Folsom Road (Mill Creek) Bridge Project

Wetland/Waters Determination Report

Prepared for:

Linn County Road Department

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1 Introduction

David Evans and Associates, Inc. (DEA) conducted an on-site wetland delineation on August 26, 2020 for the Folsom Road (Mill Creek) Bridge Project (Project). The Project is located approximately 5.25 miles east of the City of Albany, in Linn County, Oregon as shown in Figure 1 (S 5, T 11S, R2W, QQ SWNE on tax lots 200, 300, 1400 and 2100). The 0.74-acre study area extends about 500 feet along Folsom Road SE on both sides of Mill Creek, and about 35 feet upstream and 15 feet downstream of the bridge.

2 Landscape Setting and Land Use

Mill Creek is a tributary of the South Santiam River and is situated north to south where it crosses under the Folsom Road SE Bridge. The South Santiam River is located approximately 0.8 mile east of the project site. Land use is primarily agricultural, with a mix of pasture and crop production, and rural residences are scattered throughout the area. A narrow forested riparian area borders the creek. The surrounding landscape is very flat and only a few feet above the South Santiam River floodplain. Lakeview Slough drains into Mill Creek approximately 400 feet north (downstream) of the project's bridge.

3 Site Alterations

Alterations to the project area from its natural condition include construction of the roadway, bridge, driveways, overhead power lines, and cultivation of agricultural land which likely channelized water entering Mill Creek in the area. These alterations occurred several decades in the past and there is no indication of recent earthwork or drainage alteration. Therefore, conditions at the site are normal and would not affect the location or boundaries of Waters of the State or US within the study area.

4 Precipitation Data and Analysis

Preceding precipitation was reviewed prior to the field visit on August 26, 2020. Table 1 shows the two-week precipitation total for the closest available station for which daily values were available (LACOMB 3 NNE, Oregon gauge location) prior to the field work (NRCS 2020). The precipitation record revealed little precipitation for the two weeks prior to the site visit (Table 1). Table 2 shows that precipitation was above the normal WETS range in May and June, and below in July, which would amount to somewhat normal precipitation overall for the three preceding months. The water year for August 26 was also low at 77 percent of normal, however this is within the normal WETS range (Table 3). Therefore, it was assumed that overall hydrologic conditions during the site visit were only slightly below normal, although the site visit took place during the drier part of the year. No change in field methods was needed and primary or secondary hydrology indicators were present in the wetland plot.

TABLE 1. PRECIPITATION ON DAY OF FIELD INVESTIGATION AND TWO WEEKS PRIOR (IN INCHES)

Aug 12	Aug 13	Aug 14	Aug 15	Aug 16	Aug 17	Aug 18
0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 19	**Aug 20**	**Aug 21**	**Aug 22**	**Aug 23**	**Aug 24**	**Aug 25**
0.00	0.00	0.00	0.12	0.00	0.00	0.00
Aug 26*		**Total over 2 weeks**				
0.00		0.12				

Observed precipitation data from Lacomb 3 NNE, Oregon gauge location. Source: (NRCS 2020)

TABLE 2. PERCENT OF NORMAL PRECIPITATION FOR THE THREE MONTHS PRECEDING THE FIELD INVESTIGATION (IN INCHES)

Date	Observed Precipitation for Month[1] (Inches)	Average Precipitation for Month[2] (Inches)	Departure from Normal (Inches)	WETS Table 30% Range of Normal	Within Normal WETS range?
May 2020	3.68	3.38	+0.3	2.40-4.01	Yes
June 2020	3.51	2.30	+1.21	1.54-2.75	No (above normal)
July 2020	0.05	0.39	-0.34	0.20-0.45	No (below normal)

[1] Observed precipitation data from Lacomb 3 NNE, Oregon gauge location. Source: (NRCS 2020)

[2] Monthly normal values from the Lacomb 3 NNE, Oregon NRCS WETS table data (1999-2019). Source: (NRCS 2020)

TABLE 3. WATER YEAR TO DATE

Date	Observed Precipitation (Inches)	Normal Precipitation (Inches)	Departure from Normal (inches)	Within 30% of Normal Precipitation for Water Year?
Aug 26, 2020	42.35	55.0	-12.65	Yes (77% of normal)

Water year data for the LACOMB 3 NNE, Oregon gauge location based on October 1 start date. Source: (NRCS 2020)

5 Methods

DEA biologists performed an on-site determination on August 26, 2020, according to the Level 2 Routine On-Site Method described in the *U.S. Army Corps of Engineers* (USACE) *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010). These methods require an area to possess a prevalence of hydrophytic vegetation, hydric soils, and wetland hydrology. Under normal circumstances, positive indicators of each of these three parameters must be present for an area to satisfy the criteria for jurisdictional wetlands (Environmental Laboratory 1987). Data on the three parameters was gathered at specific data plots in order to document site conditions and specific locations of any potential wetland boundaries.

Precipitation was slightly low for the period preceding the field investigation, but not low enough to warrant a change in field methods. However, field investigations occurred during the dry months in the Willamette Valley, therefore we relied on the presence of secondary indicators to determine hydrology.

The presence of regulated waterways and determination of the ordinary high water mark (OHWM) was evaluated based on the criteria described in the USACE Regulatory Guidance Letter No. 05-05 (USACE 2005). This method relies on the presence of physical indicators of OHWM, such as extent of terrestrial vegetation, scour, sediment lines, etc. No field indicators of an OHWM were present within the study area.

Wetland boundaries were flagged on site by DEA biologists, and were surveyed by Linn County professional land surveyors with an accuracy of +/- 1 foot.

6 Results

Wetland A (Mill Creek) was the only features identified within the study area. Site photographs are included in Appendix B.

6.1 Wetland A (Mill Creek)

Wetland A is a palustrine emergent (Cowardin, 1979), Slope (HGM; Adamus and Field, 2001) wetland which occupies the channel of Mill Creek. It is located at the center of the study area and passes under the existing Folsom Road SE Bridge (Figure 4). The National Hydrography Dataset (NHD) has mapped this feature as a perennial stream (USGS 2020). However, this feature displayed no signs of an OHWM (e.g. bank scour, sediment deposition lines, water marks on rocks or bridge supports) and no water was present in the drainage during the August 26, 2020 site visit. Another site visit was conducted on January 3rd, 2021 after a storm event to observe site conditions during the rainy season, during which DEA observed no more than 12 inches of flowing water in the feature. Wetland A is a known seasonal overflow channel of the South Santiam River with a seasonal connection both upstream and downstream of the study area.

The channel bottom was fully vegetated during the site visit, except directly underneath the bridge which is shaded out. Within the study area dominant vegetation includes reed canarygrass (Phalaris *arundinacea*) and Oregon ash (*Fraxinus latifolia*). There is a narrow band of forested upland habitat

that is dominated by Oregon ash, bigleaf maple (*Acer macrophyllum*), Himalayan blackberry (*Rubus armeniacus*), Nootka rose (*Rosa nutkana*), thimbleberry (Rubus parviflorus), English ivy (Hedera helix), and reed canarygrass.

The width of Wetland A averages approximately 12.5 feet through the study area. One bridge bent lies upslope of the delineated wetland, and another lies partially within the wetland.

7 Deviation from LWI or NWI

Within the study area Mill Creek is mapped as Palustrine, Scrub-Shrub, Seasonally Flooded (PSSC) on the NWI map (Figure 2). Field investigation results determined that this is an accurate description. No other wetland or water features are present within the study area.

8 Mapping Method

Wetland boundaries and plot locations were flagged in the field by DEA wetland biologists. Wetland flagging was then mapped by Linn County survey crews. Estimated accuracy of surveyed boundaries and plot locations is approximately within one (1) foot.

9 Additional Information

A data search of this reach of Mill Creek on StreamNet shows it as being used year-round by Coastal cutthroat trout (*Oncorhynchus clarkii*) (StreamNet 2020), and the National Hydrography Dataset (NHD) has mapped this feature as a perennial stream (USGS 2020). ODFW also considers Mill Creek to be a fish-bearing stream due to overflow from the river. However, based on the fully vegetated drainage bottom and the absence of OHWM indicators, it is apparent that flowing water is only present periodically during high water events when the South Santiam River flows into secondary channels or during periods of heavy rainfall. The lower reaches of Mill Creek have been designated as Essential Salmonid Habitat by DSL, but that designation terminates approximately 2.5 miles downstream of the study area.

10 Results and Conclusions

The study area contains one jurisdictional wetland, Wetland A (Mill Creek) as defined by USACE or Oregon Department of State Lands (DSL). This feature is a seasonal overflow channel of the South Santiam River with wetland conditions and a seasonal surface water connection both upstream and downstream of the study area. Within the study area the feature was lacking field indicators of an OHWM but did meet wetland criteria. Jurisdictional boundaries were flagged and surveyed and are shown in Figure 4. Wetland A occupies 0.027 acres (1,180 square feet) within the study area.

The wetland/waters determination was undertaken to determine the location and extent of jurisdictional wetlands and waterways within the study area that may be regulated by Federal and state governments. Both DSL and USACE have concurrent jurisdiction over wetlands and waters within the State of Oregon. Any removal of material from inside Wetland A, other than bridge pile, will require a Section 404 permit from USACE, and will subject the project to a Section 401 review by the Oregon Department of Environmental Quality (DEQ). Removal and fill volumes in excess of 50 cubic yards will require a Removal-Fill Law permit from DSL. At this time, and based on the present design, permits are not required from USACE, DEQ, or DSL.

Due to seasonal fish presence, ODFW will require approval of a fish passage plan for replacement of the Folsom Road Bridge.

11 Disclaimer

This report documents the investigation, best professional judgment, and conclusions of the investigator. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk until it has been reviewed and approved in writing by the Oregon Department of State Lands in Accordance with OAR 141-090-0005 through OAR 141-090-0555.

References:

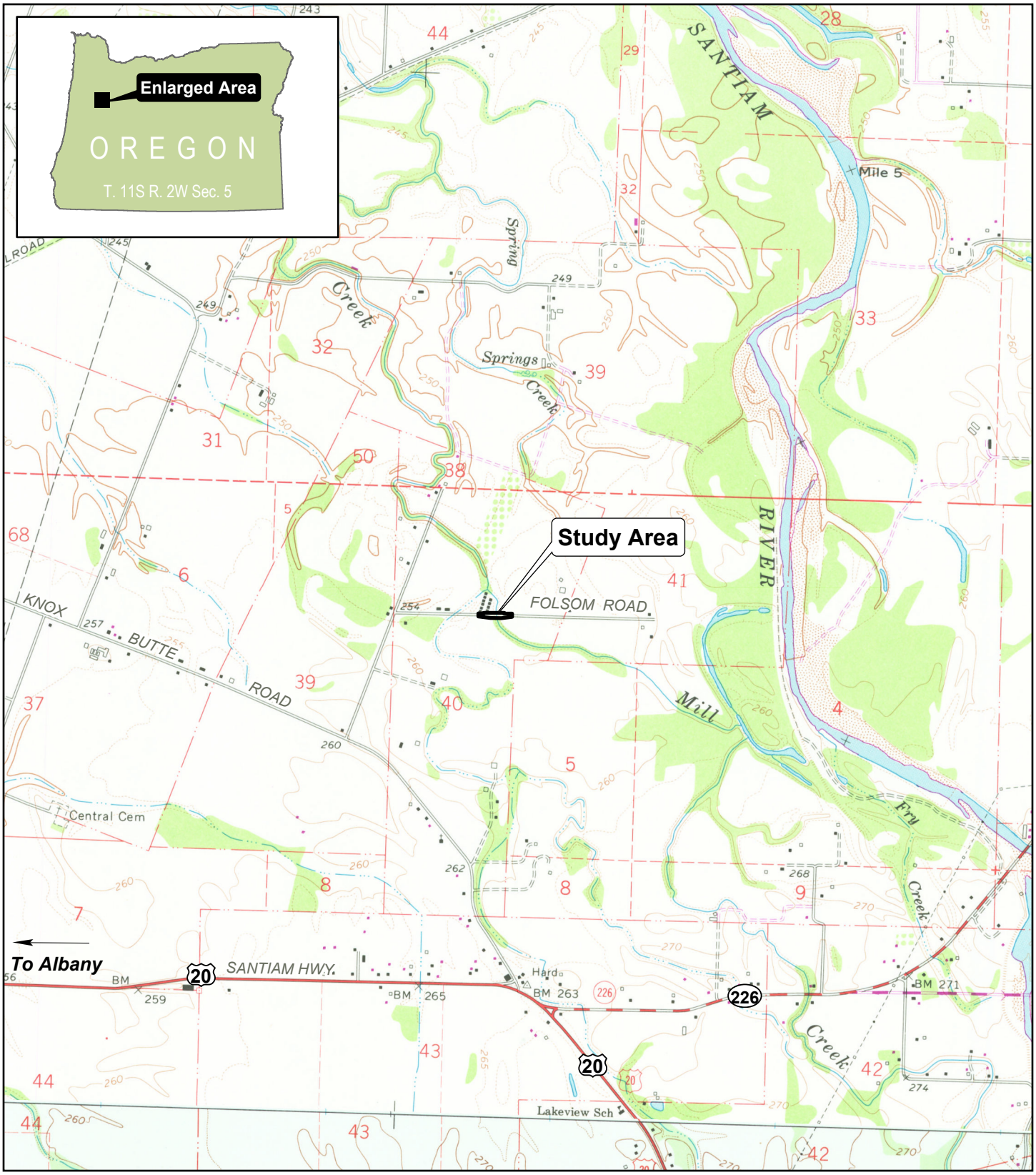
Adamus, P.R. and D. Field. 2001. *Guidebook for Hydrogeomorphic (HGM) - based Assessment of Oregon Wetland and Riparian Sites*. I. Willamette Valley Ecoregion, Riverine Impounding and Slope/Flat subclasses. Volume 1A: Assessment Methods. 146pp.

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm (Version 04DEC1998).

U.S. Geological Survey (USGS). 2020. The National Map interactive web application. Accessed at: https://viewer.nationalmap.gov/advanced-viewer/

APPENDICES

APPENDIX A – Figures



ESRI, ArcGIS Online, USA Topographic Maps, 1970. Crabtree, Linn County, Oregon.

Folsom Road (Mill Creek) Bridge Project

Figure 1
Vicinity

N

0 0.5 1 Miles

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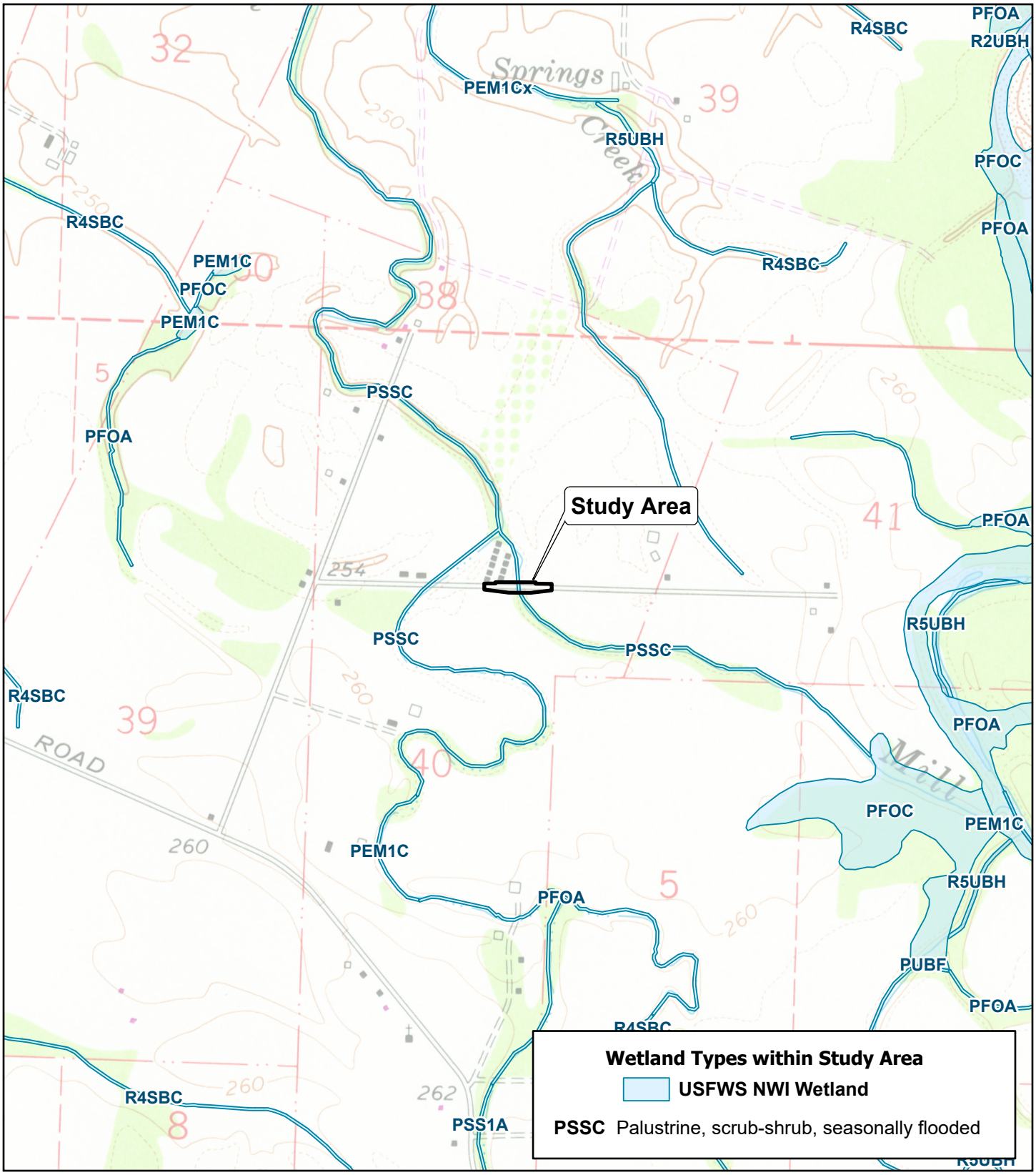

ESRI, ArcGIS Online, USA Topographic Maps, 1970. Crabtree, Linn County, Oregon.
US Fish and Wildlife Service, 2020, National Wetlands Inventory (1977 to present), Branch of Habitat Assessment.

Folsom Road (Mill Creek) Bridge Project

Figure 2
National Wetland Inventory

N
0 1,000 2,000 Feet

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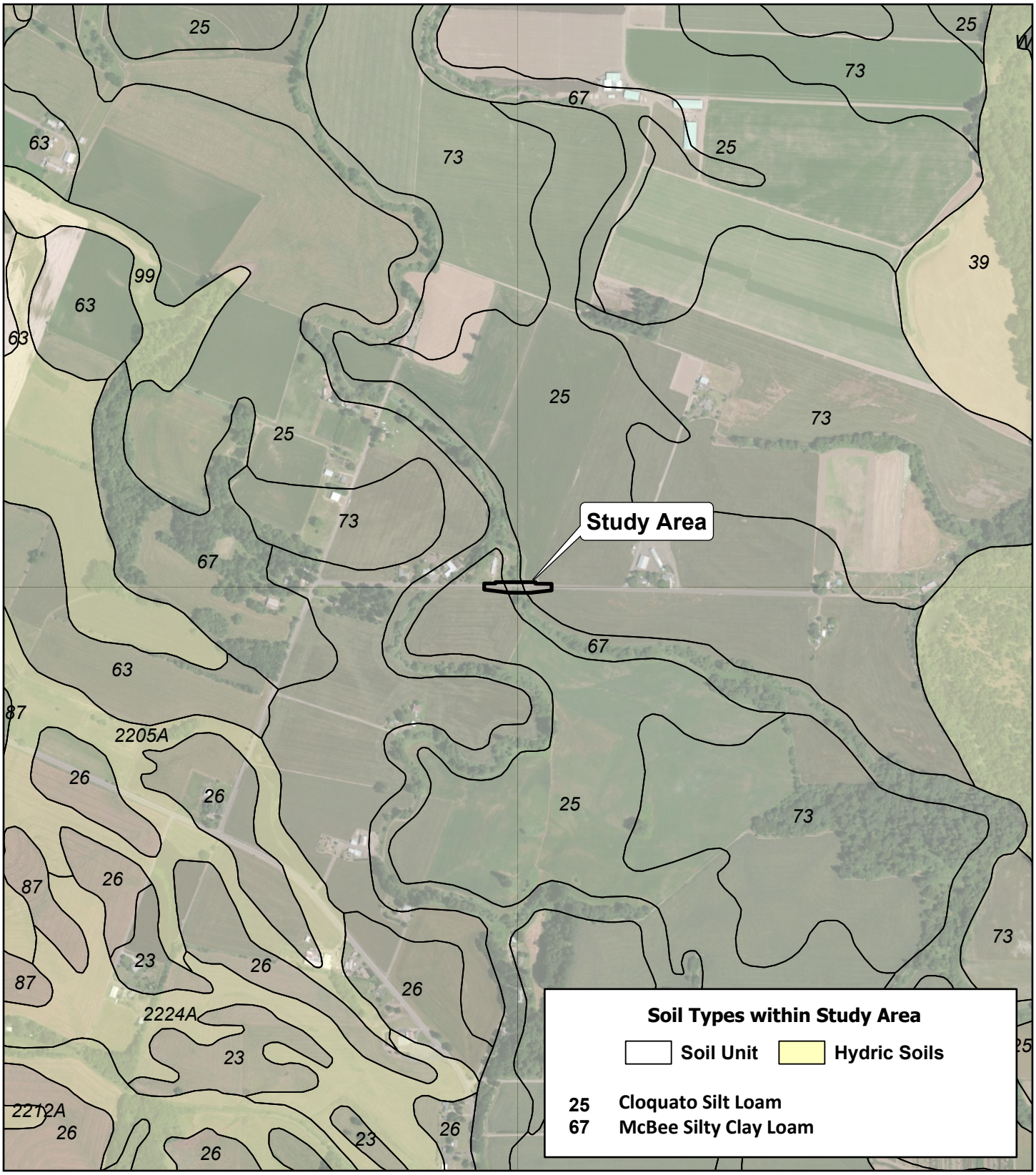

ESRI, ArcGIS Online, World Imagery (Clarity).
Natural Resources Conservation Service (NRCS), 2016, Soil Survey Geographic (SSURGO) database for Linn County Area, Oregon.

Folsom Road (Mill Creek) Bridge Project

Figure 3
Soil Survey

N
0 1,000 2,000 Feet

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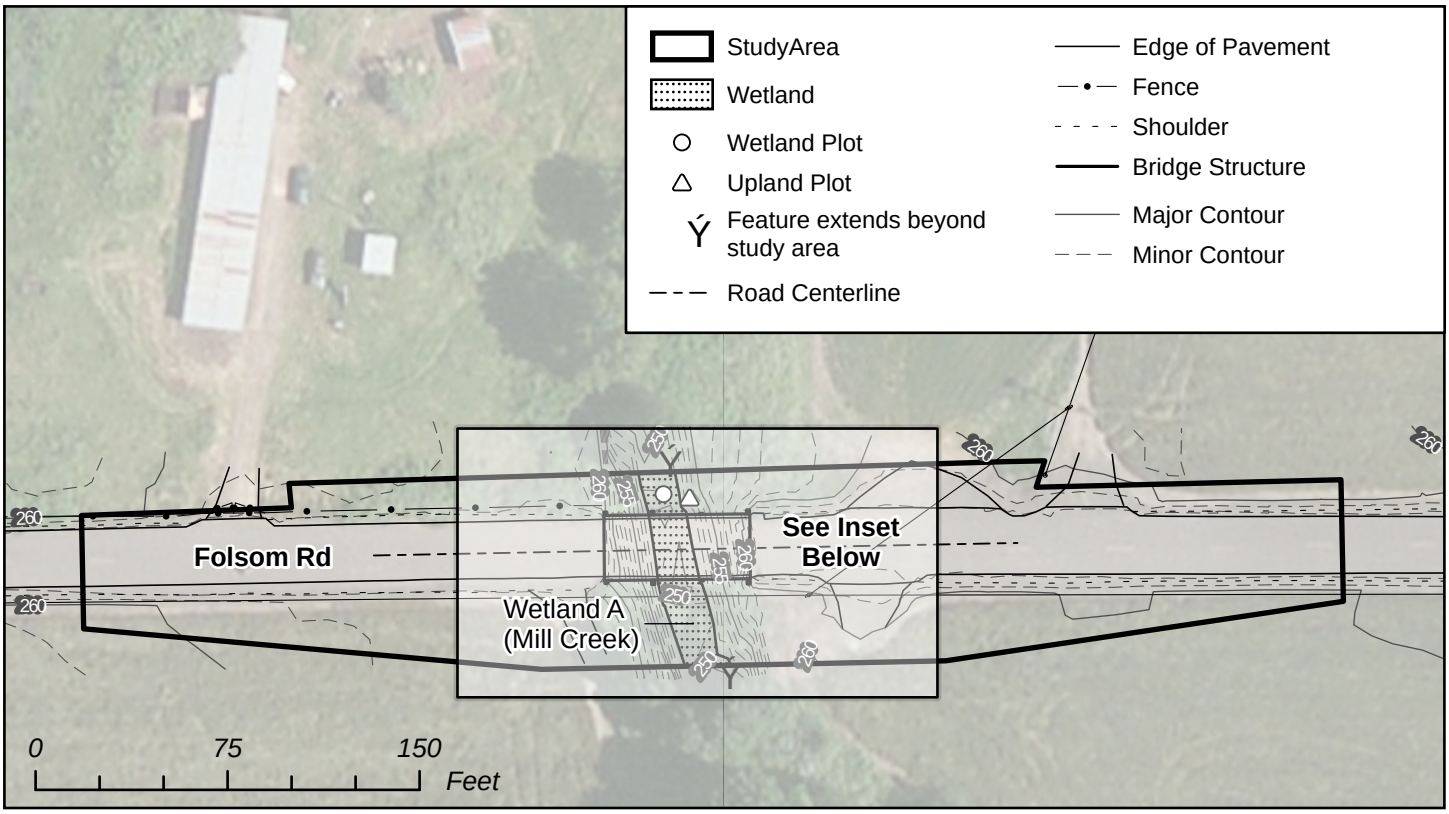

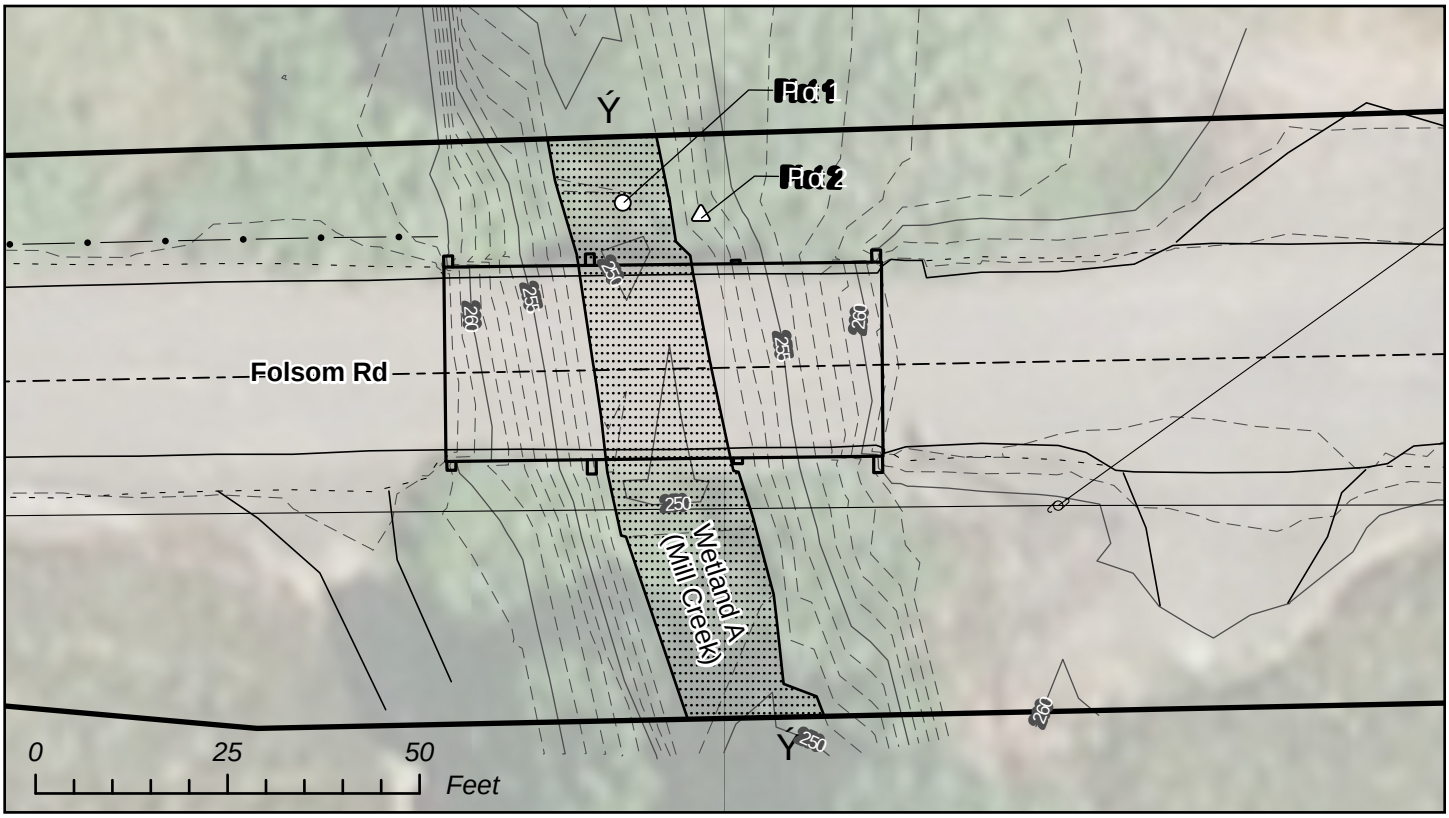

ESRI, ArcGIS Online, World Imagery (Clarity).

Folsom Road (Mill Creek) Bridge Project

Figure 4
Wetland/Waters Determination

Scale - As noted

Appendix B – Ground Level Color Photographs

Photo 1. Looking west along Folsom Road SE at the Mill Creek Bridge.

Photo 2. Looking east along Folsom Road SE at the Mill Creek Bridge.

Photo 3. Mill Creek drainage, looking downstream toward the Folsom Road SE bridge.

Photo 4. Mill Creek drainage, looking upstream toward the Folsom Road SE bridge.

Photo 5. Photo taken from underneath the Folsom Road SE bridge. Note there is loose soil in the channel bottom and no sorting or other indicators of OHW. Sparsely vegetated due to bridge cover.

APPENDIX C – WETS Tables

WETS Table

WETS Station: LACOMB 3 NNE, OR													
Requested years: 1999 - 2019													
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall					
Jan	46.1	33.6	39.9	7.27	5.24	8.58	14	-					
Feb	49.9	33.6	41.7	5.63	3.80	6.73	12	-					
Mar	54.7	35.6	45.1	6.92	5.30	8.04	15	-					
Apr	59.7	37.9	48.8	5.35	4.17	6.18	13	-					
May	66.6	42.9	54.7	3.38	2.40	4.01	9	-					
Jun	72.5	47.1	59.8	2.30	1.54	2.75	6	-					
Jul	81.7	49.7	65.7	0.39	0.20	0.45	1	-					
Aug	82.1	49.6	65.8	0.61	0.17	0.65	2	-					
Sep	75.3	45.8	60.6	2.30	1.13	2.75	4	-					
Oct	62.8	41.3	52.1	5.00	3.32	5.99	10	-					

Nov	51.6	37.0	44.3	7.10	5.37	8.28	13	-					
Dec	45.1	33.5	39.3	-	-	-	-	0.4					
Annual:					-	-							
Average	62.3	40.6	51.5	-	-	-	-	-					
Total	-	-	-	-			-	-					
GROWING SEASON DATES													
Years with missing data:	24 deg = 1	28 deg = 0	32 deg = 0										
Years with no occurrence:	24 deg = 2	28 deg = 0	32 deg = 0										
Data years used:	24 deg = 20	28 deg = 21	32 deg = 21										
Probability	24 F or higher	28 F or higher	32 F or higher										
50 percent *	2/3 to 12/4: 304 days	3/19 to 11/21: 247 days	4/27 to 10/22: 178 days										
70 percent *	1/19 to 12/19: 334 days	3/9 to 12/1: 267 days	4/20 to 10/29: 192 days										

* Percent chance of the growing season occurring between the Beginning and Ending dates.													
STATS TABLE - total precipitation (inches)													
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1973			5.48	2.37	2.04	2.94	0.08	1.18	2.74	3.82	19.05	12.18	51.88
1974	10.60	8.17	9.27	4.63	2.92	1.34	2.28	0.50	0.30	2.82	7.74	10.73	61.30
1975	6.55	5.41	7.04	4.16	2.78	2.27	0.56	3.77	0.00	8.16	7.41	9.55	57.66
1976	8.31	6.91	5.33	5.31	3.04	1.47	1.20	3.68	1.66	2.22	2.82	1.77	43.72
1977	1.56	3.80	7.27	2.69	8.49	1.87	0.99	2.64	4.39	3.37	9.70	11.69	58.46
1978	7.60	3.83	2.63	7.42	5.00	2.30	1.06	5.37	3.71	0.91	6.96		46.79
1979	3.56	10.85	4.19	6.05	3.23	1.20	0.37	1.75	2.28	8.48	6.92	6.56	55.44
1980	7.38	4.53	6.31	4.24	2.34	2.79	0.41	T	1.90	2.45	6.33	11.14	49.82
1981	2.78	6.69	4.09	4.66	5.04	5.85	0.20	0.04	3.18	5.73	6.50	13.65	58.41
1982	M9.32	7.94	5.40	4.58	1.32	3.38	0.90	1.22	3.28	5.26	6.00	10.05	58.65
1983	9.41	10.63	9.02	4.39	3.41	4.41	4.95	2.85	0.86	2.15	11.61	7.66	71.35

1984		7.60	6.52	6.73	5.71	7.01	0.47	0.01	1.79	7.34	15.98		59.16
1985	0.74	6.07	5.73	2.56	1.53	2.38	1.35	1.11	3.68	5.87	8.48	2.98	42.48
1986	6.40	10.21	4.58	4.18	3.63	0.99	1.79	0.13	5.51	2.58	12.83		52.83
1987	8.30	3.13	5.50	3.52	3.38	0.61	3.42	0.10	0.67	0.48	5.24	11.20	45.55
1988	9.31	2.33	5.65	7.41	6.15	3.25	0.17	0.00	0.81	0.33	13.42	M4.62	53.45
1989	6.29	M3.33	10.65	1.93	3.36	2.28	1.05	1.73	0.88	2.62	5.02	2.90	42.04
1990	10.23	7.15	3.85	3.75	3.65	2.56	0.45	M1.72	0.48	9.27	8.74	4.82	56.67
1991	3.22	5.40	7.05	5.41	7.87	3.27	0.61	0.85	0.49	3.79	9.27	6.52	53.75
1992	4.56	5.39	1.67	7.14	0.66	1.77	1.38	0.38	1.16	4.21	7.72	9.08	45.12
1993	5.62	M2.06	7.38	10.69	6.79	5.31	2.68	0.63	0.10	2.01	2.89	6.57	52.73
1994	5.68	5.75	5.05	3.85	2.31	3.11	0.15	T	1.89	5.63	M12.80	6.76	52.98
1995	9.97	4.79	5.45	5.47	2.69	4.26	1.19	1.52	4.62	5.81	9.89	9.96	65.62
1996	12.30	15.18	3.59	6.24	5.64	1.64	1.24	0.22	2.75	8.03	13.08	19.62	89.53
1997	7.69	5.02	10.26	5.93	2.63	3.13	0.97	1.65	4.61	7.21	4.37	3.92	57.39
1998	9.69	6.14	6.39	4.26	9.33	9.88	0.06	0.00	1.96	5.42	11.57	10.70	75.40
1999	9.15	M10.10	6.89	3.26	4.76	2.54	0.32	0.89	0.00	3.78	M10.89	7.20	59.78
2000	10.85	M7.94	4.92	3.36	M5.05	2.85	0.45	0.08	1.22	3.72	3.91	4.58	48.93
2001	3.55	1.74	4.60	4.66	2.34	2.94	0.52	0.56	1.16	4.73	9.47	10.07	46.34
2002	9.39	4.16	6.77	4.20	2.38	2.41	0.05	0.35	1.31	1.21	4.89	12.14	49.26
2003	8.64	5.66	8.74	9.50	2.04	0.84	0.00	0.31	1.90	M3.15	8.09	13.66	62.53
2004	11.12	5.74	3.19	2.89	2.90	2.51	0.15	3.54	4.35	5.95	4.89	M5.48	52.71
2005	2.88	1.24	6.25	6.62	6.44	4.69	0.59	0.10	0.85	5.84	8.00	11.55	55.05
2006	16.91	3.99	5.11	4.47	4.82	2.30	0.25	0.00	1.53	2.12	M19.07	M8.16	68.73

2007	M5.94	8.41	8.04	4.75	2.08	1.39	0.66	1.02	3.11	5.37	6.26	M10.20	57.23
2008	M10.69	4.06	7.87	5.29	2.45	1.99	0.15	1.90	1.11	1.78	6.63	9.36	53.28
2009	5.50	4.87	4.82	4.01	5.14	M0.63	0.27	0.24	1.94	M5.17	8.24	5.48	46.31
2010	7.38	M3.78	M8.08	7.72	M4.94	5.08	0.36	0.20	M3.00	6.76	M10.43	10.76	68.49
2011	5.10	3.56	M11.44	M7.43	M3.74	1.87	2.07	0.20	M0.59	M4.31	7.09	M6.06	53.46
2012	12.10	M5.46	M13.17	M7.56	M3.32	M4.60	M0.55	M0.01	M0.13	M7.13	10.29	M11.52	75.84
2013	6.00	3.00	M2.79	M3.32	5.56	M2.06	0.06	0.55	9.79	M2.54	3.77	M3.56	43.00
2014	M4.76	9.37	8.71	4.79	3.08	M2.25	0.71	M0.04	2.53	9.55	7.18	9.21	62.18
2015	3.26	3.90	4.71	M3.14	1.68	0.58	0.00	1.41	2.17	3.53	8.21	14.89	47.48
2016	7.12	4.88	7.82	3.42	2.01	1.83	0.61	0.33	1.23	14.06	7.81	6.99	58.11
2017	5.55	12.03	11.28	5.54	3.33	1.97	0.00	0.00	3.28	7.67	9.34	4.45	64.44
2018	6.68	3.60	M6.05	6.29	0.64	1.76	0.00	M0.23	1.03	2.97	5.08	8.31	42.64
2019	3.47	10.80	4.04	10.05	2.31	1.15	0.46	0.87	6.14	3.66	1.49	M5.46	49.90
2020	11.09	3.49	4.45	3.13	5.75	3.51	0.05	0.27	M0.00				31.74
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													