Appendix D

Wetland Delineation Report

Frog Pond Ridge
Wilsonville, Oregon
Wetland & Waters Delineation Report

Date: December 16, 2019

Prepared for: West Hills Land Development
3330 NW Yeon, Suite 200
Portland, OR 97210

Prepared By: AKS Engineering & Forestry, LLC
Stacey Reed, PWS, Senior Wetland Scientist
Haley Smith, MS, Natural Resource Specialist
(503) 563-6151 ext. 211| staceyr@aks-eng.com

Site Information: Tax Lot 1500 & portion of Tax Lot 2200
Clackamas County Assessor's Tax Map 3S 1 12D
Wilsonville, Oregon

AKS Job Number: 7005

12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151

Table of Contents

Tables

Appendices

Introduction

This report was prepared by AKS Engineering & Forestry, LLC (AKS) in accordance with Oregon Administrative Rules (OAR) 141-090-0030 and OAR 141-090-0035 (1-17). The report describes the results of a wetland and waters delineation conducted on Tax Lot 1500 and a portion of Tax Lot 2200 of Clackamas County Assessor's Tax Map 3 1W 12D, which located west of SW Stafford Road and south of SW Frog Pond Lane in Wilsonville, Clackamas County, Oregon (Figures 1-2 in Appendix A). The study area for the wetland and waters delineation is ±6.76 acres and is shown in Figures 1-5 in Appendix A.

The on-site boundaries of two palustrine emergent (PEM) wetlands (referred to as Wetlands A and B) were delineated within the study area, as well as the top of bank of Willow Creek. Wetlands A and B appear to be hydrologically connected via subsurface drain tile. Wetlands A and B extends off-site to the east. Willow Creek extend off-site to the south. Adjacent off-site wetlands to the east were documented Oregon Department of State Lands (DSL) Files WD#2018-0638 and WD#2019-0558.

A. Landscape Setting and Land Use

The study area on Tax Lot 1500 consists of undeveloped field dominant in Himalayan blackberry (*Rubus armeniacus*, FAC), a bentgrass species (*Agrostis* species), field meadow-foxtail (*Alopecurus pratensis*, FAC), common velvet grass (*Holcus lanatus*, FAC), large sweet vernal grass (*Anthoxanthum odoratum*, FACU), and common timothy (*Phleum pretense*, FAC). The topography varies with a subtle (less than 25%) southeasterly slope towards Wetland B and Willow Creek.

The study area on Tax Lot 2200 is also an undeveloped field, separated from Tax Lot 1500 by a fence and row of planted Western red cedar (*Thuja plicata*, FAC) trees. The field is dominated by Himalayan blackberry, rose (*Rosa* species), and tall false rye grass (*Schedonorus arundinaceus*, FAC).

According to the Natural Resources Conservation Service (NRCS) Clackamas County Area Soil Survey Map, the following soil units are mapped within the study area, (Figure 3 in Appendix A):

- (Unit 1A) Aloha silt loam, 0% to 3% slopes; Non-hydric, with 3% hydric Huberly and 2% hydric Dayton inclusions in depressions; and
- (Unit 21) Concord silt loam; Hydric, with 5% hydric Dayton inclusions in terraces and 3% hydric Huberly inclusions in depressions.

B. Site Alterations

Historical aerial imagery dating from 1944 to 1991 were obtained from the Portland District Army Corps of Engineers (USACE) and are included as Appendix B. More recent aerial photographs, dating from 1994 to 2019, were obtained from Google Earth and are included in Appendix B. According to historic aerial imagery, the study area has been undeveloped since as early as 1944 and appears to have been historically used for agricultural purposes. A linear drainage signature in the eastern portion of the study area is present on the 1944-1977. The linear feature is not as obvious in the 1989 aerial photo. Wetlands A and B were delineated in the vicinity of this linear feature, which appears to be the historical headwaters of Willow Creek.

C. Precipitation Data and Analysis

Observed precipitation data were obtained from the National Weather Service (NWS) Portland Oregon weather station. The closest WETS (wetlands climate analysis) station to the project site is the Portland

KGW TV WETS station. Fieldwork for tax lot 1500 was conducted in March 2019. Field work for the on-site portion of tax lot 2200 was conducted in November 2019.

According to the NWS Portland station, no rainfall was received the day of the March 19, 2019 site visit and 0.84 inches were received for the two weeks prior. Observed water year-to-date (starting October 1, 2018) was 19.12 inches, which was 5.69 inches below normal compared to WETS. According to the NWS Portland station, no rainfall was received the day of the March 29, 2019 site visit and 0.57 inches were received for the two weeks prior to the site visit. Observed water year-to-date for the March 29, 2019 site visit was 19.80 inches, which was 6.33 inches below normal.

No rainfall was received on November 22, 2019, according to the NWS Portland station. However, 1.22 inches were received within the two weeks prior to the site visit. The observed water year to date on November 22, 2019 was 2.73 inches, which was 4.27 inches below normal.

Table 1 shows antecedent rainfall according to the NWS Portland station for the three months prior to the March 2019 site visits. Table 2 shows antecedent precipitation for the three months prior to the November 22, 2019 site visit (raw data included in Appendix C for both tables).

Table 1. Precipitation Data for March 19, 2019 Site Visit – Monthly Averages Based on the Climate Period 1971-2000 (Inches)

Prior Months	Observed Precipitation (Inches)	Average	30% Chance Will Have		Condition Dry, Wet, Normal	Condition Value (1=dry, 2=normal, 3=wet)	Month Weight	Multiply Previous Two Columns
			Less Than	More Than				
Mar 1-18, 2019	0.86	4.44	3.39	5.17	Dry (so far)	-	-	-
Feb 2019	4.10	5.29	3.57	6.32	Normal	2	3	6
Jan 2019	2.79	6.05	3.77	7.31	Dry	1	2	2
Dec 2018	5.08	6.46	4.43	7.71	Normal	2	1	2
							Sum	**10**
								Normal
Rainfall of prior period was: **drier** than normal (sum is 6-9), **normal** (sum is 10-14), **wetter** than normal (sum is 15-18)								

Table 2. Precipitation Data for November 22, 2019 Site Visit – Monthly Averages Based on the Climate Period 1971-2000 (Inches)

Prior Months	Observed Precipitation (Inches)	Average	30% Chance Will Have		Condition Dry, Wet, Normal	Condition Value (1=dry, 2=normal, 3=wet)	Month Weight	Multiply Previous Two Columns
			Less Than	More Than				
Nov 1-21, 2019	1.22	6.59	4.40	7.90	Dry	1	3	3
Oct 2019	1.51	3.39	1.85	4.14	Dry	1	2	2
Sept 2019	3.85	1.75	0.82	2.06	Wet	3	1	3
							Sum	**8**
								Drier
Rainfall of prior period was: **drier** than normal (sum is 6-9), **normal** (sum is 10-14), **wetter** than normal (sum is 15-18)								

According to the WETS table, monthly observed precipitation for the area was within the normal range for the three months preceding the March site visits. Climatic conditions prior to the November site visit

were considered drier than normal for the three months prior. Regardless, all plots containing hydric soil indicators displayed primary wetland hydrology indicators. Plots 5 and 12 had a groundwater table during both of the March 2019 site visits, but lacked hydric soil indicators. These plots were in line with the former linear ditch signature on historic aerials and is likely being supported by recent broken drain tile.

D. Methods

The methodology used to determine the presence of wetlands followed the U.S. Army Corps of Engineers *Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. *The National Wetland Plant List 2016* (Lichvar, 2016) was used to assign wetland indicator status for the appropriate region.

Initial field work for tax lot 1500 was conducted on March 19, 2019 by Senior Wetland Scientist, Stacey Reed, PWS, and Natural Resource Specialist, Haley Smith, MS, with a follow-up site visit conducted on March 29, 2019 by Haley Smith and Natural Resource Specialist, Samantha Sharka. Field work for the portion of tax lot 2200 in the study area was conducted on November 22, 2019 by Haley Smith and Samantha Sharka.

Soils, vegetation, and indicators of hydrology were recorded at a total of 22 sample plot locations (referred to as Plots 1-18 and Plots 1A-4A) on standardized wetland determination data forms (Appendix D) to document site conditions. Additional hydrology data collected for Plots 1-18 during the March 29, 2019 site visit is recorded in the hydrology remarks section of some of the data sheets. Test pits were left open for at least 20 minutes to allow sufficient time for the groundwater table to equilibrize in the test pit.

The top of bank of Willow Creek was delineated as the potentially jurisdictional extent of waters on November 22, 2019. The ordinary high water mark is assumed below the top of bank.

Representative ground-level site photographs are included in Appendix E. References cited and literature used are listed at the end of this report.

F. Description of Wetlands

Wetlands

Wetland A

Wetland A is a palustrine emergent (PEM) wetland delineated in the eastern portion of the study area. Wetland conditions extend off site to the east and is connected to an off-site wetland recently delineated under DSL File WD2019-0558. Wetland A belongs to the Slope hydrogeomorphic (HGM) subclassification. Two 18-inch culverts are present in the northern (upper) portion of the wetland, which appear to discharge flow from off-site into the wetland. Water was observed flowing through the culverts during both March 2019 site visits. A photo of the culverts is included in Appendix E. We did not locate the culvert outlet at the downslope end of Wetland A.

The wetland was dominated by small patches of cluster rose (*Rosa pisocarpa*, FAC), with a bentgrass species (*Agrostis* species, assumed as FAC), sedge (*Carex stipata*, OBL and *Carex* species, assumed as FAC), and common timothy (*Phleum pretense*, FAC) mainly dominant throughout. Soils in the wetland met hydric soil indicator F6 Redox Dark Surface. All wetland plots contained a groundwater table within the surface 12 inches during our March 2019 site visits.

The wetland boundary was defined by a slight change in landform from a low sloped concave in the wetland to a slightly higher convex elevation landform to the east and west of the wetland. The change in landform coincided with a change in vegetation from sedge and bentgrass in the wetland to a higher percentage of field meadow-foxtail (FAC), tall fescue (FAC), and large sweet vernal grass (FAC) in the upland. The adjacent upland also lacked hydric soil indicators.

Wetland B

Wetland B is a PEM wetland delineated in the southern portion of the study area. Wetland conditions drain to Willow Creek. Wetland B belongs to the Slope HGM subclassification. Wetland conditions extends slightly off-site to the south, as delineated under DSL File WD2018-0638.

The majority of the wetland was dominated by cluster rose (FAC), a bent grass species (FAC), soft rush (*Juncus effuses*; FACW), slough sedge (*Carex obnupta*, OBL), common velvet grass (FAC), and field meadow-foxtail (FAC). Matrix soils within the wetland generally contained a depleted matrix with redoximorphic features, starting within 12-inches below ground surface meeting hydric soil indicators F3 Depleted Matrix. Wetland Plots 1, 2, 6, 7, and 13 contained a groundwater table within the surface 12 inches during the March 2019 site visits. Scattered shallow isolated ponding up to 1-inch in depth was observed in lower elevational areas of Wetland B during the March 29, 2019 site visit.

The southern portion of the wetland on Tax Lot 2200 was dominated by western red cedar (FAC), Himalayan blackberry (FAC), common velvet grass (FAC), willow herb (*Epilobium* species, FAC), and bluegrass (*Poa* species, FAC). The soils in this portion of the wetland had a low chroma underlain by a depleted matrix with redoximorphic features, meeting hydric soil indicator A11, Depleted Below Dark Surface. Plot 3A likely meets wetland hydrology indicators in the early portion of the growing season.

The wetland boundary is defined by a slight change in landform from a low elevation concave landform in the wetland to a slightly higher elevation convex landform in the upland. The change in landform coincided with increased cover of common meadow-foxtail (FAC) and common timothy (FAC) in the upland, along with lack of common velvet grass in the upland. The adjacent upland lacked hydric soil indicators.

Willow Creek

Willow Creek within the study area is a ditched intermittent stream originating in the southern portion of Wetland B within the study area. The channel is approximately 3 feet wide with 6-inch tall banks, and is composed of a silt loam dominated substrate. No flow was recorded within the on-site portions of the channel during the November 22, 2019 site visit. The riparian area surrounding Willow Creek is dominated by Himalayan blackberry (FAC), rose (FAC), and common velvet grass (FAC).

Uplands

Plot 18 documents a low elevation spot in the northwest corner of the study area. Vegetation was dominated by Queen Anne's lace (*Dactylis glomerata,* FACU) and a bentgrass species (assumed as FAC). Soils contained a depleted matrix with redoximorphic features, starting within 12-inches below ground surface meeting hydric soil indicators F3 Depleted Matrix; however, no groundwater was observed within the test pit during the March 29, 2019 site visit and was determined to be upland.

Plots 5 and 12 were located in between Wetlands A and B. These plots all had a groundwater table within the surface 12-inches during our site visits, but lacked hydric soil indicators. This area lacked a defined

bed and bank. It is likely subsurface piping or tile in this area is failing, resulting in wetland hydrology. We documented this area as upland, as these plots lacked hydric soil indicators during our site visit.

Plots 1A and 4A were located to the southwest of Wetland B and Willow Creek. Vegetation was dominated by Himalayan blackberry (FAC), rose (FAC), and tall false rye grass (FAC). Soils at both of these plots lacked hydric soil and wetland hydrology indicators.

F. Deviation from NWI

The study area is outside the limits of the City of Wilsonville's Local Wetland Inventory (LWI) Map. According the US Fish and Wildlife (USFW) National Wetland Inventory (NWI) map, a riverine wetland is mapped in the southern portion of the study area (Figure 4). Our study determined the mapped riverine wetland to be in the approximate location of Wetland B and the headwaters of Willow Creek.

G. Mapping Method

The locations for Plots 1-18, Plots 1A-4A, and the on-site wetland and water boundaries are shown on Figure 5 Wetland Delineation Map in Appendix A. These features were GPS mapped using a hand-held Trimble Geo 7X receiver with submeter accuracy.

H. Additional Information

Wetland A and Wetland B would both likely be determined jurisdictional by DSL. Wetland A appears to have a hydrological connection to Wetland B. Wetland A drains off-site to the south into Willow Creek. Willow Creek is a natural tributary that has a direct surface water connection to the Willamette River (Water of the U.S.); therefore, Wetland A and Wetland B may be determined jurisdictional to the USACE.

Willow Creek is an intermittent stream with a direct surface hydrology connection to the Willamette River; therefore, is likely to be jurisdictional to USACE. Willow Creek may provide food sources for food and game fish; therefore, may be regulated by DSL.

I. Summary of Results and Conclusions

Table 3 below provides a summary of the on-site sizes of the features, hydrologic connections to other nearby waters, the Cowardin and HGM classifications for the wetlands, latitude and longitude of center of each feature, and our prediction of whether each feature would likely be determined jurisdictional by DSL or the USACE.

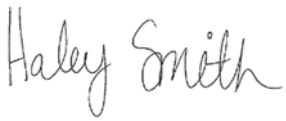
Table 3. Summary of Study Results and Conclusions

Potentially Jurisdictional Feature	Size (acres)	Cowardin Class	HGM Subclass / Flow Regime	Connection to Other Waters	DSL/ USACE Predicted Jurisdiction	Latitude and Longitude
Wetland A	0.20	PEM	Slope	Willow Creek	DSL & USACE	45.321151, -122.747961
Wetland B	0.30	PEM	Slope	Willow Creek	DSL & USACE	45.320075, -122.748183
Willow Creek	0.01	N/A	Intermittent	Willamette River	DSL & USACE	45.319810, -122.748148

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 Oregon Administrative Rules (OAR) 141-090-0005 through 141-090-0055.

K. List of Preparers



Haley Smith, MS
Natural Resource Specialist
Fieldwork and Report Preparation

Stacey Reed, PWS
Senior Wetland Scientist
Fieldwork and Report QA/QC

Literature Cited and Referenced

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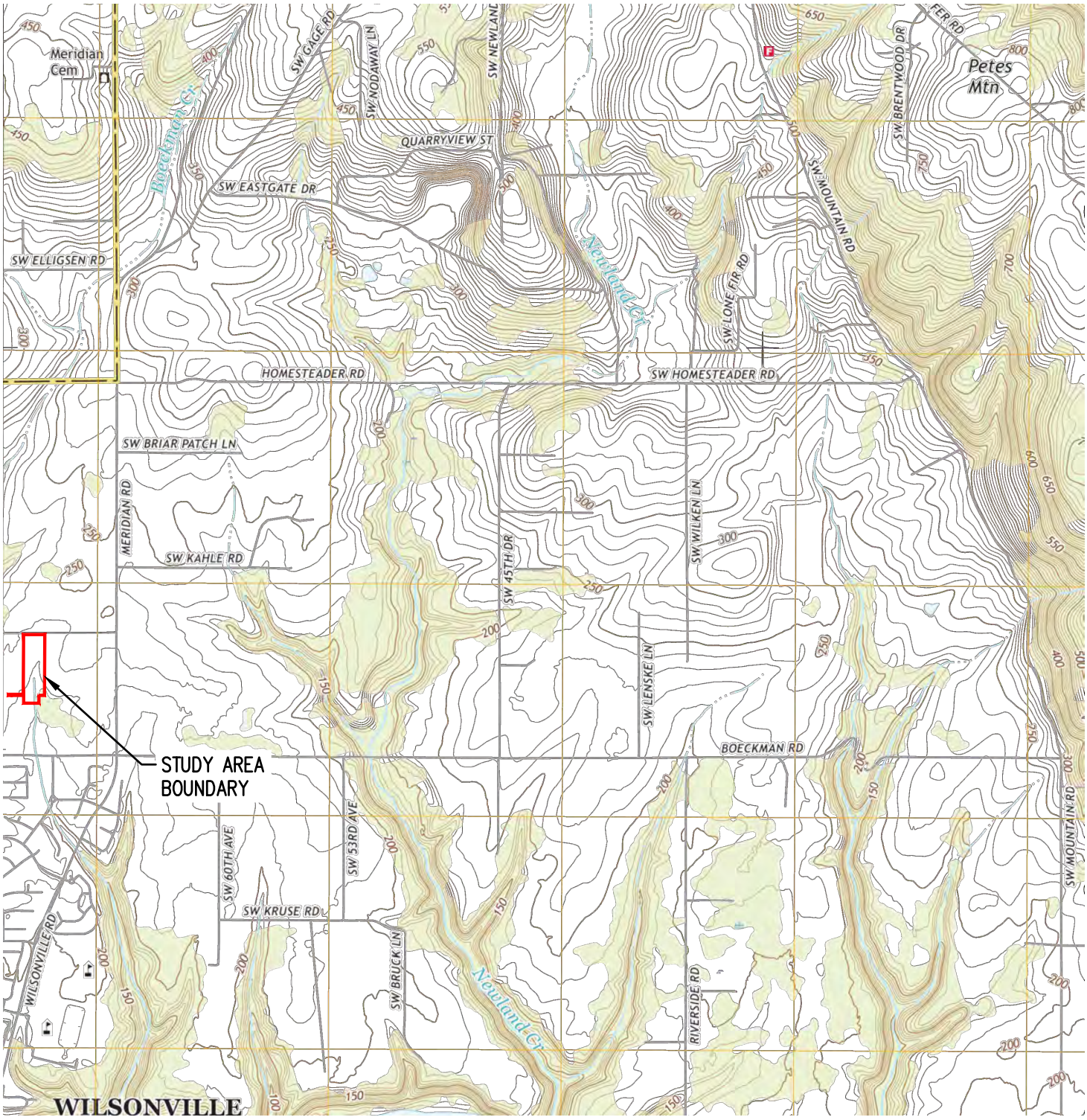
Appendix A: Maps



USGS 7.5' TOPOGRAPHIC SERIES
QUADRANGLE: CANBY, OR (2017)

N

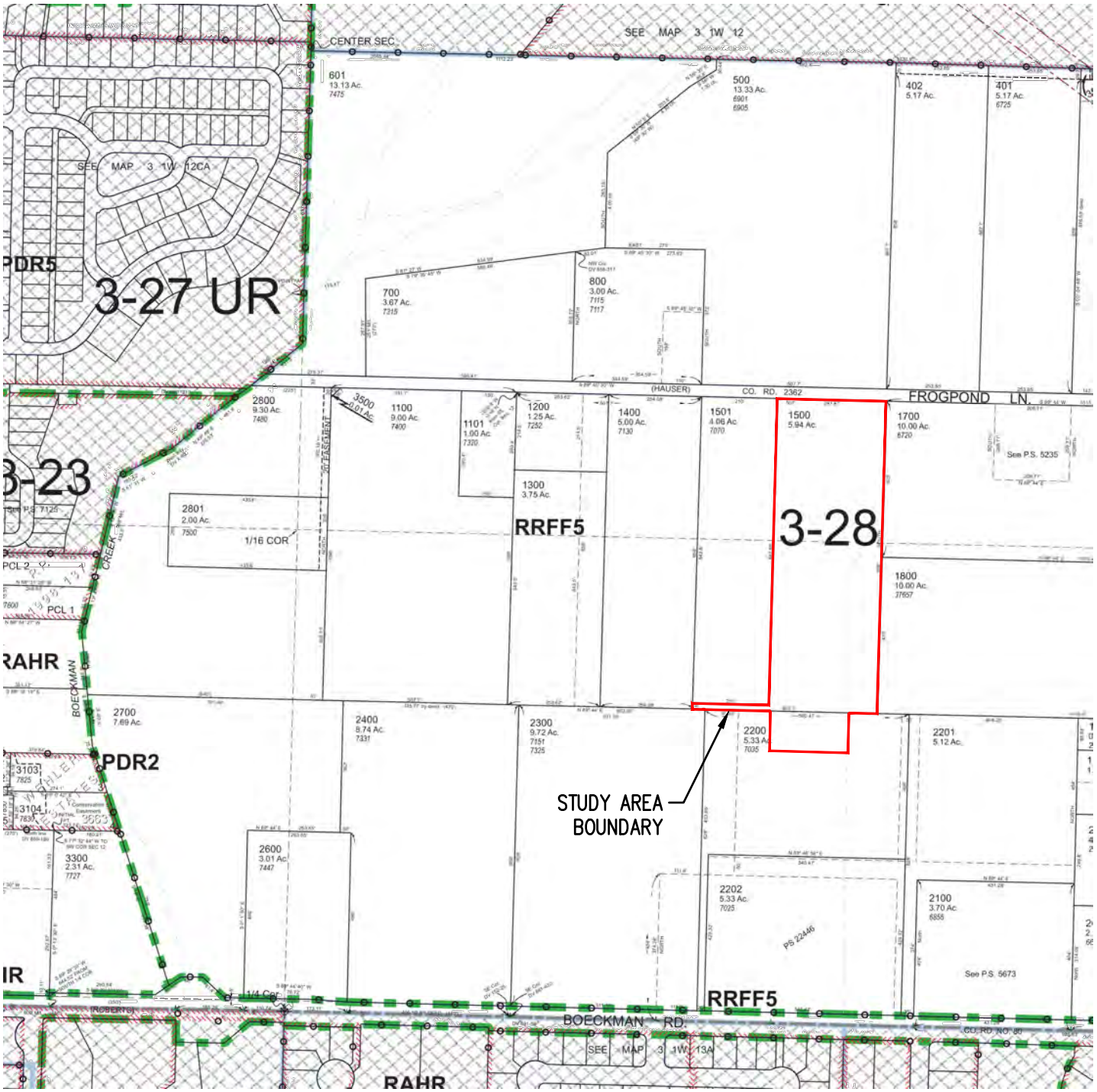
SCALE: 1"= 2000 FEET

2000 0 800 1200 1600 2000

DATE: 12/16/2019

USGS VICINITY MAP FROG POND RIDGE WETLAND AND WATERS DELINEATION	FIGURE 1
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7005

DWG: 7005 COATES WDR FIGURES | FIGURE 1



CLACKAMAS COUNTY
TAX LOT 1500
TAX MAP 3S 1 12D

N

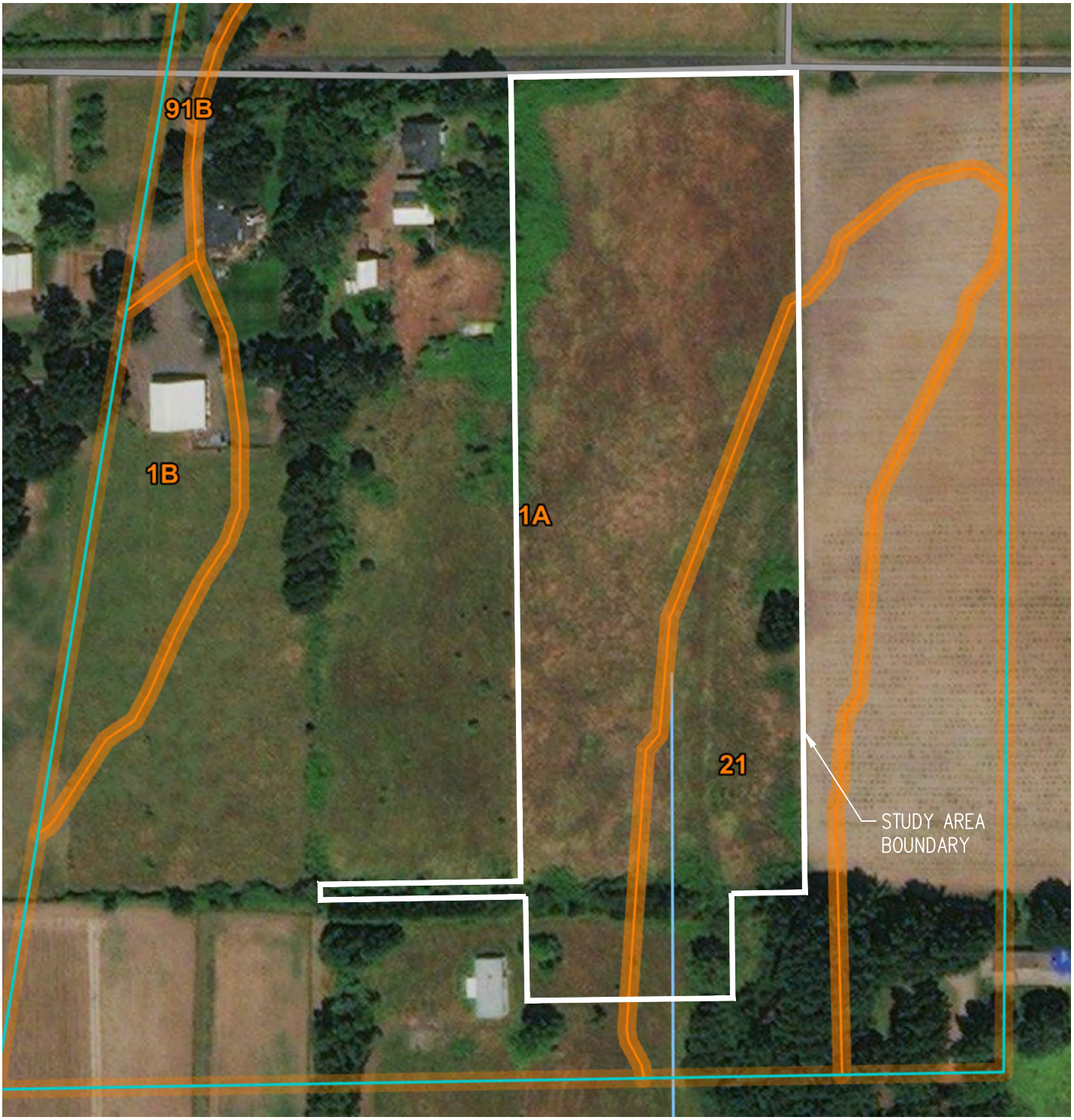
SCALE: 1"= 400 FEET

400 0 160 240 320 400

DATE: 12/16/2019

TAX MAP (MAP 3S 1 12D) FROG POND RIDGE WETLAND AND WATERS DELINEATION	FIGURE 2
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7005

DWG: 7005 COATES WDR FIGURES | FIGURE 2



MAP UNIT SYMBOL	MAP UNIT NAME
1A	ALOHA SILT LOAM, 0% TO 3% SLOPES; NON-HYDRIC
21	CONCORD SILT LOAM; HYDRIC

N

SCALE: 1"=150 FEET

150 0 60 90 120 150

NRCS WEB SOIL SURVEY FOR
CLACKAMAS COUNTY

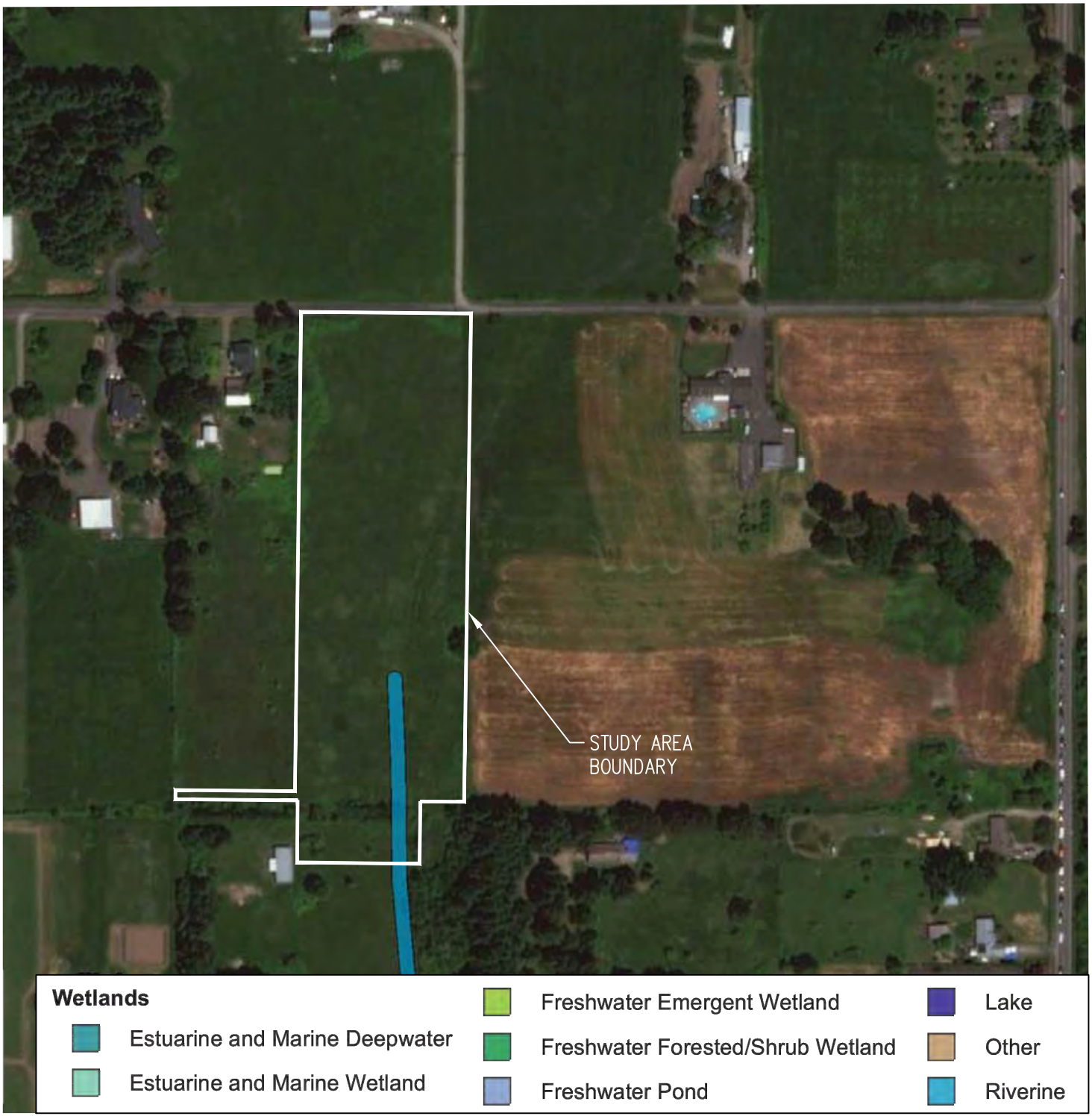
DATE: 12/16/2019

NRCS SOIL SURVEY MAP
FROG POND RIDGE WETLAND AND WATERS DELINEATION

FIGURE 3

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SAS
CHKD: SAR
AKS JOB: 7005



N

SCALE: 1"= 250 FEET

250 0 100 150 200 250

US FISH & WILDLIFE SERVICE
NATIONAL WETLAND INVENTORY (2017)

DATE: 12/16/2019

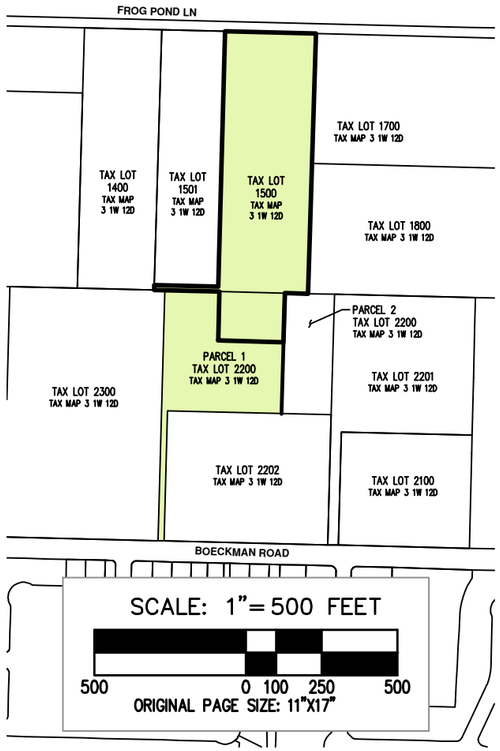
NATIONAL WETLAND INVENTORY MAP
FROG POND RIDGE WETLAND AND WATERS DELINEATION

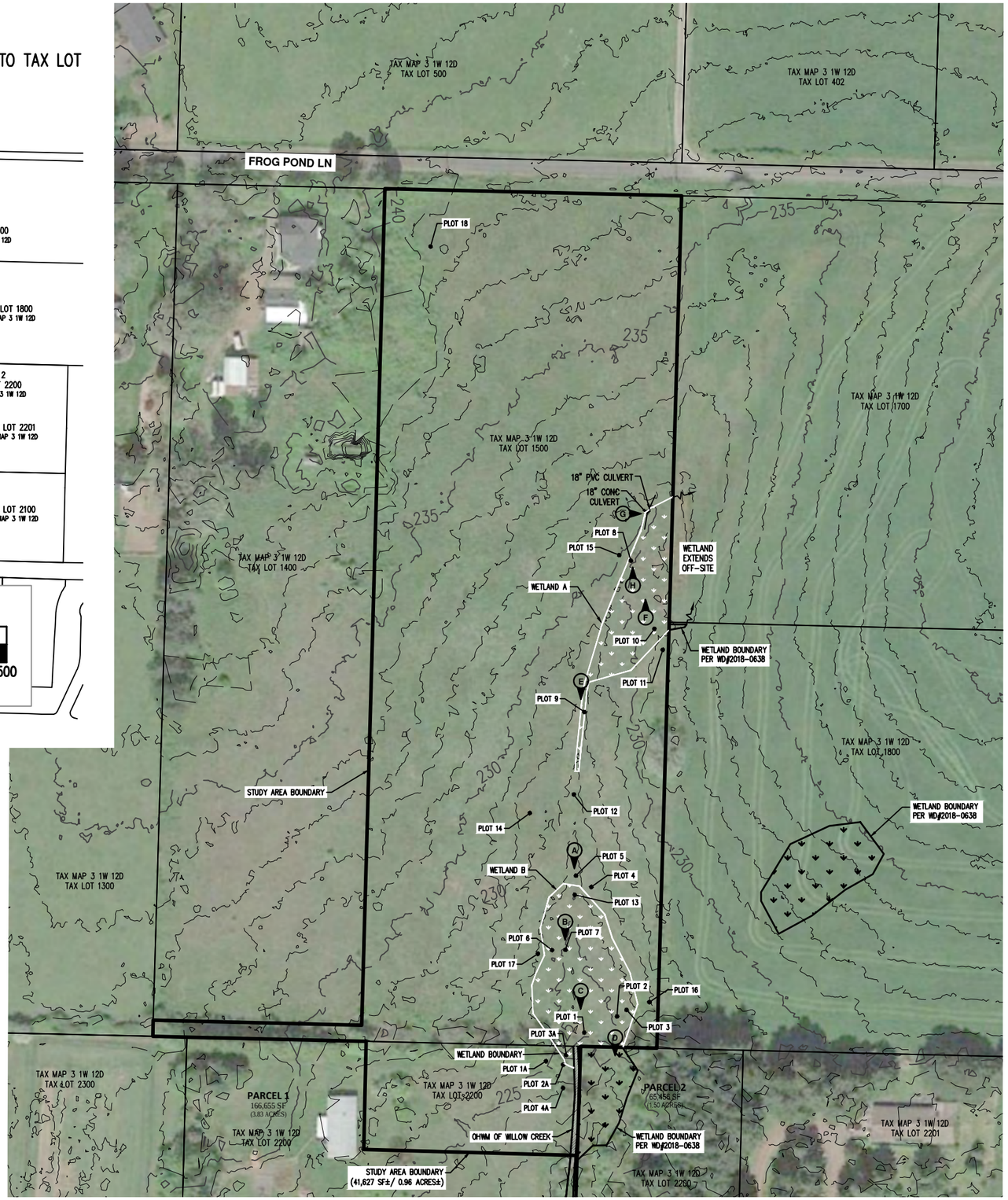
FIGURE 4

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SAS
CHKD: SAR
AKS JOB: 7005

INSERT BELOW: STUDY AREA IN RELATION TO TAX LOT BOUNDARIES (INSERT SCALE PROVIDED).





GOOGLE EARTH AERIAL IMAGERY
APRIL, 2015

LEGEND (COLOR COPY):

ON-SITE PEM WETLAND AREA: 21,661 SF± (0.50 ACRES±)

WETLAND A: 8,753 SF± (0.20 ACRES±)
WETLAND B: 12,908 SF± (0.30 ACRES±)

ON-SITE PORTION OF WILLOW CREEK: 552 SF± (0.01 ACRES±)

A PHOTO LOCATIONS & ORIENTATION

PLOTS 1-18 WERE DOCUMENTED BY AKS ENGINEERING & FORESTRY, LLC (AKS) ON MARCH 19 & 29, 2019. PLOTS 1A-4A WERE DOCUMENTED BY AKS ON NOVEMBER 22, 2019. FEATURES SHOWN WERE LOCATED USING A HANDHELD TRIMBLE GEO7X GPS RECEIVER WITH SUBMETER ACCURACY.

1-FOOT INTERVAL GROUND CONTOURS DERIVED FROM NOAA LIDAR DATA.

N

SCALE: 1"= 120 FEET
120 0 48 72 96 120
SCALED 11 X 17"

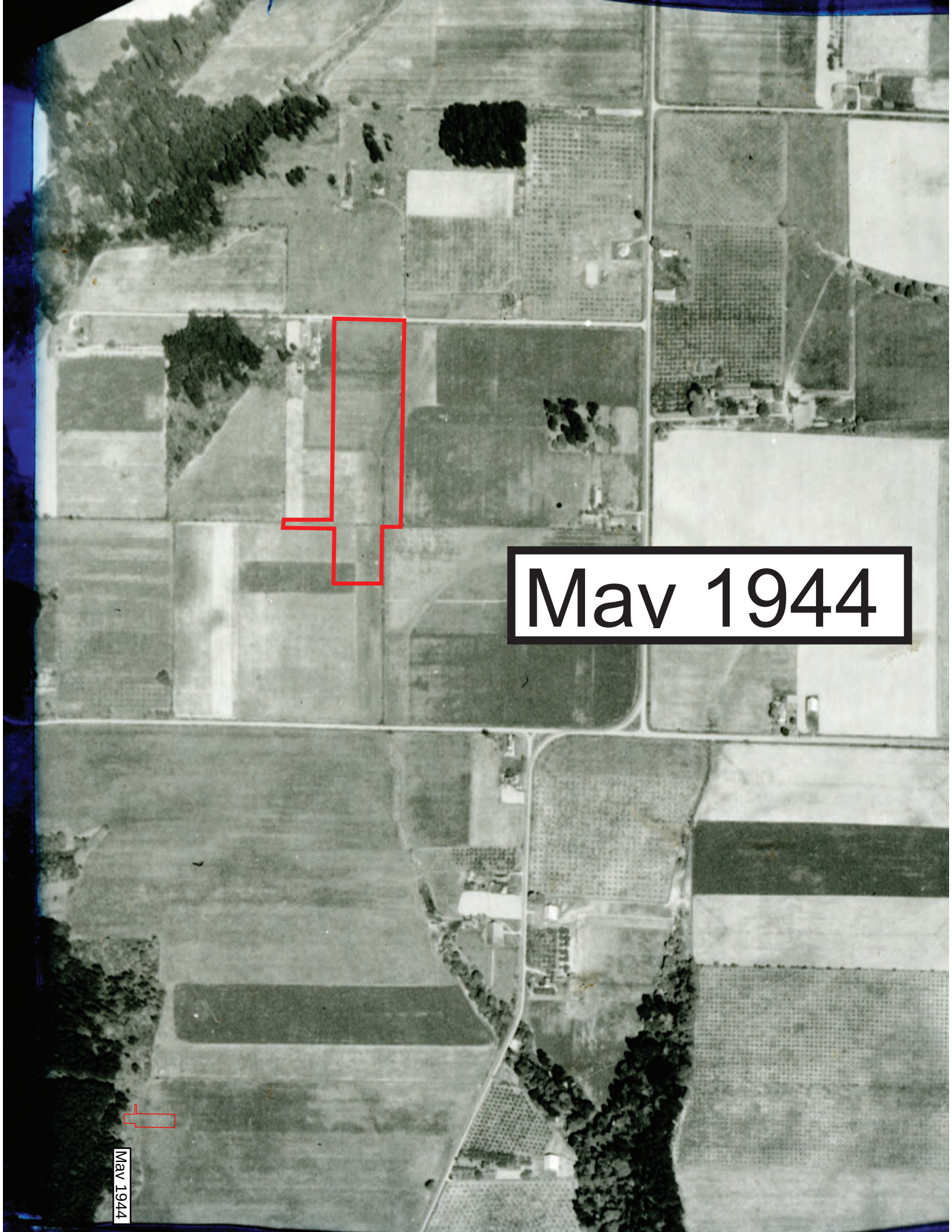
DATE: 12/12/2019

WETLAND AND WATERS DELINEATION MAP	FIGURE 5
FROG POND RIDGE	

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
P: 503.563.6151 F: 503.563.6152 aks-eng.com

DRWN: JRI
CHKD: SAR
AKS JOB: 7005

Appendix B: Historical Aerial Photographs


May 1944
May 1944

May 1953
May 1953


April 1969
April 1969

May 1977


June 1989
June 1989


June 1991
June 1991


June 1994
Coates & School Properties
AKS Job 7005
SW Frog Pond Ln
Google Earth
500 ft
N


May 2002
Coates & School Properties
AKS Job 7005
SW Frog Pond Ln
Google Earth
500 ft
N


June 2006
Coates & School Properties
AKS Job 7005
SW Frog Pond Ln
Google Earth
500 ft
N


May 2010
Coates & School Properties
AKS Job 7005
SW Frog Pond Ln
Google Earth
500 ft
N


April 2015
Coates & School Properties
AKS Job 7005
SW Frog Pond Ln
Google Earth
500 ft
N


May 2017
Coates & School Properties
AKS Job 7005
SW Frog Pond Ln
Google Earth
500 ft
N


May 2019
Coates & School Properties
AKS Job 7005
SW Frog Pond Ln
Google Earth
500 ft
N

Appendix C: Precipitation 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 (Monthly)

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133
CXUS56 KPQR 011648 CCA
CLMPDX

CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
838 AM PST TUE JAN 1 2019

.....................................

...THE PORTLAND OR CLIMATE SUMMARY FOR THE MONTH OF DECEMBER 2018...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1940 TO 2018

WEATHER         OBSERVED          NORMAL  DEPART  LAST YEAR`S
                 VALUE   DATE(S)  VALUE   FROM    VALUE  DATE(S)
                                          NORMAL
.............................................................
TEMPERATURE (F)
HIGHEST            59                                56  12/29
LOWEST             31                                23  12/26
AVG. MAXIMUM     49.1              45.6     3.5     45.5
AVG. MINIMUM     38.8              35.2     3.6     34.2
MEAN             44.0              40.4     3.6     39.8
DAYS MAX >= 90      0               0.0     0.0        0
DAYS MAX <= 32      0               0.9    -0.9        0
DAYS MIN <= 32      4               8.7    -4.7       14
DAYS MIN <= 0       0               0.0     0.0        0

PRECIPITATION (INCHES)
RECORD
 MAXIMUM        15.24   2015
 MINIMUM         1.38   1976
TOTALS           5.08              5.49   -0.41     3.09
DAYS >= .01        17              18.6    -1.6       15
DAYS >= .10        11              12.3    -1.3        8
DAYS >= .50         3               3.4    -0.4        3
DAYS >= 1.00        0               0.9    -0.9        0
GREATEST
 24 HR. TOTAL    0.80   12/18 TO 12/18

SNOWFALL (INCHES)
TOTALS            0.0
SINCE 7/1         0.0

DEGREE_DAYS
HEATING TOTAL     644               763    -119      776
 SINCE 7/1       1465              1732    -267     1701
COOLING TOTAL       0                 0       0        0
 SINCE 1/1        692               424     268      700
.............................................................

WIND (MPH)
AVERAGE WIND SPEED             9.8
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RESULTANT WIND SPEED/DIRECTION   7/126
HIGHEST WIND SPEED/DIRECTION    36/090    DATE  12/05
HIGHEST GUST SPEED/DIRECTION    46/210    DATE  12/14

SKY COVER
POSSIBLE SUNSHINE (PERCENT)   MM
AVERAGE SKY COVER           0.80
NUMBER OF DAYS FAIR            3
NUMBER OF DAYS PC              8
NUMBER OF DAYS CLOUDY         20

AVERAGE RH (PERCENT)     77

WEATHER CONDITIONS. NUMBER OF DAYS WITH
THUNDERSTORMS        0        MIXED PRECIP            0
HEAVY RAIN           1        RAIN                    7
LIGHT RAIN           21       FREEZING RAIN           0
LT FREEZING RAIN     0        HAIL                    0
HEAVY SNOW           0        SNOW                    0
LIGHT SNOW           0        SLEET                   0
FOG                  20       FOG W/VIS <=1/4 MILE    4
HAZE                 2


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

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Climatological Report (Monthly)

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CXUS56 KPQR 011805 CCA
CLMPDX

CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
957 AM PST FRI FEB 1 2019

.....................................

...THE PORTLAND OR CLIMATE SUMMARY FOR THE MONTH OF JANUARY 2019...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1940 TO 2019

WEATHER         OBSERVED          NORMAL  DEPART  LAST YEAR`S
                 VALUE   DATE(S)  VALUE   FROM    VALUE  DATE(S)
                                          NORMAL
.............................................................
TEMPERATURE (F)
HIGHEST            57                                59  01/13
LOWEST             29                                29  01/01
AVG. MAXIMUM     49.2              47.0     2.2     50.8
AVG. MINIMUM     37.1              35.8     1.3     40.4
MEAN             43.1              41.4     1.7     45.6
DAYS MAX >= 90      0               0.0     0.0        0
DAYS MAX <= 32      0               0.5    -0.5        0
DAYS MIN <= 32      5               8.3    -3.3        2
DAYS MIN <= 0       0               0.0     0.0        0

PRECIPITATION (INCHES)
RECORD
 MAXIMUM        12.83   1953
 MINIMUM         0.06   1985
TOTALS           2.79             4.88   -2.09     5.36
DAYS >= .01        13             18.0    -5.0       24
DAYS >= .10         7             11.8    -4.8       14
DAYS >= .50         1              3.0    -2.0        5
DAYS >= 1.00        1              0.5     0.5        0
GREATEST
 24 HR. TOTAL    1.11   01/18 TO 01/18

SNOWFALL (INCHES)
TOTALS            0.0
SINCE 7/1         0.0

DEGREE_DAYS
HEATING TOTAL     670              732     -62      595
 SINCE 7/1       2135             2464    -329     2296
COOLING TOTAL       0                0       0        0
 SINCE 1/1          0                0       0        0
.............................................................

WIND (MPH)
AVERAGE WIND SPEED             8.9
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RESULTANT WIND SPEED/DIRECTION 6/119
HIGHEST WIND SPEED/DIRECTION 40/210 DATE 01/05
HIGHEST GUST SPEED/DIRECTION 54/190 DATE 01/05

SKY COVER
POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.70
NUMBER OF DAYS FAIR 5
NUMBER OF DAYS PC 5
NUMBER OF DAYS CLOUDY 21

AVERAGE RH (PERCENT) 74

WEATHER CONDITIONS. NUMBER OF DAYS WITH

THUNDERSTORMS	0	MIXED PRECIP	0
HEAVY RAIN	0	RAIN	2
LIGHT RAIN	17	FREEZING RAIN	0
LT FREEZING RAIN	0	HAIL	0
HEAVY SNOW	0	SNOW	0
LIGHT SNOW	0	SLEET	0
FOG	19	FOG W/VIS <=1/4 MILE	7
HAZE	1		

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

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Climatological Report (Monthly)

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151
CXUS56 KPQR 011633
CLMPDX

CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
820 AM PST FRI MAR 1 2019

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...THE PORTLAND OR CLIMATE SUMMARY FOR THE MONTH OF FEBRUARY 2019...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1940 TO 2019

WEATHER         OBSERVED          NORMAL  DEPART  LAST YEAR`S
                 VALUE   DATE(S)  VALUE   FROM    VALUE  DATE(S)
                                          NORMAL
.............................................................
TEMPERATURE (F)
HIGHEST            50                                60  02/04
LOWEST             23                                23  02/21
AVG. MAXIMUM     42.9              51.3    -8.4     49.0
AVG. MINIMUM     32.2              36.3    -4.1     35.9
MEAN             37.6              43.8    -6.2     42.5
DAYS MAX >= 90      0               0.0     0.0        0
DAYS MAX <= 32      0               0.2    -0.2        0
DAYS MIN <= 32     15               6.8     8.2        9
DAYS MIN <= 0       0               0.0     0.0        0

PRECIPITATION (INCHES)
RECORD
 MAXIMUM        10.36   2017
 MINIMUM         0.72   1993
TOTALS           4.10              3.66    0.44     1.86
DAYS >= .01        21              14.9     6.1       14
DAYS >= .10        13               9.2     3.8        6
DAYS >= .50         2               2.0     0.0        0
DAYS >= 1.00        0               0.4    -0.4        0
GREATEST
 24 HR. TOTAL    0.77   02/12 TO 02/12

SNOWFALL (INCHES)
TOTALS            6.5
SINCE 7/1         6.5

DEGREE_DAYS
HEATING TOTAL     760               594     166      625
 SINCE 7/1       2895              3058    -163     2921
COOLING TOTAL       0                 0       0        0
 SINCE 1/1          0                 0       0        0
.............................................................

WIND (MPH)
AVERAGE WIND SPEED             9.1
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RESULTANT WIND SPEED/DIRECTION   5/121
HIGHEST WIND SPEED/DIRECTION    36/090    DATE  02/26
HIGHEST GUST SPEED/DIRECTION    46/100    DATE  02/26

SKY COVER
POSSIBLE SUNSHINE (PERCENT)   MM
AVERAGE SKY COVER           0.80
NUMBER OF DAYS FAIR            0
NUMBER OF DAYS PC              8
NUMBER OF DAYS CLOUDY         20

AVERAGE RH (PERCENT)     78

WEATHER CONDITIONS. NUMBER OF DAYS WITH
THUNDERSTORMS        1        MIXED PRECIP            0
HEAVY RAIN           0        RAIN                    7
LIGHT RAIN           20       FREEZING RAIN           0
LT FREEZING RAIN     0        HAIL                    0
HEAVY SNOW           0        SNOW                    4
LIGHT SNOW           10       SLEET                   0
FOG                  22       FOG W/VIS <=1/4 MILE    4
HAZE                 2

-  INDICATES NEGATIVE NUMBERS.
R  INDICATES RECORD WAS SET OR TIED.
MM INDICATES DATA IS MISSING.
T  INDICATES TRACE AMOUNT.
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Climatological Report (Monthly)

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435
CXUS56 KPQR 011601 CCA
CLMPDX

CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
858 AM PDT MON APR 1 2019

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...THE PORTLAND OR CLIMATE SUMMARY FOR THE MONTH OF MARCH 2019...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1940 TO 2019

WEATHER         OBSERVED          NORMAL  DEPART  LAST YEAR`S
                 VALUE   DATE(S)  VALUE   FROM    VALUE  DATE(S)
                                          NORMAL
.............................................................
TEMPERATURE (F)
HIGHEST            72                                69  03/12
LOWEST             24                                30  03/06
AVG. MAXIMUM     56.6              56.7    -0.1     55.8
AVG. MINIMUM     36.7              39.6    -2.9     38.6
MEAN             46.7              48.2    -1.5     47.2
DAYS MAX >= 90      0               0.0     0.0        0
DAYS MAX <= 32      0               0.0     0.0        0
DAYS MIN <= 32     10               2.1     7.9        1
DAYS MIN <= 0       0               0.0     0.0        0

PRECIPITATION (INCHES)
RECORD
 MAXIMUM         7.89   2012
 MINIMUM         1.10   1965
TOTALS           1.54              3.68   -2.14     2.50
DAYS >= .01        11              17.6    -6.6       16
DAYS >= .10         5              10.7    -5.7        9
DAYS >= .50         0               1.7    -1.7        1
DAYS >= 1.00        0               0.2    -0.2        0
GREATEST
 24 HR. TOTAL    0.37   03/12 TO 03/12

SNOWFALL (INCHES)
TOTALS            0.5
SINCE 7/1         7.0

DEGREE_DAYS
HEATING TOTAL     562               522      40      546
 SINCE 7/1       3457              3580    -123     3467
COOLING TOTAL       0                 0       0        0
 SINCE 1/1          0                 0       0        0
.............................................................

WIND (MPH)
AVERAGE WIND SPEED              7.7
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RESULTANT WIND SPEED/DIRECTION 5/105
HIGHEST WIND SPEED/DIRECTION 33/080 DATE 03/18
HIGHEST GUST SPEED/DIRECTION 40/080 DATE 03/18

SKY COVER
POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.50
NUMBER OF DAYS FAIR 8
NUMBER OF DAYS PC 15
NUMBER OF DAYS CLOUDY 8

AVERAGE RH (PERCENT) 62

WEATHER CONDITIONS. NUMBER OF DAYS WITH

THUNDERSTORMS	0	MIXED PRECIP	0
HEAVY RAIN	0	RAIN	3
LIGHT RAIN	13	FREEZING RAIN	0
LT FREEZING RAIN	0	HAIL	0
HEAVY SNOW	0	SNOW	0
LIGHT SNOW	3	SLEET	0
FOG	8	FOG W/VIS <=1/4 MILE	2
HAZE	1		

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

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Climatological Report (Monthly)

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CXUS56 KPQR 011601
CLMPDX

CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
851 AM PDT TUE OCT 1 2019

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...THE PORTLAND OR CLIMATE SUMMARY FOR THE MONTH OF SEPTEMBER 2019...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1940 TO 2019
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WEATHER	OBSERVED VALUE	OBSERVED DATE(S)	NORMAL VALUE	DEPART FROM NORMAL	LAST YEAR`S VALUE	LAST YEAR`S DATE(S)
TEMPERATURE (F)						
HIGHEST	88				91	09/05
LOWEST	39				47	09/24
AVG. MAXIMUM	72.1		75.8	-3.7	75.9	
AVG. MINIMUM	56.8		53.1	3.7	52.8	
MEAN	64.4		64.5	-0.1	64.4	
DAYS MAX >= 90	0		1.6	-1.6	1	
DAYS MAX <= 32	0		0.0	0.0	0	
DAYS MIN <= 32	0		0.0	0.0	0	
DAYS MIN <= 0	0		0.0	0.0	0	
PRECIPITATION (INCHES)						
RECORD						
MAXIMUM	5.62	2013				
MINIMUM	T	1993 1975				
TOTALS	3.85		1.47	2.38	1.59	
DAYS >= .01	15		6.7	8.3	7	
DAYS >= .10	10		3.3	6.7	4	
DAYS >= .50	2		0.8	1.2	1	
DAYS >= 1.00	1		0.2	0.8	0	
GREATEST						
24 HR. TOTAL	1.01	09/17 TO 09/17				
SNOWFALL (INCHES)						
TOTALS	0.0					
SINCE 7/1	0.0					
DEGREE_DAYS						
HEATING TOTAL	80		76	4	61	
SINCE 7/1	83		103	-20	69	
COOLING TOTAL	70		59	11	48	
SINCE 1/1	564		422	142	691	

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WIND (MPH)
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AVERAGE WIND SPEED              5.5
RESULTANT WIND SPEED/DIRECTION   1/280
HIGHEST WIND SPEED/DIRECTION    22/200    DATE  09/08
HIGHEST GUST SPEED/DIRECTION    31/170    DATE  09/17

SKY COVER
POSSIBLE SUNSHINE (PERCENT)    0
AVERAGE SKY COVER           0.60
NUMBER OF DAYS FAIR            4
NUMBER OF DAYS PC             13
NUMBER OF DAYS CLOUDY         13

AVERAGE RH (PERCENT)     66

WEATHER CONDITIONS. NUMBER OF DAYS WITH
THUNDERSTORMS              2     MIXED PRECIP               0
HEAVY RAIN                 1     RAIN                       4
LIGHT RAIN                18     FREEZING RAIN              0
LT FREEZING RAIN           0     HAIL                       0
HEAVY SNOW                 0     SNOW                       0
LIGHT SNOW                 0     SLEET                      0
FOG                       11     FOG W/VIS <= 1/4 MILE      0
HAZE                       2

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

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Climatological Report (Monthly)

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CXUS56 KPQR 011526 CCA
CLMPDX

CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
824 AM PDT FRI NOV 1 2019

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...THE PORTLAND OR CLIMATE SUMMARY FOR THE MONTH OF OCTOBER 2019...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1940 TO 2019

WEATHER         OBSERVED          NORMAL  DEPART  LAST YEAR`S
                 VALUE   DATE(S)  VALUE   FROM    VALUE  DATE(S)
                                          NORMAL
.............................................................
TEMPERATURE (F)
HIGHEST            71                                77  10/16
LOWEST             29                                40  10/21
                                                         10/15
AVG. MAXIMUM     60.8              63.8    -3.0     66.1
AVG. MINIMUM     42.1              46.0    -3.9     47.1
MEAN             51.5              54.9    -3.4     56.6
DAYS MAX >= 90      0               0.1    -0.1        0
DAYS MAX <= 32      0               0.0     0.0        0
DAYS MIN <= 32      2               0.2     1.8        0
DAYS MIN <= 0       0               0.0     0.0        0

PRECIPITATION (INCHES)
RECORD
 MAXIMUM         8.41   1994
 MINIMUM         0.19   1988
TOTALS           1.51             3.00   -1.49     3.43
DAYS >= .01        12             12.5    -0.5       13
DAYS >= .10         4              7.4    -3.4        8
DAYS >= .50         0              1.7    -1.7        1
DAYS >= 1.00        0              0.3    -0.3        1
GREATEST
 24 HR. TOTAL    0.43   10/19 TO 10/19

SNOWFALL (INCHES)
TOTALS            0.0
SINCE 7/1         0.0

DEGREE_DAYS
HEATING TOTAL     414              315      99      254
 SINCE 7/1        497              418      79      323
COOLING TOTAL       0                2      -2        1
 SINCE 1/1        564              424     140      692
.............................................................

WIND (MPH)
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```
AVERAGE WIND SPEED              6.5
RESULTANT WIND SPEED/DIRECTION   1/127
HIGHEST WIND SPEED/DIRECTION    36/090    DATE  10/29
HIGHEST GUST SPEED/DIRECTION    44/100    DATE  10/29

SKY COVER
POSSIBLE SUNSHINE (PERCENT)   MM
AVERAGE SKY COVER           0.50
NUMBER OF DAYS FAIR            9
NUMBER OF DAYS PC             12
NUMBER OF DAYS CLOUDY         10

AVERAGE RH (PERCENT)     66

WEATHER CONDITIONS. NUMBER OF DAYS WITH
THUNDERSTORMS              1     MIXED PRECIP               0
HEAVY RAIN                 1     RAIN                       4
LIGHT RAIN                13     FREEZING RAIN              0
LT FREEZING RAIN           0     HAIL                       0
HEAVY SNOW                 0     SNOW                       0
LIGHT SNOW                 0     SLEET                      0
FOG                       15     FOG W/VIS <= 1/4 MILE      4
HAZE                       2

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

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Climatological Report (Monthly)

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CXUS56 KPQR 011740 CCA
CLMPDX

CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
930 AM PST SUN DEC 1 2019

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...THE PORTLAND OR CLIMATE SUMMARY FOR THE MONTH OF NOVEMBER 2019...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1940 TO 2019
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WEATHER	OBSERVED VALUE	DATE(S)	NORMAL VALUE	DEPART FROM NORMAL	LAST YEAR`S VALUE	DATE(S)
TEMPERATURE (F)						
HIGHEST	66				68	11/01
LOWEST	26				32	11/19
						11/09
AVG. MAXIMUM	54.4		52.8	1.6	54.8	
AVG. MINIMUM	39.2		40.5	-1.3	41.4	
MEAN	46.8		46.6	0.2	48.1	
DAYS MAX >= 90	0		0.0	0.0	0	
DAYS MAX <= 32	0		0.2	-0.2	0	
DAYS MIN <= 32	5		3.4	1.6	2	
DAYS MIN <= 0	0		0.0	0.0	0	
PRECIPITATION (INCHES)						
RECORD						
MAXIMUM	11.92	2006				
MINIMUM	0.77	1976				
TOTALS	1.52		5.63	-4.11	2.86	
DAYS >= .01	10		19.0	-9.0	13	
DAYS >= .10	6		12.6	-6.6	7	
DAYS >= .50	0		3.3	-3.3	1	
DAYS >= 1.00	0		0.8	-0.8	0	
GREATEST						
24 HR. TOTAL	0.49	11/19 TO 11/19				
SNOWFALL (INCHES)						
TOTALS	T					
SINCE 7/1	T					
DEGREE_DAYS						
HEATING TOTAL	537		551	-14	498	
SINCE 7/1	1034		969	65	821	
COOLING TOTAL	0		0	0	0	
SINCE 1/1	564		424	140	692	

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WIND (MPH)
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AVERAGE WIND SPEED 5.7
RESULTANT WIND SPEED/DIRECTION 2/095
HIGHEST WIND SPEED/DIRECTION 32/090 DATE 11/30
HIGHEST GUST SPEED/DIRECTION 43/100 DATE 11/30

SKY COVER
POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.60
NUMBER OF DAYS FAIR 8
NUMBER OF DAYS PC 7
NUMBER OF DAYS CLOUDY 15

AVERAGE RH (PERCENT) 74

WEATHER CONDITIONS. NUMBER OF DAYS WITH

THUNDERSTORMS	0	MIXED PRECIP	0
HEAVY RAIN	1	RAIN	6
LIGHT RAIN	11	FREEZING RAIN	0
LT FREEZING RAIN	0	HAIL	0
HEAVY SNOW	0	SNOW	0
LIGHT SNOW	1	SLEET	0
FOG	20	FOG W/VIS <= 1/4 MILE	11
HAZE	4		

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

WETS Table

WETS Station: PORTLAND KGW-TV, OR								
Requested years: 1971 - 2000								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	46.2	36.4	41.3	6.05	3.77	7.31	12	1.2
Feb	50.6	38.5	44.5	5.29	3.57	6.32	12	0.9
Mar	56.2	40.7	48.5	4.44	3.39	5.17	12	0.1
Apr	61.4	43.9	52.6	3.13	2.18	3.71	9	0.0
May	67.3	48.6	57.9	2.58	1.59	3.12	8	0.0
Jun	73.2	53.1	63.2	1.59	0.85	1.94	4	0.0
Jul	79.1	57.0	68.1	0.78	0.35	0.93	2	0.0
Aug	79.5	57.4	68.5	1.02	0.32	1.17	2	0.0
Sep	74.9	54.1	64.5	1.75	0.82	2.06	4	0.0
Oct	63.4	47.5	55.5	3.39	1.85	4.14	7	0.0
Nov	52.2	41.4	46.8	6.59	4.40	7.90	14	0.4
Dec	46.1	36.8	41.4	6.46	4.43	7.71	13	0.9
Annual:					38.24	48.02		
Average	62.5	46.3	54.4	-	-	-	-	-
Total	-	-	-	43.07			100	3.5

GROWING SEASON DATES			
Years with missing data:	24 deg = 6	28 deg = 6	32 deg = 6
Years with no occurrence:	24 deg = 15	28 deg = 4	32 deg = 0
Data years used:	24 deg = 24	28 deg = 24	32 deg = 24
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	No occurrence	1/30 to 12/24: 328 days	2/20 to 11/29: 282 days
70 percent *	No occurrence	1/19 to 1/4: 350 days	2/12 to 12/8: 299 days
* Percent chance of the growing season occurring between the Beginning and Ending dates.			

STATS TABLE - total precipitation (inches)													
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1973								1.66	3.76	3.81	13.46	9.88	32.57
1974	9.07	4.85	6.43	2.64	2.17	0.86	2.27	0.14	0.15	2.22	7.13	6.93	44.86
1975	8.83	6.03	5.02	2.48	1.97	1.22	0.41	2.84	T	5.67	4.71	6.74	45.92
1976	6.07	5.41	3.41	2.63	1.74	0.92	0.75	2.50	0.93	1.73	1.13	1.36	28.58
1977	1.26	2.71	4.10	0.63	4.39	0.99	1.05	3.57	4.69	3.51	5.87		32.77
1978	5.93	3.81	1.73	3.53	3.70	1.41	1.17	2.36	3.58	0.48	4.08	2.85	34.63
1979	3.04	7.00	2.58	2.83	2.18	0.39	0.25				4.58	7.35	30.20
1980	8.88	4.51	4.45	3.11	2.16	2.77	0.18	0.21	2.06	1.25	7.09	10.27	46.94

1981	1.67	3.84	2.74	3.11	1.81	4.03	0.21	0.04	2.76	4.57	5.99	10.34	41.11
1982	8.76	7.10	3.61	4.89	0.59	0.99	0.83	1.92	3.33	4.96	3.84	9.40	50.22
1983	7.71	9.05	7.31	2.44	2.38	2.04	2.94	2.01	0.47	1.92	10.73	5.78	54.78
1984	2.38	4.05	4.32	4.38	4.09	4.48	0.00	0.08	1.99	4.60	10.69	3.38	44.44
1985	0.27		4.06	1.14	0.88	2.28	0.12	0.99	2.71	3.05		2.20	17.70
1986	5.87	7.15	2.78	1.32	2.33	0.32	1.86	0.04	2.96	2.09	6.36	4.23	37.31
1987	7.33	2.99	6.50	2.45	1.88	0.20	1.56	0.46	0.36	0.28	1.97	9.19	35.17
1988	6.31	1.38	4.08	5.08	2.97	2.20	0.26	0.11	1.66	0.33	8.34	3.04	35.76
1989	4.43	2.64	8.74	1.63	3.53	0.97	1.01	1.11	1.13	1.68	4.46	3.82	35.15
1990	8.51	5.44	2.68	3.01		1.89	1.10	1.04	0.52	5.87	4.88	3.74	38.68
1991	3.66	4.92	4.52	4.02	4.13	2.43	0.12	0.93	0.10	2.17	7.44	4.88	39.32
1992	5.04	4.58	1.78	5.06	0.13	0.56	0.45	0.25	1.33	3.17	5.45	6.84	34.64
1993	3.60	0.96	5.20	6.31	4.02	1.94	1.42	0.18	T	1.44	1.79	6.86	33.72
1994	4.95	6.11	2.72	2.31	1.23	1.10	0.07	0.14	1.63	9.02	7.49	6.53	43.30
1995	7.44	5.22	5.02	4.19	1.13	2.29	0.98	1.69	2.14	M4.35	11.71	7.84	54.00
1996	8.56	12.43	4.46	5.95	4.84	0.09	M0.49	0.50	3.22	6.17	9.72	16.28	72.71
1997	8.86	2.14	8.24	3.78	2.46	1.62	0.64	1.55	2.84	7.58	5.19	4.01	48.91
1998	M7.76	6.80	4.21	1.49	5.18	1.61	0.34	T	1.02	3.57	13.36	M9.21	54.55
1999	8.97	11.39	5.67	M1.61	M2.59	M2.45	0.38	M1.12	0.19	2.89	7.67	7.67	52.60
2000	8.08	4.96	3.62	2.39	2.51	M0.90	M0.25	0.15	1.76	3.19	M2.91	M3.85	34.57
2001	1.99	1.79	3.73	3.09	1.12	1.40	0.46	0.87	0.66	4.37	M7.44	M7.83	34.75
2002	8.03	4.92	5.40	3.60	M1.57	2.19	M0.19	0.01	1.31	0.32	2.49	10.48	40.51
2003	9.14	3.17	M5.16	7.03	1.60	M0.11	T	0.06	M1.50	2.30	5.38	10.43	45.88
2004	M5.02	4.86	2.01	2.16	1.17	1.03	T	3.20	1.76	3.27	2.46	4.58	31.52
2005	M2.02	M0.99	4.73	4.44	5.06	M2.03	M0.39	0.22	1.37	4.26	6.54	M10.20	42.25
2006	12.05	2.38	3.63	2.52	M0.48	1.12	0.19	0.07	1.12	1.83	15.56	M3.80	44.75
2007	M1.88	M3.19	M1.58	M0.42	M1.06	M0.87	M0.54	M0.51	M0.41	M1.15	M3.80	M7.52	22.93
2008	M5.81	M2.41	M3.65	M2.07	M1.22	M1.00	MT	M1.17	M0.30	M0.58	M4.14	M2.45	24.80
2009	M5.03	M1.42	M1.91	M1.19	M3.03	M1.05	M0.22	M0.77	M1.63	3.54	7.21	4.99	31.99
2010	6.68	3.96	5.62	3.99	4.63	4.79	0.30	MT	M2.94	5.16	7.39	10.23	55.69
2011	5.13	5.79	7.59	5.37	3.25	0.87	1.36	0.10	0.70	2.64	8.32	3.37	44.49
2012	M8.74	3.71	9.95	3.85	3.21	2.78	0.51	T	0.01	6.59	8.53	9.14	57.02
2013	3.11	1.51	2.37	2.59	5.26	M1.43	0.00	0.63	6.85	0.93	3.52	1.77	29.97
2014	3.34	5.95	7.58	4.51	2.79	1.84	0.92	0.13	1.05	7.26	3.58	6.78	45.73

2015	3.69	4.11	5.12	2.61	0.64	0.44	0.60	0.78	0.87	4.39	5.61	18.61	47.47
2016	8.93	4.87	5.71	2.46	1.30	M1.11	0.75	0.16	1.26	10.11	8.74	M6.12	51.52
2017	5.65	12.18	8.40	4.63	2.25	1.12	0.00	0.09	2.53	5.19	7.90	4.23	54.17
2018	6.21	2.93	3.11	5.08	0.29	1.06	T	0.03	0.90	3.75	3.65	M3.53	30.54
Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.													
Data missing for all days in a month or year is blank.													
Creation date: 2016-07-22													

Appendix D: Wetland Determination Data Forms

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 1

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Wetland B

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0%	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rubus armeniacus*	20%	Yes	FAC
2.			
3.			
4.			
5.			
	20%	= Total Cover	
Herb Stratum (Plot Size: 5' r or)			
1. *Carex obnupta*	50%	Yes	OBL
2. *Juncus effusus*	15%	No	FACW
3. *Juncus tenuis*	5%	No	FAC
4. *Avena fatua*	5%	No	NOL
5. *Agrostis species*	5%	No	FAC ?
6.			
7.			
8.			
9.			
10.			
11.			
	80%	= Total Cover	
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0%	= Total Cover	

% Bare Ground in Herb Stratum 20%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 50	x 1 =	50
FACW species 15	x 2 =	30
FAC species 30	x 3 =	90
FACU species 0	x 4 =	0
UPL species 5	x 5 =	25
Column Totals: 100 (A)		195 (B)

Prevalence Index = B/A = 1.95

Hydrophytic Vegetation Indicators:
- 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	95	5YR 4/4	5	C	M	SiL	Many fine roots
4-16	10YR 4/1	85	5YR 4/4	15	C	M	SiCL	

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	X	No	_____	Depth (inches): 8"
Saturation Present? (includes capillary fringe)	Yes	X	No	_____	Depth (inches): 7"

Wetland Hydrology Present? Yes X No _____

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

Remarks:
Hummocks in wetland.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 2

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

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

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Plot is approximately 2 feet higher than Plot 1. Wetland B

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rosa pisocarpa*	25%	Yes	FAC
2. *Rubus armeniacus*	5%	No	FAC
3.			
4.			
5.			
	30% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Holcus lanatus*	35%	Yes	FAC
2. *Agrostis species*	30%	Yes	FAC ?
3. *Avena fatua*	5%	No	NOL
4. *Schedonorus arundinaceus*	5%	No	FAC
5. *Conium maculatum*	5%	No	FAC
6. *Lupinus species*	5%	No	FAC to NOL
7. *Alopecurus pratensis*	2%	No	FAC
8.			
9.			
10.			
11.			
	87% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1. *Rubus ursinus*	7%	Yes	FACU
2.			
	7% = Total Cover		

% Bare Ground in Herb Stratum 13%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	107	x 3 =	321
FACU species	7	x 4 =	28
UPL species	5	x 5 =	25
Column Totals:	119 (A)		374 (B)

Prevalence Index = B/A = 3.14

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	95	7.5YR 4/6	5	C	PL	SiL	
4-16	10YR 4/1	85	5YR 4/4	15	C	M & PL	SiCL	

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	Yes X No ___
Water Table Present?	Yes X	No ___	Depth (inches): 8"		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 6"		

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

Remarks:
Hummocky.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 3

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

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

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Plot 3 is approximately 6 inches higher than Plot 2. Wetland B

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rubus armeniacus*	30%	Yes	FAC
2. *Rosa pisocarpa*	20%	Yes	FAC
3.			
4.			
5.			
	50% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Holcus lanatus*	70%	Yes	FAC
2. *Agrostis species*	10%	No	FAC ?
3. *Avena fatua*	5%	No	NOL
4. *Lotus corniculatus*	5%	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1. *Rubus ursinus*	5%	Yes	FACU
2.			
	5% = Total Cover		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	135	x 3 =	405
FACU species	5	x 4 =	20
UPL species	5	x 5 =	25
Column Totals:	145 (A)		450 (B)

Prevalence Index = B/A = 3.10

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	99	7.5YR 4/6	1	C	M	SiL	
9-16	10YR 4/2	95	7.5YR 4/4	5	C	M	SiL	

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	X	No	_____	Depth (inches): 9"
Saturation Present? (includes capillary fringe)	Yes	X	No	_____	Depth (inches): 8"

Wetland Hydrology Present? Yes X No _____

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

Remarks:
Hydrology rechecked 3/29/2019: Left pit open for 30+ minutes; water table was at 10", and saturation was at 8".

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 4

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

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

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Agrostis species*	50%	Yes	FAC ?
2. *Lupinus species*	15%	Yes	FAC to NOL
3. *Cirsium arvense*	10%	No	FAC
4. *Alopecurus pratensis*	10%	No	FAC
5. *Anthoxanthum odoratum*	5%	No	FACU
6. *Schedonorus arundinaceus*	5%	No	FAC
7. *Phleum pratense*	5%	No	FAC
8. *Avena fatua*	2%	No	NOL
9.			
10.			
11.			
	102% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

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 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 80	x 3 =	240
FACU species 5	x 4 =	20
UPL species 2	x 5 =	10
Column Totals: 87 (A)		270 (B)
Prevalence Index = B/A =		3.10

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 4

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-9	10YR 3/2	100					SiL	
9-14	10YR 3/2	97	5YR 4/4	3	C	M	SiL	

[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 Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	X	No	___	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 13

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

Hydrology rechecked 3/29/2019: Left pit open for 1+ hour; water table at 13" and saturation at 12"-likely due to heavy rains received day of site visit.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 5

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Phleum pratense*	40%	Yes	FAC
2. *Anthoxanthum odoratum*	20%	Yes	FACU
3. *Agrostis species*	15%	No	FAC ?
4. *Lupinus species*	10%	No	FAC to NOL
5. *Holcus lanatus*	5%	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	90% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	80 (A)		260 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes No X

Remarks:

SOIL

Sampling Point: 5

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-11	10YR 3/2	100					SiL	
11-13	10YR 3/2	98	7.5YR 4/4	2	C	M	SiL	
13-16	10YR 3/2	95	7.5YR 4/4	5	C	M	SiL+	

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes X	No ___	Depth (inches): 6"	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 3"	

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Hydrology recheck 3/29/2019: Pit left open for 1+ hour, water table at the surface. Hydrology at this plot likely supported by broken drain tile.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 6

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

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

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Plot 6 is approximately 1 foot higher than Plot 7 in the wetland. Wetland B

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Alopecurus pratensis*	45%	Yes	FAC
2. *Schedonorus arundinaceus*	10%	Yes	FAC
3. *Holcus lanatus*	10%	Yes	FAC
4. *Anthoxanthum odoratum*	10%	Yes	FACU
5. *Agrostis species*	10%	Yes	FAC ?
6. *Rumex crispus*	5%	No	FAC
7. *Lupinus species*	5%	No	FAC to NOL
8. *Lotus corniculatus*	5%	No	FAC
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 85	x 3 =	255
FACU species 10	x 4 =	40
UPL species 0	x 5 =	0
Column Totals: 95 (A)		295 (B)

Prevalence Index = B/A = 3.11

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 6

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-7	10YR 3/2	100					SiL	
7-9	10YR 3/2	98	7.5YR 4/4	2	C	M	SiL	
9-16	10YR 4/2	95	7.5YR 4/4	5	C	M	SiCL	

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	X	No	_____	Depth (inches): 13"
Saturation Present? (includes capillary fringe)	Yes	X	No	_____	Depth (inches): 12"

Wetland Hydrology Present? Yes X No _____

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

Remarks:
Hydrology rechecked 3/29/2019: Pit was left open 45+ minutes; water table was at 11", and saturation was at 10".

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 7

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Wetland B

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Agrostis species*	50%	Yes	FAC ?
2. *Juncus effusus*	20%	Yes	FACW
3. *Alopecurus pratensis*	10%	No	FAC
4. *Holcus lanatus*	10%	No	FAC
5. *Phleum pratense*	5%	No	FAC
6. *Avena fatua*	5%	No	NOL
7. *Lupinus species*	2%	No	FAC to NOL
8.			
9.			
10.			
11.			
	102% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 20	x 2 =	40
FAC species 75	x 3 =	225
FACU species 0	x 4 =	0
UPL species 5	x 5 =	25
Column Totals: 100 (A)		290 (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	98	7.5YR 4/6	2	C	M	SiL	
4-16	10YR 4/1	95	7.5YR 4/6	5	C	M	SiCL	

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Remarks:
Hummocks.
Hydrology rechecked 3/29/2019: Pit was open for 30+ minutes; water table and saturation were both at surface.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 8

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Wetland A

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Agrostis species*	40%	Yes	FAC ?
2. *Carex species*	40%	Yes	FAC ?
3. *Alopecurus pratensis*	10%	No	FAC
4. *Cirsium arvense*	5%	No	FAC
5. *Schedonorus arundinaceus*	5%	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 100	x 3 =	300
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 8

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/2	98	7.5YR 4/6	2	C	M	SiL	
7-17	10YR 3/2	90	7.5YR 4/6	10	C	M	SiL	

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes X	No ___	Depth (inches): 5"	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 3"	

Wetland Hydrology Present? Yes X No ___

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

Remarks:
Hydrology recheck on 3/29/2019: Pit left open for 1+ hour; water table was at the surface.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 9

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord Silt Loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Wetland A

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Phleum pratense*	45%	Yes	FAC
2. *Agrostis species*	25%	Yes	FAC ?
3. *Schedonorus arundinaceus*	15%	No	FAC
4. *Alopecurus pratensis*	10%	No	FAC
5. *Avena fatua*	5%	No	NOL
6. *Lotus corniculatus*	5%	No	FAC
7.			
8.			
9.			
10.			
11.			
	105% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 100	x 3 =	300
FACU species 0	x 4 =	0
UPL species 5	x 5 =	25
Column Totals: 105 (A)		325 (B)

Prevalence Index = B/A = 3.10

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 9

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	95	7.5YR 4/6	5	C	M	SiL	Many roots
8-16	10YR 3/2	95	5YR 4/4	5	C	M/PL	SiL	

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____	
Water Table Present?	Yes X	No _____	Depth (inches): 7"	
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 5"	

Wetland Hydrology Present? Yes X No _____

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: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 10

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Wetland A

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rosa pisocarpa*	15%	Yes	FAC
2.			
3.			
4.			
5.			
	15% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Anthoxanthum odoratum*	50%	Yes	FACU
2. *Carex stipata*	40%	Yes	OBL
3. *Schedonorus arundinaceus*	5%	No	FAC
4. *Avena fatua*	5%	No	NOL
5. *Rumex crispus*	2%	No	FAC
6. *Lupinus species*	2%	No	FAC to NOL
7. *Galium aparine*	2%	No	FACU
8.			
9.			
10.			
11.			
	106% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 40	x 1 =	40
FACW species 0	x 2 =	0
FAC species 22	x 3 =	66
FACU species 52	x 4 =	208
UPL species 5	x 5 =	25
Column Totals: 119 (A)		339 (B)
Prevalence Index = B/A =		2.85

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 10

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/2	100					SiL	
7-12+	10YR 3/2	95	5YR 4/4	5	C	M	SiL	

[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:
No ORZ's.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X 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 X	No _____	Depth (inches): 6"	
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 5"	

Wetland Hydrology Present? Yes X No _____

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

Remarks:
Hydrology recheck on 3/29/2019: Pit left open for 1+ hour; water table was at 5" and saturation was at 4".

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 11

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

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

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Plot is approximately half a foot higher than Plot 10.

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0%	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	
Herb Stratum (Plot Size: 5' r or)			
1. *Anthoxanthum odoratum*	40%	Yes	FACU
2. *Agrostis species*	25%	Yes	FAC ?
3. *Lupinus species*	15%	No	FAC to NOL
4. *Schedonorus arundinaceus*	10%	No	FAC
5. *Alopecurus pratensis*	5%	No	FAC
6. *Lolium perenne*	5%	No	FAC
7.			
8.			
9.			
10.			
11.			
	100%	= Total Cover	
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0%	= Total Cover	

% Bare Ground in Herb Stratum 0%

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 45	x 3 =	135
FACU species 40	x 4 =	160
UPL species 0	x 5 =	0
Column Totals: 85 (A)		295 (B)

Prevalence Index = B/A = 3.47

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

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes No X

Remarks:

SOIL

Sampling Point: 11

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/2	100					SiL	
13-16	10YR 4/1	98	7.5YR 4/6	2	C	M	SiCL	

[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 Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	Yes ___ No X
Water Table Present?	Yes ___	No X	Depth (inches): >16		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 16"		

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

Remarks:
Hydrology rechecked on 3/29/2019: Pit was left open for 1+ hour; water table was at 14" and saturation was at 13".

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 12

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Phleum pratense*	40%	Yes	FAC
2. *Anthoxanthum odoratum*	25%	Yes	FACU
3. *Holcus lanatus*	10%	No	FAC
4. *Lupinus species*	10%	No	FAC to NOL
5. *Rumex crispus*	5%	No	FAC
6. *Avena fatua*	5%	No	NOL
7.			
8.			
9.			
10.			
11.			
	95% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 55	x 3 =	165
FACU species 25	x 4 =	100
UPL species 5	x 5 =	25
Column Totals: 85 (A)		290 (B)

Prevalence Index = B/A = 3.41

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes No X

Remarks:

SOIL

Sampling Point: 12

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					SiL	
12-16	10YR 3/2	98	7.5YR 4/4	2	C	M	SiCL	

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes X	No ___	Depth (inches): 6"	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 5"	

Wetland Hydrology Present? Yes X No ___

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

Remarks:
Hydrology rechecked on 3/29/2019: pit was left open for 1+ hour; water table and saturation were both at approximately 5". Water supporting this area appears to be broken drain tile.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 13

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:
Wetland B

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Carex stipata*	60%	Yes	OBL
2. *Holcus lanatus*	20%	Yes	FAC
3. *Phleum pratense*	20%	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 60	x 1 =	60
FACW species 0	x 2 =	0
FAC species 40	x 3 =	120
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 100 (A)		180 (B)

Prevalence Index = B/A = 1.80

Hydrophytic Vegetation Indicators:
- 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 13

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	99	7.5YR 4/6	1	C	M	SiL	
8-14	10YR 4/2	95	7.5YR 4/6	5	C	M/PL	SiL	
14-16	10YR 4/2	85	7.5YR 4/6	15	C	M	SiL	

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	X	No	_____	Depth (inches): 4"
Saturation Present? (includes capillary fringe)	Yes	X	No	_____	Depth (inches): 2"

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Hydrology was rechecked on 3/29/2019: pit was left open for 30+ minutes; water table and saturation were both to surface.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/19/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 14

Investigator(s): Stacey Reed and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.84 inches within the two weeks prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Agrostis species*	45%	Yes	FAC ?
2. *Alopecurus pratensis*	40%	Yes	FAC
3. *Avena fatua*	15%	No	NOL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 85	x 3 =	255
FACU species 0	x 4 =	0
UPL species 15	x 5 =	75
Column Totals: 100 (A)		330 (B)

Prevalence Index = B/A = 3.30

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 14

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/2	100					SiL	
11-16	10YR 3/2	95	7.5YR 4/6	5	C	M	SiL	

[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 Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): >16"	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 14"	

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/29/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: **15**

Investigator(s): Samantha Sharka and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.57 inches within the two weeks prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Alopecurus pratensis*	50%	Yes	FAC
2. *Schedonorus arundinaceus*	40%	Yes	FAC
3. *Galium aparine*	10%	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 90	x 3 =	270
FACU species 10	x 4 =	40
UPL species 0	x 5 =	0
Column Totals: 100 (A)		310 (B)

Prevalence Index = B/A = 3.10

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 15

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					SiL	
10-14	10YR 3/2	99	7.5YR 4/4	1	C	M	SiL	
14-17	10YR 4/2	95	7.5YR 4/6	5	C	M	SiL+	

[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 Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): >17"	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): >17"	

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Left pit open for 1+ hour. Soils are dry.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/29/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 16

Investigator(s): Samantha Sharka and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.57 inches within the two weeks prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rubus armeniacus*	20%	Yes	FAC
2.			
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Alopecurus pratensis*	50%	Yes	FAC
2. *Schedonorus arundinaceus*	20%	Yes	FAC
3. *Vicia species*	7%	No	FAC to UPL
4. *Galium aparine*	2%	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	79% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 21%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 90	x 3 =	270
FACU species 2	x 4 =	8
UPL species 0	x 5 =	0
Column Totals: 92 (A)		278 (B)
Prevalence Index = B/A =		3.02

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 16

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					SiL	
14-16	10YR 4/2	95	7.5YR 4/6	5	C	M	SiL+	

[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 Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	X	No	___	Depth (inches): 16"
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 14"

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Left pit open for 20+ minutes.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/29/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: 17

Investigator(s): Samantha Sharka and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.57 inches within the two weeks prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Alopecurus pratensis*	50%	Yes	FAC
2. *Schedonorus arundinaceus*	45%	Yes	FAC
3. *Vicia species*	5%	No	FAC to UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 95	x 3 =	285
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 95 (A)		285 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 17

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					SiL	
10-16	10YR 3/2	65					SiL	
	10YR 4/2	30	7.5YR 3/4	5	C	M	SiCL	
16-19	10YR 4/2	95	7.5YR 3/4	5	C	M	CL	

[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 Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): >19"	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): >19"	

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Left pit open for 30+ minutes.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville/Clackamas | Sampling Date: 3/29/2019

Applicant/Owner: West Hills Land Development | State: OR | Sampling Point: **18**

Investigator(s): Samantha Sharka and Haley Smith | Section, Township, Range: Sec. 12, T.3S., R.1W., W.M.

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum:

Soil Map Unit Name: Unit 91B: Woodburn silt loam, 3% to 8% slopes | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland station, no rainfall was received on the day of the site visit and 0.57 inches within the two weeks prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Dactylis glomerata*	65%	Yes	FACU
2. *Agrostis species*	20%	Yes	FAC ?
3. *Alopecurus pratensis*	10%	No	FAC
4. *Vicia species*	5%	No	FAC to UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 30	x 3 =	90
FACU species 65	x 4 =	260
UPL species 0	x 5 =	0
Column Totals: 95 (A)		350 (B)

Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes No **X**

Remarks:

SOIL

Sampling Point: 18

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					SiL	
14-16	10YR 4/2	60	7.5YR 4/6	10	C	M	SiCL	

[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:
Earthworms present at 0-9" depth.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): >16"	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): >16"	

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Pit was left open for 1 hour.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville / Clackamas | Sampling Date: 11/22/2019

Applicant/Owner: West Hills Land Development / West Linn-Wilsonville School District | State: OR | Sampling Point: **1A**

Investigator(s): Haley Teach and Samantha Sharka | Section, Township, Range: Sec. 12, T. 3S., R.1W., W. M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): None | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: 45.319830 | Long: -122.748236 | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland weather station, no rainfall was received on the day of the site visit and 1.22 inches were received within the two weeks prior. Climatic conditions are considered drier than normal for the three months prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja plicata*	20%	Yes	FAC
2.			
3.			
4.			
	20% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rubus armeniacus*	15%	Yes	FAC
2. *Rosa species*	10%	Yes	FAC*
3.			
4.			
5.			
	25% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Schedonorus arundinaceus*	20%	Yes	FAC
2. *Holcus lanatus*	10%	Yes	FAC
3. *Vicia species*	10%	Yes	FAC*
4. *Geranium molle*	5%	No	NOL
5. *Hypochaeris radicata*	5%	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	50% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 50%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	5	x 4 =	20
UPL species	5	x 5 =	25
Column Totals:	95 (A)		300 (B)

Prevalence Index = B/A = 3.16

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
*Assumed FAC. Bare ground exposed.

SOIL

Sampling Point: 1A

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					SiL	

[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:
Roots throughout.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___	No 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 ___ No X

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

Remarks:
Soils are dry.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville / Clackamas | Sampling Date: 11/22/2019

Applicant/Owner: West Hills Land Development / West Linn-Wilsonville School District | State: OR | Sampling Point: **2A**

Investigator(s): Haley Teach and Samantha Sharka | Section, Township, Range: Sec. 12, T. 3S., R.1W., W. M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Sl. Concave | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: 45.319822 | Long: -122.748169 | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland weather station, no rainfall was received on the day of the site visit and 1.22 inches were received within the two weeks prior. Climatic conditions are considered drier than normal for the three months prior.

Remarks:
Plot is located 1 foot higher in elevation than Plot 1 and approximately 3 feet from the top of bank of Willow Creek.

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rubus armeniacus*	40%	Yes	FAC
2. *Rosa species*	15%	Yes	FAC*
3.			
4.			
5.			
	55% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Poa species*	75%	Yes	FAC*
2. *Geranium molle*	5%	No	NOL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 20%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	130	x 3 =	390
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	135 (A)		415 (B)

Prevalence Index = B/A = 3.07

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
*Assumed FAC.

SOIL

Sampling Point: 2A

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					SiL	
14-16	10YR 4/2	95	7.5YR 4/6	5	C	M	SiL	

[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 Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): >16"	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): >16"	

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Soils are moist.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville / Clackamas | Sampling Date: 11/22/2019

Applicant/Owner: West Hills Land Development / West Linn-Wilsonville School District | State: OR | Sampling Point: **3A**

Investigator(s): Haley Teach and Samantha Sharka | Section, Township, Range: Sec. 12, T. 3S., R.1W., W. M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: 45.319849 | Long: -122.748158 | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland weather station, no rainfall was received on the day of the site visit and 1.22 inches were received within the two weeks prior. Climatic conditions are considered drier than normal for the three months prior.

Remarks:
Wetland B

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja plicata*	25%	Yes	FAC
2. *Corylus cornuta*	5%	No	FACU
3.			
4.			
	30% = Total Cover		
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rubus armeniacus*	80%	Yes	FAC
2. *Rosa species*	5%	No	FAC*
3.			
4.			
5.			
	85% = Total Cover		
Herb Stratum (Plot Size: 5' r or)			
1. *Holcus lanatus*	15%	Yes	FAC
2. *Epilobium species*	10%	Yes	FAC*
3. *Poa species*	10%	Yes	FAC*
4. *Elymus species*	5%	No	FAC*
5. *Cirsium arvense*	3%	No	FAC*
6.			
7.			
8.			
9.			
10.			
11.			
	43% = Total Cover		
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 57%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 153	x 3 =	459
FACU species 5	x 4 =	20
UPL species 0	x 5 =	0
Column Totals: 158 (A)		479 (B)
Prevalence Index = B/A =		3.03

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
*Assumed FAC.

SOIL

Sampling Point: 3A

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/2	100					SiL	
11-16	10YR 4/2	95	7.5YR 4/4	5	C	M	SiCL	

[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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X 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): >16"
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >16"

Wetland Hydrology Present? Yes X No ___

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

Remarks:
Soils moist. Plot would likely meet primary wetland hydrology indicators in the early portion of the growing season.

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

Project/Site: Frog Pond Ridge | City/County: Wilsonville / Clackamas | Sampling Date: 11/22/2019

Applicant/Owner: West Hills Land Development / West Linn-Wilsonville School District | State: OR | Sampling Point: **4A**

Investigator(s): Haley Teach and Samantha Sharka | Section, Township, Range: Sec. 12, T. 3S., R.1W., W. M.

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): None | Slope (%): <3%

Subregion (LRR): A, Northwest Forests and Coast | Lat: 45.319759 | Long: -122.748166 | Datum:

Soil Map Unit Name: Unit 21: Concord silt loam | NWI classification:

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

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

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

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

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

Precipitation:
According to the NWS Portland weather station, no rainfall was received on the day of the site visit and 1.22 inches were received within the two weeks prior. Climatic conditions are considered drier than normal for the three months prior.

Remarks:

VEGETATION

Tree Stratum (Plot Size: 30' r or)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0%	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10' r or)			
1. *Rubus armeniacus*	20%	Yes	FAC
2. *Rosa species*	10%	Yes	FAC*
3. *Crataegus monogyna*	5%	No	FAC
4. *Corylus cornuta*	2%	No	FACU
5.			
	37%	= Total Cover	
Herb Stratum (Plot Size: 5' r or)			
1. *Schedonorus arundinaceus*	40%	Yes	FAC
2. *Daucus carota*	5%	No	FACU
3. *Lotus corniculatus*	5%	No	FAC
4. *Epilobium species*	5%	No	FAC*
5. *Tanacetum vulgare*	5%	No	FACU
6. *Holcus lanatus*	5%	No	FAC
7. *Agrostis species*	4%	No	FAC*
8. *Vicia species*	2%	No	FAC*
9. *Geranium molle*	2%	No	NOL
10.			
11.			
	73%	= Total Cover	
Woody Vine Stratum (Plot Size: 10' r or)			
1.			
2.			
	0%	= Total Cover	

% Bare Ground in Herb Stratum 27%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 96	x 3 =	288
FACU species 12	x 4 =	48
UPL species 2	x 5 =	10
Column Totals: 110 (A)		346 (B)
Prevalence Index = B/A =		3.15

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 (Explain)[1]

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
*Assumed FAC. *Corylus cornuta* is a sapling.

SOIL

Sampling Point: 4A

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	100					SiL	
9-16	10YR 3/2	95	7.5YR 3/4	5	C	M	SiL	

[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 Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches): ___	
Water Table Present?	Yes ___ No X	Depth (inches): >16"	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches): >16"	

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Soils are dry.

Appendix E: Representative Site Photographs

Photo A. View south of Wetland B (orange flags) and Plots 4, 5, and 13 (yellow flags). *(Photo taken 3/19/2019)*

Photo B. View south of Plot 7 and Wetland B.

(Photo taken 3/19/2019)

Photo C. View facing south of ponded water in Wetland B.

(Photo taken 3/19/2019)

Photo D. View facing north of the northern poron` of Wetland B. Paired Plots 13 and 4 (yellow flags) and Wetland boundary (orange flag) are in the distance.

(Photo taken 3/19/2019)

Photos taken by Haley Smith March 19 & 29, 2019 and November 22, 2019.

Photo E. View facing south of Plot 9 in Wetland A.

(Photo taken 3/19/2019)

Photo F. View of 18-inch culverts at the Wetland A boundary.

(Photo taken 3/29/2019)

Photo G. View facing northwest of Plot 3A and the southern poron` of the Wetland B boundary.

(Photo taken 11/22/2019)

Photo H. View facing northeast of the channel of Willow Creek, which was dry on the day of the site visit.

(Photo taken 11/22/2019)

Photos taken by Haley Smith March 19 & 29, 2019 and November 22, 2019.

Appendix E

Abbreviated SRIR Report

Frog Pond Ridge Residential Development Abbreviated Significant Resource Impact Report (SRIR)

Date: January 2020

Prepared for: West Hills Land Development, LLC
3330 NW Yeon, Suite 200
Portland, OR

Prepared by: AKS Engineering & Forestry, LLC
Stacey Reed, PWS, Senior Wetland Scientist
503-563-6151 | staceyr@aks-eng.com

Site Information: SW Stafford Road and SW Frog Pond Lane
Wilsonville, Clackamas County, Oregon
Clackamas County Assessor's Map 3 1 W 12D
Tax Lots 1500, 1700, and a portion of 2200

AKS Job Number: 7005

AKS ENGINEERING & FORESTRY
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151

Table of Contents

Tables

Figures

Appendices

Introduction

AKS Engineering & Forestry, LLC (AKS) was contracted by West Hills Land Development to prepare an Abbreviated Significant Resource Impact Report (SRIR) for the Frog Pond Ridge residential development project located at 6720 SW Frog Pond Lane in Wilsonville, Clackamas County, Oregon. The project site consists of Tax Lots 1500, 1700, and the northern portion of Tax Lot 2200 of Clackamas County Assessor's Map 3 1 W 12D (Figures 1 and 2). The project site is located within the Frog Pond West Neighborhood of the Frog Pond Urban Growth Boundary (UGB), added to the City of Wilsonville in 2002. The Frog Pond Ridge residential project consists of a 71-lot, single-family residential community located immediately north and west from the Frog Pond Meadows residential development project (approved under City File DB 18-0060).

Palustrine emergent (PEM) wetland and the headwaters of Willow Creek were delineated on the project site. The site is not included in the City's 2009 Significant Natural Resource Overlay Zone (SROZ) map and wetlands delineated on the project site do not meet any of the criteria listed under Section 4.139.10(.02) of the City of Wilsonville's (City) SROZ ordinance and are therefore not required to be added to the SROZ map as significant wetlands and do not require vegetated corridor buffers. Willow Creek is not mapped on the City's 2009 SROZ map but is mapped as SROZ on the Frog Pond West 2017 Master Plan. Willow Creek can be defined as a non-fish-bearing Secondary Protected Water Feature with adjacent slopes less than 25 percent, requiring a 15-foot-wide vegetated corridor. The City requires a 25-foot-wide Impact Area setback to extend from the edge of the 15-foot-wide vegetated corridor (SROZ boundary).

The project will require unavoidable permanent impacts to locally nonsignificant PEM wetlands for collector and local framework streets and grading to facilitate three residential lots. The applicant will obtain the necessary Oregon Department of State Lands (DSL) and US Army Corps of Engineers (USACE) permits prior to impacting any jurisdictional wetlands. Wetland impacts will be mitigated through the purchase of wetland mitigation bank credits from the Mud Slough Wetland Bank.

Impacts to SROZ (Willow Creek and 15-foot-wide vegetated corridor) and the Impact Area setback are necessary for the extension of the SW Brisband Street crossing. According to Section 4.139.04(.08) of the City's SROZ ordinance, construction of new roads to cross the SROZ are exempt if they are consistent with the Wilsonville Comprehensive Plan and conform to the submittal requirements listed under Section 4.139.06(.01)B-I for an Abbreviated SRIR. The alignment of SW Brisband Street extension is consistent with the City's 2017 Frog Pond West Master Plan. SW Brisband Street is mapped as a Local Framework Street and is required by the City to be extended as part of the Frog Pond Ridge project. Unavoidable SROZ impacts will be mitigated for on-site through enhancement of upland buffer in Tract B.

This report has been prepared to meet Section 4.139.06(.01) Abbreviated Significant Resource Impact Report (SRIR) review criteria of the City of Wilsonville's Significant Resource Overlay Zone (SROZ) Ordinance. This report also documents PEM wetlands do not meet requirements listed under Section 4.139.10(.02)A-D.

Background Mapping and Information

The site is located within the City of Wilsonville Frog Pond West Neighborhood Planning area. The project site is ±15.93 acres in size and is located in the Foothills of the Willamette Valley ecoregion. Topography on the site has a gentle (less than 10 percent overall) slope southerly toward Willow Creek. The

easternmost portion of the site slopes southerly towards a ditch along the western side of SW Stafford Road.

The following soil units are mapped within the project area, according to the Natural Resources Conservation Service (NRCS) Clackamas County Area Soil Survey Map and Clackamas County hydric soil list (Figure 3):

- (Unit 1A) Aloha silt loam, 0 to 3 percent slopes; Non-hydric
- (Unit 1B) Aloha silt loam, 3 to 6 percent slopes; Non-hydric
- (Unit 21) Concord silt loam; Hydric
- (Unit 2225A) Huberly silt loam; Hydric

The project site is located within the Coffee Lake Creek-Willamette River watershed (HUC 1709000070402). Hydrology on the site drains southwesterly to Willow Creek, located in the southern portion of the site. Willow Creek continues off site to the south and has a direct surface water connection to the Willamette River, located over 1 mile south of the project site.

A single-family residence and two detached outbuilding are present on Tax Lot 1700. The remainder of the project site is undeveloped. The undeveloped portions of Tax Lot 1700 were under recent agricultural use. Tax Lot 1500 does not appear to have been in active agricultural use for the past 5 years. There are no known existing sanitary sewer or water utilities present on the project site.

Wetlands and Waters Mapping

Wilsonville Local Wetland and Riparian Inventory Maps: The project site is not within the City of Wilsonville's 1998 Local Wetland or Riparian Corridor Inventory map boundaries.

National Wetland Inventory Map: According to the US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) map, a riverine linear wetland is mapped in the southern portion of the project site (Figure 4). Our study determined wetland and headwaters of Willow Creek to be present in the vicinity of the NWI mapped feature.

City of Wilsonville Significant Resource Overlay Zone (SROZ) Map: The project site is located outside of the SROZ map (Figure 5).

Frog Pond and Advance Road Urban Growth (UGB) Areas: According to Pacific Habitat Services (PHS) 2017 study for the Frog Pond and Advance Road UGB, wetlands are mapped throughout the project site (Figure 6). Our study determined wetlands are present on the site but are not as extensive as those hand- mapped by PHS during their 2017 study. The PHS study maps a stream originating in the southern portion of the project site. Our investigated generally agrees with the PHS stream mapping. The headwaters of Willow Creek were delineated in the vicinity of this PHS mapped feature.

Frog Pond West Master Plan: According to the City's 2017 Frog Pond West Master Plan, Willow Creek on the project site is mapped as SROZ (see Figure 7).

Wetland and Waters Delineation

AKS delineated three PEM wetland polygons (referred to as Wetlands A, B, and C) on the project site. The wetland boundaries on Tax Lot 1700 were concurred by DSL under DSL File WD#2019-0558. The wetland and water boundaries for Tax Lot 1500 and the northern portion of Tax Lot 2200 are currently under at DSL under File WD#2019-0660. The boundaries of wetlands and waters delineated on the project site are

shown on Figure 8, Natural Resources Existing Conditions Map. The DSL Wetland Delineation Concurrence Letter for WD#2019-0558 is included in Appendix A.

PEM Wetlands A, B and C

Wetlands A and B are hydrologically connected via drain tile. The hydrology associated with Wetlands A and B drain southerly to form the headwaters of Willow Creek. The wetlands are generally dominated by non-native grasses and lack woody vegetation. Wetlands A and B belong to the Slope Hydrogeomorphic (HGM) Oregon classification. Our site visits were conducted during the early portion of the 2019 growing season and there was no evidence of ponding or flooding. Wetlands are seasonally saturated.

Wetland C is the on-site upper extent of a larger wetland delineated immediately to the south by Anchor QEA under WD#2018-0638. DSL and USACE permits were obtained to impact the off-site portion of this wetland for the Frog Pond Meadows project (DSL Permit 61667-RF and USACE Individual Permit NWP-2018-600-1). The on-site portion of Wetland C is small (0.04 acres), dominated by non-native grasses, and lacked evidence of ponding or flooding in the growing season.

Willow Creek

The headwaters of Willow Creek originate in the southern portion of the project site downslope of Wetland B. Within the project site, the tributary consists of a ditched linear feature with an average ±5-foot-wide channel bed with up to 1-foot-tall banks. The channel bed is unvegetated and dominated by a silt loam substrate lacking gravels and cobbles. Within the project site, the channel also lacks in-stream habitat (large woody debris) and pool and riffle complexes. The channel contained stagnant flow during a March 2019 site visit but lacked flow during our November 2019 site visit and is considered to have an intermittent flow regime. The on-site riparian community is described in the Riparian Corridor section below.

Adding Wetlands to SROZ

None of the PEM wetlands delineated on the project site are mapped on the City's SROZ; however, wetlands do not meet any of the criteria listed under Section 4.139.10(.02)A-D of Wilsonville's SROZ ordinance:

Wilsonville Development Code

Section 4.139.10 Development Review Board (DRB) Process

(.02) Adding Wetlands. Except for water quality or storm water detention facilities, the City shall initiate amendments to the Significant Resource Overlay Zone maps to add wetlands when the City receives significant evidence that a wetland meets any one of the following criteria:

A. The wetland is fed by surface flows, sheet flows or precipitation, and has evidence of flooding during the growing season, and has 60 percent or greater vegetated cover, and is over one-half acre in size; or the wetland qualifies as having intact water quality function under the 1996 Oregon Freshwater Wetland Assessment Methodology; or

Response: Wetlands A and B are essentially one wetland that totals 0.57 acres in size. However, Wetlands A and B are primarily fed by subsurface lateral flow and are not fed by surface or sheet flows and do not flood during the growing season. Under the 1996 Oregon Freshwater Assessment Methodology (OFWAM), Wetlands A and B do not have an intact water quality control function (OFWAM worksheets included in Appendix C).

B. The wetland is in the Metro Title 3 Flood Management Area as corrected by the most current FEMA Flood Insurance Rate Maps, and has evidence of flooding during the growing season, and is five acres or more in size, and has a restricted outlet or no outlet; or the wetland qualifies as having intact hydrologic control function under the 1996 Oregon Freshwater Wetland Assessment Methodology; or

Response: None of the wetlands delineated on the site are mapped within a current Federal Emergency Management Agency (FEMA) Flood Management Area. According to OFWAM, Wetlands A and B do not have an intact hydrologic control function (see OFWAM worksheets included in Appendix C). Wetlands A and B do not have evidence of flooding during the growing season, are less than 5 acres in size, and have an unconstructed outlet to Willow Creek.

C. The wetland or a portion of the wetland is within a horizontal distance of less than one - fourth mile from a water body which meets the Department of Environmental Quality definition of water quality limited water body in OAR Chapter 340, Division 41 (1996).

Response: Wetlands on the project site are located greater than ¼-mile from an Oregon Department of Environmental Quality (DEQ) water-quality limited listed water body. The Willamette River is the closest water-quality limited water body, which is located over 1 mile from the project site.

D. Created or restored wetlands that meet the requirements of Section 4.139.10(.02) shall be added to the Significant Resource Overlay Zone. [Added by Ord. # 674 11/16/09]

Response: Wetlands on the project site were not created or restored under requirements of Section 4.139.10 (.02) of City's SROZ ordinance.

Since Wetlands A, B, and C do not meet any of the above criteria, they are considered to be locally non-significant and do not require vegetated corridor or Impact Area setbacks.

Riparian Corridor

The slopes adjacent to Willow Creek are less than 25 percent; therefore, Willow Creek meets the definition of a Secondary Protected Water Feature and requires a 15-foot-wide vegetated corridor according to Table NR-1: *Metro Water Quality Resource Area Slope Calculations* of the City's SROZ Ordinance. The flow regime of Willow Creek is intermittent and the upstream drainage basin is less than 100 acres. The 15-foot-wide SROZ adjacent to Willow Creek was concurred by City Staff under the Frog Pond Meadows SRIR report prepared by Anchor QEA (City File DB 18-0060).

Within the project site, Willow Creek meets the City's Riparian Corridor Type NR-4 (stream-riparian ecosystem), which requires a 25-foot-wide Significant Resource (SR) impact area to extend from the edge of the SROZ (from the edge of the 15-foot-wide vegetated corridor). The wetland adjacent to Willow Creek was determined to be non-locally significant and is not mapped as a Title 3 Water Quality Resource Area by Metro; therefore, the riparian corridor extends from the edge of Willow Creek rather than from the edge of the wetland boundary.

The 15-foot-wide vegetated corridor adjacent to Willow Creek is dominated by invasive Himalayan blackberry (*Rubus armeniacus*, FAC), trailing blackberry (*Rubus ursinus*, FACU), a native rose species (FAC), and common velvet grass (*Holcus lanatus*, FAC). The vegetated corridor lacks tree canopy and can be considered to provide "degraded" functional support to Willow Creek.

Tree Groves

A grove of Oregon white oak (*Quercus garryana*) trees with greater than 6-inch diameter at breast height (DBH) is present in the eastern portion of the project site. A single Oregon white oak is present in the southern portion of the site. The survey dripline of the Oregon white oak trees were mapped on the site by Otak, Inc., as shown on attached Figure 8. The project avoids impact to the Oregon white oak dripline.

Project

The project consists of a 71-lot, single-family residential development consistent with the City's Frog Pond West Master Plan. The project requires permanent encroachment into locally non-significant PEM wetlands and within SROZ (Willow Creek and vegetated corridor) and the adjacent SR Impact Area setback. Table 1, below, describes the natural resource impacts associated with the project. The Site Plan is included as Figure 9.

Table 1: Summary of Permanent SROZ and Non-SROZ Wetland Impacts

	Permanent SROZ Impacts			Permanent Non SROZ Impacts
Development Activity	**Willow Creek**	**Vegetated Corridor**	**Impact Area**	**PEM Wetlands**
SW Brisband Street extension	176 SF / 36 LF	844 SF	1,124 SF	0
SW Willow Creek Drive extension and Lots 19-21	0	0	0	0.28 acres

SROZ Impacts

The existing condition of the upland SROZ can be described as "degraded" condition (lacking native woody vegetation and tree canopy). A portion of the SROZ contains PEM wetland dominated by non-native grasses and forbs. The SR Impact Area setback is also dominated by non-native grasses and forbs, lacking tree canopy. Therefore, permanent encroachment into SROZ for the SW Brisband Street crossing is not expected to create a significant functional loss of resources within the City's local watershed. The proposed on-site upland buffer enhancement, as described in the mitigation section below, will offset the SROZ encroachment and provide a net functional benefit to Willow Creek.

The SW Brisband Street crossing will require permanent impacts to Willow Creek. An 18-inch-diameter culvert will be installed to convey seasonal flow under SW Brisband Street.

SROZ Mitigation Plan

To offset the permanent SROZ vegetated corridor impact of the Brisband Street crossing, the site plan incorporates ±4,245 square feet of on-site upland buffer enhancement adjacent to remaining portions of wetland in Tract B (see Site Plan, Figure 9). The existing condition of the upland buffer consists of non-native grasses, lacking native woody vegetation. The installation of native trees and shrubs will provide a net water quality benefit to downstream portions of Willow Creek, as Wetland B discharges into Willow Creek.

Plant species, density, and spacing for the on-site upland buffer enhancement area will be consistent with the planting requirements, listed under Section 4.139.07(.02)E.1.b, of a rate of five trees and 25 shrubs

per 500 square feet of disturbance area. A recommended planting specifications table is included in Appendix D. The location of the upland buffer enhancement area is shown on attached Site Plan Figure 9.

SRIR Review Criteria

The following documents how the project is compliant with the SRIR review criteria set forth under Section 4.139.06(03) of the City's SROZ Ordinance. Since the project SROZ impacts can be considered exempt according to Section 4.139.04, submittal requirements consistent with Section 4.139.06(.01)B-I are applicable.

Wilsonville Development Code

Section 4.139.06 Significant Resource Impact Report (SRIR) and Review Criteria

(.03) SRIR Review Criteria. In addition to the normal Site Development Permit Application requirements as stated in the Planning and Land Development Ordinance, the following standards shall apply to the issuance of permits requiring an SRIR. The SRIR must demonstrate how these standards are met in a manner that meets the purposes of this Section.

A. Except as specifically authorized by this code, development shall be permitted only within the Area of Limited Conflicting Use (see definition) found within the SROZ;

Response: Section 4.139.06(.03) only applies to SROZ associated with Willow Creek. Impacts to the SROZ can be considered exempt per Section 4.139.04(.08), because the SROZ impacts are associated with the construction of a new road consistent with the Wilsonville Comprehensive Plan. According to the City's Frog Pond Area Master Plan Transportation Framework, SW Brisband Street is mapped as a local framework street. Willow Creek flows southerly within the alignment, making avoidance impracticable. Per the Frog Pond West Master Plan, local streets are required to have a minimum 52-foot-wide right-of-way consisting of two travel lanes, 5-foot-wide sidewalks, and 7-foot-wide planter strips. SROZ impacts associated with the SW Brisband Street crossing have been minimized by utilizing curb-tight sidewalk and retaining walls reducing the road build out width in SROZ from 52 feet to +/-38 feet.

B. Except as specifically authorized by this code, no development is permitted within Metro's Urban Growth Boundary Management Functional Plan Title 3 Water Quality Resource boundary;

Response: Wetlands and Willow Creek on the project site are not mapped as Title 3 Water Quality Resources.

C. No more than five (5) percent of the Area of Limited Conflicting Use (see definition) located on a property may be impacted by a development proposal. On properties that are large enough to include Areas of Limited Conflicting Use on both sides of a waterway, no more than five (5) percent of the Area of Limited Conflicting Use on each side of the riparian corridor may be impacted by a development proposal. This condition is cumulative to any successive development proposals on the subject property such that the total impact on the property shall not exceed five (5) percent;

Response: The SROZ riparian corridor on the project site meets the City's Type NR-4 Riparian Corridor (stream-riparian ecosystem) standard, which does not have an Area of Limited Conflicting Use. Therefore, this requirement is not applicable.

D. Mitigation of the area to be impacted shall be consistent with Section 4.139.06 of SROZ code and shall occur in accordance with the provisions of this Section;

Response: Locally nonsignificant wetland impacts will be mitigated through the purchase of wetland mitigation bank credits from the DSL and USACE-approved Mud Slough Bank. Unavoidable SROZ impacts associated with the required SW Brisband Street extension will be offset through enhancement of on-site upland buffer adjacent to remaining locally nonsignificant wetland in Tract B. The existing condition of the wetland buffer consists of non-native grasses and lacks woody vegetation. Since the wetland in Tract B discharges directly into Willow Creek, the installation of native trees and shrubs will provide a net functional benefit to downstream portions of Willow Creek. Proposed SROZ mitigation is consistent with provisions of Section 4.139.06.

E. The impact on the SROZ is minimized by limiting the degree or magnitude of the action, by using appropriate technology or by taking affirmative steps to avoid, reduce or mitigate impacts;

Response: Impacts to the SROZ has been minimized by reducing the right-of-way width by utilizing curb tight sidewalk (eliminating planter strips) and incorporating retaining walls at the SW Brisband Street crossing.

F. The impacts to the Significant Resources will be rectified by restoring, rehabilitating, or creating enhanced resource values within the "replacement area" (see definitions) on the site, or where mitigation is not practical on-site, mitigation may occur in another location approved by the City;

Response: The unavoidable permanent vegetated corridor impacts associated with the SW Brisband Street crossing will be mitigated on-site by enhancing remaining wetland buffer in Tract B with native trees and shrubs. The native tree and shrub plantings will be consistent with plant quantities, spacing, and diversity standards listed under Section 4.139.07(02)E.1.b of City's SROZ ordinance.

G. Non-structural fill used within the SROZ area shall primarily consist of natural materials similar to the soil types found on the site;

Response: No fill will be placed in Willow Creek. Most of the fill within SROZ vegetated corridor will consist of structural fill to facilitate development of SW Brisband Street. Non-structural fill material within SROZ will consist of native upland soils from the site.

H. The amount of fill used shall be the minimum required to practically achieve the project purpose;

Response: The amount of fill within SROZ is the minimum necessary to construct SW Brisband Street.

I. Other than measures taken to minimize turbidity during construction, stream turbidity shall not be significantly increased by any proposed development or alteration of the site;

Response: Erosion and sediment control measures consistent with DEQ's 1200-C permit and Clean Water Act Section 401 Water Quality Certification standards will be implemented throughout the duration of construction to avoid the potential for sedimentation of and turbidity within Willow Creek.

J. Appropriate federal and state permits shall be obtained prior to the initiation of any activities regulated by the U.S. Army Corps of Engineers and Oregon Division of State Lands in any jurisdictional wetlands or waters of the United States or State of Oregon, respectively.

Response: The applicant will obtain DSL and USACE permits as necessary prior to impacts within jurisdictional wetlands and waters on the project site. The Joint Permit Application (JPA) will be submitted to DSL and the USACE in January 2020.

Report Preparer and Qualifications

Stacey Reed, PWS
Senior Wetland Scientist
Fieldwork and Report Preparation

Stacey Reed is a certified Professional Wetland Scientist (PWS) with more than 20 years of experience delineating wetlands and waters, conducting wetland and stream function and value assessments and prepare natural resource assessments throughout Oregon.

Literature Cited and Referenced

Adams, P.R. 2001. *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles.* Salem (OR): Oregon Division of State Lands. Available at: http://www.oregon.gov/dsl/WW/Documents/hydro_guide_class.pdf. [Accessed August 2019].

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Roth, E.M., R.D. Olsen, P.L. Snow, and R.R. Sumner. April 1996. *Oregon Freshwater Wetland Assessment Methodology*, Ed. By S.G. McCannell. Oregon Division of State Lands. Salem. OR.

Wakeley, J.S., R.W. Lichvar, and C.V. Noble, eds. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0). ERDC/EL TR-10-3. Vicksburg (MS): US Army Engineer Research and Development Center, US Army Corps of Engineers.

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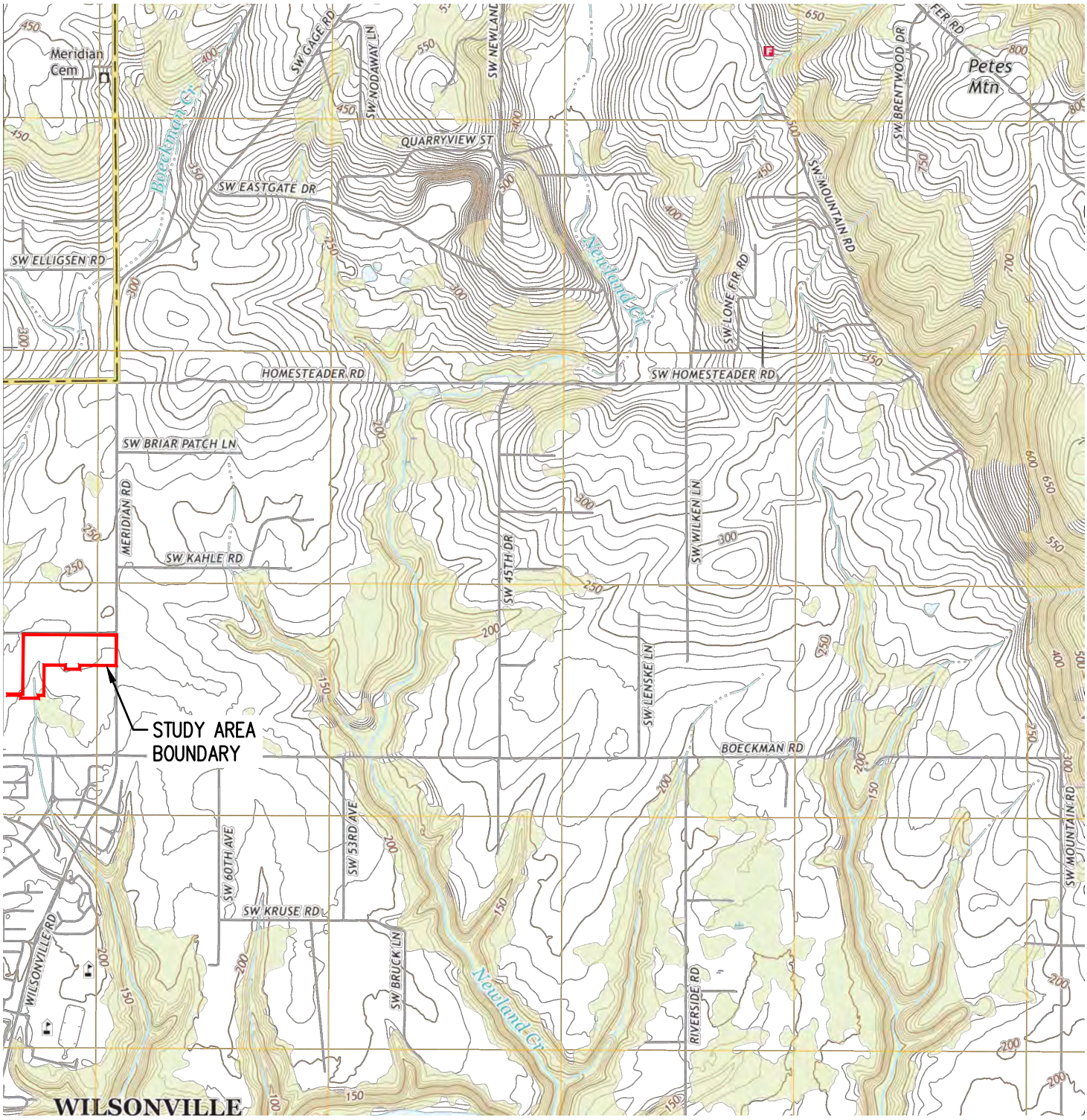


USGS 7.5' TOPOGRAPHIC SERIES
QUADRANGLE: CANBY, OR (2017)

N

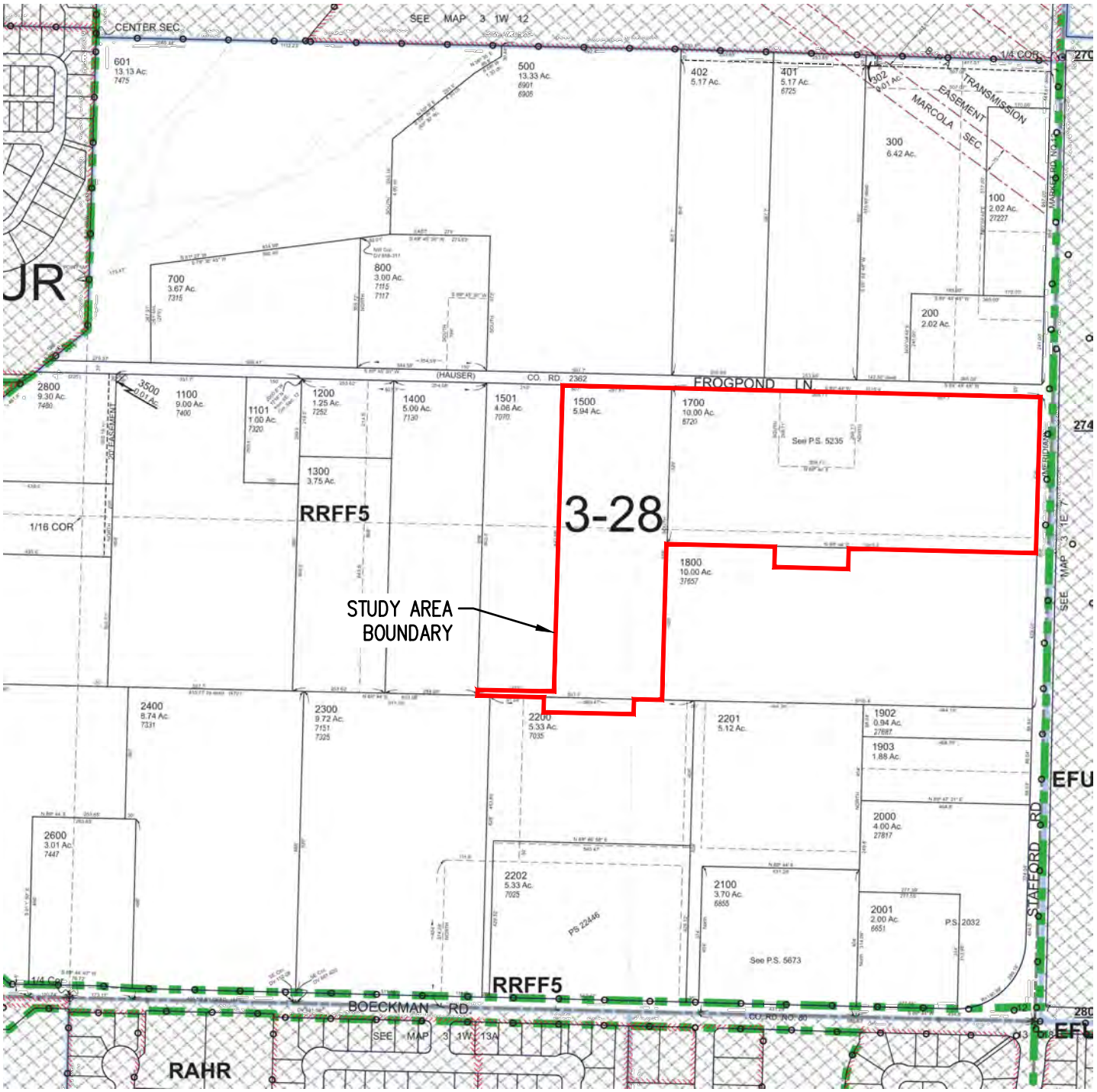
SCALE: 1"= 2000 FEET

2000 0 800 1200 1600 2000

DATE: 01/09/2020

USGS VICINITY MAP FROG POND RIDGE ABBREVIATED SRIR	FIGURE 1
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7005

DWG: 7005 SRIR FIGURES | FIGURE 1



CLACKAMAS COUNTY
TAX LOTS 1500, 1700, AND
PORTIONS OF TAX LOTS 1800 & 2200
TAX MAP 3S 1 12D

N

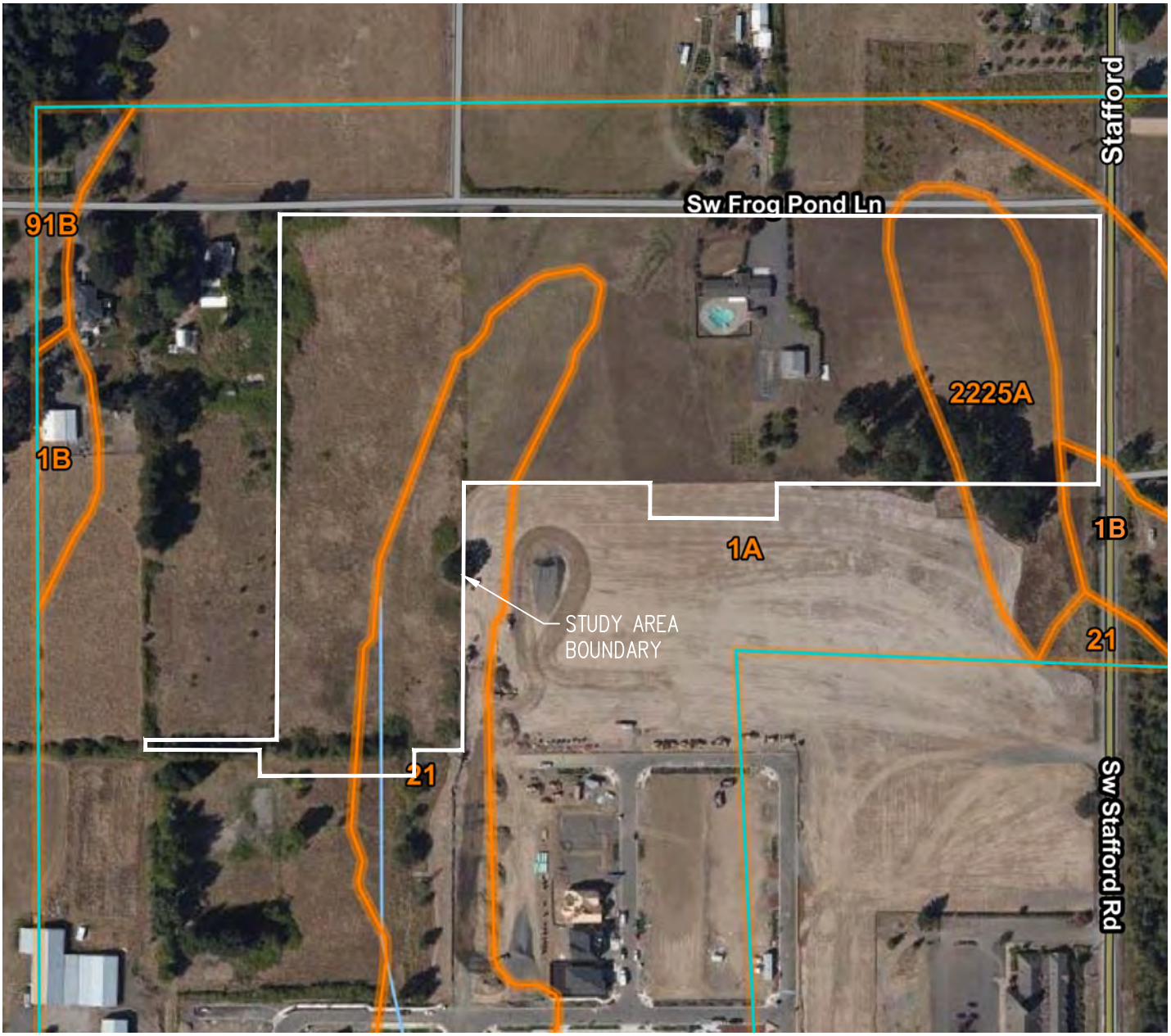
SCALE: 1"= 400 FEET

400 0 160 240 320 400

DATE: 01/09/2020

TAX MAP (MAP 3S 1 12D) FROG POND RIDGE ABBREVIATED SRIR	FIGURE 2
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7005

DWG: 7005 SRIR FIGURES | FIGURE 2



MAP UNIT SYMBOL	MAP UNIT NAME
1A	ALOHA SILT LOAM, 0% TO 3% SLOPES; NON-HYDRIC
1B	ALOHA SILT LOAM, 3% TO 6% SLOPES, NON-HYDRIC
21	CONCORD SILT LOAM; HYDRIC
2225A	HUBERLY SILT LOAM, 0% TO 3% SLOPES; HYDRIC

NRCS WEB SOIL SURVEY FOR
CLACKAMAS COUNTY

N

SCALE: 1"= 250 FEET

250 0 100 150 200 250

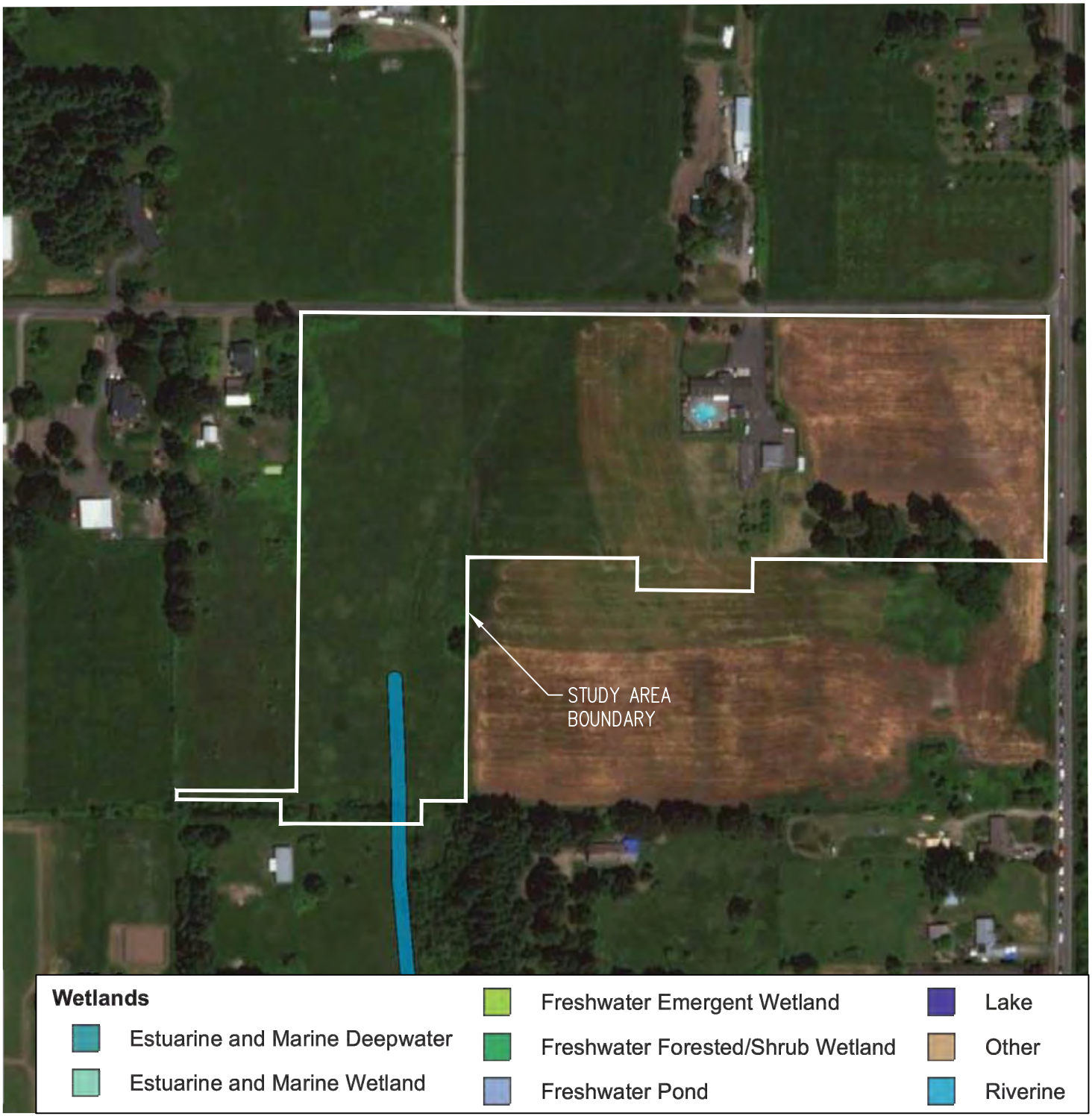
DATE: 01/09/2020

NRCS SOIL SURVEY MAP
FROG POND RIDGE ABBREVIATED SRIR

FIGURE 3

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SAS
CHKD: SAR
AKS JOB: 7005



US FISH & WILDLIFE SERVICE
NATIONAL WETLAND INVENTORY (2017)

N

SCALE: 1"= 250 FEET

250 0 100 150 200 250

DATE: 01/09/2020

NATIONAL WETLAND INVENTORY MAP
FROG POND RIDGE ABBREVIATED SRIR

FIGURE 4

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SAS
CHKD: SAR
AKS JOB: 7005

CITY OF WILSONVILLE SIGNIFICANT
RESOURCE OVERLAY ZONE (2009)

N

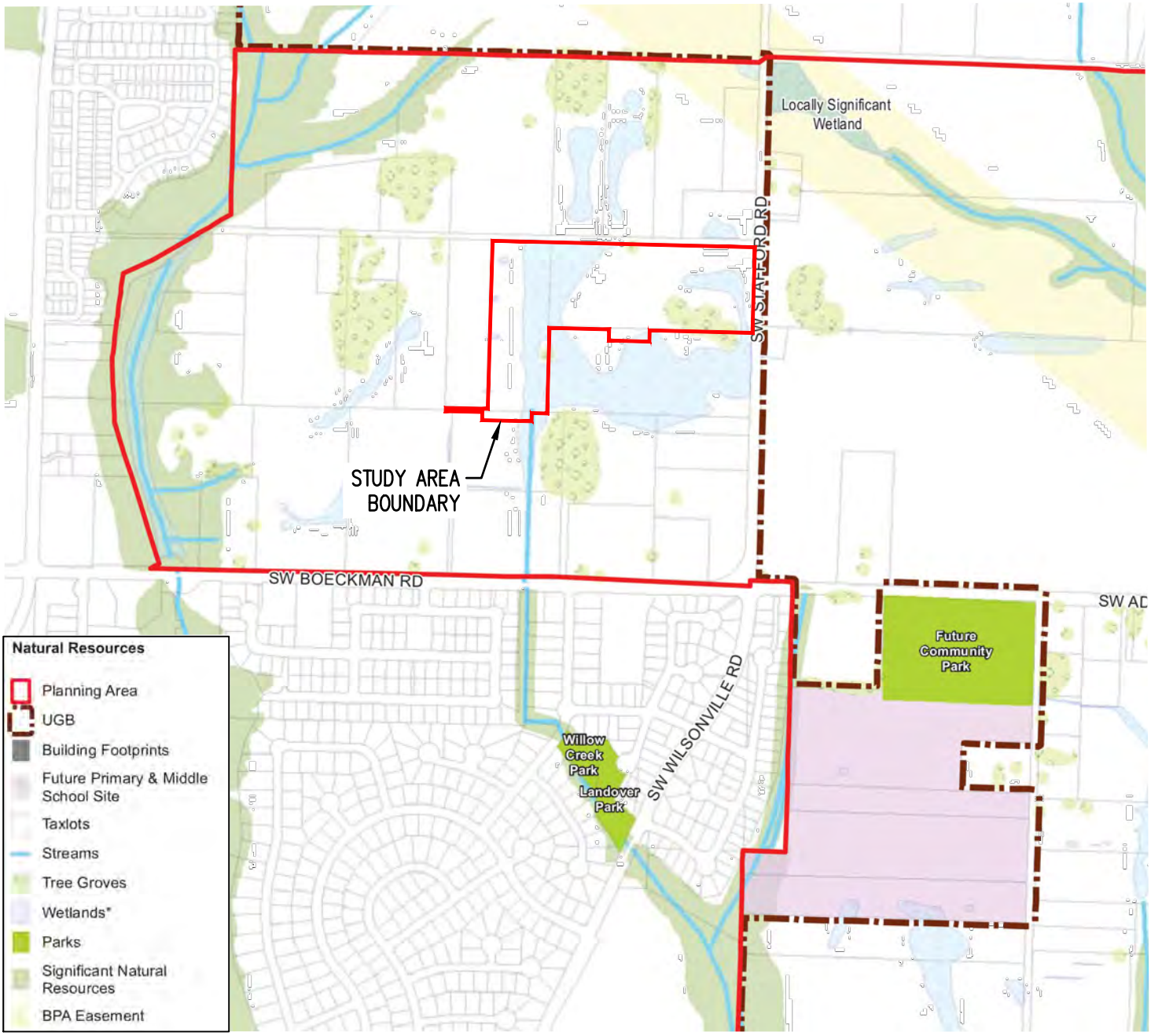
SCALE: 1"= 250 FEET

250 0 100 150 200 250

DATE: 01/09/2020

SIGNIFICANT RESOURCE OVERLAY ZONE MAP FROG POND RIDGE ABBREVIATED SRIR	FIGURE 5
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7005

DWG: 7005 SRIR FIGURES | FIGURE 5



PARK AND OPEN SPACE FRAMEWORK
FROG POND AREA PLAN (2015)

N

SCALE: 1"= 750 FEET

750 0 300 450 600 750

DATE: 01/09/2020

FROG POND AND ADVANCE ROAD URBAN GROWTH AREA MAP **FROG POND RIDGE ABBREVIATED SRIR**	FIGURE **6**
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7005

DWG: 7005 SRIR FIGURES | FIGURE 6

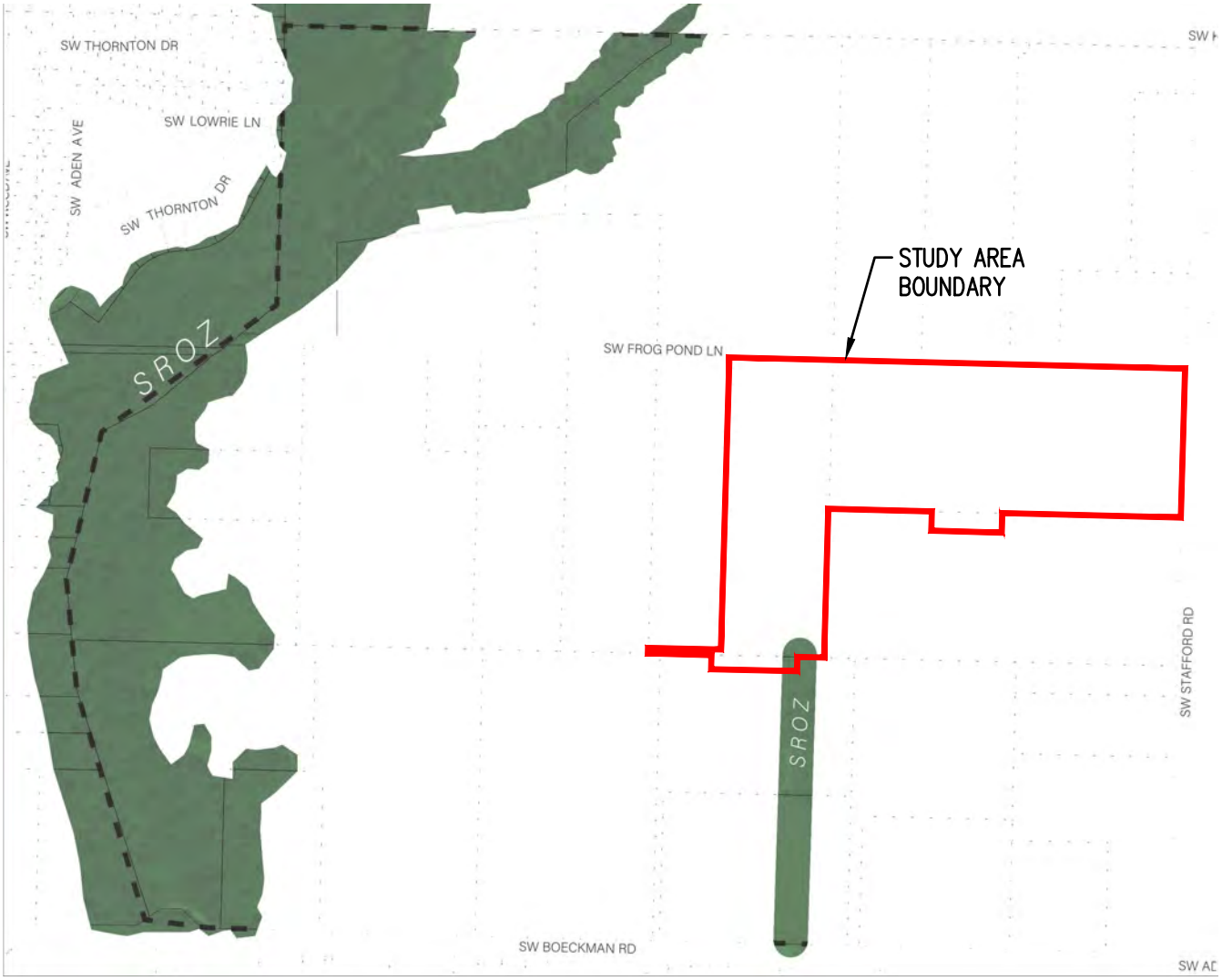
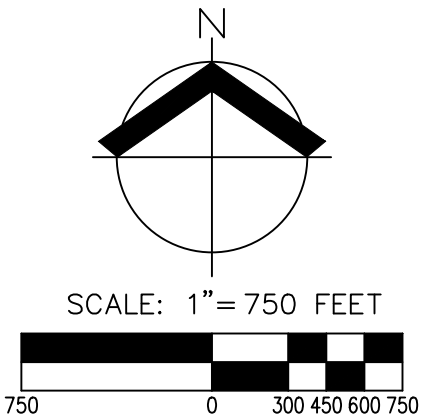


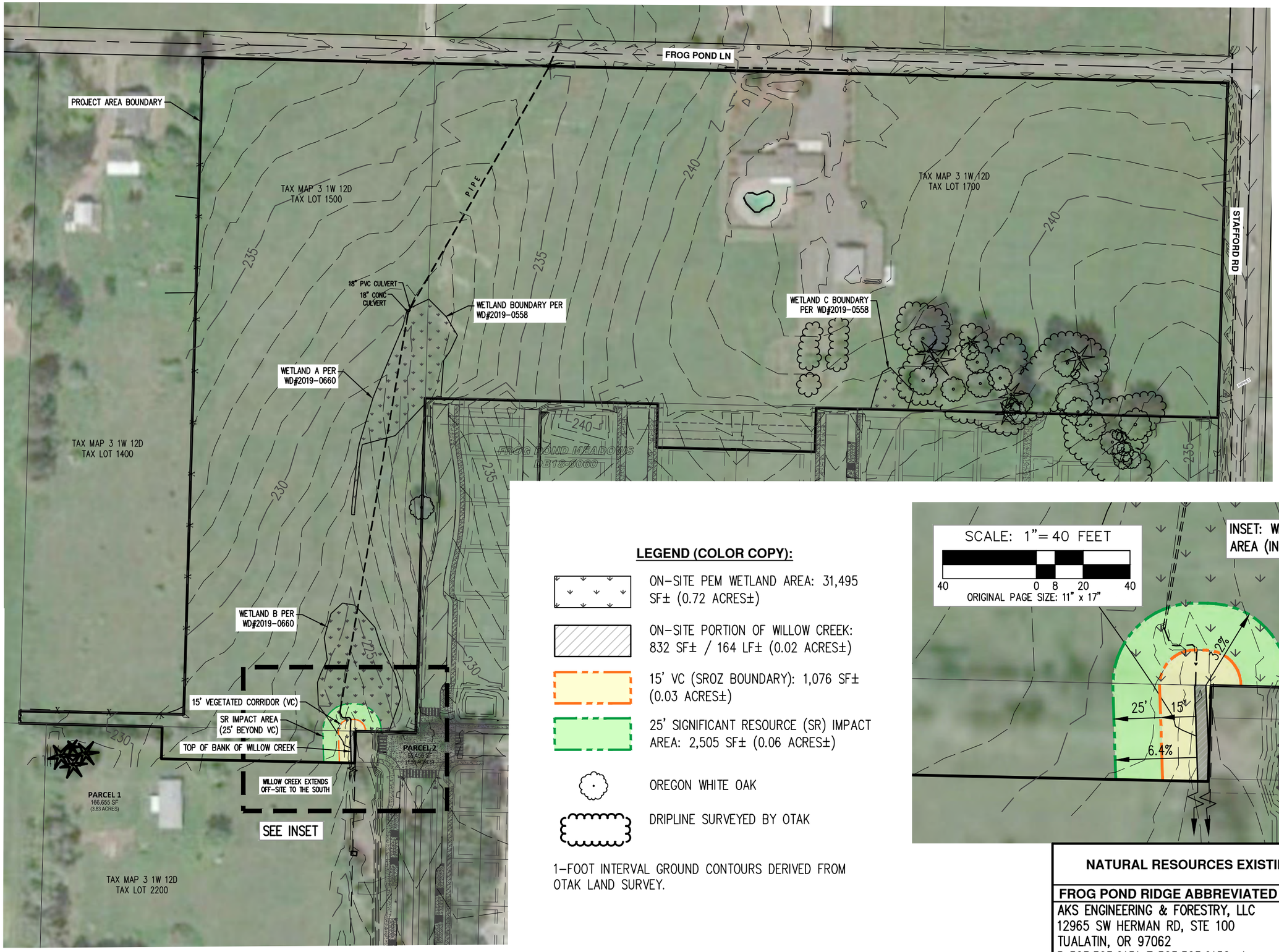
FIGURE 41 OF FROG POND
WEST MASTER PLAN (2017)



DATE: 01/09/2020

2017 FROG POND WEST SROZ MAP **FROG POND RIDGE ABBREVIATED SRIR**	FIGURE **7**
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: JRI CHKD: SAR AKS JOB: 7005

DWG: 7005 SRIR FIGURES | FIGURE 7



GOOGLE EARTH AERIAL IMAGERY
MAY 2019

N

SCALE: 1"=120 FEET

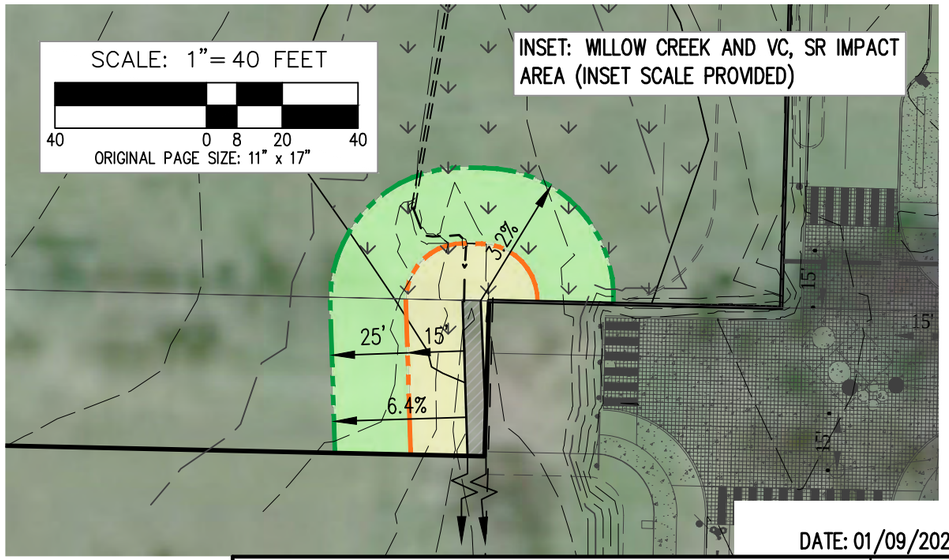
120 0 24 60 120

ORIGINAL PAGE SIZE: 11"X17"

LEGEND (COLOR COPY):

- ON-SITE PEM WETLAND AREA: 31,495 SF± (0.72 ACRES±)
- ON-SITE PORTION OF WILLOW CREEK: 832 SF± / 164 LF± (0.02 ACRES±)
- 15' VC (SROZ BOUNDARY): 1,076 SF± (0.03 ACRES±)
- 25' SIGNIFICANT RESOURCE (SR) IMPACT AREA: 2,505 SF± (0.06 ACRES±)
- OREGON WHITE OAK
- DRIPLINE SURVEYED BY OTAK

1-FOOT INTERVAL GROUND CONTOURS DERIVED FROM OTAK LAND SURVEY.



DATE: 01/09/2020

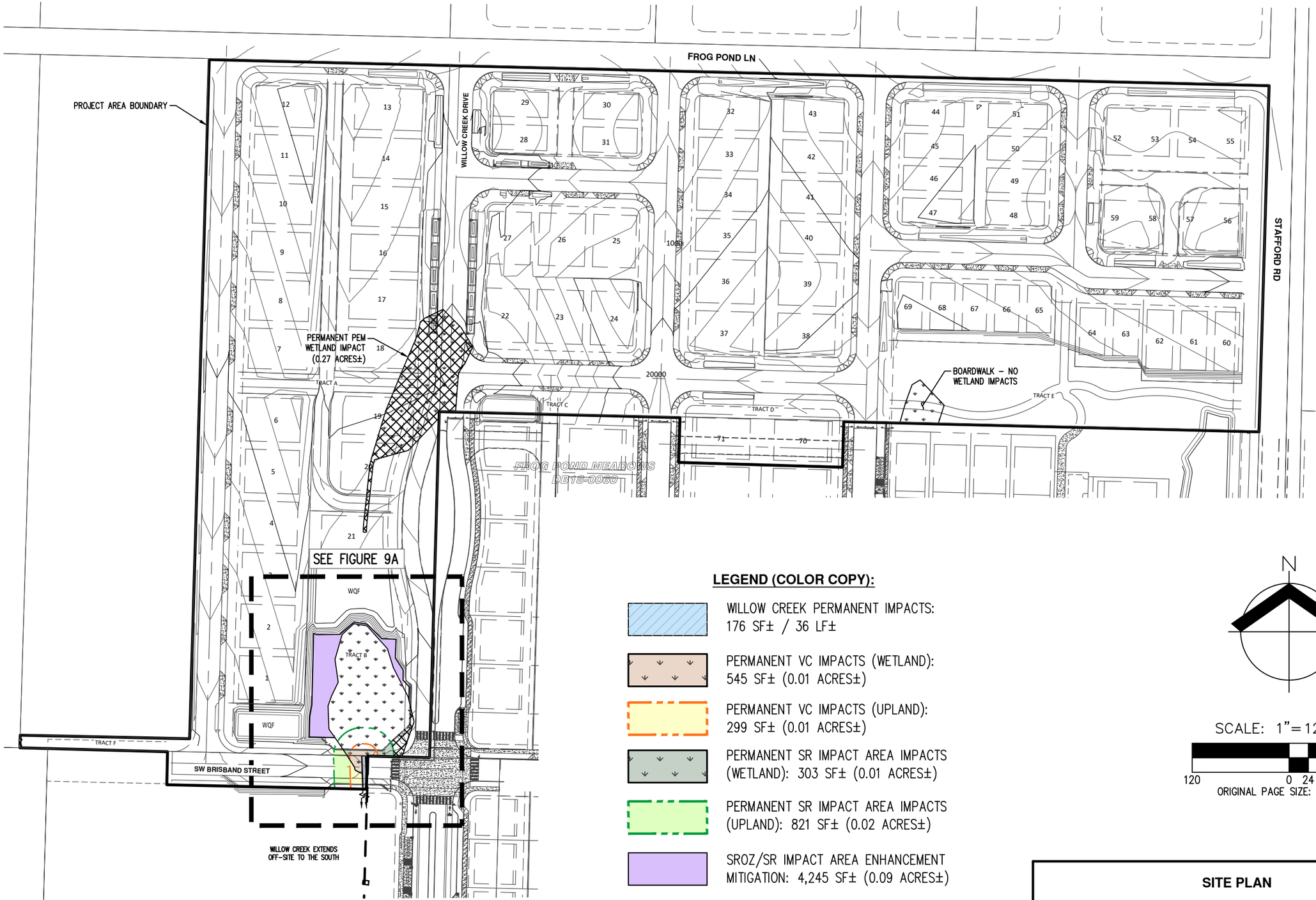
NATURAL RESOURCES EXISTING CONDITIONS MAP

FROG POND RIDGE ABBREVIATED SRIR

FIGURE 8

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
P: 503.563.6151 F: 503.563.6152 aks-eng.com

DRWN: JRI
CHKD: SAR
AKS JOB: 7005



LEGEND (COLOR COPY):

- WILLOW CREEK PERMANENT IMPACTS: 176 SF± / 36 LF±
- PERMANENT VC IMPACTS (WETLAND): 545 SF± (0.01 ACRES±)
- PERMANENT VC IMPACTS (UPLAND): 299 SF± (0.01 ACRES±)
- PERMANENT SR IMPACT AREA IMPACTS (WETLAND): 303 SF± (0.01 ACRES±)
- PERMANENT SR IMPACT AREA IMPACTS (UPLAND): 821 SF± (0.02 ACRES±)
- SROZ/SR IMPACT AREA ENHANCEMENT MITIGATION: 4,245 SF± (0.09 ACRES±)

SITE PLAN DESIGN FILES PROVIDED BY OTAK.

N

SCALE: 1"=120 FEET

120 0 24 60 120

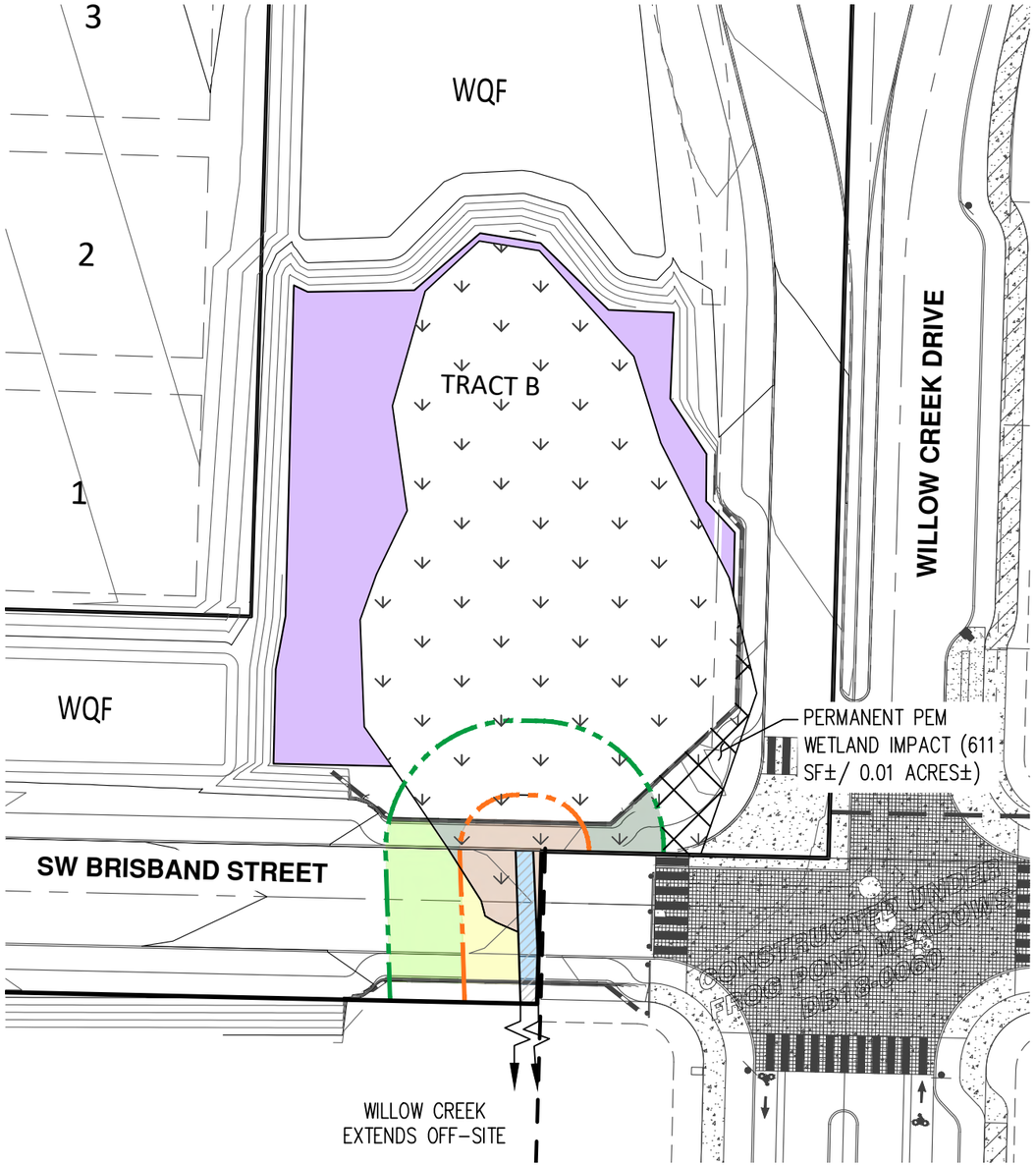
ORIGINAL PAGE SIZE: 11"X17"

DATE: 01/09/2020

SITE PLAN	FIGURE 9
FROG POND RIDGE ABBREVIATED SRIR	

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
P: 503.563.6151 F: 503.563.6152 aks-eng.com

DRWN: JRI
CHKD: SAR
AKS JOB: 7005



LEGEND (COLOR COPY):

- WILLOW CREEK PERMANENT IMPACTS: 176 SF± / 36 LF±
- PERMANENT VC IMPACTS (WETLAND): 545 SF± (0.01 ACRES±)
- PERMANENT VC IMPACTS (UPLAND): 299 SF± (0.01 ACRES±)
- PERMANENT SR IMPACT AREA IMPACTS (WETLAND): 303 SF± (0.01 ACRES±)
- PERMANENT SR IMPACT AREA IMPACTS (UPLAND): 821 SF± (0.02 ACRES±)
- SROZ/SR IMPACT AREA ENHANCEMENT MITIGATION: 4,245 SF± (0.09 ACRES±)

SITE PLAN DESIGN FILES PROVIDED BY OTAK.

N

SCALE: 1"= 40 FEET

40 0 8 20 40

ORIGINAL PAGE SIZE: 11" x 17"

DATE: 01/09/2020

SITE PLAN	FIGURE **9A**
FROG POND RIDGE ABBREVIATED SRIR	

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
P: 503.563.6151 F: 503.563.6152 aks-eng.com

DRWN: JRI
CHKD: SAR
AKS JOB: 7005

Appendix A:
DSL Wetland Delineation Concurrence Letter

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

November 14, 2019

The William Ray Morgan and Janice Ellen Morgan
Revocable Living Trust
Attn: Janice E. Morgan
4500 SW Advance Rd
Wilsonville, OR 97070

Re: WD # 2019-0558 **Approved**
Wetland Delineation Report for the Morgan Property
Clackamas County; T3S R1W S12D TL1700

Dear Ms. Morgan:

The Department of State Lands has reviewed the wetland delineation report prepared by AKS Engineering & Forestry, LLC 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 5 of the report. Please replace all copies of the preliminary wetland map with the final Department-approved map.

Within the study area, 2 wetlands (Wetland A and B, totaling approximately 0.11 acres) were identified. The wetlands 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 or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Since 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. If you have any questions, please contact Chris Stevenson, the Jurisdiction Coordinator for Clackamas County, at (503) 986-5246.

Sincerely,

Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

ec: Stacey Reed, PWS, AKS Engineering & Forestry
City of Wilsonville Planning Department (Maps enclosed for updating LWI)
Jessica Menichino, Corps of Engineers
Anita Huffman, DSL

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: https://apps.oregon.gov/DSL/EPS/program?key=4.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (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 of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information

☒ Applicant ☒ Owner Name, Firm and Address:

The William Ray Morgan and Janice Ellen Morgan Revocable Living Trust
4500 SW Advance Rd
Wilsonville, OR 97070

Business phone #
Mobile phone # (optional) 503-860-1061
E-mail: billjanice1956@yahoo.com

RECEIVED
OCT 09 2019
RECEIVED $ 454.00
DEPARTMENT OF STATE LANDS
#33069

☐ Authorized Legal Agent, Name and Address (if different):

Business phone #
Mobile phone # (optional)
E-mail:

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: William R Morgan Janice E Morgan **Signature:** William R Morgan Janice E Morgan

Date: 10/2/2019 Special instructions regarding site access: ____

Project and Site Information

Project Name: Morgan Property

Latitude: 45.321279 Longitude: -122.747716
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Residential Development

Tax Map # 3 1W 12D
Tax Lot(s) 1700

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
6720 SW Frog Pond Lane

Township 3S Range 1W Section 12 QQ D

Use separate sheet for additional tax and location information

City: Wilsonville County: Clackamas

Waterway: None River Mile: N/A

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:

Stacey Reed, PWS
AKS Engineering & Forestry, LLC
12965 SW Herman Road, Suite 100
Tualatin, OR 97062

Phone # (503) 563-6151
Mobile phone # (if applicable)
E-mail: staceyr@aks-eng.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: Stacey Reed Date: 10/4/19

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No Study Area size: 10.34 acres Total Wetland Acreage: 0.11 AC

Check Applicable Boxes Below

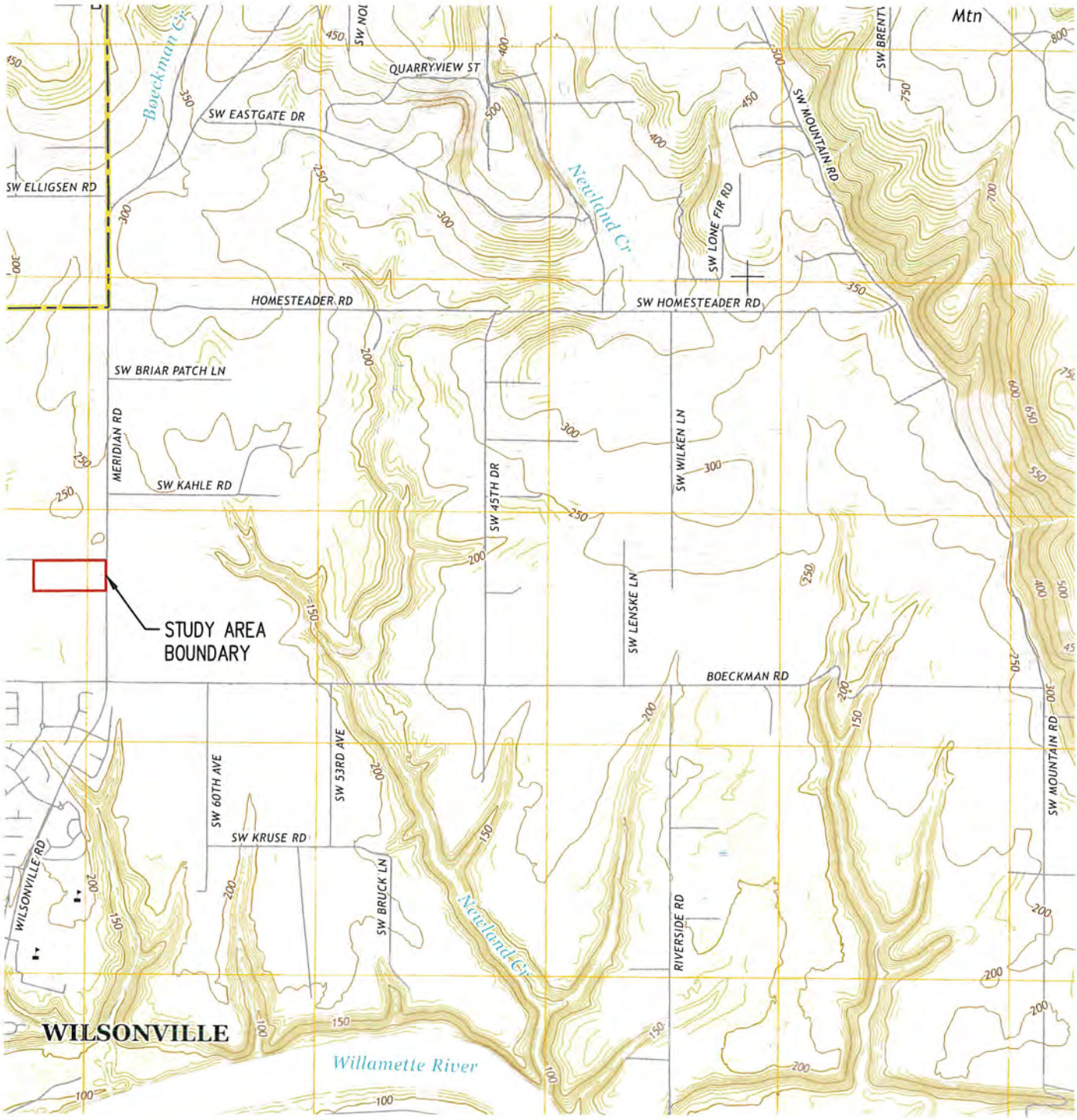
☐ R-F permit application submitted
☐ Mitigation bank site
☐ Industrial Land Certification Program Site
☐ Wetland restoration/enhancement project (not mitigation)
☐ Previous delineation/application on parcel
If known, previous DSL # ____

☒ Fee payment submitted $ 454
☐ Fee ($100) for resubmittal of rejected report
☐ Request for Reissuance. See eligibility criteria. (no fee)
DSL # ____ Expiration date ____
☐ LWI shows wetlands or waters on parcel
Wetland ID code ____

For Office Use Only

DSL Reviewer: CS Fee Paid Date: 10 / 9 / 19 DSL WD # 2019-0558

Date Delineation Received: 10 / 9 / 19 Scanned: ☐ Electronic: ☐ DSL App.# ____



USGS 7.5' TOPOGRAPHIC SERIES
QUADRANGLE: CANBY, OR (2017)

N

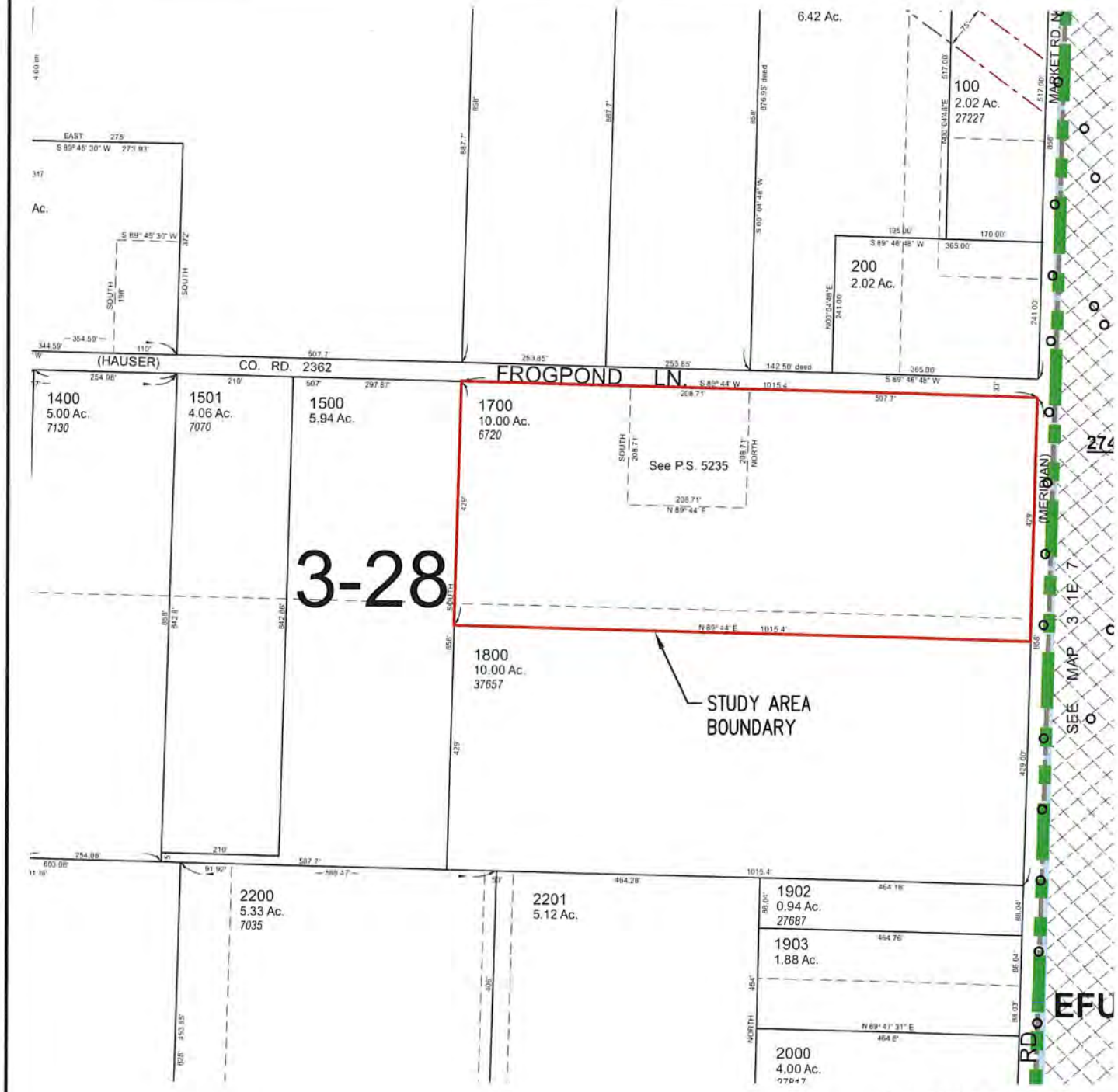
SCALE: 1"= 2000 FEET

2000 0 800 1200 1600 2000

DATE: 03/29/2019

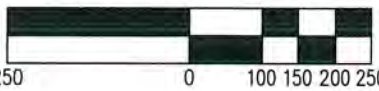
USGS VICINITY MAP STAFFORD MEADOWS - MORGAN PROPERTY WETLAND DELINEATION REPORT	FIGURE 1
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD SUITE 100 TUALATIN, OR 97062 www.aks-eng.com PHONE: 503.563.6151 FAX: 503.563.6152	DRWN: SAS CHKD: SAR AKS JOB: 7005

DWG: 7005 MORGAN WDR FIGURES | FIGURE 1



CLACKAMAS COUNTY
TAX LOT 1700
TAX MAP 3 1W 12D

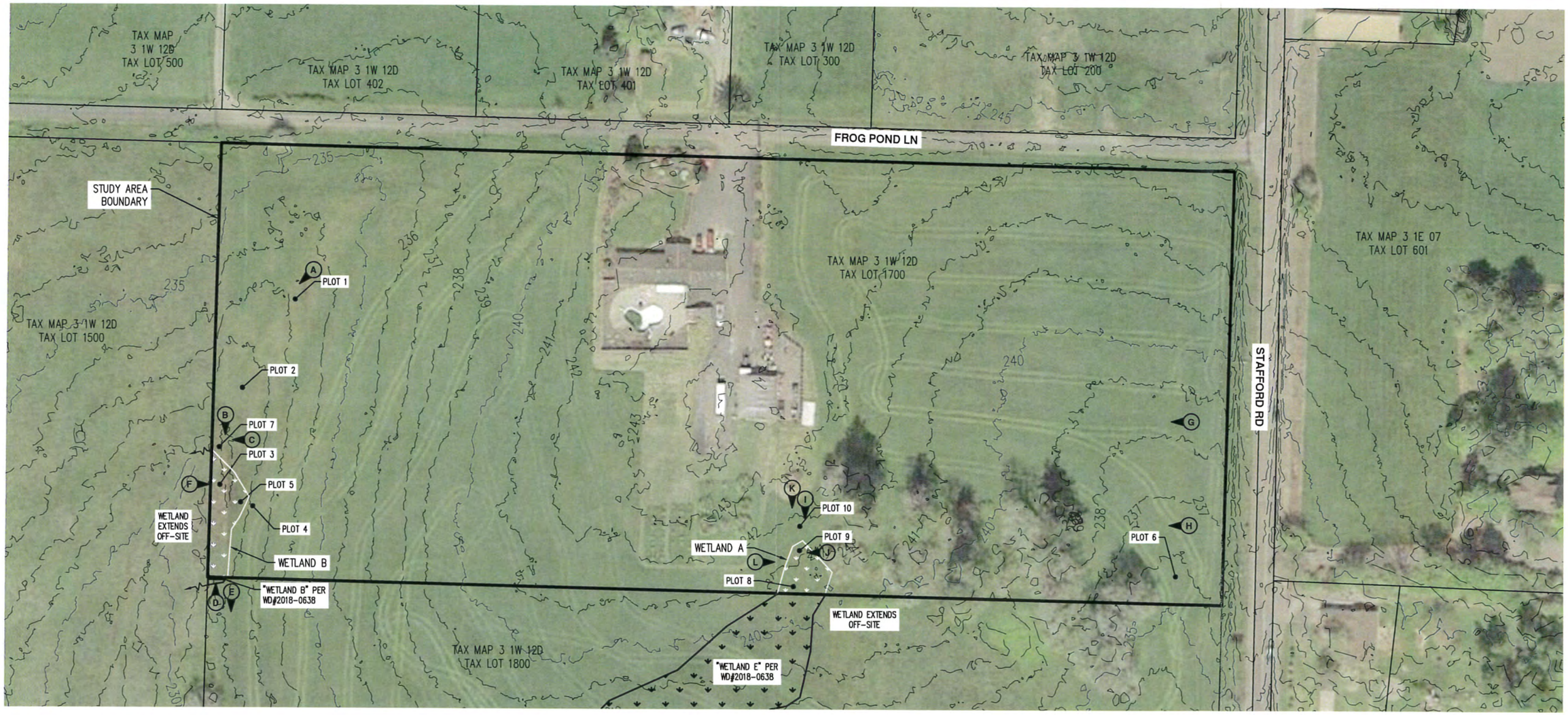
SCALE: 1"= 250 FEET



DATE: 03/29/2019

TAX MAP (MAP 3 1 W 12D) STAFFORD MEADOWS - MORGAN PROPERTY WETLAND DELINEATION REPORT	FIGURE 2
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD SUITE 100 TUALATIN, OR 97062 www.aks-eng.com PHONE: 503.563.6151 FAX: 503.563.6152	DRWN: SAS CHKD: SAR AKS JOB: 7005

DWG: 7005 MORGAN WDR FIGURES | FIGURE 2



GOOGLE EARTH AERIAL IMAGERY
APRIL, 2015

N

SCALE: 1"=100 FEET

100 0 40 60 80 100

SCALED 11 X 17"

LEGEND:

ON-SITE WETLAND AREA: 4,923 SF± (0.11 ACRES±)

WETLAND A: 1,909 SF± (0.04 ACRES±)
WETLAND B: 3,014 SF± (0.07 ACRES±)

A PHOTO POINT LOCATIONS/ORIENTATIONS

WETLAND BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING AND FORESTRY, LLC (AKS) ON MARCH 19, 2019 AND SEPTEMBER 18, 2019. FEATURES WERE LOCATED USING A HANDHELD TRIMBLE GEO7X GPS RECEIVER WITH SUBMETER ACCURACY.

1-FOOT INTERVAL GROUND CONTOURS DERIVED FROM NOAA LIDAR DATA.

DSL WD # 2019-0558
Approval Issued 11/14/2019
Approval Expires 11/14/2024

DATE: 09/23/2019

WETLAND DELINEATION MAP

STAFFORD MEADOWS - MORGAN PROPERTY WETLAND DELINEATION REPORT

FIGURE 5

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
P: 503.563.6151 F: 503.563.6152 aks-eng.com

DRWN: JRI
CHKD: SAR
AKS JOB: 7005

Appendix B: Representative Site Photographs

Photo A. View looking northwest of Wetland B.

Photo B. View south of Willow Creek during March 19, 2019 site visit.

Photo C. View facing south of Willow Creek during November 2019 site visit.

Photo D. View facing south of southern end of Wetland B in vicinity of SW Brisband Street crossing.

Photo E. View facing west of SROZ in vicinity of SW Brisband Street crossing.

Photo F. View facing south of Wetland A.

Photo G. View facing north of Wetland A.

Photo H. View facing south of Wetland C.

Appendix C: OFWAM Assessment for Wetlands A & B

Wetlands A & B
Frog Pond Ridge

Water quality (pollutant removal)

Sediment trapping

During periods of heavy rainfall, water runoff may cause erosion and increase solids suspended in receiving surface waters. The excess sediment entering water systems can damage aquatic ecosystems. For example, sediment accumulation in stream bottoms can smother spawning areas and kill aquatic insect larvae. It can also reduce the storage capacity of downstream water supply reservoirs.

Wetlands perform an important function by trapping sediment from waters that pass through them. As water flows through wetlands, it is slowed by vegetation, and sediment settles to the bottom before the water moves farther downstream. As much as 90% of the solids suspended in the water may be removed as the water moves through wetlands, resulting in cleaner water entering streams, rivers, lakes and estuaries.

Nutrient attenuation

Nitrogen and phosphorus are the two nutrients most often associated with water pollution. They are also main ingredients of fertilizers used on agricultural fields and lawns, and both are found in high concentrations in discharges from sewage treatment plants and livestock operations. Excessive amounts of nitrogen and phosphorus in lakes and slow-moving streams can cause algal blooms and subsequent oxygen deficiencies, which may kill fish and reduce water quality. The processes that occur as a result of excess nutrients are lumped together under the term "eutrophication." Within limits, wetlands can reduce nutrient levels so that the effects of eutrophication on downstream areas are prevented or reduced. This index considers only point and non-point pollutant sources that are due to land uses in the watershed.

Assessment questions

Question 1

What is the wetland's primary source of water?

a. Surface flow, including streams and ditches.
b. Precipitation or sheet flow.
c. Groundwater, including seeps and springs.

Directions

See question 36 in the Wetland Characterization.

Rationale

Wetlands bordering a perennial or intermittent stream or lake are areas into which floodwaters spread during periods of high runoff, enabling the wetlands to remove pollutants.

Notes

Question 2

Is there evidence of flooding or ponding during a portion of the growing season?

a. Yes.
b. Unable to determine or not applicable.
c. No.

Directions

See question 37 in the Wetland Characterization.

Rationale

Water level fluctuation in the wetland indicates the ability to retain water. Impounded or standing water acts as a sediment trap because it greatly slows the flow of the incoming water, allowing suspended solids to settle out. Additionally, the slower velocity increases the contact time of the water with vegetation, resulting in uptake of nutrients by the vegetation. These actions function to reduce pollutant loads.

Question 3

What is the degree of wetland vegetation cover?

a. High (greater than 60%).
b. Moderate (approximately 60%).
c. Low (less than 60%).

Directions

See question 21 in the Wetland Characterization. Add the lower end of the ranges for forest, scrub-shrub and emergent vegetation to get the result. If the result is 60% or more, answer "high." If the result is 60%, answer "moderate." Answer "low" for other results.

Rationale

The more dense the vegetation, the greater the wetland's ability to take up nutrients. A dense stand of persistent emergent plants (such as cattail and rush) along with floating and submerged aquatics would tend to provide maximum nutrient uptake during the growing season. Wooded and scrub-shrub wetlands remove nutrients mainly through settling of suspended solids in runoff and flood waters.

Notes

Question 4

What is the wetland's area in acres?

a. More than 5 acres.

b. Between 0.5 acres and 5 acres; or wetland area is less than 0.5 acres, and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake.

c. Less than 0.5 acres, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake.

Directions

See questions 17 and 27 in the Wetland Characterization.

Rationale

The larger the wetland, the greater its capacity and ability to filter pollutants. Small wetlands connected by surface water act as a series of filters and thus function similarly to a larger wetland.

Question 5

What is the dominant, existing land use within 500 feet of the wetland's edge?

a. Developed uses.

b. Agriculture.

c. Exclusive Forest Use or Open Space.

Directions

Refer to the directions for question 8 of the wildlife habitat assessment questions.

Rationale

Urbanized areas have more impervious surface areas and concentrate pollution sources. Wetlands in urban areas are important for filtering the runoff water before it enters a stream.

Notes

Question 6

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

Directions

See questions 7 and 8 in the Wetland Characterization. If both "a" and "b" apply, choose "a."

a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.

c. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.

Rationale

A watershed with upstream pollutant loading sources needs wetlands to reduce pollutant levels in water before it is delivered downstream.

Notes

Water quality: assessment criteria

A wetland's water-quality function is intact if:	Question 1 is answered "a" or "b," questions 2 and 3 are answered "a," and any other question is answered "a" or "b."
A wetland's water-quality function is impacted or degraded if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's water-quality function is lost or not present if:	Four out of six questions are answered "c."

Wetlands A + B - Frog Pond Ridge

Hydrologic control
(flood control & water supply)

Wetlands function as natural water-storage areas during periods of high runoff and stream flooding. At times they act as flood regulators by holding floodwater then slowly releasing it downstream. This temporary storage reduces the amount of water downstream during floods, thereby reducing peak flows. Through this flood storage mechanism, wetlands associated with tributaries of streams or rivers can prevent water from all tributaries reaching the stream or river at the same time (this is called desynchronization). Wetlands can also act as floodwater "brakes." For example, water flowing through riverine wetlands during floods is slowed by trees, shrubs, reeds, rushes and other wetland vegetation. Wetlands acting as brakes can reduce flood peaks and thereby reduce flood damage, bank and bed erosion, and other adverse effects caused by fast moving water.

Wetlands also have long-term water holding abilities. Wetlands may store water for longer periods, sometimes for months. The slow draining of these wetlands to surface water or ground water as the water level in the wetland recedes may contribute to maintenance of baseflows in streams hydrologically connected to the wetland. The ability of this long-term water storage to maintain stream flows is called "flow conservation."

Notes

Assessment questions

Question 1

Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

a. Yes.
b. No.

Directions

See question 19 in the Wetland Characterization.

Rationale

Wetlands located within a floodplain or enclosed basin have a greater opportunity to receive and store water from surface flows and to release it slowly downstream or into the groundwater.

Question 2

Is there evidence of flooding or ponding during a portion of the growing season?

a. Yes.
b. Unable to determine or not applicable.
c. No.

Directions

See question 37 in the Wetland Characterization.

Rationale

Water marks are valid indicators of seasonal and episodic stage fluctuations in wetlands and, as such, are strong indicators of storage function.

Question 3

What is the wetland's area in acres?

a. More than 5 acres.
b. Between .5 acres and 5 acres.
c. Less than .5 acres.

Directions

See question 17 in the Wetland Characterization.

Rationale

Generally, the larger the wetland, the greater its ability to store and attenuate flood flows.

Question 4

Is waterflow out of the wetland restricted (e.g., beaver dam, concrete structure, undersized culvert)?

a. Yes, the outlet is restricted or the wetland has no outlet.
b. Minor restrictions slow down the water (i.e., undersized culvert.)
c. No, the outlet has unrestricted flow.

Directions

See question 38 in the Wetland Characterization.

Rationale

Wetlands with no outlets or with restricted or controlled outlets generally will store greater amounts of water than wetlands with unrestricted flow outlets. Also, the wetland can store water for slower release into the water system.

Notes

Question 5

What is the dominant wetland vegetation cover type?

a. Woody vegetation.
b. Emergent vegetation and ponding, or open water only.
c. Emergent vegetation or wet meadow.

Directions

See question 23 in the Wetland Characterization.

Rationale

Densely vegetated wetlands with vegetation greater than 6 feet tall are better able to control flood flows than wetlands dominated by open water or low growing vegetation, which generally offers little resistance.

Question 6

What is the dominant existing land use, within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

a. Developed uses.
b. Agriculture.
c. Exclusive Forest Use and Open Space.

Directions

See question 16 in the Wetland Characterization.

Rationale

If the wetland is upstream from developed areas, its ability to control floods becomes more important.

Question 7

What is the dominant land use in the watershed upstream from the assessment area?

a. Urban or urbanizing.
b. Agriculture.
c. Forested or natural area.

Directions

See question 6 in the Wetland Characterization.

Rationale

Runoff volume is directly related to the level of development in the watershed: The more development, the more runoff. The opportunity for the wetland to provide flood control and flow conservation to a community is greater where runoff is greater.

Notes

Hydrologic control: assessment criteria

A wetland's hydrologic control function is intact if:	Four or more questions are answered "a."
A wetland's hydrologic control function is is impacted or degraded if:	Answers do not satisify the above- or below-listed criteria.
A wetland's hydrologic control function is lost or not present if:	Four or more questions are answered "c."

Notes

Appendix D: Recommended SROZ Enhancement Mitigation Planting Specifications

Frog Pond Ridge SROZ Recommended Upland Buffer Enhancement Mitigation Planting Specifications

Planting specifications for the enhancement of 4,245 square feet of upland buffer.

Scientific Name	Common Name	Size*	Spacing/Seeding Rate	Quantity
Trees (total 43)				
Acer macrophyllum	bigleaf maple	2 gallon	8-12 feet on center	14
Alnus rubra	red alder	1 gallon	8-12feet on center	14
Thuja plicata	Western red cedar	2 gallon	8-12 feet on center	15
Shrubs (total 212)				
Acer circinatum	vine maple	2 gallon	4-5 feet on center	42
Holcus discolor	oceanspray	1 gallon	4-5 feet on center	42
Polystichum munitum	Pineland sword fern	1 gallon	4-5 feet on center	42
Rubus parvifolium	thimbleberry	1 gallon	4-5 feet on center	42
Symphoricarpus albus	snowberry	1 gallon	4-5 feet on center	44
Seed Mix				
Bromus carinaus	Native California brome	seed	1 lb pls/acre	As needed for bare soil areas >25 square feet
Elymus glaucus	Blue wildrye	seed	1 lbs pls/acre	

**Bare root plants may be substituted for container plants based on availability. If bare root plants are used, they must be planted during the late winter/early spring dormancy period.*

Planting Notes- ***Per Section 4.139.07.E.1-7 of Wilsonville SROZ Ordinance***

1) Plantings should preferably be installed between February 1 and May 1 for bare roots and seeds and between October 1 and November 15 for containers. Plants may be installed at other times of the year; however, additional measures may be necessary to ensure plant survival during the two-year maintenance period. Bare root plants must be installed during the late winter/early spring dormancy period.
2) Plant size for tree and shrub container stock shall be at least 1-gallon in size and shall be at least 12-inches in height.
3) Plants shall be spaced per table above or clustered in single species groups of no more than 4 plants, with each cluster planted between 8 and 10 feet on center. When planting near existing trees, the drip line of the existing tree shall be the starting point for the plant spacing measurement.
4) All non-native invasive or noxious vegetation shall be removed from planting areas prior to installing native enhancement plantings.
5) Plantings shall be mulched a minimum of three inches in depth and 18 inches in diameter to retain moisture and discourage weed growth around newly installed plant material.
6) Browse protection shall be installed on trees and shrubs.
7) Irrigation may be necessary for the survival of the enhancement plantings. Irrigation or other water practices (i.e. polymer, plus watering) is recommended during the two-year maintenance period. Watering shall be provided at a rate of at least one inch per week between June 15 and October 15.

8) Installation of enhancement plantings shall occur prior to or within the same construction season as the impact activity (ie development of SW Brisband Street).

Monitoring and Maintenance Plan

1) Monitoring Period: The City of Wilsonville requires monitoring and maintenance to be conducted for a period of five years (ie 5 growing seasons) following plant installation. The enhancement plantings are to be inspected annually during the growing season for survival, ideally between June 1 and September 30.

2) Plant Survival: Per Section 4.139.07.02.7 of Wilsonville's SROZ ordinance, tree and shrub survival criterion is a minimum of 80% survival at the end of the fifth year anniversary following initial installation of plants. If any mortality is noted on the site, the factor likely to have caused mortality of the plantings is to be determined and corrected if possible. If survival falls below 80% at any time during the 5-year maintenance period, the plantings shall be replaced in kind (to the extent necessary) and other corrective measures, such as mulching or irrigation, may need to be implemented.

3) Annual Monitoring Report: Per Section 4.139.07.02.6 of Wilsonville's SROZ ordinance, the applicant shall submit an annual monitoring report to the City's Planning Director documenting success and status of the enhancement plantings. At a minimum, the report shall contain: photographs from established photo points; quantitative measures of success including plant survival and vigor; and on-going maintenance activities performed (non-native and noxious plant removal, irrigation, etc).

Appendix F
Revised Tree Plan

Frog Pond Ridge

This Tree Plan is required by Section 4.610.40. Type C Permit as part of the site development application for the Frog Pond Ridge subdivision in Wilsonville, Oregon. Trees were measured by a licensed surveyor and inventoried by an ISA Certified Arborist. The attached Tree Table includes all trees that are 6 inches in diameter and larger. There are 61 trees and the Tree Table delineates those to be protected and those to be removed. Root protection zones (RPZs) for protected trees are listed in the tree table. All protected trees have been tagged with metal tags that must remain in place throughout the development. Tag numbers are keyed to the tree survey map and the attached Tree Table.

The southeast portion of the property includes a grove of mature native trees. Site design elements preserve these trees as a group and maintain the character of this native grove. The engineer and I determined the location of the sidewalk in the grove by walking the optimal route through trees and mapping this route in real time using global positioning satellite technology. The finished sidewalk location within the grove will be somewhat flexible to allow the project arborist and construction crew to preserve large roots that may be encountered. The sidewalk will be built on-grade according to the following construction plan:

1. A small sized backhoe on rubber tracks and using a flat bucket, will gradually scrape away the first layer of soil. The project arborist will supervise this work and will advise on root pruning and preservation.
2. A layer of geo-textile fabric will be applied to the native soil where the sidewalk is within the RPZs of protected trees.
3. A two-inch to four-inch layer of crushed rock will be placed on the fabric. This layer of rock will be lightly compacted using a hand operated, motorized compactor.
4. Concrete forms may be installed before or after the crushed rock is added.
5. Concrete will be poured. Concrete will be piped into the grove by a concrete truck that will remain outside of the RPZs of protected trees. Concrete may also be brought into the grove using a power wheelbarrow, skid-steer on rubber tracks, bobcat, or similar piece of equipment.

The project arborist must be onsite during grading for the sidewalk. The above grade work of setting forms installing gravel and pouring concrete will not require arborist oversite. At no time may large trucks or steel-tracked equipment enter the grove. Rock and gravel must be piped or ferried in using the smaller sized equipment described above. This construction plan avoids unnecessary soil compaction within the RPZs of protected trees.

Lots 63, 64, 67, and 68 encroach into the RPZs of protected trees. These lots are designed so that building footprints are outside of RPZs. Spread footings, beams on grade, or other alternative construction techniques will be used where foundations or patios are withing the RPZs of protected trees. The root zones of protected trees that extend into these four lots will be mulched four inches to six inches deep with wood chips or a similar organic material like bark dust during the grading

and construction phase of the project. Tree 55832 and Tree 55850 have long errant branches and limbs that extend into the building site. These branches and limbs may require pruning as the project progresses. Pruning will be conducted or supervised by an ISA Certified Arborist.

The building footprints on Lots 63, 64, 67, and 68 abut the RPZs of Tree 55832 and Tree 55850. The project arborist will supervise excavation near the root zones of these two trees. The project arborist will prune roots that are two inches in diameter and smaller. Larger roots will be preserved. If large roots impede the construction of conventional footings, the arborist will document these and make recommendations for alternative foundations.

A tree easement is being placed on Lots 63, 64, 67, and 68 to preserve the root crowns of protected trees that will be in the backyards of these lots. Landscape plans not covered here must be approved by and an ISA Certified Arborist. Following are the requirements and restrictions of the easement:

1. The top organic layer (turf layer) of soil may be removed to facilitate landscape construction.
2. A layer of geo-textile fabric shall be applied to the native soil to provide a barrier between the root zone and landscaping.
3. Mulch and native plantings are encouraged.
4. Impermeable paving within the easement is prohibited.
5. Lawns/turf may be installed on grade on top of the geo-textile fabric. The lawn/turf area must be three feet away from the southern lot line or backyard fence. This three-foot wide area bordering the south lot line must be mulched three inches to four inches deep with woodchips or similar organic material. This area may be used as a planting bed for flowers, woody shrubs, or understory trees. Holes in the landscaping fabric may be cut and the appropriate, sized hole dug for the intended planting. Trees must be installed by a certified landscape professional who will avoid damaging roots.
6. Patios must be constructed on grade and be paved with permeable pavers or permeable concrete to allow water to percolate into the root zone. Patios will not exceed 400 square feet.
7. Tilling of the native soil is not allowed.
8. Raised bed gardens or planting containers may be installed and will not exceed 64 square feet.
9. Play structures and sandboxes are allowed.

The purpose of the tree easement is to preserve the native root zones of the adjacent trees being preserved. The geo-textile fabric provides a barrier between landscaping activities and the root zones beneath, reduces soil compaction during regular use of the backyards, and allows stormwater to pass through to the roots of preserved trees. The preserved trees are currently adapted to competition from a hearty grassland; therefore, the installation of lawns and other plantings is not a concern. The use of chemical fertilizers and herbicides is discouraged. When necessary, the use of chemical agents should be conservative and targeted.

The 32 trees being preserved during development will be cordoned off with fencing built at the edge of root protection zones before construction activity begins. Fencing will consist of 6-foot high metal chain link secured with 8-foot metal posts. Without authorization, none of the following is allowed within a root protection zone:
1. New buildings;
2. Grade change or cut and fill, during or after construction;
3. New impervious surfaces;
4. Utility or drainage field placement;
5. Staging or storage of materials and equipment during construction;
6. Vehicle maneuvering during construction.

There will be 29 trees removed from the site. Section 4.620.00. requires that each removed tree be replaced with a 2-inch caliper tree within one year of removal. Replacement trees shall be chosen for the site from an approved tree species list supplied by the City and shall be state Department of Agriculture Nursery Grade No. 1 or better. The trees must be staked, fertilized, and mulched, and shall be guaranteed by the permit grantee for two years after the planting date. The species and locations will be determined by the landscape designer. Alternatively, the owner may invoke Section 4.629.00.(06.) and will pay into the City Tree Fund the value of the replacement trees that cannot be planted at the site.

The goal of this Tree Plan is to meet the requirements of the tree preservation code and to observe all laws, rules, and regulations. All trees to be removed should be verified and marked and all tree protection measures should be inspected and approved before any clearing or grading work begins. It is the owner's responsibility to implement this tree plan and to monitor the construction process to its conclusion. Deviations can result in tree damage, liability, and violations of the City Code.

Portland Tree Consulting PO Box 19042 Portland, OR 97280
503.421.3883 info@pdxtreeconsulting.com CCB 230301

1. Client warrants any legal description provided to the Consultant is correct and titles and ownerships to property are good and marketable. Consultant shall not be responsible for incorrect information provided by Client.

2. Consultant can neither guarantee nor be responsible for the accuracy of information provided by others.

3. The Consultant shall not be required to give testimony or attend court or hearings unless subsequent contractual arrangements are made, including additional fees.

4. The report and any values expressed therein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

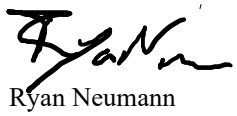
5. Sketches, drawings, and photographs in the report are intended as visual aids and may not be to scale. The reproduction of information generated by others will be for coordination and ease of reference. Inclusion of such information does not warrant the sufficiency or accuracy of the information by the Consultant.

6. Unless expressed otherwise, information in the report covers only items that were examined and reflects the condition at the time of inspection. The inspection is limited to visual examination of accessible items without laboratory analysis, dissection, excavation, probing, or coring, unless otherwise stated.

7. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

8. The report is the completed work product. Any additional work, including production of a site plan, addenda and revisions, construction of tree protection measures, tree work, or inspection of tree protection measures, for example, must be contracted separately. Loss or alteration of any part of the report invalidates the entire report.

9. Any action or proceeding seeking to enforce any provision of this Agreement shall be brought against any of the parties in Multnomah County Circuit Court of the State of Oregon, or, when applicable, in the United States District Court for the District of Oregon. Each party consents to the jurisdiction of such courts (and of the appropriate appellate courts) and waives any objection to such venue.



Ryan Neumann

ISA Certified Arborist PN-5539A TRAQ Qualified

Appendix G-1

Geotechnical Report - Coates Property

HARDMAN GEOTECHNICAL SERVICES INC.
Practical, Cost-Effective Geotechnical Solutions

September 6, 2018
HGSI Project No. 18-2362

Dan Grimberg / Kristi Hosea
West Hills Land Development
3330 NW Yeon Avenue, Suite 200
Portland, Oregon 97210

Via e-mail (pdf format); hard copies can be mailed on request

Subject: **GEOTECHNICAL ENGINEERING REPORT**
FROG POND – COATES PROPERTY
TAX LOT 31W12D 01500
WILSONVILLE, CLACKAMAS COUNTY, OREGON

This report presents the results of a geotechnical engineering study conducted by Hardman Geotechnical Services Inc. (HGSI) for the property located between 7070 SW Frog Pond Lane and 6720 SW Frog Pond Lane at tax lot 31W12D 01500 (Figure 1). The purpose of this study was to evaluate subsurface conditions at the site and to provide geotechnical recommendations for site development.

SITE DESCRIPTION AND PROPOSED DEVELOPMENT

Our understanding of the site and project conditions is based on a review of information provided, and property data obtained online from Clackamas County. The project consists of one tax lot 31W12D 01500, totaling about 6 acres. Please note that the parcel acreage was taken from the Clackamas County GIS website and may not be completely accurate.

There are no structures present on this parcel of land. The lot slopes gradually towards the south and is mostly tall grasses with some blackberry bushes, other brush and a few trees on the boundaries of the property. The site is within an area of rural residential properties.

There is a network of old drain tiles beneath the property, generally trending north to south. Several shallow "sinkholes" are evident on the site, one about mid-point along the east property line, and one in the northwest corner of the property, which are likely related to erosion and "piping" of the soils around the drain tiles, resulting in localized ground loss and subsidence.

The proposed development includes grading the site to support residential lots, with associated underground utilities, roadways and water quality facilities. Details of the planned lot and street layout, and proposed grading, have not yet been developed. HGSI should review the grading plan when available to verify consistency with the geotechnical recommendations, and to provide any supplemental or revised input to the design needed based on geotechnical considerations.

REGIONAL GEOLOGY AND SEISMIC SETTING

The subject site lies within the Portland Basin, a broad structural depression situated between the Coast Range on the west and the Cascade Range on the east. The Portland Basin is a northwest-southwest trending

structural basin produced by broad regional downwarping of the area. The Portland Basin is approximately 20 miles wide and 45 miles long and is filled with consolidated and unconsolidated sedimentary rocks of late Miocene, Pliocene and Pleistocene age.

The subject site is underlain by Quaternary age (last 1.6 million years) loess, a windblown silt deposit that mantles older deposits and basalt bedrock in the Portland Hills (Madin, 1990). The loess generally consists of massive silt deposited following repeated catastrophic flooding events in the Willamette Valley, the last of which occurred about 10,000 years ago. In localized areas, the loess includes buried paleosols that developed between depositional events. Regionally, the total thickness of loess ranges from 5 feet to greater than 100 feet.

The loess is underlain by residual soil formed by in place weathering of the underlying Columbia River Basalt Formation (Madin, 1990). The Miocene aged (about 14.5 to 16.5 million years ago) Columbia River Basalts are a thick sequence of lava flows which form the crystalline basement of the Tualatin Valley. The basalts are composed of dense, finely crystalline rock that is commonly fractured along blocky and columnar vertical joints. Individual basalt flow units typically range from 25 to 125 feet thick and interflow zones are typically vesicular, scoriaceous, brecciated, and sometimes include sedimentary rocks.

At least three major fault zones capable of generating damaging earthquakes are known to exist in the region. These include the Portland Hills Fault Zone, Gales Creek-Newberg-Mt. Angel Structural Zone, and the Cascadia Subduction Zone. These potential earthquake source zones are included in the determination of seismic design values for structures, as presented in the *Seismic Design* section. None of the known faults extend beneath the site.

FIELD EXPLORATION – TEST PITS AND HAND AUGER BORINGS

The site-specific exploration for this study was conducted on August 30, 2018 and consisted of five test pit excavations (designated TP-1 through TP-5) excavated to maximum depths of approximately 9 feet below ground surface (bgs) at the approximate locations shown on Figure 2. Also included are two hand auger borings done previously as part of our exploration for the School District Properties. The hand auger borings are designated HA-3 and HA-4, at the approximate locations shown on Figure 2. It should be noted that exploration locations were determined in the field by pacing or taping distances from apparent property corners and other site features shown on the plans provided. As such, the locations of the explorations should be considered approximate.

Explorations were conducted under the full-time observation of HGSI personnel. Soil samples obtained from the borings were classified in the field and representative portions were placed in relatively air-tight plastic bags. These soil samples were then returned to the laboratory for further examination. Pertinent information including soil sample depths, stratigraphy, soil engineering characteristics, and groundwater occurrence was recorded. Soils were classified in general accordance with the Unified Soil Classification System.

Summary exploration logs are attached to this report. The stratigraphic contacts shown on the individual borehole logs represent the approximate boundaries between soil types. The actual transitions may be more gradual. The soil and groundwater conditions depicted are only for the specific dates and locations reported, and therefore, are not necessarily representative of other locations and times.

SUBSURFACE CONDITIONS

The following discussion is a summary of subsurface conditions encountered in our explorations. For more detailed information regarding subsurface conditions at specific exploration locations, refer to the attached

hand auger logs. Also, please note that subsurface conditions can vary between exploration locations, as discussed in the *Uncertainty and Limitations* section below.

Soil

On-site soils are anticipated to consist of topsoil, clayey silt, and clay, as described below.

> ***Topsoil –*** From the ground surface, all explorations encountered 1.5 to 2 feet of topsoil, comprised of moist silt. The upper about 1 foot of the topsoil was highly organic.
>
> ***Clayey Silt to Silty Clay –*** Beneath the topsoil in the hand augers, we encountered stiff to very stiff, moist to wet, brown clayey silt to silty clay. The upper several feet of this unit exhibited orange and gray mottling. All of the explorations terminated in the clayey silt to silty clay unit, at maximum depths of about 5 to 8 feet bgs.

Groundwater

During the field exploration, no static groundwater table was encountered to the maximum depth of exploration at 8 feet bgs. In wet weather conditions, it is probable that perched groundwater conditions would be encountered on site. There is a network of old drain tiles beneath the field, as was commonly done in the past for drainage. Perched groundwater conditions often occur over fine-grained native deposits such as those beneath the site, particularly during the wet season. It is anticipated that groundwater conditions will vary depending on the season, local subsurface conditions, changes in site utilization, and other factors. The groundwater conditions reported above are for the specific date and locations indicated, and therefore may not necessarily be indicative of other times and/or locations.

CONCLUSIONS AND RECOMMENDATIONS

Results of this study indicate that the proposed development is geotechnically feasible, provided that the recommendations of this report are incorporated into the design and construction phases of the project. Recommendations are presented below regarding site preparation and undocumented fill removal, engineered fill, wet weather earthwork, spread footing foundations, below grade structural retaining walls, concrete slabs-on-grade, perimeter footing drains, seismic design, excavating conditions and utility trench backfill, and erosion control considerations.

Site Preparation and Undocumented Fill Removal

The areas of the site to be graded should first be cleared of vegetation, undocumented fill, and any loose debris; and debris from clearing should be removed from the site. Organic-rich topsoil should then be removed to competent native soils. We anticipate that the average depth of topsoil stripping will be about 12 inches over most of the site, however deeper stripping may be needed in localized areas. The final depth of stripping removal may vary depending on local subsurface conditions and the contractor's methods, and should be determined on the basis of site observations after the initial stripping has been performed. Stripped organic soil should be stockpiled only in designated areas or removed from the site and stripping operations should be observed and documented by HGSI. Existing subsurface structures (tile drains, old utility lines, septic leach fields, etc.) beneath areas of proposed structures and pavement should be removed and the excavations backfilled with engineered fill.

There is potential for old fills to be present on site in areas beyond our explorations. Where encountered beneath proposed structures, pavements, or other settlement-sensitive improvements, undocumented fill should be removed down to firm inorganic native soils and the removal area backfilled with engineered fill (see below). HGSI should observe removal excavations (if any) prior to fill placement to verify that overexcavations are adequate and an appropriate bearing stratum is exposed.

In construction areas, once stripping has been verified, the area should be ripped or tilled to a depth of 12 inches, moisture conditioned, and compacted in-place prior to the placement of engineered fill. Exposed subgrade soils should be evaluated by HGSI. For large areas, this evaluation is normally performed by proof-rolling the exposed subgrade with a fully loaded scraper or dump truck. For smaller areas where access is restricted, the subgrade should be evaluated by probing the soil with a steel probe. Soft/loose soils identified during subgrade preparation should be compacted to a firm and unyielding condition or over-excavated and replaced with engineered fill, as described below. The depth of overexcavation, if required, should be evaluated by HGSI at the time of construction.

Engineered Fill

In general, we anticipate that on-site soils will be suitable for use as engineered fill in dry weather conditions, provided they are relatively free of organics and are properly moisture conditioned for compaction. Imported fill material must be approved by the geotechnical engineer prior to being imported to the site. Oversize material greater than 6 inches in size should not be used within 3 feet of foundation footings, and material greater than 12 inches in diameter should not be used in engineered fill.

Engineered fill should be compacted in horizontal lifts not exceeding 8 inches using standard compaction equipment. We recommend that engineered fill be compacted to at least 90 percent of the maximum dry density determined by ASTM D1557 (Modified Proctor) or equivalent. On-site soils may be wet or dry of optimum; therefore, we anticipate that moisture conditioning of native soil will be necessary for compaction operations.

Proper test frequency and earthwork documentation usually requires daily observation and testing during stripping, rough grading, and placement of engineered fill. Field density testing should conform to ASTM D2922 and D3017, or D1556. Engineered fill should be periodically observed and tested by the project geotechnical engineer or his representative. Typically, one density test is performed for at least every 2 vertical feet of fill placed or every 500 yd^3, whichever requires more testing.

Wet Weather Earthwork

The on-site soils are moisture sensitive and may be difficult to handle or traverse with construction equipment during periods of wet weather. Earthwork is typically most economical when performed under dry weather conditions. Earthwork performed during the wet-weather season will probably require expensive measures such as cement treatment or imported granular material to compact fill to the recommended engineering specifications. If earthwork is to be performed or fill is to be placed in wet weather or under wet conditions when soil moisture content is difficult to control, the following recommendations should be incorporated into the contract specifications.

- Earthwork should be performed in small areas to minimize exposure to wet weather. Excavation or the removal of unsuitable soils should be followed promptly by the placement and compaction of clean engineered fill. The size and type of construction equipment used may have to be limited to prevent soil disturbance. Under some circumstances, it may be necessary to excavate soils with a backhoe to minimize subgrade disturbance caused by equipment traffic;
- The ground surface within the construction area should be graded to promote run-off of surface water and to prevent the ponding of water;
- Material used as engineered fill should consist of clean, granular soil containing less than about 7 percent fines. The fines should be non-plastic. Alternatively, cement treatment of on-site soils may be performed to facilitate wet weather placement;

- The ground surface within the construction area should be sealed by a smooth drum vibratory roller, or equivalent, and under no circumstances should be left uncompacted and exposed to moisture. Soils which become too wet for compaction should be removed and replaced with clean granular materials;
- Excavation and placement of fill should be observed by the geotechnical engineer to verify that all unsuitable materials are removed and suitable compaction and site drainage is achieved; and
- Bales of straw and/or geotextile silt fences should be strategically located to control erosion.

If cement or lime treatment is used to facilitate wet weather construction, HGSI should be contacted to provide additional recommendations and field monitoring.

Spread Footing Foundations

Shallow, conventional isolated or continuous spread footings may be used to support the proposed structures, provided they are founded on competent native soils, or compacted engineered fill placed directly upon the competent native soils. We recommend a maximum allowable bearing pressure of 2,000 pounds per square foot (psf) for designing spread footings bearing on undisturbed native soils or engineered fill. The recommended maximum allowable bearing pressure may be increased by a factor of 1.33 for short term transient conditions such as wind and seismic loading. Exterior footings should be founded at least 18 inches below the lowest adjacent finished grade. Minimum footing widths should be determined by the project engineer/architect in accordance with applicable design codes.

Assuming construction is accomplished as recommended herein, and for the foundation loads anticipated, we estimate total settlement of spread foundations of less than about 1 inch and differential settlement between two adjacent load-bearing components supported on competent soil of less than about ½ inch. We anticipate that the majority of the estimated settlement will occur during construction, as loads are applied.

Wind, earthquakes, and unbalanced earth loads will subject the proposed structure to lateral forces. Lateral forces on a structure will be resisted by a combination of sliding resistance of its base or footing on the underlying soil and passive earth pressure against the buried portions of the structure. For use in design, a coefficient of friction of 0.5 may be assumed along the interface between the base of the footing and subgrade soils. Passive earth pressure for buried portions of structures may be calculated using an equivalent fluid weight of 390 pounds per cubic foot (pcf), assuming footings are cast against dense, natural soils or engineered fill. The recommended coefficient of friction and passive earth pressure values do not include a safety factor. The upper 12 inches of soil should be neglected in passive pressure computations unless it is protected by pavement or slabs on grade.

Footing excavations should be trimmed neat and the bottom of the excavation should be carefully prepared. Loose, wet or otherwise softened soil should be removed from the footing excavation prior to placing reinforcing steel bars. HGSI should observe foundation excavations prior to placing crushed rock, to verify that adequate bearing soils have been reached. Due to the high moisture sensitivity of on-site soils, construction during wet weather may require overexcavation of footings and backfill with compacted, crushed aggregate.

Below-Grade Structural Retaining Walls

Lateral earth pressures against below-grade retaining walls will depend upon the inclination of any adjacent slopes, type of backfill, degree of wall restraint, method of backfill placement, degree of backfill compaction, drainage provisions, and magnitude and location of any adjacent surcharge loads. At-rest soil pressure is exerted on a retaining wall when it is restrained against rotation. In contrast, active soil pressure will be exerted on a wall if its top is allowed to rotate or yield a distance of roughly 0.001 times its height or greater. If the subject retaining walls will be free to rotate at the top, they should be designed for an active earth pressure equivalent to that generated by a fluid weighing 35 pcf for level backfill against the wall. For

restrained walls, an at-reset equivalent fluid pressure of 54 pcf should be used in design, again assuming level backfill against the wall. These values assume that the recommended drainage provisions are incorporated, and hydrostatic pressures are not allowed to develop against the wall.

During a seismic event, lateral earth pressures acting on below-grade structural walls will increase by an incremental amount that corresponds to the earthquake loading. Based on the Mononobe-Okabe equation and peak horizontal accelerations appropriate for the site location, seismic loading should be modeled using the active or at-rest earth pressures recommended above, plus an incremental rectangular-shaped seismic load of magnitude 5H, where H is the total height of the wall.

We assume relatively level ground surface below the base of the walls. As such, we recommend passive earth pressure of 390 pcf for use in design, assuming wall footings are cast against competent native soils or engineered fill. If the ground surface slopes down and away from the base of any of the walls, a lower passive earth pressure should be used and HGSI should be contacted for additional recommendations.

A coefficient of friction of 0.5 may be assumed along the interface between the base of the wall footing and subgrade soils. The recommended coefficient of friction and passive earth pressure values do not include a safety factor, and an appropriate safety factor should be included in design. The upper 12 inches of soil should be neglected in passive pressure computations unless it is protected by pavement or slabs on grade.

The above recommendations for lateral earth pressures assume that the backfill behind the subsurface walls will consist of properly compacted structural fill, and no adjacent surcharge loading. If the walls will be subjected to the influence of surcharge loading within a horizontal distance equal to or less than the height of the wall, the walls should be designed for the additional horizontal pressure. For uniform surcharge pressures, a uniformly distributed lateral pressure of 0.3 times the surcharge pressure should be added.

The recommended equivalent fluid densities assume a free-draining condition behind the walls so that hydrostatic pressures do not build up. This can be accomplished by placing a 12-inch wide zone of crushed drain rock containing less than 5 percent fines against the walls. A 3-inch minimum diameter perforated, plastic drain pipe should be installed at the base of the walls and connected to a sump to remove water from the crushed drain rock zone. The drain pipe should be wrapped in filter fabric (Mirafi 140N or other as approved by the geotechnical engineer) to minimize clogging. The above drainage measures are intended to remove water from behind the wall to prevent hydrostatic pressures from building up. Additional drainage measures may be specified by the project architect or structural engineer, for damp-proofing or other reasons.

HGSI should be contacted during construction to verify subgrade strength in wall keyway excavations, to verify that backslope soils are in accordance with our assumptions, and to take density tests on the wall backfill materials.

Concrete Slabs-on-Grade

Preparation of areas beneath concrete slab-on-grade floors should be performed as recommended in the *Site Preparation* section. Care should be taken during excavation for foundations and floor slabs, to avoid disturbing subgrade soils. If subgrade soils have been adversely impacted by wet weather or otherwise disturbed, the surficial soils should be scarified to a minimum depth of 8 inches, moisture conditioned to within about 3 percent of optimum moisture content, and compacted to engineered fill specifications. Alternatively, disturbed soils may be removed and the removal zone backfilled with additional crushed rock. For evaluation of the concrete slab-on-grade floors using the beam on elastic foundation method, a modulus of subgrade reaction of 200 kcf (115 pci) should be assumed for the soils anticipated at subgrade depth. This value assumes the concrete slab system is designed and constructed as recommended herein, with a minimum thickness of crushed rock of 8 inches beneath the slab.

Interior slab-on-grade floors should be provided with an adequate moisture break. The capillary break material should consist of ODOT open graded aggregate per ODOT Standard Specifications 02630-2. The minimum recommended thickness of capillary break materials on re-compacted soil subgrade is 8 inches. The total thickness of crushed aggregate will be dependent on the subgrade conditions at the time of construction, and should be verified visually by proof-rolling. Under-slab aggregate should be compacted to at least 90% of its maximum dry density as determined by ASTM D1557 or equivalent.

In areas where moisture will be detrimental to floor coverings or equipment inside the proposed structure, appropriate vapor barrier and damp-proofing measures should be implemented. A commonly applied vapor barrier system consists of a 10-mil polyethylene vapor barrier placed directly over the capillary break material. With this type of system, an approximately 2-inch thick layer of sand is often placed over the vapor barrier to protect it from damage, to aid in curing of the concrete, and also to help prevent cement from bleeding down into the underlying capillary break materials. Other damp/vapor barrier systems may also be feasible. Appropriate design professionals should be consulted regarding vapor barrier and damp proofing systems, ventilation, building material selection and mold prevention issues, which are outside HGSI's area of expertise.

Perimeter Footing Drains

Due to the potential for perched surface water above fine grained deposits such as those encountered at the site, we recommend the outside edge of perimeter footings be provided with a drainage system consisting of 3-inch minimum diameter perforated PVC pipe embedded in a minimum of 1 ft^3 per lineal foot of clean, free-draining sand and gravel or 1"- ¼" drain rock. The drain pipe and surrounding drain rock should be wrapped in non-woven geotextile (Mirafi 140N, or approved equivalent) to minimize the potential for clogging and/or ground loss due to piping. Water collected from the footing drains should be directed into the local storm drain system or other suitable outlet. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. The footing drains should include clean-outs to allow periodic maintenance and inspection.

Down spouts and roof drains should collect roof water in a system separate from the footing drains in order to reduce the potential for clogging. Roof drain water should be directed to an appropriate discharge point well away from structural foundations. Grades should be sloped downward and away from buildings to reduce the potential for ponded water near structures.

Seismic Design

Structures should be designed to resist earthquake loading in accordance with the methodology described in the 2012 International Building Code (IBC) with applicable 2014 Oregon Structural Specialty Code (OSSC) revisions. We recommend Site Class C be used for design per the OSSC, which references ASCE 7-10, Chapter 20, Table 20.3-1. Design values determined for the site using the USGS (United States Geological Survey) *Earthquake Ground Motion Parameters* utility are summarized on Table 1.

Table 1. Recommended Earthquake Ground Motion Parameters (2012 IBC / 2014 OSSC)

Parameter	Value
Location (Lat, Long), degrees	45.3234, -122.7469
Mapped Spectral Acceleration Values (MCE, Site Class B):	
Short Period, S_s	0.930 g
1.0 Sec Period, S_1	0.409 g
Soil Factors for Site Class D:	
F_a	1.128
F_v	1.591
$SD_s = 2/3 \times F_a \times S_s$	0.700 g
$SD_1 = 2/3 \times F_v \times S_1$	0.434 g

Potential seismic impacts also include secondary effects such as soil liquefaction, fault rupture potential, and other hazards as discussed below:

- **Soil Liquefaction Potential –** Soil liquefaction is a phenomenon wherein saturated soil deposits temporarily lose strength and behave as a liquid in response to earthquake shaking. Soil liquefaction is generally limited to loose, granular soils located below the water table. Following development, on-site soils will consist predominantly of engineered fill or stiff clayey native soils above the water table, which are not considered susceptible to liquefaction. Therefore, it is our opinion that special design or construction measures are not required to mitigate the effects of liquefaction.
- **Fault Rupture Potential** – Based on our review of available geologic literature, we are not aware of any mapped active (demonstrating movement in the last 10,000 years) faults on the site. During our field investigation, we did not observe any evidence of surface rupture or recent faulting. Therefore, we conclude that the potential for fault rupture on site is low.
- **Seismic Induced Landslide** – Topography in the vicinity of the subject site is generally flat to gently sloping. The potential for slope instability and seismic induced landslide on site is considered very low.
- **Effects of Local Geology and Topography** – In our opinion, no additional seismic hazard will occur due to local geology or topography. The site is expected to have no greater seismic hazard than surrounding properties and the Wilsonville area in general.

Excavating Conditions and Utility Trench Backfill

We anticipate that on-site soils can be excavated using conventional heavy equipment such as scrapers and trackhoes to a depth of 8 feet and likely greater. Maintenance of safe working conditions, including temporary excavation stability, is the responsibility of the contractor. Temporary cuts in excess of 4 feet in height should be sloped in accordance with U.S. Occupational Safety and Health Administration (OSHA) regulations (29 CFR Part 1926), or be shored. The existing native soils classify as Type B Soil and temporary excavation side slope inclinations as steep as 1H:1V may be assumed for planning purposes. This cut slope inclination is applicable to excavations above the water table only.

Perched groundwater conditions often occur over fine-grained native deposits such as those beneath the site, particularly during the wet season. If encountered, the contractor should be prepared to implement an appropriate dewatering system for installation of the utilities. At this time, we anticipate that dewatering systems consisting of ditches, sumps and pumps would be adequate for control of groundwater where

encountered during construction conducted during the dry season. Regardless of the dewatering system used, it should be installed and operated such that in-place soils are prevented from being removed along with the groundwater.

Vibrations created by traffic and construction equipment may cause some caving and raveling of excavation walls. In such an event, lateral support for the excavation walls should be provided by the contractor to prevent loss of ground support and possible distress to existing or previously constructed structural improvements.

Utility trench backfill should consist of ¾"-0 crushed rock, compacted to at least 90% of the maximum dry density obtained by Modified Proctor (ASTM D1557) or equivalent. Initial backfill lift thick nesses for a ¾"-0 crushed aggregate base may need to be as great as 4 feet to reduce the risk of flattening underlying flexible pipe. Subsequent lift thickness should not exceed 1 foot. If imported granular fill material is used, then the lifts for large vibrating plate-compaction equipment (e.g. hoe compactor attachments) may be up to 2 feet, provided that proper compaction is being achieved and each lift is tested. Use of large vibrating compaction equipment should be carefully monitored near existing structures and improvements due to the potential for vibration-induced damage.

Adequate density testing should be performed during construction to verify that the recommended relative compaction is achieved. Typically, one density test is taken for every 4 vertical feet of backfill on each 200-lineal-foot section of trench.

Erosion Control Considerations

During our field exploration program, we did not observe soil types that would be considered highly susceptible to erosion. Erosion at the site during construction can be minimized by implementing the project erosion control plan, which should include judicious use of straw, bio-bags, silt fences, or other appropriate technology. Where used, erosion control devices should be in place and remain in place throughout site preparation and construction. Areas of exposed soil requiring immediate and/or temporary protection against exposure should be covered with either mulch or erosion control netting/blankets.

UNCERTAINTIES AND LIMITATIONS

We have prepared this report for the owner and his/her consultants for use in design of this project only. This report should be provided in its entirety to prospective contractors for bidding and estimating purposes; however, the conclusions and interpretations presented in this report should not be construed as a warranty of the subsurface conditions. Experience has shown that soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions can occur between explorations that may not be detected by a geotechnical study. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, HGSI should be notified for review of the recommendations of this report, and revision of such if necessary.

Sufficient geotechnical monitoring, testing and consultation should be provided during construction to confirm that the conditions encountered are consistent with those indicated by explorations. Recommendations for design changes will be provided should conditions revealed during construction differ from those anticipated, and to verify that the geotechnical aspects of construction comply with the contract plans and specifications.

Within the limitations of scope, schedule and budget, HGSI executed these services in accordance with generally accepted professional principles and practices in the field of geotechnical engineering at the time the report was prepared. No warranty, expressed or implied, is made. The scope of our work did not include

environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic substances in the soil, surface water, or groundwater at this site.

We appreciate this opportunity to be of service.

Sincerely,

HARDMAN GEOTECHNICAL SERVICES INC.

Scott L. Hardman, P.E., G.E.
Geotechnical Engineer

Attachments: References
Figure 1 – Vicinity Map
Figure 2 – Site Plan
Logs of Test Pits TP-1 through TP-5
Logs of Hand Auger Borings HA-3 and HA-4

REFERENCES

Beeson, M.H., Tolan, T.L., and Madin, I.P., 1991, Geologic map of the Portland Quadrangle, Multnomah, and Washington Counties, Oregon: Oregon Department of Geology and Mineral Industries Geological Map Series GMS-75, scale 1:24,000.

Madin, I.P., 1990, Earthquake hazard geology maps of the Portland metropolitan area, Oregon: Oregon Department of Geology and Mineral Industries Open-File Report 0-90-2, scale 1:24,000, 22 p.

Snyder, D.T., 2008, Estimated Depth to Ground Water and Configuration of the Water Table in the Portland, Oregon Area: U.S. Geological Survey Scientific Investigations Report 2008–5059, 41 p., 3 plates.

Yeats, R.S., Graven, E.P., Werner, K.S., Goldfinger, C., and Popowski, T., 1996, Tectonics of the Willamette Valley, Oregon: in Assessing earthquake hazards and reducing risk in the Pacific Northwest, Vol. 1: U.S. Geological Survey Professional Paper 1560, P. 183-222, 5 plates, scale 1:100,000.

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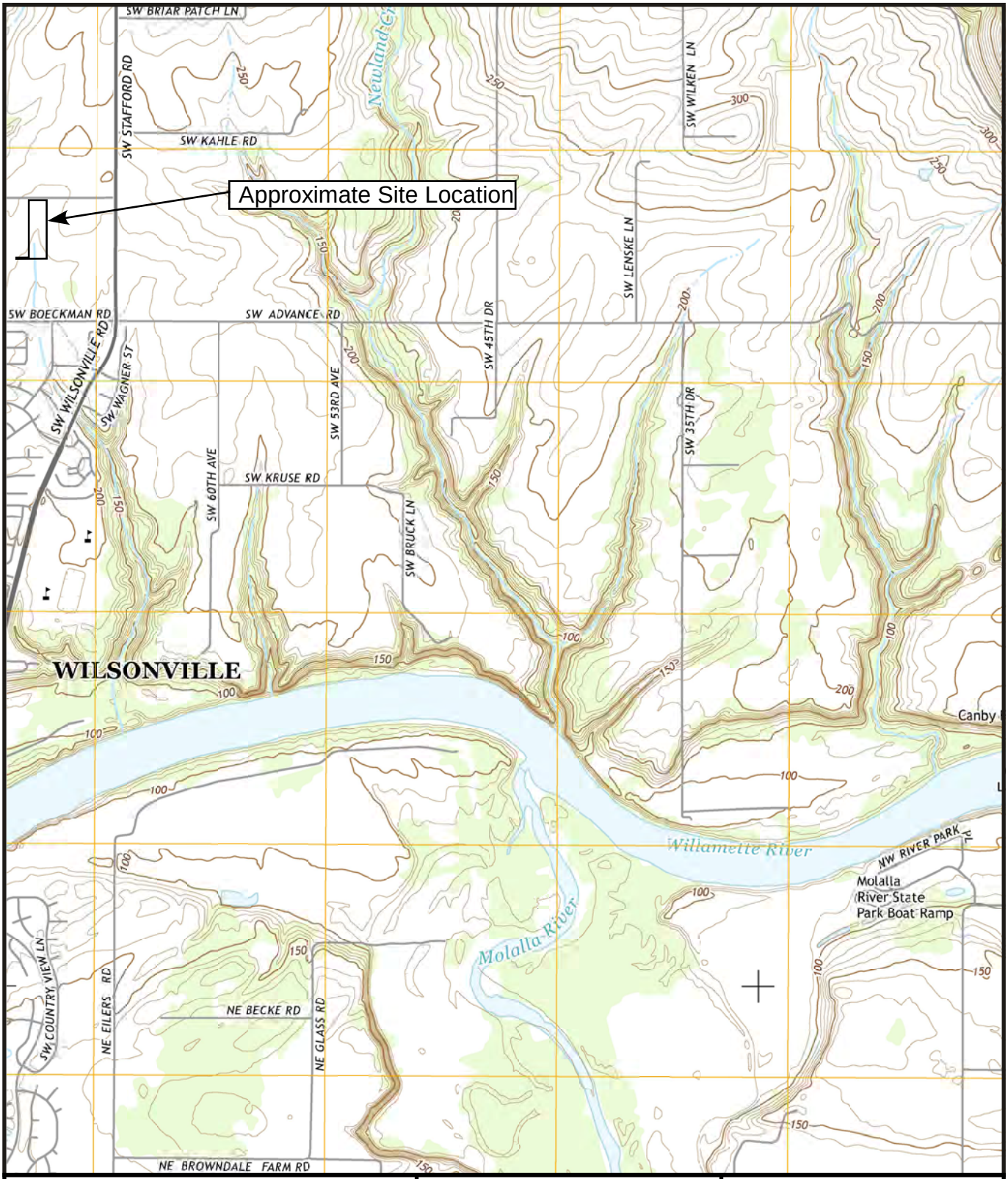
VICINITY MAP



Project: Coates Property Wilsonville, Oregon	Project No. 18-2362	FIGURE 1

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SITE PLAN

Legend

TP-4 Test Pit Designation and Approximate Location

HA-4 Hand Auger Boring from Previous Study (School Dist Prop)

Base map obtained from Google Earth

Approximate Site Location

Project: Coates Property Wilsonville, Oregon	Project No. 18-2362	FIGURE 2

TEST PIT LOG

Project: Frog Pond - Coates Property Wilsonville, Oregon	Project No. 18-2362	Test Pit No. TP-1

Depth (ft)	Sample Interval	Sample Designation	Pocket Penetrometer (tons/ft²)	Moisture Content (%)	Groundwater	Material Description
0						Soft, highly organic (grass roots) SILT, dark brown, dessicated (Till zone / disturbed native soil)
1						Very stiff to stiff, clayey SILT (ML),light brown with orange and gray mottling, dessicated (Willamette Formation)
2						
3						
4						Very stiff to stiff, fine grained sandy SILT (ML),light brown with orange and gray mottling, slightly moist (Willamette Formation)
5						
6						
7						Moistening with depth
8						Test pit terminated at 8 feet No groundwater encountered No caving occured
9						
10						
11						
12						
13						
14						
15						

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LEGEND

▽ Observed seepage at time of excavation

Date Excavated: 8/30/18

Logged By: CSH

TEST PIT LOG

Project: Frog Pond - Coates Property Wilsonville, Oregon	Project No. 18-2362	Test Pit No. TP- 2

Depth (ft)	Sample Interval	Sample Designation	Pocket Penetrometer (tons/ft²)	Moisture Content (%)	Groundwater	Material Description
0						Soft, highly organic (grass roots) SILT, dark brown, dessicated (Till zone / disturbed native soil)
1						Very stiff to stiff, clayey SILT (ML),light brown with orange and gray mottling, dessicated (Willamette Formation)
2						Very stiff to stiff, clayey SILT (ML),light brown with orange and gray mottling, slightly moist (Willamette Formation)
3						
4						Moistening with depth
5						
6						
7						
8						
9						Test pit terminated at 9 feet No groundwater encountered No caving occured
10						
11						
12						
13						
14						
15						

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LEGEND

▽ Observed seepage at time of excavation

Date Excavated: 8/30/18

Logged By: CSH

TEST PIT LOG

Project: Frog Pond - Coates Property Wilsonville, Oregon	Project No. 18-2362	Test Pit No. TP-3

Depth (ft)	Sample Interval	Sample Designation	Pocket Penetrometer (tons/ft²)	Moisture Content (%)	Groundwater	Material Description
						Soft, highly organic (grass roots) SILT, dark brown, dessicated (Till zone / disturbed native soil)
1						Very stiff to stiff, clayey SILT (ML),light brown with orange and gray mottling, dessicated (Willamette Formation)
2						
3						
4						
5						Very stiff to stiff, fine grained sandy SILT (ML),light brown with orange and gray mottling, moist (Willamette Formation)
6						
7						
8						Test pit terminated at 8 feet No groundwater encountered No caving occured
9						
10						
11						
12						
13						
14						
15						

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LEGEND

▽ Observed seepage at time of excavation

Date Excavated: 8/30/18

Logged By: CSH

TEST PIT LOG

Project: Frog Pond - Coates Property Wilsonville, Oregon	Project No. 18-2362	Test Pit No. TP- 4

Depth (ft)	Sample Interval	Sample Designation	Pocket Penetrometer (tons/ft²)	Moisture Content (%)	Groundwater	Material Description
0						Soft, highly organic (grass roots) SILT (OL), dark brown, dessicated (Till zone / disturbed native soil)
1						Medium stiff, moderately organic clayey SILT (ML) Dessicated (Till zone)
2						
3						Medium stiff to stiff, SILT with trace fine grained sand(ML),light brown with orange and gray mottling, slightly moist (Willamette Formation)
4						
5						
6						
7						Medium stiff to stiff, fine grained sandy SILT (ML),light brown with orange and gray mottling, moist (Willamette Formation)
8						Test pit terminated at 8 feet No groundwater encountered No caving occured
9						
10						
11						
12						
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15						

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LEGEND

▽ Observed seepage at time of excavation

Date Excavated: 8/30/18

Logged By: CSH

TEST PIT LOG

Project: Frog Pond - Coates Property Wilsonville, Oregon	Project No. 18-2362	Test Pit No. TP- 5

Depth (ft)	Sample Interval	Sample Designation	Pocket Penetrometer (tons/ft²)	Moisture Content (%)	Groundwater	Material Description
0						Soft, highly organic (grass roots) SILT (OL), dark brown, dessicated (Till zone / disturbed native soil)
1						Medium stiff, moderately organic clayey SILT (ML) Dessicated (Till zone)
2						
3						Medium stiff to stiff, SILT with trace fine grained sand(ML),light brown with orange and gray mottling, slightly moist (Willamette Formation)
4						
5						
6						
7						Medium stiff to stiff, fine grained sandy SILT (ML),light brown with orange and gray mottling, moist (Willamette Formation)
8						Test pit terminated at 8 feet No groundwater encountered No caving occured
9						
10						
11						
12						
13						
14						
15						

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LEGEND

▽ Observed seepage at time of excavation

Date Excavated: 8/30/18

Logged By: CSH

HAND AUGER BORING LOG

Project: School District Properties Willsonville, Oregon	Project No. 18-2317	Boring No. HA- 3

Depth (ft)	Sample Interval	Sample Designation	In-Situ Dry Density (lb/ft^3)	Moisture Content (%)	Groundwater	Material Description
1						Soft, highly organic (grass roots) SILT, dark brown, moist (Topsoil)
2						very stiff, clay with trace silt, grey brown, moist (dry creek bed)
3						Medium stiff to stiff, clayey SILT (ML), light brown with orange and gray mottling, slightly moist (Willamette Formation)
4						Boring terminated at 4 feet
5						
6						
7						

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LEGEND

S-1 — Soil Sample Depth Interval and Designation

Water Level at Time of Drilling

Date Excavated: 05/23/18

Logged By: EAH

Surface Elevation:

HAND AUGER BORING LOG

Project: School District Properties Willsonville, Oregon	Project No. 18-2317	Boring No. HA- 4

Depth (ft)	Sample Interval	Sample Designation	In-Situ Dry Density (lb/ft^3)	Moisture Content (%)	Groundwater	Material Description
0						Soft, highly organic (grass roots) SILT, dark brown, moist (Topsoil)
1						Medium stiff to stiff, clayey SILT (ML), light brown with orange and gray mottling, slightly moist (Willamette Formation)
2						
3						
4						Boring terminated at 4 feet
5						
6						
7						

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LEGEND

S-1 — Soil Sample Depth Interval and Designation

Water Level at Time of Drilling

Date Excavated: 05/23/18

Logged By: EAH

Surface Elevation:

Appendix G-2

Geotechnical Report-Morgan Property

HARDMAN GEOTECHNICAL SERVICES INC.
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April 23, 2018
HGSI Project No. 18-2306

Dan Grimberg / Kristi Hosea
West Hills Land Development
3330 NW Yeon Avenue, Suite 200
Portland, Oregon 97210

Via e-mail (pdf format); hard copies can be mailed on request

Subject: GEOTECHNICAL ENGINEERING REPORT
MORGAN PROPERTY
6720 SW FROG POND LANE
WILSONVILLE, CLACKAMAS COUNTY, OREGON

This report presents the results of a geotechnical engineering study conducted by Hardman Geotechnical Services Inc. (HGSI) for the property at 6720 SW Frog Pond Lane in Wilsonville, Oregon (Figure 1). The purpose of this study was to evaluate subsurface conditions at the site and to provide geotechnical recommendations for site development. This geotechnical study was performed in accordance with HGSI Proposal No. 18-794, dated March 28, 2018, and your subsequent authorization of our proposal and *General Conditions for Geotechnical Services*.

SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The project totals about 10.01 acres, and is currently occupied by a single-family home constructed in 1965. Other existing site improvements include an in-ground swimming pool, and a detached garage. Site vegetation consists of lawn, landscaping shrubs and trees around the existing home. The majority of the property is grass field or pasture. Site slopes are gentle, generally down toward the south. The site is within an area of rural residential properties.

A grading plan has not been finalized and should be reviewed by HGSI when completed. Underground utilities and onsite stormwater systems are also planned. HGSI should review the grading plan when available to verify consistency with the geotechnical recommendations, and to provide any supplemental or revised input to the design needed based on geotechnical considerations.

REGIONAL GEOLOGY AND SEISMIC SETTING

The subject site lies within the Portland Basin, a broad structural depression situated between the Coast Range on the west and the Cascade Range on the east. The Portland Basin is a northwest-southwest trending structural basin produced by broad regional downwarping of the area. The Portland Basin is approximately 20 miles wide and 45 miles long and is filled with consolidated and unconsolidated sedimentary rocks of late Miocene, Pliocene and Pleistocene age.

The subject site is underlain by Quaternary age (last 1.6 million years) loess, a windblown silt deposit that mantles older deposits and basalt bedrock in the Portland Hills (Madin, 1990). The loess generally consists of massive silt deposited following repeated catastrophic flooding events in the Willamette Valley, the last of

which occurred about 10,000 years ago. In localized areas, the loess includes buried paleosols that developed between depositional events. Regionally, the total thickness of loess ranges from 5 feet to greater than 100 feet.

The loess is underlain by residual soil formed by in place weathering of the underlying Columbia River Basalt Formation (Madin, 1990). The Miocene aged (about 14.5 to 16.5 million years ago) Columbia River Basalts are a thick sequence of lava flows which form the crystalline basement of the Tualatin Valley. The basalts are composed of dense, finely crystalline rock that is commonly fractured along blocky and columnar vertical joints. Individual basalt flow units typically range from 25 to 125 feet thick and interflow zones are typically vesicular, scoriaceous, brecciated, and sometimes include sedimentary rocks.

At least three major fault zones capable of generating damaging earthquakes are known to exist in the region. These include the Portland Hills Fault Zone, Gales Creek-Newberg-Mt. Angel Structural Zone, and the Cascadia Subduction Zone. These potential earthquake source zones are included in the determination of seismic design values for structures, as presented in the *Seismic Design* section. None of the known faults extend beneath the site.

FIELD EXPLORATION – HAND AUGER BORINGS

The site-specific exploration for this study was conducted on April 19, 2018 and consisted of five hand auger borings (designated HA-1 through HA-5) excavated to maximum depths of approximately 5 feet below ground surface (bgs) at the approximate locations shown on Figure 2. It should be noted that exploration locations were determined in the field by pacing or taping distances from apparent property corners and other site features shown on the plans provided. As such, the locations of the explorations should be considered approximate.

Explorations were conducted under the full-time observation of HGSI personnel. Soil samples obtained from the borings were classified in the field and representative portions were placed in relatively air-tight plastic bags. These soil samples were then returned to the laboratory for further examination. Pertinent information including soil sample depths, stratigraphy, soil engineering characteristics, and groundwater occurrence was recorded. Soils were classified in general accordance with the Unified Soil Classification System.

Summary exploration logs are attached to this report. The stratigraphic contacts shown on the individual borehole logs represent the approximate boundaries between soil types. The actual transitions may be more gradual. The soil and groundwater conditions depicted are only for the specific dates and locations reported, and therefore, are not necessarily representative of other locations and times.

SUBSURFACE CONDITIONS

The following discussion is a summary of subsurface conditions encountered in our explorations. For more detailed information regarding subsurface conditions at specific exploration locations, refer to the attached hand auger logs. Also, please note that subsurface conditions can vary between exploration locations, as discussed in the *Uncertainty and Limitations* section below.

Soil

On-site soils are anticipated to consist of topsoil, clayey silt, and clay, as described below.

> ***Topsoil –*** From the ground surface, all explorations encountered 1.5 to 2 feet of topsoil, comprised of moist silt. The upper about 1 foot of the topsoil was highly organic.

Clayey Silt to Silty Clay – Beneath the topsoil in the hand augers, we encountered stiff to very stiff, moist to wet, brown clayey silt to silty clay. The upper several feet of this unit exhibited orange and gray mottling. All of the explorations terminated in the clayey silt to silty clay unit, at maximum depth of about 5 feet bgs.

Groundwater

During the field exploration, no static groundwater table was encountered to the maximum depth of exploration at 5 feet bgs. Slight seepage was encountered in borings HA-1, HA-3 and HA-4 at about 2.5 to 3 feet bgs. Perched groundwater conditions often occur over fine-grained native deposits such as those beneath the site, particularly during the wet season. It is anticipated that groundwater conditions will vary depending on the season, local subsurface conditions, changes in site utilization, and other factors. The groundwater conditions reported above are for the specific date and locations indicated, and therefore may not necessarily be indicative of other times and/or locations.

CONCLUSIONS AND RECOMMENDATIONS

Results of this study indicate that the proposed development is geotechnically feasible, provided that the recommendations of this report are incorporated into the design and construction phases of the project. Recommendations are presented below regarding site preparation and undocumented fill removal, engineered fill, wet weather earthwork, spread footing foundations, below grade structural retaining walls, concrete slabs-on-grade, perimeter footing drains, seismic design, excavating conditions and utility trench backfill, and erosion control considerations.

Site Preparation and Undocumented Fill Removal

The areas of the site to be graded should first be cleared of vegetation, undocumented fill, and any loose debris; and debris from clearing should be removed from the site. Organic-rich topsoil should then be removed to competent native soils. We anticipate that the average depth of topsoil stripping will be about 12 inches over most of the site, however deeper stripping may be needed in localized areas. The final depth of stripping removal may vary depending on local subsurface conditions and the contractor's methods, and should be determined on the basis of site observations after the initial stripping has been performed. Stripped organic soil should be stockpiled only in designated areas or removed from the site and stripping operations should be observed and documented by HGSI. Existing subsurface structures (tile drains, old utility lines, septic leach fields, etc.) beneath areas of proposed structures and pavement should be removed and the excavations backfilled with engineered fill.

There is potential for old fills to be present on site in areas beyond our explorations. Where encountered beneath proposed structures, pavements, or other settlement-sensitive improvements, undocumented fill should be removed down to firm inorganic native soils and the removal area backfilled with engineered fill (see below). HGSI should observe removal excavations (if any) prior to fill placement to verify that overexcavations are adequate and an appropriate bearing stratum is exposed.

In construction areas, once stripping has been verified, the area should be ripped or tilled to a depth of 12 inches, moisture conditioned, and compacted in-place prior to the placement of engineered fill. Exposed subgrade soils should be evaluated by HGSI. For large areas, this evaluation is normally performed by proof-rolling the exposed subgrade with a fully loaded scraper or dump truck. For smaller areas where access is restricted, the subgrade should be evaluated by probing the soil with a steel probe. Soft/loose soils identified during subgrade preparation should be compacted to a firm and unyielding condition or over-excavated and replaced with engineered fill, as described below. The depth of overexcavation, if required, should be evaluated by HGSI at the time of construction.

Engineered Fill

In general, we anticipate that on-site soils will be suitable for use as engineered fill in dry weather conditions, provided they are relatively free of organics and are properly moisture conditioned for compaction. Imported fill material must be approved by the geotechnical engineer prior to being imported to the site. Oversize material greater than 6 inches in size should not be used within 3 feet of foundation footings, and material greater than 12 inches in diameter should not be used in engineered fill.

Engineered fill should be compacted in horizontal lifts not exceeding 8 inches using standard compaction equipment. We recommend that engineered fill be compacted to at least 90 percent of the maximum dry density determined by ASTM D1557 (Modified Proctor) or equivalent. On-site soils may be wet or dry of optimum; therefore, we anticipate that moisture conditioning of native soil will be necessary for compaction operations.

Proper test frequency and earthwork documentation usually requires daily observation and testing during stripping, rough grading, and placement of engineered fill. Field density testing should conform to ASTM D2922 and D3017, or D1556. Engineered fill should be periodically observed and tested by the project geotechnical engineer or his representative. Typically, one density test is performed for at least every 2 vertical feet of fill placed or every 500 yd^3, whichever requires more testing.

Wet Weather Earthwork

The on-site soils are moisture sensitive and may be difficult to handle or traverse with construction equipment during periods of wet weather. Earthwork is typically most economical when performed under dry weather conditions. Earthwork performed during the wet-weather season will probably require expensive measures such as cement treatment or imported granular material to compact fill to the recommended engineering specifications. If earthwork is to be performed or fill is to be placed in wet weather or under wet conditions when soil moisture content is difficult to control, the following recommendations should be incorporated into the contract specifications.

- Earthwork should be performed in small areas to minimize exposure to wet weather. Excavation or the removal of unsuitable soils should be followed promptly by the placement and compaction of clean engineered fill. The size and type of construction equipment used may have to be limited to prevent soil disturbance. Under some circumstances, it may be necessary to excavate soils with a backhoe to minimize subgrade disturbance caused by equipment traffic;
- The ground surface within the construction area should be graded to promote run-off of surface water and to prevent the ponding of water;
- Material used as engineered fill should consist of clean, granular soil containing less than about 7 percent fines. The fines should be non-plastic. Alternatively, cement treatment of on-site soils may be performed to facilitate wet weather placement;
- The ground surface within the construction area should be sealed by a smooth drum vibratory roller, or equivalent, and under no circumstances should be left uncompacted and exposed to moisture. Soils which become too wet for compaction should be removed and replaced with clean granular materials;
- Excavation and placement of fill should be observed by the geotechnical engineer to verify that all unsuitable materials are removed and suitable compaction and site drainage is achieved; and
- Bales of straw and/or geotextile silt fences should be strategically located to control erosion.

If cement or lime treatment is used to facilitate wet weather construction, HGSI should be contacted to provide additional recommendations and field monitoring.

Spread Footing Foundations

Shallow, conventional isolated or continuous spread footings may be used to support the proposed structures, provided they are founded on competent native soils, or compacted engineered fill placed directly upon the competent native soils. We recommend a maximum allowable bearing pressure of 2,000 pounds per square foot (psf) for designing spread footings bearing on undisturbed native soils or engineered fill. The recommended maximum allowable bearing pressure may be increased by a factor of 1.33 for short term transient conditions such as wind and seismic loading. Exterior footings should be founded at least 18 inches below the lowest adjacent finished grade. Minimum footing widths should be determined by the project engineer/architect in accordance with applicable design codes.

Assuming construction is accomplished as recommended herein, and for the foundation loads anticipated, we estimate total settlement of spread foundations of less than about 1 inch and differential settlement between two adjacent load-bearing components supported on competent soil of less than about ½ inch. We anticipate that the majority of the estimated settlement will occur during construction, as loads are applied.

Wind, earthquakes, and unbalanced earth loads will subject the proposed structure to lateral forces. Lateral forces on a structure will be resisted by a combination of sliding resistance of its base or footing on the underlying soil and passive earth pressure against the buried portions of the structure. For use in design, a coefficient of friction of 0.5 may be assumed along the interface between the base of the footing and subgrade soils. Passive earth pressure for buried portions of structures may be calculated using an equivalent fluid weight of 390 pounds per cubic foot (pcf), assuming footings are cast against dense, natural soils or engineered fill. The recommended coefficient of friction and passive earth pressure values do not include a safety factor. The upper 12 inches of soil should be neglected in passive pressure computations unless it is protected by pavement or slabs on grade.

Footing excavations should be trimmed neat and the bottom of the excavation should be carefully prepared. Loose, wet or otherwise softened soil should be removed from the footing excavation prior to placing reinforcing steel bars. HGSI should observe foundation excavations prior to placing crushed rock, to verify that adequate bearing soils have been reached. Due to the high moisture sensitivity of on-site soils, construction during wet weather may require overexcavation of footings and backfill with compacted, crushed aggregate.

Below-Grade Structural Retaining Walls

Lateral earth pressures against below-grade retaining walls will depend upon the inclination of any adjacent slopes, type of backfill, degree of wall restraint, method of backfill placement, degree of backfill compaction, drainage provisions, and magnitude and location of any adjacent surcharge loads. At-rest soil pressure is exerted on a retaining wall when it is restrained against rotation. In contrast, active soil pressure will be exerted on a wall if its top is allowed to rotate or yield a distance of roughly 0.001 times its height or greater. If the subject retaining walls will be free to rotate at the top, they should be designed for an active earth pressure equivalent to that generated by a fluid weighing 35 pcf for level backfill against the wall. For restrained walls, an at-reset equivalent fluid pressure of 54 pcf should be used in design, again assuming level backfill against the wall. These values assume that the recommended drainage provisions are incorporated, and hydrostatic pressures are not allowed to develop against the wall.

During a seismic event, lateral earth pressures acting on below-grade structural walls will increase by an incremental amount that corresponds to the earthquake loading. Based on the Mononobe-Okabe equation and peak horizontal accelerations appropriate for the site location, seismic loading should be modeled using the active or at-rest earth pressures recommended above, plus an incremental rectangular-shaped seismic load of magnitude 5H, where H is the total height of the wall.

We assume relatively level ground surface below the base of the walls. As such, we recommend passive earth pressure of 390 pcf for use in design, assuming wall footings are cast against competent native soils or engineered fill. If the ground surface slopes down and away from the base of any of the walls, a lower passive earth pressure should be used and HGSI should be contacted for additional recommendations.

A coefficient of friction of 0.5 may be assumed along the interface between the base of the wall footing and subgrade soils. The recommended coefficient of friction and passive earth pressure values do not include a safety factor, and an appropriate safety factor should be included in design. The upper 12 inches of soil should be neglected in passive pressure computations unless it is protected by pavement or slabs on grade.

The above recommendations for lateral earth pressures assume that the backfill behind the subsurface walls will consist of properly compacted structural fill, and no adjacent surcharge loading. If the walls will be subjected to the influence of surcharge loading within a horizontal distance equal to or less than the height of the wall, the walls should be designed for the additional horizontal pressure. For uniform surcharge pressures, a uniformly distributed lateral pressure of 0.3 times the surcharge pressure should be added.

The recommended equivalent fluid densities assume a free-draining condition behind the walls so that hydrostatic pressures do not build up. This can be accomplished by placing a 12-inch wide zone of crushed drain rock containing less than 5 percent fines against the walls. A 3-inch minimum diameter perforated, plastic drain pipe should be installed at the base of the walls and connected to a sump to remove water from the crushed drain rock zone. The drain pipe should be wrapped in filter fabric (Mirafi 140N or other as approved by the geotechnical engineer) to minimize clogging. The above drainage measures are intended to remove water from behind the wall to prevent hydrostatic pressures from building up. Additional drainage measures may be specified by the project architect or structural engineer, for damp-proofing or other reasons.

HGSI should be contacted during construction to verify subgrade strength in wall keyway excavations, to verify that backslope soils are in accordance with our assumptions, and to take density tests on the wall backfill materials.

Concrete Slabs-on-Grade

Preparation of areas beneath concrete slab-on-grade floors should be performed as recommended in the *Site Preparation* section. Care should be taken during excavation for foundations and floor slabs, to avoid disturbing subgrade soils. If subgrade soils have been adversely impacted by wet weather or otherwise disturbed, the surficial soils should be scarified to a minimum depth of 8 inches, moisture conditioned to within about 3 percent of optimum moisture content, and compacted to engineered fill specifications. Alternatively, disturbed soils may be removed and the removal zone backfilled with additional crushed rock. For evaluation of the concrete slab-on-grade floors using the beam on elastic foundation method, a modulus of subgrade reaction of 200 kcf (115 pci) should be assumed for the soils anticipated at subgrade depth. This value assumes the concrete slab system is designed and constructed as recommended herein, with a minimum thickness of crushed rock of 8 inches beneath the slab.

Interior slab-on-grade floors should be provided with an adequate moisture break. The capillary break material should consist of ODOT open graded aggregate per ODOT Standard Specifications 02630-2. The minimum recommended thickness of capillary break materials on re-compacted soil subgrade is 8 inches. The total thickness of crushed aggregate will be dependent on the subgrade conditions at the time of construction, and should be verified visually by proof-rolling. Under-slab aggregate should be compacted to at least 90% of its maximum dry density as determined by ASTM D1557 or equivalent.

In areas where moisture will be detrimental to floor coverings or equipment inside the proposed structure, appropriate vapor barrier and damp-proofing measures should be implemented. A commonly applied vapor

barrier system consists of a 10-mil polyethylene vapor barrier placed directly over the capillary break material. With this type of system, an approximately 2-inch thick layer of sand is often placed over the vapor barrier to protect it from damage, to aid in curing of the concrete, and also to help prevent cement from bleeding down into the underlying capillary break materials. Other damp/vapor barrier systems may also be feasible. Appropriate design professionals should be consulted regarding vapor barrier and damp proofing systems, ventilation, building material selection and mold prevention issues, which are outside HGSI's area of expertise.

Perimeter Footing Drains

Due to the potential for perched surface water above fine grained deposits such as those encountered at the site, we recommend the outside edge of perimeter footings be provided with a drainage system consisting of 3-inch minimum diameter perforated PVC pipe embedded in a minimum of 1 ft^3 per lineal foot of clean, free-draining sand and gravel or 1"- ¼" drain rock. The drain pipe and surrounding drain rock should be wrapped in non-woven geotextile (Mirafi 140N, or approved equivalent) to minimize the potential for clogging and/or ground loss due to piping. Water collected from the footing drains should be directed into the local storm drain system or other suitable outlet. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. The footing drains should include clean-outs to allow periodic maintenance and inspection.

Down spouts and roof drains should collect roof water in a system separate from the footing drains in order to reduce the potential for clogging. Roof drain water should be directed to an appropriate discharge point well away from structural foundations. Grades should be sloped downward and away from buildings to reduce the potential for ponded water near structures.

Seismic Design

Structures should be designed to resist earthquake loading in accordance with the methodology described in the 2012 International Building Code (IBC) with applicable 2014 Oregon Structural Specialty Code (OSSC) revisions. We recommend Site Class C be used for design per the OSSC, which references ASCE 7-10, Chapter 20, Table 20.3-1. Design values determined for the site using the USGS (United States Geological Survey) *Earthquake Ground Motion Parameters* utility are summarized on Table 1.

Table 1. Recommended Earthquake Ground Motion Parameters (2012 IBC / 2014 OSSC)

Parameter	Value
Location (Lat, Long), degrees	45.3175, -122.7474
Mapped Spectral Acceleration Values (MCE, Site Class B):	
Short Period, S_s	0.928 g
1.0 Sec Period, S_1	0.408 g
Soil Factors for Site Class D:	
F_a	1.129
F_v	1.592
$SD_s = 2/3 \times F_a \times S_s$	0.698 g
$SD_1 = 2/3 \times F_v \times S_1$	0.433 g

Potential seismic impacts also include secondary effects such as soil liquefaction, fault rupture potential, and other hazards as discussed below:

- **Soil Liquefaction Potential –** Soil liquefaction is a phenomenon wherein saturated soil deposits temporarily lose strength and behave as a liquid in response to earthquake shaking. Soil liquefaction is generally limited to loose, granular soils located below the water table. Following development, on-site soils will consist predominantly of engineered fill or stiff clayey native soils above the water table, which are not considered susceptible to liquefaction. Therefore, it is our opinion that special design or construction measures are not required to mitigate the effects of liquefaction.
- **Fault Rupture Potential** – Based on our review of available geologic literature, we are not aware of any mapped active (demonstrating movement in the last 10,000 years) faults on the site. During our field investigation, we did not observe any evidence of surface rupture or recent faulting. Therefore, we conclude that the potential for fault rupture on site is low.
- **Seismic Induced Landslide** – Topography in the vicinity of the subject site is generally flat to gently sloping. The potential for slope instability and seismic induced landslide on site is considered very low.
- **Effects of Local Geology and Topography** – In our opinion, no additional seismic hazard will occur due to local geology or topography. The site is expected to have no greater seismic hazard than surrounding properties and the Wilsonville area in general.

Excavating Conditions and Utility Trench Backfill

We anticipate that on-site soils can be excavated using conventional heavy equipment such as scrapers and trackhoes to a depth of 5 feet and likely greater. Maintenance of safe working conditions, including temporary excavation stability, is the responsibility of the contractor. Actual slope inclinations at the time of construction should be determined based on safety requirements and actual soil and groundwater conditions. All temporary cuts in excess of 4 feet in height should be sloped in accordance with U.S. Occupational Safety and Health Administration (OSHA) regulations (29 CFR Part 1926), or be shored. The existing native soils classify as Type B Soil and temporary excavation side slope inclinations as steep as 1H:1V may be assumed for planning purposes. This cut slope inclination is applicable to excavations above the water table only.

Perched groundwater conditions often occur over fine-grained native deposits such as those beneath the site, particularly during the wet season. If encountered, the contractor should be prepared to implement an appropriate dewatering system for installation of the utilities. At this time, we anticipate that dewatering systems consisting of ditches, sumps and pumps would be adequate for control of groundwater where encountered during construction conducted during the dry season. Regardless of the dewatering system used, it should be installed and operated such that in-place soils are prevented from being removed along with the groundwater.

Vibrations created by traffic and construction equipment may cause some caving and raveling of excavation walls. In such an event, lateral support for the excavation walls should be provided by the contractor to prevent loss of ground support and possible distress to existing or previously constructed structural improvements.

Utility trench backfill should consist of ¾”-0 crushed rock, compacted to at least 90% of the maximum dry density obtained by Modified Proctor (ASTM D1557) or equivalent. Initial backfill lift thick nesses for a ¾”-0 crushed aggregate base may need to be as great as 4 feet to reduce the risk of flattening underlying flexible pipe. Subsequent lift thickness should not exceed 1 foot. If imported granular fill material is used, then the lifts for large vibrating plate-compaction equipment (e.g. hoe compactor attachments) may be up to 2 feet, provided that proper compaction is being achieved and each lift is tested. Use of large vibrating

compaction equipment should be carefully monitored near existing structures and improvements due to the potential for vibration-induced damage.

Adequate density testing should be performed during construction to verify that the recommended relative compaction is achieved. Typically, one density test is taken for every 4 vertical feet of backfill on each 200-lineal-foot section of trench.

Erosion Control Considerations

During our field exploration program, we did not observe soil types that would be considered highly susceptible to erosion. Erosion at the site during construction can be minimized by implementing the project erosion control plan, which should include judicious use of straw, bio-bags, silt fences, or other appropriate technology. Where used, erosion control devices should be in place and remain in place throughout site preparation and construction. Areas of exposed soil requiring immediate and/or temporary protection against exposure should be covered with either mulch or erosion control netting/blankets.

UNCERTAINTIES AND LIMITATIONS

We have prepared this report for the owner and his/her consultants for use in design of this project only. This report should be provided in its entirety to prospective contractors for bidding and estimating purposes; however, the conclusions and interpretations presented in this report should not be construed as a warranty of the subsurface conditions. Experience has shown that soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions can occur between explorations that may not be detected by a geotechnical study. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, HGSI should be notified for review of the recommendations of this report, and revision of such if necessary.

Sufficient geotechnical monitoring, testing and consultation should be provided during construction to confirm that the conditions encountered are consistent with those indicated by explorations. Recommendations for design changes will be provided should conditions revealed during construction differ from those anticipated, and to verify that the geotechnical aspects of construction comply with the contract plans and specifications.

Within the limitations of scope, schedule and budget, HGSI executed these services in accordance with generally accepted professional principles and practices in the field of geotechnical engineering at the time the report was prepared. No warranty, expressed or implied, is made. The scope of our work did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic substances in the soil, surface water, or groundwater at this site.

April 23, 2018
HGSI Project No. 18-2306

We appreciate this opportunity to be of service.

Sincerely,

HARDMAN GEOTECHNICAL SERVICES INC.

Scott L. Hardman, P.E., G.E.
Geotechnical Engineer

Attachments: References
Figure 1 – Vicinity Map
Figure 2 – Site Plan
Logs of Hand Auger Borings HA-1 through HA-5

REFERENCES

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Snyder, D.T., 2008, Estimated Depth to Ground Water and Configuration of the Water Table in the Portland, Oregon Area: U.S. Geological Survey Scientific Investigations Report 2008–5059, 41 p., 3 plates.

Yeats, R.S., Graven, E.P., Werner, K.S., Goldfinger, C., and Popowski, T., 1996, Tectonics of the Willamette Valley, Oregon: in Assessing earthquake hazards and reducing risk in the Pacific Northwest, Vol. 1: U.S. Geological Survey Professional Paper 1560, P. 183-222, 5 plates, scale 1:100,000.

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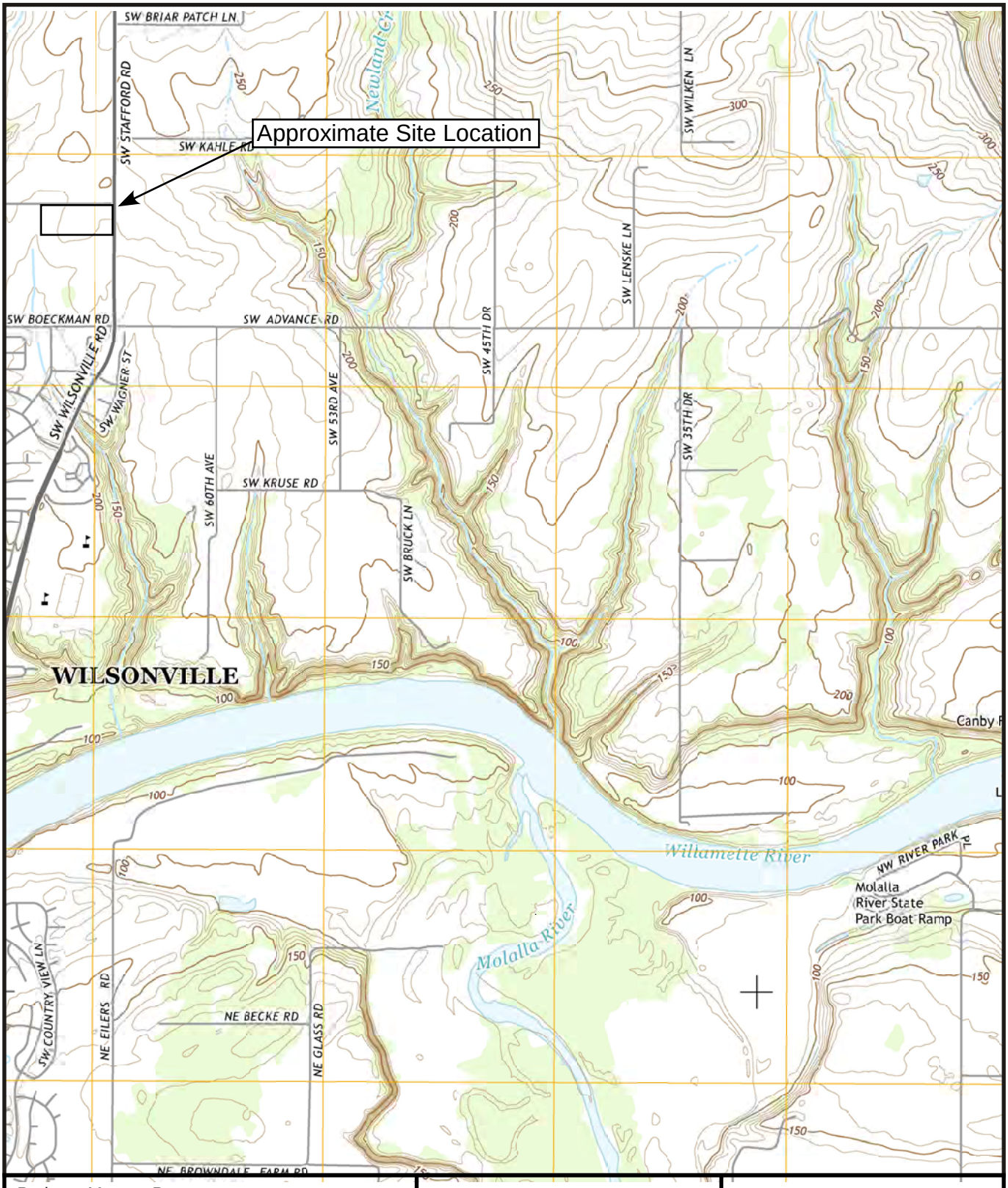
VICINITY MAP



Project: Morgan Property Wilsonville, Oregon	Project No. 18-2306	FIGURE 1

HGSI HARDMAN GEOTECHNICAL SERVICES INC.
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SITE PLAN AND EXPLORATION LOCATIONS

Legend

HA-1 Hand Auger Designation and Approximate Location

DCP-1 DCP Test Designation and Approximate Location

Water Well

Septic Tank

Base map from Google Earth

Note: For exploration logs and geotechnical recommendations refer to HGS geotechnical report dated April 23, 2018

Project: Morgan Property Clackamas County, Oregon	Project No. 18-2307	FIGURE 2

HAND AUGER BORING LOG

Project: Morgan Property Willsonville, Oregon	Project No. 18-2306	Boring No. HA-1

Depth (ft)	Sample Interval	Sample Designation	In-Situ Dry Density (lb/ft^3)	Moisture Content (%)	Groundwater	Material Description
1						Soft to medium stiff, Silt with many fine roots, dark brown, moist (top soil)
2						Stiff, Clayey silt, brown with orange and gray mottling, moist
3						Water at 3 feet, perched on stiff soils below Very stiff to hard, Silty Clay, grey, very moist to wet.
4						
5						Boring terminated at 5 feet
6						
7						

HGSI HARDMAN GEOTECHNICAL SERVICES INC.
Practical Cost-Effective Geotechnical Solutions
10110 SW Nimbus Avenue, Suite B-5
Portland, Oregon 97223
(503) 530-8076

LEGEND

S-1 — Soil Sample Depth Interval and Designation

Water Level at Time of Drilling

Date Excavated: 04/19/18

Logged By: EAH

Surface Elevation:

HAND AUGER BORING LOG

Project: Morgan Property Willsonville, Oregon	Project No. 18-2306	Boring No. HA-2

Depth (ft)	Sample Interval	Sample Designation	In-Situ Dry Density (lb/ft^3)	Moisture Content (%)	Groundwater	Material Description
1						Surface water, soft, Silt with many fine roots, dark brown, saturated (top soil)
2						Stiff, Clayey silt, brown with orange and gray mottling, moist
3						Boring terminated at 2.5 feet
4						
5						
6						
7						

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LEGEND

S-1 — Soil Sample Depth Interval and Designation

Water Level at Time of Drilling

Date Excavated: 04/19/18

Logged By: EAH

Surface Elevation:

HAND AUGER BORING LOG

Project: Morgan Property Willsonville, Oregon	Project No. 18-2306	Boring No. HA-3

Depth (ft)	Sample Interval	Sample Designation	In-Situ Dry Density (lb/ft^3)	Moisture Content (%)	Groundwater	Material Description
1						Soft to medium stiff, Silt with many fine roots, dark brown, moist (top soil)
2						Stiff, Clayey silt, brown with orange and gray mottling, moist Water at 2.5 feet, perched on stiff soils below
3						Very stiff to hard, Silty Clay, grey, very moist to wet.
4						Boring terminated at 4 feet
5						
6						
7						

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Portland, Oregon 97223
(503) 530-8076

LEGEND

Soil Sample Depth Interval and Designation

Water Level at Time of Drilling

Date Excavated: 04/19/18
Logged By: EAH
Surface Elevation:

HAND AUGER BORING LOG

Project: Morgan Property Willsonville, Oregon	Project No. 18-2306	Boring No. HA- 4

Depth (ft)	Sample Interval	Sample Designation	In-Situ Dry Density (lb/ft^3)	Moisture Content (%)	Groundwater	Material Description
1						Soft to medium stiff, Silt with many fine roots, dark brown, moist (top soil)
2						Stiff, light brown silt, moist, old tilled native.
3						Stiff, Clayey silt, brown with orange and gray mottling, moist Water at 3 feet, perched on stiff soils below
4						Very stiff to hard, Silty Clay, grey, very moist to wet.
5						Boring terminated at 5 feet
6						
7						

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LEGEND

S-1 — Soil Sample Depth Interval and Designation

Water Level at Time of Drilling

Date Excavated: 04/19/18

Logged By: EAH

Surface Elevation:

HAND AUGER BORING LOG

Project: Morgan Property Willsonville, Oregon	Project No. 18-2306	Boring No. HA- 5

Depth (ft)	Sample Interval	Sample Designation	In-Situ Dry Density (lb/ft^3)	Moisture Content (%)	Groundwater	Material Description
1						Surface water, soft, Silt with many fine roots, dark brown, saturated (top soil)
2						Stiff, Clayey silt, brown with orange and gray mottling, moist
3						Boring terminated at 2.5 feet
4						
5						
6						
7						

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LEGEND

S-1 — Soil Sample Depth Interval and Designation

Water Level at Time of Drilling

Date Excavated: 04/19/18

Logged By: EAH

Surface Elevation:

Appendix H-1

Covenants, Conditions, Restrictions and Easements

AFTER RECORDING, RETURN TO:

52

Michelle D. Da Rosa LLC
Attorney at Law
205 SE Spokane Street, Suite 300
Portland, OR 97202

Clackamas County Official Records
Sherry Hall, County Clerk

2019-002161

$358.00

02201725201900021610520524

01/15/2019 09:08:53 AM

PD-COV Cnt=3 Stn=2 COUNTER3
$260.00 $10.00 $16.00 $62.00 $10.00

DECLARATION OF PROTECTIVE COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR STAFFORD MEADOWS

WEST HILLS LAND DEVELOPMENT LLC

Declarant

TABLE OF CONTENTS

Page

DECLARATION OF PROTECTIVE COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR STAFFORD MEADOWS

THIS DECLARATION is made this 15 day of January, 2019 by **WEST HILLS LAND DEVELOPMENT LLC**, an Oregon limited liability company ("**Declarant**").

RECITALS

A. Declarant has recorded the plat of "**Stafford Meadows**" in the plat records of Clackamas County, Oregon as Plat No. 4558. Declarant is the only owner of the land so platted.

B. Declarant desires to subject the Lots and Tracts described in Section 2.1 to the conditions, restrictions and charges set forth in this instrument for the benefit of such property, and its present and subsequent owners, and to establish such property under the Oregon Planned Community Act, ORS 94.550 to 94.783, as the first phase of a Class I planned development to be known as Stafford Meadows.

NOW, THEREFORE, Declarant hereby declares that the property described in Section 2.1 will be held, sold and conveyed subject to the following easements, covenants, restrictions and charges, which run with such property and are binding on all parties having or acquiring any right, title, or interest in such property or any part thereof, unless otherwise provided herein, and inure to the benefit of all such persons.

Article 1

DEFINITIONS

As used in this Declaration, the terms set forth below have the following meanings:

1.1 "**Additional Property**" means any land, whether or not owned by Declarant, that is made subject to this Declaration as provided in Section 2.2.

1.2 "**Architectural Review Committee" or "the Committee**" means the committee appointed pursuant to Article 7.

1.3 "**Assessments**" means all assessments and other charges, fines and fees imposed by the Association on an Owner in accordance with this Declaration, the Bylaws of the Association, or the provisions of the Oregon Planned Community Act, including, without limitation, General Assessments, Special Assessments, Emergency Assessments, Limited Common Area Assessments, Working Fund Assessments and Individual Assessments as described in Article 10.

1.4 "**Association**" means the nonprofit corporation formed to serve as the Owners association as provided in Article 8, and its successors and assigns.

1.5 "**Board of Directors" or "the Board**" means the duly appointed or elected board of directors of the Association, which is invested with the authority to operate the Association and to appoint the officers of the Association. Prior to the Turnover Meeting, Declarant will appoint the Board of Directors. After the Turnover Meeting, the Board will be elected by the Owners.

1.6 "**Bylaws**" means the duly adopted bylaws of the Association as the same may hereafter be amended or replaced.

1.7 "**City of Wilsonville Development Agreements**" mean the following agreements between Declarant and the City of Wilsonville dated effective the same date as this Declaration and recorded in the Records of Clackamas County, Oregon:

-Sanitary Sewer Pipeline Easement Agreement (Tracts "B" and "C", Plat of "Stafford Meadows");

-Stormwater Pipeline Easement Agreement (Tracts "B", "C", and "D", Portions of Tracts "F" and "G", Portion of Lot 11, Plat of "Stafford Meadows");

-Conservation Easement, which affects a portion of Tract F as legally described in the exhibits in the Conservation Easement);

-Storm Drainage Easement Agreement (Tract "G", Plat of "Stafford Meadows");

-Water Pipeline Easement Agreement (Tract "I", Portion of Tract "H", Plat of "Stafford Meadows");

-Public Access Easement Agreement (Tracts "A", "B", "C", "D", "E", "H", "I", AND "J", Portions of Lots 1-6, Plat of "Stafford Meadows").

1.8 "**Common Areas**" means those lots or tracts designated as such on any plat of the Property, or in this Declaration or any declaration annexing Additional Property to Stafford Meadows, including any Improvements thereon, and also includes Limited Common Areas, Common Easement Areas, Limited Common Easement Areas, and any Lots converted to Common Areas as provided in Section 3.2.

1.9 "**Common Easement Areas**" means the easements established for the benefit of all property within Stafford Meadows pursuant to this Declaration or any plat or declaration annexing Additional Property to Stafford Meadows.

1.10 "**Common Maintenance Areas**" means the Common Areas and any other areas designated as such in Section 9.1 of this Declaration or in any declaration annexing Additional Property to Stafford Meadows as being maintained by the Association.

1.11 "**Declarant**" means West Hills Land Development LLC, and its successors and assigns if such successor or assignee should acquire Declarant's interest in the remainder of the Property, or less than all of such property if a recorded instrument executed by Declarant assigns to the transferee all of Declarant's rights under this Declaration, and any member or affiliate of West Hills Land Development LLC. Any such successor declarant will succeed to all of the rights and

obligations of the Declarant under this Declaration, including, without limitation, the obligation to complete any Improvements required by City of Wilsonville as part of its subdivision approval.

1.12 "**Design Guidelines**" means the guidelines adopted from time to time by the Architectural Review Committee pursuant to Article 7.

1.13 "**Emergency Assessments**" means the Assessments described in Section 10.4(c).

1.14 "**Front Yard**" means the front yards and side yards of Lots, which are not enclosed by a fence and street frontage planter strips for all Lots, street trees and entry monuments, if any.

1.15 "**General Assessments**" means the Assessments described in Section 10.4(a).

1.16 "**General Plan of Development**" means Declarant's general plan of development of the Property as approved by Clackamas County, as the same may be amended from time to time.

1.17 "**Home**" means a building or a portion of a building located upon a Lot within the Property and designated for separate residential occupancy together with any permitted accessory dwelling unit.

1.18 "**Improvement**" means every structure or improvement of any kind, including, but not limited to, a fence, wall, driveway, swimming pool, storage shelter, mailbox and newspaper receptacle, landscaping and any other product of construction efforts on or in respect to the Property.

1.19 "**Individual Assessments**" means the Assessments described in Section 10.4(d).

1.20 "**Initial Property**" means the real property referred to in Section 2.1.

1.21 "**Limited Common Areas**" means those Common Areas established for the exclusive use or enjoyment of certain Lots as designated in this Declaration or in any declaration annexing property to Stafford Meadows including Limited Common Easement Areas.

1.22 "**Limited Common Area Assessments**" means the Assessments described in Section 10.4(d).

1.23 "**Limited Common Easement Areas**" means those Limited Common Area easements established for the exclusive use or enjoyment of certain Lots as designated in this Declaration or in the Plat or any declaration annexing property to Stafford Meadows.

1.24 "**Lot**" means a platted or partitioned lot within the Property, with the exception of any lot marked on the Plat as being common or open space or so designated in this Declaration or the declaration annexing such property to Stafford Meadows. Lots do not include Common Areas or Public Areas.

1.25 "**Mortgage**" means a mortgage or a trust deed, "**Mortgagee**" means a mortgagee or a beneficiary of a trust deed, and "**Mortgagor**" means a mortgagor or a grantor of a trust deed.

1.26 "**Occupant**" means the occupant of a Home who is the Owner, lessee or any other Person authorized by the Owner to occupy the premises.

1.27 "**Operations Fund**" means the fund described in Section 10.6.

1.28 "**Owner**" means the Person or Persons, including Declarant, owning any Lot in the Property, but does not include a tenant or holder of a leasehold interest or a contract vendor or other Person holding only a security interest in a Lot. If a Lot is Sold under a recorded real estate installment sale contract, the purchaser (rather than the seller) will be considered the Owner unless the contract specifically provides to the contrary. If a Lot is subject to a written lease with a term in excess of one year and the lease specifically so provides, then upon filing a copy of the lease with the Board of Directors, the lessee (rather than the fee owner) will be considered the Owner during the term of the lease for the purpose of exercising any rights related to such Lot under this Declaration. The rights, obligations and other status of being an Owner commence upon acquisition of the ownership of a Lot and terminate upon disposition of such ownership, but termination of ownership does not discharge an Owner from obligations incurred prior to termination.

1.29 "**Person**" means a human being, a corporation, partnership, limited liability company, trustee or other legal entity.

1.30 "**Plat**" means the plat of Stafford Meadows recorded in the plat records of Clackamas County, Oregon as Document No. _____ and any annexation plat, as the same may be amended.

1.31 "**Public Areas**" means areas or easement areas dedicated to the public or established for public use in any plat of the Property, or so designated in this Declaration or the declaration annexing such property to Stafford Meadows.

1.32 "**Reserve Fund**" means the fund described in Section 10.7.

1.33 "**Rules and Regulations**" means those policies, procedures, rules and regulations adopted by the Association pursuant to the authority granted in this Declaration, as the same may be amended from time to time.

1.34 "**Sold**" means that legal title has been conveyed or that a contract of sale has been executed and recorded under which the purchaser has obtained the right to possession.

1.35 "**Special Assessments**" means the Assessments described in Section 10.4(b)

1.36 "**Stafford Meadows**" means the Initial Property and any Additional Property annexed to this Declaration.

1.37 "**The Property**" means Stafford Meadows.

1.38 "**This Declaration**" means all of the easements, covenants, restrictions and charges set forth in this instrument, together with any rules or regulations promulgated hereunder, as the same may be amended or supplemented from time to time in accordance with the provisions hereof, including the provisions of any supplemental declaration annexing property to Stafford Meadows.

1.39 "**Turnover Meeting**" means the meeting called by Declarant pursuant to Section 8.7, at which Declarant will turn over administrative responsibility for the Property to the Association.

1.40 "**Working Fund Assessments**" means the Assessments described in Section 10.4(f).

Article 2

PROPERTY SUBJECT TO THIS DECLARATION

2.1 **Initial Property.** Declarant hereby declares that all of the real property located in the City of Wilsonville described below is owned and will be owned, conveyed, hypothecated, encumbered, used, occupied and improved subject to this Declaration:

> All real property within that certain plat entitled "**Stafford Meadows,**" filed in the plat records of Clackamas County, Oregon, as Document No. 2019-002153, except Lot 24 and Tracts A, K and L.

2.2 **Annexation of Additional Property**. Declarant may from time to time and in its sole discretion annex to Stafford Meadows as "Additional Property" any real property now or hereafter acquired by it and may also from time to time and in its sole discretion permit other holders of real property to annex the real property owned by them to Stafford Meadows. The annexation of such Additional Property is accomplished as follows:

(a) The Owner or Owners of such real property will record a declaration that is executed by or bear the approval of Declarant and will, among other things, describe the real property to be annexed; establish land classifications for the Additional Property; establish any additional limitations, uses, restrictions, covenants and conditions that are intended to be applicable to such Additional Property; and declare that such property is held and will be held, conveyed, hypothecated, encumbered, used, occupied and improved subject to this Declaration.

(b) The Additional Property described in any such annexation thereby becomes a part of Stafford Meadows and subject to this Declaration, and the Declarant and the Association will have and accept and exercise administration of this Declaration with respect to such Additional Property.

(c) Notwithstanding any provision apparently to the contrary, a declaration with respect to any Additional Property may:

(1) modify or exclude any then-existing restrictions and establish such new land classifications and such limitations, uses, restrictions, covenants and conditions with respect to such Additional Property as Declarant may deem to be appropriate for the development of the Additional Property; and

(2) with respect to existing land classifications, modify or exclude any then-existing restrictions and establish additional or different limitations, uses, restrictions, covenants and conditions with respect to such property as Declarant may deem to be appropriate for the development of such Additional Property.

(d) There is no limitation on the number of Lots or Homes that Declarant may create or annex to Stafford Meadows except as may be established by applicable ordinances of Clackamas County. Similarly, there is no limitation on the right of Declarant to annex common property, except as may be established by Clackamas County.

(e) Declarant does not agree to build any specific future Improvement but does not choose to limit Declarant's right to add additional Improvements.

(f) Nothing in this Declaration establishes any duty or obligation on Declarant to annex any property to this Declaration, and no owner of property excluded from this Declaration has any right to have such property annexed to this Declaration or Stafford Meadows.

(g) Upon annexation to Stafford Meadows, additional Lots so annexed will be entitled to voting rights as set forth in Section 8.3.

(h) The formula to be used for reallocating the common expenses if additional Lots are annexed and the manner of reapportioning the common expenses if additional Lots are annexed during a fiscal year are set forth in Section 10.5.

2.3 **Improvements.** Declarant does not agree to build any Improvements on the Property other than as required by City of Wilsonville, but may elect, at Declarant's option, to build additional Improvements.

2.4 **Withdrawal of Property.** Property may be withdrawn from Stafford Meadows only by duly adopted amendment to this Declaration, except that Declarant may withdraw all or a portion of the Initial Property or any Additional Property annexed pursuant to a declaration described in Section 2.2 at any time prior to the sale of the first Lot in the plat of the Initial Property or, in the case of Additional Property, prior to the sale of the first Lot in the property annexed by the supplemental declaration, subject to the prior approval of City of Wilsonville. Such withdrawal will be by a declaration executed by Declarant and recorded in the deed records of Clackamas County, Oregon. If a portion of the Property is withdrawn, all voting rights otherwise allocated to Lots being withdrawn will be eliminated, and the common expenses will be reallocated among the remaining Lots.

2.5 **Dedications.** Declarant reserves the right to dedicate any portions of the Property then owned by Declarant to any governmental authority, quasi-governmental entity or entity qualifying under Section 501(c)(3) of the Internal Revenue Code or similar provisions, from time to time, for such purposes as Declarant may deem to be appropriate, including, without limitation, for utility stations, equipment, fixtures and lines; streets and roads; sidewalks; trails; open space; recreational facilities; schools; fire, police, security, medical and similar services; and such other purposes as Declarant and such governmental authority or quasi-governmental entity determine to be appropriate from time to time. Any consideration received by Declarant as a result of such dedication or by reason of any condemnation or any conveyance in lieu of condemnation will belong solely to Declarant.

2.6 **Conversion of Lots to Common Areas**. Declarant may elect to build common facilities on one or more Lots and designate such Lots, or any portion thereof, as Common Areas by a supplemental declaration recorded in the deed records of Clackamas County, Oregon. The supplemental declaration must be executed by Declarant. Additionally, Declarant reserves the right over the Common Areas (excluding the Common Easement Areas) to make boundary line

adjustments between any Lot (before the Lot has been sold to someone other than the Declarant or a successor declarant) and an adjacent Common Area by a supplemental declaration and plat recorded in the deed records of Clackamas County, Oregon, notwithstanding that such an adjustment may convert a Lot or a portion thereof to Common Area, or a Common Area, or portion thereof, into a Lot or portion of a Lot. This reserved conversion right will expire upon turnover of the Association to the members by the Declarant as provided for in the Bylaws.

2.7 **Subdivisions**. Declarant reserves the right to subdivide any Lots in the Additional Property then owned by it upon receiving all required approvals from the applicable governing authority. If any two or more Lots are so subdivided or subject to condominium ownership, they will be deemed separate Lots for the purposes of allocating assessments under the Declaration. No other Owner of any Lot in the Additional Property may subdivide any Lot without the prior written approval of Declarant prior to the Turnover Meeting and thereafter by the Architectural Review Committee, which consent may be granted or denied at the sole discretion of Declarant or the Committee, as applicable.

2.8 **Consolidations**. Declarant has the right to consolidate any two or more Lots in the Additional Property then owned by it upon receipt of any required approvals from the applicable governing authority. No other Owner may consolidate any Lots without the prior written approval of Declarant before the Turnover Meeting and thereafter by the Architectural Review Committee, which may be granted or denied at the sole discretion of Declarant or the Committee, as applicable. An approved consolidation will be effected by the recording of a supplemental declaration stating that the affected Lots are consolidated, which declaration must be executed by the Owner(s) of the affected Lots and by the chairperson of the Association. Once so consolidated, the consolidated Lot may not thereafter be partitioned, nor may the consolidation be revoked except as provided in Section 2.7 above. Any Lots consolidated pursuant to this section will be considered one Lot thereafter for the purposes of the Declaration, including voting rights and allocation of Assessments.

Article 3

LAND CLASSIFICATIONS

3.1 **Land Classifications Within Initial Property**. All land within the Initial Property is included in one or another of the following classifications:

(a) Lots, which consist of Lots 1 through 23 and Lots 25 through 44, inclusive, of the plat of the Initial Property.

(b) Common Areas, including the areas marked as Tracts D, E, F, G, H, I, and J, on the plat of the Initial Property, plus the Limited Common Areas, Common Easement Areas, and Limited Common Easement Areas, all of which are to be owned and maintained by the Association pursuant to the terms and conditions of this Declaration. Tract D is a pedestrian, bicycle, and emergency vehicular access area; Tract F is a natural resource area; Tract G is a stormwater treatment area subject to an easement in favor of the City of Wilsonville; Tracts E, H, I and J are open space areas that are subject to public pedestrian and bicycle access easements, with E and H being landscape buffers along S.W. Boeckman Road.

(c) Common Easement Areas, inclusive, public pedestrian access easements, public utility easements, storm drainage easements, clean water service and storm facility easement areas, sight distance easements, wall maintenance easements in favor of the Association, and any other easements established on the plat of the Initial Property or in any recorded document for entrance signage, monuments, or landscaping over Lots.

(d) Tract B is a Limited Common Area for ingress and egress over a shared driveway to and from Lots 1 and 6, which is subject to a wall maintenance; Tract C is a Limited Common Area for ingress and egress over a shared driveway to and from Lots 2, 3, 4, and 5.

(e) There are no Limited Common Easement Areas in the Initial Property.

3.2 **Conversion of Lots to Common Areas**. Declarant may elect to build common facilities on one or more Lots and designate such Lots as Common Areas by a declaration recorded in the deed records of Clackamas County, Oregon. Such declaration must be executed by Declarant as Owner of the Lots.

3.3 **Subdivisions**. Declarant reserves the right to subdivide any Lots then owned by it upon receiving all required approvals from City of Wilsonville. If a Lot or Lots are so subdivided, the new lots will be deemed separate Lots for the purposes of allocating Assessments under this Declaration. No other Owner of any Lot in the Property may subdivide any Lot without the prior written approval of the Declarant prior to the Turnover Meeting, and thereafter, by the Architectural Review Committee, which consent may be granted or denied at the sole discretion of the Declarant or the Committee, as applicable.

3.4 **Consolidations**. Declarant has the right to consolidate any two or more Lots then owned by it upon receipt of any required approvals from City of Wilsonville. No other Owner may consolidate any Lots without the prior written approval of the Declarant prior to the Turnover Meeting and thereafter by the Architectural Review Committee, which may be granted or denied at the sole discretion of the Declarant or Committee, as applicable. An approved consolidation will be effected by the recording of a supplemental declaration stating that the affected Lots are consolidated, which declaration must be executed by the Owner(s) of the affected Lots and by the president of the Association. Once so consolidated, the consolidated Lot may not thereafter be partitioned, nor may the consolidation be revoked except as provided in Section 3.3. Any Lots consolidated pursuant to this section will be considered one Lot thereafter for the purposes of this Declaration, including voting rights and allocation of Assessments.

Article 4

PROPERTY RIGHTS IN COMMON AREAS

4.1 **Owners' Easements of Enjoyment**. Subject to the provisions of this Article 4, every Owner and his or her invitees have a right and easement of enjoyment in and to the Common Areas, which easement is appurtenant to and passes with the title to every Lot. The use of the Limited Common Easement Areas, however, are limited to the Owners and invitees of the Lots designated in the declaration establishing the Limited Common Easement Area.

4.2 **Title to Common Areas.** Except for portions dedicated to the public or any governmental authority and otherwise provided in this Section 4.2, title to the Common Areas, except the Common Easement Areas and Limited Common Easement Areas, will be conveyed to the Association by Declarant AS IS, but free and clear of monetary liens, on or before the Turnover Meeting. The Association, upon such conveyance, will assume all obligations to maintain, insure, and otherwise assume the obligations of the Declarant in respect of the Common Areas set forth in this Agreement or the Plat or any agreement entered by Declarant with City of Wilsonville in respect of such tracts. Title to Common Easement Areas and Limited Common Easement Areas, if any, subject to the easements set forth in this Declaration or the supplemental declaration creating such areas, rests in the Owners of the respective Lots within which such areas are located, or to the public if part of dedicated street rights-of-way.

4.3 **Extent of Owners' Rights.** The rights and easements of enjoyment in the Common Areas created hereby are subject to the following and to all other provisions of this Declaration:

(a) **Association Easements.** Declarant grants to the Association for the benefit of the Association and all Owners of Lots within the Property the following easements over, under and upon the Common Maintenance Areas:

(1) An easement for underground installation and maintenance of power, gas, electric, water and other utility and communication lines and services installed by Declarant or with the approval of the Board of Directors of the Association and any such easement shown on any plat of the Property.

(2) An easement for construction, maintenance, repair, and use of such areas, including any common facilities on the Common Area tracts.

(3) An easement for access for regular upkeep, maintenance, modification and replacement of the Front Yard landscaping and related irrigation equipment, including drainage systems, if any, and for making emergency repairs to the landscaping and related equipment and settings in the Front Yards of the Lots necessary for the public safety or to prevent damage to the Common Maintenance Areas or to another Lot, or to enforce this Declaration or the Rules and Regulations, or with the approval of the Board of Directors of the Association; and notwithstanding that such areas of Lots are not regular Common Maintenance Areas, an easement for access to unfenced yard landscaping and irrigation controllers on Lots to enforce this Declaration or the Rules and Regulations, including but not limited to standards for Lot maintenance thereunder.

(4) An easement for the purpose of making repairs to any existing structures on Common Areas.

(b) **Public and Utility Easements.**

The Common Areas are subject to the public and utility easements established the Plat. In addition, the public is hereby granted access easements over all sidewalks, pedestrian accesses and trails in the Common Areas within the Property as designated on the Plat. In addition, Declarant or the Association may (and, to the extent required by law will) grant or assign such easements to municipalities or other utilities performing utility services and to communication

companies, and the Association may grant free access thereon to police, fire and other public officials, and to employees of utility companies and communications companies serving the Property.

(c) **Use of the Common Areas.** The Common Areas will be used for the purposes set forth in any plat of the Property; Common Area tracts identified on any plat of the Property may not be partitioned or otherwise divided into parcels for residential use; and, no private structure of any type will be constructed on the Common Areas. Except as otherwise provided in this Declaration, the Common Areas are reserved for the use and enjoyment of all Owners. No private use may be made of the Common Areas except as otherwise provided in this Declaration. No Owner may place or cause to be placed on the Common Areas any trash, structure, equipment, furniture, package, or object of any kind. Nothing in this Declaration prevents the placing of a sign or signs upon the Common Areas by Declarant or the Association identifying the Property or identifying pathways or items of interest, signs restricting certain uses, or warning, traffic or directional signs, provided that such signs are approved by the Architectural Review Committee and comply with any applicable sign ordinances. The Board of Directors has authority to abate any trespass or encroachment upon the Common Areas at any time, by any reasonable means and with or without having to bring legal proceedings. A declaration annexing Additional Property may provide that the Owners of such Additional Property do not have the right to use a particular Common Area or facility located on such Common Area, in which event such Common Area will automatically become a "Limited Common Area" assigned to the Lots that have access thereto.

(d) **Alienation of the Common Areas.** The Association may not by act or omission seek to abandon, partition, subdivide, encumber as security for a debt, sell, transfer or convey the Common Areas owned directly or indirectly by the Association for the benefit of the Lots unless the holders of at least 80 percent of the Class A voting rights and the Class B Member (as defined in Section 8.3), if any, have given their prior written approval and unless approved by City of Wilsonville. Such approvals will not be required for dedications under Section 2.5. The Association, upon approval in writing of at least two-thirds of the Class A voting rights and the Class B Member, if any, and if approved by order or resolution of City of Wilsonville, may dedicate or convey any portion of the Common Areas to a park district or other public body. Any sale, transfer, conveyance or encumbrance permitted by this Declaration may provide that the Common Area may be released from any restrictions imposed by this Declaration if the request for approval of the action also includes approval of the release.

(e) **Leases, Easements, Rights-of-Way, Licenses and Similar Interests and Vacations of Roadways**. Notwithstanding the provisions of Section 4.3(d), the Association may execute, acknowledge and deliver leases, easements, rights-of-way, licenses and other similar interests affecting the Common Areas and consent to vacation of roadways within and adjacent to the Common Areas, subject to such approvals as are required by ORS 94.665(4) and (5).

(f) **Limitations on Use.** Use of the Common Areas is subject to the following:

(1) The provisions of this Declaration and any applicable supplemental declaration;

(2) Any restrictions or limitations contained in any deed or other instrument conveying such property to the Association;

(3) Easements reserved or granted in this Declaration or any supplemental declaration;

(4) The Common Areas may not be used for the construction of residential structures at any time.

(5) The Board's right to:

(A) adopt Rules and Regulations regulating use and enjoyment of the Common Areas, including rules limiting the number of guests who may use the Common Areas;

(B) suspend the right of an Owner to use the Common Areas as provided in this Declaration;

(C) dedicate or transfer all or any part of the Common Areas, subject to such approval requirements as may be set forth in this Declaration;

(D) impose reasonable membership requirements and charge reasonable admission or other use fees for the use of any recreational facility situated upon the Common Areas;

(E) permit use of any recreational facilities situated on the Common Areas by Persons other than Owners, their families, lessees and guests with or without payment of use fees established by the Board;

(F) designate areas and facilities of Common Areas as Public Areas; and

(G) provide certain Owners the rights to the exclusive use of those portions of the Common Areas designated as Limited Common Areas.

4.4 **Delegation of Use.** Any Owner may extend the Owner's right of use and enjoyment of the Common Areas to the members of the Owner's family, lessees and social invitees, as applicable, subject to reasonable regulation by the Board of Directors. An Owner who leases the Owner's Home will be deemed to have assigned all such rights to the lessee of such Home for the period of the lease.

4.5 **Easements Reserved by Declarant.** So long as Declarant owns any Lot, Declarant reserves an easement for itself and its successor and assigns (including any builder who purchased more than one Lot from Declarant for purposes of development), over, under and across the Common Areas to carry out sales and rental activities necessary or convenient for the sale or rental of Lots, including, without limitation, advertising and "For Sale" signs. Declarant, for itself and its successors and assigns, hereby retains a right and easement of ingress and egress over, in, upon, under and across the Common Areas and the right to store materials thereon and to make such other use thereof as may be reasonably necessary or incident to the construction of the Improvements on the Property or other real property owned by Declarant; provided, however, that no such rights may be exercised by Declarant in such a way as to unreasonably interfere with the occupancy of, use of, enjoyment of or access to an Owner's Lot by the Owner or the Owner's family, tenants, employees, guests, or invitees.

4.6 **Easement to Serve Other Property.** Declarant reserves for itself and its duly authorized agents, successors, assigns and Mortgagees, and the developers of Improvements in all future phases of Stafford Meadows, a perpetual easement over the Common Areas for the purposes of enjoyment, use, access and development of the property, even if such property is never made subject to this Declaration, including but not limited to, reservations for the benefit of real property in the vicinity of the Property that is owned by or that may be owned in the future by West Hills Land Development LLC, its successors and assigns, for so long as the same reserves annexation rights to the Property. This easement includes, but is not limited to, a right of ingress and egress over the Common Areas for construction, utilities, water and sanitary sewer lines, communication lines, drainage facilities, irrigation systems and signs, and ingress and egress for the benefit of other portions of Stafford Meadows and any Additional Property that becomes subject to this Declaration or any property in the vicinity of the Property or Additional Property that is then owned by Declarant or an affiliate thereof. Declarant agrees that such users are responsible for any damage caused to the Common Areas resulting from their actions in connection with development of such property. If the easement is exercised for permanent use by such property and such property or any portion thereof benefiting from such easement is not made subject to this Declaration, Declarant, its successors or assigns will enter a reasonable agreement with the Association to share the cost of any maintenance of such facilities. The allocation of costs in any such agreement will be based on the relative extent of use of such facilities and the number of dwelling units in such property compared to the number of Homes in the Property.

4.7 **Limited Common Areas.** If any Limited Common Areas are included in an annexation declaration, the respective Limited Common Areas will be subject to a reciprocal access easement for the use by the Owners of the benefited Lots for vehicular access and utilities and communication lines serving such Lots. Such areas will be operated, maintained, replaced, and improved by the Association, but the entire cost thereof, including reserves for future maintenance, repairs, and replacements, will be assessed on an equal basis as Limited Common Area Assessments to the Owners of Lots to which such Limited Common Areas pertain.

Article 5

PROPERTY RIGHTS IN LOTS

5.1 **Use and Occupancy.** The Owner of a Lot in the Property is entitled to the exclusive use and benefit of such Lot, except as otherwise expressly provided in this Declaration, but the Lot is bound by, and each Owner and Declarant must comply with, the restrictions contained in Article 6, all other provisions of this Declaration and the provisions of any supplement or amendment to this Declaration.

5.2 **Easements Reserved.** In addition to any utility and drainage easements shown on any recorded plat, Declarant hereby reserves the following easements for the benefit of Declarant and the Association:

(a) **Adjacent Common Maintenance Area.** The Owner of any Lot that includes a Common Maintenance Area or adjoins or blends together visually with any Common Maintenance Area must, as the Association so requires, permit the Association to enter upon the Lot to perform the maintenance of such Common Maintenance Area. The Owner and Occupant of each Lot is

responsible for controlling such Owner's or Occupant's pets so they do not harm or otherwise disturb Persons performing such maintenance on behalf of the Association.

(b) **Utility Easements.** Easements for installation and maintenance of utilities and drainage facilities may be reserved over portions of certain Lots, as shown on any recorded plat. Within the utility easement areas, the Architectural Review Committee will not permit any structure, planting or other material to be placed or permitted to remain on the easement area if such structure, planting or other material may damage or interfere with the installation or maintenance of utilities, change the direction of flow of drainage systems or drainage infiltration facilities in the easements, or obstruct or retard the flow of water through drainage channels in the easements and/or to the extent not permitted in the City of Wilsonville Development Agreements. The easement area of each Lot and all Improvements in it will be maintained continuously by the Owner of the Lot, except for those Improvements for which a public authority or utility company is responsible, and except Common Maintenance Areas, which are maintained by the Association.

(c) **Construction on Adjoining Lot.** Declarant hereby reserves for the benefit of Declarant and its assigns a temporary easement over each Lot for access to the adjoining Lot for construction purposes, including temporary placement of ladders or scaffolding. Declarant will restore the Lot to its condition as it existed prior to such access and will be responsible for any damage to the Lot. Declarant hereby reserves for the benefit of Declarant and its assigns a temporary easement over each Lot Declarant then-currently owns to accommodate uses related to portions of the Property being used for the 2019 "Street of Dreams" event.

(d) **Utility Inspection and Repairs.** Each utility and communication service provider and its agents or employees have authority to access all Lots, but not Improvements constructed thereon, and the Common Areas on which communication, power, gas, drainage, sewage or water facilities may be located for installing, operating, maintaining, improving or constructing such facilities; reading meters; inspecting the condition of pipes, lines and facilities; and completing repairs. The Owner of any such Lot will be given advance notice if possible. In the case of an emergency, as determined solely by the utility or communication service provider, no prior notice will be required.

(e) **Easements for Encroachments.** Declarant grants reciprocal appurtenant easements of encroachment, and for maintenance and use of any permitted encroachment, between each Lot and any adjacent Common Areas and between adjacent Lots due to the unintentional placement or settling or shifting of the Improvements constructed, reconstructed or altered thereon (in accordance with the terms of this Declaration and the Design Guidelines) to a distance of not more than three feet, as measured from any point on the common boundary along a line perpendicular to such boundary. However, in no event will an easement for encroachment exist if such encroachment occurred due to willful and knowing conduct on the part of, or with the knowledge and consent of, the Person claiming the benefit of such easement.

(f) **Easements for Maintenance, Emergency and Enforcement.** Upon request given to the Owner and any Occupant, any Person authorized by the Association may enter a Lot to perform necessary maintenance, repair, or replacement of any property for which the Association has maintenance, repair or replacement responsibility under this Declaration, to make emergency repairs to a Lot that are necessary for the public safety or to prevent damage to Common Areas or to another Lot, or to enforce this Declaration or the Rules and Regulations. Requests for entry must be made in advance and for a reasonable time, except in the case of any emergency, when

the right of entry is immediate. An emergency entry does not constitute a trespass or otherwise create a right of action in the Owner of the Lot.

(g) **Future Easements.** Declarant reserves the nonexclusive right and power to grant and record such specific easements as may be necessary, in the sole discretion of Declarant, in connection with the development of any of the Property. The location of any such easement is subject to the written approval of the Owner of the burdened Lot, which approval will not unreasonably be withheld, delayed or conditioned.

Article 6

GENERAL USE RESTRICTIONS

6.1 **Structures Permitted.** No structures may be erected or permitted to remain on any Lot except a single Home and structures normally accessory thereto that have been constructed by Declarant or have first been approved by the Architectural Review Committee pursuant to Article 7. A Home will be deemed a permitted improvement on a Lot under this Section 6.1 notwithstanding that a Home may include within its exterior walls an independent living area with a separate outside entrance. This provision does not exclude construction of a private greenhouse or storage unit, or an accessory dwelling unit as defined by City of Wilsonville ordinances, provided that the location, size and design of such structures are in conformity with the applicable ordinances and permit requirements of City of Wilsonville, are compatible in design and style with the Home constructed on the Lot, and have been approved by the Committee.

6.2 **Residential Use.** Lots must only be used for residential purposes. Except with the consent of the Board of Directors, no trade, craft, business, profession, commercial or similar activity of any kind will be conducted on any Lot, nor may any goods, equipment, vehicles, materials, or supplies used in connection with any trade, service or business be kept or stored on any such Lot. The mere parking on a Lot of a vehicle bearing the name of a business will not, in itself, constitute a violation of this provision. Nothing in this Section 6.2 will be deemed to prohibit (a) activities relating to the sale of Homes; (b) the right of Declarant or any contractor or home builder to construct Improvements on any Lot, to store construction materials and equipment on such Lots in the normal course of construction, and to use one or more Homes as sales offices or model homes for purposes of sales in Stafford Meadows; and (c) the right of the Owner of a Lot to maintain his or her professional personal library, keep his or her personal business or professional records or accounts, handle his or her personal business or professional telephone calls or confer with business or professional associates, clients or customers in his or her Home by appointment only or to operate a registered or certified family child care home pursuant to ORS 329A.250 to 329A.500. The Board will not approve commercial activities otherwise prohibited by this Section 6.2 unless the Board determines that only normal residential activities would be observable outside of the Home and that the activities would not be in violation of applicable law. The Board may specify acceptable activities in the Rules and Regulations.

6.3 **Offensive or Unlawful Activities.** No noxious or offensive activities may be carried out upon the Property, nor will anything be done or placed on the Property that interferes with or jeopardizes the enjoyment of the Property, or that is a source of annoyance to Owners or Occupants. Occupants will use extreme care about creating disturbances, making noises or using musical instruments, radios, televisions, amplifiers and audio equipment that may disturb other Occupants.

No unlawful use may be made of the Property or any part thereof, and all valid laws, zoning ordinances and regulations of all governmental bodies having jurisdiction over the Property must be observed. Owners and other Occupants must not engage in any abusive or harassing behavior, either verbal or physical, or any form of intimidation or aggression directed at other Owners, Occupants, guests or invitees, or directed at the managing agent, its agents or employees, or vendors.

6.4 **Animals.** No animals, livestock, or poultry of any kind may be raised, bred, kept or permitted within any Lot other than seeing eye horses and a reasonable number of ordinary household pets that are not kept, bred, or raised for commercial purposes and that are reasonably controlled so as not to be a nuisance. The Board of Directors has the authority to determine what is an "ordinary household pet." Any unrestrained or barking dog constitutes a nuisance. Any inconvenience, damage or unpleasantness caused by such pets are the responsibility of their respective Owners. No animal is permitted to roam the Property unattended, and each dog must be kept on a leash while outside a Lot. The construction or installation of dog-runs and doghouses are subject to prior review and approval by the Architectural Review Committee pursuant to Article 7. An Owner or Occupant may be required to remove a pet upon receipt of the third written notice from the Board of violations of any rule, regulation or restriction governing pets within the Property.

6.5 **Maintenance of Structures.** Each Owner must maintain the Owner's Lot and Improvements thereon, including sidewalks adjacent to the Owner's Lot, and walkways and the driveway, in a clean and attractive condition, in good repair and in such fashion as not to create a fire or other hazard. Such maintenance includes, without limitation, exterior painting or staining, repair, replacement and care for roofs, gutters, downspouts, exterior building surfaces, walks, lights, perimeter fences and other exterior Improvements and glass surfaces. All repainting or re-staining, any change in type of roof or roof color and any exterior remodeling or changes are subject to prior review and approval by the Architectural Review Committee. Damage caused by fire, flood, storm, earthquake, riot, vandalism or other causes are likewise the responsibility of each Owner and must be restored within a reasonable time. Any change in appearance must first be approved by the Committee.

6.6 **Landscape Installation.** All landscaping on a Lot must be completed within a reasonable time not to exceed 90 days from the date of occupancy of the Home constructed on a Lot. In the event of undue hardship due to weather conditions, this provision may be extended for a reasonable length of time upon approval of the Architectural Review Committee. Landscape plans will be submitted to the Committee for approval. Landscaping in the Front Yards must not be changed by an Owner without the approval of the Committee. Notwithstanding such limitations, an Owner may utilize planting pots or other free standing, movable planters within the Front Yard of his or her Lot; provided that the planters and plants growing in the planters are properly maintained. The Board of Directors may regulate the number and type of such planters.

6.7 **Maintenance of Landscaping.** In any every portion of the Owner's Lot other than the Front Yard, the Owner will keep all shrubs, trees, grass and plantings of every kind on the Owner's Lot, neatly trimmed, properly cultivated, and free of trash, weeds and other unsightly material. Following initial installation by the Declarant or builder the Association will be responsible for maintenance and irrigation of landscaping of the Front Yard of Lots, including the irrigation equipment and controllers. No Owner or Occupant of one of these Lots may alter, change or tamper with the irrigation equipment, controllers or settings in a Front Yard the Association maintains, which settings belong to the Association.

6.8 **Boundary Fences**. The responsibility for and cost of maintenance, repair and replacement of fencing on boundary lines between Lots will be shared by the Owners on either side of the fence in accordance with ORS Chapter 96; provided, however, that the Association is responsible for the maintenance of any fencing or walls adjacent to Tracts E and H the cost of which will be a common expense.

6.9 **Fences, Hedges and Walls.** No fence, hedge, structure, wall, or retaining wall may be constructed or exist anywhere on any Lot without prior approval of the Architectural Review Committee and in accordance with its Design Guidelines. No planting or structure obstructing vision at driveways or intersections is permissible or may be maintained. Installation and maintenance of retaining walls that are required and approved by the Committee due to topographic conditions of a given Lot are the sole and absolute responsibility of the individual Lot Owner, are to be aesthetically incorporated into the landscaping of the Lot, and are not the responsibility of the Association.

6.10 **Pest and Weed Control.** No Owner will permit any thing or condition to exist upon any portion of the Property that will induce, breed or harbor infectious plant or animal diseases or noxious insects or vermin. Each Owner must control noxious weeds on the Owner's Lot.

6.11 **Parking.** Except as may otherwise be provided in the Rules and Regulations, parking in excess of 24 hours of boats, trailers, motorcycles, mobile homes, campers or other recreational vehicles or equipment, regardless of weight, are not be allowed on any part of the Property or on public streets within the Property unless within areas designated for such purposes by the Board of Directors or within the confines of an enclosed garage and approved by the Architectural Review Committee before construction or screened from view in a manner approved by the Committee. No portion of the vehicle may project beyond the screened area. If there is no rear fencing and the vehicle could be seen from outside the Lot other than from the front road, the vehicle must also be screened from view from that direction. Vehicles may not be used for storage of materials for more than 48 hours without approval from the Committee. No motor vehicle of any type may constructed, reconstructed, or repaired in such a manner as will be visible from neighboring property, nor may any vehicle be occupied for residential purposes while located within the Property. The Rules and Regulations may restrict the amount of noise vehicles may generate. The parking of vehicles is prohibited on any public or private street within the Property if posted or marked "No Parking" or if curbs are painted to restrict parking. Blocking a Common Area tract established under any plat of the Property, a roadway, Limited Common Area driveway, or alley is prohibited. No parking is permitted in Common Areas unless so posted.

6.12 **Vehicles in Disrepair.** No Owner will permit any vehicle that is in an extreme state of disrepair or not currently licensed to be abandoned or to remain parked on the Owner's Lot (unless screened from view) or on the Common Area or any street for a period in excess of 48 hours. A vehicle will be deemed in an "extreme state of disrepair" when the Board of Directors determines that its presence reasonably offends the Occupants of the area due to its appearance or continued inoperability. Should any Owner fail to remove such vehicle within five days following the date on which notice is mailed to him or her by the Association, the Association may have the vehicle removed from the Property and charge the expense of such removal to the Owner.

6.13 **Signs.** No signs may be erected or maintained on any Lot except that not more than one "For Sale" sign placed by the Owner, Declarant or a licensed real estate agent, not exceeding 24 inches high and 36 inches long, may be temporarily displayed within the Front Yard of any Lot or

inside of a first floor, front street facing window of a Home located on a Lot, and two such signs may be placed on a Lot during the course of initial construction of a dwelling on such Lot. "For Rent" and "For Lease" signs are prohibited. The restrictions contained in this paragraph do not prohibit the temporary placement of "political" signs on any Lot by the Owner, subject to reasonable regulations adopted by the Architectural Review Committee relating to size and length of display.

6.14 **Rubbish, Trash and Outside Storage.** No part of the Property may be used as a dumping ground for trash or rubbish of any kind, and no rubbish, refuse or garbage is allowed to accumulate. All garbage and other waste must be kept in appropriate sanitary containers for proper disposal and out of public view, except the night before and during garbage pickup days. Yard rakings, dirt, and other material resulting from landscaping work will not be dumped onto Lots, streets, or Common Maintenance Areas. Storage areas, and the storage of machinery and equipment are prohibited on any Lot, unless obscured from view of neighboring property and streets by an appropriate screen or enclosure approved by the Architectural Review Committee. Tarps and covers are prohibited except as otherwise provided in the Rules and Regulations and the Design Guidelines. Should any Owner or Occupant responsible for its generation fail to remove any such materials within 10 days following the date on which notice is mailed to the Owner or Occupant by the Board of Directors, the Association may have the materials removed and charge the expense of such removal to the Owner.

6.15 **Construction.** The construction of any building on any Lot, including painting and all exterior finish, must be completed within eight months from the beginning of construction so as to present a finished appearance when viewed from any angle, and the Home will not be occupied until so completed. In the event of undue hardship due to weather conditions or other causes beyond the reasonable control of the Owner, this time period may be extended for a reasonable length of time upon approval from the Architectural Review Committee. The building area must be kept reasonably clean and in workmanlike order, free of litter, during the construction period with a garbage can or other garbage disposal facility on the site during such period. Debris may not be deposited on any other Lot. All construction debris, stumps, trees, etc. must be periodically removed from each Lot by the builder or Owner, and such debris will not be dumped in any area within the Property unless approved by the Committee. The Rules and Regulations may impose reasonable limitations on the hours during which construction activities may take place. If construction has not commenced upon any Lot within one year after an Owner has acquired it, other than Declarant or an affiliate of Declarant, the Owner must install the sidewalk and landscape the area within 20 feet from the curb. The Owner will irrigate and maintain this area. The Committee may waive this requirement if it determines that construction will commence within a reasonable time. In any case, all unimproved or unoccupied Lots will be kept in a neat and orderly condition, free of brush, vines, weeds and other debris, and grass thereon must be cut or mowed at sufficient intervals to prevent creation of a nuisance or fire hazard.

6.16 **Temporary Structures.** No incomplete building or structure of a temporary character, nor any trailer, basement, tent, shack, garage, barn, or other outbuilding may be used on any Lot at any time as a residence either temporarily or permanently.

6.17 **Recreational Equipment.** Unless approved by the Architectural Review Committee or permitted by the Design Guidelines, no playground, athletic or recreational equipment or structures, including without limitation, permanently installed basketball backboards, hoops and related supporting structures, will be placed, installed or utilized on any Lot in view from any street,

sidewalk or Common Area within the Property. Portable basketball backboards, hoops, soccer goal nets, and related supporting structures may be used during daylight hours, so long as such equipment is stored out of view from any street, sidewalk, or Common Area within the Property.

6.18 **Service Facilities.** Service facilities (garbage containers, fuel tanks, clotheslines, etc.) will be screened so that the elements screened are not visible at any time from the street or a neighboring property. The Architectural Review Committee may develop guidelines for clotheslines that are consistent with the green sustainability objectives of Stafford Meadows. All telephone, power, natural gas, cable television and other communication lines will be placed underground, except as otherwise mandated by local jurisdictions or public utility companies.

6.19 **Antennas and Satellite Dishes.** Exterior antennas, satellite receivers, and transmission dishes are prohibited, except to the extent expressly mandated by rules adopted by the Federal Communication Commission. Specifically, ham radio antennas, cell towers, satellite dishes one meter or larger, television antennas or on masts 12 feet or higher and multi-point distribution antennas are prohibited. To the extent permitted by Federal Communication Commission rules, the Board of Directors may require all other antennas and dishes to be hidden from view from streets and adjoining dwellings. Other communication devices will not be permitted to be placed upon any Lot except in accordance with rules established by the Architectural Review Committee in accordance with Section 7.3.

6.20 **Exterior Lighting or Noisemaking Devices.** Except with the consent of the Architectural Review Committee, no exterior lighting or noisemaking devices may be installed or maintained on any Lot, other than as originally installed by the builder of the home and security alarms and fire alarms. Seasonal holiday lighting and decorations are permissible if consistent with any applicable Rules and Regulations and if installed not more than 30 days before and removed within 30 days after the celebrated holiday. The Committee may regulate the shielding or hours of use of lighting in order to reduce annoyance to neighboring properties. The location of air conditioning compressors must be approved by the Committee prior to installation.

6.21 **Subdividing or Partitioning Lots.** Except as otherwise provided in this Declaration, no Lot may be subdivided or partitioned, nor may its Lot lines be adjusted, without the approval of Clackamas County and the Architectural Review Committee.

6.22 **Grades, Slopes and Drainage.** Each Owner of a Lot accepts the burden of the established drainage pattern and grades, slopes and courses related thereto over any Lot or Common Area, and will not in any manner alter, modify or interfere with such drainage pattern, grades, slopes and courses, any public vegetated swale or rain garden, without the prior approval of the Architectural Review Committee, and then only to the extent and in the manner specifically approved. No structure, plantings or other materials may be placed or permitted to remain on or within any grades, slopes or courses, nor may any other activities be undertaken that may damage or interfere with established slope ratios, create erosion or sliding problems, or obstruct, change the direction of or retard the flow of water through drainage channels.

6.23 **Garages.** All garage doors must remain closed except to permit entrance and exit and in connection with outside activities. Garages will be used primarily for parking of vehicles, and only secondarily for storage, and must not be used as office or living space without the prior approval of the Architectural Review Committee.

6.24 **Windows, Decks, Porches and Outside Walls.** To preserve the attractive appearance of the Property, the Association may regulate the nature of items that may be placed in or on windows, decks, porches, and the outside walls so as to be visible from the street or Common Areas, including, without limitation, window air conditioners and fans. Window coverings, curtains, shutters, drapes or blinds, other than those of commercially produced quality, are not permitted to be visible from any public or private street, pathway, Common Area or adjacent property. No aluminum foil, reflective film, or similar treatment may be placed on windows or glass doors. Garments, rugs, laundry and other similar items may not be hung from windows, facades, porches or decks.

6.25 **Air Conditioning Units.** Window or portable air conditioning units are prohibited.

6.26 **Firearms and Fireworks**. Firearms may not be discharged within Stafford Meadows at any time. Firearms are to be unloaded at all times while in Stafford Meadows. Weapons including "BB" guns, pellet guns, dart guns, paint-ball guns and any other weapon capable of firing a projectile are considered firearms. Oregon statutory law prohibits the use of certain types of fireworks. Only fireworks considered legal are allowed. Owners and their guests must clean up any fireworks discharged in Stafford Meadows.

6.27 **Nonbiodegradable Substances.** No motor oil, paint or other caustic or nonbiodegradable substance may be deposited in any street drain, sewer system or on the grounds within Stafford Meadows Any fine levied by a governmental agency and/or costs associated with the cleanup of any nonbiodegradable substance for any spill that is caused by any Owner or their guests will be the responsibility of the offending Owner.

6.28 **Leasing and Rental of Homes**. A Home may not be leased or rented for a period of less than 30 days. All leases of a Home must be by written agreement specifying that: (i) the tenant is subject to all provisions of the Declaration, Bylaws and Rules and Regulations; and (ii) failure to comply with any provision of the Declaration, Bylaws or Rules and Regulations constitutes a default under the rental agreement. The Owner must provide each tenant a copy of the Declaration, Bylaws and Rules and Regulations. The Owner is responsible for any violations by tenants and is directly responsible for either correcting or eliminating such violations or causing tenant to do the same.

6.29 **Rules and Regulations.** In addition, the Association from time to time may adopt, modify, or revoke such nondiscriminatory Rules and Regulations governing the conduct of Persons and the operation and use of the Property as it may deem necessary or appropriate to ensure the peaceful and orderly use and enjoyment of the Property. A copy of the Rules and Regulations, upon adoption, and a copy of each amendment, modification or revocation thereof, must be delivered by the Board of Directors promptly to each Owner. The Rules and Regulations may be adopted by the Board, except as may be otherwise provided in the Bylaws of the Association.

Article 7

ARCHITECTURAL REVIEW COMMITTEE

7.1 **Architectural Review.** No Improvement may be commenced, erected, placed or altered on any Lot, including without limitation re-landscaping, until the construction or landscaping plans, respectively, and specifications showing the nature, shape, heights, materials, colors and proposed location of the Improvement or landscaping, have been submitted to and approved in

writing by the Architectural Review Committee, except that construction by Declarant or any affiliate of Declarant will be presumed to have been approved and is thereby exempt from this review. Such exception for Declarant and such builders' construction will include without limitation the construction of buildings, hedges, walls, and fences. The building plans to be submitted will consist of one complete set of plans and specifications in the usual form showing insofar as appropriate, (i) size and dimensions of the Improvements; (ii) exterior design; (iii) approximate exterior color scheme; (iv) location of Improvements on the Lot, including setbacks, driveway and parking areas; and (v) location of existing trees to be removed. These plans and specifications must be left with the Committee until 60 days after notice of completion has been received by the Committee. This is for determining whether, after inspection by the Committee, the Improvement complies substantially with the plans and specifications that were submitted and approved. The Committee is not responsible for determining compliance with structural and building codes, zoning codes, or any other governmental regulations, all of which are the responsibility of the applicant. The procedure and specific requirements for review and approval of construction may be set forth in Design Guidelines adopted from time to time by the Committee. The Committee may charge a reasonable fee to cover the cost of processing an application. In all cases in which the Committee's consent is required by this Declaration, the provisions of this Article 7 apply, except that this Article 7 does not apply to construction by Declarant or any affiliate of Declarant.

7.2 **Committee Decision.** The Architectural Review Committee will render its decision with respect to a construction proposal within 30 working days after it has received all material required by it with respect to the application. In the event the Committee fails to render its approval or disapproval within 45 working days after the Committee has received all material required by it with respect to the proposal, or if no suit to enforce this Declaration has been commenced within one year after completion thereof, approval will not be required and the related provisions of this Declaration will be deemed to have been fully complied with.

7.3 **Committee Discretion.** The Architectural Review Committee may withhold consent to any proposed work if the Committee finds the proposed work would be inappropriate for the particular Lot or incompatible with the Design Guidelines or design standards that the Committee intends for Stafford Meadows. It is the intent and purpose of this Declaration to ensure quality of workmanship and materials, to ensure harmony of external design with the existing Improvements and with respect to topography and finished grade elevations, and to ensure compliance with the setback requirements contained in the conditions of approval of Clackamas County. Considerations such as siting, shape, size, color, design, materials, height, screening, impairment of the view from other Lots or other effect on the enjoyment of other Lots or the Common Area, disturbance of existing terrain and vegetation, and any other factors that the Committee reasonably believes to be relevant may be considered by the Committee in determining whether or not to consent to any proposed work. Regulations on siting of television antennas and satellite receiving dishes must be in conformance with any applicable Federal Communications Commission rules.

7.4 **Design Guidelines**.

(a) **Adoption of Design Guidelines**. Declarant or the Architectural Review Committee will prepare Design Guidelines, which may contain general provisions applicable to all of the Property as well as specific provisions that vary from Neighborhood to Neighborhood or any portions of a Neighborhood or Neighborhoods or as to types of use or Improvements. The Design Guidelines will interpret and implement the provisions of this Declaration for architectural review and

establish guidelines for architectural design, placement of buildings, color schemes, exterior finishes and materials and similar features that may be used in Stafford Meadows; provided, however that the Design Guidelines will not be in derogation of the minimum standards established by this Declaration. The Design Guidelines are not the exclusive basis for decisions of the Committee, and compliance with the Design Guidelines does not guarantee approval of any application. Regulations on siting of television antennas and satellite receiving dishes will be in conformance with any applicable Federal Communications Commission rules. The Design Guidelines may not unreasonably restrict solar energy systems in violation of ORS 105.880 or electrical vehicle charging stations in conflict with ORS 94.762.

(b) **Publication of Design Guidelines**. The Architectural Review Committee must make the Design Guidelines available to Owners and builders who seek to engage in development or construction within the Property. In Declarant's discretion, the Design Guidelines may be recorded, in which event the recorded version, as it may be amended from time to time, will control in the event of any dispute as to which version of the Design Guidelines was in effect at any particular time.

(c) **Amendment of Design Guidelines**. Declarant has sole and full authority to amend the Design Guidelines during the Development Period notwithstanding a delegation of reviewing authority to the Architectural Review Committee unless Declarant also delegates the power to amend to the Committee. Upon delegation of Declarant's right to amend, the Committee will have the authority to amend the Design Guidelines with the consent of the Board of Directors. Any amendments to the Design Guidelines will be prospective only and will not apply to require modifications to or removal of structures previously approved once the approved construction or modification has commenced. There is no limitation on the scope of amendments to the Design Guidelines, and such amendments may remove requirements previously imposed or otherwise make the Design Guidelines less restrictive.

7.5 **Membership: Appointment and Removal.** The Architectural Review Committee will consist of as many Persons as Declarant may from time to time appoint. Declarant, at its discretion, may appoint a single Person to serve as the Committee and may remove any member of the Committee from office at any time and may appoint new or additional members at any time. The Association will keep on file at its principal office a list of the names and addresses of the members of the Committee. Declarant may at any time delegate to the Board of Directors of the Association the right to appoint or remove members of the Committee. In such event, or in the event Declarant fails to appoint an Architectural Review Committee, the members of the Committee will be appointed by, and serve on behalf of, the Board, or if the Board fails to appoint such members, then the Board will serve as the Committee. The term of office for each member appointed by the Board will be one year unless lengthened by the Board at the time of appointment or unless the Board serves as the Committee, in which case the terms of the members will be the same as their terms as Board members. The Board may appoint any or all of its members to the Committee and is not required to appoint non-Board members. The Board may appoint one or more members to the Committee who are not Owners, but who have special expertise regarding the matters that come before the Committee. In the sole discretion of the Board, such non-Owner members of the Committee may be paid for such services, the cost of which may be paid by the applicants or treated as a common expense, as determined by the Board.

7.6 **Majority Action.** Except as otherwise provided in this Declaration, a majority of the members of the Architectural Review Committee has the power to act on behalf of the Committee, without the necessity of a meeting and without the necessity of consulting the remaining members of the Committee. The Committee may render its decision only by written instrument setting forth the action taken by the consenting members.

7.7 **Liability.** Neither the Architectural Review Committee nor any member thereof is liable to any Owner, Occupant, builder or developer for any damage, loss or prejudice suffered or claimed on account of any action or failure to act of the Committee or a member of the Committee, and the Association will indemnify the Committee and its members therefrom, provided only that the member has, in accordance with the actual knowledge possessed by him or her, acted in good faith.

7.8 **Nonwaiver.** Consent by the Architectural Review Committee to any matter proposed to it or within its jurisdiction will not be deemed to constitute a precedent or waiver impairing its right to withhold approval as to any similar matter thereafter proposed or submitted to it for consent.

7.9 **Appeal.** At any time after Declarant has delegated appointment of the members of the Architectural Review Committee to the Board of Directors pursuant to Section 7.5, any Owner adversely affected by action of the Committee may appeal such action to the Board. Appeals must be made in writing within 10 days of the Committee's action and must contain specific objections or mitigating circumstances justifying the appeal. If the Board is already acting as the Committee, the appeal will be treated as a request for a rehearing, in which case the Board will meet and receive evidence and argument on the matter. A final, conclusive decision will be made by the Board within 15 working days after receipt of such notification.

7.10 **Effective Period of Consent.** The Architectural Review Committee's consent to any proposed work will automatically be revoked one year after issuance unless construction of the work has been substantially commenced in the judgment of the Committee and thereafter diligently pursued, or unless the Owner has applied for and received an extension of time from the Committee.

7.11 **Estoppel Certificate.** Within 20 business days after written request is delivered to the Architectural Review Committee by any Owner, and upon payment to the Committee of a reasonable fee fixed by the Committee to cover costs, the Committee will provide such Owner with an estoppel certificate executed by a member of the Committee and acknowledged, certifying with respect to any Lot owned by the Owner, that as of the date of the certificate either (a) all Improvements made or done upon or within such Lot by the Owner comply with this Declaration or (b) such Improvements do not so comply, in which event the certificate must also identify the noncomplying Improvements and set forth with particularity the nature of such noncompliance. Any purchaser from the Owner, and any Mortgagee or other encumbrancer, is entitled to rely on such certificate with respect to the matters set forth therein, such matters being conclusive as between Declarant, the Committee, the Association and all Owners, and such purchaser or Mortgagee.

7.12 **Enforcement.** If during or after the construction the Architectural Review Committee finds that the work was not performed in substantial conformance with the approval granted, or that the required approval was not obtained, the Committee will notify the Owner in writing of the noncompliance, specifying the particulars of the noncompliance. The Committee may require conforming changes to be made or that construction be stopped. The cost of any required changes will be borne by the Owner. The Committee has the power and authority to order any manner

of changes or complete removal of any Improvement, alteration, or other activity for which prior written approval from the Committee is required and has not been obtained or waived in writing. If an Owner fails to comply with an order of the Committee, then, subject to the Owner's right of appeal under Section 7.9, either the Committee or the Board of Directors may enforce compliance in accordance with the procedures set forth in Section 11.1.

Article 8

ASSOCIATION

Declarant has organized, or before conveyance of the first Lot will organize, an association of all of the Owners within Stafford Meadows. Such Association, and its successors and assigns, will be organized as an Oregon nonprofit corporation under the name "**Stafford Meadows Homeowners Association**," and will have such property, powers and obligations as are set forth in this Declaration for the benefit of the Property and all Owners of Lots located therein.

8.1 **Organization.** Declarant will, before the first Lot is conveyed to an Owner, organize the Association as a nonprofit corporation under the general nonprofit corporation laws of the State of Oregon. The Articles of Incorporation of the Association will provide for its perpetual existence, but in the event the Association is at any time dissolved, whether inadvertently or deliberately, it will automatically be succeeded by an unincorporated association of the same name. In that event, the unincorporated association will have all the property, powers and obligations of the incorporated association existing immediately prior to dissolution. To the greatest extent possible, any successor unincorporated association will be governed by the Articles of Incorporation and Bylaws of the Association as if they had been made to constitute the governing documents of the unincorporated association and will be served by the members of the Board of Directors and the officers who served immediately prior to dissolution.

8.2 **Membership.** Every Owner of one or more Lots within the Property must, immediately upon creation of the Association and thereafter during the entire period of such Owner's ownership of one or more Lots within the Property, be a member of the Association. Such membership commences, exists, and continues simply by virtue of such ownership; expires automatically upon termination of such ownership; and need not be confirmed or evidenced by any certificate or acceptance of membership.

8.3 **Voting Rights.** The Association has two classes of voting membership:

Class A. Class A Members are all Owners with the exception of the Class B Member and are entitled to one vote for each Lot owned. When more than one Person holds an interest in any Lot, all such Persons are members. The vote for such Lot is exercised as they among themselves determine, but in no event will more than one vote be cast with respect to any Lot.

Class B. The Class B Member is Declarant, who is entitled to three votes for each Lot owned by Declarant. The Class B Membership will cease and be converted to Class A Membership on the happening of any of the following events, whichever occurs earlier:

(1) When all of the Lots in the final phase of development of Stafford Meadows have been Sold and conveyed to Owners other than a successor Declarant; or

(2) At such earlier time as Declarant may elect in writing to terminate Class B Membership.

8.4 **General Powers and Obligations**. The Association has, exercises and performs all of the following powers, duties, and obligations:

(a) The powers, duties and obligations granted to the Association by this Declaration.

(b) The powers and obligations of a nonprofit corporation pursuant to the general nonprofit corporation laws of the State of Oregon.

(c) The powers, duties and obligations of a homeowners association pursuant to the Oregon Planned Community Act.

(d) Any additional or different powers, duties and obligations necessary or desirable for carrying out the functions of the Association pursuant to this Declaration or otherwise promoting the general benefit of the Owners within the Property.

The powers and obligations of the Association may from time to time be amended, repealed, enlarged or restricted by changes in this Declaration made in accordance with the provisions of this Declaration, accompanied by any required changes in the Articles of Incorporation or Bylaws of the Association made in accordance with such instruments and with the nonprofit corporation laws of the State of Oregon.

8.5 **Specific Powers and Duties**. The powers and duties of the Association include, without limitation, all of the following:

(a) **Maintenance and Services.** The Association will provide maintenance and services for the Property as provided in Article 9 and other provisions of this Declaration.

(b) **Insurance.** The Association will obtain and maintain in force policies of insurance as determined by the Board of Directors and in accordance with any requirements in this Declaration or the Bylaws of the Association.

(c) **Rulemaking.** The Association will make, establish, promulgate, amend and repeal Rules and Regulations as provided in Section 0.

(d) **Assessments.** The Association will adopt budgets and impose and collect Assessments as provided in Article 10.

(e) **Enforcement.** The Association will perform such acts, whether or not expressly authorized by this Declaration, as may be reasonably necessary to enforce the provisions of this Declaration and the Rules and Regulations adopted by the Association, including, without limitation, enforcement of the decisions of the Architectural Review Committee. Nothing in this Declaration may be construed as requiring the Association to take any specific action to enforce violations.

(f) **Employment of Agents, Advisers and Contractors.** The Association, through its Board of Directors, may employ the services of any Person as manager; hire employees to manage, conduct and perform the business, obligations and duties of the Association; employ professional counsel and obtain advice from such Persons such as, but not limited to, landscape architects, architects, planners, attorneys and accountants; and contract for or otherwise provide for all services necessary or convenient for the management, maintenance and operation of the Property; provided, however, the Board may not incur or commit the Association to incur legal fees in excess of $5,000 for any specific litigation or claim matter or enter into any contingent fee contract or any claim in excess of $100,000 unless the Owners have enacted a resolution authorizing the incurring of such fees by a vote of 75 percent of the total voting rights of the Association. These limitations are not applicable to legal fees incurred in defending the Association or the Board from claims or litigation brought against them. The limitations set forth in this paragraph (f) will increase by 10 percent on each fifth anniversary of the recording of this Declaration.

(g) **Borrow Money.** The Association may borrow and repay money for the purpose of performing its duties under this Declaration; provided, however, that such borrowing in any calendar year may not exceed 20 percent of the estimated budgeted expenses of the Association for that calendar year unless the owners have enacted a resolution authorizing the project by a majority of the voting rights of the members. The Association may pledge Association income to secure such borrowing, and, subject to Section 4.3(d), encumber the Common Areas as security for the repayment of such borrowed money.

(h) **Acquire and Hold Title to Property.** The Association may acquire and hold title to real and personal property and interests therein, and must accept any real or personal property, leasehold or other property interests within Stafford Meadows conveyed to the Association by Declarant.

(i) **Transfers, Dedications, Encumbrances and Easements.** Except as otherwise provided in Sections 4.3(d) and 4.3(e), the Association may sell, transfer or encumber and grant easements upon all or any portion of the Common Area, or other real property to which it then holds title, to a Person, whether public or private, and dedicate or transfer all or any portion of such Common Area or property to any public agency, authority or utility for public purposes.

(j) **Create Classes of Service and Make Appropriate Charges.** The Association may, in its sole discretion, create various classes of service and make appropriate Individual Assessments or charges therefor to the users of such services, including, but not limited to, reasonable admission and other fees for the use of any and all recreational facilities situated on the Common Areas, without being required to render such services to those of its members who do not assent to such charges and to such related Rules and Regulations as the Board deems proper. In addition, the Board has the right to discontinue any service upon nonpayment of Assessments or to eliminate any service for which there is no demand or for which there are inadequate funds to maintain the same.

(k) **Restoring Damaged Improvements.** In the event of damage to or destruction of Common Areas or other property that the Association insures, the Board of Directors or its duly authorized agent must file and adjust all insurance claims and obtain reliable and detailed estimates of the cost of repairing or restoring the property to substantially the condition in which it existed prior to the damage, allowing for changes or Improvements necessitated by changes in

applicable building codes. If a decision is made not to restore the damaged Improvements, and no alternative Improvements are authorized, the affected property will be cleared of all debris and ruins and thereafter will be maintained by the Association in a neat and attractive, landscaped condition. If insurance proceeds are insufficient to cover the costs of reconstruction, the Board may levy Special Assessments to cover the shortfall against those Owners responsible for the premiums for the applicable insurance coverage. Any insurance proceeds remaining after paying the costs of repair or reconstruction, or after such settlement as is necessary and appropriate, will be retained by the Association for the benefit of all or some of the Owners, as appropriate, and placed in a capital Improvements account. This is a covenant for the benefit of Mortgagees and may be enforced by the Mortgagee of any affected Lot.

(l) **Security.** The Association may, but is not obligated to, maintain or support certain activities within Stafford Meadows designed to make the Property more enjoyable or safer than it otherwise might be. **Neither the Association, Declarant nor any managing agent will be considered insurers or guarantors of security or safety within the Property, nor will either be held liable for any loss or damage by reason of failure to provide adequate security or ineffectiveness of security or safety measures undertaken. No representation or warranty is made that any system or measure, including any mechanism or system for limiting access to the Property, cannot be compromised or circumvented, nor that any such system or measure undertaken will in all cases prevent loss or provide the detection or protection for which it is designed or intended. Each Owner acknowledges and agrees that the Association, the Board of Directors and any managing agent are not insurers and that each Person using the Property assumes all risks for personal injury and loss or damage to property resulting from acts of third parties.**

(m) **Services.** The Association may provide or contract for such services as the Board of Directors may reasonably deem to be of benefit to the Property, including, without limitation, landscape services, garbage and trash removal and security services.

(n) **Implied Rights and Obligations.** The Association may exercise any other right or privilege reasonably to be inferred from the existence of any right or privilege expressly given to the Association under this Declaration or reasonably necessary to effectuate any such right or privilege.

8.6 **Liability.** Neither a member of the Board of Directors nor an officer of the Association or member of the Architectural Review Committee or any other committee established by the Board will be liable to the Association, any Owner or any third party for any damage, loss or prejudice suffered or claimed on account of any action or failure to act in the performance of his or her duties, so long as the individual acted in good faith; believed that the conduct was in the best interests of the Association, or at least was not opposed to its best interests; and, in the case of criminal proceedings, had no reason to believe the conduct was unlawful. In the event any member of the Board or any officer or committee member of the Association is threatened with or made a party to any proceeding because the individual was or is a director, officer, or committee member of the Association, the Association will defend the individual against such claims and indemnify the individual against liability and expenses incurred to the maximum extent permitted by law.

8.7 **Interim Board; Turnover Meeting.** Declarant has the right to appoint an interim board of one to three directors, who will serve as the Board of Directors of the Association until

replaced by Declarant or until their successors take office at the Turnover Meeting following termination of Class B Membership. Declarant will call a meeting of the Association for the purpose of turning over administrative responsibility for the Property to the Association not later than 90 days after termination of the Class B Membership in accordance with Section 8.3. At the Turnover Meeting the interim directors will resign and their successors will be elected by the Owners, as provided in this Declaration and in the Bylaws of the Association. If Declarant fails to call the Turnover Meeting required by this Section 8.7, any Owner or Mortgagee of a Lot may call the meeting by giving notice as provided in the Bylaws.

8.8 **Contracts Entered into by Declarant or Before Turnover Meeting.** Notwithstanding any other provision of this Declaration, any management contracts, service contracts or employment contracts entered into by Declarant or the Board of Directors on behalf of the Association before the Turnover Meeting will have a term of not more than three years. In addition, any such contract must provide that it may be terminated without cause or penalty by the Association or Board upon not less than 30 days' notice to the other party given not later than 60 days after the Turnover Meeting. The limitations contained in this Section 8.8 do not apply to those contracts referred to in ORS 94.700(2).

8.9 **Bylaws.** The Bylaws of the Association and any amendment or modification of the Bylaws will be recorded in the Deed Records of Clackamas County, Oregon. On behalf of the Association, the Declarant will adopt and record the initial Bylaws as provided in ORS 94.625.

Article 9

MAINTENANCE

9.1 **Common Maintenance Areas.** The Common Maintenance Areas include the Common Areas, Limited Common Areas, Common Easement Areas, and the Front Yards of Lots in Stafford Meadows, and the wall maintenance areas designated on the Plat, until such maintenance is assumed by the local jurisdiction, if ever.

9.2 **Maintenance and Lighting of Common Maintenance Areas.** The Association is responsible for exterior lighting, if any, in the Common Areas and will perform all maintenance upon the Common Maintenance Areas, including, but not limited to, entrance monuments, gates, fences, walls in Common Areas or bordering the Common Areas (including without limitation any fence or wall along S.W. Boeckman Road, and any public vegetated swale along any roadway in the Property), signs, parking areas, pathways, bicycle paths, unless the maintenance thereof is assumed by a public body. Sidewalks, notwithstanding the public easement over them, are the Lot Owner's responsibility to maintain, repair, and replace and to keep free of leaves, ice, and snow. The Association is responsible for maintenance and irrigation of landscaping in the Front Yards and the walls constructed in the wall maintenance easement areas designated on the Plat, and for the design and any modification thereof.

(a) In the Front Yards, irrigation systems, including related controllers, monitors, and equipment, belong to the Lot Owner. Landscaping irrigation settings will be set by the Association and no Owner may tamper with or change such settings. The Association has the right of access to each such controller, monitor, or other equipment wherever located on a Lot. The cost of water for irrigation of the Front Yards is the responsibility of the Association and will be a common

expense. Rain gardens are part of the Property's overall stormwater treatment plan, whether located in the public right of way or on a portion of a Lot; any rain garden located on any Lot will be the responsibility of the Association to maintain as part of the Lot's Front Yard landscaping, which must be performed so that the rain garden area works for its intended stormwater collection and filtering functions. The Association will also maintain and irrigate the area of the street right-of-way between the curb and the sidewalk. Such areas will be maintained in attractive condition and in a good and workmanlike manner to render them fit for the purposes for which they are intended. The maintenance of Front Yards by the Association does not include maintenance of special features, which are the Owner's responsibility, including but not limited to decorative water features (ponds, streams, waterfalls, etc.), bridges, gazebos, foot paths, putting greens, or any other Improvement other than ordinary landscaping, which are the responsibility of the Lot Owner. Front Yard maintenance expenses borne by the Association will be Individual Expenses to be determined by the board of directors according to Section 10.3 below.

(b) The Association is hereby assigned and assumes the City of Wilsonville Development Agreements in respect of all the Property thereunder that subjected to this Declaration. Except to the extent of the Declarant's obligations to install, construct, and for the stated bond period therein, inspect and maintain, certain improvements on the affected Common Areas, this assignment and assumption includes Declarant's on-going maintenance, repair, inspection, and replacement obligations under the City of Wilsonville Development Agreements.

9.3 **Maintenance of Shared Irrigation Systems and Utility Facilities.** The Association will perform or contract to perform maintenance of (i) all irrigation systems and facilities within Common Maintenance Areas, and (ii) any private utilities serving a Common Area (other than Common Easement Areas), except to the extent such maintenance is performed by the utilities furnishing such services. The Association is not liable for any interruption or failure of such services. Each Owner is responsible for maintaining utility lines within his or her Lot other than those serving the Common Maintenance Areas.

9.4 **Owner's Responsibility.** Except as otherwise provided in this Declaration or by written agreement with the Association, all maintenance of the Lots and Improvements, including landscaping for which the Association is not responsible, walkways, and the driveway thereon as provided in Section 6.5 and 6.7 will be the sole responsibility of the Lot Owner, who will maintain the Lot in a neat and attractive condition in accordance with the community-wide standard of Stafford Meadows. Sidewalks, notwithstanding the public easement over them, are the Lot Owner's responsibility to maintain, repair, and replace and to keep free of leaves, ice, and snow. The Association may, in the discretion of the Board of Directors, assume the maintenance responsibilities of such Owner if, in the opinion of the Board, the level and quality of maintenance being provided by such Owner does not satisfy such standard. Before assuming such maintenance responsibilities, the Board will notify the Owner in writing of its intention to do so, and if such Owner has not commenced and diligently pursued remedial action within 15 days after mailing of such written notice, then the Association may proceed. The expenses of such maintenance by the Association will be reimbursed to the Association by the Owner, together with interest as provided in Section 11.3. Such charges will be an Individual Assessment and lien on the Lot as provided in Sections 10.4(d) and 11.1.

9.5 **Damage Liability.** Any damage to any Common Maintenance Area by Owners or their children, agents, visitors, friends, relatives, tenants, Occupants or service personnel, to the extent

not covered by the Association's insurance (including any deductible), will be assessed to such Owners as an Individual Assessment.

9.6 **Maintenance Plan.** Declarant will initially prepare and thereafter the Board of Directors must implement, review, and update a maintenance plan (the "**Maintenance Plan**") for the maintenance, repair and replacement of all property for which the Association has maintenance, repair or replacement responsibility under this Declaration or the Bylaws or the Oregon Planned Community Act. The Maintenance Plan will describe the maintenance, repair or replacement to be conducted; include a schedule for maintenance, repair or replacement; be appropriate for the size and complexity of the maintenance, repair and replacement responsibility of the Association; and address issues that include, but are not limited to, warranties and the useful life of the items of which the Association has maintenance, repair or replacement responsibility. The Board must review and update the Maintenance Plan as necessary. Changes or updates to the Maintenance Plan will be based on advice of competent experts or consultants. For a period of 10 years following recording of the Declaration, any changes to the Maintenance Plan without the approval of the Declarant and the original general contractor may void any applicable warranty and will release them from liability for any damage resulting from such change.

Article 10

ASSESSMENTS

10.1 **Purpose of Assessments.** The Association may levy Assessments. The Assessments levied by the Association must be used exclusively to promote the recreation, health, safety and welfare of the Owners and Occupants of the Property and for the improvement, operation and maintenance of the Common Maintenance Areas.

10.2 **When Lots Become Subject to Assessment.** Upon the first sale of each Lot to a purchaser other than (i) Declarant, (ii) another developer or builder in a bulk sale of Lots, (iii) a successor declarant, or (iv) an affiliate of Declarant, the Lot Sold becomes subject to assessment and the Owner will pay General Assessments, Special Assessments, Emergency Assessments, Limited Common Area Assessments, and if any, Individual Assessments.

10.3 **Allocation of Assessments.** Except as may otherwise be provided in an applicable supplemental declaration annexing Additional Property to this Declaration, all Lots subject to assessment will pay an equal share of the General Assessments, Special Assessments, and Emergency Assessments. The cost of Front Yard maintenance, including landscaping upkeep, repair and operation of irrigation systems, and water for irrigation, will be Individual Expenses, which will be reasonably determined by the board of directors based on the size and features of any given Lot's Front Yard and categories of corresponding assessments for the Front Yard maintenance performed by the Association. The board has the authority to create categories of Lots based on their size and Front Yard features, including without limitation that some Lots will have private rain gardens in their Front Yards and others will not, for the purpose of creating categories of Lots in respect of the Front Yard assessments; in other words, notwithstanding that Front Yard maintenance costs will be assessed as Individual Assessments, Front Yards may be lumped together by size and feature for simplification of assessment invoicing. If the irrigation water is not separately metered on a Lot, the board of directors will reasonably estimate irrigation as between Lots sharing a landscaping water meter and allocate the water costs accordingly or according to categories of Lots for Front Yard assessment.

10.4 **Type of Assessments.** The Association is authorized to levy the following types of Assessments:

(a) **General Assessments.** The Association will levy General Assessments for the common expenses incurred by or on behalf of the Association in accordance with this Declaration. The Board of Directors will from time to time and at least annually prepare an operating budget for the Association, taking into account the current costs of maintenance and services and future needs of the Association, any previous over-assessment and any common profits of the Association. The budget must take into account the number of Lots subject to assessment as of the first day of the fiscal year for which the budget is prepared and the number of Lots reasonably anticipated to become subject to assessment during the fiscal year. The budget may be based upon a greater number of Lots than those reasonably anticipated to be subject to assessment during the fiscal year if the Declarant agrees to subsidize the Association for any shortfall in the Operations Fund. The budget will provide for such reserve or contingency funds as the Board deems necessary or as may be required by law, but not less than the reserves required by Section 10.7. General Assessments for such operating expenses and reserves will then be apportioned among the Lots as provided in Section 10.3. The Board may revise the budget and adjust the General Assessment from time to time during the year. Within 30 days after the adoption of a final budget by the Board, the Board will send a copy of the final budget to each Owner. If the Board fails to adopt a budget, the last adopted budget continues in effect. The manner of billing and collection of Assessments is as provided in the Bylaws.

(b) **Special Assessments.** The Board of Directors may levy during any fiscal year a Special Assessment, applicable to that year only, for the purpose of deferring all or any part of the cost of any construction or reconstruction, unexpected repair, or acquisition or replacement of a described capital Improvement, or for any other one-time expenditure not to be paid for out of General Assessments. Special Assessments for acquisition or construction of new capital Improvements or additions that in the aggregate in any fiscal year exceed an amount equal to 15 percent of the budgeted gross expenses of the Association for the fiscal year may be levied only if approved by a majority of the voting rights voting on such matter, together with the written consent of the Class B Member, if any. Prior to the Turnover Meeting, any Special Assessment for acquisition or construction of new capital Improvements or additions must be approved by not less than 50 percent of the Class A voting rights, together with the written consent of the Class B Member. Special Assessments will be apportioned as provided in Section 10.3 and may be payable in lump sum or in installments, with or without interest or discount, as determined by the Board.

(c) **Emergency Assessments.** If the General Assessments levied at any time are or will become inadequate to meet all expenses incurred under this Declaration for any reason, including nonpayment of any Owner's Assessments on a current basis, the Board of Directors will immediately determine the approximate amount of such inadequacy and issue a supplemental budget, noting the reason therefor, and levy an Emergency Assessment for the amount required to meet all such expenses on a current basis. Emergency Assessments will be apportioned as set forth in Section 10.3 and payable as determined by the Board.

(d) **Limited Common Area Assessments**. General Assessments, Special Assessments and Emergency Assessments relating to maintenance, upkeep, repair, replacement or improvements to Limited Common Areas will be assessed exclusively and on an equal basis to the Lots having the right to use such Limited Common Areas.

(e) **Individual Assessments.** Any common expense or any part of a common expense benefiting fewer than all of the Lots may be assessed as Individual Assessments exclusively against the Lots benefited. Individual Assessments include, without limitation, charges for services provided under Sections 8.5(j), 9.2(a), and 10.4(a) and any loss or cost incurred by the Association that the Board of Directors determines is the fault of one or more Owners and not paid by insurance. Individual Assessments also include default Assessments levied against any Lot to reimburse the Association for costs incurred in bringing such Lot or its Owner into compliance with the provisions of this Declaration or the Rules and Regulations of the Association and for fines or other charges imposed pursuant to this Declaration for violation thereof. Unless otherwise provided by the Board, Individual Assessments will be due 30 days after the Board has given written notice thereof to the Owners subject to the Individual Assessments.

(f) **Working Fund Assessments.** Upon the first sale of a Lot to a purchaser other than a successor Declarant and upon any subsequent sale of such Lot, the purchaser will pay to the Association a Working Fund Assessment equal to two times the monthly General Assessment then applicable to the Lot. The Board of Directors may deposit Working Fund Assessments either in the Operations Fund or in the Reserve Fund, at the discretion of the Board.

10.5 **Assessment of Additional Property.** When Additional Properties are annexed to Stafford Meadows, the Lots included therein become subject to Assessments from the date of such annexation to the extent provided in Section 10.2. The Board of Directors, however, at its option may elect to recompute the budget based upon the additional Lots subject to Assessment and additional Common Areas and recompute General Assessments for all Lots, including the new Lots, for the balance of the fiscal year. Notwithstanding any provision of this Declaration apparently to the contrary, a declaration annexing Additional Property may provide that such Additional Property does not have the right to use a particular Common Area or facility located thereon, in which case such Additional Property will not be assessed for the costs of operating, maintaining, repairing, replacing or improving such Common Area or facility.

10.6 **Operations Fund.** The Association will keep all funds received by it as Assessments, other than reserves described in Section 10.7 or Working Fund Assessments deposited in the Reserve Fund, separate and apart from its other funds, in an Operations Fund in a bank account in the name of the Association. The Association will use such fund for the purpose of promoting the recreation, health, safety and welfare of the residents within the Property and in particular for the improvement and maintenance of properties, services and facilities devoted to this purpose and related to the use and enjoyment of the Common Maintenance Areas and the Lots, including but not limited to:

(a) Payment of the cost of operation, maintenance, utilities, services, repairs, and replacements for the Common Maintenance Areas.

(b) Payment of the cost of insurance maintained by the Association.

(c) Payment of taxes assessed against the Common Areas and any Improvements thereon.

(d) Payment of the cost of other services that the Association deems to be of general benefit to the Owners, including, but not limited to, accounting, legal, and secretarial services.

10.7 **Reserve Fund.**

(a) **Establishment of Account.** Declarant, on behalf of the Association, will conduct an initial reserve study as described in Section 10.7(c) and establish a Reserve Fund in a bank account in the name of the Association to fund major maintenance, repair or replacement of any common properties that will normally require replacement in whole or in part in more than one and less than 30 years; for exterior painting if the Common Maintenance Areas or other property to be maintained by the Association includes exterior painted surfaces; and for other items, whether or not involving Common Maintenance Areas, if the Association has responsibility to maintain the items, including items required by the Maintenance Plan established pursuant to Section 9.6. The Reserve Fund need not include those items that can reasonably be funded from the general budget or other funds of the Association or for those items for which one or more, but less than all, Owners are responsible for maintenance and replacement under the provisions of this Declaration or the Bylaws. Nothing in this Section 10 prohibits prudent investment of the Reserve Fund.

(b) **Funding of Reserve Fund.** The Reserve Fund will be funded by Assessments against the individual Lots assessed for maintenance of the items for which the Reserve Fund is being established, which sums will be included in the regular General Assessment for the Lot and the Limited Common Area Assessments, if applicable. The Board, however, may borrow funds from the Reserve Fund to meet high seasonal demands on the regular operating funds or to meet other temporary expenses that will later be paid from General Assessments, Special Assessments, or Emergency Assessments. The Reserve Fund also includes Working Fund Assessments to the extent so allocated by the Board of Directors pursuant to Section 10.4(f). The Reserve Fund will be established in the name of the Association. The Association is responsible for administering the Reserve Fund and making periodic payments into the account. The Board of Directors or the Owners may not vote to eliminate funding the Reserve Account unless the Board determines that the Reserve Account will be adequately funded for the following year, except that after the Turnover Meeting the Board, with the approval of all Owners, may, on an annual basis, elect not to fund the Reserve Fund for the following year. Assessments paid into the Reserve Fund are the property of the Association and are not refundable to sellers or Owners of Lots. Sellers of the Lots, however, may treat their outstanding share of the Reserve Fund as a separate item in any sales agreement.

(c) **Reserve Studies.** The reserve portion of the initial Assessment determined by Declarant will be based on a reserve study described in this paragraph (c) or other sources of information. The Board of Directors will annually conduct a reserve study, or review and update an existing study, to determine the Reserve Fund requirements, and may adjust the amount of payments as indicated by the study or update and provide other reserve items that the Board, in its discretion, may deem appropriate. The reserve study will:

(1) Identify all items for which reserves are to be established;

(2) Include the estimated remaining useful life of each item as of the date of the reserve study; and

(3) Include for each item, as applicable, an estimated cost of maintenance, repair and replacement at the end of its useful life.

(d) **Use of Reserve Fund.** If a Reserve Fund is required, the Reserve Fund will be used only for the purposes for which the reserves have been established and kept separate from other funds. After the Turnover Meeting, however, the Board of Directors may borrow funds from the Reserve Fund to meet high seasonal demands on the regular operating funds or to meet unexpected increases in expenses if the Board has adopted a resolution, which may be an annual continuing resolution, authorizing the borrowing of funds. Not later than the adoption of the budget for the following year, the Board will adopt by resolution a written payment plan providing for repayment of the borrowed funds within a reasonable period. Assessments paid into the Reserve Fund are the property of the Association and are not refundable to sellers or Owners of Lots. Sellers of the Lots, however, may treat their outstanding share of the Reserve Fund as a separate item in any sales agreement.

10.8 **Declarant's Subsidy.** Declarant may, but is not be obligated to, reduce the General Assessments for any fiscal year by payment of a subsidy (in addition to any other amounts then owed by Declarant), which may be either a contribution, an advance against future Assessments due from Declarant or a loan, in Declarant's discretion. Any such subsidy will be disclosed as a line item in the income portion of the Association's budget. Payment of such subsidy in any year will not obligate Declarant to continue payment of such subsidy in future years unless otherwise provided in a written agreement between the Association and Declarant.

10.9 **Commencement of Assessment Obligation; Time of Payment.** The obligation to pay Assessments under this Declaration commences as to each Lot on the first day of the month after such Lot becomes subject to Assessment. The first annual General Assessment levied on each Lot will be adjusted according to the number of months remaining in the fiscal year at the time Assessments commence for such Lot.

10.10 **Payment of Assessments.** Assessments must be paid in such manner and on such dates as the Board of Directors may establish. Unless the Board otherwise provides, the General Assessment is due and payable in advance on the first day of each fiscal year. If any Owner is delinquent in paying any Assessments or other charges levied on his or her Lot, the Board may require the outstanding balance on all Assessments to be paid in full immediately. Until the Turnover Meeting, any obligation of Declarant to pay Assessments may be satisfied in the form of cash or by "in kind" contributions of services or materials, or by a combination of these.

10.11 **Creation of Lien and Personal Obligation of Assessments.** Declarant, for each Lot owned by it within the Property, hereby covenants, and each Owner of any Lot by acceptance of a conveyance thereof, whether or not so expressed in any such conveyance, will be deemed to covenant to pay to the Association all Assessments or other charges as may be fixed, established and collected from time to time in the manner provided in this Declaration or the Association Bylaws. Such Assessments and charges, together with any interest, late charges, expenses or attorneys' fees imposed pursuant to Article 11, are a charge on the land and a continuing lien upon the Lot against which each such Assessment or charge is made. Such Assessments, charges, and other costs are also the personal obligation of the Person who was the Owner of such Lot at the time when the Assessment or charge fell due. Such liens and personal obligations will be enforced in the manner set forth in Article 11.

10.12 **Voluntary Conveyance.** In a voluntary conveyance of a Lot the grantee will be jointly and severally liable with the grantor for all unpaid Assessments against the grantor of the Lot up to

the time of the grant or conveyance, without prejudice to the grantee's right to recover from the grantor the amounts paid by the grantee therefor. However, upon request of an Owner or Owner's agent for the benefit of a prospective purchaser, the Board of Directors will make and deliver a written statement of the unpaid Assessments against the prospective grantor of the Lot effective through a date specified in the statement, and the grantee in that case will not be liable for any unpaid Assessments against the grantor not included in the written statement.

10.13 **No Waiver.** Failure of the Board of Directors to fix Assessment amounts or rates or to deliver or mail each Owner an Assessment notice will not be deemed a waiver, modification or release of any Owner from the obligation to pay Assessments. In such event, each Owner will continue to pay Assessments on the same basis as during the last year for which an Assessment was made, if any, until a new Assessment is levied, at which time the Association may retroactively assess any shortfalls in collections.

10.14 **No Option to Exempt.** No Owner may exempt himself or herself from liability for Assessments by nonuse of Common Areas, abandonment of his or her Lot, or any other means. The obligation to pay Assessments is a separate and independent covenant on the part of each Owner. No diminution or abatement of Assessments or set-off may be claimed or allowed for any alleged failure of the Association or Board of Directors to take some action or perform some function required of it, or for inconvenience or discomfort arising from the making of repairs or Improvements, or from any other action it takes.

10.15 **Certificate.** Upon written request, the Association must furnish to any Owner liable for any type of Assessment a certificate in writing signed by an Association officer setting forth whether such Assessment has been paid. Such certificate is conclusive evidence of payment. The Association may require the advance payment of a reasonable processing fee for the issuance of such certificate.

Article 11

ENFORCEMENT

11.1 **Violation of General Protective Covenants.** If an Owner constructs or permits to be constructed on his or her Lot an Improvement contrary to the provisions of this Declaration, or violates any provisions of this Declaration, the Bylaws, or the Rules and Regulations, then the Association acting through the Board of Directors will notify the Owner in writing of any such specific violations. If the Owner is unable, is unwilling, or refuses to comply with the Association's specific directives for remedy or abatement, or the Owner and the Association cannot agree to a mutually acceptable solution within the framework and intent of this Declaration, after notice and opportunity to be heard and within 14 days after issuing written notice to the Owner, then the Association acting through the Board has the right to do any or all of the following:

(a) Assess reasonable fines against such Owner, based upon a resolution adopted by the Board of Directors that is delivered to each Lot, mailed to the mailing address of each Lot or mailed to the mailing address designated by the Owner of each Lot in writing, which fines constitute Individual Assessments for purposes of this Declaration;

(b) Enter the offending Lot and remove the cause of such violation, or alter, repair or change the item that is in violation of this Declaration in such a manner as to make it conform thereto, in which case the Association may assess such Owner for the entire cost of the work done, which amount will be payable to the Operations Fund as an Individual Assessment, provided that no items of construction will be altered or demolished in the absence of judicial proceedings;

(c) Cause any vehicle parked in violation of this Declaration or of the Rules and Regulations to be towed and impounded at the Owner's expense;

(d) Suspend the voting rights, any utility services paid for out of Assessments and the right to use the Common Areas for the period that the violations remain unabated, provided that the Association does not deprive any Owner of access to and from the Owner's Lot in the absence of a lien foreclosure or court order to such effect; and

(e) Bring suit or action against the Owner on behalf of the Association and other Owners to enforce this Declaration.

11.2 **Default in Payment of Assessments; Enforcement of Lien.** If an Assessment or other charge levied under this Declaration is not paid within 30 days after its due date, such Assessment or charge becomes delinquent and bears interest from the due date at the rate set forth below. In such event the Association may exercise any or all of the following remedies:

(a) The Association may suspend such Owner's voting rights, any utility or communication service paid for out of Assessments and right to use the Common Areas until such amounts, plus other charges under this Declaration, are paid in full, and may declare all remaining periodic installments of any General Assessment immediately due and payable. In no event, however, will the Association deprive any Owner of access to and from the Owner's Lot in the absence of a lien foreclosure or court order to such effect.

(b) The Association has a lien in accordance with ORS 94.709 against each Lot for any Assessment levied against the Lot, including any fines or other charges imposed under this Declaration or the Bylaws against the Owner of the Lot, and may foreclose such lien in the manner provided in ORS 94.709.

(c) The Association may bring an action to recover a money judgment for unpaid Assessments under this Declaration without foreclosing or waiving the lien described in Section 11.2(b). Recovery on any such action, however, operates to satisfy the lien, or the portion thereof, for which recovery is made.

(d) The Association has any other remedy available to it by law or in equity.

11.3 **Interest, Late Charges and Expenses.** Any amount not paid to the Association when due in accordance with this Declaration bears interest from the due date until paid at a rate that is the greater of 12 percent per annum or such other rate as may be established by the Board of Directors, but not to exceed the lawful rate of interest under the laws of the state of Oregon. A late charge may be charged for each delinquent Assessment in an amount established from time to time by resolution of the Board, which resolution is delivered to each Lot, mailed to the mailing address of each Lot or mailed to the mailing address designated by the Owner in writing, together with all

expenses incurred by the Association in collecting such unpaid Assessments, including attorneys' fees (even if suit is not instituted). In the event the Association files a notice of lien, the lien amount also includes the recording fees associated with filing the notice, and a fee for preparing the notice of lien, established from time to time by resolution of the Board.

11.4 **Costs and Attorneys' Fees.** In the event of any suit or action to enforce this Declaration, the Bylaws, the Rules and Regulations, or the Oregon Planned Community Act, or to collect any money due hereunder or to foreclose a lien, the prevailing party in such suit or act will be entitled to recover all costs and expenses incurred by it in connection with such suit or action, including a foreclosure title report, and will recover such amount as the court may determine to be reasonable as attorneys' fees at trial and upon any appeal or petition for review thereof or in connection with any bankruptcy proceedings or special bankruptcy remedies.

11.5 **Assignment of Rents.** As security for the payment of all obligations owing to the Association pursuant to this Section 11.5, each Owner hereby grants to the Association the right to collect the rents, issues and profits of the Owner's Lot; provided, however, that the Owner will retain the right, prior to any default by such Owner in performance of the Owner's obligations under this Declaration, to collect and retain such rents, issues and profits as they become due and payable. Upon any such default, the Association may, at any time after 10 days written notice to the Owner, either in person, by agent or by a receiver to be appointed by a court of competent jurisdiction, and without regard to the adequacy of any security for such indebtedness, in its own name sue for or otherwise collect such rents, issues and profits, including those past due and unpaid, and apply them, less costs and expenses of operation and collection, including reasonable attorneys' fees, in payment of such indebtedness to the Association, and in such order as the Association may determine. Such action will not cure nor waive any default under this Declaration or invalidate any act done pursuant to this Declaration. The assignment of rents and powers described in this Section 11.5 does not affect, and will in all respects be subordinated to, the rights and powers of the holder of any first or second Mortgage on any Lot to do the same or similar acts

11.6 **Nonexclusiveness and Accumulation of Remedies.** An election by the Association to pursue any remedy provided for violation of this Declaration will not prevent concurrent or subsequent exercise of another remedy permitted under this Declaration. The remedies provided in this Declaration are not exclusive but are in addition to all other remedies, including actions for damages and suits for injunctions and specific performance, available under applicable law to the Association. In addition, any aggrieved Owner may bring an action against another Owner or the Association to recover damages or to enjoin, abate, or remedy any violation of this Declaration by appropriate legal proceedings.

11.7 **Enforcement by Clackamas County.** The provisions of this Declaration relating to preservation and maintenance of Common Areas will be deemed to be for the benefit of Clackamas County as well as the Association and Owners of Lots, and Clackamas County may enforce such provisions by appropriate proceedings at law or in equity, or may cause such maintenance to be performed, the costs of which will become a lien upon the Property.

Article 12

DISPUTE RESOLUTION

12.1 **Mediation.**

(a) Except as otherwise provided in this Section 12.1, before initiating litigation, arbitration, or an administrative proceeding in which the Association and an Owner have an adversarial relationship, the party that intends to initiate litigation, arbitration or an administrative proceeding will offer to use any dispute resolution program available within Clackamas County, Oregon that is in substantial compliance with the standards and guidelines adopted under ORS 36.175. The written offer must be hand-delivered or mailed by certified mail, return receipt requested, to the address, contained in the records of the Association, for the other party.

(b) If the party receiving the offer does not accept the offer within 10 days after receipt of the offer, such acceptance to be made by written notice, hand-delivered or mailed by certified mail, return receipt requested, to the address, contained in the records of the Association, for the other party, the initiating party may commence the litigation, arbitration or administrative proceeding. The notice of acceptance of the offer to participate in the program must contain the name, address, and telephone number of the body administering the dispute resolution program.

(c) If a qualified dispute resolution program exists within Clackamas County, Oregon and an offer to use the program is not made as required under Section 12.1(a), then litigation, arbitration or an administrative proceeding may be stayed for 30 days upon a motion of the noninitiating party. If the litigation, arbitration or administrative action is stayed under this Section 12.1(c), both parties must participate in the dispute resolution process.

(d) Unless a stay has been granted under Section 12.1(c), if the dispute resolution process is not completed within 30 days after receipt of the initial offer, the initiating party may commence litigation, arbitration or an administrative proceeding without regard to whether the dispute resolution is completed.

(e) Once made, the decision of the court, arbitrator or administrative body arising from litigation, arbitration or an administrative proceeding may not be set aside on the grounds that an offer to use a dispute resolution program was not made.

(f) The requirements of this Section 12.1 do not apply to circumstances in which irreparable harm to a party will occur due to delay or to litigation, arbitration, or an administrative proceeding initiated to collect Assessments, other than Assessments attributable to fines.

12.2 **Arbitration.** Any claim, controversy or dispute by or among Declarant (including members, officers, directors, shareholders and affiliates of Declarant), Association, the Architectural Review Committee, or one or more Owners, or any of them, arising out of or related to this Declaration, the Bylaws, the Rules and Regulations, or the Property will be first subject to mediation as described in Section 12.1 or otherwise, and if not timely settled by mediation will be resolved by arbitration in accordance with this Article 12. The decisions and award of the arbitrator are final, binding and nonappealable. The arbitration will be conducted in the Portland, Oregon, metropolitan area or at such other location as may be agreed upon by the parties, pursuant to the arbitration statutes

of the state of Oregon, and any arbitration award may be enforced by any court with jurisdiction. Filing for arbitration will be treated the same as filing in court for purposes of meeting any applicable statute of limitations or for purposes of filing a notice of pending action ("lis pendens").

12.3 **Selection of Arbitrator.** The arbitration will be conducted by a single arbitrator selected by mutual agreement of the parties. The arbitrator selected must be neutral and unbiased, except to the extent the arbitrator's prior relationship with any party is fully disclosed and consented to by the other party or parties. If the parties are unable to agree upon the arbitrator within 10 days after a party's demand for arbitration, upon application of any party, the presiding judge of the Circuit Court of Clackamas County, Oregon will designate the arbitrator.

12.4 **Consolidated Arbitration.** Upon demand by any party, claims between or among the parties and third parties will be submitted in a single, consolidated arbitration. Notwithstanding the provisions of this Article 12, in the event any claim, controversy or dispute involves a claim by either party against a third party who is not required to and does not voluntarily agree to submit such claim to arbitration, then either party may elect to have the matter determined by a court of law in a consolidated proceeding, rather than by arbitration. In such case, the parties hereby waive trial by jury and agree that the matter will be determined by a judge sitting without a jury.

12.5 **Discovery.** The parties to the arbitration are entitled to such discovery as would be available to them in an action in Clackamas County Circuit Court. The arbitrator has all of the authority of the court incidental to such discovery, including, without limitation, authority to issue orders to produce documents or other materials, to issue orders to appear and submit to deposition, and to impose appropriate sanctions, including, without limitation, award against a party for failure to comply with any order.

12.6 **Evidence.** The parties to the arbitration may offer such evidence as they desire and will produce such additional evidence as the arbitrator may deem necessary for an understanding and determination of the dispute. The arbitrator will determine the admissibility of the evidence offered. All evidence will be taken in the presence of the arbitrator and all of the parties, except when any of the parties is absent in default or has waived its right to be present.

12.7 **Excluded Matters.** Notwithstanding the foregoing, the following matters are not subject to mediation or arbitration under this Article 12 (but are subject to the applicable provisions of Section 12.8): (a) actions relating to the collection of fees, Assessments, fines and other charges imposed or levied by the Association (other than disputes as to the validity or amount of such fees, Assessments, fines or charges, which disputes will be subject to mediation/arbitration as provided above); and (b) actions to enforce any order, decision or award rendered by arbitration pursuant to this Article 12. The filing of a lis pendens or the application to any court for the issuance of any provisional process or similar remedy described in the Oregon or Federal Rules of Civil Procedure will not constitute a waiver of the right or duty to utilize the procedures specified in this Article 12.

12.8 **Costs and Attorneys' Fees.** The fees of any mediator and the costs of mediation will be divided and paid equally by the parties. Each party will pay its own attorneys' fees and costs in connection with any mediation. The fees of any arbitrator and the costs of arbitration will be paid by the nonprevailing party or parties; if none, such fees and costs will be divided and paid equally by the parties. Should any suit, action or arbitration be commenced in connection with any dispute related to or arising out of this Declaration, the Bylaws, the Rules and Regulations, or the Oregon Planned

Community Act to obtain a judicial construction of any provision of this Declaration, the Bylaws or the Rules and Regulations; to rescind this Declaration; or to enforce or collect any judgment or decree of any court or any award obtained during arbitration, the prevailing party will be entitled to recover its costs and disbursements, together with such investigation, expert witness and attorneys' fees incurred in connection with such dispute as the court or arbitrator may adjudge reasonable, at trial, in the arbitration, upon any motion for reconsideration, upon petition for review, and on any appeal of such suit, action or arbitration proceeding. The determination of who is the prevailing party and the amount of reasonable attorneys' fees to be paid to the prevailing party will be decided by the arbitrator (with respect to attorneys' fees incurred before and during the arbitration proceeding) and by the court or courts, including any appellate or review court, in which such matter is tried, heard or decided, including a court that hears a request to compel or enjoin arbitration or that hears exceptions made to an arbitration award submitted to it for confirmation as a judgment (with respect to attorneys' fees incurred in such proceedings).

12.9 **Survival.** The mediation and arbitration agreement set forth in this Article 12 will survive the transfer by any party of its interest or involvement in the Property and any Lot therein and will survive the termination of this Declaration.

Article 13

MORTGAGEES

The following provisions are for the benefit of holders, insurers and guarantors of first Mortgages on Lots. The provisions of this Article 13 apply to both this Declaration and to the Bylaws, notwithstanding any other provisions contained therein.

13.1 **Subordination of Lien to Mortgages.** The lien of the Assessments or charges provided for in this Declaration are subordinate to the lien of any Mortgage on such Lot which was made in good faith and for value and which was recorded prior to the recordation of the notice of lien. Sale or transfer of any Lot does not affect the Assessment lien, but the sale or transfer of any Lot that is subject to any Mortgage or deed of trust pursuant to a decree of foreclosure or nonjudicial sale thereunder extinguishes any lien of an Assessment, notice of which was recorded after the recording of the Mortgage. Such sale or transfer, however, does not release the Lot from liability for any Assessments or charges thereafter becoming due or from the lien of such Assessments or charges.

13.2 **Reimbursement of First Mortgagees.** First Mortgagees of Lots may, jointly or singly, pay taxes or other charges which are in default and which may or have become a charge against any Common Areas and may pay overdue premiums on hazard insurance policies or secure new hazard insurance coverage on the lapse of a policy, for such Common Area. First Mortgagees making such payments are owed immediate reimbursement therefor from the Association.

13.3 **Notification of First Mortgagee.** If a first Mortgagee has requested such notice in writing from the Association, the Board will notify such Mortgagee of any individual Lot of any default in performance of this Declaration by the Owner which is not cured within 60 days after notice of default to the Owner.

13.4 **Notice to Association.** Upon request, each Owner is obligated to furnish to the Association the name and address of the holder of any Mortgage encumbering such Owner's Lot.

Article 14

AMENDMENT AND REPEAL

14.1 **How Proposed.** Amendments to or repeal of this Declaration will be proposed by either a majority of the Board of Directors or by Owners holding 30 percent or more of the Association's voting rights. The proposed amendment or repeal must be reduced to writing and will be included in the notice of any meeting at which action is to be taken thereon or attached to any request for consent to the amendment or repeal.

14.2 **Approval Required.** This Declaration, or any provision thereof, as from time to time in effect with respect to all or any part of the Property, may be amended or repealed by the vote or written consent of Owners representing not less than 75 percent of the voting rights, without regard to any weighted vote for the Class B Member, together with the written consent of the Class B Member, if such Class B Membership has not been terminated as provided in this Declaration. In no event will an amendment under this section create, limit or diminish special Declarant rights without Declarant's written consent, or change the boundaries of any Lot or any uses to which any Lot is restricted under this Declaration or change the method of determining liability for common expenses, the method of determining the right to common profits or the method of determining voting rights of any Lot unless the Owners of the affected Lots unanimously consent to the amendment. Declarant may not amend this Declaration to increase the scope of special Declarant rights reserved in this Declaration after the sale of the first Lot unless Owners representing 75 percent of the total vote, other than Declarant, agree to the amendment. To the extent any amendment relates to the preservation or maintenance of the Common Areas or private utility lines, a City of Wilsonville Development Agreement, or the existence of an entity responsible for accomplishing the same, such amendment must be approved by the planning department of City of Wilsonville.

14.3 **Recordation.** Any such amendment or repeal becomes effective only upon recordation in the Deed Records of Clackamas County, Oregon of a certificate of the president and secretary of the Association setting forth in full the amendment, amendments or repeal so approved and certifying that such amendment, amendments or repeal have been approved in the manner required by this Declaration and ORS 94.590, and acknowledged in the manner provided for acknowledgment of deeds.

14.4 **Regulatory Amendments.** Notwithstanding the provisions of Section 14.2, until the Turnover Meeting has occurred, Declarant has the right to amend this Declaration or the Bylaws of the Association to comply with the requirements of the Federal Housing Administration; the United States Department of Veterans Affairs; the Farmers Home Administration of the United States; the Federal National Mortgage Association; the Government National Mortgage Association; the Federal Home Mortgage Loan Corporation; any department, bureau, board, commission or agency of the United States or the state of Oregon; or any corporation wholly owned, directly or indirectly, by the United States or the state of Oregon that insures, guarantees or provides financing for a planned community or lots in a planned community. After the Turnover Meeting, any such amendment must be approved by the Association in accordance with the approval provisions of this Declaration or the Bylaws, as applicable.

Article 15

MISCELLANEOUS PROVISIONS

15.1 **No Implied Obligations.** Nothing in this Declaration may be construed to require Declarant or any successor Declarant to subject Additional Property to this Declaration or to improve or develop any of the Property or to do so for any particular uses.

15.2 **Right to Approve Additional Covenants.** No Person may record any declaration of covenants, conditions and restrictions, declaration of condominium or similar instrument affecting any portion of the Property without Declarant's prior written consent. Any attempted recordation without such consent will result in such instrument being void and of no force or effect unless subsequently approved in writing by Declarant.

15.3 **Notice of Sale or Transfer of Title.** Any Owner selling or otherwise transferring title to his or her Lot must give the Association written notice within seven days after the transfer of the name and address of the purchaser or transferee, the date of such transfer of title and such other information as the Association may reasonably require. The transferor continues to be jointly and severally responsible with the transferee for all obligations of the Owner of the Lot, including Assessment obligations, until the date upon which such notice is received by the Board, notwithstanding the transfer of title.

15.4 **Exclusive Rights to Use Name of Development.** No Person may use the name "Stafford Meadows" or any derivative of such name in any printed, digital (i.e., internet) or other promotional or commercial material without Declarant's prior written consent. However, an Owner may use the name "Stafford Meadows" where such term is used solely to specify that the Owner's property is located within the Property. In no event will any Owner enter into an agreement with any third party for the sale, rental, or management of the Owner's Lot if such agreement purports to grant any right to such third party to use the name "Stafford Meadows" or any derivative of such name in violation of this provision.

15.5 **Lessees and Other Invitees.** Lessees, employees, invitees, licensees, contractors, family members, guests, and other Persons entering the Property under rights derived from an Owner must comply with all of the provisions of this Declaration restricting or regulating the Owner's use, improvement or enjoyment of his or her Lot and other areas within the Property. The Owner is responsible for obtaining such compliance and will be liable for any failure of compliance by such Persons in the same manner and to the same extent as if the failure had been committed by the Owner.

15.6 **Nonwaiver.** Failure by the Association or by any Owner to enforce any covenant or restriction contained in this Declaration will in no event be deemed a waiver of the right to do so thereafter.

15.7 **Construction and Severability.** This Declaration will be liberally construed as an entire document to accomplish the purposes hereof as stated in the introductory paragraphs hereof. Nevertheless, each provision of this Declaration will be deemed independent and severable, and the invalidity or partial invalidity of any provision will not affect the validity or enforceability of the remaining part of that or any other provision.

15.8 **Terminology and Captions.** As used in this Declaration, the singular includes the plural and the plural the singular, and the masculine and neuter each include the masculine, feminine and neuter, as the context requires. All captions used in this Declaration are intended solely for convenience of reference and in no way limit any of the provisions of this Declaration.

15.9 **Notices.** All notices to the Association or to the Board of Directors will be sent care of the manager or, if there is no manager, to the principal office of the Association or to such other address as the Board may designate from time to time. All notices to any Owner will be sent to such address as may have been designated by such Owner from time to time, in writing, to the Board or, if no address has been designated, to the Owner's Lot. In the discretion of the Board, any notice, information or other written material required to be given to an Owner or director under this Declaration or the Bylaws or pursuant to the Oregon Planned Community Act, may be given by electronic mail, facsimile or other form of electronic communication acceptable to the Board, except for the following notices: failure to pay an Assessment, foreclosure of an Association lien under ORS 94.709, or an action the Association may take against an Owner. An Owner or director may decline to receive notice by electronic mail, facsimile or other form of electronic communication and may direct the Board to provide notice in any other manner permitted under this Declaration or the Bylaws or the Oregon Planned Community Act.

15.10 **Private Agreement.** This Declaration and the covenants and agreements contained herein constitute a private agreement among the Owners of Lots in Stafford Meadows. This Declaration does not restrict City of Wilsonville's authority to adopt or amend its development regulations. It is the duty of every Person engaged in development or remodeling of a Lot and/or Improvement in Stafford Meadows to know the requirements of this Declaration and the covenants

and agreements contained herein. There may be conflicting requirements between this Declaration and regulations of City of Wilsonville. In the event there is a conflict between a regulation of City of Wilsonville and this Declaration, any question regarding which provision controls will be directed to the Architectural Review Committee. In each case, Clackamas County will limit its review of a development application to the requirements of its regulations and will not be liable for any approvals or permits that are granted in compliance with the regulations of City of Wilsonville, Clackamas County, the state of Oregon or any other jurisdiction, but that are not in compliance with this Declaration. Declarant, the Committee and the Association, or any one of them, will not be liable for any approvals that are granted in compliance with this Declaration, but that are not in compliance with the regulations of City of Wilsonville, Clackamas County, the State of Oregon or any other jurisdiction.

IN WITNESS WHEREOF, Declarant has executed this Declaration on the date set forth above.

WEST HILLS LAND DEVELOPMENT LLC,
an Oregon limited liability company

Walter E. Remmers, Member

STATE OF OREGON)
)ss.
COUNTY OF Multnomah)

The foregoing instrument was acknowledged before me this 12th day of December, 2018, by Walter E. Remmers, member of West Hills Land Development LLC, an Oregon limited liability company, on its behalf.

Notary Public for Oregon
My commission expires: March 01, 2022

OFFICIAL STAMP
ZACHARY TYEE TAYLOR
NOTARY PUBLIC-OREGON
COMMISSION NO. 971627
MY COMMISSION EXPIRES MARCH 01, 2022

Appendix H-2

Homeowners Association Bylaws

23P

AFTER RECORDING RETURN TO:

Michelle D. Da Rosa LLC
Attorney at Law
205 SE Spokane Street, Suite 300
Portland, OR 97202
Zachary Taylor

Clackamas County Official Records
Sherry Hall, County Clerk

2019-002824

$203.00

01/17/2019 12:56:31 PM

PD-BYL Cnt=1 Stn=54 COUNTER2
$115.00 $16.00 $62.00 $10.00

BYLAWS OF STAFFORD MEADOWS HOMEOWNERS ASSOCIATION

Attached hereto are the initial Bylaws of Stafford Meadows Homeowners Association adopted January 18, 2019 by the Declarant pursuant to the Declaration of Protective Covenants, Conditions, Restrictions and Easements for Stafford Meadows recorded 1/15, 2019 in the Records of ~~Washington~~ Clackamas County, Oregon, as Document No. 2019-002161.

WEST HILLS LAND DEVELOPMENT LLC,
an Oregon limited liability company

By: _____
Walter E. Remmers, member

Address: 3330 NW Yeon, Suite 200
Portland, OR 97210

STATE OF OREGON)
)ss.
COUNTY of Multnomah)

This instrument was acknowledged before me this 12th day of December, 2018, by Walter E. Remmers, member of West Hills Land Development LLC, an Oregon limited liability company, on its behalf.

_____
Notary Public for Oregon
My commission expires March 1, 2022

OFFICIAL STAMP
ZACHARY TYEE TAYLOR
NOTARY PUBLIC-OREGON
COMMISSION NO. 971627
MY COMMISSION EXPIRES MARCH 01, 2022

BYLAWS OF

STAFFORD MEADOWS HOMEOWNERS ASSOCIATION

TABLE OF CONTENTS

Page

BYLAWS OF

STAFFORD MEADOWS HOMEOWNERS ASSOCIATION

Article 1

DEFINITIONS

1.1 **Association**. "Association" means Stafford Meadows Homeowners Association, a nonprofit corporation organized and existing under the laws of the State of Oregon.

1.2 **Articles of Incorporation**. "Articles of Incorporation" means the Articles of Incorporation of the Association.

1.3 **Declaration**. The "Declaration" means the recorded Declaration of Protective Covenants, Conditions, Restrictions and Easements for Stafford Meadows, as the same may be subsequently amended or supplemented pursuant to the terms thereof.

1.4 **Incorporation by Reference**. Except as otherwise provided herein, the terms that are defined in Article 1 of the Declaration are used in these Bylaws as therein defined.

Article 2

MEMBERSHIP

2.1 **Membership.** Every Owner of one or more Lots within the Property will, immediately upon creation of the Association and thereafter during the entire period of such ownership, be a member of the Association. Such membership commences, exists and continues simply by virtue of such ownership, expires automatically upon termination of such ownership, and need not be confirmed or evidenced by any certificate or acceptance of membership. The Association has two classes of membership, Class A and Class B, as set forth in the Declaration.

2.2 **Membership List**. The Secretary will maintain at the principal office of the Association a membership list showing the name and address of the Owner of each Lot. The Secretary may accept as satisfactory proof of such ownership a duly executed and acknowledged conveyance, a title insurance policy, or other evidence reasonably acceptable to the Board of Directors.

Article 3

MEETINGS AND VOTING

3.1 **Place of Meetings.** Meetings of the members of the Association will be held at such reasonable place convenient to the members as may be designated in the notice of the meeting

3.2 **Turnover Meeting.** Declarant will call the first meeting of the Owners to organize the Association within 90 days after termination of the Class B Membership as provided in Section

3.7 below. Notice of such meeting will be given to all Owners as provided in Section 3.5. If a quorum of the Owners is present, the Owners will elect not fewer than the number of directors sufficient to constitute a quorum of the Board of Directors. If the Declarant fails to call the meeting, the meeting may be called and notice given by any Owner or Mortgagee of a Lot. The expense of giving notice will be paid or reimbursed by the Association. In the event of a lack of quorum at such Turnover Meeting, it may be adjourned as provided in Section 3.6. Nothing in this section may be construed as preventing Declarant from calling the Turnover Meeting before such date or from calling informal, informational meetings of the Owners.

3.3 **Annual Meeting.** The annual meeting of the members for the election of directors and for the transaction of such other business as may properly come before the meeting will be held at a reasonable hour and on a reasonable day as may be established by the Board of Directors or, if the Board fail to designate a date by the first day of September, then at 7:30 p.m. on the second Thursday in October. The first annual meeting will be held within one year after the date of the Turnover Meeting.

3.4 **Special Meetings.** A special meeting of the Association may be called at any time by the President or by a majority of the Board of Directors. A special meeting will be called by the president or secretary upon receipt of a written request stating the purpose of the meeting from members having at least 30 percent of the voting rights entitled to be cast at such meeting. Business transacted at a special meeting will be confined to the purposes stated in the notice of meeting.

3.5 **Notice of Meeting**.

(a) Written or printed notice stating the place, day and hour of the meeting, the items on the agenda, including the general nature of any proposed amendment to the Declaration or these Bylaws, any budget changes, any proposal to remove a director or officer and, in case of a special meeting, the purpose or purposes for which the meeting is called, will be delivered not less than 10 or more than 50 days before the date of the meeting. Such notice will be given either personally, by mail or, to the extent permitted by law, by electronic mail, facsimile or other form of electronic communication acceptable to the Board of Directors, by or at the direction of the President, the Secretary, or the persons calling the meeting, to each member entitled to vote at such meeting and to all Mortgagees who have requested such notice. For a period of 10 years following recording of the Declaration, notices of meetings (including agendas) must also be given to Declarant (or any designee of Declarant specified in any written notice to the Association) in the same manner as given to Owners, and Declarant or a representative of Declarant will be entitled to attend such meetings. If mailed, such notice will be deemed to be delivered when deposited in the United States mail, with postage fully prepaid thereon, addressed to the member at his or her most recent address as it appears on the records of the Association or to the mailing address of his or her Lot.

(b) When a meeting is adjourned for 30 days or more, or when a redetermination of the Persons entitled to receive notice of the adjourned meeting is required by law, notice of the adjourned meeting will be given as for an original meeting. In all other cases, no notice of the adjournment or of the business to be transacted at the adjourned meeting need be given other than by announcement at the meeting at which such adjournment is taken.

3.6 **Quorum.** At any meeting of the Association, members having at least 25 percent of the voting rights entitled to be cast at such meeting, present in person, by proxy or by absentee ballot,

if permitted by the Board of Directors, constitutes a quorum, except when a larger quorum is required by the Declaration. When a quorum is once present to organize a meeting, it cannot be broken by the subsequent withdrawal of a member or members. If any meeting of members cannot be organized because of a lack of quorum, the members who are present, either in person or by proxy, may adjourn the meeting from time to time not less than 48 hours or more than 30 days from the time the original meeting was called until a quorum is present, in which case, at the re-scheduled meeting at least 10 percent of the voting rights entitled to be case at such meeting, present in person, or by proxy, or by absentee ballot (if permitted by the Board of Directors) will constitute a quorum, or half the number of a larger quorum required by the Declaration. If the notice of a meeting of the Association provided that if the meeting fails to meet the 25%-quorum requirement then the quorum will be reduced to 10 percent, then a meeting may continue with a quorum of 10 percent of the voting rights entitled to be cast at such meeting are present in person, or by proxy, or by absentee ballot (if permitted by the Board of Directors).

3.7 **Voting Rights**. The Association has two classes of voting membership:

Class A. Class A Members are all Owners with the exception of the Class B Member and is entitled to one vote for each Lot owned. When more than one Person holds an interest in any Lot, all such Persons will be members. The vote for such Lot is exercised as they among themselves determine, but in no event will more than one vote be cast with respect to any Lot.

Class B. The Class B Member is the Declarant, who is entitled to three votes for each Lot owned by Declarant. The Class B Membership ceases and is converted to Class A Membership on the happening of either of the following events, whichever occurs earlier:

(1) When all of the Lots in the final phase of development of Stafford Meadows have been Sold and conveyed to Owners other than a successor Declarant; or

(2) At such earlier time as Declarant may elect in writing to terminate Class B Membership.

3.8 **Fiduciaries and Joint Owners**. An attorney-in-fact, executor, administrator, guardian, conservator or trustee may vote or grant consent with respect to any Lot owned or held in a fiduciary capacity, whether or not the specific right has been transferred to his or her name; provided that such Person satisfies the Secretary that he or she is the attorney-in-fact, executor, administrator, guardian, conservator or trustee, holding such Lot in a fiduciary capacity. Whenever any Lot is owned by two or more Persons jointly, according to the records of the Association, the vote of such Lot may be exercised by any one of the Owners, in the absence of protest by a co-Owner. In the event of disagreement among the co-Owners, the vote of such Lot will be disregarded completely in determining the proportion of votes given with respect to such matter, unless a valid court order establishes the authority of a co-Owner to vote.

3.9 **Tenants and Contract Vendors**. Unless otherwise expressly stated in the rental agreement or lease, all voting rights allocated to a Lot are exercised by the Owner. Unless otherwise stated in the contract, all voting rights allocated to a Lot are exercised by the vendee of any recorded land sale contract on the Lot.

3.10 **Casting of Votes and Consents**. The voting rights or consent of an Owner may be cast in person at a meeting of the Association or, at the discretion of the Board of Directors, by proxy in accordance with paragraph (a) of this Section, by absentee ballot in accordance with paragraph (b) of this Section, by written ballot in accordance with paragraph (c) of this Section, or by any other method specified in the Declaration, these Bylaws or the Oregon Planned Community Act.

(a) **Proxies**. A proxy must be dated and signed by the Owner and it is not valid if it is undated or purports to be revocable without notice; such proxy terminates one year after its date unless the proxy specifies a shorter term. The Board of Directors may not require that a proxy be on a form prescribed by the Board. An Owner may not revoke a proxy given pursuant to this paragraph except by actual notice of revocation to the person presiding over a meeting of the Association or to the Board if a vote is being conducted by written ballot in lieu of a meeting. A copy of a proxy in compliance with this paragraph provided to the Association by facsimile, electronic mail or other means of electronic communication utilized by the Board is valid.

(b) **Absentee Ballots**. An absentee ballot, if authorized by the Board of Directors, will set forth each proposed action and provide an opportunity to vote for or against each proposed action. All solicitations for votes by absentee ballot must include instructions for delivery of the completed absentee ballot, including the delivery location and instructions about whether the ballot may be canceled if the ballot has been delivered according to the instructions. An absentee ballot will be counted as an Owner present for the purpose of establishing a quorum. Even if an absentee ballot has been delivered to an Owner, the Owner may vote in person at a meeting if the Owner has returned the absentee ballot and canceled the absentee ballot, if cancellation is permitted in the instructions given under this paragraph.

(c) **Ballot Meetings**. At the discretion of the Board of Directors, any action that may be taken at any annual, regular or special meeting of the Association may be taken without a meeting by written ballot to the extent and in the manner provided in ORS 94.647

(d) **Electronic Ballots**. To the extent authorized by the Board of Directors and permitted by the Oregon Planned Community Act, any vote, approval or consent of an owner may be given by electronic ballot.

(e) **Mortgages**. An Owner may pledge or assign such Owner's voting rights to a Mortgagee. In such a case, the Mortgagee or its designated representative will be entitled to receive all notices to which the Owner is entitled under these Bylaws and to exercise the Owner's voting rights from and after the time that the Mortgagee will give written notice of such pledge or assignment to the Board of Directors. Any first Mortgagee may designate a representative to attend all or any meetings of the Association.

3.11 **Majority Vote**. The vote of a majority of the voting rights entitled to be cast by the members present or represented by absentee ballot or proxy, at a meeting at which a quorum is present, is necessary for the adoption of any matter voted upon by the members, unless a greater proportion is required by law, by the Declaration, by the Articles of Incorporation, or by these Bylaws.

3.12 **Rules of Order**. Unless other rules of order are adopted by resolution of the Association or the Board of Directors, all meetings of the Association are to be conducted according to the latest edition of *Robert's Rules of Order*, published by Robert's Rules Association.

Article 4

DIRECTORS: MANAGEMENT

4.1 **Number and Qualification.** The affairs of the Association will be governed by a Board of Directors of three or five individuals. All directors, other than interim directors appointed by Declarant, must be Owners or co-Owners of Lots. For purposes of this section, an officer, employee or agent of a corporation, a member, manager, employee or agent of a limited liability company, or a partner, employee or agent of a partnership may serve on the Board if such corporation, limited liability company or partnership is an Owner or co-Owner of a Lot. In addition, a trustee may serve on the Board if the trustee holds legal title to a Lot for the benefit of the owner of the beneficial interest in the Lot; and an executor, administrator, guardian, conservator or other individual appointed by a court to serve in a fiduciary capacity for an Owner of a Lot, or an officer or employee of an entity if an entity is appointed, may serve on the Board.

4.2 **Interim Directors.** Upon the recording of the Declaration, Declarant will appoint an interim board of one to three directors, who serve until replaced by Declarant or until their successors have been replaced by the Owners as provided below.

4.3 **Transitional Advisory Committee.** Unless the Turnover Meeting has already been held, Declarant will call a meeting of the Owners for the purpose of forming a Transitional Advisory Committee. The meeting must be called within 60 days after the date Declarant conveys 50 percent or more of the Lots then existing in Stafford Meadows to Owners other than a successor Declarant. The committee will consist of two or more Owners elected by the Owners other than Declarant and not more than one representative of Declarant. The members serve until the Turnover Meeting. The Transitional Advisory Committee is advisory only, and its purpose is to enable ease of transition from administrative control of the Association by Declarant to control by the Owners. The committee will have access to any information, documents and records that Declarant must turn over to the Owners at the time of the Turnover Meeting. If Declarant fails to call the meeting to elect a Transitional Advisory Committee within the time specified, the meeting may be called and notice given by any Owner. If the Owners fail to elect a Transitional Advisory Committee at the meeting called for such purpose, Declarant will have no further obligation to form the committee.

4.4 **Election and Tenure of Office.**

(a) At the Turnover Meeting, the interim directors will resign and the members will elect three directors, two to serve for two years and one to serve for one year. The nominees receiving the greatest number of votes serve for two years. In the event of a tie, term selection will be by random means. Thereafter, the successors to each director serve for terms of two years each.

(b) Upon a majority vote of the voting rights entitled to be cast by the members present or represented by absentee ballot or proxy at a meeting or ballot meeting at which a quorum is present, the Board of Directors may be increased from three directors to five directors. At the next annual meeting or a special meeting called for such purpose, two additional directors will be elected, one to serve for a two-year term and one to serve for a one- year term. Term selection will be in the same manner as provided in paragraph (a) above.

(c) All directors hold office until their respective successors have been elected by the members. Election is by plurality.

4.5 **Vacancies**.

(a) A vacancy in the Board of Directors will exist upon the death, resignation or removal of any director, or if the authorized number of directors is increased, or if the members fail at any annual or special meeting of members at which any director or directors are to be elected to elect the full authorized number of directors to be voted for at that meeting.

(b) Vacancies in the Board of Directors caused by any reason other than the removal of a director by a vote of the Association will be filled by vote of the majority of the remaining directors, even though they may constitute less than a quorum, or by a sole remaining director. Each person so elected will serve as a director until a successor is elected to fill the unexpired term at the next annual meeting of the Association or the next special meeting of the Association called for that purpose. Vacancies in interim directors are filled by Declarant.

4.6 **Removal of Directors.** At any regular or special meeting of the Association duly called, any one or more of the directors, other than interim directors, may be removed with or without cause by a majority vote of the members present in person or by proxy, and a successor may be elected at that meeting to fill the vacancy thus created. The members must vote on the removal of each director separately. The notice and agenda of any such meeting will state that such removal is to be considered, and any director whose removal has been proposed must be given an opportunity to be heard at that meeting and prior to the vote. A removed director remains a director until the vacancy has been filled.

4.7 **Powers.** The Board of Directors has all the powers and duties necessary for the administration of the affairs of the Association, except such powers and duties as by law or by the Declaration or by these Bylaws may not be delegated to the Board by the Owners. The Board may delegate responsibilities to committees or a managing agent but must retain ultimate control and supervision. The powers and duties to be exercised by the Board include, but not be limited to, those set forth in Section 8.5 of the Declaration and the following:

(a) Carry out the program for maintenance, upkeep, repair and replacement of any property required to be maintained by the Association as described in the Declaration and these Bylaws.

(b) Determine the amounts required for operation, maintenance and other affairs of the Association, and the making of such expenditures.

(c) Prepare a budget for the Association, and assessment and. collection of the Assessments.

(d) Employ and dismiss such personnel as may be necessary for such maintenance, upkeep and repair.

(e) Employ legal, accounting or other personnel for reasonable compensation to perform such services as may be required for the proper administration of the Association; provided,

however, the Board of Directors may not incur or commit the Association to incur legal fees in excess of $5,000 for any specific litigation or claim matter or enter into any contingent fee contract on any claim in excess of $100,000 unless the Owners have enacted a resolution authorizing the incurring of such fees by a vote of 75 percent of the total voting rights. These limitations are not applicable to legal fees incurred in defending the Association or the Board from claims or litigation brought against them. The limitations set forth in this paragraph will increase by ten percent on each fifth anniversary of the recording of the Declaration. To the extent required by the Oregon Planned Community Act, the Board will notify the Owners before instituting litigation or administrative proceedings. With regard to any pending litigation involving the Association, the Board will periodically report to the Owners the status (including settlement offers), progress and method of funding such litigation. Nothing in this paragraph may be construed as requiring the Board to disclose any privileged communication between the Association and its counsel.

(f) Open bank accounts on behalf of the Association and designating the signatories required therefor.

(g) Prepare and file, or cause to be prepared and filed, any required income tax returns or forms for the Association.

(h) Purchase Lots at foreclosure or other judicial sales in the name of the Association or its designee.

(i) Sell, lease, mortgage, vote the votes appurtenant to (other than for the election of directors), or otherwise deal with Lots acquired by the Association or its designee.

(j) Obtain insurance or bonds pursuant to the provisions of these Bylaws and review such insurance coverage at least annually.

(k) Make additions and improvements to, or alterations of, the Common Areas, or modify, close, remove, eliminate or discontinue use of any common facility, including any improvement or landscaping, except that any such modification, closure, removal, elimination or discontinuance (other than on a temporary basis) of any swimming pool, spa or recreational or community building must be approved by a majority vote of the members at a meeting or by written ballot held or conducted in accordance with these Bylaws.

(l) From time to time adopt, modify, or revoke such rules and regulations governing the details for the operation of the Association, the conduct of Persons and the operation and use of the Property as the Board of Directors may deem necessary or appropriate to ensure the peaceful and orderly use and enjoyment of the Property. Such action may be overruled or modified by vote of not less than 75 percent of the voting rights of each class of members present, in person or by proxy, at any meeting, the notice of which will have stated that such modification or revocation of rules and regulations will be under consideration.

(m) Enforce by legal means the provisions of the Declaration, these Bylaws and any rules and regulations adopted hereunder.

(n) In the name of the Association, maintain a current mailing address of the Association, file annual reports with the Oregon Secretary of State, and maintain and keep current the information required to enable the Association to comply with ORS 94.670(7).

(o) Subject to Section 8.8 of the Declaration, enter into management agreements with professional management firms.

4.8 **Meetings**.

(a) Meetings of the Board of Directors will be held at such place as may be designated from time to time by the Board or other Persons, calling the meeting.

(b) Annual meetings of the Board of Directors will be held within 30 days following the adjournment of the annual meetings of the members.

(c) Special meetings of the Board of Directors for any purpose or purposes may be called at any time by the President or by any two directors.

Unless other rules of order are adopted by resolution of the Association or the Board of Directors, all meetings of the Board will be conducted according to the latest edition of *Robert's Rules of Order*, published by Robert's Rules Association.

4.9 **Open Meetings**.

(a) All meetings of the Board of Directors must be open to Owners except that, in the discretion of the Board, the Board may close the meeting to Owners other than Board members and meet in executive session to consult with legal counsel or to consider personnel matters, including salary negotiations and employee discipline, negotiation of contracts with third parties or collection of unpaid assessments. Except in the case of an emergency, the Board will vote in an open meeting on whether to meet in executive session. If the Board votes to meet in executive session, the presiding officer will state the general nature of the action to be considered and; as precisely as possible, when and under what circumstances the deliberations can be disclosed to Owners. The statement, motion or decision to meet in the executive session must be included in the minutes of the meeting, and any contract or action considered in executive session does not become effective unless the Board, following the executive session, reconvenes in open meeting and votes on the contract or action, which is reasonably identified in the open meeting and included in the minutes.

(b) Meetings of the Board of Directors may be conducted by telephonic communication or by other means of communication that allows all members of the Board participating to hear each other simultaneously or otherwise to be able to communicate during the meeting, except that if a majority of the Lots are principal residences of the occupants, then: (i) for other than emergency meetings, notice of each Board's meeting must be posted at a place or places on the property at least three days before the meeting, or notice will be provided by a method otherwise reasonably calculated to inform the Owners of such meeting; and (ii) only emergency meetings of the Board may be conducted by telephonic communication. The meeting and notice requirements of this section may not be circumvented by chance, social meetings, or any other means.

4.10 **Notice of Meetings**.

(a) Notice of the time and place of meetings will be given to each director orally, or delivered in writing personally, by mail or to the extent permitted by the Oregon Planned Community Act, by electronic mail, facsimile or other form of electronic communication acceptable to the Board of Directors, at least 24 hours before the meeting. Notice is sufficient if received at the required time or if mailed or sent electronically not less than 72 hours before the meeting. If mailed, the notice will be directed to the address shown on the Association's records or to the director's actual address ascertained by the person giving the notice. Such notice need not be given for an adjourned meeting if such time and place is fixed at the meeting adjourned. For a period of 10 years following recording of the Declaration, notices of meetings (including agendas) must also be given to Declarant in the same manner as given to the directors.

(b) Attendance of a director at a meeting constitutes a waiver of notice of such meeting except when a director attends a meeting for the express purpose of objecting to the transaction of any business because the meeting is not lawfully called or convened.

4.11 **Quorum and Vote**.

(a) A majority of the directors constitutes a quorum for the transaction of business. A minority of the directors, in the absence of a quorum, may adjourn from time to time but may not transact any business.

(b) The action of a majority of the directors present at any meeting at which there is a quorum is the act of the Board of Directors unless a greater number is required by law, the Declaration, the Articles of incorporation or these Bylaws.

(c) A director who is present at a meeting of the Board of Directors at which action is taken on any Association matter is presumed to have assented to the action unless the director votes against the action or abstains from voting on the action because the director claims a conflict of interest. When action is taken on any matter at a meeting of the Board, the vote or abstention of each director present must be recorded in the minutes of the meeting. Directors may not vote by proxy or by secret ballot at meetings of the Board, except that officers may be elected by secret ballot.

4.12 **Right Of Declarant To Disapprove Actions.** So long as Declarant or any affiliate of Declarant owns any property within Stafford Meadows, directly or indirectly, in whole or in part, Declarant has a right to disapprove any action, policy or program of the Association, the Board of Directors and any committee which, in the sole judgment of the Declarant, would tend to impair the rights of Declarant or builders under the Declaration or these Bylaws, or interfere with development, construction or marketing of any portion of the Property, or diminish the level of services being provided by the Association. This right to disapprove is in addition to, and not in lieu of, any right to approve or disapprove specific actions of the Association, the Board or any committee as may be granted to the Class B Member or Declarant in the Declaration or these Bylaws.

(a) The Declarant must be given written notice of all meetings of the Association, the Board of Directors or any committee thereof and of all proposed actions of the Association, the Board or any committee thereof to be approved at such meetings or by written request in lieu of a meeting. Such notice will be given by certified mail, return receipt requested, or by personal delivery

at the address it has registered with the Secretary of the Association, which notice complies with the requirements for Board meetings set forth in these Bylaws and which notice will, except in the case of the regular meetings held pursuant to the Bylaws, set forth with reasonable particularity the agenda to be followed at such meeting.

(b) The Declarant must be given the opportunity at any such meeting to join in or to have its representatives or agents join in discussion from the floor of any prospective action, policy, or program which would be subject to the right of disapproval set forth herein. The Declarant, its representatives or agents may make its concerns, thoughts, and suggestions known to the Board of Directors and/or the members of the subject committee.

(c) No action, policy or program subject to the right of disapproval set forth herein become effective or be implemented until and unless the requirements of subsections (a) and (b) above have been met and the time period set forth in subsection (d) below has expired.

(d) The Declarant, acting through any officer or director, agent or authorized representative, may exercise its right to disapprove at any time within 10 days following the meeting at which such action was proposed or, in the case of any action taken by written consent in lieu of a meeting, at any time within 10 days following receipt of written notice of the proposed action. This right to disapprove may be used to block proposed actions but does not include a right to require any action or counteraction on behalf of any committee, the Board of Directors, or the Association unless such action or counteraction countermands an action, policy or program that was not properly noticed and implemented. The Declarant will not use its right to disapprove to reduce the level of services which the Association is obligated to provide or to prevent capital repairs or any expenditure required to comply with applicable laws and regulations.

4.13 **Liability**. Neither a member of the Board of Directors nor an officer of the Association or a member of the Architectural Review Committee or any other committee established by the Board will be liable to the Association, any Owner or any third party for any damages, loss or prejudice suffered or claimed on account of any action or failure to act in the performance of his or her duties, so long as the individual acted in good faith, believed that the conduct was in the best interests of the Association, or at least was not opposed to its best interests; and in the case of criminal proceedings, had no reason to believe the conduct was unlawful. In the event any member of the Board or any officer or committee member of the Association is made a party to any proceeding because the individual is or was a director, officer or committee member of the Association, the Association will defend such individual against such claims and indemnify such individual against liability and expenses incurred to the maximum extent permitted by law.

4.14 **Compensation**. No director will receive any compensation from the Association for acting as such.

4.15 **Executive, Covenants and Other Committees**. Subject to law, the provisions of the Declaration and these Bylaws, the Board of Directors, may appoint an Executive Committee, a Covenants Committee to be responsible for covenant enforcement as provided in Section 4.16 and such other standing or temporary committees as may be necessary from time to time consisting of Owners and at least one member of the Board and having such powers as the Board may designate. Such committees hold office at the pleasure of the Board.

4.16 **Enforcement Procedures**. The Association has the power, as provided in the Declaration, to impose sanctions for any violation of the Declaration, these Bylaws or the Rules and Regulations. To the extent specifically required by the Declaration, the Board of Directors must comply with the following procedures prior to the imposition of sanctions:

(a) **Notice.** The Board of Directors or its delegate must serve the alleged violator with written notice describing (i) the nature of the alleged violation, (ii) the proposed sanction to be imposed, (iii) a statement that the alleged violator will have 14 days to present a written request for a hearing before the Board or a Covenants Committee appointed by the Board, if any; and (iv) a statement that the proposed sanction may be imposed as contained in the notice unless a hearing is requested within 14 days of the notice.

(b) **Response.** The alleged violator must respond to the notice of the alleged violation in writing within such 14 day period, regardless of whether the alleged violator is challenging the imposition of the proposed sanction. If the alleged violator cures the alleged violation and notifies the Board of Directors in writing within such 14 day period the Board may, but is not obligated to, waive the sanction. Such waiver does not constitute a waiver of the right to sanction future violations of the same or other provisions by any Person. If a timely request for a hearing is not made, the sanction stated in the notice will be imposed; provided, however, that the Board or Covenants Committee may, but is not obligated to, suspend any proposed sanction if the violation is cured within the 14 day period. Any response or request for a hearing must be delivered to the Association's manager, President or Secretary, or as otherwise specified in the notice of violation.

(c) **Proof of Notice.** Prior to the effectiveness of sanctions imposed pursuant to this section, proof of proper notice must be placed in the minutes of the Board of Directors or Covenants Committee, as applicable. Such proof will be deemed adequate if a copy of the notice, together with a statement of the date and manner of delivery, is entered by the officer, director, or agent who delivered such notice. The notice requirement will be deemed satisfied if the alleged violator or its representative requests and appears at the hearing.

(d) **Hearing.** If a hearing is requested within the allotted 14 day period, the hearing will be held before the Board of Directors or the Covenants Committee, as applicable. The alleged violator will be afforded a reasonable opportunity to be heard. The minutes of the meeting must contain a written statement of the results of the hearing (i.e., the decision) and the sanction, if any, to be imposed.

(e) **Appeal.** Following a hearing before the Covenants Committee, if applicable, the violator must have the right to appeal the decision to the Board of Directors. To exercise this right, the violator must deliver a written notice of appeal to the Association's manager, President or Secretary within 10 days after the hearing date.

(f) **Enforcement Policies.** The Board of Directors, by Resolution, may adopt additional policies and procedures governing enforcement of the Declaration, these Bylaws or the Rules and Regulations.

Article 5

OFFICERS

5.1 **Designation and Qualification.** The officers of the Association are the President, the Secretary, the Treasurer, and such Vice Presidents and subordinate officers as the Board of Directors will from time to time appoint. The President must be a member of the Board, but the other officers need not be directors. Any two offices, except the offices of President and Secretary, may be held by the same person.

5.2 **Election and Vacancies.** The officers of the Association are appointed annually by the Board of Directors at the organization meeting of each new Board to serve for one year and until their respective successors are elected. If any office becomes vacant by reason of death, resignation, removal, disqualification or any other cause, the Board will appoint a successor to fill the unexpired term at any meeting of the Board.

5.3 **Removal and Resignation.**

(a) Any officer may be removed upon the affirmative vote of a majority of the directors whenever, in their judgment, the best interests of the Association will be served thereby. The removal of an officer will be without prejudice to the contract rights, if any, of the officer so removed.

(b) Any officer may resign at any time by giving written notice to the Board of Directors, the President or the Secretary of the Association. Any such resignation takes effect upon receipt of such notice or at any later time specified therein. Unless otherwise specified therein, the acceptance of such resignation is not necessary to make it effective, provided, however, that the Board may reject any postdated resignation by notice in writing to the resigning officer. The effectiveness of such resignation will not prejudice the contract rights, if any, of the Association against the officer so resigning.

5.4 **President.** The President is the chief executive officer of the Association and, subject to the control of the Board of Directors, has powers of general supervision, direction and control of the business and affairs of the Association. He or she presides at all meetings of the members and of the Board. He or she is an ex officio member of all the standing committees, including the executive committee, if any, has the general powers and duties of management usually vested in the office of president of a nonprofit corporation, and has such other powers and duties as may be prescribed by the Board or these Bylaws.

5.5 **Vice Presidents.** The Vice Presidents, if any, performs such duties as the Board of Directors prescribe. In the absence or disability of the President, the President's duties and powers are performed and exercised by the Senior Vice President as designated by the Board.

5.6 **Secretary.**

(a) The Secretary keeps or causes to be kept a book of minutes of all meetings of directors and members showing the time and place of the meeting, whether it was regular or special,

and if special, how authorized, the notice given, the names of those present at directors' meetings, the number of memberships present or represented at members' meetings and the proceedings thereof.

(b) The Secretary gives or causes to be given such notice of the meetings of the members and of the Board of Directors as is required by these Bylaws or by law. The Secretary keeps the seal of the Association, if any, and affixes it to all documents requiring a seal, and has such other powers and perform such other duties as may be prescribed by the Board or these Bylaws.

(c) If there are no Vice Presidents, then in the absence or disability of the President, the President's duties and powers are performed and exercised by the Secretary.

5.7 **Treasurer.** The Treasurer keeps and maintains, or causes to be kept and maintained, adequate and correct accounts of the properties and business transactions of the Association, including accounts of its assets, liabilities, receipts and disbursements. The books of accounts must at all reasonable times be open to inspection by any director. The Treasurer deposits or causes to be deposited all moneys and other valuables in the name and to the credit of the Association with such depositories as may be designated by the Board of Directors. The Treasurer disburses or causes to be disbursed the funds of the Association as may be ordered by the Board, renders to the President and directors, whenever they request it, an account of all of the Treasurer's transactions as Treasurer and of the financial condition of the Association, and has such other powers and perform such other duties as may be prescribed by the Board or these Bylaws.

5.8 **Compensation of Officers.** No officer who is a member of the Board of Directors will receive any compensation from the Association for acting as an officer, unless such compensation is authorized by a resolution duly adopted by the members. The Board may fix any compensation to be paid to other officers.

Article 6

ASSESSMENTS, RECORDS AND REPORTS

6.1 **Assessments.** As provided in the Declaration, the Association, through its Board of Directors, will do the following:

(a) Assess and collect from every Owner Assessments in the manner described in the Declaration.

(b) Keep all funds received by the Association as Assessments, other than reserves described in the Declaration, in the Operations Fund and keep all reserves collected pursuant to the Declaration in the Reserve Fund and use such funds only for the purposes described in the Declaration. All assessments will be deposited and maintained in the name of the Association in one or more separate federally insured accounts, including certificates of deposit, at a financial institution as defined in ORS 706.008, other than an extranational institution. Such funds may be used to purchase obligations of the United States government. All expenses of the Association are paid from the Association's bank account.

(c) From time to time, and at least annually, prepare a budget for the Association, estimating the common expenses expected to be incurred with adequate allowance for reserves based

upon the reserve study required by the Declaration and determine whether the General Assessment should be increased or decreased. Within 30 days after adopting a proposed annual budget, the Board of Directors will provide a summary of the budget to all Owners. If the Board fails to adopt a budget, the last adopted annual budget continues in effect.

(d) Fix the amount of the General Assessment against each Lot at least 30 days in advance of each General Assessment period. Written notice of any Assessment will be sent to every Owner subject thereto and to any first Mortgagee requesting such notice. The due dates will be established by the Board of Directors, which may fix a regular flat Assessment payable on a monthly, quarterly, semiannual or annual basis. The Board will cause to be prepared a roster of the Lots showing Assessments applicable to each Lot. The roster will be kept in the Association office and subject to inspection by any Owner or Mortgagee during regular business hours. Within 10 business days after receiving a written request, and for a reasonable charge, the Association will furnish to any Owner or Mortgagee a recordable certificate setting forth the unpaid Assessments against such Owner's Lot. Such certificate is binding upon the Association, the Board, and every Owner as to the amounts of unpaid Assessments.

(e) When Additional Properties are annexed, the Board of Directors will assess any Lots included therein in accordance with Section 10.5 of the Declaration.

(f) Enforce the Assessments in the manner provided in the Declaration.

(g) Keep records of the receipts and expenditures affecting the Operations Fund and Reserve Fund and make the same available for examination by members and their Mortgagees at convenient hours, maintain an Assessment roll showing the amount of each Assessment against each Owner, the amounts paid upon the account and the balance due on the Assessments, give each member written notice of each Assessment at least 30 days before the time when such Assessments will become due and payable; and for a reasonable charge, promptly provide any Owner or Mortgagee who makes a request in writing with a written certificate of such Owner's unpaid Assessments.

6.2 **Records**. The Association will keep within the State of Oregon correct and complete financial records sufficiently detailed for proper accounting purposes, keep minutes of the proceedings of its members, Board of Directors and committees having any of the authority of the Board, and retain all documents, information and records turned over to the Association by Declarant. All documents, information and records delivered to the Association by Declarant pursuant to ORS 94.616 will be kept within the State of Oregon.

6.3 **Statement of Assessments Due.** The Association will provide, within 10 business days after receipt of a written request from an Owner, a written statement that provides: (a) the amount of assessments due from the Owner and unpaid at the time the request was received, including regular and special assessments, fines and other charges, accrued interest, and late-payment charges; (b) the percentage rate at which interest accrues on assessments that are not paid when due; and (c) the percentage rate used to calculate the charges for late payment or the amount of a fixed-rate charge for late payment. The Association is not required to comply with this section if the Association has commenced litigation by filing a complaint against the Owner and the litigation is pending when the statement would otherwise be due.

6.4 **Inspection of Books and Records**. Except as otherwise provided in ORS 94.670(5), during normal business hours or under other reasonable circumstances, the Association must make reasonably available for examination and, upon written request, available for duplication, by Owners, lenders, and holders of any Mortgage of a Lot that make the request in good faith for a proper purpose, current copies of the Declaration, Articles, Bylaws, Rules and Regulations, amendments or supplements to such documents and the books, records, financial statements and current operating budget of the Association. The Association will maintain a copy, suitable for purposes of duplication, of each of the following: (a) the Declaration, these Bylaws, the Rules and Regulations and any amendments or supplements to them, (b) the most recent financial statement of the Association, and (c) the current operating budget of the Association. The Association, within 10 business days after receipt of a written request by an Owner, will furnish copies of such documents to the requesting Owner. Upon written request, the Association will make such documents, information and records available to such Persons for duplication during reasonable hours. The Board of Directors, by resolution, may adopt reasonable rules governing the frequency, time, location, notice and manner of examination and duplication of Association records and the imposition of a reasonable fee for furnishing copies of such documents, information or records. The fee may include reasonable personnel costs for furnishing the documents, information or records.

6.5 **Payment of Vouchers**. The Treasurer or managing agent will pay all vouchers for all budgeted items and for any nonbudgeted items, up to $1,000 signed by the President, managing agent, manager or other person authorized by the Board of Directors. Any voucher for nonbudgeted items in excess of $1,000 requires the authorization of the President or a resolution of the Board.

6.6 **Execution of Documents**. The Board of Directors may, except as otherwise provided in the Declaration, Articles of Incorporation; or these Bylaws, authorize any officer or agent to enter into any contract or execute any instrument in the name of and on behalf of the Association. Such authority may be general or confined to specific instances. Unless so authorized by the Board, no officer, agent, or employee has any power or authority to bind the Association by any contract or engagement, to pledge its credit, or to render it liable for any purpose or for any amount.

6.7 **Reports and Audits**. An annual financial statement consisting of a balance sheet and an income and expense statement for the preceding year will be rendered by the Board of Directors to all Owners and to all Mortgagees who have requested the same within 90 days after the end of each fiscal year. Commencing with the fiscal year following the Turnover Meeting, if the General Assessments exceed $75,000 for the year, then the Board will cause such financial statements to be reviewed within 300 days after the end of the fiscal year by an independent certified public accountant licensed in Oregon in accordance with the Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants, or if the General Assessments are $75,000 or less, will cause such review within 300 days after receipt of a petition requesting such review signed by at least a majority of owners. The Board need not cause such a review to be performed if so directed by an affirmative vote of at least 60 percent of the Owners, not including votes of Declarant with respect to Lots owned by Declarant. From time to time, the Board, at the expense of the Association, may obtain an audit of the books and records pertaining to the Association and furnish copies thereof to the members. At any time an Owner or holder of a Mortgage may, at their own expense, cause an audit or inspection to be made of the books and records of the Association.

Article 7

INSURANCE

7.1 **Types of Insurance.** For the benefit of the Association and the Owners, the Board of Directors will obtain and maintain at all times, and pay for out of the Operations Fund, the following insurance:

(a) **Property Damage Insurance.**

(1) The Association will maintain a policy or policies of insurance covering loss or damage from fire, with standard extended coverage and "all risk" endorsements, and such other coverages as the Association may deem desirable.

(2) The amount of the coverage will be for not less than 100 percent of the current replacement cost of the improvements on the Common Areas (exclusive of land, foundation, excavation and other items normally excluded from coverage), subject to a reasonable deductible not to exceed $10,000.

(3) The policy or policies will include all fixtures and building service equipment to the extent that they are part of the Common Areas and all personal property and supplies belonging to the Association.

(b) **Liability Insurance**.

(1) The Association will maintain comprehensive general liability insurance coverage insuring the Declarant, the Association, the Board of Directors, and the managing agent, against liability to the public or to Owners and their invitees or tenants, incident to the operation, maintenance, ownership or use of the Common Areas, including legal liability arising out of lawsuits related to employment contracts of the Association. There may be excluded from such policy or policies coverage of an Owner (other than as a member of the Association or Board) for liability arising out of acts or omissions of such Owner and liability incident to the ownership and/or use of the part of the Property as to which such Owner has the exclusive use or occupancy.

(2) Limits of liability under such insurance will not be less than $1,000,000 on a combined single-limit basis.

(3) Such policy or policies will be issued on a comprehensive liability basis and provide a cross-liability endorsement wherein the rights of named insureds under the policy or policies are not prejudiced as respects his, her or their action against another named insured.

(c) **Workers' Compensation Insurance.** The Association will maintain workers' compensation insurance to the extent necessary to comply with any applicable laws.

(d) **Fidelity Insurance**.

(1) The Board of Directors will cause the Association to maintain blanket fidelity insurance for all officers, directors, trustees and employees of the Association and all other

Persons handling or responsible for funds of, or administered by, the Association. In the event that the Association has retained a management agent, the Board may require such agent to maintain fidelity insurance for its officers, employees and agents handling or responsible for funds of, or administered on behalf of, the Association. The cost of such insurance, if any, is borne by the Association.

(2) The total amount of fidelity insurance coverage required will be based upon the best business judgment of the Board of Directors.

(3) Such fidelity insurance will name the Association as obligee and contain waivers by the insurers of all defenses based upon the exclusion of Persons serving without compensation from the definition of "employees" or similar terms or expressions. The insurance will provide that it may not be canceled or substantially modified (including cancellation for nonpayment of premium) without at least 10 days' prior written notice to the Association.

(e) **Director's and officers' liability insurance.** The Association will maintain a policy of directors' and officers' liability insurance with coverage in the amount of not less than $1,000,000 subject to a reasonable deductible, which deductible is the responsibility of the Association. Such insurance will cover both interim and regular directors and will include coverage for claims brought by the Association, Owners and/or third parties, including, without limitation, claims arising out of construction defects or failure to maintain adequate reserves. Directors and officers will be accepting such positions in reliance upon such insurance protection being maintained by the Association. Therefore, in the event the Association fails to carry such insurance or amends these Bylaws to delete or reduce these insurance requirements, the Association and Owners will be deemed to have released such claims and deemed to have covenanted not to sue or prosecute any claims against its current or former directors or officers that would have been insured under such a policy.

7.2 **Insurance by Lot Owners.** Each Owner are responsible for obtaining, at his or her own expense, homeowner's insurance covering the improvements on the Owner's Lot and liability resulting from use or ownership of the Lot, unless the Association agrees otherwise. The insurance coverage maintained by the Association may not be brought into contribution with the insurance obtained under this section by the Owners.

7.3 **Planned Community Act Requirements.** The insurance maintained by the Association must comply with the requirements of the Oregon Planned Community Act, ORS 94.550 to 94.780.

Article 8

GENERAL PROVISIONS

8.1 **Seal.** The Board of Directors may, by resolution, adopt a corporate seal.

8.2 **Notice.** All notices to the Association or to the Board of Directors will be sent care of the managing agent, or if there is no managing agent, to the principal office of the Association or to such other address as the Board of Directors may hereafter designate from time to time. All notices to members will be sent to the member's unit or to such other address as may have been designated by the member from time to time in writing to the Board of Directors.

8.3 **Waiver of Notice.** Whenever any notice to any member or director is required by law, the Declaration, the Articles of Incorporation, or these Bylaws, a waiver of notice in writing signed at any time by the Person entitled to notice is equivalent to the giving of the notice.

8.4 **Action Without Meeting.** Any action that the law, the Declaration, the Articles of Incorporation or the Bylaws require or permit the members or directors to take at any meeting may be taken without a meeting or ballot meeting if a consent in writing setting forth the action so taken is signed by all of the members or directors entitled to vote on the matter. The consent, which will have the same effect as a unanimous vote of the members or directors, will be filed in the records of minutes of the Association.

8.5 **Conflicts.** These Bylaws are intended to comply with the Oregon Planned Community Act, the Oregon Nonprofit Corporation Law, the Declaration and the Articles of Incorporation. In case of any irreconcilable conflict, such statutes and documents control over these Bylaws.

Article 9

AMENDMENTS TO BYLAWS

9.1 **How Proposed**. Amendments to these Bylaws must be proposed by either a majority of the Board of Directors or by members holding at least 30 percent of the voting rights entitled to be cast for such amendment. The proposed amendment must be reduced to writing and must be included in the notice of any meeting at which action is to be taken thereon or he attached to any request for consent to the amendment.

9.2 **Adoption**.

(a) A resolution adopting a proposed amendment may be proposed by either the Board of Directors or by the members and may be approved by the membership at a meeting called for such purpose, or by written consent of the members. Members not present at the meeting considering such amendment may express their approval in writing or by proxy. Any resolution must be approved by members holding a majority of the voting rights, together with the written consent of the Class B Member, if any. Amendment or repeal of any provision of these Bylaws that is also contained in the Declaration must be approved by the same voting requirement for amendment of such provision of the Declaration.

(b) Notwithstanding the provisions of the preceding paragraph, until the Turnover Meeting has occurred, Declarant has the right to amend these Bylaws in order to comply with the requirements of the Federal Housing Administration, the United States Department of Veterans Affairs, the Farmers Home Administration of the United States, the Federal National Mortgage Association, the Government National Mortgage Association, the Federal Home Mortgage Loan Corporation, any department, bureau, board, commission or agency of the United States or the State of Oregon, or any corporation wholly owned, directly or indirectly, by the United States or the State of Oregon that insures, guarantees or provides financing for a planned community or lots in a planned community. After the Turnover Meeting, any such amendment must be approved as provided in Section 9.2(a).

9.3 **Execution and Recording**. An amendment will not be effective until certified by the President and Secretary of the Association as being adopted in accordance with these Bylaws and ORS 94.625 and recorded in the Deed Records of Clackamas County, Oregon.

Appendix I

Example Building Elevations

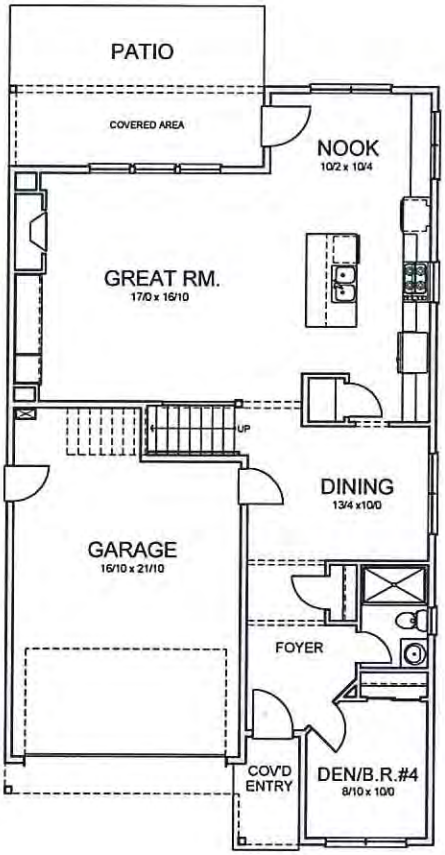
WEST HILLS
HOMES NORTHWEST

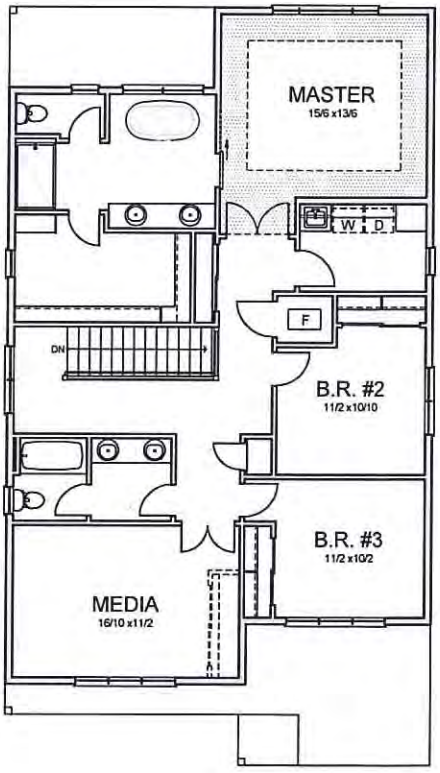
2467 HAVERTON FARMHOUSE

M. FLR.	=	1,088 S.F.
U. FLR.	=	1,461 S.F.
TOTAL	=	2,549 S.F.
GARAGE	=	434 S.F.

PDX E ORE
EVERETT
CUSTOM HOMES

4-BEDROOMS
3-BATHS
MEDIA
2-CAR GARAGE





MAIN LEVEL FLOOR PLAN (9' CLG.)

UPPER LEVEL FLOOR PLAN (8' CLG.)

REV: 7/20/18 DDR

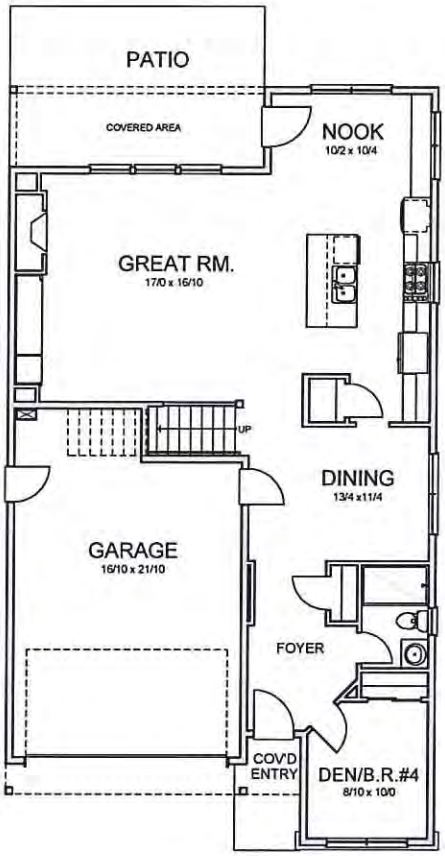
WEST HILLS
HOMES NORTHWEST

2467 HAVERTON ENGLISH

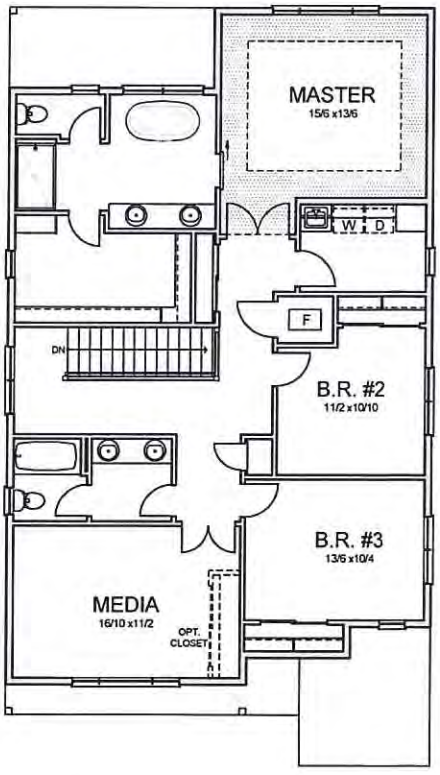
M. FLR.	=	1,088 S.F.
U. FLR.	=	1,481 S.F.
TOTAL	=	2,569 S.F.
GARAGE	=	435 S.F.

PDX E ORE
EVERETT
CUSTOM HOMES

4-BEDROOMS
3-BATHS
MEDIA
2-CAR GARAGE



MAIN LEVEL FLOOR PLAN (9' CLG.)



UPPER LEVEL FLOOR PLAN (8' CLG.)

REV: 8/29/18 DDR

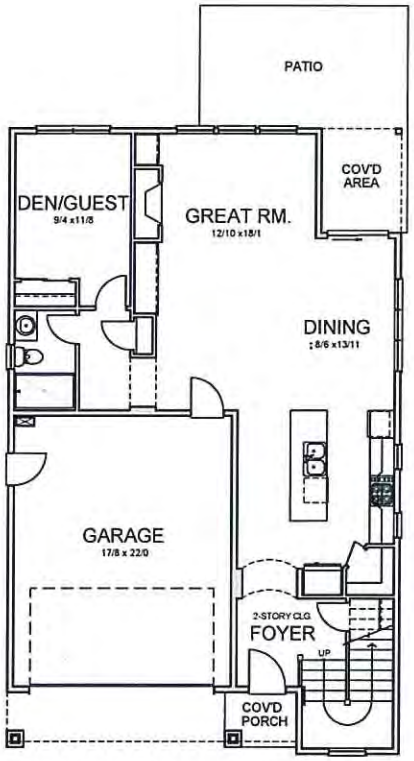
WEST HILLS
HOMES NORTHWEST

2470 BREMERTON FARMHOUSE

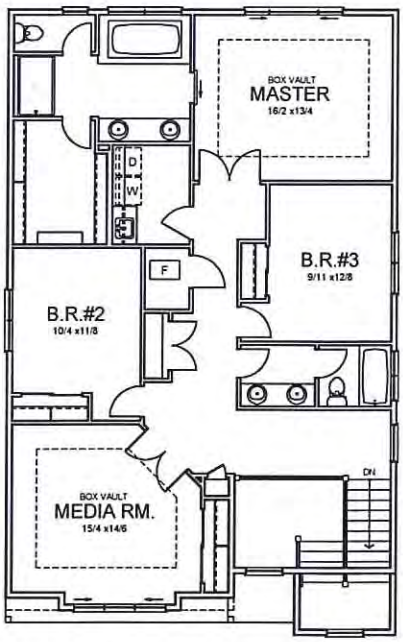
M. FLR.	=	994 S.F.
U. FLR.	=	1,503 S.F.
TOTAL	=	2,497 S.F.
GARAGE	=	411 S.F.

PDX E ORE
EVERETT
CUSTOM HOMES

4-BEDROOMS
3-BATHS
MEDIA RM
2-CAR GARAGE



MAIN LEVEL FLOOR PLAN (9' CLG.)



UPPER LEVEL FLOOR PLAN (8' CLG.)

REV: 5/21/18 DDR

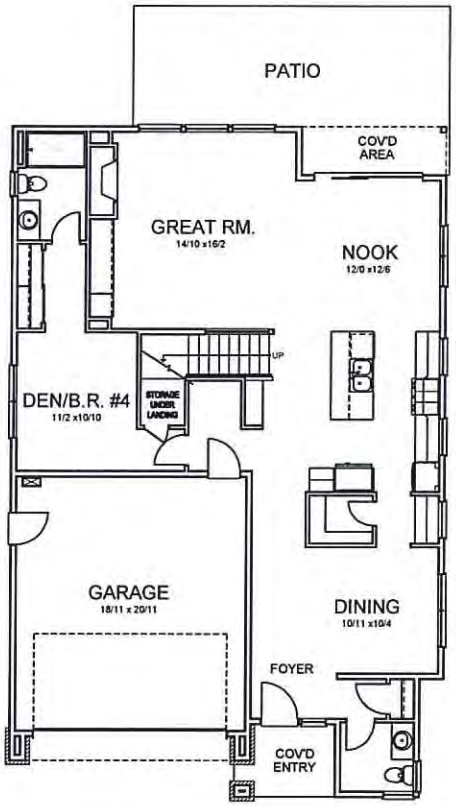
WEST HILLS
HOMES NORTHWEST

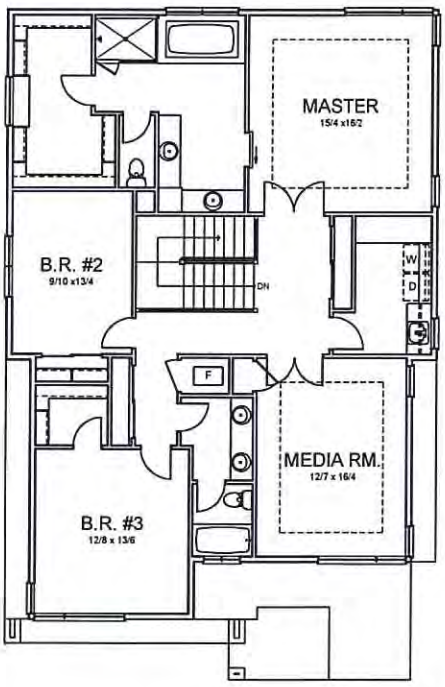
2956 SYLVAN PRAIRIE

M. FLR.	=	1,312 S.F.
U. FLR.	=	1,645 S.F.
TOTAL	=	2,957 S.F.
GARAGE	=	420 S.F.

PDX E ORE
EVERETT
CUSTOM HOMES

4-BEDROOMS
3.5-BATHS
MEDIA
2-CAR GARAGE





MAIN LEVEL FLOOR PLAN (10' CLG.)

UPPER LEVEL FLOOR PLAN (9' CLG.)

REV: 9/27/18 DDR

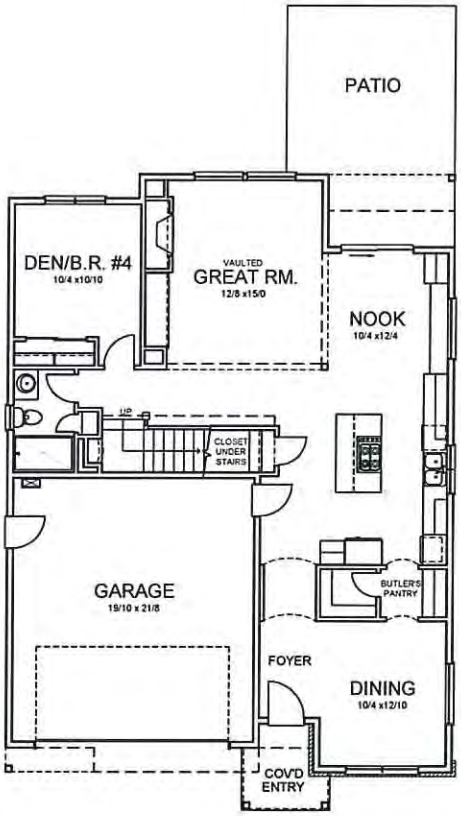
WEST HILLS
HOMES NORTHWEST

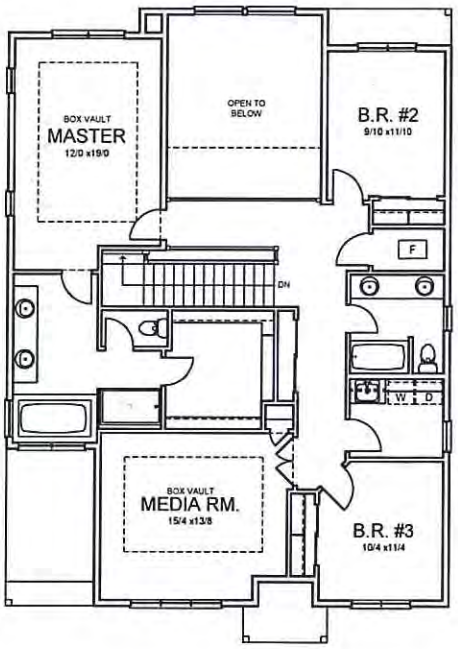
2647 BERKSHIRE FRENCH

M. FLR.	=	1,192 S.F.
U. FLR.	=	1,455 S.F.
TOTAL	=	2,647 S.F.
GARAGE	=	459 S.F.

PDX E ORE
EVERETT
CUSTOM HOMES

4-BEDROOMS
3-BATHS
MEDIA
2-CAR GARAGE





MAIN LEVEL FLOOR PLAN (9' CLG.)

UPPER LEVEL FLOOR PLAN (8' CLG.)

REV: 5/31/18 SHG

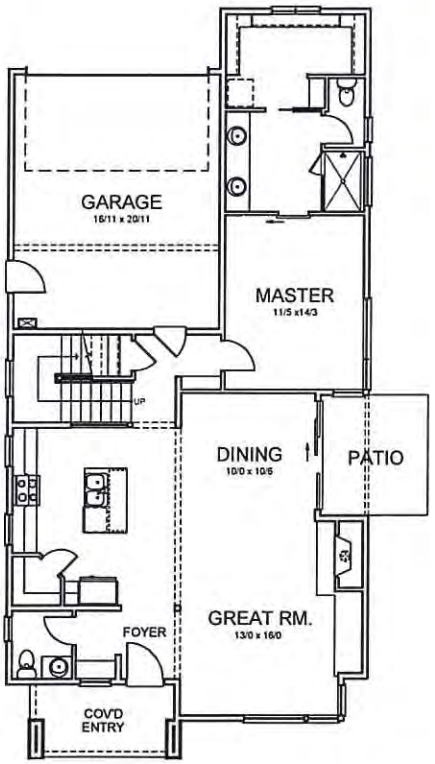
WEST HILLS
HOMES NORTHWEST

2233 MONT CLAIR
PRAIRIE

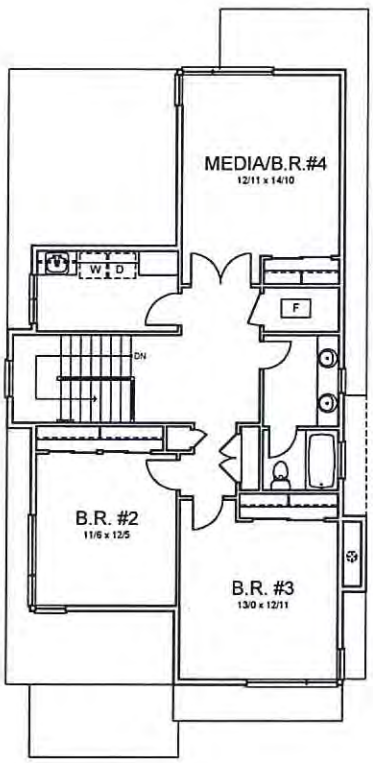
M. FLR.	=	1,156 S.F.
U. FLR.	=	1,095 S.F.
TOTAL	=	2,251 S.F.
GARAGE	=	378 S.F.

PDX E ORE
EVERETT
CUSTOM HOMES

3-BEDROOMS
2.5-BATHS
MEDIA RM/B.R.#4
2-CAR GARAGE



MAIN LEVEL FLOOR PLAN (9' CLG.)



UPPER LEVEL FLOOR PLAN (9' CLG.)

DRAWN: 9/28/18 DDR


2'-0"

Appendix J

Service Provider Letter from Republic Services

REPUBLIC SERVICES

10295 Southwest Ridder Road Wilsonville, OR 97070
o 503.570.0626 f 503.582.9307 republicservices.com

January 25, 2020

Mike Peebles
OTAK, Inc.

Re: Frog Pond Ridge Development
Wilsonville, OR 97070

Dear Mike,

Thank you, for sending us the site plans for this proposed development in Wilsonville.

My Company: Republic Services of Clackamas and Washington Counties has the franchise agreement to service this area with the City of Wilsonville. We will provide complete commercial waste removal and recycling services as needed on a weekly basis for this location

Our team has reviewed the design plans received 1/13/2020 and determined that all roadway and private alley widths are of acceptable dimensions. There is concern however regarding the ability of our collection trucks to enter and exit private alleys where they intersect with the residential streets.

On 1/20/2020, we conducted a physical test with a standard collection truck at a section of this development that is close to completion. We determine that clearances required for our trucks to enter and exit the alleys will require designated "No Parking" to allow adequate turn radius. Your design plans received 1/16/2020 which defines no parking parameters at alley entrances is adequate.

Our serviceability approval is contingent on your firm's agreement to review with Republic Services, upon final design, individual alley-to-street intersections to evaluate and define adequate No Parking parameters that will allow safe maneuverability of our trucks during waste and recycle collection.

Thanks Mike, for your help and concerns for our services prior to this project being developed.

Sincerely,

Kelly Herrod
Operations Supervisor
Republic Services Inc.