

Aquatic Resources Delineation Report

Airport Road Distribution Center Project Redding, Shasta County, California

Prepared for:
42 Real Estate, LLC
November 2021
613-02

ENPLAN

3179 Bechelli Lane Suite 100
Redding, CA 96002

Airport Road Distribution Center Project Aquatic Resource Delineation Report

Applicant/Land Owner:

42 Real Estate, LLC
2030 Main Street, Suite 342
Dallas, Texas 75201
Attn: Larry Ginnings

Access:

The Airport Road Distribution Center Project site is located in the City of Redding, on the east side of Airport Road, and approximately 1.5 miles north of the public airport entrance.

I. INTRODUCTION

The project applicant is proposing development of a warehouse/distribution center on Shasta County Assessor's Parcel Numbers 054-200-002 and 054-210-006 on Airport Road in the City of Redding. The project site is on the east side of Airport Road approximately 1.5 miles north of the main entrance to the Redding Municipal Airport. In addition to the two parcels proposed for development, the project study area included adjoining road rights-of-way and an off-site sewer line corridor extending south to Shasta View Drive. As shown in **Figure 1 (Appendix A)**, the ± 41.6 -acre study area is situated in Section 22, Township 31 North, Range 4 West (U.S. Geological Survey, Enterprise 7.5-minute quadrangle, 1998). The site ranges in elevation from approximately 500 to 520 feet above sea level. Land uses adjoining the study area are primarily rural, with commercial and industrial businesses in the vicinity of the project site.

The site is and the predominant community type is oak woodland. Vegetation is dominated by common manzanita, poison oak, valley oak, interior live oak, and gray pine. Approximately 19 acres of the site has been cleared of brush. The remainder of the site is densely vegetated with pedestrian trails throughout.

According to the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS, 2021), three soil units has been mapped within the study site (**Figure 2, Appendix A**). **Table 1** describes the onsite soil units and any hydric inclusions.

The climate of the project vicinity consists of warm, dry summers and cool, wet winters. Annual precipitation averages ± 33.7 inches at the Redding Municipal Airport, California (WRCC, 2021).

Table 1
Summary of On-Site Soil Units

Map Symbol	Soil Unit Name	Hydric Soil?	Hydric Inclusions Present?	Hydric* Criteria	Hydric Landforms
PmA	Perkins gravelly loam, gravelly clay loam substratum, 0 to 3 percent slopes, MLRA 17	N	Y	3	Depressions
RbA	Red Bluff loam, 0 to 3 percent slopes, MLRA 17, moist	N	Y	3	Depressions
RbB	Red Bluff loam, 3 to 8 percent slopes	N	N	—	—

*3 Soils that are frequently ponded for long or very long duration during the growing season

II. METHODOLOGY

Prior to undertaking the field study, National Wetlands Inventory maps (U.S. Fish and Wildlife Service, 2021) were reviewed to determine if any waters have been previously mapped on the project site. One feature has been mapped within the project boundary: a fresh emergent wetland (PEM1A). The feature is located along Airport Road, on the western edge of the project site.

In 2004, North State Resources conducted a wetland delineation addressing parcel 054-200-002, which encompasses the northern 30 acres of the project site. The delineation report identified a 0.13-acre vernal pool on the western boundary of the study area; the vernal pool was later verified by the U.S. Department of the Army, Corps of Engineers as a federally jurisdictional feature. The vernal pool is a portion of the feature shown on the National Wetland Inventory map.

For the present study, the field investigation was conducted on April 15, July 22, and October 18, 2021. The field survey was conducted in accordance with technical methods outlined in the *Corps of Engineers Wetlands Delineation Manual* (U.S. Department of the Army, Corps of Engineers, 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Department of the Army, Corps of Engineers, 2008). The delineation methods include the evaluation of three field parameters: the presence of hydrophytic vegetation, hydric soil, and wetland hydrology. In most cases, the presence of all three parameters is required to meet the definition of a wetland as described in Corps of Engineers Manuals; however, abnormal climatic conditions or other disturbances have the potential to mask the presence of one or more of these parameters.

The U.S. Army Corps of Engineers' Antecedent Precipitation Tool (APT) was used as an indicator of climatic circumstances at the time of the field delineation. Rainfall conditions for the three months prior to the field dates were calculated and compared to rainfall quantities during typical years. According to the APT, the present field delineation was conducted during dryer than normal conditions (Deters, 2020). Results produced by the APT are provided in **Appendix B**. Wetland determination forms were completed and are provided in **Appendix C**.

Scientific nomenclature for plants cited in this report is in accordance with *The Jepson Manual* (Baldwin et al., 2012). The indicator status of plants in this report is in accordance with the National Wetland Plant List (U.S. Department of the Army, Corps of Engineers, 2018).

The biologist documented all wetlands and other waters observed in the field that could potentially be subject to state or federal jurisdiction. Where appropriate, a GPS unit capable of sub-meter accuracy was used to record the boundaries of the features. The boundary of the wetland on the western edge of the site was determined based on a combination of GPS data and data presented in the 2004 study. The GPS data was downloaded and processed in QGIS for mapping and acreage calculations.

III. RESULTS

As a result of the field delineation effort, one feature potentially subject to state and/or federal jurisdiction was identified: a highly degraded remnant of a vernal pool (**Figures 3 and 4, Appendix A**). The feature was mapped as approximately 0.35 acres in size. The feature was delineated based on a combination of field indicators, as described in the previous section, and an evaluation of the 2004 study results.

The present study documented the presence of hydric soils in the feature; neither hydrophytic vegetation nor indicators of wetland hydrology were present at the time of the field investigation. The absence of wetland hydrology indicators may be due in part to prolonged drought in the region. Additionally, the culvert under Airport Road is at least partially blocked, and roads and ditches have reduced the drainage area tributary to the feature. With respect to vegetation, the feature has been extensively disturbed by

pedestrian and vehicle traffic, which, combined with drought conditions, may have contributed to the introduction and spread of weedy species in the feature.

Although conditions at the site have significantly changed since the wetland was verified by the Corps in 2004, we anticipate that all three parameters would be met in a year with normal precipitation and absent the recent level of disturbance. The feature was therefore delineated and mapped as a wetland feature.

Five man-made upland trenches were also observed in the study area, primarily along property boundaries. It appears that the trenches were created as barriers to prevent off-road vehicles from entering the site. The trenches were not identified as wetlands or other waters because they lack an ordinary high-water mark, wetland vegetation, do not show evidence of ponding, and are not connected to any surface water features.

Representative photos are presented in **Appendix D**. A table identifying the Cowardin type is provided in **Appendix E**.

IV. CONCLUSION

Based on the National Wetland Inventory maps and field observations, the on-site wetland was previously the eastern portion of a much larger vernal pool that continues to the west of Airport Road. The vernal pool was bisected by the construction of Airport Road decades ago. A culvert is present under the Airport Road, but is at least partially blocked. Additionally, a drainage ditch has been constructed on the west side of Airport Road, which further severs the hydrologic connection between the two portions of the vernal pool.

Despite the limited hydrologic connection between the on-site wetland and the vernal pool on the west side of Airport Road, there is reasonable potential for a physical, chemical, or biological nexus between the on-site wetland and nearby surface waters. The on-site wetland is approximately 0.5 miles east of Clover Creek, an intermittent stream, and Stillwater Creek, another intermittent stream, flows in a southerly direction about 0.6 miles to the east of the site. These features are used by numerous aquatic, semi-aquatic, and avian species as both breeding and foraging habitat. As a nearby

seasonal water source, the on-site wetland may also be utilized by wildlife within the area providing essential habitat connectivity and diversity.

Due to the ability of the site to support an ecological connection with the surrounding wetlands and water features, it is reasonable to assume the on-site wetland will be subject to federal jurisdiction in accordance with the Clean Water Act as defined by Rapanos. Therefore, a Preliminary Jurisdictional Determination is being requested from the U.S. Army Corps of Engineers for the on-site wetland feature.

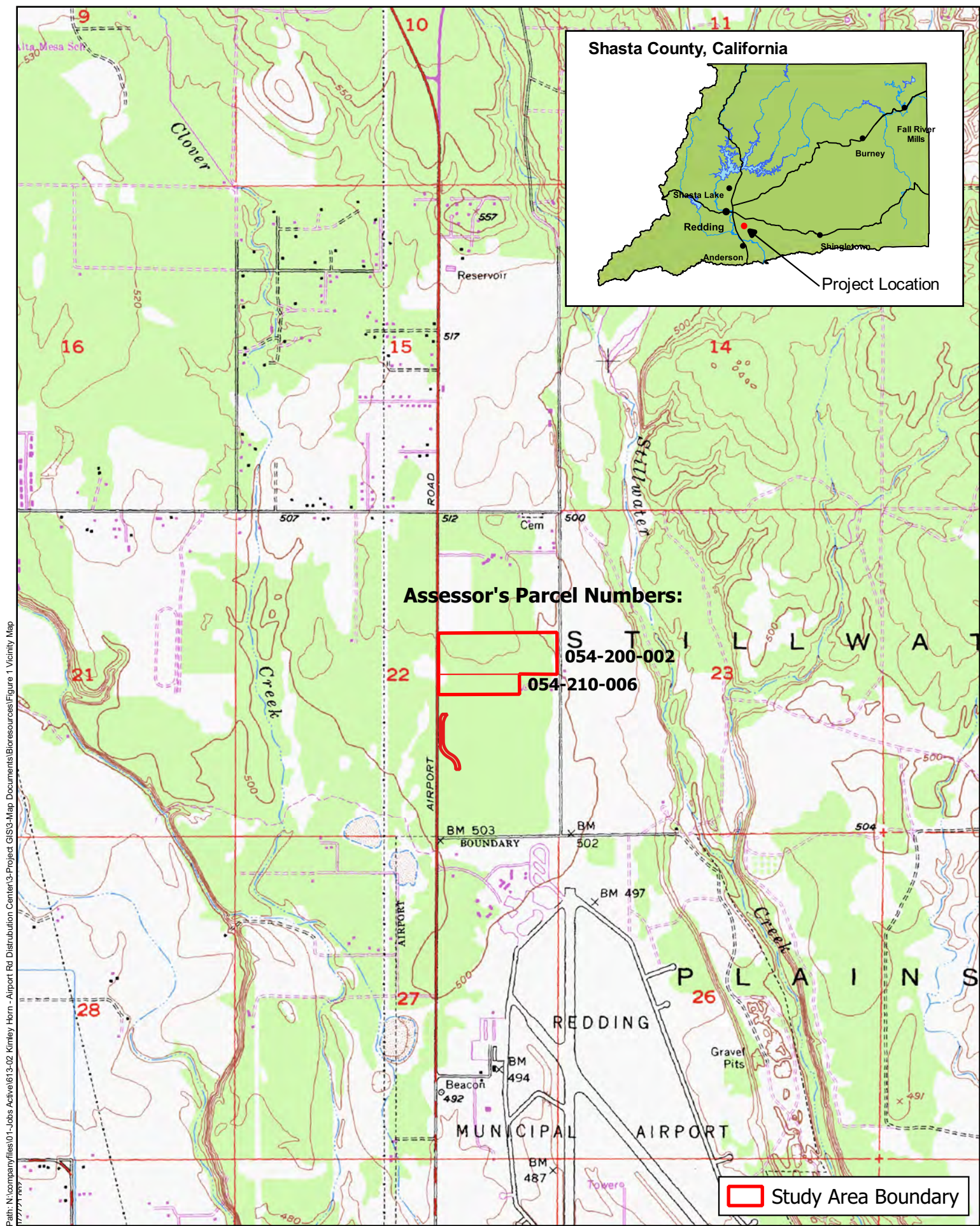
In regard to the five upland ditches located on-site, they do not meet the definition of waters under Regulatory Guidance Letter 0505. Therefore, the ditches have not been included as features pertinent to this delineation report.

V. REFERENCES

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California*, second edition. University of California Press, Berkeley.
- Deters, J. 2020. Antecedent Precipitation Tool (APT) - v 1.0.13. U.S. Army Corps of Engineers; accessed April 2021. <[https://github.com/jDeters-USACE/Antecedent-Precipitation-Tool/releases/tagv.1.0.13](https://github.com/jDeters-USACE/Antecedent-Precipitation-Tool/releases/tag/v.1.0.13)>.
- U.S. Department of the Army, Corps of Engineers. 1987. *Corps of Engineers Wetland Delineation Manual*. Technical Report Y-87-1. National Technical Information Service, Springfield, Virginia.
- _____. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. U.S. Army Engineer Research and Development Center, Vicksburg, MS.
- _____. 2018. National Wetland Plant List, version 3.4. Accessed July 2021. <<http://wetland-plants.usace.army.mil/>>.
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 2020. Web Soil Survey, accessed July 2021. <<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>>.
- U.S. Environmental Protection Agency. 2020. The Navigable Waters Protection Rule: Definition of "Waters of the United States." Federal Register 85(77): 22250-22342, accessed July 2021. <<https://www.federalregister.gov/documents/2020/04/21/2020-02500/the-navigable-waters-protection-rule-definition-of-waters-of-the-united-states>>.
- U.S. Fish and Wildlife Service. National Wetlands Inventory Wetlands Mapper, accessed July 2021. <<http://www.fws.gov/wetlands/Data/Mapper.html>>.
- U.S. Geological Survey. 1957. Enterprise, California, 7.5-minute quadrangle sheet.
- Western Regional Climate Center. 2021. Redding Municipal Airport, California (047304). <REDDING MUNI AP, CALIFORNIA - Climate Summary (dri.edu)>.

APPENDIX A

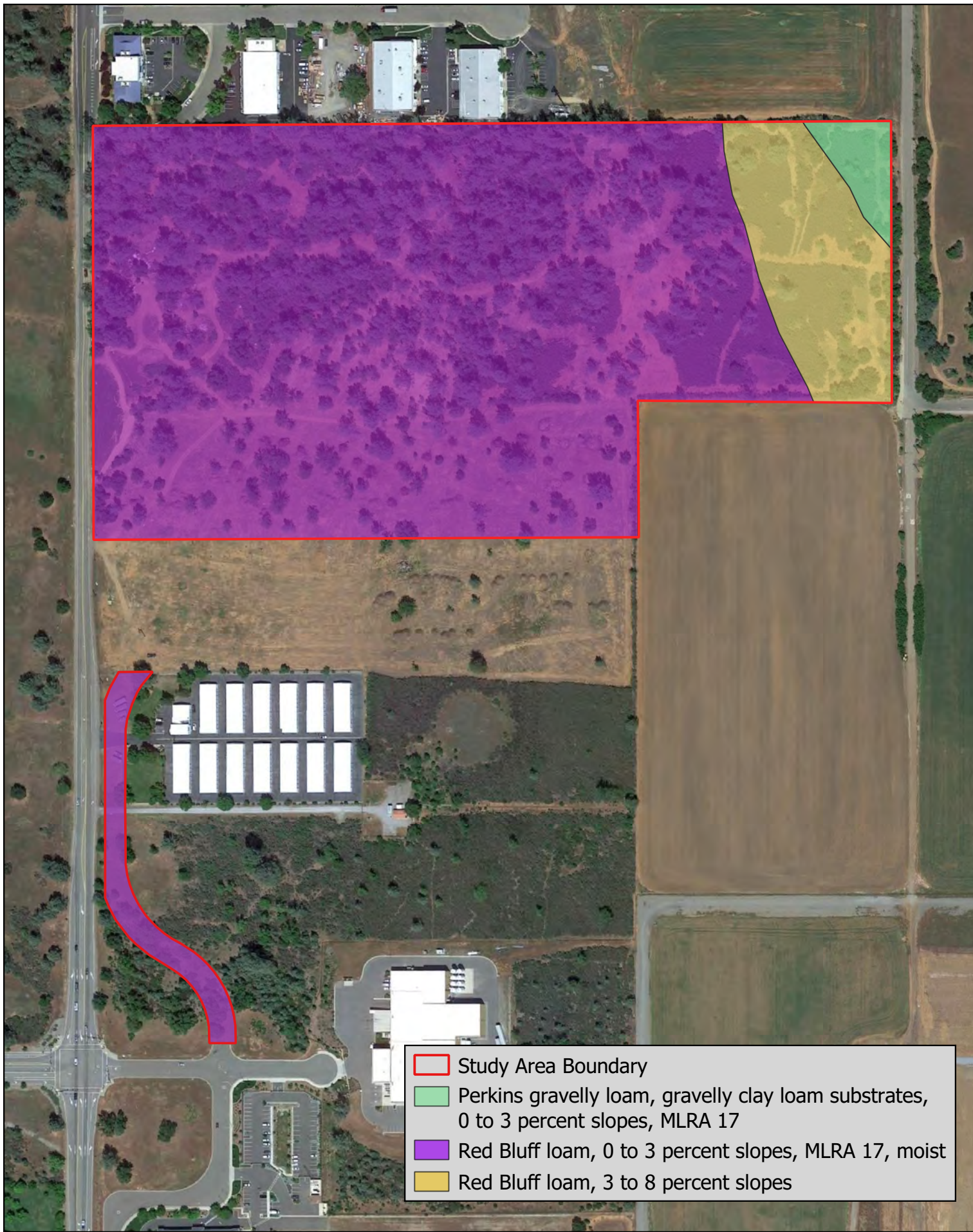
Maps



Path: N:\CompanyFiles\01-Jobs Active\613-02 Kinley Horn - Airport Rd Distribution Center\3-Project GIS\3-Map Documents\Bioresources\Figure 1 Vicinity Map

All depictions are approximate. Not a survey product.

11.05.21



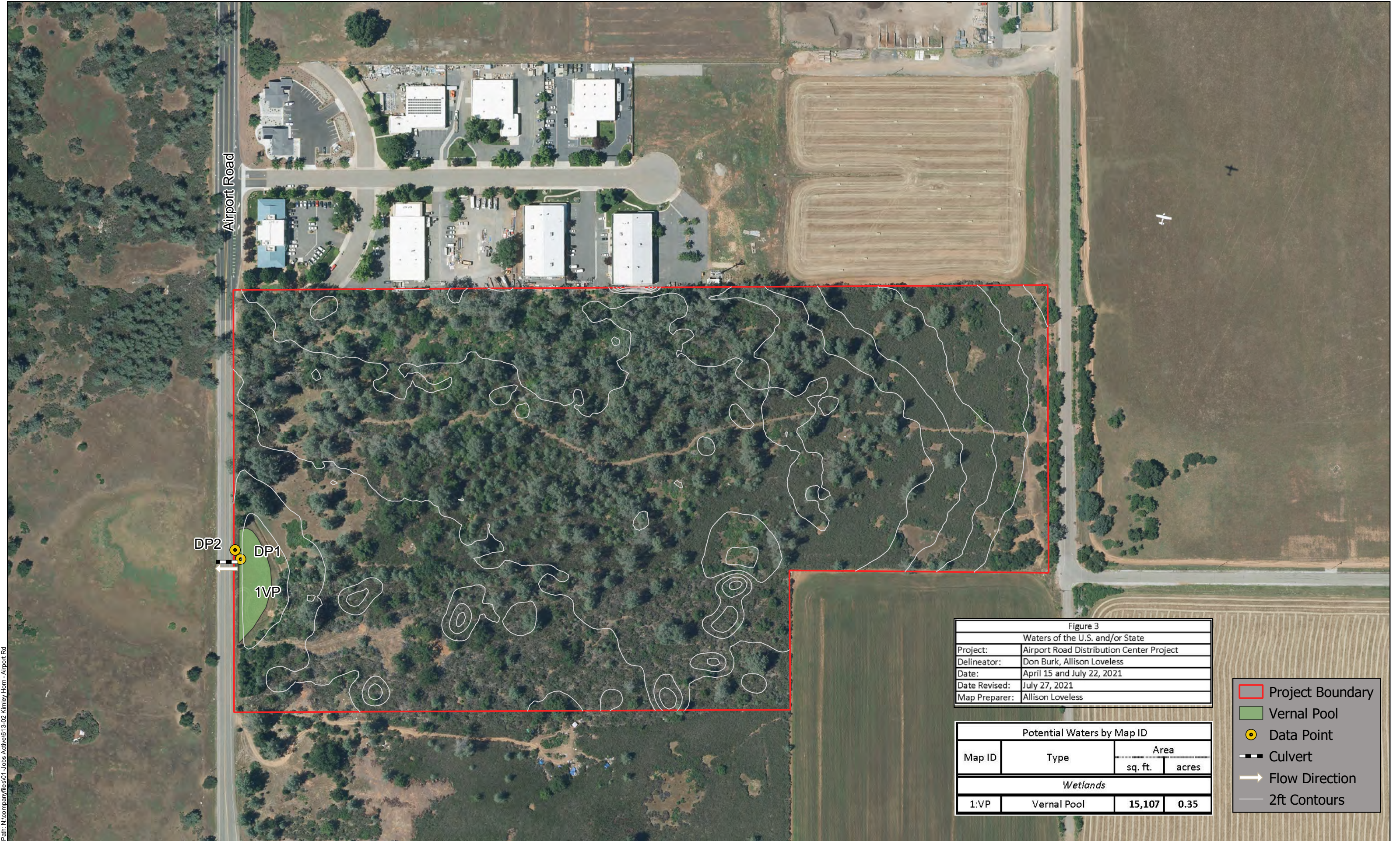
All depictions are approximate. Not a survey product.

10.19.21



0 150 300 Feet

Figure 2
Project Soils



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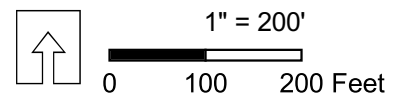


Figure 3
Aquatic Resources Delineation Results - Development Site

Feature and boundary locations depicted are approximate only.
This is not a survey product.

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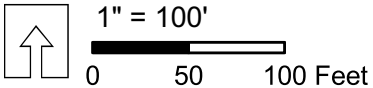


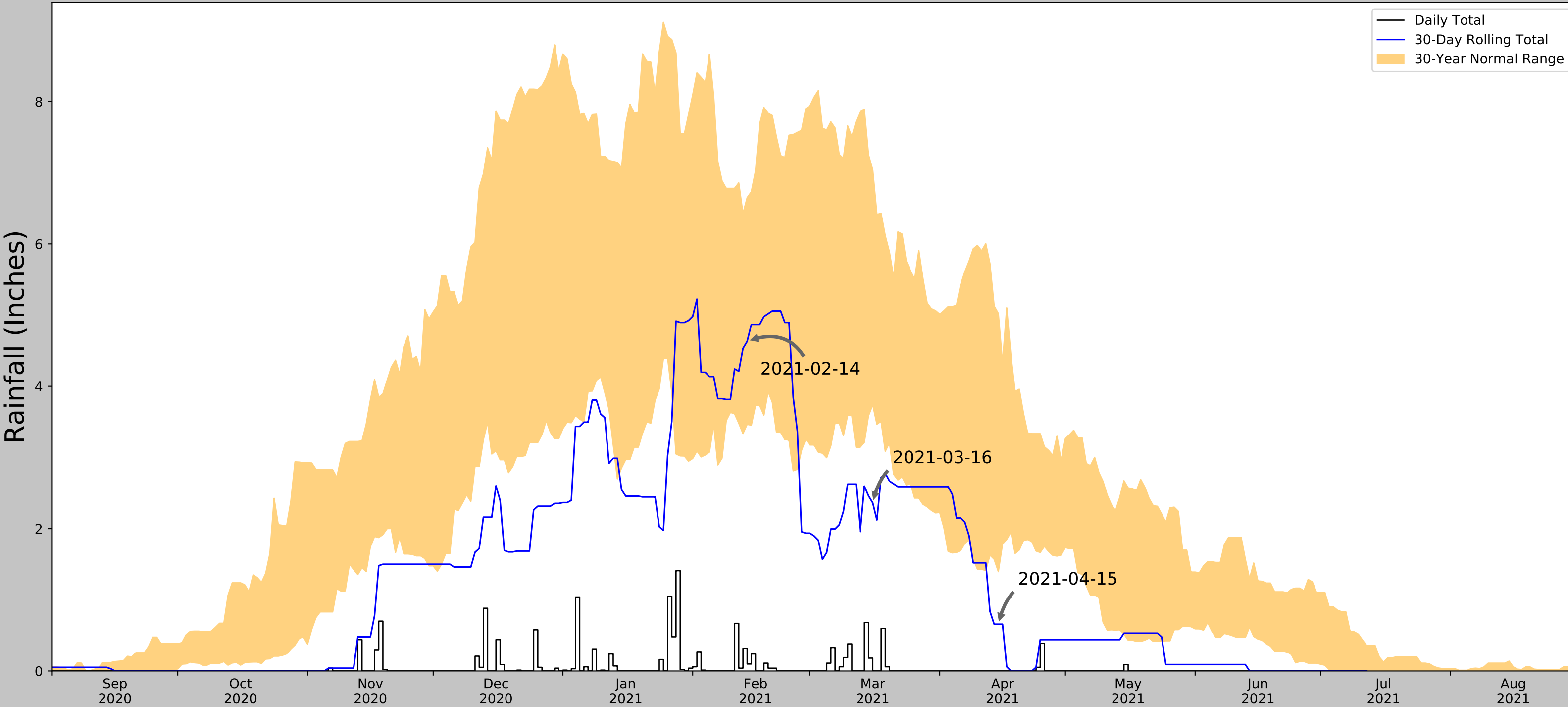
Figure 4
Aquatic Resources Delineation Results - Sewer Line Project Extension

Features and boundaries depicted are approximate only. 10.20.21
This is not a survey product.

APPENDIX B

Antecedent Precipitation Tool Results

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



Coordinates	40.5277203, -122.3014798
Observation Date	2021-04-15
Elevation (ft)	511.64
Drought Index (PDSI)	Extreme drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-04-15	1.395669	5.023622	0.65748	Dry	1	3	3
2021-03-16	3.740945	7.039764	2.362205	Dry	1	2	2
2021-02-14	3.465354	6.649607	4.629921	Normal	2	1	2
Result							Drier than Normal - 7

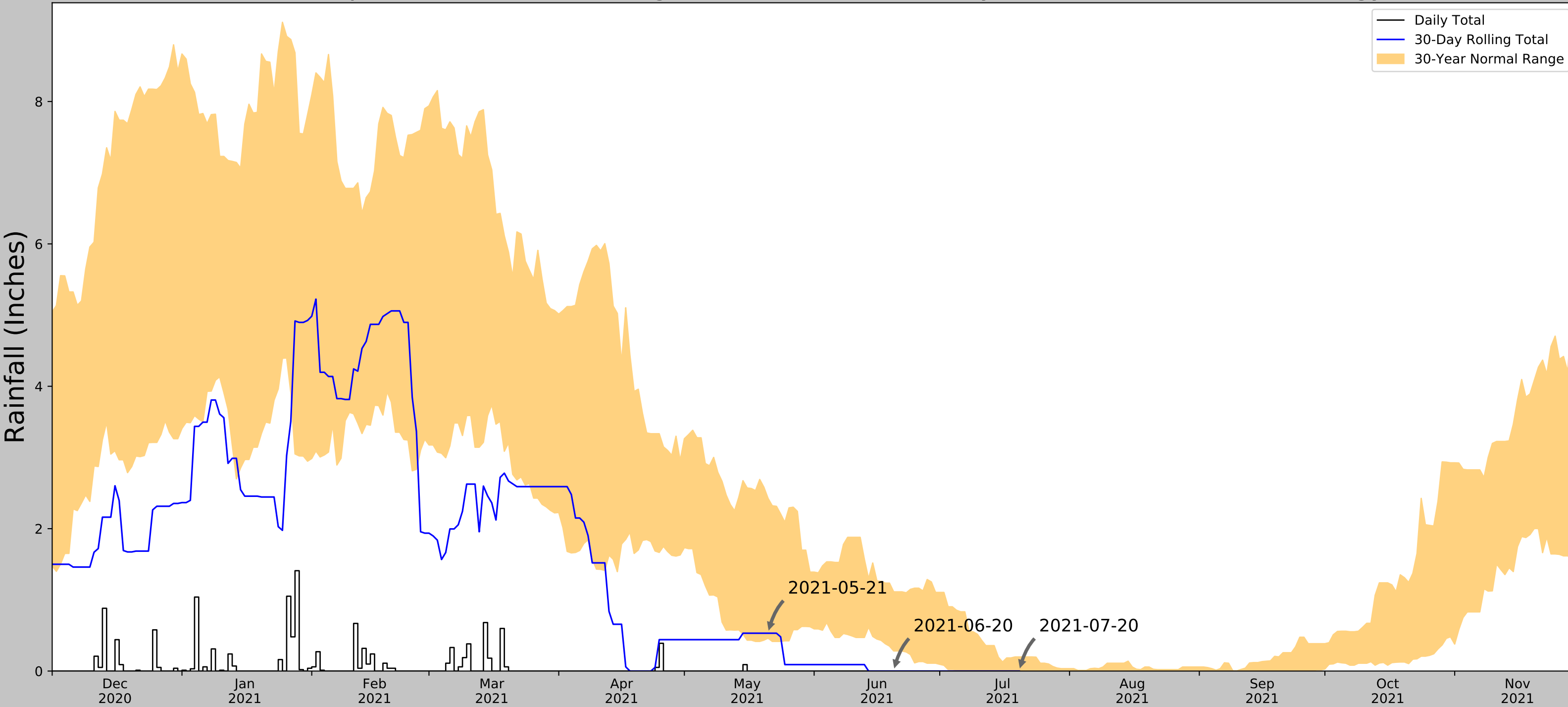


Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

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

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
REDDING MUNI AP	40.5175, -122.2986	497.047	0.722	14.593	0.336	11353	90

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



Coordinates	40.5277203, -122.3014798
Observation Date	2021-07-20
Elevation (ft)	511.64
Drought Index (PDSI)	Extreme drought (2021-06)
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-07-20	0.0	0.198425	0.0	Normal	2	3	6
2021-06-20	0.282283	1.112598	0.0	Dry	1	2	2
2021-05-21	0.462992	2.425197	0.531496	Normal	2	1	2
Result							Normal Conditions - 10




Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

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

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
REDDING MUNI AP	40.5175, -122.2986	497.047	0.722	14.593	0.336	11353	89
REDDING 3.7 S	40.5188, -122.3685	445.866	3.574	65.774	1.843	0	1

APPENDIX C

Wetland Determination Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Road Distribution Center City/County: Redding/Shasta Sampling Date: 04/15/2021
 Applicant/Owner: 42 Real Estate LLC State: CA Sampling Point: DP1
 Investigator(s): D.Burk, A.Loveless Section, Township, Range: S22, T31N, R4W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): C Lat: 40.52755893 Long: -122.30263130 Datum: WGS84
 Soil Map Unit Name: Red Bluff loam, 0 to 3 percent slopes NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil _____, or Hydrology X significantly disturbed? Y Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: APT results indicate a drier than average year. A wetland was delineated and verified onsite in 2004. The site has been significantly disturbed since 2004. We are therefore suggesting that this site is currently a wetland containing disturbed vegetation and hydrology.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>28</u> x 3 = <u>84</u> FACU species <u>4</u> x 4 = <u>16</u> UPL species <u>78</u> x 5 = <u>390</u> Column Totals: <u>110</u> (A) <u>490</u> (B) Prevalence Index = B/A = <u>4.45</u>
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <u>N</u> Dominance Test is >50% <u>N</u> Prevalence Index is ≤3.0 ¹ <u>N</u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>Y</u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Anthoxanthum aristatum</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Festuca perennis</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
3. <u>Hordeum marinum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	
4. <u>Erodium botrys</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	
5. <u>Lepidium nitidum</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	
6. <u>Lathyrus angulatus</u>	<u>50</u>	<u>Y</u>	<u>UPL</u>	
7. <u>Leontodon saxatilis</u>	<u>3</u>	<u>N</u>	<u>FACU</u>	
8. <u>Castilleja attenuata</u>	<u>1</u>	<u>N</u>	<u>UPL</u>	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				
Remarks: Vegetation is problematic due to the climatically drier than average condition onsite at the time of the survey.				

SOIL

Sampling Point: DP1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10 YR 3/4	100					loam	
2-6	10 YR 3/3	60	10 YR 2/2	20	C	M	loam	
			10 YR 5/6	20	C	M	loam	
6-12	10 YR 4.5/6	70	10 YR 2/2	30	C	M	loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (**LRR C**)
☐ 1 cm Muck (A9) (**LRR D**)
☐ 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)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☒ Redox Depressions (F8)
☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (**LRR C**)
☐ 2 cm Muck (A10) (**LRR B**)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):Type: N/A

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Redox depressions: the soil meets the criteria for Redox Depression by containing 20% distinct or prominent redox concentrations in a layer that is four inches thick and occurs within the upper six inches of soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1) (**Nonriverine**)
☐ Sediment Deposits (B2) (**Nonriverine**)
☐ Drift Deposits (B3) (**Nonriverine**)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)

☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ 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)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) (**Riverine**)
☐ Sediment Deposits (B2) (**Riverine**)
☐ Drift Deposits (B3) (**Riverine**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:Surface Water Present? Yes _____ No X Depth (inches): _____Water Table Present? Yes _____ No X Depth (inches): _____Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No indicators of hydrology are present, however, a verified delineation from 2004 shows the presence of a vernal pool feature. Due to the previous study combined with the current drought conditions and high levels of disturbance onsite, we suggest **disturbed hydrology**.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Road Distribution Center City/County: Redding/Shasta Sampling Date: 04/15/2021
 Applicant/Owner: 42 Real Estate LLC State: CA Sampling Point: DP2
 Investigator(s): D.Burk, A.Loveless Section, Township, Range: S22, T31N, R4W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10
 Subregion (LRR): C Lat: 40.52761896 Long: -122.30267995 Datum: WGS84
 Soil Map Unit Name: Red Bluff loam, 0 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: APT results indicate a drier than average year.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.33</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>90</u> x 5 = <u>450</u> Column Totals: <u>125</u> (A) <u>565</u> (B) Prevalence Index = B/A = <u>4.52</u>
Sapling/Shrub Stratum (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>N</u> Dominance Test is >50% <u>N</u> Prevalence Index is ≤3.0 ¹ <u>N</u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>N</u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)	_____	_____	_____	
1. <u>Festuca perennis</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Centaurea solstitialis</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
3. <u>Centromadia fitchii</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Erodium botrys</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
5. <u>Vicia villosa</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>	% Cover of Biotic Crust <u>0</u>			
Remarks:				

SOIL

Sampling Point: DP2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10 YR 3/4	100					loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ 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)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No indicators of hydrology are present.

APPENDIX D

Representative Photos



1VP: Vernal Pool. View to south, April 15, 2021



Upland trench located immediately east of 1VP, which blocks flow to the feature, July 21, 2021



Upland trench located along the eastern edge of the project site, July 23, 2021



Upland trench located within the project site, July 23, 2021

APPENDIX E

Onsite Wetland by Cowardin Type

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude
1VP	CALIFORNIA	PEM	DEPRESS	Area	15,107	SQ_FT	B1WETNONADJ	40.52755893	-122.30263130