

APPENDIX 3.4

Compensatory Mitigation Plan

Amoruso Project Impacts and Mitigation

Amoruso Ranch Project

Placer County, California

U.S. Army Corps of Engineers SPK-2004-00888

Prepared for:

Brookfield Sunset, LLC

July 20, 2018



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LIST OF ACRONYMS AND ABBREVIATIONS

ARSP	Amoruso Ranch Specific Plan
City	City of Roseville
CWA	Clean Water Act
EIR	Environmental Impact Report
ESA	Endangered Species Act
2015 Guidelines	2015 Survey Guidelines for the Listed Large Branchiopods
HUC	Hydrologic Unit Code
MDBM	Mount Diablo Base and Meridian
Mitigation Properties	240-acre Mourier East, 265-acre Mourier West, and the 139-acre Skover properties
Mourier West	Mourier West mitigation property
msl	Mean sea level
PCCP	Placer County Conservation Plan
PJD	Preliminary jurisdictional determination
Proposal	Refined Wetland Mitigation Proposal
Regulatory Agencies	U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the U.S. Environmental Protection Agency
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VELB	Valley elderberry longhorn beetle

1.0 INTRODUCTION

A Refined Wetland Mitigation Proposal (Proposal) has been prepared for the Amoruso Ranch Project (Project). This Proposal was prepared to provide information to the U.S. Army Corps of Engineers (USACE), the U.S. Fish and Wildlife Service (USFWS), and the U.S. Environmental Protection Agency (USEPA) (collectively, Regulatory Agencies) on the mitigation proposed to offset impacts anticipated during implementation of the Project. This Proposal is a refinement of the original Amended Preliminary Wetland Mitigation Proposal submitted in October 2014 (ECORP 2014).

As the environmental permitting process for this Project moves forward with the Regulatory Agencies, final mitigation plans including specific compensatory mitigation design and a long-term operations and management plan for all proposed mitigation preserves will be developed as required to fulfill permit mitigation requirements.

1.1 Proposal Objectives

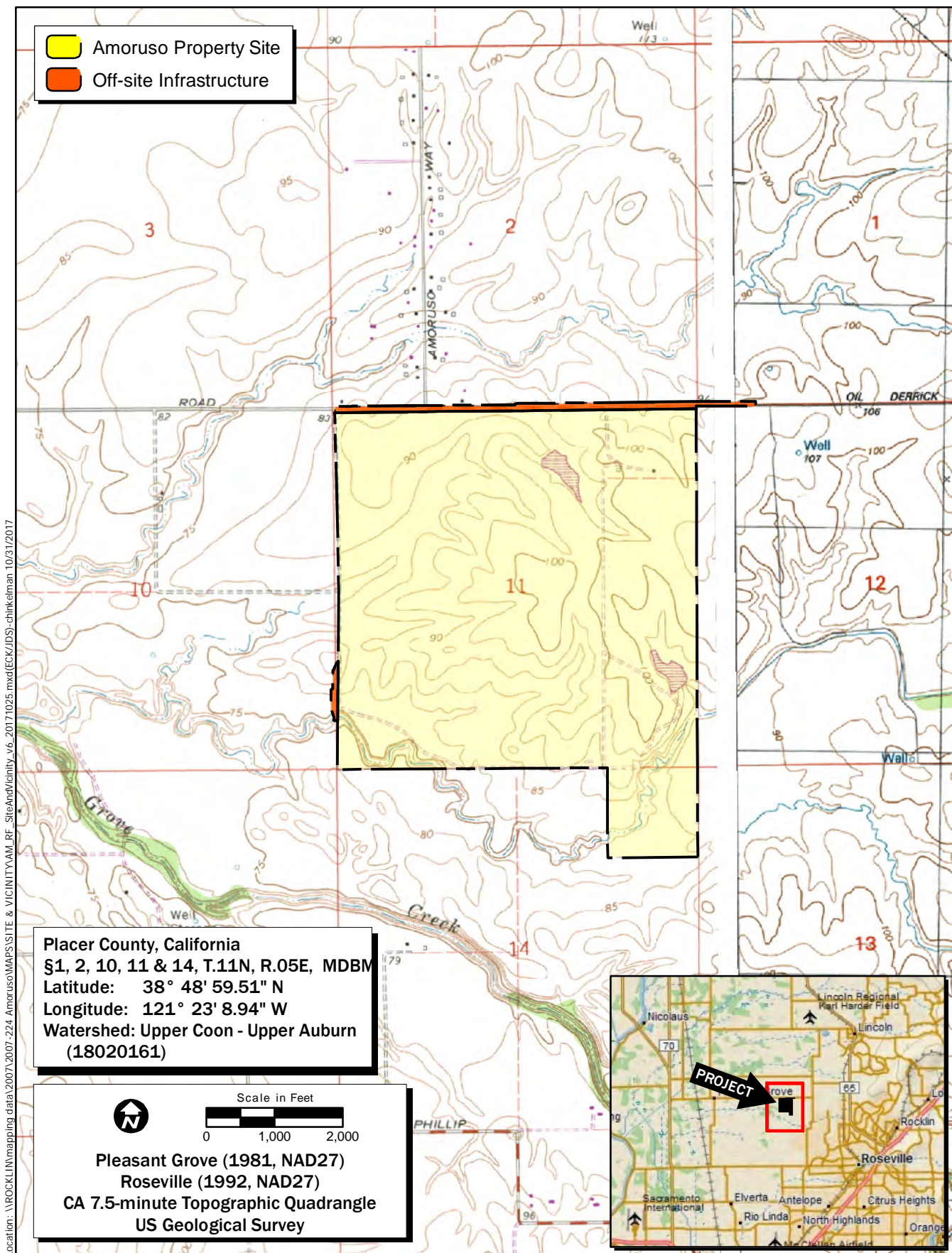
The overall objective of this Proposal is to describe how the Applicant intends to offset Project development impacts by preserving and restoring Waters of the U.S., including habitat to federally protected vernal pool fairy shrimp species, using a habitat-level approach that is compatible with the future Placer County Conservation Plan (PCCP).

This Proposal includes a brief description of the proposed Project, discussion of applicable regulations and regional planning efforts that affect the Project, proposed impacts using the PCCP framework, the proposed PCCP-compatible mitigation strategy, details on project impacts and proposed mitigation, and the implementation plan for completing compensatory mitigation.

This Proposal was developed consistent with the PCCP strategy. In ensuring compliance with the PCCP framework, this mitigation strategy should satisfy compensatory mitigation requirements for Clean Water Act (CWA) 404 permitting as well as provide the basis for USACE to request a Biological Opinion for incidental take authorization under Section 7 of the Endangered Species Act (ESA) from the USFWS.

1.2 Proposed Project

The 646-acre Project occurs within a portion of the approximately 674-acre Amoruso Ranch property. The Project is located south of West Sunset Boulevard, west of Fiddymont Road, east of Pettigrew Road, and north of Pleasant Grove Creek (*Figure 1. Amoruso Ranch Property and Offsite Improvements Location and Vicinity*). The sites correspond to portions of Sections 1, 2, 10, 11, and 14 of Township 11 North and Range 5 East (Mount Diablo Base and Meridian [MDBM]) of the "Pleasant Grove, California" and "Roseville, California" 7.5-minute quadrangles (U.S. Geological Survey [USGS] 1981, 1992). The approximate center of the Amoruso Ranch Project is located at 38° 48' 59.51" North and 121° 23' 8.94" West within the Upper Coon-Upper Auburn watershed (#18020161, Natural Resource Conservation Service, USGS, USEPA 2016).



Map Date: 10/31/2017
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Figure 1. Amoruso Ranch Property and Offsite Improvements Location and Vicinity

The Project also includes the adjacent ±13-acre West Sunset Boulevard right-of-way, and an ±2-acre portion of the Al Johnson Wildlife Area property (Offsite Drainage Area), but does not include the ±49-acre future Placer Parkway regional transportation improvement project. Figure 2. Amoruso Ranch Project Detail illustrates the Project components. The alignment of the future Placer Parkway Project was determined by the Federal Highway Administration in May 2010 and transects the northern half of the Amoruso Ranch property. While the Placer Parkway project must be accommodated by the Project, it is a standalone project and will be permitted separately by the responsible local government agency. Potential direct wetland impacts resulting from the construction of the future Placer Parkway project are not included in this Proposal as they are a covered activity already anticipated under the PCCP and are the responsibility of the local government agency.

The Project includes ±98 acres of onsite Open Space Preserve, which will preserve a total of 13.648 acres of Waters of the U.S., and the additional avoidance of 2.194 acres of Waters of the U.S. that lie within the ±9 acres of avoided General Open Space (see Figure 2). The design of the onsite Open Space Preserve provides connectivity to other offsite regional open space areas, protects the areas of the Amoruso Ranch property that the Regulatory Agencies believe contain the most prominent natural resources, provides upland connectivity between the southeast and southwest portions of the Preserve, and includes a sizable portion of a seasonal wetland swale which was originally contemplated for direct impact. Additionally, the Open Space Preserve is situated so that it is contiguous with other open space areas and abuts portions of the Creekview Specific Plan's Open Space Preserve to the south, portions of the West Roseville Specific Plan's Open Space Preserve to the southeast, and the City of Roseville's Al Johnson Wildlife Area property to the west (Figure 3. Regional Conservation Areas).

The Project is proposed for development in three phases (Figure 4. Amoruso Ranch Phased Impacts to Wetted Acreage). Impacts and corresponding mitigation associated with Waters of the U.S. and potential habitat for PCCP-covered species are proposed to be phased to correspond to the Project's development phasing plan.

1.3 Project Background

The Project is part of the 695-acre Amoruso Ranch Specific Plan (ARSP). The ARSP was adopted by the Roseville City Council and annexed into the City of Roseville (City) in June 2016.

A final Environmental Impact Report (EIR) was approved by the City on June 15, 2016 (AES 2016). Along with the EIR, the City approved the development agreement and specific plan for the Project.

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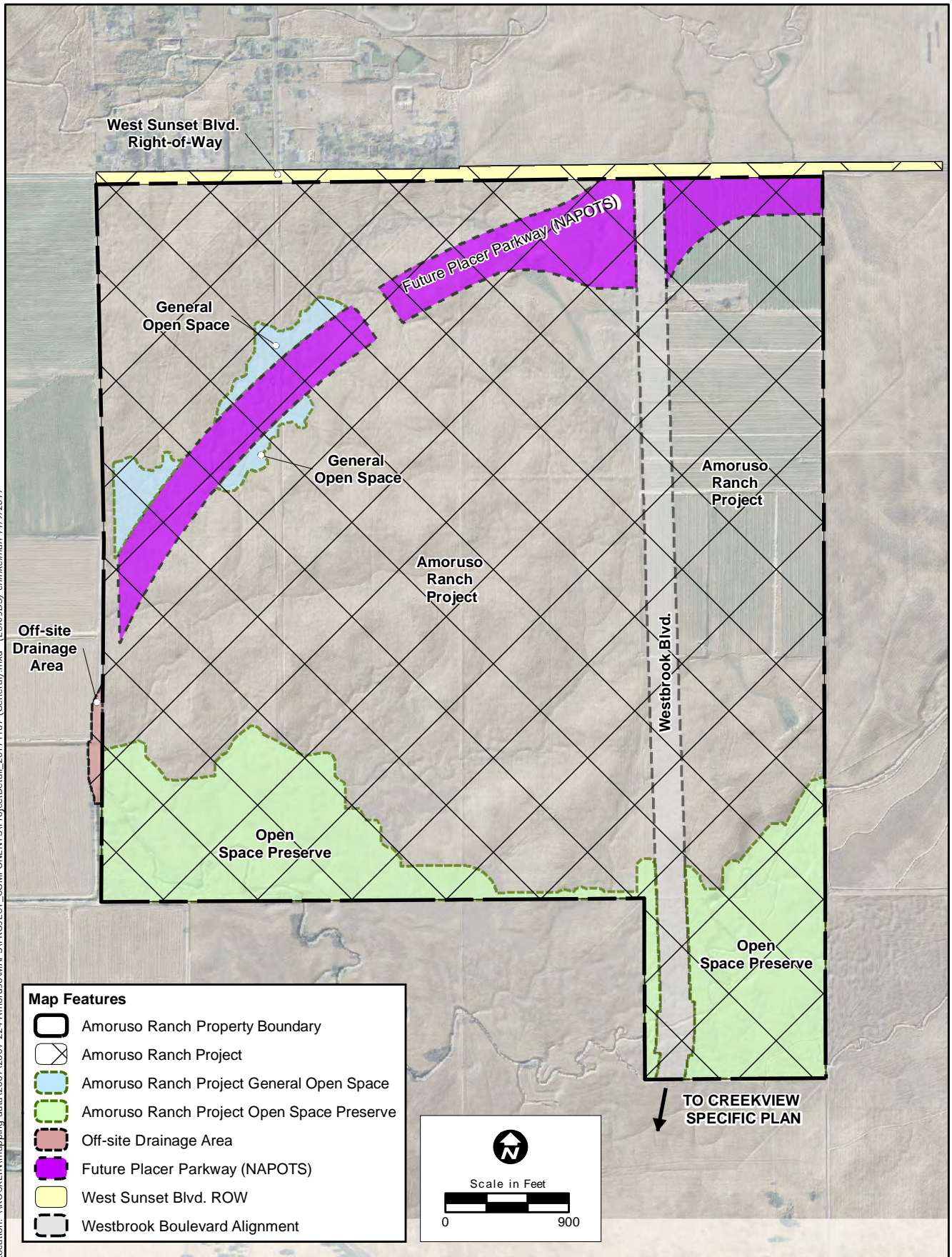
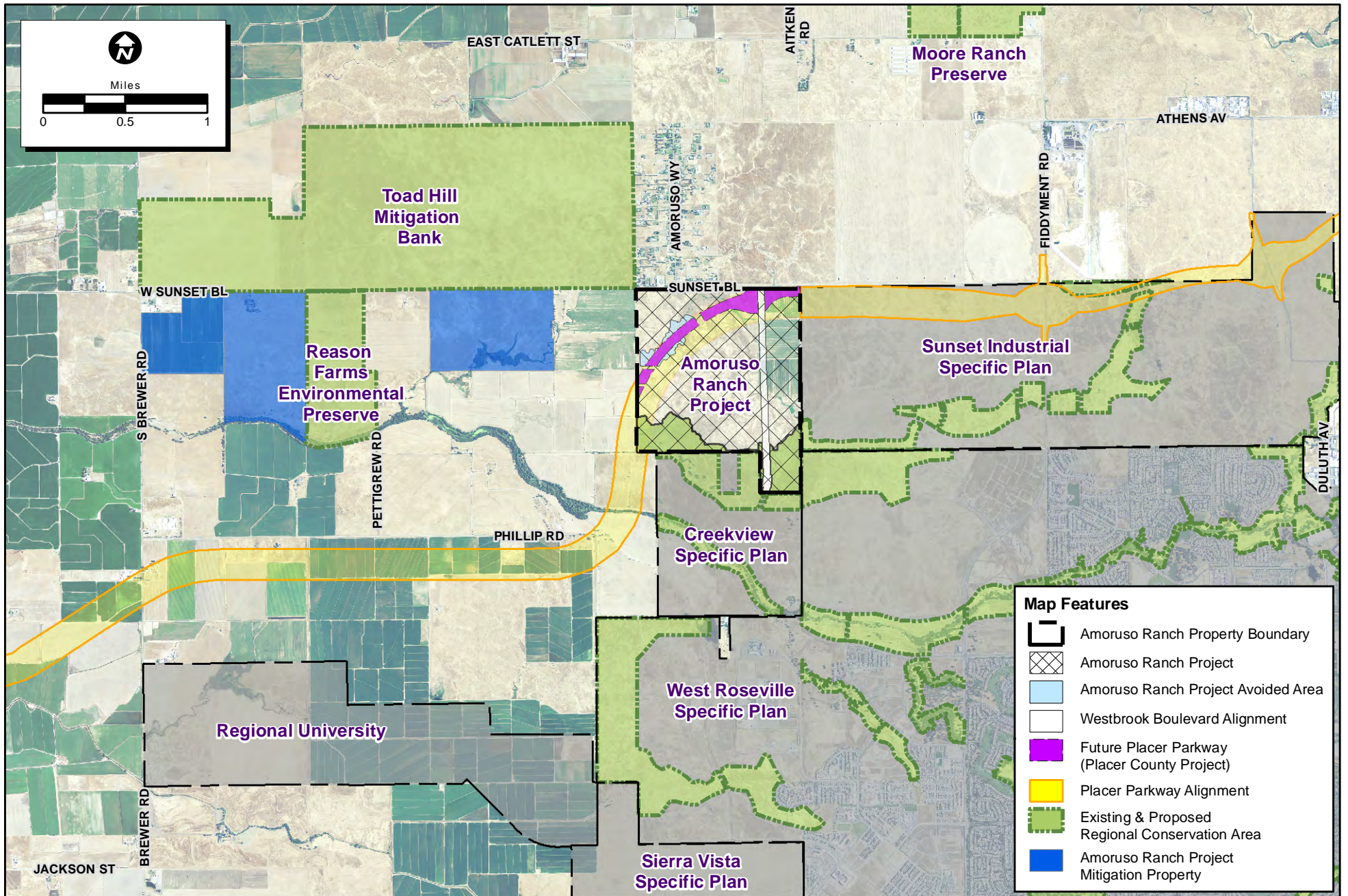


Figure 2. Amoruso Ranch Project Detail



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Figure 3. Regional Conservation Areas

1.4 Regulatory and Regional Planning Context

The PCCP is being prepared by Placer County, the City of Lincoln, and the Placer County Water Agency to address the impacts of their projects and activities on threatened and endangered species in western Placer County for the next 50 years. The PCCP is both a habitat conservation plan to comply with federal ESA and a natural community conservation plan to comply with the state Natural Community Conservation Planning Act. The PCCP has been developed in partnership with the USFWS, USACE, California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board, and the Placer County Authority to apply a regional context to the conservation of natural resources by preserving large and connected areas of high-value aquatic habitat while concentrating the expected growth of Placer County in areas identified for future development.

The Project is identified as a Participating Special Entity in the draft PCCP, and is a Covered Activity within Placer County's land use authority. This means the impacts of the Project have been evaluated as part of the potential future growth and are included as part of the potential take covered in the permits. The Project is therefore eligible for take authorization under the permits and could receive take authorization through the County. Further, the proposed mitigation sites are within the reserve area identified in the PCCP and are central to the PCCP's conservation strategy. As a Covered Activity, it is determined that the Project does not conflict with the draft PCCP's conservation strategy or the ability to meet the goals and objectives of the draft PCCP. Consistent with the Project's status as a Covered Activity, this Proposal is designed to be compatible with the future PCCP mitigation goals and strategies.

Compensatory mitigation is required for impacts to Waters of the U.S. pursuant to Section 404 of the CWA. Such compensatory mitigation is often considered during the Section 7 Consultation process under Section 7 of the ESA. The PCCP guidelines for mitigation include additional requirements for PCCP-covered species habitat. The following Proposal provides a description of the proposed onsite Open Space Preserve, mitigation ratios, and proposed mitigation based on a PCCP-compatible approach to compensatory mitigation.

1.5 PCCP Framework for Impacts

This Proposal uses the PCCP model to calculate impacts associated with Project development. Impacts are analyzed for both Waters of the U.S. and PCCP-covered species' habitats in the form of wetted acreage and land cover impacts. As per the PCCP, Waters of the U.S. are categorized into PCCP aquatic resource types that are associated with covered species habitat. Impacts to aquatic resource types are calculated on a wetted acreage basis. The aquatic types are vernal pool types, riverine/riparian, and aquatic/wetland. Vernal pool types include the wetted acreage of vernal pools, seasonal wetlands, and seasonal wetland swales. Riverine/riparian includes ephemeral, intermittent, and perennial streams/drainages. Aquatic/wetland complex includes marshes and ponds. Also per the PCCP, land proposed for conversion from one land cover type to another is considered a land cover impact. Each land cover type is associated with covered species habitat and calculated on a per-acre basis.

The PCCP has developed a specific list of covered species that include both federal and State-listed species as well as non-listed species. The intention of the conservation plan is to preserve and restore

habitat associated with each of these covered species. The covered species of interest within the Project are vernal pool fairy shrimp (*Branchinecta lynchi*), valley elderberry longhorn beetle (VELB, *Desmocerus californicus dimorphus*; federally threatened), western burrowing owl (*Athene cunicularia*, State Species of Special Concern), and Swainson's hawk (*Buteo swainsoni*, State threatened).

The PCCP has designated modeled habitat for PCCP-covered species that correspond to the land cover types. The vernal pool complex land cover consists of wetland and upland acreage and is considered modeled habitat for listed vernal pool branchiopods. Grassland, which includes pasture land, consists largely of uplands and is modeled habitat for Swainson's hawk, northwestern pond turtle (*Actinemys marmorata marmorata*), western burrowing owl, and tricolored blackbird (*Agelaius tricolor*).

Aquatic/wetland complex consists of marsh lands and ponds, and is modeled habitat for northwestern pond turtle, tricolored blackbird, and California black rail (*Laterallus jamaicensis coturniculus*). Rural residential land cover is not modeled habitat for any species except humans.

1.6 PCCP Framework for Mitigation

This Proposal uses the mitigation framework developed for the PCCP to compensate for impacts to Waters of the U.S. and PCCP-covered species/habitats. The PCCP addresses environmental impacts to both Waters of the U.S. and sensitive species at the regional scale. Mitigation for wetland features will be covered under the Placer County Aquatic Resources Program (CARP), and mitigation ratios are determined by the CARP. Similarly, the PCCP addresses potential impacts to sensitive species through the preservation of habitat at the regional scale. A project's impacts are measured as the amount of landcover, a proxy for species' habitat, that will be converted to development. The land cover conversion is then used to calculate the mitigation required for the project. Land cover mitigation occurs in the form of preservation of appropriate land cover in perpetuity.

The mitigation values proposed herein were calculated using the current guidance under the PCCP regarding preservation and restoration mitigation for direct and indirect impacts to wetted acreage (Placer County 2011). Direct impacts to vernal pool type features warrant both preservation and restoration mitigation. Indirect impacts to vernal pool type features were assessed for preservation mitigation only. Direct impacts to other wetted features were assessed for restoration mitigation only. Mitigation for land cover conversion/impacts have fixed preservation and restoration ratios based on ecological value of the land cover type.

This Proposal uses the preservation mitigation ratio of 1.36:1 for impacts to vernal pool type wetted features and restoration ratio of 1.5:1 for impacts to all types of wetted features. Preservation mitigation ratios can vary for impacts to wetted acreage of federally listed large branchiopod habitat depending on whether branchiopod occupancy is established, known as the occupancy standard. Both the Project area and the proposed offsite mitigation sites have been surveyed for listed branchiopods and established occupancy within all the sites, thereby meeting the occupancy standard established by the PCCP.

The following sections will present the details of the proposed PCCP-compliant mitigation strategy to address impacts to Waters of the U.S. and land cover types. Prior to permit issuance, a detailed mitigation and monitoring plan will be submitted to USACE, USFWS, and California Department of Fish and Wildlife

for review and approval. Additionally, a long-term management plan and financial mechanism details for the open space preserves will be submitted for approval by USACE and USFWS.

2.0 REGULATED RESOURCES WITHIN THE PROJECT

2.1 Waters of the U.S.

There are 39.186 acres of Waters of the U.S. within the Amoruso Ranch property, including within the adjacent West Sunset Boulevard right-of-way and Offsite Drainage Area. These Waters of the U.S. include vernal pools, seasonal wetlands, seasonal wetland swales, farmed wetlands, marshes, ephemeral drainages, intermittent drainages, a seasonal creek, and a manmade stock pond. Direct wetland impacts discussed in this Proposal would be the result of the development footprint of the Project. Indirect wetland impacts were assessed based on a microwatershed approach that is discussed in Section 3.1.

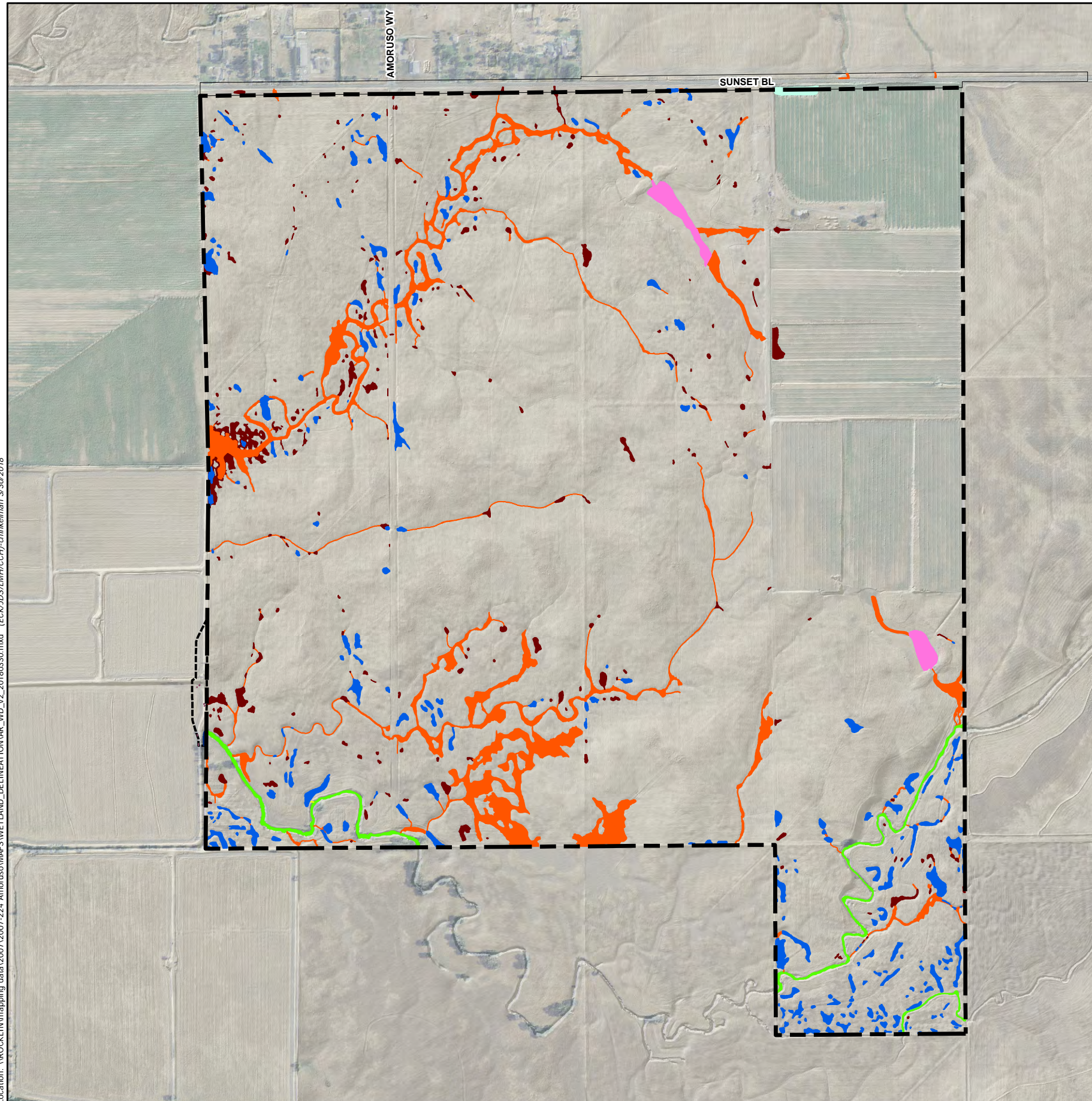
A preliminary jurisdictional determination (PJD) was issued for the Amoruso Ranch property and the adjacent West Sunset Boulevard right-of-way by USACE on March 30, 2011 (*Figure 5. Amoruso Ranch Property Wetland Delineation*). Additionally, a PJD was issued by USACE on June 13, 2017 for the Al Johnson Wildlife Area improvements area, which includes the Offsite Drainage Improvements. Jurisdictional Waters of the U.S. present within this area include a total of 0.066 acre of potential Waters of the U.S., consisting of 0.003 acre of farmed wetland, and 0.037 acre of seasonal creek (see Figure 5.). Table 1 includes the acreage of each type of Waters of the U.S.

Type	Amoruso Ranch Property	West Sunset Blvd Right-Of-Way	Offsite Drainage Improvements ¹	Total
Wetlands				
Vernal Pool	9.758	0.055	--	9.813
Seasonal Wetland	4.767	0.060	--	4.827
Seasonal Wetland Swale	19.720	0.051	--	19.771
Marsh	1.822	--	--	1.822
Farmed Wetland	--	--	0.003	0.003
Other Waters				
Intermittent Drainage	1.920	--	--	1.920
Ephemeral Drainage	0.002	--	--	0.002
Seasonal Creek	--	--	0.037	0.037
Stock Pond	0.313	0.051	--	0.364
Total	38.303	0.217	0.040	38.560

*Note: Wetland areas are measured on the NAD83 datum in State Plane coordinates. All measurements are in the defined units for this coordinate system (feet) and all impact calculations and summations of wetland areas are calculated in defined units for maximum precision and accuracy. Results are converted to acreages for ease of use, however this conversion may lead to minor rounding errors in the reporting of acreage summaries.

¹ The Offsite Drainage Improvements area is a reduced area of the Al Johnson Wildlife Area and contains 0.026 acre less wetlands than the delineation.

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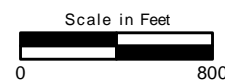
**Figure 5. Amoruso Ranch Property
Wetland Delineation**

Map Features

- Amoruso Ranch Property Boundary
 - Off-site Drainage Area
 - Off-site ROW
 - Marsh
 - Seasonal Creek/Stream
 - Seasonal Wetland
 - Seasonal Wetland Swale
 - Stock Pond
 - Vernal Pool
- Wetland Type**
- Ephemeral Drainage
 - Intermittent Drainage
 - Farmed Wetland

Waters of the U.S.	Amoruso Ranch Property	Off-site Drainage Area	West Sunset Blvd	Total (acres)
Wetlands				
Vernal Pool	9.758	0.000	0.055	9.813
Seasonal Wetland	4.767	0.000	0.060	4.827
Seasonal Wetland Swale	19.720	0.000	0.051	19.771
Marsh	1.822	0.000	0.000	1.822
Farmed Wetland	0.000	0.003	0.000	0.003
Subtotal (acres)	36.068	0.003	0.166	36.237
Other Waters				
Intermittent Drainage	1.920	0.000	0.000	1.920
Ephemeral Drainage	0.002	0.000	0.000	0.002
Seasonal Creek/Stream	0.000	0.037	0.000	0.037
Stock Pond	0.313	0.000	0.051	0.364
Subtotal (acres)	2.235	0.037	0.051	2.323
Total (acres)	38.303	0.040	0.217	38.560

Notes:
 -Impact calculations are approximate and are based on the best available information to date.
 -The acreage value for each feature has been rounded to the nearest 1/1000 decimal.
 Summation of these values may not equal the total acreage reported.



2.2 Federal and PCCP Covered Species

Thirteen federally listed endangered, threatened, and candidate plant and animal species were identified as having some potential to occur within the Project area or immediate vicinity. The following summarizes the Applicant's ESA Section 7 biological effects determination based on information provided in the Biological Assessment (ECORP 2014a).

Of the 13 federally listed endangered, threatened, and candidate plant and animal species with potential to occur within the Project area, the proposed Project may have an adverse effect on one species: vernal pool fairy shrimp, federally listed threatened.

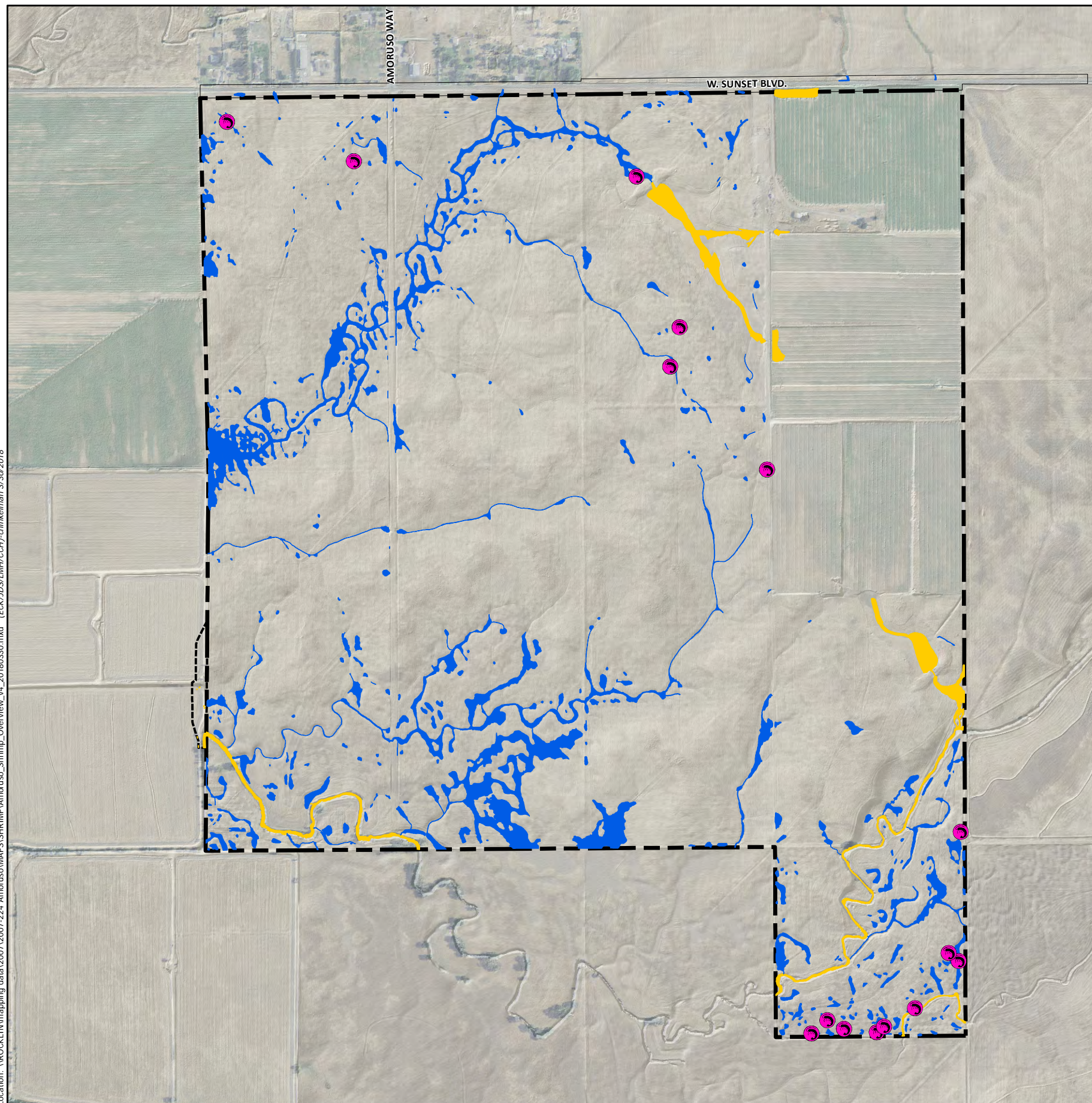
Wet season surveys for federally listed branchiopods were conducted in compliance with the April 19, 1996 Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the ESA for the Listed Vernal Pool Branchiopods (USFWS 1996) at the Amoruso Ranch property by ECORP during the 2007-2008 and 2008-2009 wet seasons (ECORP 2008a, 2009). Guideline-level wet season surveys for federally listed branchiopods were conducted within the Al Johnson Wildlife Area (Offsite Drainage Improvements) area during the 2013-2014 wet season and 2004 dry season (ECORP 2014b). A total of 15 wetlands were documented to support the federally threatened vernal pool fairy shrimp at the Amoruso Ranch property (*Figure 6. Amoruso Ranch Vernal Pool Fairy Shrimp Locations*). Therefore, the vernal pools, seasonal wetlands, and seasonal wetland swales within or adjacent to the Project have potential to support the federally listed vernal pool fairy shrimp.

Protocol-level surveys for the federally threatened valley elderberry longhorn beetle (VELB) were conducted within the Amoruso Ranch Property and adjacent Offsite Drainage Improvements area by ECORP in 2011 and 2014 (ECORP 2013, 2014c). During these surveys, one elderberry shrub (*Sambucus nigra* ssp. *caerulea*), the exclusive host plant for the federally-threatened VELB, was located within the Amoruso Ranch Property. However, the shrub is located within the future Placer Parkway alignment (not within the proposed Amoruso Ranch Project). Burrowing owls have been found within the Amoruso Ranch Property, presumably nesting (ECORP 2011b), but protocol-level surveys have not been conducted. Swainson's hawk has been observed foraging but not nesting within the Amoruso Ranch Property (ECORP 2011b). There are large oak trees present within the future onsite open space preserve that could provide nesting habitat and there are known nests within one mile of the Project.

2.3 PCCP Land Cover







The Project contains four land cover types consisting of vernal pool complex, grassland (i.e., pasture), aquatic/wetland complex, and rural residential.

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**Figure 6. Amoruso Ranch
Vernal Pool Fairy Shrimp Locations**

Map Features

-  Amoruso Ranch Property Boundary
-  Off-site Drainage Area
-  Off-site ROW
-  Vernal Pool Fairy Shrimp Occurrence
-  Vernal Pool Fairy Shrimp Occurrence
-  Non-Vernal Pool Fairy Shrimp Habitat



3.0 IMPACT ANALYSIS

3.1 Proposed Impact to Waters of the U.S.

Project development will result in 18.704 acres of direct impacts and 3.378 acres of indirect impacts to Waters of the U.S.

A summary of total proposed impacts to wetted acres by Waters of the U.S. and PCCP aquatic resource type is provided in Table 2. Potential indirect impacts are based on a microwatershed analysis of all vernal pool habitat features within 50 feet of a preserve and/or open space boundary. If the depressional vernal pool type feature (vernal pool and seasonal wetland) is within a microwatershed that would be impacted by the development footprint, the feature was considered indirectly impacted. Linear vernal pool type features (seasonal wetland swales) were clipped at the 50-foot boundary and entire depressional features were counted as indirect if within the 50-foot boundary. No impacts were accounted for in this impact analysis associated with future covered activity development such as the future Placer Parkway and adjacent Placer Ranch development projects.

Table 2. Waters of the U.S. Impact Acreages*						
Waters of the U.S. Feature Type	PCCP Aquatic Resource Type	Direct Impact	Indirect Impact	Avoided/ Preserved	NAPOTS	Total ¹
Vernal Pool Shrimp Habitat						
Vernal Pool	Vernal Pool Habitat	3.011	1.601	4.159	1.043	9.813
Seasonal Wetland	Vernal Pool Habitat	2.906	0.651	0.712	0.559	4.827
Seasonal Wetland Swale	Vernal Pool Habitat	10.476	1.126	5.208	2.961	19.771
Sub Total:		<i>16.393</i>	<i>3.378</i>	<i>10.078</i>	<i>4.562</i>	<i>34.411</i>
Other Waters						
Farmed Wetland	Aquatic/Wetland	0.003	0	0	0	0.003
Marsh	Aquatic/Wetland	1.822	0	0	0	1.822
Ephemeral Drainage	Riverine/Riparian	0	0	0.002	0	0
Intermittent Drainage	Riverine/Riparian	0.084	0	1.836	0	1.920
Seasonal Creek	Riverine/Riparian	0.037	0	0	0	0.037
Stock Pond	Aquatic/Wetland	0.364	0	0	0	0.364
Sub Total:		<i>1.825</i>	<i>0</i>	<i>1.838</i>	<i>0</i>	<i>4.146</i>
Grand Total:		18.704	3.378	11.916	4.562	38.560

¹Includes Waters of the U.S. within the West Sunset Boulevard Right-of-way and the Offsite Drainage Improvements area. Does not include NAPOTS.

*Note: Wetland areas are measured on the NAD83 datum in State Plane coordinates. All measurements are in the defined units for this coordinate system (feet) and all impact calculations and summations of wetland areas are calculated in defined units for maximum precision and accuracy. Results are converted to acreages for ease of use, however this conversion may lead to minor rounding errors in the reporting of acreage summaries.

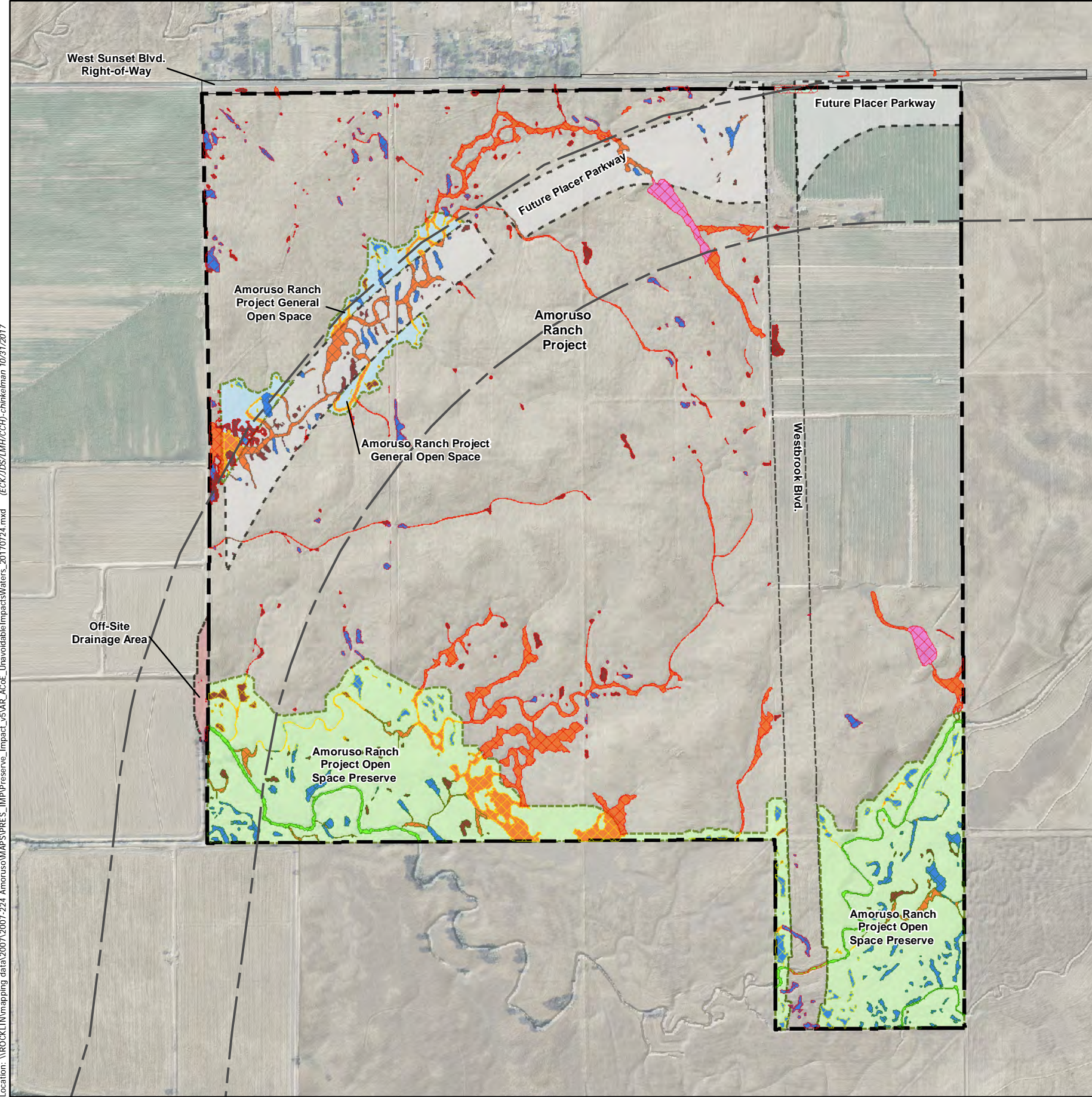


Figure 7. Proposed Project Impacts to Waters of the U.S.

Map Features

- Amoruso Ranch Property Boundary
 - Amoruso Ranch Project General Open Space
 - Amoruso Ranch Project Open Space Preserve
 - Off-site Drainage Area
 - Future Placer Parkway (NAPOTS)
 - Off-site ROW
 - Placer Parkway 1000' Corridor
- Wetland Type**
 - Ephemeral Drainage
 - Farmed Wetland
 - Intermittent Drainage
 - Marsh
 - Seasonal Creek/Stream
 - Seasonal Wetland
 - Seasonal Wetland Swale
 - Stock Pond
 - Vernal Pool

Potential Impacts to Waters of the U.S.

Waters of the U.S.	Amoruso Ranch Project				Grand Total
	Preserved	Indirect Impact	Direct Impact	NAPOTS	
Ephemeral Drainage	0.002	0.000	0.000	0.000	0.002
Intermittent Drainage	1.836	0.000	0.084	0.000	1.920
Marsh	0.000	0.000	1.822	0.000	1.822
Seasonal Wetland	0.604	0.758	2.906	0.559	4.827
Seasonal Wetland Swale	1.243	5.091	10.476	2.961	19.771
Stock Pond	0.000	0.000	0.364	0.000	0.364
Vernal Pool	3.458	2.302	3.011	1.043	9.813
Farmed Wetland	0.000	0.000	0.003	0.000	0.003
Seasonal Creek/Stream	0.000	0.000	0.037	0.000	0.037
Grand Total	7.142	8.151	18.704	4.562	38.560

Notes:

-Impact calculations are approximate and are based on the best available information to date.
 -The acreage value for each feature has been rounded to the nearest 1/1000 decimal.
 Summation of these values may not equal the total acreage reported.



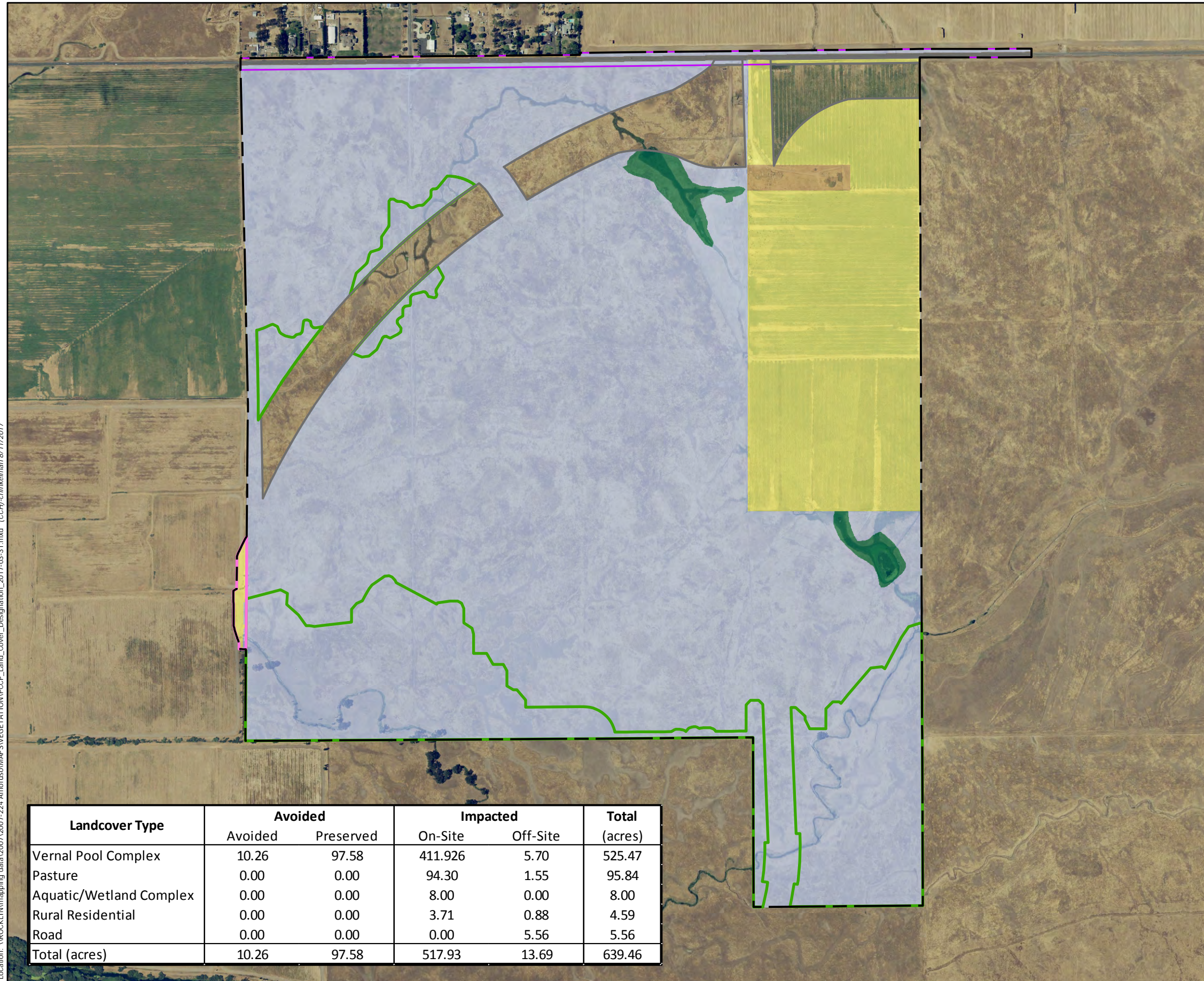
Location: \\PROCKLIN\mapping_data\2007-224 Amoruso\MAPS\PRES_impact_v5\AR_ACoE_UnavoidableImpactsWaters_20170724.mxd (E:\JDS\LMH\CCH-chinkeiman_10/31/2017

The Project will result in land cover impacts to a total of 531.6 acres within four land cover types (*Figure 8 Placer County Conservation Plan Land Cover and Modeled Habitat Proposed Impact and Avoidance*). There will be 417.6 acres of impacts to vernal pool complex (habitat with potential to support vernal pools), 95.8 acres of impacts to grassland (i.e., pasture), 8.0 acres to aquatic/wetland complex, and 10.1 acres to rural residential/road (Table 3).



Table 3. Land Cover Impact and Avoidance			
Land Cover Type	Impact Acreage	Avoided/Preserved Acreage	Total Acreage ¹
Vernal Pool Complex	417.6	107.8	525.5
Pasture/Grassland	95.9	0	95.8
Aquatic/Wetland Complex	8.0	0	8.0
Rural Residential/Road	10.1	0	10.1
Total:	531.6	107.8	639.4

¹Includes Waters of the U.S. within the West Sunset Boulevard right-of-way and the Offsite Drainage Improvements area.






Figure 8. Placer County Conservation Plan Land Cover and Modeled Habitat Proposed Impact and Avoidance



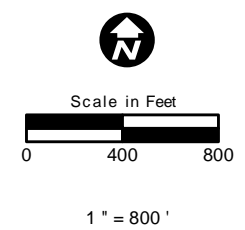
Map Features

-  Amoruso Boundary
-  Open Space Preserve
-  Al Johnson Wildlife Area Improvements Area
-  Offsite ROW
-  Future Placer Parkway (Placer County Project)

PCCP 2017 Landcover

-  Pasture
-  Aquatic/Wetland Complex
-  Road
-  Rural Residential
-  Vernal Pool Complex

Landcover Type	Avoided		Impacted		Total (acres)
	Avoided	Preserved	On-Site	Off-Site	
Vernal Pool Complex	10.26	97.58	411.926	5.70	525.47
Pasture	0.00	0.00	94.30	1.55	95.84
Aquatic/Wetland Complex	0.00	0.00	8.00	0.00	8.00
Rural Residential	0.00	0.00	3.71	0.88	4.59
Road	0.00	0.00	0.00	5.56	5.56
Total (acres)	10.26	97.58	517.93	13.69	639.46



Location: \\ROCKLIM\mapping\data\2007-224 Amoruso\MAPS\VEGETATION\PCCP_Land_Cover_Designation_2017-03-31.mxd (CCH)-chinkelman B/11/2017

4.0 PROPOSED MITIGATION

4.1 Wetted-Features Impacts and Required Mitigation

The Project applicant is in the process of developing a final mitigation plan in coordination with the United States Army Corps of Engineers. A final mitigation plan would be approved by the Corps during its review of the Section 404 permit application and adopted as part of the consultation process under Section 7 of the ESA.

Based on the preservation and restoration ratios found in the PCCP, direct and indirect impacts would require 26.89 acres of vernal pool feature preservation and 28.06 acres of restoration of Waters of the U.S. The preservation and restoration mitigation requirements for wetted acreage impacts are provided in Table 4.

Table 4. PCCP-Compatible Mitigation Ratios and Acreages – Direct and Indirect Project Impacts to Wetted Features (excludes future Placer Parkway)						
Waters of the U.S.	Direct Impacts	Indirect Impacts	Preservation Ratio	Restoration Ratio ¹	Preservation Acreage	Restoration Acreage
Aquatic / Wetland Features						
Farmed Wetland	0.003	-	-	1.5:1.00	-	0.005
Marsh	1.822	-	-	1.5:1.00	-	2.733
Stock Pond	0.364	-	-	1.5:1.00	-	0.546
Riverine / Riparian						
Ephemeral Drainage	0	-	-	1.5:1.00	-	0.000
Intermittent Drainage	0.084	-	-	1.5:1.00	-	0.126
Seasonal Creek	0.037	-	-	1.5:1.00	-	0.056
Other Waters Subtotal:	2.31					3.465
Vernal Pool Type Features						
Seasonal Wetland	2.906	0.651	1.36:1.00	1.5:1.00	4.838	4.359
Seasonal Wetland Swale	10.476	1.126	1.36:1.00	1.5:1.00	15.779	15.714
Vernal Pool	3.011	1.601	1.36:1.00	1.5:1.00	6.272	4.517
Vernal Pool Type Subtotal:	16.393	3.378			26.889	24.590
Total Waters of the U.S.:	18.704	3.378			26.889	28.055

¹The restoration ratio is applied only to the direct impacts to Waters of the U.S.

4.2 Land Cover Conversion Impacts and Required Mitigation

Based on the Project impacts to land cover types described in Section 2.3, and consistent with the mitigation ratios identified in the PCCP, total required mitigation for all Land Cover Conversions would include 641 acres of preservation and 31.2 acres of restoration. Table 5 depicts the mitigation ratios and

acres for land cover conversion for the Project. Mitigation of vernal pool complex land cover type is addressed under wetted feature mitigation (see Table 4). Rural residential does not require mitigation. Also, impacts associated with offsite drainage improvements are not included in Table 5 as those impacts are temporary and will not result in land cover conversion.

Table 5. Land Cover Conversion Mitigation Ratios and Acreages					
Land Cover Type	Impact Acreage	Preservation Ratio	Restoration Ratio ¹	Preservation Acreage	Restoration Acreage
Vernal Pool Complex	417.6	1.36:1.00	n/a	568.0	see Wetted Feature Mitigation
Pasture/Grassland	95.9	0.55:1.00	0.20:1.00	52.7	19.2
Aquatic/Wetland Complex	8.0	2.54:1.00	1.5:1.00	20.3	12.0
Rural Residential/Road ²	10.1	0.00:1.00	0.00:1.00	0	0
Total:	531.6			641.0	31.2

¹ Vernal pool complex restoration is fulfilled by restoration of wetted acreage within the vernal pool complex land cover and is addressed separately.

²Rural residential cover type does not require mitigation.

4.3 Form of Mitigation

This Proposal includes both wetland preservation and wetland restoration components to mitigate for impacts to Waters of the U.S. and vernal pool fairy shrimp habitat.

In keeping with a PCCP compatible strategy, the mitigation of Project impacts may include preservation of land cover acreage, and preservation and restoration of wetlands. Three potential offsite properties have been identified, as well as the onsite Open Space Preserve for preservation and restoration of wetlands. The offsite properties total 644 acres and include the 240-acre Mourier East, 265-acre Mourier West, and the 139-acre Skover properties (collectively called Mitigation Properties) (*Figure 9. Amoruso Mitigation Properties*). Mitigation Properties are described in detail in Section 5.0.

The proposed mitigation will benefit regional aquatic resources by protecting endemic plant and wildlife species associated with local wetlands, including vernal pool ecosystems, and by contributing to the recovery and survival of vernal pool invertebrates listed under the ESA. Additionally, the proposed onsite and offsite preserved areas (i.e., onsite open space preserves and offsite mitigation properties) will add to the adjacent regional conservation areas, resulting in larger contiguous preserved areas.

4.3.1 Onsite Open Space Preserve

The Project was designed to avoid a sizable portion of the wetted features and potential vernal pool fairy shrimp habitat in the southern and northern portions of the Project. The southern onsite Open Space Preserve is identified within the Reserve Acquisition Area under the PCCP and possesses substantial wetland and covered species habitat. The northern avoided area is considered General Open Space and is bisected by the future Placer Parkway Project.

The Project will establish a ±98-acre Open Space Preserve to preserve ±13.648 acres of Waters of the U.S., including 11.81 acres considered vernal pool fairy shrimp habitat. The Open Space Preserve is situated so that it is contiguous with adjacent offsite open space areas. It abuts portions of the Creekview Specific Plan's Open Space Preserve to the south, portions of the West Roseville Specific Plan's Open Space Preserve to the southeast, and the City of Roseville's Al Johnson Wildlife Area property to the west (see Figure 4).

The Project will also avoid impacts to ±2.194 acres of Waters of the U.S. in a ±9-acre General Open Space in the north within the future Placer Parkway regional transportation improvement project alignment. The Waters of the U.S. and land cover within the General Open Space are not utilized in this Proposal as they will not be permanently protected as a preserve.

5.0 MITIGATION PROPERTIES

The three proposed Mitigation Properties - Mourier East, Mourier West, and Skover - possess attributes and resources that make them ideal candidates to serve as mitigation for this Project. The following section details their suitability, location, land use and setting, and available natural resources.

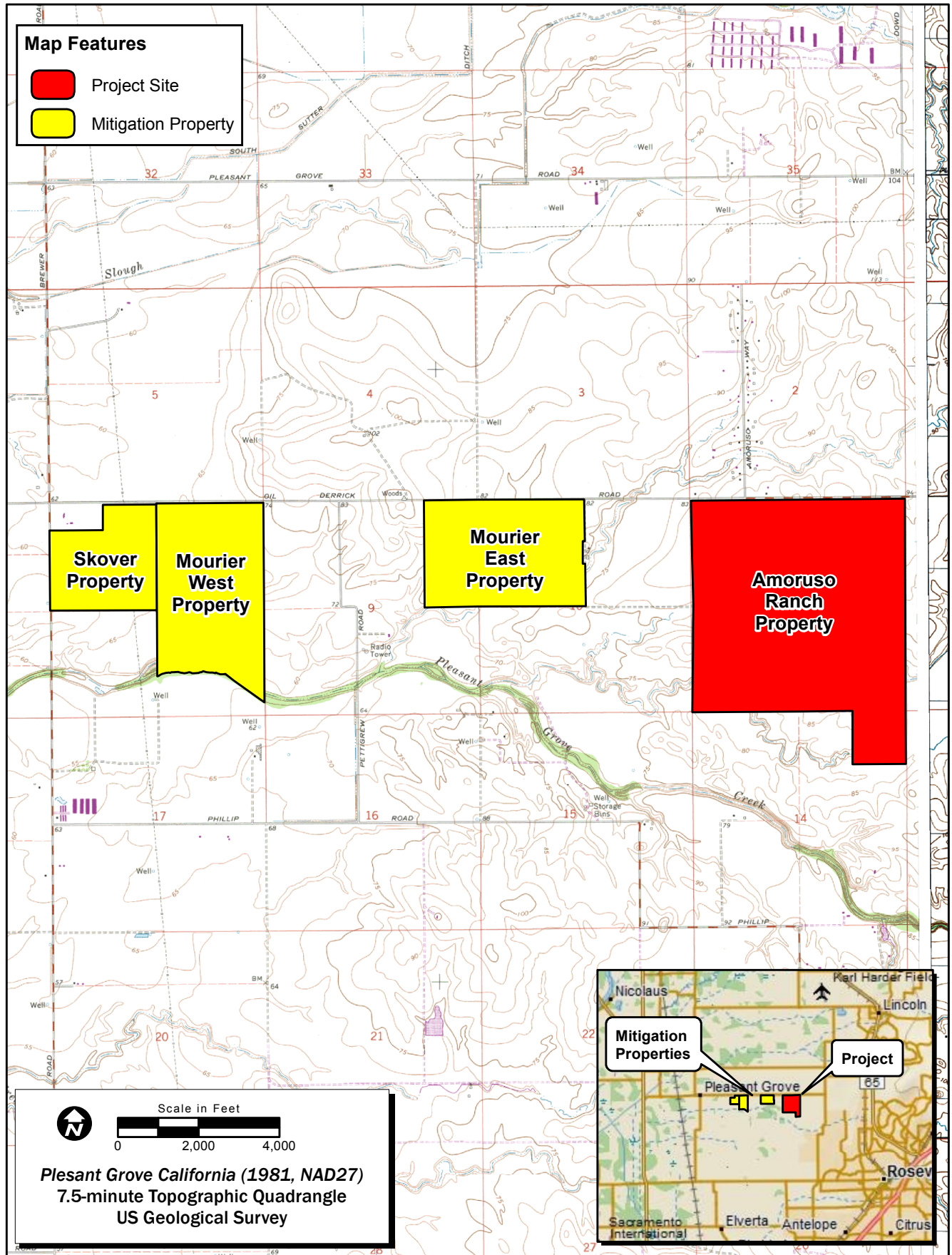
5.1 Suitability of Mitigation Properties as Compensatory Mitigation

The Mitigation Properties possess several characteristics that make them appropriate candidates to serve as compensatory mitigation for the Project. They are summarized below.

5.1.1 *Preservation of Mitigation Properties*

The resources to be preserved provide important physical, chemical, or biological functions for the watershed.

Mourier East, Mourier West, Skover, and the Project are within the same Pleasant Grove Creek HUC-12 watershed (*Figure 10. Hydrologic Unit Code-12 Watersheds*). The Mitigation Properties occupy ±505 acres of drainage basin to Pleasant Grove Creek, making them a significant contributor to water quality and nutrient cycling. Mourier East contains a large marsh that supports a colony of tricolored blackbirds, a natural segment of intermittent drainage, and numerous vernal pools, seasonal wetlands, and swales that are known fairy shrimp habitat. Mourier West directly abuts Pleasant Grove Creek and contains relatively healthy riparian woodland habitat, both historic and remnant rice vernal pools, and seasonal wetlands and swales that are heavily occupied by listed shrimp species. Additionally, feature types such as marsh and intermittent drainage are of higher quality at the Mitigation Properties than those to be impacted.



Map Date: 10/2/2015
 Service Layer Credits: Copyright:© 2015 DeLorme







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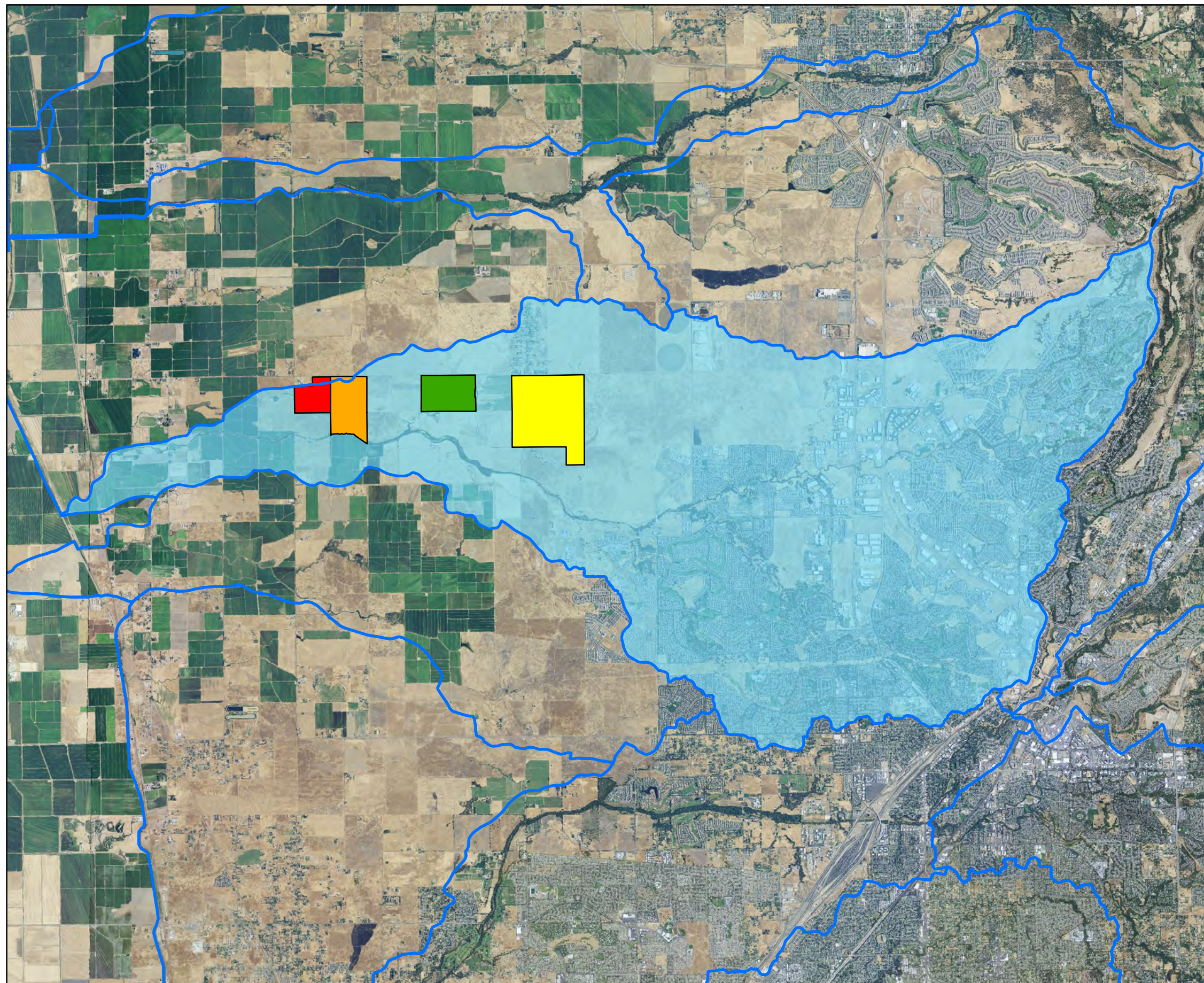
Figure 9. Amoruso Mitigation Properties

2007-224 Amoruso Ranch

Figure 10.
Hydrologic Unit Code-12
Watersheds

Map Features

-  HUC 12 Watershed Boundaries
-  180201610302 - Pleasant Grove Creek
-  Amoruso Ranch Property
-  Mourier East Property
-  Mourier West Property
-  Skover Property



The resources to be preserved contribute significantly to the ecological sustainability of the watershed.

The Mitigation Properties are located directly south of the Toad Hill Mitigation Bank, north of the Al Johnson Wildlife Area, and directly adjacent to the western boundary of Reason Farms Preserve (see Figure 4). The currently preserved lands, when combined with the Mitigation Properties, would serve as a significant expansion of preserved landscape and biological corridors within the Pleasant Grove Creek watershed of Placer County. The resources present within these properties have been analyzed in the context of the PCCP and deemed a significant component of the county-wide effort to preserve and maintain aquatic resources.

5.1.2 Restoration within Mitigation Properties

Wetland restoration is proposed within all three Mitigation Properties. Practitioners have demonstrated that diverse and highly functional vernal pool systems can be created and maintained given appropriate site conditions, constructed topography, restoration, and management (De Weese 1998, Sutter and Francisco 1998). There are several characteristics that qualify the proposed Mitigation Properties as appropriate for vernal pool creation to offset impacts associated with the Project:

- The Mitigation Properties exist within the same watershed as Amoruso Ranch and are composed of the same soil types that support vernal pools on the Project site (ECORP 2006, 2008b, 2011a, 2011b).
- These soils contain drainage-restricting features (claypans and hardpans) necessary to support ponding of vernal pools.
- Given the location and historic aerial photos of the Mitigation Properties, it is known that they historically supported more vernal pools than are currently present.
- These properties are contiguous with existing preserved lands.
- Mourier East and West properties already support some high-quality wetland habitat (including vernal pools) with known populations of special-status species including the federally endangered vernal pool fairy shrimp.

Ground-Penetrating Radar Analysis

To assess the feasibility of vernal pool creation and gain information needed to inform potential vernal pool creation plans, detailed topographic mapping and soil studies using ground-penetrating radar were conducted at the Mitigation Properties by the Institute for Ecohydrology Research (IER 2016a, b, c). The ground-penetrating radar analysis identified the extent and depth of the drainage-restricting layers across each site. This analysis determined that all three Mitigation Properties can support created vernal pools if the appropriate topography and hydrology are established. The study also identified the areas in which vernal pools may be created on each property, and made estimates regarding the total acreage of vernal pools that can be established under various restoration scenarios.

5.1.3 PCCP-Compliant Wetland Restoration Acreage

This analysis assumes a limit of 10 percent vernal pool density for vernal pool complex land cover type. Thus, the potential restored wetted acreage within each property is limited. However, the PCCP allows restoration of greater than 10 percent vernal pool density if a property has historically contained greater than 10 percent density of vernal pools. Considering the total parcel acreages and the 10 percent density criteria, there are a total of ±188 acres of land among the Mitigation Properties that could potentially support created vernal pools. There is a potential for 52.3 acres of vernal pool restoration. Table 6 provides a summary of these results. The required mitigation based on the PCCP Compatible Strategy is ±28 acres, which could well fit within the Mitigation Properties as well as produce excess contingency wetlands.

Table 6. Summary of each Mitigation Property Area and the Potential for Vernal Pool Creation				
	Mourier East	Mourier West	Skover	Total
Property size (acres)	241	266	140	647
Existing vernal pools (acres)	3.8	8.6	0.3	12.4
Current property-wide vernal pool density (%)	1.6%	3.2%	0.2%	1.9%
Vernal pool creation potential to achieve 10% property wide density (acres)	20.3	18.0	14.0	52.3
Estimate of land cover appropriate for vernal pool creation (acres)	73.0	90.1	25.2	188.3

Mourier East

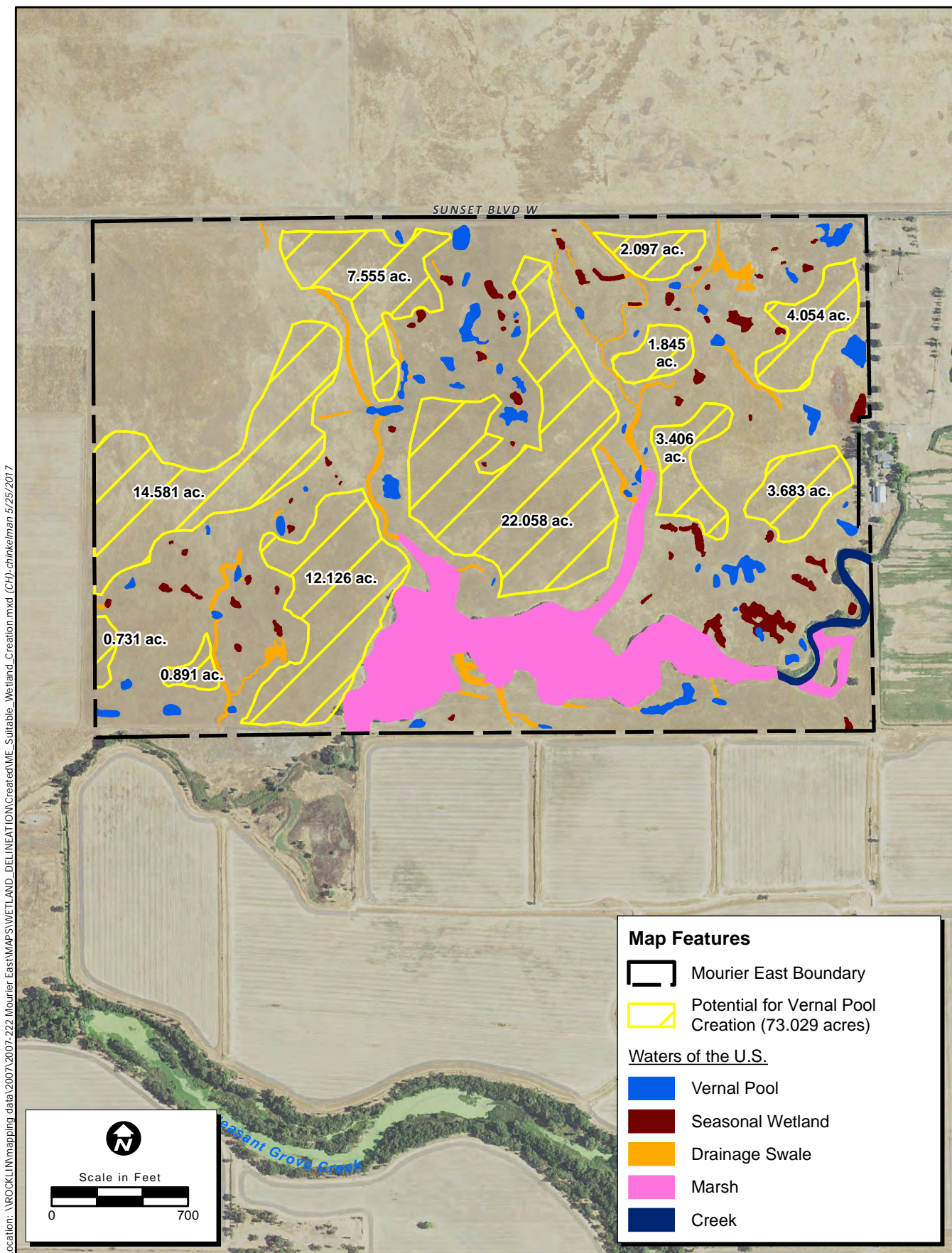
The soil analysis indicates there are 73 acres of land suitable for vernal pool creation at the Mourier East property (IER 2016a). Taking into account the current 3.8 acres of vernal pools within the property, creating up to 10 percent vernal pool cover for the whole property would allow for the construction of 20.3 acres of vernal pool (Figure 11. Area Suitable for Vernal Pool Creation, Mourier East).

Mourier West

The soil analysis indicates there are 90.1 acres of land suitable for vernal pool creation at the Mourier West property (IER 2016b). Taking into account the current 8.6 acres of vernal pools within the property, creating 10 percent vernal pool cover for the whole property would allow for the construction of 18.0 acres of vernal pool (Figure 12. Area Suitable for Vernal Pool Creation, Mourier West).

Skover Property

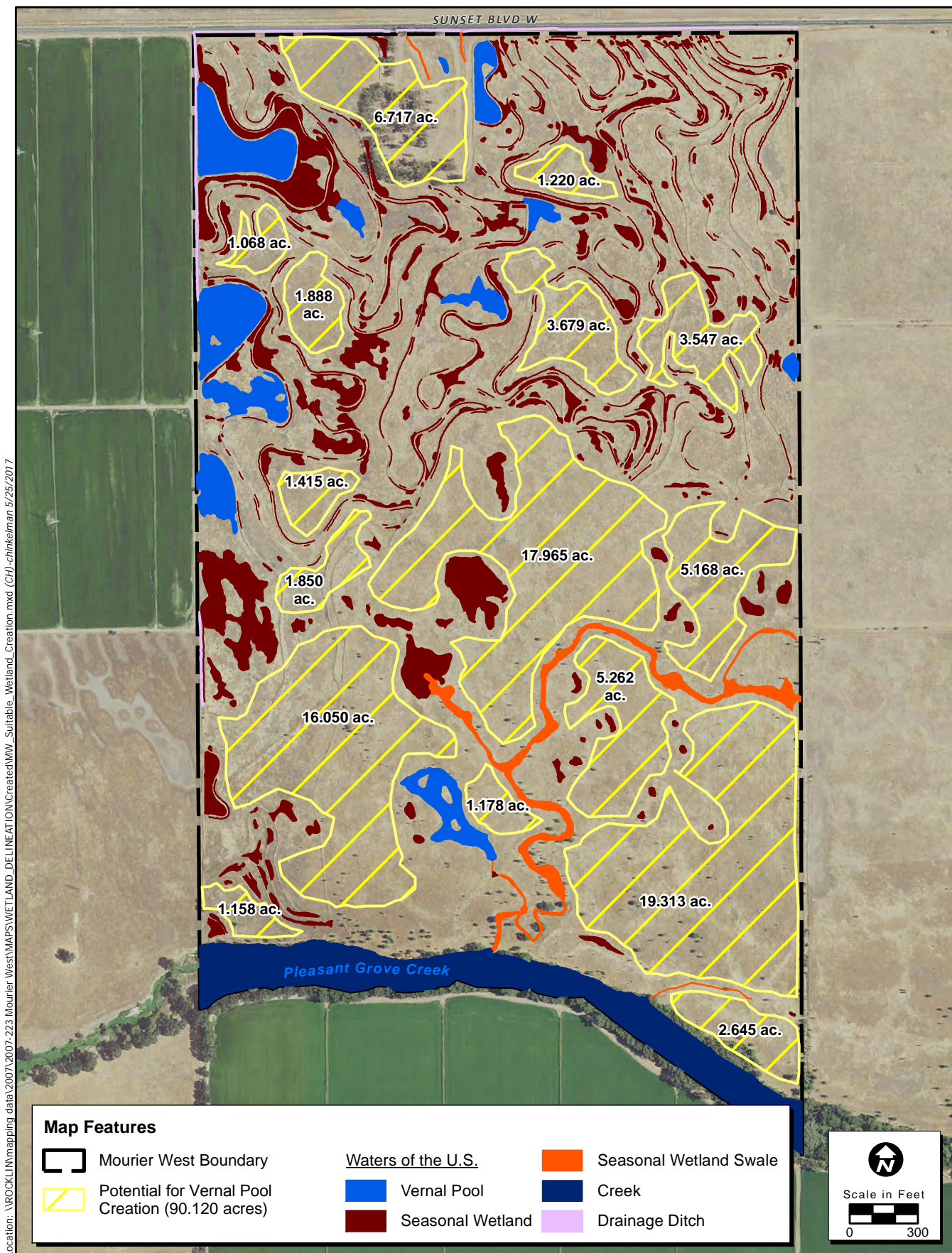
The Skover property presents a different situation than the Mourier properties because it was laser-leveled for rice production. Because of this modification, the existing claypan and hardpan layers are near the soil surface. Whereas pool creation can be achieved at the other properties by excavating pools within catchments appropriate for vernal pool creation, pool creation at Skover will require the importation of loam soils to increase the depth to the claypan and hardpan layers (IER 2016c).



Location: \\ROCKLIN\mapping_data\2007\2007-222 Mourier East\MAPS\WETLAND_DELINEATION\CreatedME_Suitable_Wetland_Creation.mxd (CH)-chinkelman_5/25/2017

Figure 11. Area Suitable for Vernal Pool Creation, Mourier East

2007-222 Mourier East



Location: \\ROCKLIN\mapping_data\2007\2007-223 Mourier West\MAPS\WETLAND_DELINEATION\Created\WW_Suitable_Wetland_Creation.mxd (CH)-chinkelman 5/25/2017

Figure 12. Area Suitable for Wetland Creation, Mourier West

There is potential for soil excavated from constructed pools on the other Mitigation Properties to be used for this need. The catchments created by this filling process can be distributed evenly across the site and could conceivably support up to 25 acres of wetland creation. Creating 10 percent cover for the whole property would allow for the construction of 14 acres of vernal pool and 11 acres of restoration of Other Waters (*Figure 13. Mourier East Waters of the U.S.*).

5.2 Detailed Description of Mitigation Properties

5.2.1 Mourier East Mitigation Property

The ±241-acre Mourier East mitigation property is located south of Sunset Boulevard West and east of Pettigrew Road in western Placer County, California (see Figure 9). The property corresponds to portion of Sections 9 and 10, Township 11 North, and Range 5 East (MDBM) of the "Pleasant Grove, California" 7.5-minute quadrangle (USGS 1981). The approximate center of the Mourier East site is located at 38° 49' 15" North and 121° 24' 42" West within the Upper Coon-Upper Auburn Watershed (Hydrologic Unit Code [HUC] #18020161, USGS 2015).

Site Description

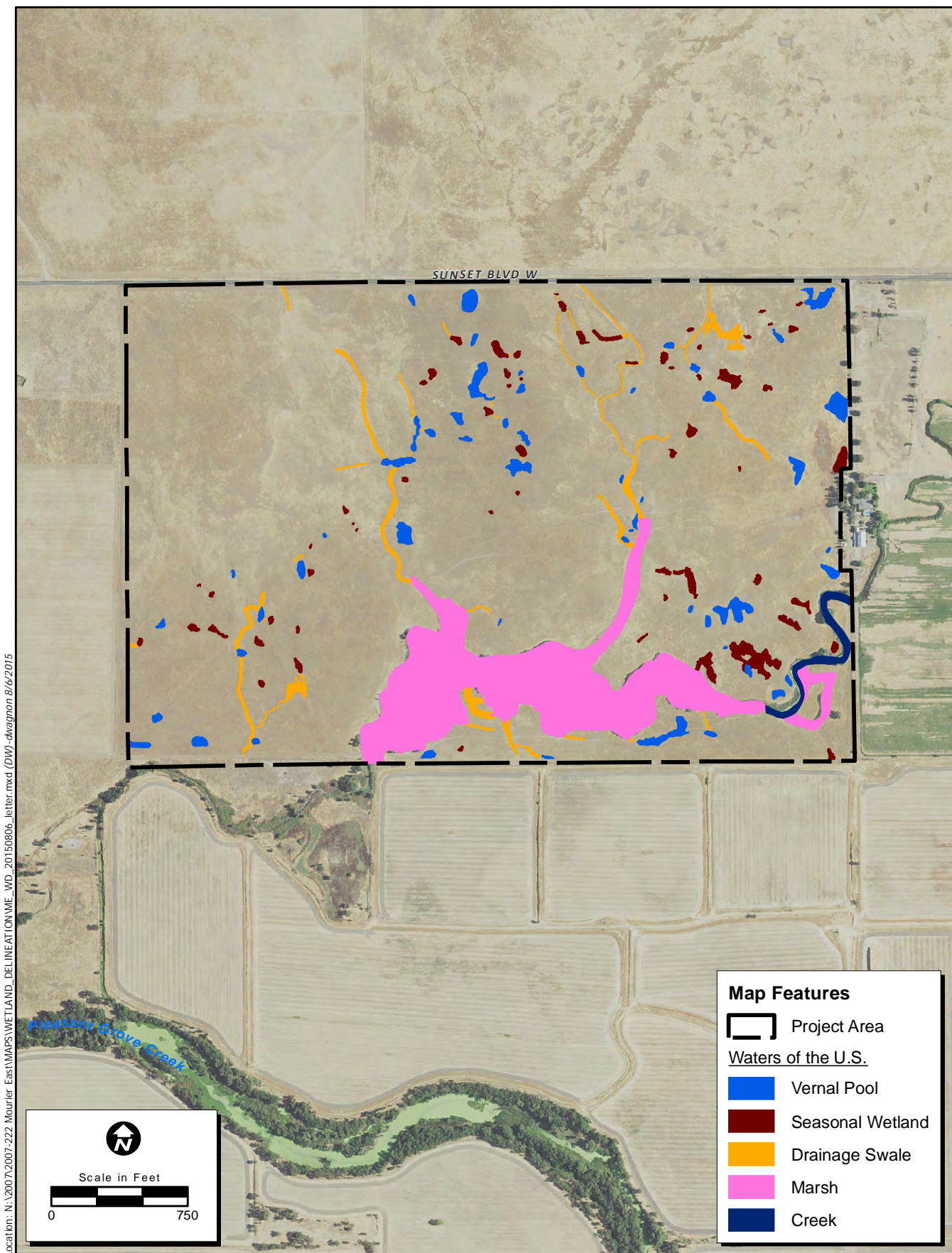
Mourier East is composed of level to gently rolling terrain and is in the Sacramento Valley subregion of the California Floristic Province (Baldwin et al. 2012). This area experiences a Mediterranean climate, which consists of hot and dry summer months and cool and wet winter months. The property is situated at an elevation range of approximately 80 feet above mean sea level (msl). Current and historic land use include cattle grazing. Surrounding land uses include agriculture (e.g., rice fields and pastures) and scattered rural residential developments.

Existing Waters of the U.S.

ECORP conducted a wetland delineation in July 2003 and an updated wetland delineation in September and October 2006 (ECORP 2004, 2006, and 2008b). The USACE issued a PJD for the Project site on September 1, 2011. Mourier East currently supports 30.150 acres of Waters of the U.S. (SPK-2004-00898) The offsite mitigation property supports 3.810 acres of vernal pools, 2.762 acres of seasonal wetlands, 2.933 acres of drainage swales, 19.676 acres of marsh, and 0.969 acre of intermittent creek (*Figure 13. Mourier East Waters of the U.S.*).

Land Cover

The land cover types present within Mourier East are vernal pool complex (219.82 acres), Aquatic/Wetland Complex including marsh and freshwater emergent vegetation (20.72 acres), and Road (0.67 acres). *Figure 14. Mourier East Placer County Conservation Plan Land Cover Analysis* shows the various land cover types within the Mourier East property.



Location: N:\2007\2007-222_Mourier East\MAPS\WETLAND_DELINEATION\ME_WD_20150806_letter.mxd (DW) - dwagmon, 8/6/2015

Map Date: 8/6/2015
 Photo Source: NAIP (2014)

Figure 13. Mourier East Waters of the U.S.

Location: \\PROCKLIN\mapping_data\2007-224 Amoruso\MAPS\LandCover\PCCP_Land_Cover_MourierEast.mxd (CCH)-chinkelman 7/12/2018

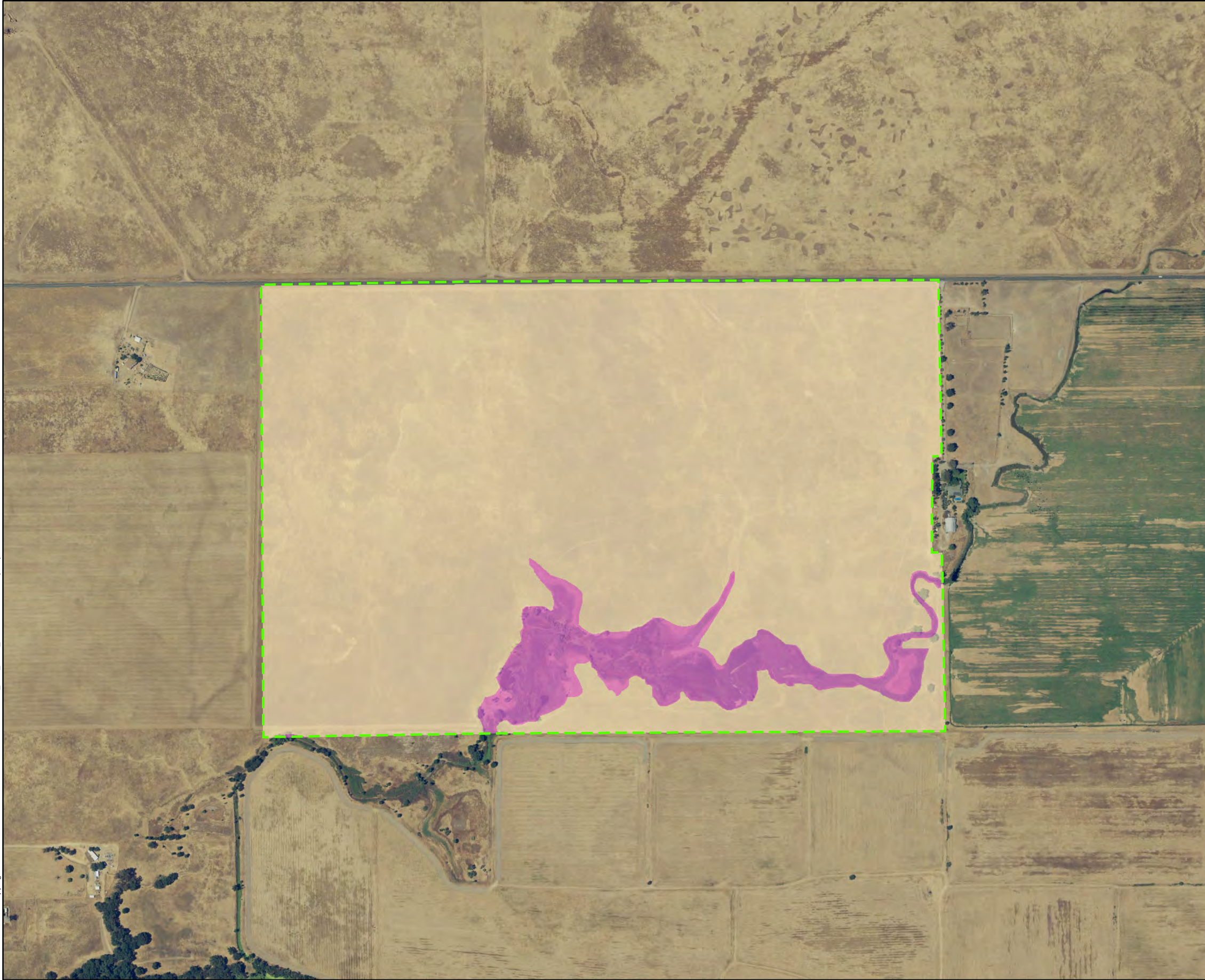





Figure 14. Mourier East PCCP Land Cover


Map Features

 Mourier East Mitigation Property (241.21 ac.)

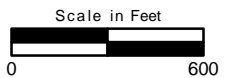
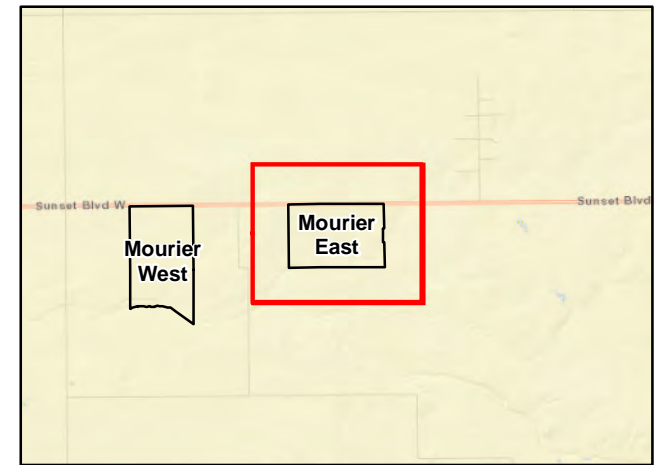
Terrestrial Habitats

 Aquatic/Wetland Complex (20.72 ac.)

 Vernal Pool Complex (219.82 ac.)

 Road (0.67 ac.)

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



Federally Listed Species

In compliance with the 2015 Survey Guidelines for the Listed Large Branchiopods (2015 Guidelines) (USFWS 2015), ECORP conducted surveys for federally listed large branchiopods at Mourier East in 2015 and 2016 (ECORP 2016a). The federally listed vernal pool fairy shrimp was found in four aquatic features out of the total 153 aquatic features within the offsite mitigation property (*Figure 15. Mourier East Guideline-Level Dry and Wet Season Survey Results*). The vernal pools and seasonal wetlands on Mourier East provide suitable habitat for the federally listed vernal pool fairy shrimp.

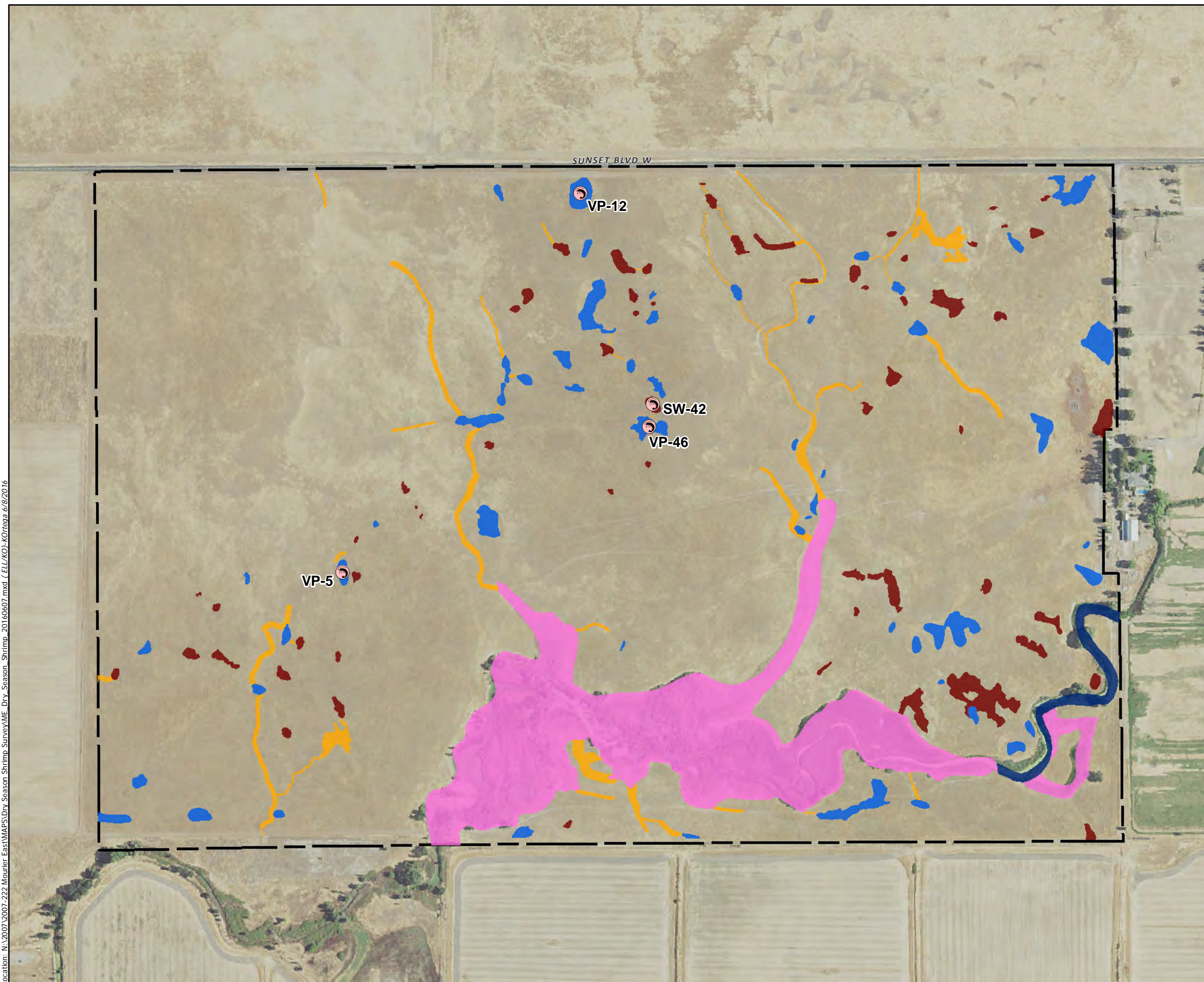
Other Species of Interest

The offsite mitigation property supports potential nesting and foraging habitat for a variety of special-status birds, including, Swainson's hawk (*Buteo swainsoni*), great blue heron (*Ardea Herodias*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), black-crowned night heron (*Nycticorax nycticorax*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), burrowing owl (*Athene cunicularia*), California black rail, Nuttall's woodpecker (*Picoides nuttallii*), loggerhead shrike (*Lanius ludovicianus*), purple martin (*Progne subis*), Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), yellow-billed magpie (*Pica nuttallii*), oak titmouse (*Baeolophus inornatus*), grasshopper sparrow (*Ammodramus savannarum*), and tricolored blackbird. Other special-status birds that may forage onsite but are not expected to nest onsite, due to breeding range restrictions and absence of nesting habitat, include ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), greater sandhill crane (*Grus canadensis tabida*), long-billed curlew (*Numenius americanus*), short-eared owl (*Asio flammeus*), prairie falcon (*Falco mexicanus*), mountain plover (*Charadrius montanus*), and fox sparrow (*Passerella iliaca*). To date, ECORP has not performed any focused bird surveys at Mourier East. However, there is a known colony of tricolored blackbirds documented within the large marsh located on the property (University of California, Davis 2015).








The annual grassland and riparian woodland communities found within Mourier East represents marginally suitable habitat for regionally occurring special-status mammals, including American badger (*Taxidea taxus*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*). To date, no surveys for these species have occurred.

The vernal pools and seasonal wetlands in Mourier East represent potential suitable rearing habitat for one special-status amphibian, the western spadefoot (*Spea hammondi*), and the intermittent creek represents potential habitat for northwestern pond turtle. No focused surveys have been performed on the offsite mitigation property, but northwestern pond turtle has been incidentally observed within Mourier East during assessment-level surveys.

Figure 15.
Mourier East Guideline-level Dry
and Wet Season Survey Results



Map Features

-  Project Area
 -  Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)
- Waters of the U.S.
-  Vernal Pool
 -  Seasonal Wetland
 -  Drainage Swale
 -  Marsh
 -  Intermittent Creek

Location: N:\2007\2007-222 Mourier East\MAPS\Dry Season Shrimp Survey\ME_Dry Season Shrimp_20160607.mxd (LELL\KD\KOrtana 6/8/2016)



5.2.2 Mourier West Mitigation Property

The ±264.4-acre Mourier West mitigation property (Mourier West) is located south of Sunset Boulevard West and approximately 0.5 mile east of South Brewer Road in western Placer County, California (see Figure 9). Mourier West corresponds to a portion of Section 8, Township 11 North, and Range 5 East (MDBM) of the "Pleasant Grove, California" 7.5-minute quadrangle (USGS 1981). The approximate center of the Study Area is located at 38° 49' 5.69" North and 121° 26' 14.09" West within the Upper Coon-Upper Auburn Watershed (HUC #18020161, USGS 2015).

Site Description

Mourier West is composed of level to gently rolling terrain and is in the Sacramento Valley subregion of the California Floristic Province (Baldwin et al. 2012). It experiences a Mediterranean climate, consisting of hot and dry summer months, and cool and wet winter months. The property is situated at an elevation range of approximately 60 - 70 feet above msl. Most of Mourier West was historically used for contour rice cultivation and retains rice checks or furrows. Historical aerial photos suggest Mourier West has been out of rice production for more than 15 years and has not recently been irrigated. Surrounding land uses include agriculture (e.g., rice fields and pastures), wetland mitigation properties, and scattered rural residences.

Existing Waters of the U.S.

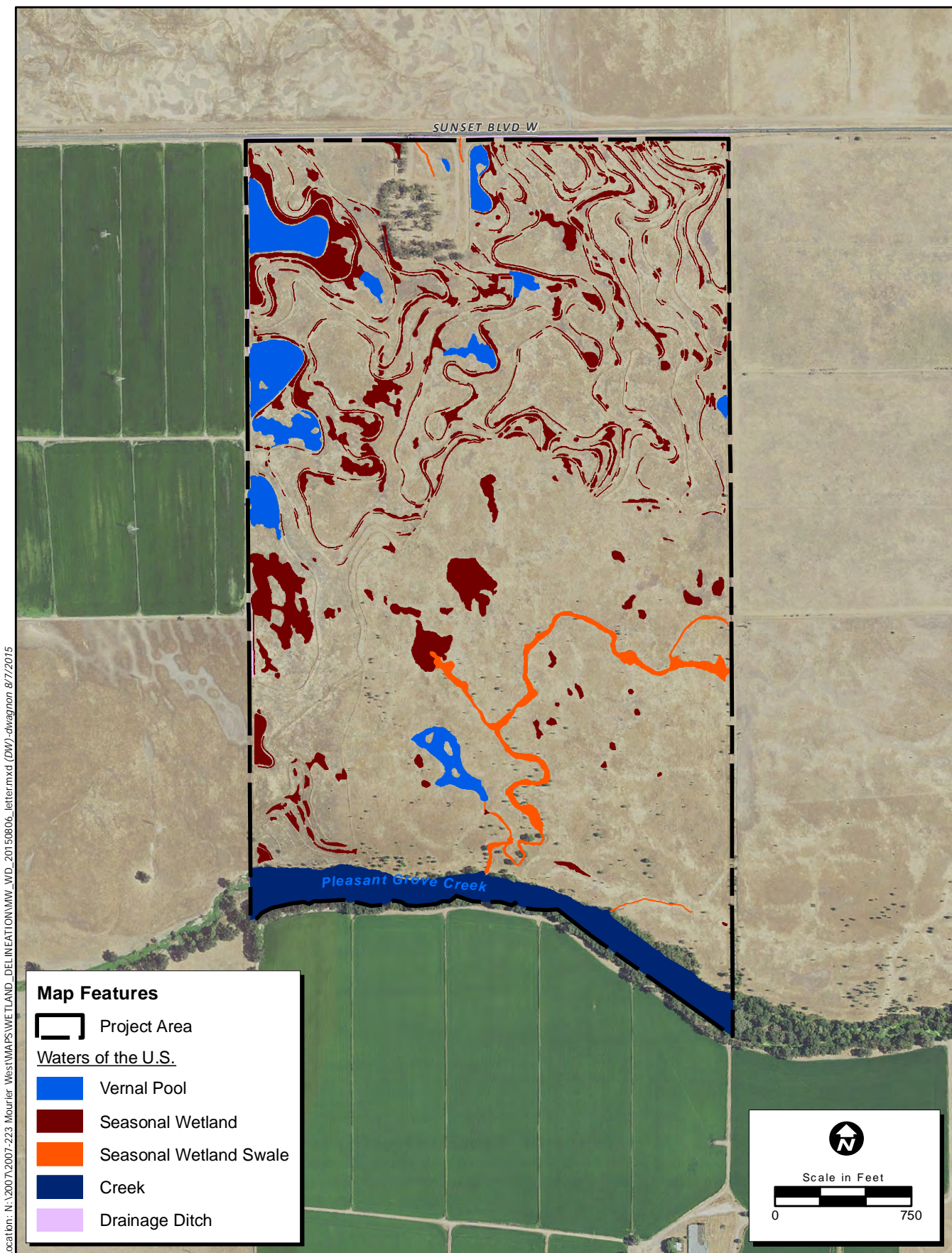
ECORP conducted fieldwork for a jurisdictional wetland delineation in 2007 and 2008; findings were submitted to USACE on February 11, 2011 (ECORP 2011a). A revision was submitted to USACE on October 25, 2011 in response to suggested edits made by USACE on September 2, 2011. Mourier West currently supports 39.588 acres of Waters of the U.S. (Regulatory # SPK-2011-01067). The property supports 8.577 acres of vernal pools, 17.742 acres of seasonal wetlands, 2.893 acres of seasonal wetland swales, 0.171 acre of drainage ditch, and 10.205 acres of creek (*Figure 16. Mourier West Waters of the U.S.*).

Land Cover

The land cover types present within Mourier West are vernal pool complex (249.48 acres), riverine/riparian (11.56 acres), and rural residential (3.41 acres) (*Figure 17. Mourier West Placer County Conservation Plan Land Cover Analysis*).

Federally Listed Species

The vernal pools and seasonal wetlands in Mourier West provide suitable habitat for the federally listed vernal pool fairy shrimp, Conservancy shrimp (*Branchinecta conservatio*), and vernal pool tadpole shrimp (*Lepidurus packardii*). In compliance with the May 31, 2015 Guidelines (USFWS 2015), ECORP conducted surveys for federally listed large branchiopods at Mourier West in 2015 and 2016 (ECORP 2016b). The federally listed vernal pool fairy shrimp was found in 50 aquatic features out of the total 498 aquatic features within the property (*Figure 18. Mourier West Guideline-Level Dry and Wet Season Survey Results*).



Location: N:\2007\2007-223 Mourier West\MAPS\WETLAND_DELINEATION\MM_WD_20150806_letter.mxd (DW) - dwagnon 8/7/2015

Map Date: 8/7/2015
 Photo Source: NAIP (2014)


Figure 16. Mourier West Waters of the U.S.

Location: \\PROCKLIN\mapping_data\2007-224_Amoruso\MAPS\LandCover\PCCP_Land_Cover_MourierWest.mxd (CCH)-chinkelman 7/12/2018



Figure 17. Mourier West PCCP Land Cover


Map Features

 Mourier West Mitigation Property (264.45 ac.)

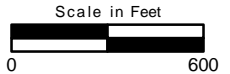
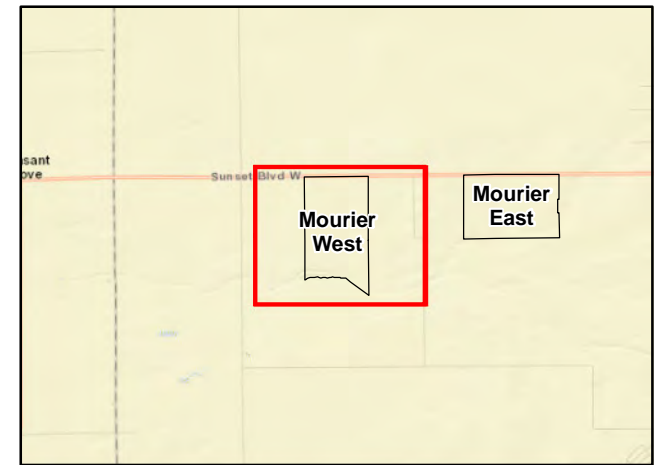
Terrestrial Habitats

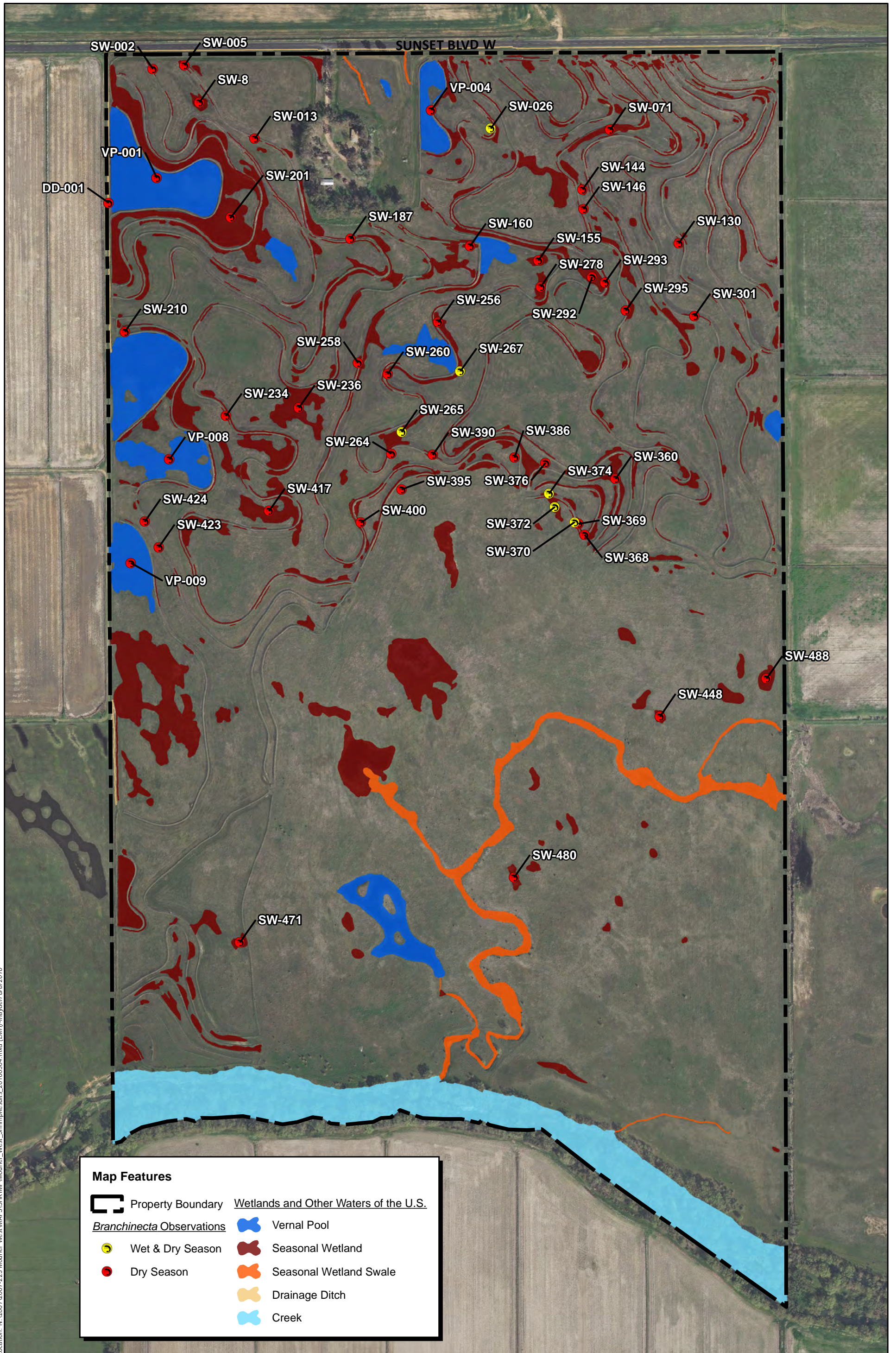
 Vernal Pool Complex (249.48 ac.)

 Riverine/Riparian (11.56 ac.)

 Rural Residential (3.41 ac.)

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community





Map Features

Property Boundary	Wetlands and Other Waters of the U.S.
Branchinecta Observations	Vernal Pool
Wet & Dry Season	Seasonal Wetland
Dry Season	Seasonal Wetland Swale
	Drainage Ditch
	Creek

Location: N:\2007\2007-223 Mourier West\MAPS\SHRIMP\Mourier West_ShrimpResults_20160504.mxd (LMH)-lhayden 8/8/2016

Map Date: 8/8/2016
Photo Source: USGS March 2008

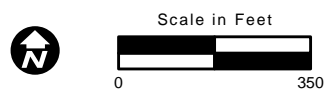


Figure 18. Mourier West Guideline-Level Dry and Wet Season Survey Results

2007-223 Mourier West Property

Other Species of Interest

The offsite mitigation property supports potential nesting and foraging habitat for a variety of special-status birds, including great blue heron, great egret, snowy egret, black-crowned night heron, white-tailed kite, northern harrier, Swainson's hawk, burrowing owl, Nuttall's woodpecker, loggerhead shrike, purple martin, yellow-billed magpie, oak titmouse, and grasshopper sparrow. Of these, burrowing owl, Nuttall's woodpecker, loggerhead shrike, yellow-billed magpie, and oak titmouse have been observed onsite. Other special-status birds that may forage onsite but are not expected to nest onsite, due to breeding range restrictions and absence of nesting habitat, include ferruginous hawk, golden eagle, greater sandhill crane, long-billed curlew, short-eared owl, prairie falcon, and fox sparrow.

The vegetation communities and habitats within Mourier West have the potential to support wildlife (e.g., waterfowl, waders, and shorebirds) movement during the wet season and less so during the dry summer/fall months. To date, ECORP has not performed any focused bird surveys at Mourier West.

The annual grassland and riparian woodland communities found within Mourier West represents marginally suitable habitat for regionally occurring special-status mammals, including American badger, pallid bat, and Townsend's big-eared bat. To date, no surveys for these species have occurred.

The vernal pools and seasonal wetlands onsite represent potentially suitable rearing habitat for western spadefoot, and Pleasant Grove Creek at the southern end of Mourier West represents potential habitat for northwestern pond turtle. No focused surveys have been performed on the property, but northwestern pond turtle has been incidentally observed within Mourier West during assessment-level surveys.

5.2.3 Skover Mitigation Property

The ±140-acre Skover Mitigation Property (Skover is located southeast of the intersection of Sunset Boulevard West and South Brewer Road in western Placer County, California (see Figure 9). The property corresponds to a portion of the Northwest ¼ Section 8, Township 11 North, and Range 5 East (MDBM) of the "Pleasant Grove, California" 7.5-minute quadrangle (USGS 1981). The approximate center of the Skover is located at 38° 49' 12.66" North and 121° 26' 46.84" West within the Upper Coon-Upper Auburn Watershed (HUC #18020161, USGS 2015).

Site Description

Skover is composed of laser-leveled rice fields with levees surrounding and dividing up the property into two fields. Along the southern boundary of the Skover is a small, narrow section of pasture extending beyond from the adjacent property. Skover is in the Sacramento Valley subregion of the California Floristic Province (Baldwin et al. 2012). This area is characterized by a Mediterranean climate, which consists of hot and dry summer months and cool and wet winter months. The property is situated at an elevation range of approximately 50 feet to 65 feet above msl, and is currently used for rice production and appears to be seasonally irrigated. Surrounding land uses include agricultural use for cattle grazing, scattered rural residential developments, and a mitigation bank managed by Wildlands, Inc. to the north.

Existing Waters of the U.S.

ECORP conducted a wetland delineation in November 2007 (ECORP 2011b), and is currently being assessed for irrigated delineated lands pursuant to 12510-SPD *Wetland Determination and Delineation Procedures for Irrigated Lands* (USACE 2012, SPK-2011-01068). Skover contains 0.447 acre of potential Waters of the U.S. The property supports 0.286 acre of vernal pools, 0.011 acre of seasonal wetland swales, 0.096 acre of roadside ditch, and 0.054 acre of drainage ditch (*Figure 19. Skover Property Potential Waters of the U.S.*)

Land Cover

The land cover types present within Skover are vernal pool complex (1.45 acres), rice fields (137.97 acres), and rural residential/road (0.46 acres) *Figure 20. Skover Property Placer County Conservation Plan Land Cover*)

Federally Listed Species

The vernal pools and seasonal wetlands in Skover provide suitable habitat for the federally listed Conservancy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp. In compliance with the May 31, 2015 Guidelines) (USFWS 2015), ECORP conducted surveys for federally listed large branchiopods at Skover in 2015 (ECORP 2016c). The federally listed vernal pool fairy shrimp was found in 10 aquatic features out of the total 14 aquatic features within the property (*Figure 21. Skover Property Guideline-Level Dry and Wet Season Survey Results*).

Other Species of Interest

The offsite mitigation property supports potential nesting habitat for a variety of special-status birds, including northern harrier, burrowing owl, and loggerhead shrike. Other special-status birds that may forage onsite but are not expected to nest onsite, due to breeding range restrictions and/or absence of nesting habitat, include great blue heron, great egret, snowy egret, black-crowned night heron, white-tailed kite, Swainson's hawk, Nuttall's woodpecker, purple martin, yellow-billed magpie, oak titmouse, grasshopper sparrow, ferruginous hawk, golden eagle, greater sandhill crane, long-billed curlew, short-eared owl, prairie falcon, and fox sparrow. The vegetation communities and irrigated rice fields within Skover have the potential to support wildlife (e.g., waterfowl, waders, and shorebirds) movement during the wet season and less so during the dry summer/fall months. To date, ECORP has not performed any focused bird surveys at Skover.

The vernal pools, seasonal wetlands, and irrigated rice fields onsite represent potentially suitable rearing habitat for western spadefoot. Northwestern pond turtle has been incidentally observed within Skover during assessment-level surveys. No focused surveys have been performed on the offsite mitigation property.



Location: N:\2007\2007-221 Skover\MAPS\Shrimp\Skover_Shrimp_Sampling_Locations_20160504.mxd (KO/LMH)-lhayden 5/9/2016

Map Date: 5/9/2016
Photo Source: USGS March 2014

Figure 19. Skover Property Potential Waters of the U.S.

Location: \\ROCKLIN\mapping_data\2007\2007-224 Amoruso\MAPS\LandCover\PCCP_Land_Cover_Skover.mxd (CCH)-chinkelman 7/12/2018




Figure 20. Skover PCCP Land Cover


Map Features

 Skover Mitigation Property (139.88 ac.)

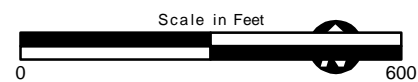
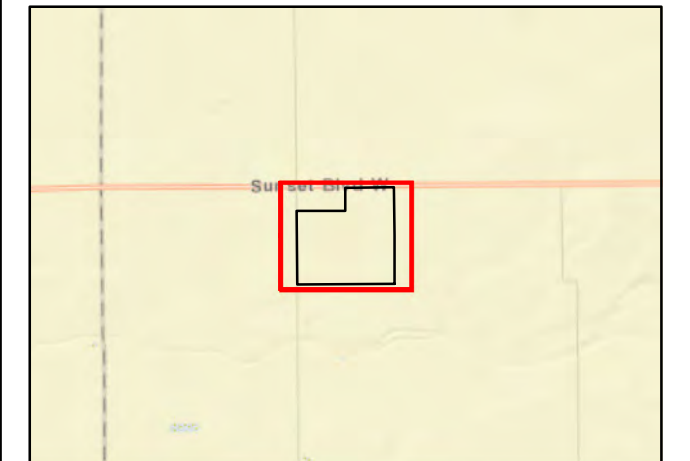
Terrestrial Habitats

 Rice (137.9 ac.)

 Vernal Pool Complex (1.45 ac.)

 Rural Residential (0.46 ac.)







Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community





Location: \\ROCKLIM\mapping_data\2007\2007-221_Skover\MAPS\SSS_Survey_and_Mapping\Shrimp_Skover_ShrimpResults_20170504.mxd (LMH)-chinkelman 5/5/2017

Map Features

-  Property Boundary
- Vernal Pool Shrimp
-  Dry Season
-  Wet and Dry Season
- Wetlands and Other Waters of the U.S.
-  Seasonal Wetland Swale
-  Vernal Pool
-  Drainage Ditch
-  Roadside Ditch

Map Date: 5/5/2017
Photo Source: USGS March 2014

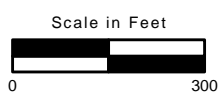


Figure 21. Skover Property Guideline-Level Dry and Wet Season Survey Results

2007-221 Skover Property

6.0 IMPLEMENTATION

The mitigation for Waters of the U.S. used to compensate for Project impacts includes 26.89 acres of preserved Waters of the U.S., 28.06 acres of restored Waters of the U.S., and mitigation for land cover impacts (*per* the PCCP) includes 641 acres of land cover preservation with 31.2 acres of restored land cover within the Mitigation Properties. There are 8.37 acres of preserved vernal pool type features and 97.6 acres of vernal pool complex land cover within the onsite Open Space Preserve that will be protected as a component of this Proposal. A total of ±723 acres of land cover, largely in the form of vernal pool complex, will be preserved and will provide the area where restoration mitigation is performed.

6.1 Wetted-Features

Proposed preservation of Waters of the U.S. by PCCP aquatic resource type within each of the Mitigation Properties and onsite Open Space Preserve are summarized in Table 7. A total of ±81.29 acres of Waters of the U.S. are present and available for preservation within the proposed Mitigation Properties and Open Space Preserve for the Project, of which ±48.34 acres represent potential habitat for the federally listed vernal pool fairy shrimp.

Preserved Waters of the U.S.	Mourier East	Mourier West	Skover	Onsite Open Space Preserve ²	Total
Aquatic/Wetland Complex					
Marsh	19.68	-	-	-	19.68
Riverine/Riparian					
Ephemeral Drainage	-	-	-	0.002	0.002
Intermittent Drainage	0.97	-	-	1.836	2.81
Creek	-	10.21	-	-	10.21
Drainage Ditch	-	0.11	0.05	-	0.12
Roadside Ditch	-	-	0.10	-	0.10
Sub Total:	<i>20.64</i>	<i>10.32</i>	<i>0.15</i>	<i>1.84</i>	<i>32.93</i>
Vernal Pool Type Features					
Vernal Pool	3.81	8.58	0.29	4.110	16.79
Seasonal Wetland	2.76	17.74	-	0.707	21.21
Seasonal Wetland Swale	2.93	2.89	0.01	4.511	10.34
Sub Total:	<i>9.50</i>	<i>29.21</i>	<i>0.30</i>	<i>9.33</i>	<i>48.34</i>
Total:	30.14	39.53	0.45	11.19	81.29

¹Note: Wetland areas are measured on the NAD83 coordinate system. Results are converted to acreages for ease of use, however this conversion may lead to minor rounding errors in the reporting of acreage summaries.

The wetted acreage mitigation required and available for both preservation and restoration of vernal pool feature types and other aquatic features (aquatic/wetland complex and riverine/riparian) within each Mitigation Property is provided in Table 8.

Table 8. Wetted Acreage Mitigation							
Wetted Acreage	Mitigation Required	Mitigation Available/ Potential					Excess
		Mourier East	Mourier West	Skover	Onsite Open Space Preserve	Total Available	
Preservation							
Vernal Pool Type Features	26.89	9.5	29.21	0.30	9.33	48.34	+21.45
Restoration							
Vernal Pool Type Features	24.59	20.3	18	14	0	52.3	+27.71
Other Aquatic Features	3.47	0 ¹	0	3.47 ¹	0	3.47	0
Restoration Total:	28.06	20.3	18	17.47	0	55.77	+27.71

¹Additional soil studies scheduled for summer of 2018 expect to find this site suitable for additional vernal pool creation above the value listed in this table.

The Mitigation Properties contain ±39 acres and the onsite Open Space Preserve contains 9.33 acres of potential preserved vernal pool type wetted acreage. Most preserved wetlands are in the Mourier West Property with smaller amounts at the Mourier East and Skover properties. Project mitigation requires preservation of 26.89 acres of vernal pool type wetted features. This amount is more than satisfied by the Mitigation Properties and onsite Open Space Preserve with ±21 acres excess preservation mitigation.

The restoration mitigation required for the Project is 24.59 acres of vernal pool type features and 3.47 acres of other aquatic feature types. All the restoration mitigation will be created within the Mitigation Properties. The Mitigation Properties can accommodate up to 52.3 acres of vernal pool type features based on the PCCP density rule, which is ±27.7 acres more than is required.

6.2 Land Cover

The land cover mitigation for both preservation and restoration acreage available within each of the Mitigation Properties is provided in Table 9. The Mitigation Properties provide adequate acreage for preservation of all impacted landcover types.

Table 9. Land Cover Mitigation							
Land Cover Type	Mitigation Required	Mitigation Available					Excess
		Mourier East	Mourier West	Skover ¹	Onsite Open Space Preserve	Total Available	
Preservation							
Vernal Pool Complex	568.0	219.8	249.5	1.5	97.6	568.4	0.4
Pasture/Grassland	52.7	0.0	0.0	137.9	0.0	137.9	85.2
Aquatic / Wetland Complex	20.3	20.7	0.0	0.0	0.0	20.7	0.4
Riverine / Riparian	0.0	0.0	11.6	0.0	0.0	11.6	11.6
Preservation Total:	641.0	240.5	261.1	139.4	97.6	738.2	97.6
Restoration							
Pasture/Grassland ²	19.2	19.2	0.0	0.0	0.0	0.0	0
Aquatic / Wetland Complex ²	12	12	0.0	0.0	0.0	0.0	0

¹Assumes current active rice area will be restored to Pasture/Grassland.

²Grassland and aquatic/wetland complex restoration will occur during wetland and upland restoration at Mourier East.

The Mitigation Properties will be protected in perpetuity as conserved open space preserves. The Mitigation Properties will have a conservation easement placed over them and a Land Trust Alliance accredited third party 501(c)(3) entity, such as Placer Land Trust, will hold an easement over the proposed Preserves or will be managed by the Placer County Authority under the PCCP. Related costs for long-term management will be provided by a funding source established by the Applicant. This management and protection strategy will allow the Waters of the U.S. and vernal pool fairy shrimp habitat preserved within the proposed Preserves to be used as preservation mitigation to offset unavoidable impacts to Waters of the U.S. and land cover which will result from Project implementation.

7.0 PROJECT PHASING

The Project will be constructed in three phases according to the EIR and as shown previously in Figure 4. The first phase would occur in the southern portion of the Project and would include the preservation of the onsite Open Space Preserve. The second phase would include the remainder of the Project located south of the future Placer Parkway. The third phase would include all planned development north of the future Placer Parkway as well as the majority of the avoided General Open Space. It is assumed that the appropriate mitigation for preservation and restoration will be applied as each phase is approved.

8.0 SUMMARY

Project implementation will result in a total of 22.082 acres of direct and indirect impacts to Waters of the U.S., excluding impacts associated with the planned Placer Parkway, and a total of 531.6 acres of land cover conversion. Mitigation for the impacts associated with the Amoruso Ranch Project will occur through preservation of land cover and Waters of the U.S. within the Project's onsite Open Space Preserve and additional preservation and restoration of land cover and aquatic features on three offsite Mitigation Properties. A minimum of 641 acres of land cover and 26.89 acres of Waters of the U.S. will be preserved within the onsite Open Space Preserve and three offsite Mitigation Properties. The mitigation laid out in this plan also provides additional grassland and riverine/riparian landcover to be preserved as part of the PCCP preserve system. The restoration of 28.06 acres of Waters of the U.S. and 31.2 acres of grasslands and aquatic/wetland complex land cover will occur within the offsite Mitigation Properties. This mitigation strategy is compatible with the PCCP and is expected to meet the mitigation requirements under the CWA Section 404 by ensuring no net loss of functions and values to Waters of the U.S.

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