WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

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

☒ Applicant ☐ Owner Name, Firm and Address: **Lincoln City Urban Renewal Agency** **Attn: Alison Robertson** **801 SW Highway 101 - Box 50** **Lincoln City, Oregon 97367**	Business phone # **541-996-1207** Mobile phone # (optional) E-mail: **AlisonR@LincolnCity.org**
☐ Authorized Legal Agent, Name and Address: **N/A**	Business phone # Mobile phone # 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: A.P. Nelson-Robertson Signature: Alison P. Nelson-Robertson

Date: Special instructions regarding site access: **Please call ahead before accessing site.**

Project and Site Information (using decimal degree format for lat/long., enter centroid of site or start & end points of linear project)

Project Name: **Wetland Delineation Report for the Delake Hostetler Park Property**	Latitude: **44.967621 deg. approx. centroid** Longitude: **-124.015408 deg. approx centroid**
Proposed Use: **None**	Tax Map # **07 11 15AC**
Project Street Address (or other descriptive location): **1230 NE 1st Street**	Township **7S** Range **11W** Section **15** QQ **SW, NE** Tax Lot(s) **3200**
City: **Lincoln City** County: **Lincoln**	Waterway: **Devils Lake** River Mile: **N/A** NWI Quad(s): **Lincoln City, Oreg.**

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: **PBS Engineering and Environmental, Attn: Greg Swenson** **4412 SW Corbett Avenue** **Portland, Oregon 97239**	Phone # **503-935-5492** Mobile phone # **503-805-9372** E-mail: **Greg.Swenson@pbsusa.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: Date: 9/21/17

Primary Contact for report review and site access is ☐ Consultant ☒ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No	Study Area size: **1.34 ac.** Total Wetland Acreage: **0.42-ac. wetlands; 0.10-ac. waters**

Check Box Below if Applicable:	**Fees:**
☐ R-F permit application submitted	☐ Fee payment submitted **$ 419**
☐ Mitigation bank site	☐ Fee ($100) for resubmittal of rejected report
☐ Wetland restoration/enhancement project (not mitigation)	☐ No fee for request for reissuance of an expired report
☐ Industrial Land Certification Program Site	
☐ Reissuance of a recently expired delineation Previous DSL # Expiration date ____	

Other Information:	Y	N	
Has previous delineation/application been made on parcel?	☒	☐	If known, previous # APP0046827
Does LWI, if any, show wetland or waters on parcel?	☒	☐	

For Office Use Only

DSL Reviewer: ____	Fee Paid Date: ____ / ____ / ____	DSL WD # ____
Date Delineation Received: ___ / ___ / ___	DSL Project # ____	DSL Site # ____
Scanned: ☐ Final Scan: ☐	DSL WN # ____	DSL App. # ____

Wetland Delineation Report for the Delake Hostetler Park Property

1230 NE 1st Street
Lincoln City, Oregon

Lincoln City Urban Renewal Agency
801 SW Highway 101 - Box 50
Lincoln City, Oregon 97367

September 21, 2017
PBS Project No. 75344.000

PBS
4412 SW CORBETT AVENUE
PORTLAND, OR 97239
503.248.1939 MAIN
866.727.0140 FAX
PBSUSA.COM

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INTRODUCTION

PBS Engineering and Environmental (PBS) was contracted by the Lincoln City Urban Renewal Agency to conduct a wetland delineation on the Delake Hostetler Park property. The study area is located at 1230 NE 1st Street in Lincoln City, Lincoln County, Oregon (Appendix A, Figure 1). Highway 101 borders the property to the west, Devils Lake borders to the south, open space borders to the east, and NE 1st Street borders to the north. The 1.34-acre study area consists of tax lot 3200 in Township 7 South, Range 11 West, Section 15 (ORMAP 2017) (Appendix A, Figure 2). PBS' fieldwork and reporting was conducted by Greg Swenson, Professional Wetland Scientist.

A. LANDSCAPE SETTING AND LAND USE

The study area is located on a marine terrace landform on the north side of Devils Lake. The land appears to be a combination of alluvial / marine sediments and old fill. Slopes are mostly gentle but steeper slopes occur on the west side of the study area along the Highway 101 embankment. Slope shape is mostly convex in the high ground and linear to concave in the low ground. According to the Lincoln City, Oreg. 7.5 minute topographic map (USGS 1984), the study area elevation is approximately 15 feet (NGVD29) above sea level with higher elevations occurring near Highway 101. The study area is generally open and contains a few park amenities such as picnic tables, gravel roads and trails, portable restrooms, and a gravel parking lot.

B. SITE ALTERATIONS

The study area was historically cleared, filled, and leveled presumably for lake-side recreational purposes. The fill placement appears to have raised the ground elevation near Devils Lake creating a grassy area for park-goers. The fill also appears to provide base material for the trail, road, and parking lot. Wetlands, if historically present in the fill areas, are effectively filled. Existing wetlands that were ineffectively filled contain a few inches of surface gravel but otherwise continue to have wetland characteristics. The extent of the Devils Lake shoreline may have also been altered by the historical placement of fill.

C. PRECIPITATION DATA AND ANALYSIS

Precipitation data were obtained from the National Oceanic and Atmospheric Administration / National Weather Service (NWS 2017) website and the Natural Resource Conservation Service WETS website for the Astoria Regional Airport (AST) station (NRCS 2017) (Appendix D). The AST station is the closest north coast station that reports both Preliminary Local Climatological data and WETS tables. As indicated in Table 1A, below normal precipitation occurred in the two weeks before the August 23, 2017 field study. Cumulative precipitation for the water year starting October 1, 2016 was above the normal range. Cumulative precipitation was within the normal range in the 3-month period leading up to the field study (Table 1B). Due to the late summer timing of the field study, secondary wetland hydrology indicators were used to make the wetland hydrology determination.

Table 1A. Precipitation To-Date Data

Field Study Date	Observed Precipitation on the Date of the Field Study (in.)	Observed Precipitation Two Weeks Prior to the Field Study Date	Percentage of Normal Precipitation for the Water Year to Date
August 23, 2017	Trace	0.38-in. (73% of normal) 1981-2010 data)	145%

Table 1B. Precipitation Data for the Preceding 3 Months

Prior Month	WETS Rainfall Percentile (in.)		Measured Rainfall (in.)	Condition: Dry, Wet, Normal	Condition Value: (1=dry, 2=normal, or 3=wet)	Month weight	Multiply previous two columns
	30th	70th					
July	0.51	1.42	0.10	Dry	1	3	3
June	1.70	3.08	2.44	Normal	2	2	4
May	2.22	3.91	5.89	Wet	3	1	3
						Sum	**10**
Rainfall of prior period was: **drier** than normal (sum is 6-9), **normal** (sum is 10-14), **wetter** than normal (sum is 15-18).							Normal
WETS Station: Astoria Regional Airport, AST, 1971-2000 **Measured Rainfall: Astoria, OR May 2017 – July 2017** **Data From: http://agacis.rcc-acis.org/?fips=41007**							

D. METHODS

The field study occurred on August 23, 2017. The method used for delineating wetland boundaries followed the routine approach of the U.S. Army Corps of Engineers (USACE) *Wetlands 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) (U.S. Army Corps of Engineers 2010). Soils, vegetation, and indicators of hydrology were recorded at seven sample plot locations on standard wetland determination data forms (Appendix B). Wetland plant ratings were assigned based on the *2016 National Wetland Plant List* (Lichvar et. al. 2016). Plot locations were chosen to represent contrasts in landscape positions and plant communities. No modification of the standard wetland boundary determination methodology (i.e., presence of hydric soil indicators, hydrophytic plant dominance, and wetland hydrology indicators) was necessary during the delineation.

E. DESCRIPTION OF ALL WETLANDS AND OTHER NON-WETLAND WATERS

Devils Lake, Wetland A, and Wetland B were documented during the field study. The Cowardin classification (Cowardin et. al. 1979) of Devils Lake would be lacustrine, limnetic, unconsolidated bottom, permanently flooded, diked / impounded and the hydrogeomorphic (Adamus, P.R. and D. Field 2001) classification would be lacustrine fringe. Hydrology sources to the lake appear to be direct precipitation, upgradient runoff, and possibly ground water discharge (although groundwater flows were not specifically researched for the purposes of this report). The permanently inundated soils within the lake were not described during the delineation. Vegetation was lacking in the lake and adjacent wetlands were dominated by typical coastal wetland species as described for Wetland A below. The ordinary high water line was mapped at the lake shoreline where the bare substrate transitioned to dense vegetation.

Wetland A was documented in the south part of the study area near Devils Lake. The Cowardin classification (Cowardin et. al. 1979) of Wetland A would be palustrine, emergent and scrub-shrub, seasonally flooded and the hydrogeomorphic (Adamus, P.R. and D. Field 2001) classification would be lacustrine fringe. Hydrology sources to Wetland A appear to be direct precipitation and lake-influenced soil saturation. Soils within Wetland A were variable due to the presence of fill material. Hydric soil indicators are weak but considered present due to stronger indicators of hydrophytic plant dominance and wetland hydrology indicators. A hydrophytic plant community dominated by Lodgepole Pine (*Pinus contorta*, FAC), Coastal Willow (*Salix hookeriana*, FACW), Salal (*Gautheria shallon*, FACU), Himalayan Blackberry (*Rubus armeniacus*, FAC), Evergreen Blueberry (*Vaccinium ovatum*, FACU), Salmon Raspberry (*Rubus spectabilis*, FAC), and Slough Sedge (*Carex obnupta*, OBL) was

documented. Contrasting upland vegetation was dominated by Salal, Garden Bird's-Foot-Trefoil (*Lotus corniculatus*, FAC), Common Velvet Grass (*Holcus lanatus*, FAC), Tall False Rye Grass (*Schedonorus arundinaceus*, FAC), and Bent (*Agrostis sp*., FAC estimated).

Wetland B was documented in the central part of the study area. The Cowardin classification (Cowardin et. al. 1979) of Wetland B would be palustrine, emergent and scrub-shrub, seasonally flooded and the hydrogeomorphic (Adamus, P.R. and D. Field 2001) classification would be depressional. Hydrology sources to Wetland B appear to be direct precipitation and incidental runoff from surrounding old fill material. Soils within Wetland B were variable due to the presence of old fill material; however, the fill did not appear to be as extensive as documented in Wetland A. Strong hydric soil indicators were documented in Wetland B. A hydrophytic plant community dominated by Lodgepole Pine, Coastal Willow and other willows, Salmon Raspberry, Douglas' Meadowsweet (*Spiraea douglasii*, FACW), Slough Sedge, and Lamp Rush (*Juncus effuses*, FACW) was documented. Contrasting upland vegetation was dominated by mowed Tall False Rye Grass and Bent.

F. DEVIATION FROM LWI OR NWI

The National Wetlands Inventory (NWI) (USFWS 2017) mapping (Appendix A, Figure 3) somewhat corresponds to the results of the field investigation. The location of Devils Lake and the east part of Wetland A are similar, but the westerly extent of Wetland A along the lake shore and Wetland B are not mapped in the NWI. The Local Wetland Inventory (LWI) (SRI / Shapiro 1996) identifies "DEL-10" polygon "D" in a very similar configuration as the results of the field investigation (Appendix A, Figure 4). The LWI refers to "DEL-10" as a combination of palustrine, emergent / scrub-shrub / forested wetland; although the forested component mostly occurs offsite to the east. The field study also documented a gravel trail between Wetland A and Wetland B that is not reflected in the LWI. The published LWI data is included in Appendix D.

G. MAPPING METHOD

A recent color aerial photograph with the study area boundary was used as the base map for the field study. The GPS location data for the wetland boundaries, sample plot locations, and photograph locations (Appendix C) were collected using a Trimble GeoExplorer XT Mapping Grade GPS unit (Appendix A, Figure 7). Accuracy for all mapped features is estimated at 1 meter or less based on the manufacturer's reported tolerance for the instrument and the post-processing report. Digitized mapping and cartography was completed in ArcGIS and AutoCAD.

H. ADDITIONAL INFORMATION

Wetland A is immediately adjacent to Devils Lake which discharges to the Pacific Ocean. Designated Critical Habitat (NMFS 2017) and Essential Salmonid Habitat (DSL 2017) are mapped within Devils Lake. Due to the presence of fish habitat and a significant nexus to downstream waters, Devils Lake and Wetland A likely fall within the jurisdiction of the Oregon Department of State Lands (DSL) and the USACE. Wetland B appears to be a closed depression that lacks a direct connection to Wetland A or Devils Lake.

Soil mapping units are depicted on Figure 5 in Appendix A. An aerial photograph depicting the study area is included as Figure 6 in Appendix A. Reference materials are included in Appendix E.

I. RESULTS AND CONCLUSIONS

Three features were delineated within the study area and are summarized in the table below.

Table 2. Wetland Summary

Wetland	Area (acre)	Cowardin Class	HGM Class
Devils Lake	0.10 within Study Area	Lacustrine, limnetic, unconsolidated bottom, permanently flooded, diked / impounded	Lacustrine fringe
Wetland A	0.25	Palustrine, emergent, seasonally flooded & palustrine, scrub-shrub, seasonally flooded	Lacustrine fringe
Wetland B	0.17	Palustrine, emergent, seasonally flooded & palustrine, scrub-shrub, seasonally flooded	Depressional

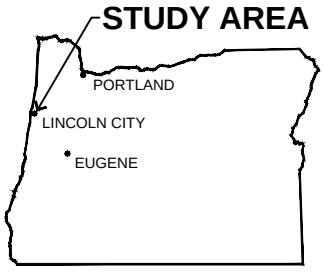
J. DISCLAIMER

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

APPENDIX A

Maps

SOURCE: USGS LINCOLN CITY, OREG. & DEVILS LAKE, OREG. QUADRANGLES, PROVISIONAL EDITION 1984.



SCALE: 1" = 2,000'

0 1,000' 2,000' 4,000'

PREPARED FOR: CITY OF LINCOLN CITY.

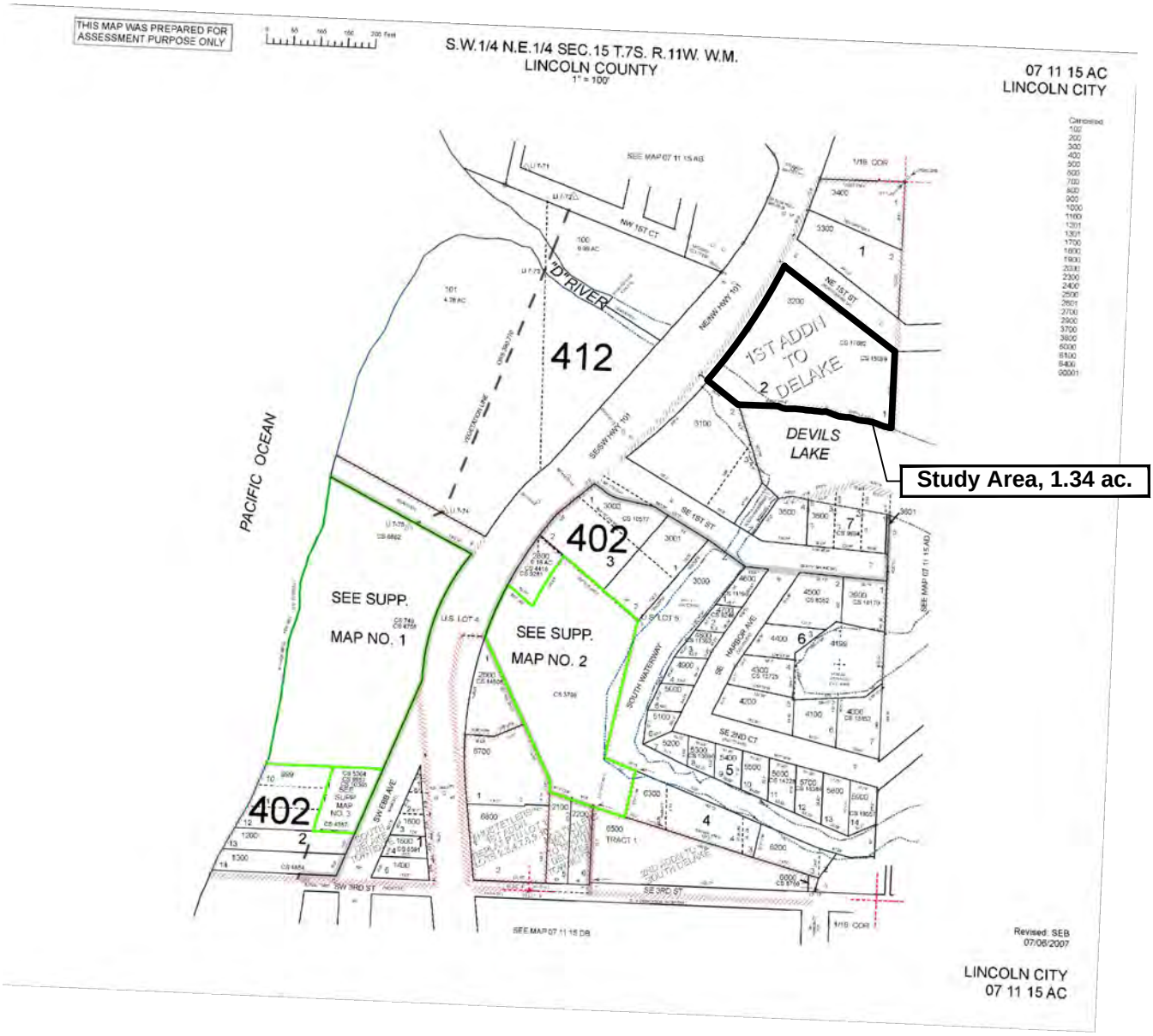
PBS

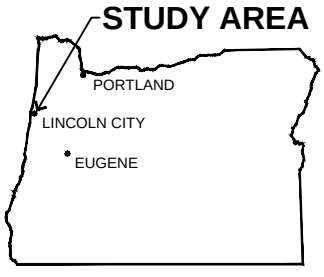
LOCATION MAP

DELAKE HOSTETLER PARK WETLAND DELINEATION
LINCOLN CITY, LINCOLN COUNTY, OREGON

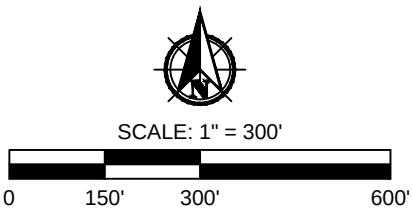
SEPT 2017
75344.000

FIGURE
1





SOURCE: ORMAP, 2017.



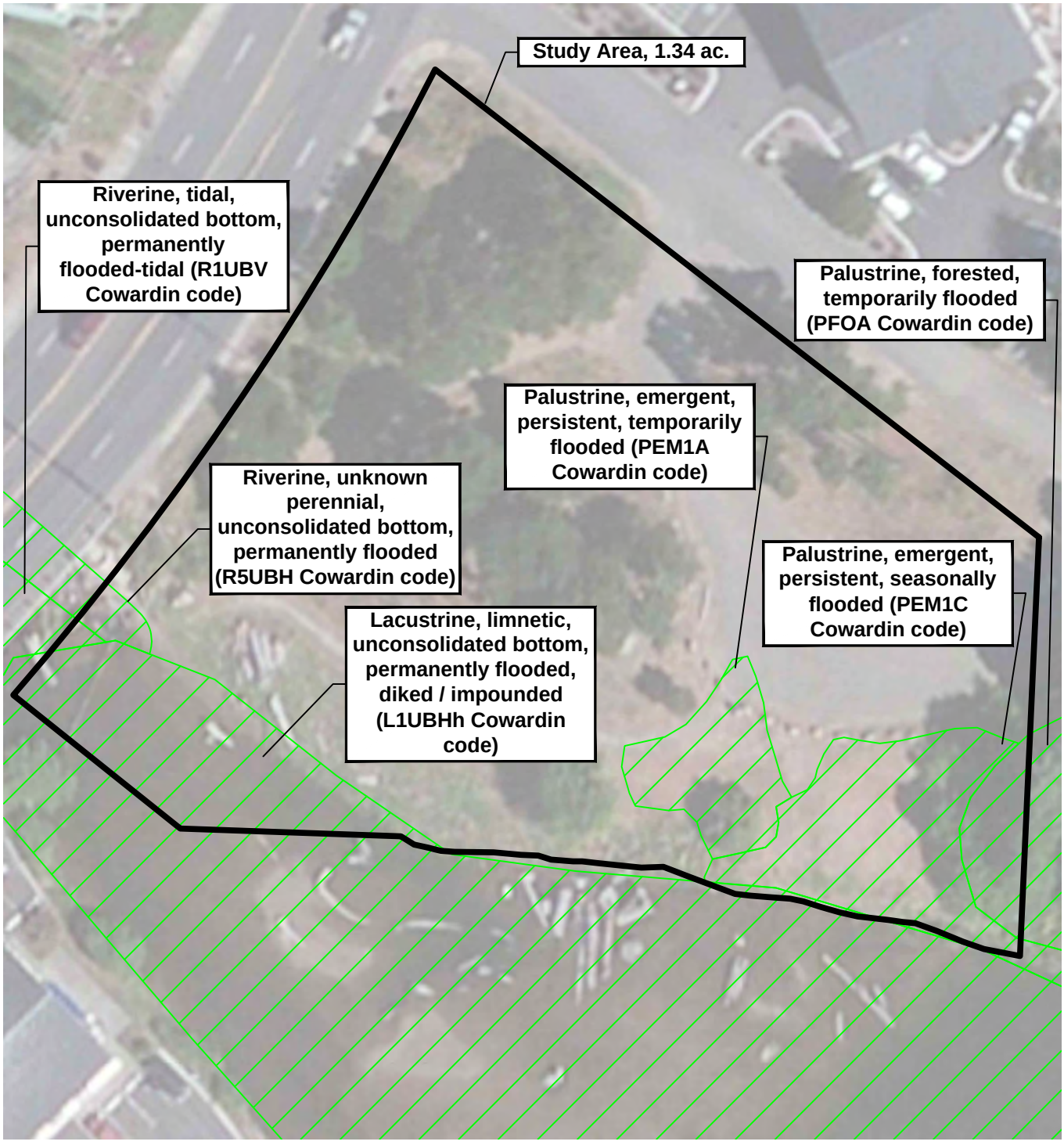
PREPARED FOR: CITY OF LINCOLN CITY.

TAX LOT MAP 07 11 15AC

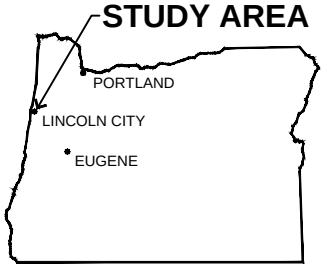
DELAKE HOSTETLER PARK WETLAND DELINEATION
LINCOLN CITY, LINCOLN COUNTY, OREGON

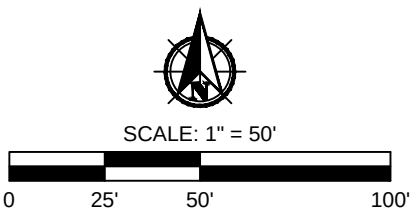
SEPT 2017
75344.000

FIGURE
2



SOURCE: NWI POLYGONS FROM US FISH AND WILDLIFE SERVICE. AERIAL PHOTOGRAPH FROM ESRI (2017).





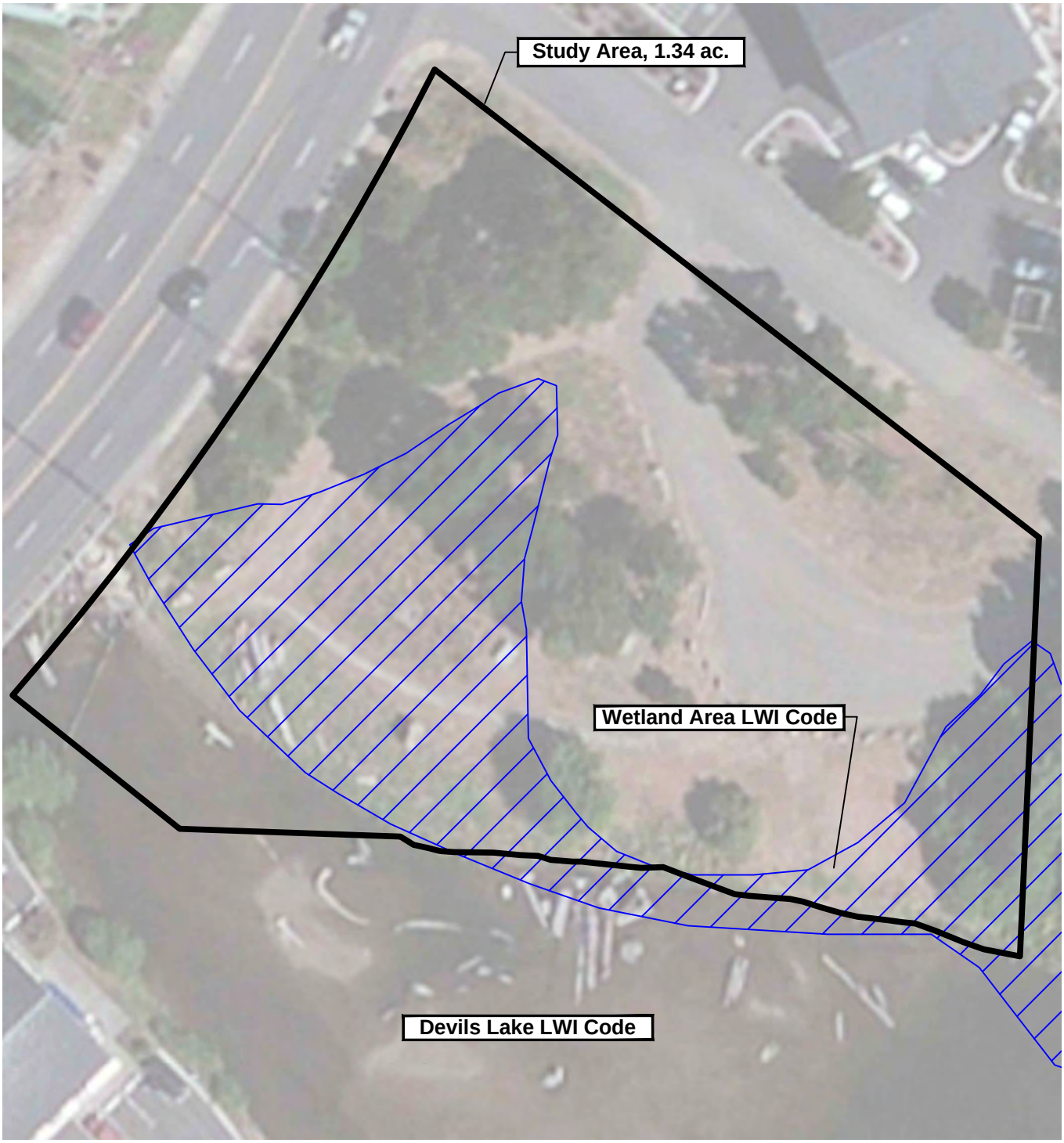
PREPARED FOR: CITY OF LINCOLN CITY.

NATIONAL WETLAND INVENTORY MAP

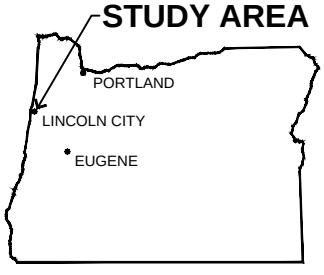
DELAKE HOSTETLER PARK WETLAND DELINEATION
LINCOLN CITY, LINCOLN COUNTY, OREGON

SEPT 2017
75344.000

FIGURE
3



SOURCE: LWI POLYGONS FROM SRI / SHAPIRO. AERIAL PHOTOGRAPH FROM ESRI (2017).



SCALE: 1" = 50'

0 25' 50' 100'

PREPARED FOR: CITY OF LINCOLN CITY.

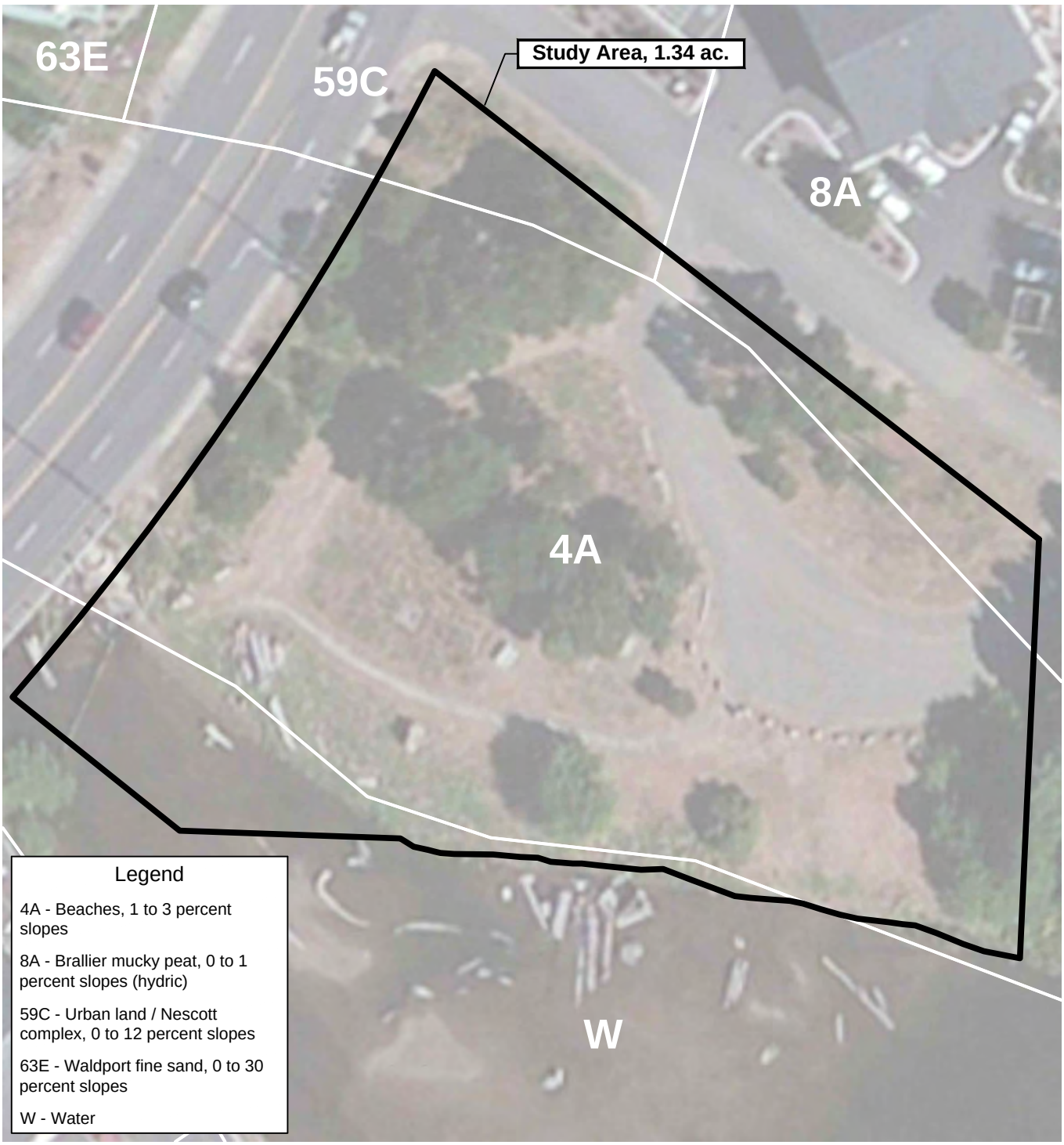
LOCAL WETLAND INVENTORY MAP

DELAKE HOSTETLER PARK WETLAND DELINEATION
LINCOLN CITY, LINCOLN COUNTY, OREGON

SEPT 2017
75344.000

FIGURE
4

Filename: L:\Projects\75000\75300-75399\75344_DeLakeHostetlerWetlands\75344-000GIS\CAD\DeLake-Hostetler.dwg CAD Plot Date/Time: 9/14/2017 4:20:21 PM



Legend

4A - Beaches, 1 to 3 percent slopes

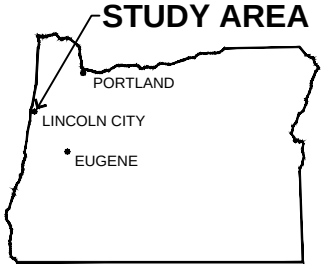
8A - Brallier mucky peat, 0 to 1 percent slopes (hydric)

59C - Urban land / Nescott complex, 0 to 12 percent slopes

63E - Waldport fine sand, 0 to 30 percent slopes

W - Water

SOURCE: SOIL MAPPING UNITS FROM NRCS. AERIAL PHOTOGRAPH FROM ESRI (2017).



SCALE: 1" = 50'

0 25' 50' 100'

PREPARED FOR: CITY OF LINCOLN CITY.

PBS

COUNTY SOIL SURVEY MAP

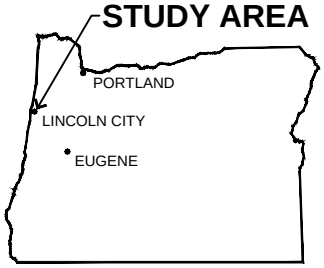
DELAKE HOSTETLER PARK WETLAND DELINEATION
LINCOLN CITY, LINCOLN COUNTY, OREGON

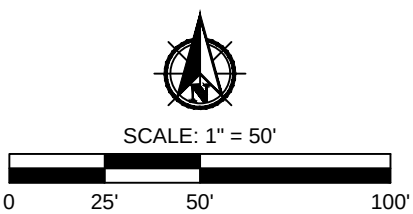
SEPT 2017
75344.000

FIGURE
5

Filename: L:\Projects\75000\75300-75399\75344_DeLakeHostetlerWetlands\75344-000\GIS\CAD\DeLake-Hostetler.dwg CAD Plot Date/Time: 9/14/2017 4:20:40 PM

SOURCE: SOIL MAPPING UNITS FROM NRCS. AERIAL PHOTOGRAPH FROM ESRI (2017).





PREPARED FOR: CITY OF LINCOLN CITY.

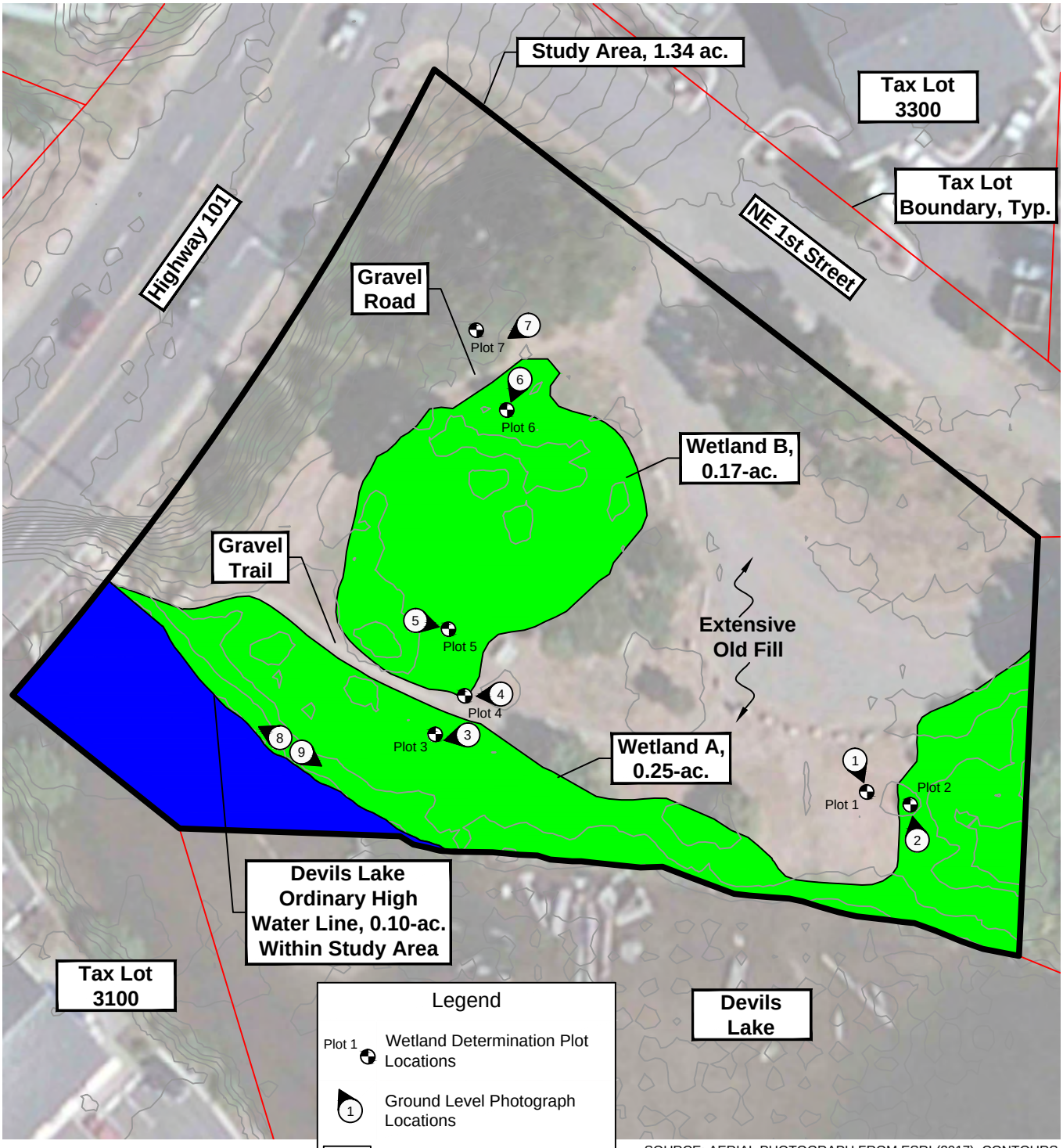
PBS

AERIAL PHOTOGRAPH

DELAKE HOSTETLER PARK WETLAND DELINEATION
LINCOLN CITY, LINCOLN COUNTY, OREGON

SEPT 2017
75344.000

FIGURE
6



Legend

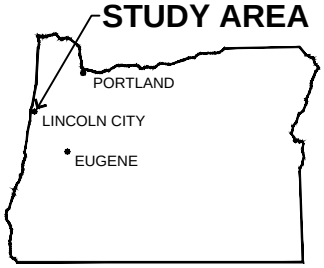
Plot 1 — Wetland Determination Plot Locations

1 — Ground Level Photograph Locations

Freshwater Wetland Boundaries, 0.42-ac. (Total)

Devils Lake Ordinary High Water Line, 0.10-ac. (Total within Study Area)

Wetland boundaries, sample plots, and photo points were mapped using a Trimble GeoXT handheld GPS unit. All features collected achieved submeter accuracy after post-processing.



SOURCE: AERIAL PHOTOGRAPH FROM ESRI (2017). CONTOURS DERIVED FROM LIDAR.

SCALE: 1" = 50'

0 25' 50' 100'

PREPARED FOR: CITY OF LINCOLN CITY.

WETLAND DELINEATION MAP

DELAKE HOSTETLER PARK WETLAND DELINEATION
LINCOLN CITY, LINCOLN COUNTY, OREGON

SEPT 2017
75344.000

FIGURE
7

Filename: L:\Projects\75000\75300-75399\75344_DeLakeHostetlerWetlands\75344-000GIS\CAD\DeLake-Hostetler.dwg
CAD Plot Date/Time: 9/21/2017 5:14:15 PM

APPENDIX B

Data Forms

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

Project/Site: Delake Hostetler Park | City/County: Lincoln City / Lincoln | Sampling Date: 8/23/2017
Applicant/Owner: City of Lincoln City | State: Oregon | Sampling Point: Plot 1
Investigator(s): G. Swenson | Section/Township/Range: Sec. 15, T. 7S, R. 11W
Landform (hillslope, terrace etc.): Fill terrace | Local relief: Convex | Slope (%): 2
Subregion (LRR): A - Northwest Forests and Coast | Lat: 44.967424 | Long: -124.014965 | Datum: WGS84
Soil Map Unit Name: Beaches, 1 to 3 percent slopes | NWI Classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed?
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?
Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes X No ___

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
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a wetland? Yes ___ No X

Remarks: Southeast part of study area, 55 feet west of east study area boundary and 40 feet north of south study area boundary.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Gaultheria shallon*	5	Yes	FACU
2.			
3.			
4.			
5.			
Total Cover:	5		
Herb Stratum (Plot size: 5' r)			
1. *Lotus corniculatus*	30	Yes	FAC
2. *Holcus lanatus*	15	Yes	FAC
3. *Schedonorus arundinaceus*	15	Yes	FAC
4. *Taraxacum officinale*	5	No	FACU
5. *Agrostis stolonifera*	5	No	FAC
6. *Potentilla anserina*	5	No	OBL
7. *Juncus balticus*	5	No	FACW
8. *Carex obnupta*	5	No	OBL
Total Cover:	100		
Woody Vine Stratum (Plot Size: 30' r)			
1.			
2.			
Total Cover:	0		

% 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: 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	10 x 1 =	10
FACW species	5 x 2 =	10
FAC species	65 x 3 =	195
FACU species	25 x 4 =	100
UPL species	0 x 5 =	
Column Totals:	105 (A)	315 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:
___ 1- Rapid Test for Hydrophytic Vegetation
X 2- Dominance Test is >50%
___ 3- Prevalence Index is ≤3.0[1]
___ 4- Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
___ 5- Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Herb stratum also includes 5% each of the following species: *Anthoxanthum odoratum*, FACU; *Plantago lanceolata*, FACU; and *Dactylis glomerata*, FACU. Plot boundaries adjusted to describe mowed grass area. Some species not mowed due to the presence of logs.

SOIL

Sampling Point: Plot 1

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

Depth (in.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	7.5YR 4/6	80					sl	dry, old fill
	7.5YR 3/4	20					sl	dry, old fill
9-18	10YR 3/3	100					s	dry old fill
18-20+	7.5YR 3/2	100					mucky peat	moist, native

[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:

Old fill appears to have been placed decades ago, possibly for construction of the park.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 (D4)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (in):		
Water Table Present?	Yes ___	No X	Depth (in):	>20	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (in):	>20	

Wetland Hydrology Present?

Yes ___ **No** X

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

Remarks:

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

Project/Site: Delake Hostetler Park | City/County: Lincoln City / Lincoln | Sampling Date: 8/23/2017
Applicant/Owner: City of Lincoln City | State: Oregon | Sampling Point: Plot 2
Investigator(s): G. Swenson | Section/Township/Range: Sec. 15, T. 7S, R. 11W
Landform (hillslope, terrace etc.): Fill terrace | Local relief: Concave | Slope (%): 2
Subregion (LRR): A - Northwest Forests and Coast | Lat: 44.967414 | Long: -124.014908 | Datum: WGS84
Soil Map Unit Name: Beaches, 1 to 3 percent slopes | NWI Classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes **X** No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?

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

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

Is the Sampled Area within a wetland? **Yes X** **No**

Remarks: Southeast part of study area, 15 feet east of Plot 1 and 1 foot lower.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' r)			
1. *Salix hookeriana*	60	Yes	FACW
2. *Pinus contorta*	35	Yes	FAC
3.			
4.			
Total Cover:	95		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Gaultheria shallon*	40	Yes	FACU
2. *Rubus armeniacus*	30	Yes	FAC
3. *Vaccinium ovatum*	5	No	FACU
4.			
5.			
Total Cover:	75		
Herb Stratum (Plot size: 5' r)			
1. *Carex obnupta*	50	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	50		
Woody Vine Stratum (Plot Size: 30' r)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 50 %

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	50 x 1 =	50
FACW species	60 x 2 =	120
FAC species	65 x 3 =	195
FACU species	45 x 4 =	180
UPL species	0 x 5 =	
Column Totals:	220 (A)	545 (B)

Prevalence Index = B/A = 2.48

Hydrophytic Vegetation Indicators:
- ___ 1- Rapid Test for Hydrophytic Vegetation
- X 2- Dominance Test is >50%
- ___ 3- Prevalence Index is ≤3.0[1]
- ___ 4- Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
- ___ 5- Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes X** **No**

Remarks:

SOIL

Sampling Point: Plot 2

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

Depth (in.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	7.5YR 4/6	75	5YR 4/4	5	C	M	sl	dry, old fill
	7.5YR 3/4	20					sl	dry, old fill
9-24+	10YR 3/2	98	7.5YR 4/4	2	C	M	s	moist, old fill

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

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

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

Indicators for Problematic Hydric Soils[3]:

	2 cm Muck (A10)
	Red Parent Material (TF2)
	Very Shallow Dark Surface (TF12)
X	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: Profile does not technically meet hydric soil indicators. However, due to the presence of old fill, strongly hydrophytic vegetation, and wetland hydrology indicators, soil is considered hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

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)
X	FAC-Neutral Test (D5)
	Raised Ant Mounds (D6) (**LRR A**)
	Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (in):
Water Table Present?	Yes		No	X	Depth (in): >24
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (in): >24

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

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

Remarks:

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

Project/Site: Delake Hostetler Park | City/County: Lincoln City / Lincoln | Sampling Date: 8/23/2017
Applicant/Owner: City of Lincoln City | State: Oregon | Sampling Point: Plot 3
Investigator(s): G. Swenson | Section/Township/Range: Sec. 15, T. 7S, R. 11W
Landform (hillslope, terrace etc.): Fill terrace | Local relief: Slightly concave | Slope (%): 2
Subregion (LRR): A - Northwest Forests and Coast | Lat: 44.967459 | Long: -124.015527 | Datum: WGS84
Soil Map Unit Name: Beaches, 1 to 3 percent slopes | NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed?
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?
Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes **X** No ___

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

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

Is the Sampled Area within a wetland? **Yes X** **No** ___

Remarks: South-central part of study area, 140 feet east of west study area boundary and 35 feet north of south study area boundary.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Rubus armeniacus*	60	Yes	FAC
2. *Rubus spectabilis*	20	Yes	FAC
3. *Salix hookeriana*	20	Yes	FACW
4.			
5.			
Total Cover:	100		
Herb Stratum (Plot size: 5' r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum (Plot Size: 30' r)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 100 %

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 =	
FACW species	20 x 2 =	40
FAC species	80 x 3 =	240
FACU species	0 x 4 =	
UPL species	0 x 5 =	
Column Totals:	100 (A)	280 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:
- ___ 1- Rapid Test for Hydrophytic Vegetation
- X 2- Dominance Test is >50%
- ___ 3- Prevalence Index is ≤3.0[1]
- ___ 4- Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
- ___ 5- Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes X** **No** ___

Remarks:

Plot boundaries adjusted to describe south side of trail.

SOIL

Sampling Point: Plot 3

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

Depth (in.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20+	10YR 2/2	40	7.5YR 5/8	10	C	M	sl	dry, old fill
	7.5YR 6/1	50						

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

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

Remarks: Profile is highly variable. Based on presence of old fill, hydrophytic plant dominance, and wetland hydrology indicators, soil is considered hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

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)
X	FAC-Neutral Test (D5)
	Raised Ant Mounds (D6) (**LRR A**)
	Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (in):
Water Table Present?	Yes		No	X	Depth (in): >20
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (in): >20

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

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

Remarks:

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

Project/Site: Delake Hostetler Park | City/County: Lincoln City / Lincoln | Sampling Date: 8/23/2017
Applicant/Owner: City of Lincoln City | State: Oregon | Sampling Point: Plot 4
Investigator(s): G. Swenson | Section/Township/Range: Sec. 15, T. 7S, R. 11W
Landform (hillslope, terrace etc.): Fill terrace | Local relief: Convex | Slope (%): 1
Subregion (LRR): A - Northwest Forests and Coast | Lat: 44.967496 | Long: -124.015491 | Datum: WGS84
Soil Map Unit Name: Beaches, 1 to 3 percent slopes | NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed?
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?
Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes **X** No ___

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**		

Remarks: South-central part of study area, 15 feet northeast of Plot 3 and 1 foot higher.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum (Plot size: 5' r)			
1. *Schedonorus arundinaceus*	60	Yes	FAC
2. *Agrostis sp.*	35	Yes	(FAC)
3. *Hypochaeris radicata*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	100		
Woody Vine Stratum (Plot Size: 30' r)			
1.			
2.			
Total Cover:	0		

% 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 =	
FACW species	0 x 2 =	
FAC species	60 x 3 =	180
FACU species	5 x 4 =	20
UPL species	0 x 5 =	
Column Totals:	65 (A)	200 (B)

Prevalence Index = B/A = 3.08

Hydrophytic Vegetation Indicators:
- ___ 1- Rapid Test for Hydrophytic Vegetation
- X 2- Dominance Test is >50%
- ___ 3- Prevalence Index is ≤3.0[1]
- ___ 4- Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
- ___ 5- Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes **X** No ___

Remarks:
Plot adjusted to describe gravel trail area between wetlands. Plot consists of mowed grasses. Indicator status in parentheses is estimated.

SOIL

Sampling Point: Plot 4

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

Depth (in.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					gr. sl	dry, old fill

[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:

Refusal at 4 inches due to gravel fill.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ____ 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 (D4)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (in):		
Water Table Present?	Yes ____	No X	Depth (in):	>4	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (in):	>4	

Wetland Hydrology Present?

Yes ____ **No** X

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

Remarks:

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

Project/Site: Delake Hostetler Park | City/County: Lincoln City / Lincoln | Sampling Date: 8/23/2017
Applicant/Owner: City of Lincoln City | State: Oregon | Sampling Point: Plot 5
Investigator(s): G. Swenson | Section/Township/Range: Sec. 15, T. 7S, R. 11W
Landform (hillslope, terrace etc.): Depression within terrace | Local relief: Concave | Slope (%): 1
Subregion (LRR): A - Northwest Forests and Coast | Lat: 44.967557 | Long: -124.015515 | Datum: WGS84
Soil Map Unit Name: Beaches, 1 to 3 percent slopes | NWI Classification: None
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 Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?
Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes **X** No ___

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

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

Is the Sampled Area within a wetland? **Yes X** **No**

Remarks: Central part of study area, 20 feet north of Plot 4 and 2 feet lower.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Salix hookeriana*	25	Yes	FACW
2. *Rubus spectabilis*	15	Yes	FAC
3. *Salix sp.*	10	Yes	(FACW)
4.			
5.			
Total Cover:	50		
Herb Stratum (Plot size: 5' r)			
1. *Carex obnupta*	85	Yes	OBL
2. *Juncus effusus*	15	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100		
Woody Vine Stratum (Plot Size: 30' r)			
1.			
2.			
Total Cover:	0		

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	40	x 2 =	80
FAC species	15	x 3 =	45
FACU species	0	x 4 =	
UPL species	0	x 5 =	
Column Totals:	140 (A)		210 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:
___ 1- Rapid Test for Hydrophytic Vegetation
X 2- Dominance Test is >50%
___ 3- Prevalence Index is ≤3.0[1]
___ 4- Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
___ 5- Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes X** **No**

Remarks:
Indicator status in parenthses is estimated.

SOIL

Sampling Point: Plot 5

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

Depth (in.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20+	10YR 3/2	80	10YR 3/4	5			s	moist, native soil
	2.5Y 2.5/1	15					mucky peat	

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

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

Remarks: 2.5Y 2.5/1 organics appear to be naturally occurring within sandy matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

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)
X	FAC-Neutral Test (D5)
	Raised Ant Mounds (D6) (**LRR A**)
	Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (in):
Water Table Present?	Yes		No	X	Depth (in): >20
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (in): >20

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

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

Remarks:

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

Project/Site: Delake Hostetler Park | City/County: Lincoln City / Lincoln | Sampling Date: 8/23/2017
Applicant/Owner: City of Lincoln City | State: Oregon | Sampling Point: Plot 6
Investigator(s): G. Swenson | Section/Township/Range: Sec. 15, T. 7S, R. 11W
Landform (hillslope, terrace etc.): Depression within terrace | Local relief: Concave | Slope (%): 1
Subregion (LRR): A - Northwest Forests and Coast | Lat: 44.967760 | Long: -124.015452 | Datum: WGS84
Soil Map Unit Name: Beaches, 1 to 3 percent slopes | NWI Classification: None
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? (If needed, explain any answers in remarks) Yes **X** No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?

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

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

Is the Sampled Area within a wetland? **Yes X** **No**

Remarks: North part of study area, 90 feet east of west study area boundary and 90 feet south of north study area boundary.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' r)			
1. *Pinus contorta*	30	Yes	FAC
2.			
3.			
4.			
Total Cover:	30		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Spiraea douglasii*	20	Yes	FACW
2. *Salix hookeriana*	15	Yes	FACW
3.			
4.			
5.			
Total Cover:	35		
Herb Stratum (Plot size: 5' r)			
1. *Carex obnupta*	75	Yes	OBL
2. *Scirpus microcarpus*	15	No	OBL
3. *Potentilla anserina*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
Total Cover:	100		
Woody Vine Stratum (Plot Size: 30' r)			
1.			
2.			
Total Cover:	0		

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	100 x 1 =	100
FACW species	35 x 2 =	70
FAC species	30 x 3 =	90
FACU species	0 x 4 =	
UPL species	0 x 5 =	
Column Totals:	165 (A)	260 (B)

Prevalence Index = B/A = 1.58

Hydrophytic Vegetation Indicators:
- 1- Rapid Test for Hydrophytic Vegetation
- X 2- Dominance Test is >50%
- 3- Prevalence Index is ≤3.0[1]
- 4- Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
- 5- Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes X** **No**

Remarks:

SOIL

Sampling Point: Plot 6

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

Depth (in.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/2	60	7.5YR 4/6	10	C	M	s	dry, native soil
	7.5YR 6/2	30						
13-20+	10YR 3/2	65	7.5YR 4/6	10	C	M	sl	dry, native soil
	5GY 6/1	25						

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

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

Remarks: Angular gravels in the upper 3 inches of soil profile. Profile is highly variable.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

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)
X	FAC-Neutral Test (D5)
	Raised Ant Mounds (D6) (**LRR A**)
	Frost-Heave Hummocks (D4)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (in):
Water Table Present?	Yes		No	X	Depth (in): >20
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (in): >20

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

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

Remarks:

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

Project/Site: Delake Hostetler Park | City/County: Lincoln City / Lincoln | Sampling Date: 8/23/2017
Applicant/Owner: City of Lincoln City | State: Oregon | Sampling Point: Plot 7
Investigator(s): G. Swenson | Section/Township/Range: Sec. 15, T. 7S, R. 11W
Landform (hillslope, terrace etc.): Fill terrace | Local relief: Convex | Slope (%): 1
Subregion (LRR): A - Northwest Forests and Coast | Lat: 44.967832 | Long: -124.015496 | Datum: WGS84
Soil Map Unit Name: Beaches, 1 to 3 percent slopes | NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes **X** No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?

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**		

Remarks: North part of study area, 20 feet northwest of Plot 6 and 2 feet higher.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum (Plot size: 30' r)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum (Plot size: 5' r)			
1. *Unidentifiable mowed grass*	60	Yes	(FAC)
2. *Schedonorus arundinaceus*	35	Yes	FAC
3. *Hypochaeris radicata*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	100		
Woody Vine Stratum (Plot Size: 30' r)			
1.			
2.			
Total Cover:	0		

% 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 =	
FACW species	0 x 2 =	
FAC species	35 x 3 =	105
FACU species	5 x 4 =	20
UPL species	0 x 5 =	
Column Totals:	40 (A)	125 (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:
- ___ 1- Rapid Test for Hydrophytic Vegetation
- X 2- Dominance Test is >50%
- ___ 3- Prevalence Index is ≤3.0[1]
- ___ 4- Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
- ___ 5- Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes **X** No ___

Remarks:

Plot adjusted to describe road fill area. Plot location was recently mowed.

SOIL

Sampling Point: Plot 7

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

Depth (in.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					sl	dry, old fill

[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:

Refusal at 8 inches due to impenetrable gravel fill.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ____ 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 (D4)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (in):		
Water Table Present?	Yes ____	No X	Depth (in):	>8	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (in):	>8	

Wetland Hydrology Present?

Yes ____ **No** **X**

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

Remarks:

APPENDIX C

Ground Level Color Photographs

Photo 1. Panoramic photo of the southeast part of the study area (upland). View is to the southeast. Sample plot 1 is visible just left of center in the mowed grass area pf the park. Photo taken August 23, 2017.

Photo 2. Panoramic photo of the southeast part of the study area (Wetland A). View is to the north. Sample plot 2 is visible in the foreground. Photo taken August 23, 2017.

Photo 3. Panoramic photo of the south part of the study area (Wetland A). View is to the southwest. Sample plot 3 is visible in the center. Photo taken August 23, 2017.

Photo 4. Panoramic photo of the south part of the study area (upland). View is to the west. Sample plot 4 is visible in the center just north of the gravel trail. Photo taken August 23, 2017.

Photo 5. Panoramic photo of the south-central part of the study area (Wetland B). View is to the east. Sample plot 5 is visible in the center. Photo taken August 23, 2017.

Photo 6. Panoramic photo of the north-central part of the study area (Wetland B). View is to the south. Sample plot 6 is visible left of center. Photo taken August 23, 2017.

Photo 7. Panoramic photo of the north part of the study area (upland). View is to the southwest. Sample plot 7 is visible right of center. Gravel road running along the west (right) side of Wetland B is visible. Photo taken August 23, 2017.

Photo 8. Photo of the south part of the study area at the Wetland A (right) interface with Devils Lake (left). View is to the west. Photo taken August 23, 2017.

Photo 9. Photo of the south part of the study area at the Wetland A (left) interface with Devils Lake (right). View is to the east. Photo taken August 23, 2017.

APPENDIX D

Additional Tables and Information

WETS Table

WETS Station: ASTORIA RGNL AP, 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	48.5	36.7	42.6	9.62	6.41	11.52	16	1.2
Feb	51.2	37.6	44.4	7.87	5.57	9.32	14	0.4
Mar	53.6	38.6	46.1	7.36	5.63	8.56	15	0.1
Apr	56.5	40.8	48.7	4.93	3.64	5.79	12	0.1
May	60.5	45.4	52.9	3.28	2.22	3.91	9	0.0
Jun	63.9	49.8	56.8	2.57	1.70	3.08	6	0.0
Jul	67.6	52.9	60.3	1.16	0.51	1.42	3	0.0
Aug	68.7	53.2	61.0	1.21	0.62	1.48	3	0.0
Sep	67.9	49.5	58.7	2.61	1.00	3.16	6	0.0
Oct	61.3	44.1	52.7	5.61	3.27	6.82	10	0.0
Nov	53.5	40.3	46.9	10.50	7.60	12.39	17	0.2
Dec	48.7	37.0	42.9	10.40	7.62	12.23	16	0.6
Annual:					59.41	73.51		
Average	58.5	43.8	51.2	-	-	-	-	-
Total	-	-	-	67.12			127	2.6

GROWING SEASON DATES			
Years with missing data:	24 deg = 0	28 deg = 0	32 deg = 0
Years with no occurrence:	24 deg = 12	28 deg = 4	32 deg = 0
Data years used:	24 deg = 30	28 deg = 30	32 deg = 30
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	1/16 to 1/9: 358 days	2/14 to 12/13: 302 days	4/8 to 11/11: 217 days
70 percent *	No occurrence	2/2 to 12/25: 326 days	4/1 to 11/18: 231 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
1953	M12.15	5.32	6.43	2.82	4.11	2.90	0.65	3.12	3.90	4.30	12.82	12.21	70.73
1954	18.94	9.56	4.17	4.70	1.66	5.48	1.77	2.24	2.01	4.44	10.10	10.22	75.29
1955	5.96	6.33	8.64	8.04	1.62	2.73	3.42	0.10	3.57	12.24	14.64	16.57	83.86
1956	17.09	9.32	13.47	1.33	1.43	4.64	0.18	2.15	3.76	11.37	2.57	9.02	76.33
1957	4.76	6.90	9.73	3.94	2.82	3.31	1.63	1.34	0.82	5.43	7.68	11.97	60.33
1958	9.61	10.96	4.62	7.03	1.03	2.80	0.09	0.52	1.94	7.33	14.14	12.17	72.24
1959	13.24	8.04	7.88	4.40	3.45	3.77	0.91	0.92	5.56	6.48	11.40	8.36	74.41
1960	10.09	8.47	7.40	5.92	6.60	1.87	0.01	1.84	1.69	7.33	13.91	6.12	71.25

1961	9.03	21.89	10.69	5.47	2.90	1.10	0.50	1.30	1.45	7.32	8.34	10.40	80.39
1962	6.53	5.61	5.18	7.44	2.88	1.87	0.34	2.49	3.50	7.40	14.21	6.78	64.23
1963	4.76	6.44	6.13	5.76	1.91	1.80	1.52	1.20	2.20	9.58	13.16	9.12	63.58
1964	18.50	4.06	7.41	3.59	2.27	2.70	2.59	2.21	2.73	2.61	11.15	13.67	73.49
1965	16.59	6.77	0.93	5.47	2.74	0.75	0.46	1.95	0.51	3.97	11.82	11.78	63.74
1966	8.61	5.53	8.79	2.90	2.18	2.13	0.54	1.01	2.18	5.83	10.00	14.07	63.77
1967	14.95	6.07	8.38	5.52	1.37	1.14	0.22	0.19	3.07	11.06	5.94	9.04	66.95
1968	9.57	9.57	10.42	4.22	3.91	4.81	1.23	5.22	4.60	8.03	11.96	13.85	87.39
1969	12.02	5.67	3.16	3.84	3.92	3.63	0.56	0.62	6.55	5.28	5.77	11.69	62.71
1970	14.46	5.29	4.28	7.74	1.92	1.19	0.31	0.08	3.65	5.80	9.86	15.93	70.51
1971	16.69	6.67	9.96	4.09	2.30	2.97	1.55	1.14	4.65	6.34	9.08	13.83	79.27
1972	10.62	8.58	10.04	6.82	1.22	0.92	2.01	0.37	4.72	1.96	6.90	13.28	67.44
1973	5.72	2.60	5.71	2.38	3.16	4.26	0.07	0.46	4.19	5.92	14.93	15.75	65.15
1974	12.47	8.38	10.73	4.88	4.37	2.33	4.20	0.29	0.67	1.85	8.95	13.84	72.96
1975	15.21	8.03	5.66	3.90	2.41	1.99	0.22	2.82	0.04	12.56	12.28	15.66	80.78
1976	11.67	7.86	7.17	3.55	2.20	1.27	2.46	2.55	1.58	2.96	1.45	4.20	48.92
1977	3.20	5.22	9.74	1.65	6.00	1.36	0.44	3.85	5.44	4.38	12.37	14.34	67.99
1978	8.66	5.43	4.40	6.35	4.75	3.07	0.90	2.61	6.93	1.01	8.43	4.99	57.53
1979	3.83	11.76	4.52	4.38	4.19	1.82	0.92	0.81	4.35	8.46	7.87	13.18	66.09
1980	7.21	9.60	6.31	4.85	1.45	1.57	0.64	1.24	2.51	2.79	12.02	12.44	62.63
1981	2.63	8.69	5.80	7.30	2.97	5.47	1.06	0.62	2.77	8.67	10.66	11.80	68.44
1982	13.98	10.87	7.19	6.52	0.37	1.22	0.75	0.63	3.72	8.31	9.62	12.14	75.32
1983	13.52	8.66	8.84	4.26	3.59	4.53	4.39	1.14	1.83	1.87	16.75	9.44	78.82
1984	6.60	8.34	5.90	5.02	5.34	3.90	0.05	0.52	3.16	8.10	15.19	6.51	68.63
1985	0.69	4.09	7.00	2.95	1.90	3.09	0.78	1.11	3.23	8.11	5.96	2.67	41.58
1986	11.19	8.93	6.11	3.58	3.30	0.94	1.69	0.14	3.62	5.45	11.42	7.34	63.71
1987	10.38	5.08	8.52	3.02	3.97	0.65	1.10	0.16	0.95	0.52	4.33	8.85	47.53
1988	6.57	3.60	7.86	3.99	4.09	3.50	0.96	0.88	1.23	2.14	13.06	7.32	55.20
1989	8.20	6.61	10.09	2.27	3.01	2.58	1.64	0.84	0.50	5.30	6.73	7.40	55.17
1990	16.09	11.83	5.15	4.44	4.00	3.47	0.54	1.57	0.67	8.44	11.28	5.11	72.59
1991	6.76	8.57	5.65	9.47	2.68	1.86	0.33	2.31	0.07	2.44	10.53	6.60	57.27
1992	9.34	5.69	1.19	7.49	0.52	0.55	0.24	0.77	2.66	4.10	10.11	5.99	48.65
1993	6.27	1.35	6.93	9.01	4.74	3.70	1.81	0.57	0.12	2.25	6.68	9.63	53.06
1994	6.83	11.34	6.48	4.31	2.52	2.27	0.81	1.49	2.84	9.52	12.56	14.84	75.81

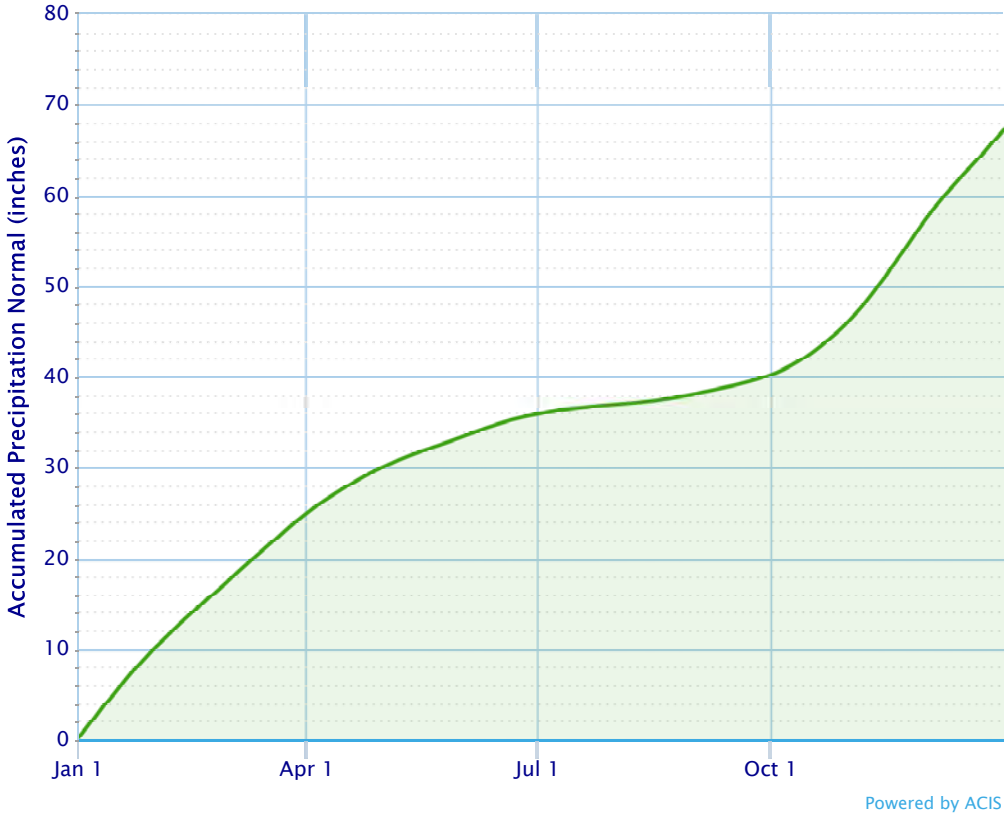
1995	10.59	5.94	8.76	5.80	2.14	2.63	0.64	1.95	2.19	7.13	17.47	11.26	76.50
1996	9.07	14.52	4.70	10.07	3.96	1.38	1.92	0.71	3.34	11.14	11.51	20.38	92.70
1997	12.74	3.95	15.31	6.62	3.61	4.53	1.35	2.90	7.27	11.56	7.65	7.99	85.48
1998	16.20	10.52	10.23	2.49	3.75	1.67	0.33	0.25	0.66	6.86	19.60	16.59	89.15
1999	13.87	18.26	9.53	2.59	5.61	3.43	0.78	1.04	0.21	3.54	15.87	12.85	87.58
2000	11.67	5.05	5.46	3.83	4.14	4.17	0.24	0.61	2.15	4.62	3.86	5.81	51.61
2001	4.60	3.43	5.23	5.59	3.12	2.83	0.85	3.67	0.89	4.21	14.21	11.83	60.46
2002	14.65	4.95	6.72	5.02	1.78	2.32	0.14	0.03	1.07	0.93	5.72	12.77	56.10
2003	12.07	4.75	13.45	5.79	2.18	0.87	0.34	0.10	1.91	6.20	9.75	9.80	67.21
2004	12.90	6.97	5.47	2.85	3.36	1.68	0.15	3.97	4.27	8.43	6.70	7.24	63.99
2005	5.78	3.30	7.64	8.32	5.46	1.67	2.26	0.25	1.22	8.89	10.53	14.36	69.68
2006	24.10	2.94	5.66	3.41	3.30	2.14	1.19	0.56	1.44	3.29	21.07	10.75	79.85
2007	7.62	10.78	8.85	3.00	1.63	2.48	2.81	0.84	1.78	7.34	5.07	12.19	64.39
2008	9.24	5.49	8.79	5.12	2.09	2.58	0.46	2.99	0.48	4.16	11.49	9.95	62.84
2009	10.71	3.65	7.70	4.14	5.83	0.39	0.61	0.92	3.26	7.92	16.71	5.76	67.60
2010	11.19	7.41	7.15	7.67	4.45	3.88	0.60	1.12	4.56	7.96	12.45	11.37	79.81
2011	12.20	7.42	11.85	8.01	4.04	1.66	1.39	0.08	3.02	3.97	10.40	4.85	68.89
2012	10.80	6.80	14.13	7.40	4.94	4.82	0.50	0.06	0.22	13.15	13.84	14.63	91.29
2013	9.10	6.26	3.92	6.84	6.40	2.45	0.03	1.35	10.69	2.05	5.11	5.00	59.20
2014	6.36	7.40	10.86	8.08	5.98	1.85	1.08	0.70	4.94	8.61	6.44	10.57	72.87
2015	9.19	6.29	6.58	3.31	1.29	0.73	0.39	1.34	2.13	7.20	14.80	20.53	73.78
2016	13.75	8.53	12.10	1.99	0.86	2.00	1.12	0.50	2.13	16.32	17.20	10.35	86.85
2017	5.81	12.07	14.45	8.91	5.89	2.44	0.10	0.39	M0.21				50.27

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

Daily Climate Normals (1981-2010) - Astoria Area, OR (ThreadEx)



Daily Precipitation Normal (inches)												
Day	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.34	0.26	0.27	0.21	0.13	0.11	0.05	0.02	0.05	0.11	0.30	0.36
2	0.35	0.27	0.26	0.21	0.12	0.10	0.05	0.03	0.06	0.11	0.30	0.36
3	0.35	0.27	0.26	0.21	0.13	0.10	0.04	0.02	0.07	0.12	0.31	0.36
4	0.35	0.27	0.26	0.20	0.12	0.11	0.05	0.03	0.06	0.12	0.31	0.35
5	0.35	0.27	0.25	0.21	0.13	0.09	0.04	0.02	0.06	0.13	0.32	0.34
6	0.35	0.27	0.25	0.19	0.12	0.10	0.04	0.02	0.06	0.14	0.33	0.34
7	0.35	0.27	0.24	0.19	0.13	0.11	0.05	0.03	0.06	0.14	0.34	0.34
8	0.35	0.27	0.24	0.19	0.11	0.10	0.04	0.03	0.06	0.14	0.35	0.33
9	0.35	0.28	0.25	0.19	0.11	0.10	0.04	0.03	0.06	0.15	0.35	0.31
10	0.35	0.27	0.24	0.18	0.11	0.10	0.04	0.03	0.06	0.16	0.36	0.32
11	0.34	0.27	0.23	0.18	0.11	0.10	0.03	0.03	0.06	0.15	0.37	0.31
12	0.34	0.26	0.25	0.18	0.11	0.09	0.04	0.03	0.06	0.17	0.37	0.31
13	0.33	0.25	0.24	0.18	0.10	0.09	0.04	0.03	0.07	0.18	0.37	0.31
14	0.34	0.25	0.25	0.17	0.10	0.10	0.03	0.04	0.06	0.19	0.38	0.31
15	0.34	0.24	0.25	0.18	0.11	0.09	0.03	0.03	0.06	0.19	0.39	0.31
16	0.35	0.24	0.25	0.17	0.10	0.09	0.03	0.04	0.07	0.19	0.39	0.30
17	0.35	0.25	0.24	0.17	0.10	0.09	0.03	0.04	0.06	0.20	0.40	0.30

18	0.34	0.24	0.24	0.17	0.10	0.08	0.03	0.04	0.07	0.21	0.40	0.29
19	0.34	0.25	0.24	0.17	0.09	0.08	0.03	0.04	0.08	0.21	0.41	0.30
20	0.33	0.24	0.24	0.17	0.10	0.09	0.02	0.04	0.07	0.22	0.41	0.30
21	0.32	0.24	0.24	0.16	0.10	0.07	0.03	0.04	0.08	0.22	0.40	0.31
22	0.31	0.25	0.24	0.16	0.09	0.07	0.03	0.04	0.07	0.23	0.40	0.31
23	0.31	0.25	0.24	0.16	0.10	0.07	0.02	0.05	0.08	0.24	0.40	0.31
24	0.29	0.25	0.23	0.15	0.10	0.07	0.03	0.04	0.08	0.24	0.40	0.32
25	0.30	0.25	0.23	0.15	0.10	0.06	0.03	0.05	0.09	0.23	0.40	0.32
26	0.30	0.26	0.22	0.15	0.10	0.06	0.03	0.05	0.09	0.25	0.40	0.32
27	0.29	0.25	0.23	0.14	0.10	0.06	0.02	0.05	0.10	0.25	0.39	0.32
28	0.30	0.25	0.22	0.14	0.10	0.06	0.02	0.05	0.09	0.26	0.40	0.31
29	0.30	-	0.21	0.14	0.10	0.05	0.02	0.06	0.10	0.27	0.40	0.31
30	0.30	-	0.22	0.13	0.10	0.06	0.03	0.05	0.10	0.28	0.40	0.31
31	0.29	-	0.22	-	0.10	-	0.02	0.06	-	0.28	-	0.30

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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

WFO Monthly/Daily Climate Data

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195
CXUS56 KPQR 021433
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                                STATION:   ASTORIA OR
                                                MONTH:     OCTOBER
                                                YEAR:      2016
                                                LATITUDE:   46  9 N
                                                LONGITUDE: 123 53 W
```

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND				:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG	MX	2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	63	52	58	2	7	0	0.56	0.0	0	8.4	22	210	M	M	9	13	33	200
2	60	46	53	-2	12	0	0.02	0.0	0	4.0	12	250	M	M	8	1	15	240
3	58	44	51	-4	14	0	0.09	0.0	0	4.7	10	190	M	M	8	1	15	180
4	62	55	59	4	6	0	0.41	0.0	0	11.5	21	200	M	M	8	18	31	200
5	62	55	59	4	6	0	0.44	0.0	0	9.5	21	300	M	M	10	1	29	300
6	62	53	58	3	7	0	0.53	0.0	0	9.1	31	180	M	M	9	1	48	180
7	62	56	59	5	6	0	0.30	0.0	0	6.5	28	220	M	M	9	1	40	220
8	66	56	61	7	4	0	0.72	0.0	0	13.9	24	210	M	M	10	18	36	210
9	58	47	53	-1	12	0	0.52	0.0	0	3.9	14	320	M	M	9	1	17	310
10	61	40	51	-3	14	0	0.00	0.0	0	5.6	15	340	M	M	3	12	19	320
11	68	40	54	0	11	0	0.00	0.0	0	5.4	17	120	M	M	0		22	130
12	65	43	54	1	11	0	0.20	0.0	0	5.5	12	260	M	M	3	1	17	220
13	65	57	61	8	4	0	3.22	0.0	0	15.5	45	190	M	M	10	1	65	210
14	63	53	58	5	7	0	1.56	0.0	0	19.4	38	190	M	M	8	13	58	210
15	64	55	60	7	5	0	1.29	0.0	0	15.8	37	180	M	M	8	13	52	200
16	63	52	58	6	7	0	1.79	0.0	0	11.8	30	190	M	M	9	13	48	190
17	62	53	58	6	7	0	0.43	0.0	0	10.0	18	210	M	M	7	1	27	210
18	61	48	55	3	10	0	0.07	0.0	0	6.8	16	220	M	M	3	1	22	230
19	59	45	52	0	13	0	0.50	0.0	0	5.8	13	170	M	M	6	18	27	210
20	62	49	56	4	9	0	0.70	0.0	0	7.5	28	200	M	M	7	1	36	220
21	62	48	55	3	10	0	0.10	0.0	0	5.2	17	200	M	M	8	128	23	220
22	64	43	54	3	11	0	0.13	0.0	0	5.8	15	220	M	M	4	1	20	210
23	63	51	57	6	8	0	0.07	0.0	0	5.4	16	90	M	M	8	1	19	90
24	62	53	58	7	7	0	0.03	0.0	0	11.4	22	190	M	M	9		36	170
25	65	54	60	9	5	0	0.03	0.0	0	9.5	20	190	M	M	6		30	180
26	64	55	60	9	5	0	0.78	0.0	0	12.7	31	190	M	M	9	1	55	200
27	62	53	58	8	7	0	0.35	0.0	0	6.7	18	190	M	M	9	1	24	200
28	64	50	57	7	8	0	0.05	0.0	0	4.7	12	140	M	M	7	1	14	140
29	62	46	54	4	11	0	0.08	0.0	0	5.7	18	190	M	M	4	1	24	190
30	55	49	52	2	13	0	0.75	0.0	0	5.3	12	80	M	M	9	1	14	80

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31  59  54  57   7   8   0 0.60  0.0    0 10.3 26 230   M    M   9 1      37 240
================================================================================
SM 1928 1555       265   0 16.32     0.0 263.3          M      226
================================================================================
AV 62.2 50.2                                  8.5 FASTST   M    M   7    MAX(MPH)
                                  MISC ---->  # 45 190                # 65  210
================================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

                                          STATION:  ASTORIA OR
                                          MONTH:    OCTOBER
                                          YEAR:     2016
                                          LATITUDE:   46  9 N
                                          LONGITUDE: 123 53 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 56.2   TOTAL FOR MONTH:  16.32    1 = FOG OR MIST
DPTR FM NORMAL:   3.6   DPTR FM NORMAL:   10.34    2 = FOG REDUCING VISIBILITY
HIGHEST:    68 ON 11    GRTST 24HR  3.37 ON 12-13      TO 1/4 MILE OR LESS
LOWEST:     40 ON 11,10                            3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:   0.0 INCH    5 = HAIL
                        GRTST 24HR     0.0         6 = FREEZING RAIN OR DRIZZLE
                        GRTST DEPTH:   0           7 = DUSTSTORM OR SANDSTORM:
                                                       VSBY 1/2 MILE OR LESS
                                                   8 = SMOKE OR HAZE
[NO. OF DAYS WITH]      [WEATHER - DAYS WITH]      9 = BLOWING SNOW
                                                   X = TORNADO
MAX 32 OR BELOW:   0    0.01 INCH OR MORE:  29
MAX 90 OR ABOVE:   0    0.10 INCH OR MORE:  21
MIN 32 OR BELOW:   0    0.50 INCH OR MORE:  13
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   4

[HDD (BASE 65) ]
TOTAL THIS MO.   265    CLEAR  (SCALE 0-3)   2
DPTR FM NORMAL  -121    PTCLDY (SCALE 4-7)  14
TOTAL FM JUL 1   519    CLOUDY (SCALE 8-10) 15
DPTR FM NORMAL  -348

[CDD (BASE 65) ]
TOTAL THIS MO.     0
DPTR FM NORMAL     0    [PRESSURE DATA]
TOTAL FM JAN 1    62    HIGHEST SLP 30.29 ON 19
DPTR FM NORMAL    50    LOWEST  SLP 29.06 ON 15

[REMARKS]
#FINAL-10-16#
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[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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

WFO Monthly/Daily Climate Data

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510
CXUS56 KPQR 011622
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                                STATION:   ASTORIA OR
                                                MONTH:     NOVEMBER
                                                YEAR:      2016
                                                LATITUDE:   46  9 N
                                                LONGITUDE: 123 53 W
```

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND			:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG	MX	2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	60	53	57	7	8	0	0.27	0.0	0	8.6	20	190	M	M	8	1	29	180
2	65	50	58	9	7	0	0.31	0.0	0	7.7	33	200	M	M	9	1	49	200
3	64	44	54	5	11	0	0.00	0.0	0	3.1	9	80	M	M	1	18	13	50
4	67	42	55	6	10	0	0.02	0.0	0	5.5	22	200	M	M	3	18	32	170
5	63	54	59	10	6	0	1.20	0.0	0	8.9	25	200	M	M	9	1	40	210
6	61	54	58	9	7	0	0.33	0.0	0	5.9	17	160	M	M	9	18	23	150
7	67	54	61	13	4	0	0.01	0.0	0	5.7	12	110	M	M	7		16	130
8	71	53	62	14	3	0	T	0.0	0	9.0	22	190	M	M	8		31	180
9	65	52	59	11	6	0	0.52	0.0	0	7.5	16	200	M	M	7	1	25	180
10	61	47	54	6	11	0	0.00	0.0	0	3.2	10	220	M	M	5	1	13	230
11	67	55	61	13	4	0	0.08	0.0	0	5.2	23	190	M	M	7	1	34	190
12	62	47	55	7	10	0	0.47	0.0	0	10.9	26	200	M	M	8	1	42	220
13	59	47	53	6	12	0	0.75	0.0	0	8.5	28	190	M	M	9	1	36	190
14	59	51	55	8	10	0	1.06	0.0	0	5.6	18	190	M	M	7	12	26	200
15	59	47	53	6	12	0	1.29	0.0	0	8.3	21	270	M	M	8	138	29	270
16	53	43	48	1	17	0	0.30	0.0	0	4.7	14	200	M	M	8	1	18	190
17	55	41	48	2	17	0	T	0.0	0	4.8	10	80	M	M	4		13	70
18	54	44	49	3	16	0	0.09	0.0	0	8.1	24	120	M	M	4		39	120
19	57	48	53	7	12	0	1.08	0.0	0	10.4	21	120	M	M	9	1	25	120
20	56	48	52	6	13	0	0.80	0.0	0	6.3	18	230	M	M	8	1	25	240
21	56	45	51	5	14	0	0.21	0.0	0	4.4	13	230	M	M	8	1	17	220
22	55	47	51	5	14	0	1.10	0.0	0	7.8	18	210	M	M	10	18	26	150
23	54	46	50	5	15	0	1.05	0.0	0	9.2	22	200	M	M	8	1	32	260
24	53	48	51	6	14	0	3.54	0.0	0	13.4	25	250	M	M	10	3	39	260
25	54	45	50	5	15	0	0.17	0.0	0	6.9	17	210	M	M	7		22	230
26	55	45	50	5	15	0	1.58	0.0	0	5.0	16	300	M	M	10	1	19	300
27	54	43	49	5	16	0	0.40	0.0	0	12.2	32	240	M	M	8	1	51	200
28	56	46	51	7	14	0	0.17	0.0	0	9.1	30	300	M	M	7	1	40	300
29	56	46	51	7	14	0	0.13	0.0	0	6.8	22	260	M	M	8		27	250
30	54	42	48	4	17	0	0.27	0.0	0	10.6	25	290	M	M	8	8	31	250

```
==============================================================================
SM 1772 1427       344   0 17.20     0.0 223.3          M      222
==============================================================================
AV 59.1 47.6                                7.4 FASTST   M    M   7    MAX(MPH)
                                  MISC ---->  # 33 200                # 51  200
==============================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

                                          STATION:  ASTORIA OR
                                          MONTH:    NOVEMBER
                                          YEAR:     2016
                                          LATITUDE:   46  9 N
                                          LONGITUDE: 123 53 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 53.3   TOTAL FOR MONTH:  17.20    1 = FOG OR MIST
DPTR FM NORMAL:   6.5   DPTR FM NORMAL:    6.05    2 = FOG REDUCING VISIBILITY
HIGHEST:    71 ON  8    GRTST 24HR  3.64 ON 23-24      TO 1/4 MILE OR LESS
LOWEST:     41 ON 17                               3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:   0.0 INCH    5 = HAIL
                        GRTST 24HR     0.0         6 = FREEZING RAIN OR DRIZZLE
                        GRTST DEPTH:   0           7 = DUSTSTORM OR SANDSTORM:
                                                       VSBY 1/2 MILE OR LESS
                                                   8 = SMOKE OR HAZE
[NO. OF DAYS WITH]      [WEATHER - DAYS WITH]      9 = BLOWING SNOW
                                                   X = TORNADO
MAX 32 OR BELOW:   0    0.01 INCH OR MORE:  26
MAX 90 OR ABOVE:   0    0.10 INCH OR MORE:  22
MIN 32 OR BELOW:   0    0.50 INCH OR MORE:  11
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   8

[HDD (BASE 65) ]
TOTAL THIS MO.   344    CLEAR  (SCALE 0-3)   2
DPTR FM NORMAL  -202    PTCLDY (SCALE 4-7)  19
TOTAL FM JUL 1   863    CLOUDY (SCALE 8-10)  9
DPTR FM NORMAL  -550

[CDD (BASE 65) ]
TOTAL THIS MO.     0
DPTR FM NORMAL     0    [PRESSURE DATA]
TOTAL FM JAN 1    62    HIGHEST SLP 30.26 ON  3
DPTR FM NORMAL    50    LOWEST  SLP 29.45 ON 26

[REMARKS]
#FINAL-11-16#
```

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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

WFO Monthly/Daily Climate Data

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221
CXUS56 KPQR 011200
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                                STATION:   ASTORIA OR
                                                MONTH:     DECEMBER
                                                YEAR:      2016
                                                LATITUDE:   46  9 N
                                                LONGITUDE: 123 53 W
```

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND				:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG	MX	2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	51	41	46	2	19	0	0.21	0.0	0	4.6	13	50	M	M	9	1	16	260
2	53	47	50	6	15	0	0.42	0.0	0	7.0	32	210	M	M	10	18	40	200
3	54	45	50	6	15	0	0.36	M	0	7.9	20	250	M	M	10		26	230
4	52	37	45	2	20	0	0.69	M	0	10.1	31	330	M	M	8	3	39	330
5	46	34	40	-3	25	0	0.47	M	0	6.6	23	280	M	M	5	18	29	280
6	44	30	37	-6	28	0	0.00	0.0	0	4.5	12	90	M	M	4		14	50
7	41	30	36	-7	29	0	0.00	0.0	0	14.9	26	80	M	M	0		33	70
8	40	34	37	-6	28	0	0.30	M	0	12.7	24	100	M	M	5	8	33	90
9	46	40	43	0	22	0	1.63	M	0	7.0	20	40	M	M	10	1	27	40
10	52	36	44	1	21	0	0.43	M	M	9.5	26	270	M	M	6	1	38	260
11	51	41	46	3	19	0	0.75	M	M	7.9	26	300	M	M	8	18	36	250
12	48	38	43	1	22	0	0.31	M	0	4.8	15	20	M	M	6	12	20	30
13	45	38	42	0	23	0	0.00	0.0	0	9.9	21	70	M	M	5	128	24	70
14	40	35	38	-4	27	0	T	M	M	16.4	23	80	M	M	3		28	70
15	40	29	35	-7	30	0	0.00	0.0	0	7.3	15	80	M	M	6		22	350
16	41	27	34	-8	31	0	0.00	0.0	0	5.4	12	100	M	M	2		13	110
17	40	28	34	-8	31	0	0.03	M	0	5.4	10	80	M	M	6	18	12	70
18	42	30	36	-6	29	0	0.00	0.0	0	4.7	8	90	M	M	2	8	10	80
19	56	37	47	5	18	0	1.98	M	0	13.3	32	190	M	M	10	18	50	190
20	56	35	46	4	19	0	0.38	M	0	10.2	28	250	M	M	10	18	41	200
21	48	34	41	-1	24	0	0.00	0.0	0	5.0	14	60	M	M	4	128	16	60
22	43	31	37	-5	28	0	0.32	M	0	4.1	16	70	M	M	6	18	18	70
23	47	36	42	0	23	0	0.47	M	0	5.9	17	300	M	M	8	18	23	300
24	45	31	38	-4	27	0	0.01	M	0	2.8	16	20	M	M	6	1268	18	20
25	45	32	39	-3	26	0	0.01	M	0	5.0	10	60	M	M	5	1	11	60
26	51	36	44	2	21	0	0.94	M	0	8.3	28	200	M	M	9	1	38	180
27	50	40	45	3	20	0	0.20	M	0	10.3	24	270	M	M	7		35	280
28	49	35	42	0	23	0	0.01	M	0	5.5	14	330	M	M	6		17	340
29	52	38	45	2	20	0	0.23	M	0	6.2	24	240	M	M	8	18	30	240
30	49	31	40	-3	25	0	0.02	M	0	3.6	15	330	M	M	2	128	18	340

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31  46  29  38  -5  27   0 0.18    M    0  6.5 28 280   M    M   8 128    38 280
================================================================================
SM 1463 1085       735   0 10.35     0.0 233.3          M      194
================================================================================
AV 47.2 35.0                                  7.5 FASTST   M    M   6    MAX(MPH)
                                  MISC ---->  # 32 210               # 50  190
================================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

                                          STATION:  ASTORIA OR
                                          MONTH:    DECEMBER
                                          YEAR:     2016
                                          LATITUDE:   46  9 N
                                          LONGITUDE: 123 53 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 41.1   TOTAL FOR MONTH:  10.35    1 = FOG OR MIST
DPTR FM NORMAL:  -1.6   DPTR FM NORMAL:    0.46    2 = FOG REDUCING VISIBILITY
HIGHEST:    56 ON 20,19 GRTST 24HR  2.23 ON 19-20      TO 1/4 MILE OR LESS
LOWEST:     27 ON 16                               3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:   0.0 INCH    5 = HAIL
                        GRTST 24HR     0.0         6 = FREEZING RAIN OR DRIZZLE
                        GRTST DEPTH:   0           7 = DUSTSTORM OR SANDSTORM:
                                                       VSBY 1/2 MILE OR LESS
                                                   8 = SMOKE OR HAZE
[NO. OF DAYS WITH]      [WEATHER - DAYS WITH]      9 = BLOWING SNOW
                                                   X = TORNADO
MAX 32 OR BELOW:   0    0.01 INCH OR MORE:  23
MAX 90 OR ABOVE:   0    0.10 INCH OR MORE:  18
MIN 32 OR BELOW:  11    0.50 INCH OR MORE:   5
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   2

[HDD (BASE 65) ]
TOTAL THIS MO.   735    CLEAR  (SCALE 0-3)   5
DPTR FM NORMAL    42    PTCLDY (SCALE 4-7)  17
TOTAL FM JUL 1  1598    CLOUDY (SCALE 8-10)  9
DPTR FM NORMAL  -508

[CDD (BASE 65) ]
TOTAL THIS MO.     0
DPTR FM NORMAL     0    [PRESSURE DATA]
TOTAL FM JAN 1    62    HIGHEST SLP 30.53 ON 18
DPTR FM NORMAL    50    LOWEST  SLP 29.47 ON 23

[REMARKS]
#FINAL-12-16#
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[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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WFO Monthly/Daily Climate Data

994
CXUS56 KPQR 011200
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASTORIA OR
MONTH: JANUARY
YEAR: 2017
LATITUDE: 46 9 N
LONGITUDE: 123 53 W

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND				:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
									12Z	AVG	MX	2MIN							
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX		SPD	DR
1	44	32	38	-5	27	0	0.09	M	0	7.1	28	280	M	M	5	18		38	280
2	39	33	36	-7	29	0	T	M	0	15.8	24	70	M	M	9			29	70
3	38	30	34	-9	31	0	0.00	0.0	0	19.4	28	70	M	M	1			34	70
4	39	24	32	-11	33	0	0.00	0.0	0	13.8	25	70	M	M	3			31	70
5	41	22	32	-11	33	0	0.00	0.0	0	4.6	12	50	M	M	0			15	20
6	40	22	31	-12	34	0	0.00	0.0	0	6.4	13	90	M	M	2			16	80
7	37	34	36	-7	29	0	0.03	M	0	12.2	20	110	M	M	10	8		26	120
8	50	37	44	1	21	0	0.85	M	0	11.1	26	200	M	M	10	1		37	190
9	47	37	42	-2	23	0	0.48	M	0	7.1	18	220	M	M	8	1		26	220
10	43	36	40	-4	25	0	0.30	M	0	10.6	21	50	M	M	7	1		26	50
11	37	34	36	-8	29	0	0.03	M	0	10.4	15	70	M	M	10	8		19	70
12	41	29	35	-9	30	0	0.00	0.0	0	6.4	14	80	M	M	0			16	20
13	37	28	33	-11	32	0	0.00	0.0	0	7.2	15	60	M	M	0	18		17	60
14	45	27	36	-8	29	0	0.00	0.0	0	6.8	14	90	M	M	0			17	90
15	46	29	38	-6	27	0	0.00	0.0	0	5.8	14	110	M	M	0			16	60
16	48	33	41	-3	24	0	0.00	0.0	0	5.3	13	80	M	M	6			17	90
17	57	40	49	5	16	0	1.84	M	0	13.7	36	200	M	M	9			55	170
18	57	48	53	9	12	0	1.45	M	0	19.3	40	190	M	M	10	18		61	180
19	52	45	49	5	16	0	0.32	M	0	11.9	23	200	M	M	10	8		32	190
20	50	43	47	3	18	0	0.02	M	0	7.8	17	120	M	M	10			23	130
21	49	40	45	1	20	0	0.15	M	0	5.6	12	70	M	M	9	18		14	180
22	51	42	47	3	18	0	0.12	M	0	8.2	21	190	M	M	5			29	180
23	53	33	43	-1	22	0	0.00	0.0	0	4.1	10	320	M	M	0			13	320
24	43	29	36	-8	29	0	0.00	0.0	0	2.1	7	140	M	M	5	18		10	320
25	49	37	43	-1	22	0	0.00	0.0	0	2.2	9	10	M	M	10	1		12	230
26	50	36	43	-1	22	0	0.02	M	0	3.6	9	80	M	M	8	18		11	90
27	53	33	43	-1	22	0	0.00	0.0	0	4.1	10	100	M	M	0	1		12	90
28	49	35	42	-2	23	0	0.00	0.0	0	3.4	9	110	M	M	0			11	100
29	43	35	39	-5	26	0	0.11	0.0	0	1.8	10	20	M	M	8	18		11	20
30	46	36	41	-3	24	0	0.00	0.0	0	3.1	10	330	M	M	8	12		16	360

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31  48  34  41  -3  24   0 0.00  0.0    0  6.4 17  50   M    M   4 12     21  40
================================================================================
SM 1422 1053       770   0  5.81     0.0 247.3          M      167
================================================================================
AV 45.9 34.0                                 8.0 FASTST   M    M   5    MAX(MPH)
                                  MISC ---->  # 40 190               # 61  180
================================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

                                          STATION:  ASTORIA OR
                                          MONTH:    JANUARY
                                          YEAR:     2017
                                          LATITUDE:   46  9 N
                                          LONGITUDE: 123 53 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 39.9   TOTAL FOR MONTH:   5.81    1 = FOG OR MIST
DPTR FM NORMAL:  -3.9   DPTR FM NORMAL:   -4.39    2 = FOG REDUCING VISIBILITY
HIGHEST:    57 ON 18,17 GRTST 24HR  2.32 ON 17-18      TO 1/4 MILE OR LESS
LOWEST:     22 ON  6, 5                            3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:   0.0 INCH    5 = HAIL
                        GRTST 24HR     0.0         6 = FREEZING RAIN OR DRIZZLE
                        GRTST DEPTH:   0           7 = DUSTSTORM OR SANDSTORM:
                                                       VSBY 1/2 MILE OR LESS
                                                   8 = SMOKE OR HAZE
[NO. OF DAYS WITH]      [WEATHER - DAYS WITH]      9 = BLOWING SNOW
                                                   X = TORNADO
MAX 32 OR BELOW:   0    0.01 INCH OR MORE:  14
MAX 90 OR ABOVE:   0    0.10 INCH OR MORE:   9
MIN 32 OR BELOW:  10    0.50 INCH OR MORE:   3
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   2

[HDD (BASE 65) ]
TOTAL THIS MO.   770    CLEAR  (SCALE 0-3)  11
DPTR FM NORMAL   111    PTCLDY (SCALE 4-7)   7
TOTAL FM JUL 1  2368    CLOUDY (SCALE 8-10) 13
DPTR FM NORMAL  -397

[CDD (BASE 65) ]
TOTAL THIS MO.     0
DPTR FM NORMAL     0    [PRESSURE DATA]
TOTAL FM JAN 1     0    HIGHEST SLP 30.62 ON 27
DPTR FM NORMAL     0    LOWEST  SLP 29.03 ON 20

[REMARKS]
#FINAL-01-17#
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[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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

WFO Monthly/Daily Climate Data

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410
CXUS56 KPQR 021628
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                                STATION:   ASTORIA OR
                                                MONTH:     FEBRUARY
                                                YEAR:      2017
                                                LATITUDE:   46  9 N
                                                LONGITUDE: 123 53 W
```

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND			:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG	MX	2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	43	34	39	-5	26	0	0.00	M	M	19.5	32	80	M	M	2		39	80
2	45	34	40	-4	25	0	0.06	M	M	16.0	29	100	M	M	6		39	120
3	49	35	42	-2	23	0	0.51	M	M	10.5	20	210	M	M	10	1	31	210
4	50	42	46	2	19	0	1.07	M	M	10.5	24	260	M	M	10	1	35	210
5	44	32	38	-6	27	0	1.42	M	M	5.1	26	270	M	M	10	1	33	270
6	44	33	39	-5	26	0	0.37	M	M	7.7	21	260	M	M	8	1	28	260
7	44	33	39	-5	26	0	0.04	M	M	6.2	16	80	M	M	4	1	18	80
8	57	36	47	3	18	0	2.09	M	M	8.6	36	190	M	M	10	1	53	200
9	57	48	53	9	12	0	1.28	M	M	20.5	37	200	M	M	9	18	55	210
10	49	40	45	1	20	0	0.16	M	M	12.7	28	230	M	M	9	8	43	210
11	48	34	41	-3	24	0	0.02	M	M	3.4	10	30	M	M	4	1	14	360
12	50	33	42	-2	23	0	0.00	M	M	4.5	13	10	M	M	0		15	90
13	64	34	49	5	16	0	0.00	M	M	7.2	21	110	M	M	0		29	120
14	59	33	46	2	19	0	0.17	M	M	6.4	16	160	M	M	5		23	140
15	58	48	53	9	12	0	1.47	M	M	17.7	39	190	M	M	10	18	64	190
16	53	44	49	5	16	0	0.14	M	M	7.3	25	190	M	M	10	1	38	190
17	53	39	46	2	19	0	T	M	M	5.8	12	70	M	M	2	1	14	20
18	50	41	46	2	19	0	0.17	M	M	4.7	13	220	M	M	7	1	17	230
19	48	40	44	0	21	0	1.35	M	M	9.0	21	180	M	M	10	1	29	170
20	48	42	45	1	20	0	0.55	M	M	5.3	14	220	M	M	10	1	19	220
21	50	37	44	0	21	0	0.01	M	M	6.7	17	320	M	M	7	1	22	320
22	46	30	38	-7	27	0	0.06	M	M	4.3	15	320	M	M	5	18	18	320
23	47	29	38	-7	27	0	0.02	M	M	4.1	14	260	M	M	3	16	17	290
24	43	33	38	-7	27	0	0.16	M	M	6.2	14	70	M	M	7	1	18	60
25	46	29	38	-7	27	0	0.12	M	M	4.6	14	180	M	M	3	12	18	170
26	45	32	39	-6	26	0	0.58	M	M	5.9	20	210	M	M	6	1	27	210
27	44	31	38	-7	27	0	0.16	M	M	5.7	23	300	M	M	8	1	32	300
28	49	36	43	-2	22	0	0.09	M	M	9.4	20	240	M	M	8	1	26	260
SM	1383	1012			615	0	12.07	M		235.5			M		183			

```
================================================================================
AV 49.4 36.1                                8.4 FASTST   M    M   7    MAX(MPH)
                                 MISC ---->  # 39 190                # 64  190
================================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

                                          STATION:  ASTORIA OR
                                          MONTH:    FEBRUARY
                                          YEAR:     2017
                                          LATITUDE:   46  9 N
                                          LONGITUDE: 123 53 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 42.8   TOTAL FOR MONTH:  12.07    1 = FOG OR MIST
DPTR FM NORMAL:  -1.6   DPTR FM NORMAL:    4.88    2 = FOG REDUCING VISIBILITY
HIGHEST:    64 ON 13    GRTST 24HR  3.00 ON  8- 9      TO 1/4 MILE OR LESS
LOWEST:     29 ON 25,23                            3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:    M          5 = HAIL
                        GRTST 24HR    M  ON   M    6 = FREEZING RAIN OR DRIZZLE
                        GRTST DEPTH:  M  ON   M    7 = DUSTSTORM OR SANDSTORM:
                                                       VSBY 1/2 MILE OR LESS
                                                   8 = SMOKE OR HAZE
[NO. OF DAYS WITH]      [WEATHER - DAYS WITH]      9 = BLOWING SNOW
                                                   X = TORNADO
MAX 32 OR BELOW:   0    0.01 INCH OR MORE:  24
MAX 90 OR ABOVE:   0    0.10 INCH OR MORE:  17
MIN 32 OR BELOW:   6    0.50 INCH OR MORE:   9
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   6

[HDD (BASE 65) ]
TOTAL THIS MO.   615    CLEAR  (SCALE 0-3)   5
DPTR FM NORMAL    38    PTCLDY (SCALE 4-7)  12
TOTAL FM JUL 1  2983    CLOUDY (SCALE 8-10) 11
DPTR FM NORMAL  -359

[CDD (BASE 65) ]
TOTAL THIS MO.     0
DPTR FM NORMAL     0    [PRESSURE DATA]
TOTAL FM JAN 1     0    HIGHEST SLP 30.52 ON 11
DPTR FM NORMAL     0    LOWEST  SLP 29.25 ON  9

[REMARKS]
#FINAL-02-17#
```

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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

WFO Monthly/Daily Climate Data

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621
CXUS56 KPQR 011200
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                                STATION:   ASTORIA OR
                                                MONTH:     MARCH
                                                YEAR:      2017
                                                LATITUDE:   46  9 N
                                                LONGITUDE: 123 53 W
```

TEMPERATURE IN F:							:PCPN:	SNOW:	WIND				:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG	MX	2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	50	41	46	1	19	0	0.09	M	0	8.0	21	250	M	M	9	1	30	260
2	49	42	46	1	19	0	0.50	M	0	10.1	22	200	M	M	10	1	32	190
3	50	39	45	0	20	0	1.14	M	0	15.3	25	290	M	M	10	18	36	210
4	45	35	40	-5	25	0	0.57	M	0	6.0	15	270	M	M	8	1	25	220
5	43	34	39	-6	26	0	0.79	M	0	10.5	24	220	M	M	8	13	35	240
6	44	33	39	-7	26	0	0.18	M	M	7.9	23	290	M	M	7	1	32	290
7	50	40	45	-1	20	0	1.19	M	M	9.6	28	200	M	M	9	1	42	190
8	44	41	43	-3	22	0	0.68	0.0	0	4.4	15	280	M	M	10	1	19	290
9	54	42	48	2	17	0	0.85	M	0	12.7	32	200	M	M	9	1	45	200
10	50	43	47	1	18	0	0.05	M	0	10.3	30	210	M	M	8	1	48	190
11	52	42	47	1	18	0	0.45	M	0	9.2	28	200	M	M	7	18	46	210
12	58	45	52	6	13	0	0.03	M	0	4.0	14	220	M	M	7	1	21	220
13	56	47	52	6	13	0	1.28	M	0	7.2	17	200	M	M	10	1	26	180
14	57	50	54	8	11	0	1.06	0.0	0	14.6	29	200	M	M	10	18	45	190
15	53	44	49	3	16	0	0.52	M	0	7.8	22	260	M	M	10	1	31	240
16	51	37	44	-2	21	0	0.02	M	0	7.3	18	240	M	M	2	1	23	250
17	58	35	47	1	18	0	1.10	M	0	8.1	35	180	M	M	7	1	51	170
18	56	34	45	-2	20	0	0.73	M	0	9.3	35	190	M	M	7	1	52	200
19	54	32	43	-4	22	0	0.00	0.0	0	7.0	17	70	M	M	0		21	70
20	51	42	47	0	18	0	0.34	M	0	8.7	16	80	M	M	7	1	20	90
21	59	47	53	6	12	0	0.13	M	0	9.1	23	190	M	M	10	1	36	220
22	51	43	47	0	18	0	0.32	M	0	11.5	24	200	M	M	10	1	34	200
23	53	40	47	0	18	0	0.26	M	0	7.7	21	170	M	M	8		26	180
24	53	45	49	2	16	0	0.23	M	0	10.7	24	200	M	M	8	1	35	170
25	51	43	47	0	18	0	0.17	M	0	5.7	15	250	M	M	8	1	22	310
26	51	43	47	0	18	0	0.76	M	0	9.0	23	200	M	M	10	18	33	200
27	51	44	48	1	17	0	0.39	M	0	10.1	20	230	M	M	9	18	28	240
28	52	46	49	2	16	0	0.27	M	0	14.1	26	190	M	M	9	18	37	210
29	52	44	48	1	17	0	0.30	M	0	13.7	30	200	M	M	10	1	46	180
30	53	44	49	2	16	0	0.05	M	0	11.0	21	300	M	M	9		28	290

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31  54  43  49   2  16   0 0.00    M    M  4.1 12 280   M    M   8        16 330
================================================================================
SM 1605 1280       564   0 14.45     0.0 284.7          M      254
================================================================================
AV 51.8 41.3                                 9.2 FASTST   M    M   8    MAX(MPH)
                                  MISC ---->  # 35 180               # 52  200
================================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

                                          STATION:  ASTORIA OR
                                          MONTH:    MARCH
                                          YEAR:     2017
                                          LATITUDE:   46  9 N
                                          LONGITUDE: 123 53 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 46.5   TOTAL FOR MONTH:  14.45    1 = FOG OR MIST
DPTR FM NORMAL:   0.1   DPTR FM NORMAL:    7.00    2 = FOG REDUCING VISIBILITY
HIGHEST:    59 ON 21    GRTST 24HR  1.28 ON 13-13      TO 1/4 MILE OR LESS
LOWEST:     32 ON 19                               3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:   0.0 INCH    5 = HAIL
                        GRTST 24HR     0.0         6 = FREEZING RAIN OR DRIZZLE
                        GRTST DEPTH:   0           7 = DUSTSTORM OR SANDSTORM:
                                                       VSBY 1/2 MILE OR LESS
                                                   8 = SMOKE OR HAZE
[NO. OF DAYS WITH]      [WEATHER - DAYS WITH]      9 = BLOWING SNOW
                                                   X = TORNADO
MAX 32 OR BELOW:   0    0.01 INCH OR MORE:  29
MAX 90 OR ABOVE:   0    0.10 INCH OR MORE:  24
MIN 32 OR BELOW:   1    0.50 INCH OR MORE:  13
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   5

[HDD (BASE 65) ]
TOTAL THIS MO.   564    CLEAR  (SCALE 0-3)   2
DPTR FM NORMAL   -14    PTCLDY (SCALE 4-7)  10
TOTAL FM JUL 1  3547    CLOUDY (SCALE 8-10) 19
DPTR FM NORMAL  -373

[CDD (BASE 65) ]
TOTAL THIS MO.     0
DPTR FM NORMAL     0    [PRESSURE DATA]
TOTAL FM JAN 1     0    HIGHEST SLP 30.47 ON  1
DPTR FM NORMAL     0    LOWEST  SLP 29.46 ON  5

[REMARKS]
#FINAL-03-17#
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[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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

WFO Monthly/Daily Climate Data

131
CXUS56 KPQR 011200
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASTORIA OR
MONTH: APRIL
YEAR: 2017
LATITUDE: 46 9 N
LONGITUDE: 123 53 W

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND			:SUNSHINE:		SKY		:PK WND		
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
									12Z	AVG	MX	2MIN							
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
1	53	45	49	1	16	0	0.13	M	M	7.3	17	310	M	M	10	18	22	320	
2	54	42	48	0	17	0	T	M	M	7.7	21	320	M	M	8		25	310	
3	54	35	45	-3	20	0	T	0.0	0	4.8	16	320	M	M	2	1	19	320	
4	59	43	51	3	14	0	0.25	0.0	0	4.5	13	90	M	M	9	1	16	230	
5	53	45	49	1	16	0	1.27	0.0	0	5.3	21	180	M	M	10	1	29	170	
6	56	47	52	4	13	0	0.19	0.0	0	8.6	22	180	M	M	9	1	29	200	
7	55	43	49	1	16	0	0.76	M	0	19.9	39	190	M	M	9	1	56	190	
8	51	40	46	-2	19	0	0.29	M	0	10.6	22	240	M	M	6		43	150	
9	55	39	47	-1	18	0	0.20	M	0	7.6	20	190	M	M	7	1	24	170	
10	52	38	45	-3	20	0	0.13	M	0	11.0	30	220	M	M	6	1	40	230	
11	57	35	46	-2	19	0	0.23	M	0	6.6	16	70	M	M	5	1	20	50	
12	54	45	50	2	15	0	0.65	M	0	9.4	25	200	M	M	9	1	36	220	
13	51	44	48	0	17	0	0.48	M	0	8.6	21	210	M	M	8	1	29	240	
14	52	42	47	-1	18	0	0.21	M	0	8.7	22	240	M	M	5		27	250	
15	55	40	48	0	17	0	0.01	M	0	7.0	17	320	M	M	3	1	22	320	
16	66	46	56	7	9	0	T	M	0	8.1	17	230	M	M	4		24	240	
17	58	44	51	2	14	0	0.25	M	0	6.6	18	210	M	M	9	1	26	200	
18	58	47	53	4	12	0	0.21	M	0	9.7	22	210	M	M	3	1	31	200	
19	56	46	51	2	14	0	0.32	M	0	8.8	18	180	M	M	9	1	27	150	
20	55	45	50	1	15	0	0.26	M	0	7.5	20	220	M	M	8	1	26	220	
21	70	38	54	5	11	0	0.00	0.0	0	7.8	22	70	M	M	1	1	26	50	
22	60	48	54	5	11	0	0.21	M	0	9.8	25	200	M	M	7	18	36	190	
23	51	45	48	-1	17	0	0.82	M	0	9.2	20	190	M	M	10	1	30	180	
24	54	44	49	-1	16	0	0.78	M	0	9.6	17	280	M	M	10	1	23	60	
25	52	43	48	-2	17	0	0.67	M	0	8.6	18	240	M	M	9	1	27	190	
26	54	44	49	-1	16	0	0.18	M	0	10.8	20	280	M	M	8	1	24	270	
27	54	42	48	-2	17	0	0.08	M	0	8.5	18	300	M	M	7	1	25	300	
28	56	40	48	-2	17	0	0.01	M	0	6.4	15	330	M	M	5	1	19	330	
29	56	36	46	-4	19	0	0.32	M	0	8.3	22	210	M	M	7	1	32	220	
30	56	44	50	0	15	0	T	M	0	8.2	17	300	M	M	8	1	23	290	

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==============================================================================
SM 1667 1275       475   0  8.91     0.0 255.5          M      211
==============================================================================
AV 55.6 42.5                                8.5 FASTST   M    M   7    MAX(MPH)
                                  MISC ---->  # 39 190                # 56  190
==============================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

                                          STATION:  ASTORIA OR
                                          MONTH:    APRIL
                                          YEAR:     2017
                                          LATITUDE:   46  9 N
                                          LONGITUDE: 123 53 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 49.0   TOTAL FOR MONTH:   8.91    1 = FOG OR MIST
DPTR FM NORMAL:   0.3   DPTR FM NORMAL:    3.71    2 = FOG REDUCING VISIBILITY
HIGHEST:    70 ON 21    GRTST 24HR  1.27 ON  5- 5      TO 1/4 MILE OR LESS
LOWEST:     35 ON 11, 3                            3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:   0.0 INCH    5 = HAIL
                        GRTST 24HR     0.0         6 = FREEZING RAIN OR DRIZZLE
                        GRTST DEPTH:   0           7 = DUSTSTORM OR SANDSTORM:
                                                       VSBY 1/2 MILE OR LESS
                                                   8 = SMOKE OR HAZE
[NO. OF DAYS WITH]      [WEATHER - DAYS WITH]      9 = BLOWING SNOW
                                                   X = TORNADO
MAX 32 OR BELOW:   0    0.01 INCH OR MORE:  25
MAX 90 OR ABOVE:   0    0.10 INCH OR MORE:  22
MIN 32 OR BELOW:   0    0.50 INCH OR MORE:   6
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   1

[HDD (BASE 65) ]
TOTAL THIS MO.   475    CLEAR  (SCALE 0-3)   2
DPTR FM NORMAL   -14    PTCLDY (SCALE 4-7)  15
TOTAL FM JUL 1  4022    CLOUDY (SCALE 8-10) 13
DPTR FM NORMAL  -387

[CDD (BASE 65) ]
TOTAL THIS MO.     0
DPTR FM NORMAL     0    [PRESSURE DATA]
TOTAL FM JAN 1     0    HIGHEST SLP 30.41 ON 21
DPTR FM NORMAL     0    LOWEST  SLP 29.04 ON  7

[REMARKS]
#FINAL-04-17#
```

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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

WFO Monthly/Daily Climate Data

545
CXUS56 KPQR 011200
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASTORIA OR
MONTH: MAY
YEAR: 2017
LATITUDE: 46 9 N
LONGITUDE: 123 53 W

TEMPERATURE IN F:							:PCPN:	SNOW:	WIND				:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG	MX	2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	50	43	47	-4	18	0	0.27	0.0	0	4.1	10	190	M	M	10	1	14	200
2	58	49	54	3	11	0	0.49	0.0	0	4.6	14	220	M	M	10	1	19	210
3	71	52	62	11	3	0	0.00	0.0	0	5.6	12	290	M	M	5	12	18	350
4	62	51	57	6	8	0	0.10	0.0	0	5.2	16	310	M	M	10	123	22	220
5	57	46	52	1	13	0	0.27	0.0	0	10.6	21	280	M	M	8	1	26	280
6	56	42	49	-2	16	0	0.03	0.0	0	9.0	17	320	M	M	5		22	310
7	59	43	51	-1	14	0	0.00	0.0	0	9.2	21	310	M	M	1		26	320
8	62	40	51	-1	14	0	0.00	0.0	0	6.6	17	310	M	M	3		21	310
9	63	40	52	0	13	0	0.00	0.0	0	5.9	15	300	M	M	1		21	330
10	61	47	54	2	11	0	0.15	0.0	0	6.9	22	220	M	M	8	1	30	230
11	58	44	51	-1	14	0	0.87	0.0	0	9.5	22	200	M	M	8	18	31	210
12	51	43	47	-5	18	0	1.35	0.0	0	8.1	17	150	M	M	8	1	21	170
13	56	44	50	-3	15	0	0.42	0.0	0	6.8	16	250	M	M	9	138	23	230
14	57	47	52	-1	13	0	0.17	M	0	7.4	17	250	M	M	10	1	22	260
15	52	44	48	-5	17	0	0.86	M	0	8.4	22	210	M	M	9	18	30	220
16	54	45	50	-3	15	0	0.73	M	0	13.5	25	270	M	M	9	13	36	270
17	58	48	53	0	12	0	0.05	M	0	6.8	15	280	M	M	9	1	19	260
18	62	43	53	0	12	0	0.00	0.0	0	4.3	13	280	M	M	7		17	350
19	65	51	58	4	7	0	0.02	0.0	0	4.4	13	280	M	M	10	1	17	290
20	63	51	57	3	8	0	0.00	0.0	0	8.2	16	310	M	M	8	1	21	320
21	74	50	62	8	3	0	0.00	0.0	0	7.8	22	310	M	M	3	12	27	320
22	84	49	67	13	0	2	0.00	M	0	7.5	24	320	M	M	0		29	320
23	62	50	56	2	9	0	T	0.0	0	12.7	22	330	M	M	5	18	30	300
24	59	47	53	-1	12	0	0.01	M	0	11.1	21	300	M	M	9		26	310
25	62	43	53	-1	12	0	0.00	0.0	0	6.6	17	310	M	M	3		21	320
26	71	44	58	4	7	0	0.00	0.0	0	5.8	18	310	M	M	0	1	23	310
27	60	50	55	0	10	0	0.00	0.0	0	6.1	15	260	M	M	9	12	17	260
28	58	51	55	0	10	0	0.00	0.0	0	4.6	12	250	M	M	10	1	15	250
29	57	52	55	0	10	0	T	0.0	0	4.7	10	320	M	M	10		13	320
30	58	52	55	0	10	0	0.02	0.0	0	4.3	13	260	M	M	10	1	15	260

```
31  62  49  56   1   9   0 0.08    M    0  7.5 20 220   M    M   9 1      26 220
=============================================================================
SM 1882 1450       344   2  5.89     0.0 223.8          M      216
=============================================================================
AV 60.7 46.8                                7.2 FASTST   M    M   7    MAX(MPH)
                                 MISC ---->  # 25 270                # 36  270
=============================================================================
```

NOTES:
LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

STATION: ASTORIA OR
MONTH: MAY
YEAR: 2017
LATITUDE: 46 9 N
LONGITUDE: 123 53 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 53.7
DPTR FM NORMAL: 0.7
HIGHEST: 84 ON 22
LOWEST: 40 ON 9, 8

[PRECIPITATION DATA]

TOTAL FOR MONTH: 5.89
DPTR FM NORMAL: 2.57
GRTST 24HR 1.35 ON 12-12

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

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

[NO. OF DAYS WITH]

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

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 17
0.10 INCH OR MORE: 11
0.50 INCH OR MORE: 4
1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 344
DPTR FM NORMAL -28
TOTAL FM JUL 1 4366
DPTR FM NORMAL -415

CLEAR (SCALE 0-3) 6
PTCLDY (SCALE 4-7) 9
CLOUDY (SCALE 8-10) 16

[CDD (BASE 65)]

TOTAL THIS MO. 2
DPTR FM NORMAL 2
TOTAL FM JAN 1 2
DPTR FM NORMAL 2

[PRESSURE DATA]

HIGHEST SLP 30.37 ON 1
LOWEST SLP 29.68 ON 16

[REMARKS]
#FINAL-05-17#

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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

WFO Monthly/Daily Climate Data

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384
CXUS56 KPQR 011200
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                                STATION:   ASTORIA OR
                                                MONTH:     JUNE
                                                YEAR:      2017
                                                LATITUDE:   46  9 N
                                                LONGITUDE: 123 53 W
```

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND			:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG	MX	2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	61	54	58	3	7	0	0.17	0.0	0	8.2	16	220	M	M	7	1	21	210
2	64	53	59	4	6	0	0.01	0.0	0	5.7	17	240	M	M	7	8	29	210
3	61	48	55	-1	10	0	0.00	0.0	0	8.8	17	320	M	M	9		23	320
4	62	45	54	-2	11	0	0.00	0.0	0	7.5	16	320	M	M	3		22	270
5	66	41	54	-2	11	0	0.00	0.0	0	7.5	21	310	M	M	0		27	310
6	68	46	57	1	8	0	0.00	0.0	0	5.6	17	240	M	M	2		20	210
7	64	48	56	0	9	0	0.03	0.0	0	5.9	20	240	M	M	3		25	250
8	57	51	54	-2	11	0	0.32	0.0	0	8.2	17	180	M	M	9	1	25	200
9	59	48	54	-2	11	0	0.34	0.0	0	7.4	20	250	M	M	8	1	29	210
10	59	46	53	-3	12	0	0.08	0.0	0	4.6	13	320	M	M	7	1	16	330
11	63	47	55	-1	10	0	T	0.0	0	6.9	18	310	M	M	7		23	320
12	59	51	55	-1	10	0	0.02	0.0	0	8.1	20	270	M	M	10	1	25	280
13	61	51	56	-1	9	0	0.01	0.0	0	7.0	15	250	M	M	9	1	21	240
14	63	51	57	0	8	0	0.01	0.0	0	6.6	18	240	M	M	8		22	250
15	59	53	56	-1	9	0	1.26	0.0	0	12.1	30	190	M	M	10	1	42	190
16	61	54	58	1	7	0	0.03	0.0	0	6.0	14	250	M	M	9	1	18	240
17	62	50	56	-1	9	0	0.02	0.0	0	5.8	14	240	M	M	9	1	18	230
18	69	56	63	6	2	0	0.12	0.0	0	4.0	12	230	M	M	8	18	16	230
19	73	58	66	9	0	1	0.00	0.0	0	7.4	20	310	M	M	6	12	25	300
20	63	56	60	2	5	0	0.02	0.0	0	11.4	22	320	M	M	10	1	26	350
21	64	50	57	-1	8	0	0.00	0.0	0	12.7	22	320	M	M	5		26	320
22	71	45	58	0	7	0	0.00	0.0	0	10.1	23	320	M	M	0		29	320
23	78	49	64	6	1	0	0.00	0.0	0	7.2	21	320	M	M	0		26	310
24	93	54	74	16	0	9	0.00	0.0	0	9.2	18	50	M	M	0		22	50
25	68	55	62	4	3	0	0.00	0.0	0	9.8	20	240	M	M	5	1	26	230
26	65	56	61	3	4	0	T	0.0	0	7.5	16	280	M	M	10	1	23	350
27	66	56	61	3	4	0	0.00	0.0	0	5.9	15	260	M	M	8		20	250
28	63	56	60	2	5	0	0.00	0.0	0	7.0	13	280	M	M	10		15	270
29	68	56	62	3	3	0	0.00	0.0	0	8.7	20	310	M	M	5		23	310
30	60	55	58	-1	7	0	T	0.0	0	7.4	13	300	M	M	10	1	16	280

```
==============================================================================
SM 1950 1539       207  10  2.44     0.0 230.2          M      194
==============================================================================
AV 65.0 51.3                                7.7 FASTST   M    M   6    MAX(MPH)
                                  MISC ---->  # 30 190               # 42  190
==============================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

                                          STATION:  ASTORIA OR
                                          MONTH:    JUNE
                                          YEAR:     2017
                                          LATITUDE:   46  9 N
                                          LONGITUDE: 123 53 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 58.2   TOTAL FOR MONTH:   2.44    1 = FOG OR MIST
DPTR FM NORMAL:   1.2   DPTR FM NORMAL:   -0.11    2 = FOG REDUCING VISIBILITY
HIGHEST:    93 ON 24    GRTST 24HR  1.26 ON 15-15      TO 1/4 MILE OR LESS
LOWEST:     41 ON  5                               3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:   0.0 INCH    5 = HAIL
                        GRTST 24HR     0.0         6 = FREEZING RAIN OR DRIZZLE
                        GRTST DEPTH:   0           7 = DUSTSTORM OR SANDSTORM:
                                                       VSBY 1/2 MILE OR LESS
                                                   8 = SMOKE OR HAZE
[NO. OF DAYS WITH]      [WEATHER - DAYS WITH]      9 = BLOWING SNOW
                                                   X = TORNADO
MAX 32 OR BELOW:   0    0.01 INCH OR MORE:  14
MAX 90 OR ABOVE:   1    0.10 INCH OR MORE:   5
MIN 32 OR BELOW:   0    0.50 INCH OR MORE:   1
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   1

[HDD (BASE 65) ]
TOTAL THIS MO.   207    CLEAR  (SCALE 0-3)   5
DPTR FM NORMAL   -35    PTCLDY (SCALE 4-7)  12
TOTAL FM JUL 1  4573    CLOUDY (SCALE 8-10) 13
DPTR FM NORMAL  -450

[CDD (BASE 65) ]
TOTAL THIS MO.    10
DPTR FM NORMAL    10    [PRESSURE DATA]
TOTAL FM JAN 1    12    HIGHEST SLP 30.35 ON 21
DPTR FM NORMAL    12    LOWEST  SLP 29.63 ON  8

[REMARKS]
#FINAL-06-17#
```

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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

WFO Monthly/Daily Climate Data

886
CXUS56 KPQR 011200
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASTORIA OR
MONTH: JULY
YEAR: 2017
LATITUDE: 46 9 N
LONGITUDE: 123 53 W

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND				:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
									12Z	AVG	MX	2MIN							
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
1	64	53	59	0	6	0	0.00	0.0	0	7.1	15	310	M	M	7		18	310	
2	67	56	62	3	3	0	T	0.0	0	10.6	20	310	M	M	8	1	23	310	
3	64	51	58	-1	7	0	0.00	0.0	0	13.7	22	330	M	M	5		26	330	
4	66	47	57	-2	8	0	0.00	0.0	0	9.2	20	310	M	M	3		26	310	
5	69	48	59	0	6	0	0.00	0.0	0	5.9	17	250	M	M	5	1	20	250	
6	66	54	60	0	5	0	0.00	0.0	0	9.4	15	320	M	M	5	8	19	300	
7	66	53	60	0	5	0	0.00	M	M	8.1	15	320	M	M	7		18	310	
8	69	48	59	-1	6	0	0.00	M	M	9.2	23	300	M	M	2	1	28	300	
9	68	54	61	1	4	0	0.00	M	M	7.9	16	330	M	M	9		22	320	
10	65	56	61	1	4	0	0.00	0.0	0	11.5	18	310	M	M	7		23	320	
11	66	55	61	1	4	0	0.00	0.0	0	12.1	21	320	M	M	1		24	330	
12	67	51	59	-1	6	0	0.00	0.0	0	5.6	15	300	M	M	6	1	19	310	
13	67	52	60	0	5	0	0.02	0.0	0	8.3	16	330	M	M	6	1	21	320	
14	69	47	58	-2	7	0	0.00	0.0	0	6.9	17	310	M	M	1		20	310	
15	67	51	59	-1	6	0	0.00	0.0	0	6.9	16	320	M	M	7		21	300	
16	68	51	60	0	5	0	0.00	0.0	0	9.1	21	310	M	M	4		25	300	
17	68	48	58	-2	7	0	0.00	0.0	0	10.4	21	310	M	M	0		25	320	
18	69	50	60	-1	5	0	0.00	0.0	0	6.5	15	310	M	M	3	12	19	290	
19	69	49	59	-2	6	0	0.00	0.0	0	5.6	14	260	M	M	3		17	240	
20	67	54	61	0	4	0	0.08	0.0	0	6.2	14	240	M	M	7	1	16	170	
21	69	50	60	-1	5	0	0.00	0.0	0	5.0	14	260	M	M	2		18	250	
22	76	59	68	7	0	3	0.00	0.0	0	9.0	20	330	M	M	4		25	320	
23	67	56	62	1	3	0	0.00	0.0	0	15.9	26	310	M	M	6		31	320	
24	71	53	62	1	3	0	0.00	0.0	0	8.4	21	310	M	M	3		26	310	
25	70	56	63	2	2	0	0.00	0.0	0	10.4	23	300	M	M	5		26	300	
26	68	56	62	1	3	0	0.00	0.0	0	9.6	16	310	M	M	10	1	19	300	
27	68	57	63	2	2	0	0.00	0.0	0	10.5	21	320	M	M	6		26	320	
28	67	50	59	-2	6	0	0.00	0.0	0	10.2	21	320	M	M	4		26	320	
29	70	47	59	-2	6	0	0.00	0.0	0	7.6	16	300	M	M	3		20	300	
30	73	59	66	5	0	1	0.00	M	0	11.2	22	320	M	M	5	1	28	330	

```
31  77  48  63   2   2   0 0.00    M    0  9.0 22 320   M    M   0        28 320
==========================================================================
SM 2117 1619       141   4  0.10     0.0 277.0          M      144
==========================================================================
AV 68.3 52.2                                 8.9 FASTST   M    M   5    MAX(MPH)
                                  MISC ---->  # 26 310               # 31  320
==========================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

                                          STATION:  ASTORIA OR
                                          MONTH:    JULY
                                          YEAR:     2017
                                          LATITUDE:   46  9 N
                                          LONGITUDE: 123 53 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 60.3   TOTAL FOR MONTH:   0.10    1 = FOG OR MIST
DPTR FM NORMAL:  -0.0   DPTR FM NORMAL:   -0.93    2 = FOG REDUCING VISIBILITY
HIGHEST:    77 ON 31    GRTST 24HR  0.08 ON 20-20      TO 1/4 MILE OR LESS
LOWEST:     47 ON 29,14                            3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:   0.0 INCH    5 = HAIL
                        GRTST 24HR     0.0         6 = FREEZING RAIN OR DRIZZLE
                        GRTST DEPTH:   0           7 = DUSTSTORM OR SANDSTORM:
                                                       VSBY 1/2 MILE OR LESS
                                                   8 = SMOKE OR HAZE
[NO. OF DAYS WITH]      [WEATHER - DAYS WITH]      9 = BLOWING SNOW
                                                   X = TORNADO
MAX 32 OR BELOW:   0    0.01 INCH OR MORE:   2
MAX 90 OR ABOVE:   0    0.10 INCH OR MORE:   0
MIN 32 OR BELOW:   0    0.50 INCH OR MORE:   0
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   0

[HDD (BASE 65) ]
TOTAL THIS MO.   141    CLEAR  (SCALE 0-3)  10
DPTR FM NORMAL    -9    PTCLDY (SCALE 4-7)  19
TOTAL FM JUL 1   141    CLOUDY (SCALE 8-10)  2
DPTR FM NORMAL    -9

[CDD (BASE 65) ]
TOTAL THIS MO.     4
DPTR FM NORMAL     1    [PRESSURE DATA]
TOTAL FM JAN 1    16    HIGHEST SLP 30.30 ON 30
DPTR FM NORMAL    13    LOWEST  SLP 29.96 ON 24

[REMARKS]
#FINAL-07-17#
```

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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WFO Monthly/Daily Climate Data

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268
CXUS56 KPQR 011200
CF6AST
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                                STATION:   ASTORIA OR
                                                MONTH:     AUGUST
                                                YEAR:      2017
                                                LATITUDE:   46  9 N
                                                LONGITUDE: 123 53 W
```

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND			:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG	MX	2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	83	51	67	6	0	2	0.00	0.0	0	6.2	20	310	M	M	0		24	310
2	93	50	72	11	0	7	0.00	0.0	0	4.3	16	310	M	M	1	8	21	310
3	76	58	67	6	0	2	0.00	0.0	0	6.2	15	250	M	M	2	18	17	250
4	68	57	63	2	2	0	0.00	0.0	0	8.1	15	230	M	M	9	1	20	250
5	70	59	65	4	0	0	0.00	0.0	0	5.7	13	240	M	M	7		18	250
6	69	55	62	1	3	0	0.00	0.0	0	6.8	14	290	M	M	8	12	17	290
7	63	57	60	-1	5	0	0.00	0.0	0	7.1	12	300	M	M	10	1	15	300
8	64	56	60	-1	5	0	0.00	0.0	0	4.9	10	260	M	M	10	1	15	260
9	63	56	60	-1	5	0	0.00	0.0	0	4.3	10	310	M	M	10	1	12	260
10	62	57	60	-1	5	0	0.00	0.0	0	4.6	10	300	M	M	10	1	13	340
11	64	57	61	0	4	0	T	0.0	0	4.5	10	280	M	M	10	1	14	270
12	67	54	61	0	4	0	0.17	0.0	0	5.8	16	240	M	M	9	1	20	250
13	68	55	62	1	3	0	0.20	0.0	0	10.0	17	310	M	M	6	1	29	200
14	67	51	59	-2	6	0	0.00	0.0	0	6.9	18	310	M	M	3		21	310
15	70	47	59	-2	6	0	0.00	0.0	0	9.8	22	330	M	M	0		26	330
16	68	54	61	0	4	0	0.01	0.0	0	8.3	15	320	M	M	9	18	20	320
17	68	58	63	2	2	0	0.00	0.0	0	9.6	20	330	M	M	6		23	330
18	69	50	60	-1	5	0	T	M	M	6.2	17	330	M	M	8	18	22	340
19	67	56	62	1	3	0	0.00	0.0	0	13.1	21	310	M	M	3		27	320
20	69	49	59	-2	6	0	0.00	0.0	0	11.0	22	310	M	M	0		27	310
21	76	53	65	4	0	0	0.00	0.0	0	6.3	20	320	M	M	4	1	25	310
22	66	51	59	-2	6	0	0.00	0.0	0	5.8	12	280	M	M	9	1	15	270
23	68	58	63	2	2	0	T	0.0	0	7.3	16	310	M	M	8	18	19	310
24	69	51	60	-1	5	0	0.00	0.0	0	7.7	17	320	M	M	3		26	300
25	70	48	59	-2	6	0	0.00	0.0	0	7.8	23	310	M	M	1	1	28	320
26	77	47	62	1	3	0	0.00	0.0	0	8.1	22	320	M	M	0		28	320
27	83	49	66	5	0	1	0.00	0.0	0	4.2	14	300	M	M	0		19	300
28	85	55	70	9	0	5	0.00	0.0	0	4.1	12	240	M	M	0		16	230
29	69	54	62	2	3	0	0.00	0.0	0	7.4	15	200	M	M	10	1	19	210
30	68	57	63	3	2	0	0.01	0.0	0	5.3	15	250	M	M	7	1	19	230

```
31  70  52  61   1   4   0 0.00  0.0    0 11.2 25 230   M    M   3 1      28 320
================================================================================
SM 2189 1662        99  17  0.39     0.0 218.6          M      166
================================================================================
AV 70.6 53.6                                7.1 FASTST   M    M   5    MAX(MPH)
                                  MISC ---->  # 25 230               # 29  200
================================================================================
```

NOTES:
LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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

STATION: ASTORIA OR
MONTH: AUGUST
YEAR: 2017
LATITUDE: 46 9 N
LONGITUDE: 123 53 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 62.1
DPTR FM NORMAL: 1.2
HIGHEST: 93 ON 2
LOWEST: 47 ON 26,15

[PRECIPITATION DATA]

TOTAL FOR MONTH: 0.39
DPTR FM NORMAL: -0.77
GRTST 24HR 0.20 ON 13-13

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

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

[NO. OF DAYS WITH]

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

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 4
0.10 INCH OR MORE: 2
0.50 INCH OR MORE: 0
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 99
DPTR FM NORMAL -32
TOTAL FM JUL 1 240
DPTR FM NORMAL -41

CLEAR (SCALE 0-3) 13
PTCLDY (SCALE 4-7) 6
CLOUDY (SCALE 8-10) 12

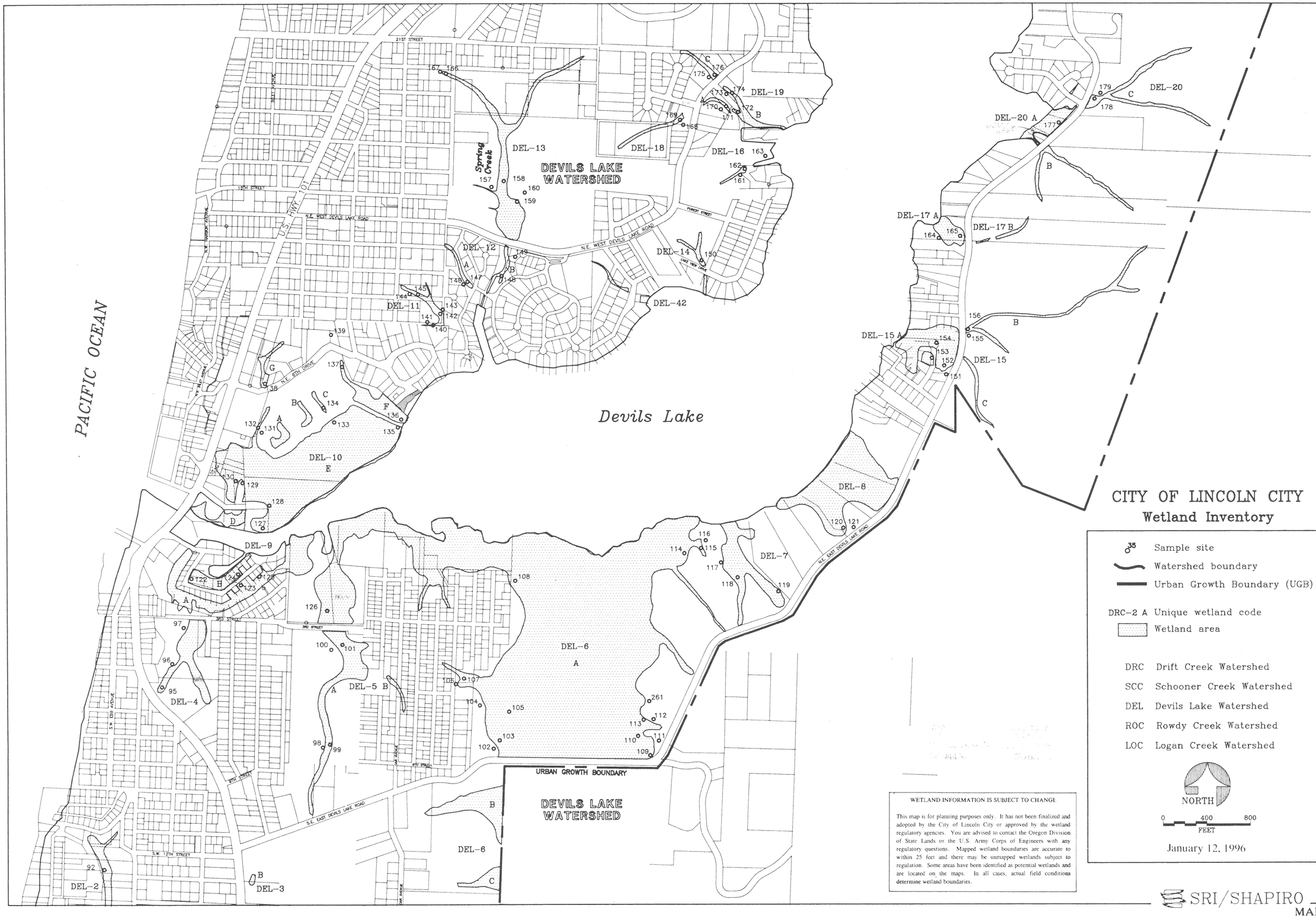
[CDD (BASE 65)]

TOTAL THIS MO. 17
DPTR FM NORMAL 13
TOTAL FM JAN 1 33
DPTR FM NORMAL 26

[PRESSURE DATA]

HIGHEST SLP 30.24 ON 19
LOWEST SLP 29.80 ON 28

[REMARKS]
#FINAL-08-17#



CITY OF LINCOLN CITY
Wetland Inventory

- Sample site
- Watershed boundary
- Urban Growth Boundary (UGB)
- DRC-2 A Unique wetland code
- Wetland area

DRC Drift Creek Watershed
SCC Schooner Creek Watershed
DEL Devils Lake Watershed
ROC Rowdy Creek Watershed
LOC Logan Creek Watershed

NORTH

0 400 800
FEET

January 12, 1996

WETLAND INFORMATION IS SUBJECT TO CHANGE.

This map is for planning purposes only. It has not been finalized and adopted by the City of Lincoln City or approved by the wetland regulatory agencies. You are advised to contact the Oregon Division of State Lands or the U.S. Army Corps of Engineers with any regulatory questions. Mapped wetland boundaries are accurate to within 25 feet and there may be unmapped wetlands subject to regulation. Some areas have been identified as potential wetlands and are located on the maps. In all cases, actual field conditions determine wetland boundaries.

SRI/SHAPIRO

MAP #3

WETLAND DELINEATION DATA FORM

SRI/SHAPIRO

Routine Onsite Method

Applicant: CITY OF LINCOLN CITY Project #: 94029-127 Date: 05/26/94
County: LINCOLN State: OR Township: 7S Range: 11W Section: 15
Investigator: JVS/FES/PF Sample Site: DEL-10-127

Soils

Mapped Series and Phase: BRALLIER MUCKY PEAT, 0-1% SLOPES
On Hydric Soils List: YES
Drainage Class: VERY POORLY DRAINED Matrix Color: 10YR 2/2
Mottles: NO
Hydric Soil Criteria met: YES
Comment: PEATY MUCK

Hydrology

Inundated: NO Depth: " Saturated Soils: YES Depth to Water Table: 6
Active Oxidized Rhizospheres Present: NO Wetland Hydrology Criteria met: YES
Comment: SOIL SATURATED TO SURFACE

Vegetation

Type	Dominant Species	FWS Status	Stratum	Overall
Sapling/Shrub	*LONICERA INVOLUCRATA*	FAC	60%	
Sapling/Shrub	*SALIX SP.*	FAC	40%	40%
Herb	*BLECHNUM SPICANT*	FAC+	10%	
Herb	*CAREX OBNUPTA*	OBL	40%	
Herb	*CAREX SP.*	FACW	15%	
Herb	*SCIRPUS ACUTUS*	OBL	20%	60%

Percentage of dominant (>= 20%) species that are FAC, FACW or OBL: 100%
Hydrophytic Vegetation Criteria met: YES

Comment:

Determination: **Wetland**

Comment:

WETLAND DELINEATION DATA FORM

SRI/SHAPIRO

Routine Onsite Method

Applicant: CITY OF LINCOLN CITY Project #: 94029-128 Date: 05/26/94
County: LINCOLN State: OR Township: 7S Range: 11W Section: 15
Investigator: JVS/FES/PF Sample Site: DEL-10-128

Soils

Mapped Series and Phase: BRALLIER MUCKY PEAT, 0-1% SLOPES
On Hydric Soils List: YES
Drainage Class: VERY POORLY DRAINED Matrix Color: 10YR 2/2
Mottles: NO
Hydric Soil Criteria met: YES
Comment: PEATY MUCK; STRONG H2S ODOR

Hydrology

Inundated: NO Depth: " Saturated Soils: YES Depth to Water Table: 2
Active Oxidized Rhizospheres Present: NO Wetland Hydrology Criteria met: YES
Comment: SOIL SATURATED TO SURFACE

Vegetation

Type	Dominant Species	FWS Status	Stratum	Overall
Tree	*ALNUS RUBRA*	FAC	80%	
Tree	*PINUS CONTORTA*	FAC	20%	40%
Sapling/Shrub	*SALIX SP.*	FAC	75%	
Sapling/Shrub	*SPIRAEA DOUGLASII*	FACW	25%	55%
Herb	*CAREX OBNUPTA*	OBL	100%	5%

Percentage of dominant (>= 20%) species that are FAC, FACW or OBL: 100%
Hydrophytic Vegetation Criteria met: YES

Comment:

Determination: **Wetland**

Comment:

APPENDIX E

Literature Citations

REFERENCES

Adamus, P.R. and D. Field. 2001. Guidebook for Hydrogeomorphic (HGM)-based Assess. of Oregon Wetland and Riparian Sites. I. Willamette Valley Ecoregion, Riverine Impounding and Slope/Flats Subclasses. Vol. IA: Assess. Methods. Oregon Div. of State Lands, Salem, OR.

Cowardin, L. M., C. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS-78/31. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

DSL. 2017. Essential Salmonid Habitat Map website. Oregon Department of State Lands, Salem, Oregon. Available online at: http://chetco-new.dsl.state.or.us/esh2017/. Accessed September 14, 2017.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Department of the Army, Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.

NMFS. 2017. Critical Habitat maps. U.S. Department of Commerce, National Oceanic and Atmospheric Administration National Marine Fisheries Service, Washington, D.C. Available online at: http://www.westcoast.fisheries.noaa.gov/maps_data/endangered_species_act_critical_habitat.html. Accessed September 14, 2017.

NRCS. 2017. Natural Resources Conservation Service, U.S. Department of Agriculture. WETS data for Oregon. Available online at http://efotg.sc.egov.usda.gov/efotg_locator.aspx. Accessed September 14, 2017.

NWS. 2017. National Weather Service precipitation data for the Astoria Regional Airport weather station. Available online at http://www.wrh.noaa.gov/pqr/. Accessed September 14, 2017.

ORMAP. 2017. The Oregon Map tax map database and viewer. Available online at http://www.ormap.net/index.cfm?opt=home. Accessed September 14, 2017.

SRI / Shapiro. 1996. Local Wetlands Inventory for the City of Lincoln City. SRI / Shapiro, Inc. Project Number 7945247. Portland, Oregon.

U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-3. Vicksburg, MS. U.S. Army Corps of Engineer Research and Development Center.

USFWS. 2016. U.S. Fish and Wildlife Service. Publication date 1977 to present. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Available at http://www.fws.gov/wetlands/. Accessed September 14, 2017.

USGS. 1984. Lincoln City, Oreg. Provisional Edition. 1:24,000 scale. 7.5 Minute Series (Topographic). Reston, Virginia: U.S. Department of the Interior, USGS.