

# CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report /  
Environmental Impact Statement

DRAFT

Fresno to Bakersfield

## Supplemental Preliminary Jurisdictional Waters and Wetlands Delineation Report

July 2012





# **Supplemental Preliminary Jurisdictional Waters and Wetlands Delineation Report**

*Prepared by:*

URS/HMM/Arup Joint Venture

July 2012



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## Acronyms and Abbreviations

Authority	California High-Speed Rail Authority
EIR/EIS	environmental impact report / environmental impact study
FRA	Federal Railroad Administration
GIS	geographic information system
GPS	global positioning system
HST	high-speed train
OHWM	ordinary high water mark
PJWWDR	Preliminary Jurisdictional Waters and Wetlands Delineation Report
PTE	permission to enter
SAR	special aquatic resources
SR	State Route
Survey Plan	Central Valley Biological Resources and Wetlands Survey Plan
TPSS	traction power supply station
USACE	U.S. Army Corps of Engineers
WSA	wetland study area

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# **Section 1.0**

## **Introduction**



## 1.0 Introduction

This document is a supplement to the Preliminary Jurisdictional Waters and Wetlands Delineation Report (PJWWDR) originally submitted to the U.S. Army Corps of Engineers (USACE) in June 2011 (Authority and FRA 2011), and subsequently modified to address requests for additional information. This supplemental report provides the results of the wetland delineation and reconnaissance surveys conducted in fall 2011 for the Fresno to Bakersfield Section of the California High-Speed Train (HST) Project. The area covered in this report includes the Hanford West Bypass Alternative, the Bakersfield Hybrid Alternative, and the engineering design changes made to accommodate a 102-foot separation from the BNSF Railway tracks (“the 102-foot separation”) in many locations. The goal of this supplemental report is to obtain a preliminary jurisdictional determination for the additional surveyed areas, in accordance with regulatory guidance from the Sacramento District of the USACE, and to provide updated tables and figures quantifying all the special aquatic resources (SAR) features identified throughout the Wetland Study Area (WSA) in the Fresno to Bakersfield Section of the HST project.

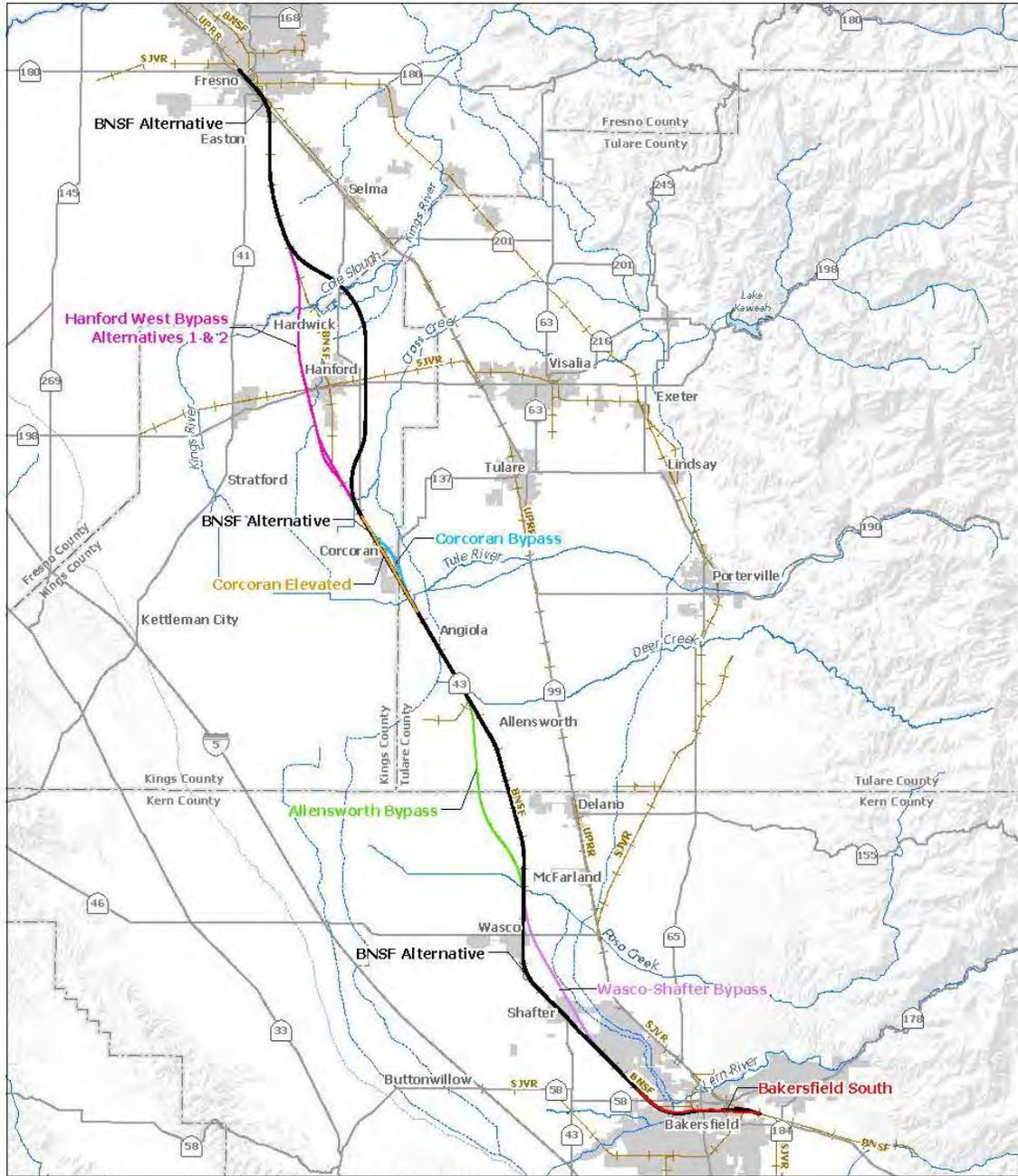
### 1.1 Project Introduction

The Fresno to Bakersfield Section of the HST project would be approximately 118 miles long, varying in length by only a few miles depending upon the route alternatives selected (Figure 1-1). To comply with the guidance from the California High-Speed Rail Authority (Authority) to use existing transportation corridors when feasible, the Fresno to Bakersfield Section of the HST Project primarily would be adjacent to the existing BNSF Railway right-of-way (BNSF Alternative).

The Authority and Federal Railroad Administration (FRA) circulated the Draft Environmental Impact Report/Environmental Impact Study (EIR/EIS) for the Fresno to Bakersfield Section to affected local jurisdictions, state and federal agencies, tribes, community organizations, other interest groups, and interested individuals for 60 days, from August 15 to October 12, 2011. Based on substantive comments received during the public and agency review of the Draft EIR/EIS, the Authority decided to reintroduce an alignment alternative west of Hanford that is consistent with the preferred alternative identified in the *Final Program EIR/EIS for the Proposed California High-Speed Train (HST) System* (Statewide EIR/EIS).

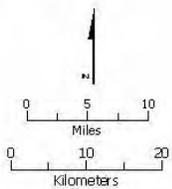
### 1.2 Engineering Revisions

The following subsections provide a high-level summary of the engineering modifications incorporated in this supplemental PJWWDR.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED  
 Data source: URS, 2012

February 9, 2012



**Figure 1-1**  
 Fresno to Bakersfield project area

### 1.2.1 Hanford West Bypass 1 Alternative

The Hanford West Bypass 1 Alternative (Figure 1-2) would parallel the BNSF Alternative from East Kamm Avenue to approximately East Elkhorn Avenue in Fresno County. At East Conejo Avenue, where the BNSF Alternative crosses to the eastern side of the BNSF Railway tracks to pass the city of Hanford to the east, the Hanford West Bypass 1 Alternative continues south on the western side of the BNSF Railway tracks. The Hanford West Bypass 1 would diverge from the BNSF Railway corridor just south of East Elkhorn Avenue and ascend onto an elevated structure just south of East Harlan Avenue, crossing over the Kings River complex and Murphy Slough, and passing the community of Laton to the west. The elevated structure would be approximately 0.8 mile in length, and reach a maximum height of approximately 40 feet to the top of the rail. The Hanford West Bypass 1 Alternative would return to grade just north of Dover Avenue. The alignment would continue at-grade, curve gently to the east, and travel between the community of Armona to the west and the city of Hanford to the east. The Hanford West Bypass 1 Alternative rejoins the BNSF Railway corridor on its western side at about Lansing Avenue.

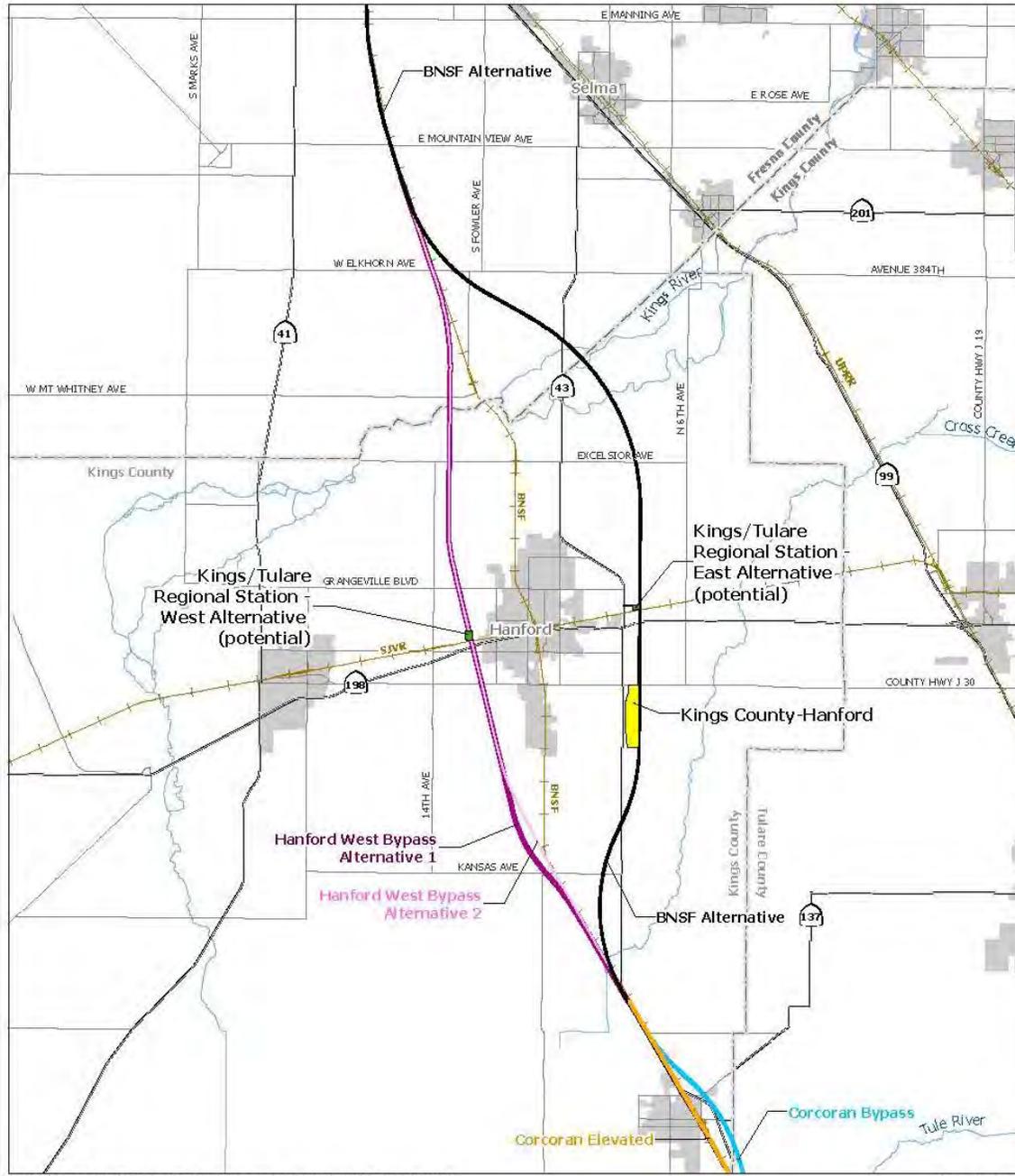
The alignment would then ascend onto another elevated structure, traveling over Cross Creek and SAR features that exist north of the city of Corcoran. The elevated structure would span approximately 3 miles, and reach a maximum height of approximately 20 feet to the top of the rail. This alignment would return to grade just north of Nevada Avenue, and would connect to the BNSF Alternative traveling through Corcoran at-grade, on the western side of the BNSF Railway corridor.

The Hanford West Bypass 1 Alternative includes a design option where the alignment would be below-grade between Grangeville Boulevard and Houston Avenue. The alignment would travel below-grade in an open cut with side slopes as it transitions to a retained-cut profile, approximately 40 feet below ground level. As the alignment transitions back to grade just north of Houston Avenue, the open-cut profile would be used once more. The alignment would cross State Route (SR) 198 and several local roads. Grade separations at Grangeville Boulevard, Thirteenth Avenue, and West Lacey Boulevard would be determined based on the alignment design option selected (at-grade or below-grade).

The potential Kings/Tulare Regional Station—West Alternative would be located along this alignment east of Thirteenth Avenue, between Lacey Boulevard and the San Joaquin Valley Railroad spur. This potential station includes an at-grade and below-grade design option as well.

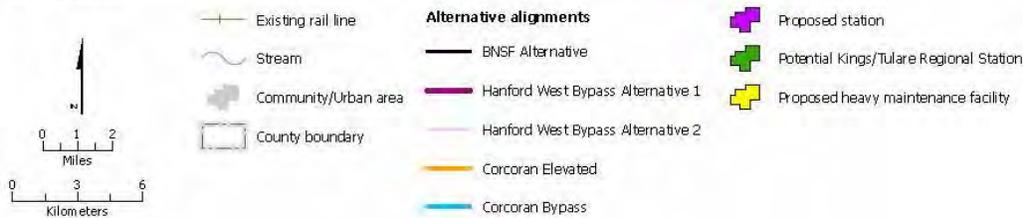
### 1.2.2 Hanford West Bypass 2 Alternative

The Hanford West Bypass 2 Alternative would be the same as the Hanford West Bypass 1 Alternative from East Kamm Avenue to just north of Jackson Avenue, where the Hanford West Bypass 2 would curve away from the Hanford West Bypass 1 to the east. The Hanford West Bypass 2 Alternative would then travel over Kent Avenue, the BNSF Railway right-of-way, and Kansas Avenue on an elevated structure approximately 1.5 miles in length. The structure would reach a maximum height of 55 feet to the top of the rail before returning to grade north of Lansing Avenue, and continuing along the BNSF Railway corridor. Similar to the Hanford West Bypass 1 Alternative, the Hanford West Bypass 2 Alternative would travel over Cross Creek and the SAR features north of Corcoran, and return to grade north of Nevada Avenue; however, the Hanford West Bypass 2 would be located on the eastern side of the BNSF Railway tracks in order to connect to either the Corcoran Elevated Alternative or the Corcoran Bypass Alternative.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED  
 Source: URS, 2012

February 23, 2012



**Figure 1-2**  
 Hanford West Bypass Alternatives 1 & 2

The Hanford West Bypass 2 Alternative includes the same below-grade design option between Grangeville Boulevard and Houston Avenue as the Hanford West Bypass 1 Alternative, as well as either the at-grade or below-grade potential Kings/Tulare Regional Station–West Alternative. Again, roadway modifications at Grangeville Boulevard, Thirteenth Avenue, and West Lacey Boulevard would depend on the alignment design option selected.

### **1.2.3 Bakersfield Hybrid Alternative**

From Rosedale Highway (SR 58) in Bakersfield, the Bakersfield Hybrid Alternative follows the Bakersfield South Alternative as it parallels the BNSF Alternative at varying distances to the north. At approximately A Street, the Bakersfield Hybrid Alternative diverges from the Bakersfield South Alternative, crosses over Chester Avenue and the BNSF right-of-way in a southeasterly direction, then curves back to the northeast to parallel the BNSF Railway tracks towards Kern Junction. After crossing Truxtun Avenue, the alignment curves to the southeast to parallel the Union Pacific Railroad tracks and Edison Highway to its terminus at Oswell Street.

The Bakersfield Hybrid Alternative would be approximately 12 miles long and would cross many of the same roads as the BNSF and Bakersfield South alternatives. This alternative includes the Bakersfield Station–Hybrid Alternative (Figure 1-3).

The Bakersfield Station–Hybrid Alternative would be in the same area as the North and South Station alternatives, and would be located at the corner of Truxtun and Union Avenue/SR 204 on the Bakersfield Hybrid Alternative. The entire site would be approximately 24 acres.

## **1.3 Engineering Design to Accommodate a 102-foot Separation from BNSF**

The BNSF Alternative would extend approximately 118 miles from Fresno to Bakersfield, and would lie adjacent to the BNSF Railway route, to the extent feasible (Figure 1-1). Minor deviations from the BNSF Railway corridor would be necessary to accommodate engineering constraints; namely, wider curves necessary to accommodate the HST (as compared with the existing lower-speed freight-line track alignment). The largest of these deviations occurs between approximately Elk Avenue in Fresno County and Nevada Avenue in Kings County. This segment of the BNSF Alternative would depart from the BNSF Railway corridor, and instead curve to the east on the northern side of the Kings River and away from Hanford, and would rejoin the BNSF Railway corridor north of Corcoran.

Although the majority of the alignment would be at-grade, the BNSF Alternative would include aerial structures in all of the four counties through which it travels.

This document incorporates engineering design changes associated with the 102-foot separation from the BNSF Railway tracks in many locations. The circulated Draft EIR/EIS required the construction of crash barriers along the BNSF Alternative where the alignment was within 102 feet of the BNSF Railway track centerline. In order to reduce costs, the BNSF Alternative was adjusted to accommodate 102-foot separation from the BNSF Railway track centerline, thus removing the need for crash barriers. In some locations, the BNSF Alternative remains within 102 feet of the BNSF Railway tracks.



## **Section 2.0**

### **Methodology**



## 2.0 Methodology

The methodology for the identification of wetlands and other waters was largely established in the *Central Valley Biological Resources and Wetlands Survey Plan* (Survey Plan) (Authority and FRA 2009).

This section summarizes the various methodologies established in the Survey Plan, and provides additional information regarding the field surveys, which were conducted to identify, map, and categorize the SAR features present within the Hanford West Bypass, and the changes associated with the 102-foot separation engineering design portions of the Fresno to Bakersfield Section.

### 2.1 Background Research

The study area for background research of the SAR features initially included the Hanford West Bypass Alternative, plus a 1.5-mile buffer on either side of the alignment. After the Hanford West Bypass Alternative was finalized, the buffer was limited to 250 feet.

Likewise, the study area for the Bakersfield Hybrid Alternative and the engineering design to accommodate a 102-foot separation from the BNSF Railway track centerline included the alignment plus a 250-foot buffer. To determine the location, type, and potential extent of known SAR features, geographic information system (GIS) data were obtained from the following sources:

- National Wetlands Inventory (USFWS 2009).
- National Hydrography Dataset (USGS 2009).
- Holland Central Valley Vernal Pool Complexes dataset, also known as the California Department of Fish and Game Central Valley Vernal Pool Habitat dataset (Holland 2009).
- 100-Year Flood Plain (FEMA 2008, 2009a, b, c).

#### 2.1.1 Pre-Survey Investigation

In addition to conducting background research, and before conducting the field surveys, wetland delineators reviewed the following sources of information for the Hanford West Bypass, the Bakersfield Hybrid Alternative, and the 102-foot separation.

- Recent aerial photographs of the WSA and vicinity (ESRI Virtual Earth Imagery Services 2009; BING 2010).
- Soil Surveys of Eastern Fresno, Kings, Tulare, and Kern counties (USDA 1971, 1982, 1986, and 1988).
- Standard biological references and field guides, including the Jepson Manual (Hickman 1993).
- National List of Plant Species That Occur in Wetlands (Reed 1988).
- U.S. Geological Survey 7.5-minute (1:24,000) topographical quadrangle sheets (Fresno North, Malaga, Fresno South, Conejo, Caruthers, Burris Park, Laton, Remnoy, Waukena, Taylor Weir, Corcoran, Pixley, Alpaugh, Hacienda Ranch NE, Delano West, Allensworth, Pond, Famoso, Wasco, Oil Center, Oildale, Rosedale, Rio Bravo, Edison, Lamont, Gosford, Stevens).

In addition, wetland delineators reviewed recent and historic regional precipitation records.

## 2.2 Field Surveys

A summary of the field methodology used during the survey and during post-processing is presented below.

### 2.2.1 Delineation of Special Aquatic Resources

A team of qualified wetland scientists recorded SAR features; both manually on map sheets, and electronically on submeter-accuracy GPS units, in accordance with the methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008a). The field maps covered the WSA in the form of aerial photographs at a scale of 1 inch equals 500 feet.

#### 2.2.1.1 Onsite Methodology

Surveys were conducted based on a 250-foot WSA surrounding the Bakersfield Hybrid Alternative, the Hanford West Bypass Alternative, and the 102-foot separation. Because of the urban nature of the Bakersfield Hybrid Alternative, no permission to enter (PTE) was requested. In the Hanford West Bypass Alternative, PTE was granted for 41 parcels. Of these parcels, 11 contained potential jurisdictional SAR features. In the 102-foot separation, PTE was granted for 61 parcels, of which 22 contained potential jurisdictional SAR features. These 33 parcels were the focus of the field surveys.

The extent of all observed SAR features within these buffers was identified and mapped using a handheld GPS unit. Locations of SAR features were also marked on field maps. For each wetland data point, a paired upland point was taken to delineate the wetland boundary. Wetland scientists photographed each SAR feature to document physical characteristics. The landforms, vegetation, hydrology, and soil conditions were noted where these characteristics were relevant to the identification of the type, extent, or boundary of each SAR feature. Survey data and personnel were recorded on the Wetland Determination Data Form for the Arid West Region (Appendix A, Arid West Data Forms). Data collected in the field was processed using ArcGIS to create a spatially explicit model of wetland and upland areas. If conditions on the ground confirmed aerial imagery data, and no SAR features were identified during background research, no further surveys were conducted.

In addition to PTE limitations, land use type and safety considerations were taken into account when conducting the field surveys. In natural areas where PTE was granted, and where the environmental conditions warranted, a team of two wetland scientists walked meandering transects to visually assess the WSA for SAR features. Agricultural fields were visually inspected to verify that they were consistent with aerial photography. The WSA for the 102-foot separation includes land adjacent to the BNSF Railway track. Because access to the area extending 25 feet from the centerline of the BNSF Railway track was not permitted due to BNSF Health and Safety Regulations, some SAR features could only be identified using desktop analysis of available aerial imagery.

### **2.2.1.2 Recorded Special Aquatic Resources**

#### **Wetlands**

All wetlands were described using the Cowardin classification system (Cowardin et al. 1979).

Wetland boundaries were determined by using paired data points in wetland and adjacent upland areas. At each sample point, the characteristic vegetation was recorded, and soil test pits were hand-excavated (to 18 inches whenever possible) to determine groundwater hydrology and soil conditions. Photographs of the soil and surrounding vegetation were taken at each test pit. After evaluating the hydrology, soils, and vegetation, data points were recorded on Wetland Determination Data Forms for the Arid West Region (USACE 2008b).

All SAR features that potentially met USACE wetland criteria were recorded as lines, points, or polygons on the GPS unit, and recorded on field maps. The boundaries of wetlands were extrapolated by following topographic contours, wetland vegetation boundaries, and clear hydrologic boundaries.

#### **Other Waters of the U.S.**

Other waters of the U.S. in the WSA, within the Hanford West Bypass, the Bakersfield Hybrid Alternative, and the 102-foot separation, were delineated using the methods described in *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (USACE 2008a), and in USACE Regulatory Guidance Letter No. 05-05 (USACE 2005), where appropriate. These methodologies provided an approach for identifying the lateral limits of other waters of the U.S., using stream geomorphology and vegetation response to the dominant stream discharge (USACE 2008a).

Indicators of the ordinary high water mark (OHWM) evaluated in the field included natural lines impressed on banks, stain lines, depositional features, shelving, changes in soil character, changes in vegetation, destruction of terrestrial vegetation, and the presence of litter and debris. Guidance from the USACE in August 2010 stated that any SAR feature displaying an OHWM should be deemed as meeting USACE jurisdiction, and therefore should be considered as other waters of the U.S. (Simmons 2010a, 2010b, personal communication).

#### **Post-Field Effort Data Processing**

Information gathered in the field was organized in the office using GIS software and summarized in tables for future reference. All GPS data were differentially corrected to achieve submeter accuracy. All delineated SAR features were labeled with acronyms corresponding to their jurisdictional status, and overlaid on the same aerial imagery used for the field maps at a scale of 1 inch equals 200 feet. The quantity and extent of each SAR feature type were calculated using GIS.

#### **Desktop Analysis**

Where land parcels within the WSA for the Hanford West Bypass, the Bakersfield Hybrid Alternative, and the 102-foot separation were inaccessible due to lack of PTE, the wetland scientists performed visual surveys from adjacent public roads or adjacent parcels. In these cases of limited access, qualified wetland scientists worked with GIS specialists to identify and estimate the extent of the SAR features remotely, using topographic maps and aerial imagery. Desktop analyses were conducted following revisions to the alignment alternatives, and before each field survey.

## 2.3 Survey Dates

A reconnaissance field trip was conducted to review and obtain preliminary information for various field survey efforts, and to determine health and safety hazards, resources present, and potential biological resource issues. The reconnaissance survey was conducted on October 13, 2011, and was attended by Amy Langston, Senior Wetland Scientist; Denise Heick, Manager of Environmental Services; Katrina Hardt-Holoch, Senior Environmental Planner; Jeff Horn, Environmental Planner; Bart Bohn, Senior Program Manager; Cheryl Lehn, Public Outreach Specialist; and Jeff Binning, Engineer. No PTE was granted for that survey, so all ground-truthing and photo-documentation were conducted from public roads.

Following this reconnaissance survey, the 102-foot separation was introduced, and engineering revisions were made to the Hanford West Bypass Alternative. A multidisciplinary team of biologists went out to survey the Hanford West Bypass and the 102-foot separation on November 7 through November 10, 2011. No PTE was granted for this survey. Ground-truthing and photo-documenting of SAR features were conducted from public roads.

A formal wetland delineation was conducted for the Hanford West Bypass Alternative over a 5-day period—from November 28 to December 2, 2011. PTE was granted for 33 parcels, as stated in Section 2.2.1A. Delineation efforts were focused in parcels with a relatively natural landscape, and in parcels where the presence of SAR features was difficult to determine from aerial imagery alone. The names of the surveyors, their education, and their years of experience are outlined in Table 2.4-1.

**Table 2.4-1**  
 Field Staff 2011 Surveys

<b>Wetland Scientist</b>	<b>Education/Degree</b>	<b>Years of Experience</b>	<b>Knowledge Areas</b>
Amy Langston	M.S., Biology, San Francisco State University; B.S., Ecology & Systematic Biology, California Polytechnic State University, San Luis Obispo	10	Environmental document preparation, wetland delineations, mitigation monitoring, botanical surveys, habitat assessments.
Emily Magnaghi	M.S., Ecological and Systematic Biology; Botany, San Francisco State University; B.A. Botany, University of Michigan	13	Plant taxonomy, natural resources management, and collection management.

## 2.4 Agency Coordination and Professional Contacts

In addition to agency coordination considered in the June 2011 submittal of the PJWWDR, the following agency coordination and professional contacts contributed to the development of the results presented in this report.

On August 24, 2011 URS/HMM/Arup Joint Venture received a letter from the USACE with comments and questions regarding changes to specific SAR features, **removal of "Vernal Pool (Potential)"** and delineation and extension of these SAR features (Simmons 2011a, personal communication). On August 30, 2011 a follow up conversation was held between Zachary Simmons, of the USACE and Justin Whitfield, of URS/HMM/Arup (Simmons 2011b, personal

communication). On September 13, 2011 URS/HMM/Arup Joint Venture submitted a letter along with supporting material that addressed **the USACE's** comments and questions.

On September 26, 2011 URS/HMM/Arup Joint Venture received a request from the USACE for a table showing SAR feature types and total area of each feature (Simmons 2011c, personal communication). On November 3, 2011 URS/HMM/Arup Joint Venture prepared and submitted a letter along with supporting material in response to **USACE's** request for this information.

On December 28, 2011 URS/HMM/Arup Joint Venture received a request from Paul Maniccia of the USACE regarding the number of decimal places shown and rounding of SAR features, removal of culverts from impact tables, and additional review of Waters of the State (riparian) for potential inclusion as waters of the U.S. (Maniccia 2011, personal communication). A follow up conversation was held on January 3, 2012 between Zachary Simmons of the USACE and Justin Whitfield of URS/HMM/Arup Joint Venture regarding the deliverables and confirming requests and approach to these revisions (Simmons 2012a, personal communication). On February 21, 2012 URS/HMM/Arup Joint Venture submitted supporting material to the PJWWDR to the USACE.

Based on discussion during a meeting held on May 7, 2012, Justin Whitfield and Clay Statham of URS/HMM/Arup Joint Venture and Zachary Simmons of the USACE worked on May 9, 2012 to review the preliminary delineation mapping, and refine boundaries of jurisdictional waters of the U.S. and labeling of SAR features (Simmons 2012b, personal communication).

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## **Section 3.0**

### **Results**



## 3.0 Results

This section presents the results of the survey for potential jurisdictional SAR features within the Fresno to Bakersfield HST project WSA, including the new SAR features identified in the Hanford West Bypass, the Bakersfield Hybrid Alternative, and the 102-foot separation WSA (Appendix B, Mapbooks; and Appendix C, Key to Jurisdictional Waters Delineation Results Map). Summaries describing the types of SAR features identified in the Hanford West Bypass, the Bakersfield Hybrid, and 102-foot separation are provided first, followed by tables quantifying all the SAR features identified throughout the Fresno to Bakersfield Section of the HST Project.

SAR features were identified through direct field surveys, as well as through desktop analysis using the methodologies presented in Section 2.0 of this supplemental report, and in Section 3.0 of the June 2011 PJWWDR (Authority and FRA 2011). The various types of SAR features identified were categorized using a unique nomenclature, and classified as outlined in the June 2011 PJWWDR, with additional revisions from the USACE (Simmons 2012a, Simmons 2012b, personal communications). Appendix D, Photographs of Representative Jurisdictional Features in the Wetland Study Area, provides representative photographs of the SAR features found in the West Hanford Bypass, the Bakersfield Hybrid Alternative, and the 102-foot separation WSA.

### 3.1 Supplemental Survey Results

Within the Hanford West Bypass Alternative, the landscape was dominated by man-made SAR features (canals/ditches, retention/detention basins, and reservoirs). These man-made SAR features are generally used for agricultural purposes. A series of pumps are often used to transport water between canals/ditches, and retention/detention basins. Some of these ditches and retention/detention basins have associated seasonal wetland features; however, they are in relatively poor biological condition due to poor landscape position and a highly manipulated hydrological regime. One reservoir was mapped in the Hanford West Bypass, approximately 4 miles northeast of Cross Creek (the closest natural water body), and is managed by the Lakeside Irrigation District.

The seasonal riverine features that occur in the Hanford West Bypass are the Kings River and Murphy Slough canal, as well as other highly manipulated channels in the area directly north of Highway 198.

One emergent wetland was mapped in the Hanford West Bypass, approximately 2 miles south of Highway 198. The wetland is confined to a large, man-made depression. Although it may be remnant of a historic natural drainage system, it is highly manipulated, and appears to receive input from adjacent agricultural lands. This emergent wetland offers some habitat for wading birds and waterfowl.

SAR features in the Bakersfield Hybrid Alternative and the 102-foot separation are primarily extensions of SAR features previously mapped and discussed in the PJWWDR 2011. Additional vernal pools and vernal swales were mapped in the Allensworth area of the 102-foot separation. No vernal pools or vernal swales were mapped in the Hanford West Bypass Alternative or the Bakersfield Hybrid Alternative.

### 3.2 Updated Project Results

The following results are presented in terms of the entire Fresno to Bakersfield Section of the HST. Specifically, these results are consistent with the results presented in the June 2011 PJWWDR, plus the inclusion of the results from the new Hanford West Bypass, the Bakersfield Hybrid Alternative, and the 102-foot separation. These results should henceforth be considered

the most complete record of the SAR features identified within all portions of the proposed Fresno to Bakersfield Section of the HST Project.

The surveys for SAR features identified the presence of a number of types of SAR features that were classified either as wetlands or other waters of the U.S. Table 3.2-1 presents a summary of these HST water types by watershed within the WSA. The SAR features are further summarized based on HST water type, as described in Table 3.2-2.

The survey for SAR features identified 977 SAR features, totaling 676.54 acres (Table 3.2-1). Table E-1 in Appendix E (USACE ORM Data Forms) provides the USACE ORM data for all SAR features in the WSA, including the area (acreage) of each SAR feature under USACE jurisdiction. The majority of the wetlands in the Hanford West Bypass occur in the Upper Dry Basin watershed. The majority of the features mapped in the Bakersfield Hybrid Alternative occur in the Middle Kern – Upper Tehachapi Grapevine Watershed. The majority of the SAR features mapped along the 102-foot separation were extensions of existing SAR features from Fresno to Bakersfield, and are concentrated in the area near the town of Allensworth.

**Table 3.2-1**

Fresno-Bakersfield Special Aquatic Resources: Totals by Watershed in the Wetland Study Area<sup>a</sup>

Watershed	Wetlands		Other Waters of the U.S.	
	Number of Features	Acreage	Number of Features	Acreage
Upper Dry Basin	11	0.72	78	27.24
Tulare-Buena Vista Lakes Basin	113	13.40	219	155.22
Upper Kaweah Basin	5	7.74	45	43.17
Upper Tule Basin	9	7.90	11	10.30
Upper Deer-Upper White Basin	317	110.32	79	220.74
Upper Poso Basin	--	--	58	19.56
Middle Kern-Upper Tehachapi-Grapevine Basin	2	0.24	30	59.97
Subtotal	457	140.34	520	536.20
Special Aquatic Resources Total	Number of Features		977	
	Acreage		676.54 <sup>b</sup>	

Notes:

<sup>a</sup> Wetland Study Area includes linear and auxiliary project construction features (i.e., TPSS, switching stations, paralleling stations, road overcrossings, heavy maintenance facilities) plus a 250-foot buffer.

<sup>b</sup> This total is derived from raw GIS data. As a result, it may not exactly equal the sum of the rounded values presented in the table.

Acronym:

TPSS = traction power supply station

**Table 3.2-2**  
 Acreage of Special Aquatic Resource Water Types in the Wetland Study Area<sup>a</sup>

Wetlands			Other Waters of the U.S.		
SAR Type	Cowardin Classification	Acreage	SAR Water Type	Cowardin Classification	Acreage
Emergent Wetland	Palustrine persistent emergent	0.92	Canal/Ditch	Riverine unconsolidated bottom	199.55
Seasonal Wetland	Palustrine emergent nonpersistent	43.56	Reservoir	Lacustrine unconsolidated bottom	117.58
Vernal Pool	Palustrine emergent nonpersistent	77.90	Retention/Detention Basin	Lacustrine unconsolidated bottom	160.75
Vernal Swale	Palustrine emergent nonpersistent	17.96	Seasonal Riverine	Riverine unconsolidated bottom	58.33
<b>Total Wetlands</b>		<b>140.34<sup>a</sup></b>	<b>Total Other Waters of the U.S.</b>		<b>536.20<sup>a</sup></b>

<sup>a</sup> This total is derived from raw GIS data. As a result, it may not exactly equal the sum of the rounded values presented in the table.

### **3.3 Summary**

A total of 977 SAR features, covering 676.54 acres, were identified in the Fresno to Bakersfield Section of the HST Project. Of those, 457 (140.34 acres) were wetlands; and 520 (536.20 acres) were other waters of the U.S.

Features in the Fresno to Bakersfield Section of the HST Project were mapped based on the identification of 8 SAR feature types:

Wetlands:

- Emergent Wetland
- Seasonal Wetland
- Vernal Pool
- Vernal Swale

Other waters of the U.S.:

- Canals / Ditches
- Reservoir
- Retention / Detention Basin
- Seasonal Riverine

This supplemental report provides additional information about SAR features within the WSA, due to the modification and addition of alignments. The information and data presented in this report follow the relevant guidance provided in letters, emails, and phone conversations with the USACE. This supplement completes the delineation package to be reviewed by the USACE for a Preliminary Jurisdictional Determination.

## **Section 4.0**

### **References**



## 4.0 References

The references section includes documents, websites, and personal communications that were used by the authors of this report to present a technically sound and accurate account of the SAR features in the Fresno to Bakersfield Section of the HST Project.

### 4.1 Documents and Websites

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## 4.2 Personal Communications

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- . 2011a. Project manager, USACE, Sacramento, California. Email to Justin Whitfield, URS-HMM-Arup Joint Venture, regarding guidance for USACE jurisdiction, August 24, 2011.
- . 2011b. Project manager, USACE, Sacramento, California. Phone call with Justin Whitfield, URS-HMM-Arup Joint Venture, regarding guidance for USACE jurisdiction email, August 30, 2011.
- . 2011c. Project manager, USACE, Sacramento, California. Email to Justin Whitfield, URS-HMM-Arup Joint Venture, regarding comments from the September 13, 2012 submittal, September 26, 2011.
- . 2012a. Project manager, USACE, Sacramento, California. Phone call with Justin Whitfield of URS/HMM/Arup Joint Venture, regarding the USACE email and subsequent comment letter, January 3, 2012.

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**Appendix A**  
**Arid West Region Wetland Determination**  
**Data Forms**

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This appendix contains confidential information and has therefore not been included on the website.

**Appendix B**  
**Jurisdictional Waters Delineation Results Map**

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**Appendix C**  
**Key to Jurisdictional Waters Delineation**  
**Results Map**



Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
CCE1OW	Retention/Detention basin	0.13	Yes	Yes	10, 11
024DOW01	Retention/Detention basin	0.35	Yes	Yes	13
027AOW02	Canals/Ditches	0.02	Yes	Yes	15
027AOW03	Canals/Ditches	0.08	Yes	Yes	15, 16, 17
027EOW01	Canals/Ditches	0.02	Yes	Yes	15
027FOW01	Retention/Detention basin	0.35	Yes	Yes	15, 16, 17
CCE2OW	Canals/Ditches	0.09	Yes	Yes	17, 18
CCE2OW	Canals/Ditches	0.2	Yes	Yes	17
BN5WL01	Seasonal wetland	0.05	Yes	Yes	18
CCE5OW	Canals/Ditches	0.07	Yes	Yes	18
031FOW01	Canals/Ditches	0.24	Yes	Yes	19, 20
031FOW02	Retention/Detention basin	0.07	Yes	Yes	19
031FOW05	Retention/Detention basin	0.43	Yes	Yes	19, 21
031FWL01	Seasonal wetland	0.01	Yes	Yes	19
031FWL02	Seasonal wetland	0.01	Yes	Yes	19
031FWL03	Seasonal wetland	0.31	Yes	Yes	19
031FWL04	Seasonal wetland	0.06	Yes	Yes	19
031FWL05	Seasonal wetland	0.12	Yes	Yes	19
031FWL06	Seasonal wetland	0.004	Yes	Yes	19
031FWL07	Seasonal wetland	0.01	Yes	Yes	19
031FWL08	Seasonal wetland	0.03	Yes	Yes	19
031FWL09	Seasonal wetland	0.07	Yes	Yes	19
031FWL10	Seasonal wetland	0.05	Yes	Yes	19
035DOW01	Canals/Ditches	0.47	Yes	Yes	20, 22
034EOW01	Retention/Detention basin	0.64	Yes	Yes	21
034EOW02	Canals/Ditches	0.33	Yes	Yes	21
034EOW02	Canals/Ditches	1.44	Yes	Yes	21, 22
034EOW03	Canals/Ditches	0.1	Yes	Yes	21
034EOW04	Canals/Ditches	0.17	Yes	Yes	21
034EOW04	Canals/Ditches	0.21	Yes	Yes	21
034EOW05	Canals/Ditches	0.07	Yes	Yes	21
034PIOW01	Canals/Ditches	0.05	Yes	Yes	21
034PIOW01	Canals/Ditches	0.34	Yes	Yes	21, 22
034PIOW02	Retention/Detention basin	0.21	Yes	Yes	21
034PIOW03	Retention/Detention basin	0.25	Yes	Yes	21

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
CCE10OW	Retention/Detention basin	0.04	Yes	Yes	22
CCE11OW	Retention/Detention basin	2.3	Yes	Yes	22
CCE12OW	Retention/Detention basin	2.15	Yes	Yes	22
CCE15OW	Retention/Detention basin	0.15	Yes	Yes	22
CCE6OW	Retention/Detention basin	1.01	Yes	Yes	22
CCE7OW	Retention/Detention basin	0.9	Yes	Yes	22
CCE8OW	Retention/Detention basin	1.04	Yes	Yes	22
CCE9OW	Retention/Detention basin	0.17	Yes	Yes	22
036DOW02	Canals/Ditches	0.25	Yes	Yes	23, 26
036DOW04	Retention/Detention basin	0.04	Yes	Yes	23
036EOW01	Canals/Ditches	0.12	Yes	Yes	23, 25
CCE220OW	Canals/Ditches	0.02	Yes	Yes	23, 24
CCE229OW	Canals/Ditches	0.05	Yes	Yes	23, 26
035EOW01	Canals/Ditches	0.25	Yes	Yes	24
037EOW03	Canals/Ditches	0.04	Yes	Yes	24
CCE221OW	Canals/Ditches	0.01	Yes	Yes	24
036DOW01	Canals/Ditches	0.34	Yes	Yes	26
036DOW03	Retention/Detention basin	0.09	Yes	Yes	26
037EOW02	Canals/Ditches	0.04	Yes	Yes	26, 27
041EOW01	Canals/Ditches	0.21	Yes	Yes	30
041EOW01	Canals/Ditches	0.72	Yes	Yes	28, 30, 31
042EOW01	Canals/Ditches	0.05	Yes	Yes	31, 32
042EOW01	Canals/Ditches	0.25	Yes	Yes	30
042EOW01	Canals/Ditches	0.44	Yes	Yes	31
043DOW01	Canals/Ditches	0.02	Yes	Yes	31
043DOW01	Canals/Ditches	0.02	Yes	Yes	31
043DOW01	Canals/Ditches	0.02	Yes	Yes	31
046DOW02	Canals/Ditches	0.1	Yes	Yes	33, 34
047COW01	Canals/Ditches	0.25	Yes	Yes	33, 34
046DOW01	Canals/Ditches	0.03	Yes	Yes	34
052BOW01	Canals/Ditches	0.14	Yes	Yes	39
052BOW01	Canals/Ditches	0.14	Yes	Yes	41
052BOW01	Canals/Ditches	0.43	Yes	Yes	40, 41
052BOW01	Canals/Ditches	0.44	Yes	Yes	39, 40
053COW01	Retention/Detention basin	0.75	Yes	Yes	42
061COW01	Retention/Detention basin	1.69	Yes	Yes	51

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
064COW01	Canals/Ditches	0.05	Yes	Yes	51
064COW02	Canals/Ditches	0.08	Yes	Yes	51
067BOW01	Canals/Ditches	0.01	Yes	Yes	55
067BOW01	Canals/Ditches	0.02	Yes	Yes	55
067BOW01	Canals/Ditches	0.15	Yes	Yes	54, 55
CCE19OW	Canals/Ditches	0.17	Yes	Yes	56
BN19OW03	Reservoir	1.12	Yes	Yes	57, 61
070BOW01	Canals/Ditches	0.08	Yes	Yes	58
070BOW01	Canals/Ditches	0.13	Yes	Yes	58, 59
073BOW01	Canals/Ditches	0.28	Yes	Yes	60, 61, 62
073BOW01	Canals/Ditches	1.02	Yes	Yes	62, 63
BN20OW01	Canals/Ditches	0.11	Yes	Yes	62
CCE20OW	Canals/Ditches	0.44	Yes	Yes	100, 102
CCE21OW	Canals/Ditches	0.25	Yes	Yes	102
CCE22OW	Seasonal riverine	2.87	Yes	Yes	104, 105, 106
CCE28OW	Seasonal riverine	1.19	Yes	Yes	107, 108, 109
CCE30OW	Seasonal riverine	1.77	Yes	Yes	114
CCE32OW	Canals/Ditches	0.1	Yes	Yes	115
CCE30OW	Seasonal riverine	4.41	Yes	Yes	113, 114, 115
CCE32OW	Canals/Ditches	1.07	Yes	Yes	113, 114, 115
CCE35OW	Canals/Ditches	0.98	Yes	Yes	123, 124
CCE33OW	Retention/Detention basin	0.05	Yes	Yes	124
CCE34OW	Canals/Ditches	0.73	Yes	Yes	124
CCE36OW	Canals/Ditches	0.91	Yes	Yes	135, 136
CCE37OW	Canals/Ditches	0.9	Yes	Yes	135, 138
CCE38OW	Retention/Detention basin	0.13	Yes	Yes	141
CCE39OW	Retention/Detention basin	0.16	Yes	Yes	141
CCE40OW	Retention/Detention basin	0.36	Yes	Yes	141
CCE41OW	Retention/Detention basin	0.24	Yes	Yes	141
159FOW01	Canals/Ditches	0.17	Yes	Yes	154
162FOW01	Canals/Ditches	0.6	Yes	Yes	156
163BOW06	Retention/Detention basin	0.43	Yes	Yes	156
180BOW02	Canals/Ditches	0.53	Yes	Yes	156
180BOW02	Canals/Ditches	0.61	Yes	Yes	171, 174
CCE48OW	Retention/Detention basin	0.3	Yes	Yes	156
CCE49OW	Retention/Detention basin	2.78	Yes	Yes	162

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
180BOW02	Canals/Ditches	1.2	Yes	Yes	165, 168, 171
177PIOW01	Canals/Ditches	0.02	Yes	Yes	168, 169
180BOW02	Canals/Ditches	1.55	Yes	Yes	156, 159, 162, 165
CCE50OW	Canals/Ditches	0.24	Yes	Yes	173, 174, 176, 177
180BOW01	Canals/Ditches	0.14	Yes	Yes	174, 175
185BOW01	Canals/Ditches	0.19	Yes	Yes	175, 178
185BOW01	Canals/Ditches	2.14	Yes	Yes	177, 178, 180
186BOW01	Canals/Ditches	0.06	Yes	Yes	177, 180
CCE51OW	Canals/Ditches	0.08	Yes	Yes	177
190BOW02	Canals/Ditches	0.36	Yes	Yes	181, 184
190BOW02	Canals/Ditches	2.23	Yes	Yes	182, 183, 184
198BOW02	Canals/Ditches	0.25	Yes	Yes	188
CCE204OW	Canals/Ditches	0.07	Yes	Yes	191, 194
CCE204OW	Canals/Ditches	0.33	Yes	Yes	188, 191
CCE204OW	Canals/Ditches	0.84	Yes	Yes	188
CCE55OW	Seasonal riverine	0.72	Yes	Yes	195
CCE54OW	Retention/Detention basin	0.38	Yes	Yes	197
CCE219OW	Canals/Ditches	0.4	Yes	Yes	198, 201, 202
CCE58OW	Seasonal riverine	0.39	Yes	Yes	199
CCE218OW	Canals/Ditches	0.12	Yes	Yes	200
CCE56OW	Canals/Ditches	0.08	Yes	Yes	201
CCE59OW	Canals/Ditches	0.26	Yes	Yes	201
CCE61OW	Seasonal riverine	2.99	Yes	Yes	203
CCE63OW	Retention/Detention basin	0.49	Yes	Yes	203
CCE65OW	Canals/Ditches	1.21	Yes	Yes	204, 287, 288
CCE68OW	Canals/Ditches	0.12	Yes	Yes	204
CCE73OW	Canals/Ditches	0.51	Yes	Yes	205, 290
CCE74OW	Canals/Ditches	0.41	Yes	Yes	205, 290
WH61OW05	Canals/Ditches	0.19	Yes	Yes	210
WH62OW01	Seasonal riverine	1.19	Yes	Yes	213, 214
WH64OW03	Canals/Ditches	0.47	Yes	Yes	215, 216
WH64OW05	Canals/Ditches	0.46	Yes	Yes	215, 216
WH64OW08	Seasonal riverine	2.95	Yes	Yes	216
WH65OW02	Canals/Ditches	0.8	Yes	Yes	217, 218, 219
WH67OW02	Canals/Ditches	0.05	Yes	Yes	223

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
WH67OW03	Canals/Ditches	0.27	Yes	Yes	223
WH70OW03	Canals/Ditches	2.52	Yes	Yes	228, 230, 231, 232
WH71OW01	Canals/Ditches	0.62	Yes	Yes	230, 233, 235
WH72OW02	Canals/Ditches	0.02	Yes	Yes	235
WH73OW02	Canals/Ditches	1.81	Yes	Yes	236, 238, 239
WH74OW01	Canals/Ditches	2	Yes	Yes	239, 240, 241
WH74OW02	Seasonal riverine	0.78	Yes	Yes	240, 241
WH75OW05	Canals/Ditches	0.18	Yes	Yes	240, 242
WH74WL01	Seasonal wetland	0.44	Yes	Yes	241
WH75OW04	Canals/Ditches	0.32	Yes	Yes	241, 244
WH75OW08	Retention/Detention basin	0.23	Yes	Yes	242
WH75OW14	Retention/Detention basin	1.15	Yes	Yes	243
WH75OW01	Canals/Ditches	0.79	Yes	Yes	244, 251
WH75OW02	Canals/Ditches	0.44	Yes	Yes	244
WH75OW03	Canals/Ditches	1.01	Yes	Yes	244
WH75OW06	Retention/Detention basin	0.36	Yes	Yes	245, 246
WH75OW07	Retention/Detention basin	0.43	Yes	Yes	245
WH75OW10	Retention/Detention basin	0.36	Yes	Yes	245
WH75OW11	Seasonal wetland	0.02	Yes	Yes	246
WH75OW13	Retention/Detention basin	3.88	Yes	Yes	247
WH76SW01	Retention/Detention basin	0.19	Yes	Yes	247
WH76OW02	Canals/Ditches	0.27	Yes	Yes	248
WH77OW06	Canals/Ditches	0.21	Yes	Yes	250, 251, 252
WH77OW07	Seasonal riverine	0.23	Yes	Yes	250, 252, 253
WH78OW01	Canals/Ditches	0.42	Yes	Yes	252, 256
WH78OW10	Canals/Ditches	0.83	Yes	Yes	254, 255, 257, 258
WH79WL03	Emergent wetland	0.59	Yes	Yes	255, 257
WH80OW02	Canals/Ditches	0.28	Yes	Yes	256
WH79OW05	Canals/Ditches	0.41	Yes	Yes	258
WH80OW01	Canals/Ditches	1	Yes	Yes	258, 259, 260, 261
WH81OW01	Canals/Ditches	0.11	Yes	Yes	260
WH81OW04	Canals/Ditches	1.17	Yes	Yes	260
WH82OW01	Canals/Ditches	0.14	Yes	Yes	265
WH83OW01	Canals/Ditches	2.11	Yes	Yes	265, 267, 268,

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
					271
WH83OW02	Canals/Ditches	0.23	Yes	Yes	266, 267
WH84OW05	Canals/Ditches	0.56	Yes	Yes	270, 272
WH84OW08	Canals/Ditches	0.28	Yes	Yes	271, 272
WH85OW02	Canals/Ditches	0.19	Yes	Yes	271, 274
WH84OW06	Retention/Detention basin	0.08	Yes	Yes	272
WH85OW12	Retention/Detention basin	0.07	Yes	Yes	272, 274
WH85OW10	Canals/Ditches	0.05	Yes	Yes	274, 275
WH85WL04	Seasonal wetland	0.01	Yes	Yes	274
WH85OW03	Canals/Ditches	0.27	Yes	Yes	275, 276
WH85OW04	Canals/Ditches	2.85	Yes	Yes	276, 278, 280, 281
WH85OW11	Canals/Ditches	0.03	Yes	Yes	277
WH86OW01	Retention/Detention basin	0.67	Yes	Yes	278, 279
WH85OW05	Reservoir	7	Yes	Yes	279
WH87OW01	Canals/Ditches	0.15	Yes	Yes	280
WH86OW03	Canals/Ditches	0.64	Yes	Yes	282, 283
WH87OW04	Canals/Ditches	0.31	Yes	Yes	282, 285
WH87OW06	Canals/Ditches	0.46	Yes	Yes	282, 284
WH87OW05	Canals/Ditches	0.47	Yes	Yes	284
WH87OW07	Canals/Ditches	0.02	Yes	Yes	284
WH87OW08	Canals/Ditches	0.04	Yes	Yes	284, 285, 286
WH87OW09	Canals/Ditches	0.52	Yes	Yes	285, 286
CCE217OW	Retention/Detention basin	0.07	Yes	Yes	287
CCE69OW	Canals/Ditches	3.49	Yes	Yes	287, 289, 290, 291, 292, 294, 295
CCE64WL	Emergent wetland	0.33	Yes	Yes	288
CCE71OW	Canals/Ditches	0.32	Yes	Yes	289, 290
CCE72OW	Canals/Ditches	0.72	Yes	Yes	290
CCE76OW	Canals/Ditches	2.02	Yes	Yes	290, 291, 292
BN90OW02	Canals/Ditches	0.15	Yes	Yes	291, 292
BN90OW06	Canals/Ditches	1.89	Yes	Yes	292, 293, 294, 296
CCE78OW	Canals/Ditches	1.33	Yes	Yes	292, 293, 294, 295
BN90OW03	Canals/Ditches	0.16	Yes	Yes	293, 296

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
CCE81OW	Canals/Ditches	2.29	Yes	Yes	293, 294, 296, 298
BN90OW07	Canals/Ditches	1.02	Yes	Yes	296
BN91OW04	Canals/Ditches	0.17	Yes	Yes	296, 298
CCE79OW	Seasonal riverine	3.74	Yes	Yes	296, 297
CCE79OW	Seasonal riverine	3.74	Yes	Yes	296, 297
CCE80OW	Seasonal riverine	0.79	Yes	Yes	296, 298
CCE86OW	Canals/Ditches	0.68	Yes	Yes	300, 301
PI06WL	Reservoir	3.7	Yes	Yes	300, 301, 302, 303, 304
CCE216OW	Canals/Ditches	0.85	Yes	Yes	303, 304
CCE88OW	Canals/Ditches	0.49	Yes	Yes	303, 304
CCE215OW	Retention/Detention basin	0.13	Yes	Yes	304
CCE87OW	Canals/Ditches	0.23	Yes	Yes	304
CCE89OW	Canals/Ditches	1.31	Yes	Yes	306, 309
CCE93OW	Canals/Ditches	0.5	Yes	Yes	308
CCE94OW	Canals/Ditches	1.37	Yes	Yes	308, 309
CCE97OW	Canals/Ditches	0.25	Yes	Yes	308
240HOW03	Canals/Ditches	1.58	Yes	Yes	309, 310
CCE98OW	Canals/Ditches	3.42	Yes	Yes	309, 311, 312, 314
CCE100OW	Canals/Ditches	0.43	Yes	Yes	316, 319
CCE101OW	Canals/Ditches	4.24	Yes	Yes	319, 320, 325
256GOW02	Canals/Ditches	0.92	Yes	Yes	320, 321, 325
254HOW05	Canals/Ditches	0.35	Yes	Yes	323, 324
254HOW06	Canals/Ditches	0.005	Yes	Yes	323
CCE108OW	Retention/Detention basin	0.53	Yes	Yes	323
260PISW01	Retention/Detention basin	0.51	Yes	Yes	324
CCE105OW	Canals/Ditches	0.31	Yes	Yes	324, 325
CCE107OW	Canals/Ditches	0.15	Yes	Yes	324
CCE103OW	Retention/Detention basin	0.23	Yes	Yes	325
CCE110OW	Canals/Ditches	0.58	Yes	Yes	325
CCE111OW	Retention/Detention basin	0.003	Yes	Yes	333
278BOW02	Canals/Ditches	0.28	Yes	Yes	334, 338
CCE214OW	Retention/Detention basin	0.51	Yes	Yes	334, 337
278BOW02	Canals/Ditches	0.52	Yes	Yes	344, 347
272PISW01	Retention/Detention basin	0.11	Yes	Yes	339

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
412OW02	Canals/Ditches	0.13	Yes	Yes	339, 340
274GOW01	Canals/Ditches	0.17	Yes	Yes	341, 342
CCE237OW	Canals/Ditches	0.03	Yes	Yes	341
PI06OW	Canals/Ditches	0.6	Yes	Yes	341
CCE113OW	Canals/Ditches	0.5	Yes	Yes	342, 343
276BOW02	Canals/Ditches	0.24	Yes	Yes	344
278BOW01	Retention/Detention basin	0.55	Yes	Yes	344, 345, 347
278BOW02	Canals/Ditches	8.87	Yes	Yes	338, 339, 341, 342, 344
279JWL01	Seasonal wetland	1.19	Yes	Yes	344, 345
CCE232OW	Canals/Ditches	0.28	Yes	Yes	347, 348
279JWL02	Seasonal wetland	0.05	Yes	Yes	348
279JWL03	Vernal pool	0.58	Yes	Yes	348
279JWL04	Vernal pool	5.85	Yes	Yes	348, 352, 353, 356
279JWL04	Vernal pool	5.85	Yes	Yes	348, 352, 353, 356
CCE119OW	Canals/Ditches	0.6	Yes	Yes	348, 349
PI04OW	Canals/Ditches	0.07	Yes	Yes	349
PI05OW	Canals/Ditches	0.12	Yes	Yes	349, 350
PI05OW	Canals/Ditches	0.12	Yes	Yes	349, 350
PI02OW	Canals/Ditches	0.83	Yes	Yes	351
285DOW01	Canals/Ditches	1.09	Yes	Yes	352, 353, 356
285DOW01	Canals/Ditches	1.09	Yes	Yes	352, 353, 356
283DWL01	Seasonal wetland	0.08	Yes	Yes	353
283DWL01	Seasonal wetland	0.08	Yes	Yes	353
283DWL02	Seasonal wetland	0.31	Yes	Yes	353
283PIOW01	Retention/Detention basin	0.37	Yes	Yes	353
283PIOW01	Retention/Detention basin	0.37	Yes	Yes	353
285DWL01	Vernal pool	0.01	Yes	Yes	356
286BOW01	Retention/Detention basin	0.12	Yes	Yes	356
286JWL01	Vernal swale	1.19	Yes	Yes	356
288BOW02	Canals/Ditches	1.48	Yes	Yes	356, 357, 359
288DWL02	Seasonal wetland	0.01	Yes	Yes	356
288DWL03	Seasonal wetland	0.42	Yes	Yes	356, 357
288BOW05	Seasonal riverine	2.74	Yes	Yes	358, 359
288BOW03	Retention/Detention basin	3.55	Yes	Yes	359

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
288DOW01	Seasonal riverine	0.43	Yes	Yes	359, 360
289DOW01	Canals/Ditches	0.003	Yes	Yes	359
289DOW02	Canals/Ditches	0.01	Yes	Yes	359
289DOW02	Canals/Ditches	0.01	Yes	Yes	359
289DOW03	Canals/Ditches	0.02	Yes	Yes	359
289DOW03	Canals/Ditches	0.02	Yes	Yes	359
289DWL01	Seasonal wetland	0.02	Yes	Yes	359
289DWL02	Seasonal wetland	0.02	Yes	Yes	359
289DWL02	Seasonal wetland	0.02	Yes	Yes	359
289DWL03	Seasonal wetland	0.07	Yes	Yes	359
289DWL04	Seasonal wetland	0.01	Yes	Yes	359
289DWL04	Seasonal wetland	0.01	Yes	Yes	359
290GOW01	Canals/Ditches	0.38	Yes	Yes	359, 361
290GOW01	Canals/Ditches	0.38	Yes	Yes	359, 361
290GOW02	Canals/Ditches	3.89	Yes	Yes	361, 362, 364, 365, 366, 368, 370
ACE11OW	Retention/Detention basin	1.1	Yes	Yes	362
ACE12OW	Retention/Detention basin	1.16	Yes	Yes	362
ACE13OW	Retention/Detention basin	1.19	Yes	Yes	362
ACE14OW	Retention/Detention basin	0.49	Yes	Yes	362, 365
ACE15OW	Retention/Detention basin	2.72	Yes	Yes	362, 365, 366
ACE16OW	Retention/Detention basin	3.63	Yes	Yes	362, 365, 366
CCE124OW	Canals/Ditches	0.06	Yes	Yes	363
CCE125OW	Retention/Detention basin	0.36	Yes	Yes	363
CCE126OW	Canals/Ditches	0.03	Yes	Yes	363
295GOW01	Retention/Detention basin	0.16	Yes	Yes	367, 370
297GOW02	Retention/Detention basin	0.04	Yes	Yes	367, 370
BN107OW01	Canals/Ditches	0.43	Yes	Yes	368, 369
BN107OW02	Canals/Ditches	0.07	Yes	Yes	368
297GOW01	Canals/Ditches	0.05	Yes	Yes	370, 371
BN107OW03	Canals/Ditches	0.03	Yes	Yes	369
297GOW01	Canals/Ditches	0.75	Yes	Yes	369, 370
297JWL01	Vernal swale	0.24	Yes	Yes	370
297RSWL01	Seasonal wetland	0.002	Yes	Yes	371
297RSWL01	Seasonal wetland	0.003	Yes	Yes	371
297RSWL01	Seasonal wetland	0.003	Yes	Yes	371

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
297RSWL01	Seasonal wetland	0.01	Yes	Yes	371
297RSWL01	Seasonal wetland	0.01	Yes	Yes	371
297RSWL01	Seasonal wetland	0.01	Yes	Yes	371
297RSWL01	Seasonal wetland	0.02	Yes	Yes	371
297RSWL01	Seasonal wetland	0.02	Yes	Yes	371
297RSWL01	Seasonal wetland	0.03	Yes	Yes	371
297RSWL01	Seasonal wetland	0.04	Yes	Yes	371
297RSWL01	Seasonal wetland	0.06	Yes	Yes	371
297RSWL01	Seasonal wetland	0.06	Yes	Yes	371
297RSWL01	Seasonal wetland	0.09	Yes	Yes	371
297RSWL01	Seasonal wetland	0.09	Yes	Yes	371
297RSWL01	Seasonal wetland	0.24	Yes	Yes	371
297RSWL01	Seasonal wetland	0.38	Yes	Yes	371, 372
300RSWL01	Seasonal wetland	0.001	Yes	Yes	372
300RSWL01	Seasonal wetland	0.31	Yes	Yes	372
301RSWL01	Seasonal wetland	0.001	Yes	Yes	373
301RSWL01	Seasonal wetland	0.001	Yes	Yes	373
301RSWL01	Seasonal wetland	0.002	Yes	Yes	376
301RSWL01	Seasonal wetland	0.002	Yes	Yes	373
301RSWL01	Seasonal wetland	0.01	Yes	Yes	376
301RSWL01	Seasonal wetland	0.01	Yes	Yes	373
301GOW02	Canals/Ditches	0.03	Yes	Yes	373
301GOW02	Canals/Ditches	0.1	Yes	Yes	375
301GOW02	Canals/Ditches	0.18	Yes	Yes	373
301GOW03	Canals/Ditches	0.33	Yes	Yes	373
301RSWL01	Seasonal wetland	0.01	Yes	Yes	373
301RSWL01	Seasonal wetland	0.01	Yes	Yes	372
301RSWL01	Seasonal wetland	0.01	Yes	Yes	372
301RSWL01	Seasonal wetland	0.01	Yes	Yes	372
301RSWL01	Seasonal wetland	0.01	Yes	Yes	372
301RSWL01	Seasonal wetland	0.01	Yes	Yes	372
301RSWL01	Seasonal wetland	0.01	Yes	Yes	372
301RSWL01	Seasonal wetland	0.02	Yes	Yes	373
301RSWL01	Seasonal wetland	0.02	Yes	Yes	373
301RSWL01	Seasonal wetland	0.02	Yes	Yes	373
301RSWL01	Seasonal wetland	0.04	Yes	Yes	373
301RSWL01	Seasonal wetland	0.04	Yes	Yes	373

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
301RSWL01	Seasonal wetland	0.07	Yes	Yes	372
301GOW01	Canals/Ditches	0.74	Yes	Yes	374, 375
301GOW02	Canals/Ditches	0.32	Yes	Yes	373, 375
301RSWL01	Seasonal wetland	0.09	Yes	Yes	373
301RSWL01	Seasonal wetland	0.11	Yes	Yes	373, 375, 376
301RSWL01	Seasonal wetland	0.14	Yes	Yes	376
303RSWL01	Seasonal wetland	0.002	Yes	Yes	376
303RSWL01	Seasonal wetland	0.002	Yes	Yes	376
303RSWL01	Seasonal wetland	0.004	Yes	Yes	376
303RSWL01	Seasonal wetland	0.01	Yes	Yes	376
303RSWL01	Seasonal wetland	0.03	Yes	Yes	376
303RSWL01	Seasonal wetland	0.03	Yes	Yes	376
303RSWL01	Seasonal wetland	0.05	Yes	Yes	376
304EOW01	Retention/Detention basin	0.42	Yes	Yes	376, 377
304RSWL01	Seasonal wetland	0.001	Yes	Yes	376
304RSWL01	Seasonal wetland	0.001	Yes	Yes	376
304RSWL01	Seasonal wetland	0.002	Yes	Yes	377
304RSWL01	Seasonal wetland	0.002	Yes	Yes	376
304RSWL01	Seasonal wetland	0.002	Yes	Yes	376
304RSWL01	Seasonal wetland	0.002	Yes	Yes	376
304RSWL01	Seasonal wetland	0.002	Yes	Yes	376
304RSWL01	Seasonal wetland	0.003	Yes	Yes	376
304RSWL01	Seasonal wetland	0.003	Yes	Yes	376
304RSWL01	Seasonal wetland	0.003	Yes	Yes	376
304RSWL01	Seasonal wetland	0.004	Yes	Yes	376
304RSWL01	Seasonal wetland	0.01	Yes	Yes	377
304RSWL01	Seasonal wetland	0.01	Yes	Yes	377
304RSWL01	Seasonal wetland	0.01	Yes	Yes	376
304RSWL01	Seasonal wetland	0.01	Yes	Yes	376
304RSWL01	Seasonal wetland	0.01	Yes	Yes	376
304RSWL01	Seasonal wetland	0.02	Yes	Yes	376
304RSWL01	Seasonal wetland	0.02	Yes	Yes	376
304RSWL01	Seasonal wetland	0.03	Yes	Yes	376
304RSWL01	Seasonal wetland	0.04	Yes	Yes	376
304RSWL01	Seasonal wetland	0.05	Yes	Yes	376
304RSWL01	Seasonal wetland	0.08	Yes	Yes	376
304RSWL01	Seasonal wetland	0.09	Yes	Yes	376

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
304RSWL01	Seasonal wetland	0.13	Yes	Yes	376
306GOW03	Canals/Ditches	0.73	Yes	Yes	377, 380
306RSWL01	Seasonal wetland	0.001	Yes	Yes	377
306RSWL01	Seasonal wetland	0.002	Yes	Yes	378
306RSWL01	Seasonal wetland	0.002	Yes	Yes	377
306RSWL01	Seasonal wetland	0.01	Yes	Yes	378
306RSWL01	Seasonal wetland	0.01	Yes	Yes	378
306RSWL01	Seasonal wetland	0.01	Yes	Yes	378
306RSWL01	Seasonal wetland	0.01	Yes	Yes	377
306RSWL01	Seasonal wetland	0.01	Yes	Yes	377
306GOW04	Canals/Ditches	0.43	Yes	Yes	378
306GOW05	Retention/Detention basin	0.18	Yes	Yes	378
306RSWL01	Seasonal wetland	0.01	Yes	Yes	377
306RSWL01	Seasonal wetland	0.02	Yes	Yes	378
306RSWL01	Seasonal wetland	0.02	Yes	Yes	378
306RSWL01	Seasonal wetland	0.02	Yes	Yes	377
306RSWL01	Seasonal wetland	0.03	Yes	Yes	378
306RSWL01	Seasonal wetland	0.04	Yes	Yes	378
306RSWL01	Seasonal wetland	0.05	Yes	Yes	378
306RSWL01	Seasonal wetland	0.05	Yes	Yes	378
306RSWL01	Seasonal wetland	0.13	Yes	Yes	377
306RSWL01	Seasonal wetland	0.14	Yes	Yes	377
307RSWL01	Seasonal wetland	0.003	Yes	Yes	378
307RSWL01	Seasonal wetland	0.005	Yes	Yes	378
307RSWL01	Seasonal wetland	0.005	Yes	Yes	378
307RSWL01	Seasonal wetland	0.01	Yes	Yes	380
307RSWL01	Seasonal wetland	0.01	Yes	Yes	378
306GOW02	Canals/Ditches	0.98	Yes	Yes	379, 380
307GOW01	Retention/Detention basin	0.93	Yes	Yes	380
307RSWL01	Seasonal wetland	0.01	Yes	Yes	378
307RSWL01	Seasonal wetland	0.04	Yes	Yes	380
309GOW01	Canals/Ditches	1.16	Yes	Yes	381, 382
309DOW01	Canals/Ditches	0.95	Yes	Yes	382, 383, 384
315GOW01	Canals/Ditches	0.22	Yes	Yes	385
315GOW02	Retention/Detention basin	0.08	Yes	Yes	384, 385
317EOW03	Canals/Ditches	0.5	Yes	Yes	384, 386, 387,

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
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315DWL01	Seasonal wetland	0.33	Yes	Yes	385, 387
315GOW01	Canals/Ditches	2.93	Yes	Yes	384, 385, 387, 389
315KWL01	Vernal Pool	3.32	Yes	Yes	385, 387, 388, 390
ACE02WL	Seasonal wetland	0.42	Yes	Yes	385, 387
318DOW01	Canals/Ditches	0.1	Yes	Yes	390
318DOW02	Canals/Ditches	0.01	Yes	Yes	390
318DWL01	Seasonal wetland	0.14	Yes	Yes	390
318KWL01	Vernal swale	1.27	Yes	Yes	390
CCE241WL	Vernal swale	0.03	Yes	Yes	390
322EOW01	Canals/Ditches	1.55	Yes	Yes	392, 393
322AWL02	Vernal swale	1.56	Yes	Yes	393, 396
322AWL02	Vernal swale	1.56	Yes	Yes	393, 396
322EOW02	Retention/Detention basin	0.07	Yes	Yes	393
322KWL01	Vernal swale	0.82	Yes	Yes	393
325EOW01	Retention/Detention basin	0.32	Yes	Yes	396
325KWL01	Vernal swale	0.22	Yes	Yes	396
327EOW01	Retention/Detention basin	0.01	Yes	Yes	398
327KWL01	Seasonal wetland	9.5	Yes	Yes	398, 399, 400, 401, 402, 403, 404
330EOW01	Retention/Detention basin	0.15	Yes	Yes	399, 400
AB003AWL01	Seasonal wetland	0.25	Yes	Yes	399, 400
330EOW02	Canals/Ditches	2.91	Yes	Yes	400, 401, 402, 403, 404
AB004AWL01	Seasonal wetland	0.19	Yes	Yes	401
336EOW01	Canals/Ditches	2.05	Yes	Yes	402, 403, 404, 408, 409
336EOW01	Canals/Ditches	2.05	Yes	Yes	402, 403, 404, 408, 409
333EOW02	Retention/Detention basin	0.2	Yes	Yes	403
AB006AWL01	Seasonal wetland	0.42	Yes	Yes	403, 404
336PIOW01	Retention/Detention basin	45.85	Yes	Yes	404, 405, 409, 410
337EOW01	Seasonal riverine	1.17	Yes	Yes	404, 405
337KWL01	Seasonal wetland	1.38	Yes	Yes	404, 405

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
ACE01WL	Seasonal wetland	2.39	Yes	Yes	404, 405
337KWL02	Vernal swale	2.74	Yes	Yes	405, 410, 411
412OW03	Reservoir	28.75	Yes	Yes	406, 407, 408, 409, 412
412OW04	Canals/Ditches	5.3	Yes	Yes	406, 407, 408
412OW06	Canals/Ditches	8.39	Yes	Yes	406, 412, 416, 423
412OW07	Canals/Ditches	2.1	Yes	Yes	406, 407, 408
412OW11	Canals/Ditches	0.27	Yes	Yes	406
412OW12	Canals/Ditches	0.1	Yes	Yes	406
341BWL10	Vernal pool	0.1	Yes	Yes	410, 411
341BWL11	Vernal pool	0.02	Yes	Yes	410
341BWL12	Vernal swale	0.18	Yes	Yes	410
341BWL04	Vernal pool	0.12	Yes	Yes	411, 414
341BWL05	Vernal pool	0.04	Yes	Yes	411
341BWL06	Vernal pool	0.05	Yes	Yes	411
341BWL07	Vernal pool	0.03	Yes	Yes	411
341BWL08	Vernal pool	0.02	Yes	Yes	411
341BWL09	Vernal pool	0.02	Yes	Yes	411
341KWL01	Vernal Pool	3.67	Yes	Yes	411, 414, 419
341BWL01	Vernal pool	0.05	Yes	Yes	414
341BWL02	Vernal pool	0.14	Yes	Yes	414
341BWL03	Vernal pool	0.02	Yes	Yes	414
345BWL01	Vernal pool	0.08	Yes	Yes	414
345BWL02	Vernal pool	0.14	Yes	Yes	414
345BWL03	Vernal pool	0.21	Yes	Yes	414
346BWL02	Vernal pool	0.08	Yes	Yes	414
ACE01OW	Retention/Detention basin	11.82	Yes	Yes	414, 415, 419, 421, 427
ACE02OW	Canals/Ditches	1.21	Yes	Yes	414
349FOW01	Reservoir	77.01	Yes	Yes	417, 418, 419, 424, 425, 426
346BWL01	Vernal pool	0.04	Yes	Yes	419
350BWL03	Vernal pool	0.01	Yes	Yes	419
350KWL01	Vernal swale	0.52	Yes	Yes	419, 421, 427
350BWL02	Vernal swale	0.01	Yes	Yes	421
412OW05	Canals/Ditches	0.17	Yes	Yes	423

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
349FOW02	Canals/Ditches	0.03	Yes	Yes	424
349FOW03	Canals/Ditches	0.11	Yes	Yes	426, 427
349FOW04	Canals/Ditches	0.31	Yes	Yes	424, 425
349FOW04	Canals/Ditches	0.32	Yes	Yes	424
CCE240WL	Vernal swale	0.21	Yes	Yes	424, 425
CCE240WL	Vernal swale	0.65	Yes	Yes	424, 425
349FOW02	Canals/Ditches	0.15	Yes	Yes	425, 426
349FOW04	Canals/Ditches	0.84	Yes	Yes	425
349FOW03	Canals/Ditches	0.11	Yes	Yes	424, 425, 426
350PIOW01	Retention/Detention basin	2.52	Yes	Yes	426, 427
350BWL01	Seasonal wetland	0.05	Yes	Yes	427
351EOW01	Retention/Detention basin	0.03	Yes	Yes	427
351KWL01	Vernal Pool	6.18	Yes	Yes	427, 428, 429, 430
355EOW03	Canals/Ditches	0.54	Yes	Yes	427
355KWL03	Vernal pool	0.03	Yes	Yes	427
355KWL04	Vernal pool	0.05	Yes	Yes	427
355KWL05	Vernal pool	0.04	Yes	Yes	427
355KWL06	Vernal pool	0.25	Yes	Yes	427
355KWL07	Vernal pool	1.03	Yes	Yes	427
355PIOW01	Retention/Detention basin	0.28	Yes	Yes	427
371EOW01	Canals/Ditches	0.1	Yes	Yes	435
355KWL01	Vernal pool	0.03	Yes	Yes	428
355OOW01	Canals/Ditches	0.003	Yes	Yes	428
355OOW01	Canals/Ditches	0.004	Yes	Yes	428
356KWL01	Vernal pool	0.004	Yes	Yes	428
355KWL02	Vernal pool	0.04	Yes	Yes	429
361KWL01	Vernal pool	0.05	Yes	Yes	430
361KWL02	Vernal pool	0.03	Yes	Yes	430
361KWL03	Vernal swale	0.06	Yes	Yes	430
361KWL04	Vernal pool	0.002	Yes	Yes	430
361KWL05	Vernal pool	0.06	Yes	Yes	430
361KWL06	Vernal pool	0.02	Yes	Yes	430
361KWL07	Vernal pool	0.01	Yes	Yes	430
361KWL08	Seasonal wetland	0.12	Yes	Yes	430
361KWL09	Seasonal wetland	0.45	Yes	Yes	430, 431

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366KWL05	Vernal Pool	2	Yes	Yes	430, 431, 433
361EOW01	Retention/Detention basin	0.05	Yes	Yes	431
361KWL10	Vernal swale	2.13	Yes	Yes	431, 433
PI07WL	Vernal Pool	1.97	Yes	Yes	431, 433
PI08WL	Vernal Pool	1.45	Yes	Yes	431, 433
370EOW01	Canals/Ditches	0.01	Yes	Yes	435, 436
366KWL01	Vernal Pool	0.38	Yes	Yes	433, 434
366KWL02	Vernal pool	0.005	Yes	Yes	433
366KWL03	Vernal swale	0.16	Yes	Yes	433
366KWL04	Vernal pool	0.02	Yes	Yes	433
370EOW01	Canals/Ditches	0.24	Yes	Yes	432, 433
412WL02	Vernal pool	0.002	Yes	Yes	433
412WL04	Vernal Pool	0.13	Yes	Yes	433
412WL06	Vernal pool	0.02	Yes	Yes	433
412WL07	Vernal pool	0.004	Yes	Yes	433
412WL08	Vernal pool	0.01	Yes	Yes	433
412WL10	Vernal pool	0.01	Yes	Yes	433
412WL11	Vernal Pool	0.02	Yes	Yes	433
412WL13	Vernal Pool	0.54	Yes	Yes	433
412WL14	Vernal Pool	0.03	Yes	Yes	433
412WL15	Vernal Pool	0.25	Yes	Yes	433
412WL16	Vernal Pool	0.04	Yes	Yes	433
412WL18	Vernal pool	0.01	Yes	Yes	433
412WL19	Vernal pool	0.5	Yes	Yes	433
412WL20	Vernal pool	0.01	Yes	Yes	433
412WL21	Vernal pool	0.02	Yes	Yes	433
412WL22	Vernal Pool	0.03	Yes	Yes	433
412WL23	Vernal Pool	0.16	Yes	Yes	433
412WL24	Vernal Pool	0.27	Yes	Yes	433
412WL25	Vernal pool	0.22	Yes	Yes	433
412WL26	Vernal pool	0.01	Yes	Yes	433
412WL27	Vernal Pool	0.17	Yes	Yes	433
412WL28	Vernal Pool	0.14	Yes	Yes	433
412WL29	Vernal pool	0.01	Yes	Yes	433
412WL30	Vernal pool	0.26	Yes	Yes	433
412WL31	Vernal pool	0.08	Yes	Yes	433

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412WL32	Vernal pool	0.01	Yes	Yes	433
412WL33	Vernal pool	0.01	Yes	Yes	433
412WL34	Vernal pool	0.03	Yes	Yes	433
BN122WL01	Vernal Pool	1.45	Yes	Yes	433
BN122WL02	Vernal Pool	1.11	Yes	Yes	433, 434
BN122WL04	Vernal pool	0.03	Yes	Yes	433
BN122WL05	Vernal pool	0.04	Yes	Yes	433
BN122WL07	Vernal pool	0.04	Yes	Yes	433
BN122WL08	Vernal pool	0.05	Yes	Yes	433
BN122WL09	Vernal pool	0.05	Yes	Yes	433, 434
BN122WL10	Vernal pool	0.05	Yes	Yes	433
PI010WL	Vernal Pool	4.17	Yes	Yes	433
PI09WL	Vernal Pool	0.1	Yes	Yes	433
370EOW01	Canals/Ditches	2.12	Yes	Yes	433, 434
371KWL01	Vernal pool	0.02	Yes	Yes	434, 435
371KWL02	Vernal swale	0.36	Yes	Yes	434
ACE06OW	Retention/Detention basin	0.76	Yes	Yes	434
BN122WL03	Vernal Pool	2.06	Yes	Yes	434
370EOW01	Canals/Ditches	3.88	Yes	Yes	434, 435, 436, 438
371EOW01	Canals/Ditches	0.74	Yes	Yes	427, 428, 430, 431, 433
371KWL03	Seasonal wetland	0.08	Yes	Yes	435
378KWL04	Seasonal wetland	0.02	Yes	Yes	438, 440
382KWL01	Vernal Pool	0.05	Yes	Yes	438, 440
382KWL02	Vernal pool	0.01	Yes	Yes	440
382KWL03	Vernal pool	0.07	Yes	Yes	440
382KWL04	Vernal pool	0.04	Yes	Yes	440
382KWL05	Vernal pool	0.05	Yes	Yes	440
382KWL06	Vernal Pool	0.38	Yes	Yes	440
382KWL07	Seasonal wetland	0.41	Yes	Yes	440
389JWL01	Seasonal wetland	2.59	Yes	Yes	441, 442
389KWL01	Seasonal wetland	0.02	Yes	Yes	441
389KWL02	Vernal pool	0.01	Yes	Yes	441
390EOW01	Canals/Ditches	0.01	Yes	Yes	441, 442
390EOW01	Canals/Ditches	0.01	Yes	Yes	441
390EOW01	Canals/Ditches	0.11	Yes	Yes	441

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390KWL01	Vernal pool	0.05	Yes	Yes	441
390KWL02	Vernal Pool	0.44	Yes	Yes	441, 442
390KWL03	Vernal swale	0.03	Yes	Yes	442
ACE04WL	Vernal swale	0.12	Yes	Yes	442
397AWL01	Seasonal wetland	0.4	Yes	Yes	444
397AWL02	Seasonal wetland	0.84	Yes	Yes	444, 445
397JWL03	Seasonal wetland	4.9	Yes	Yes	444, 445, 446
BN126OW01	Retention/Detention basin	0.79	Yes	Yes	444
CCE211OW	Retention/Detention basin	0.08	Yes	Yes	444, 445
403JWL01	Seasonal wetland	0.13	Yes	Yes	446
404EOW01	Retention/Detention basin	0.08	Yes	Yes	446
408CWL02	Vernal pool	2.21	Yes	Yes	446, 447
408JWL01	Seasonal wetland	0.08	Yes	Yes	446
409JOW01	Canals/Ditches	1.35	Yes	Yes	446
409JWL04	Seasonal wetland	0.89	Yes	Yes	446, 447
409KWL01	Vernal pool	0.23	Yes	Yes	446, 447
BN128WL01	Vernal pool	0.01	Yes	Yes	447
408CWL01	Vernal Pool	0.61	Yes	Yes	447
409KWL02	Vernal pool	0.07	Yes	Yes	447
409KWL03	Vernal Pool	1.88	Yes	Yes	447
413CWL03	Vernal pool	0.02	Yes	Yes	447
413CWL05	Vernal pool	0.16	Yes	Yes	447
413CWL07	Vernal pool	0.1	Yes	Yes	447
413CWL08	Vernal pool	0.06	Yes	Yes	447
413JWL01	Vernal pool	0.002	Yes	Yes	447
413JWL03	Vernal pool	0.03	Yes	Yes	447
413JWL04	Vernal pool	0.002	Yes	Yes	447
413JWL05	Vernal Pool	1.3	Yes	Yes	447
413JWL07	Vernal pool	0.02	Yes	Yes	447
413JWL08	Vernal pool	0.003	Yes	Yes	447
413JWL09	Seasonal wetland	0.08	Yes	Yes	447
413KWL11	Vernal swale	0.05	Yes	Yes	447
413RSWL01	Vernal pool	0.003	Yes	Yes	447
ACE07OW	Canals/Ditches	0.01	Yes	Yes	447
BN128WL01	Vernal Pool	0.55	Yes	Yes	446, 447
BN128WL02	Vernal pool	0.01	Yes	Yes	447

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
BN128WL02	Vernal Pool	0.71	Yes	Yes	447
BN128WL03	Vernal pool	0.04	Yes	Yes	447
BN128WL03	Vernal Pool	0.33	Yes	Yes	447
BN128WL04	Vernal Pool	0.32	Yes	Yes	447
BN128WL05	Vernal Pool	0.07	Yes	Yes	447
BN128WL06	Vernal Pool	0.11	Yes	Yes	447
BN128WL07	Vernal Pool	0.07	Yes	Yes	447
BN128WL08	Vernal pool	0.02	Yes	Yes	447
BN128WL09	Vernal pool	0.01	Yes	Yes	447
BN128WL10	Vernal pool	0.02	Yes	Yes	447
BN128WL11	Vernal pool	0.03	Yes	Yes	447
BN129WL36	Vernal pool	0.05	Yes	Yes	447
413JWL10	Seasonal wetland	1.76	Yes	Yes	448
413KWL02	Vernal pool	0.03	Yes	Yes	448
413KWL03	Vernal pool	0.07	Yes	Yes	448
413RSWL01	Vernal pool	0.04	Yes	Yes	448
413RSWL01	Vernal pool	0.04	Yes	Yes	448
418KWL01	Vernal pool	0.02	Yes	Yes	448
418KWL02	Vernal pool	0.22	Yes	Yes	448
418RSWL01	Vernal pool	0.00004	Yes	Yes	448
418RSWL01	Vernal pool	0.01	Yes	Yes	448
418RSWL01	Vernal pool	0.01	Yes	Yes	448
418RSWL01	Vernal pool	0.02	Yes	Yes	448
418RSWL01	Vernal pool	0.02	Yes	Yes	449
418RSWL01	Vernal pool	0.03	Yes	Yes	448
418RSWL01	Vernal pool	0.04	Yes	Yes	448
418RSWL01	Vernal pool	0.04	Yes	Yes	448
418RSWL01	Vernal pool	0.05	Yes	Yes	448
418RSWL01	Vernal pool	0.09	Yes	Yes	448
418RSWL01	Vernal pool	0.09	Yes	Yes	448
418RSWL01	Vernal pool	0.12	Yes	Yes	448
418RSWL01	Vernal pool	0.14	Yes	Yes	448
418RSWL01	Vernal pool	0.17	Yes	Yes	448
418RSWL01	Vernal pool	0.19	Yes	Yes	448
418RSWL01	Vernal pool	0.38	Yes	Yes	448
419FWL03	Vernal Pool	0.16	Yes	Yes	448

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
419FWL04	Vernal pool	0.02	Yes	Yes	448
419FWL05	Vernal pool	0.01	Yes	Yes	448
419FWL08	Vernal pool	0.002	Yes	Yes	448
419RSWL01	Vernal pool	0.001	Yes	Yes	449
419RSWL01	Vernal pool	0.03	Yes	Yes	449
ACE03WL	Vernal pool	0.02	Yes	Yes	448
BN129WL01	Vernal pool	0.12	Yes	Yes	448
BN129WL02	Vernal pool	0.04	Yes	Yes	448
BN129WL03	Vernal pool	0.06	Yes	Yes	448
BN129WL04	Vernal pool	0.02	Yes	Yes	448
BN129WL05	Vernal pool	0.07	Yes	Yes	448
BN129WL07	Vernal pool	0.11	Yes	Yes	448
BN129WL08	Vernal pool	0.02	Yes	Yes	448
BN129WL09	Vernal pool	0.04	Yes	Yes	448
BN129WL10	Vernal pool	0.08	Yes	Yes	448
BN129WL11	Vernal pool	0.04	Yes	Yes	448
BN129WL15	Vernal pool	0.01	Yes	Yes	448
BN129WL16	Vernal pool	0.003	Yes	Yes	448
BN129WL17	Vernal pool	0.01	Yes	Yes	448
BN129WL18	Vernal pool	0.01	Yes	Yes	448
BN129WL19	Vernal pool	0.01	Yes	Yes	448
BN129WL20	Vernal pool	0.03	Yes	Yes	448
BN129WL21	Vernal pool	0.05	Yes	Yes	448
BN129WL22	Vernal pool	0.04	Yes	Yes	448
BN129WL23	Vernal pool	0.02	Yes	Yes	448
BN129WL24	Vernal pool	0.19	Yes	Yes	448
BN129WL25	Vernal pool	0.04	Yes	Yes	448
BN129WL26	Vernal pool	0.07	Yes	Yes	448
BN129WL27	Vernal pool	0.01	Yes	Yes	448
BN129WL28	Vernal pool	0.05	Yes	Yes	448
BN129WL29	Vernal pool	0.01	Yes	Yes	448
BN129WL30	Vernal pool	0.01	Yes	Yes	448
BN129WL31	Vernal pool	0.06	Yes	Yes	448
BN129WL32	Vernal pool	0.01	Yes	Yes	448
BN129WL33	Vernal pool	0.06	Yes	Yes	448
BN129WL34	Vernal pool	0.01	Yes	Yes	448

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
BN129WL35	Vernal pool	0.01	Yes	Yes	448
BN129WL37	Vernal pool	0.04	Yes	Yes	448
BN129WL38	Vernal pool	0.005	Yes	Yes	448
BN129WL39	Vernal pool	0.04	Yes	Yes	448
BN129WL40	Vernal pool	0.03	Yes	Yes	448
BN129WL41	Vernal pool	0.03	Yes	Yes	448
BN129WL42	Vernal pool	0.02	Yes	Yes	448
BN129WL43	Vernal pool	0.15	Yes	Yes	448
CCE127WL	Vernal pool	0.001	Yes	Yes	448
CCE127WL	Vernal pool	0.002	Yes	Yes	449
CCE127WL	Vernal pool	0.003	Yes	Yes	448
CCE127WL	Vernal pool	0.01	Yes	Yes	448
CCE127WL	Vernal pool	0.01	Yes	Yes	448
418RSWL01	Vernal pool	0.67	Yes	Yes	448
418RSWL01	Vernal pool	1.54	Yes	Yes	449
419RSWL01	Vernal pool	0.03	Yes	Yes	449
419RSWL01	Vernal pool	0.08	Yes	Yes	449
419RSWL01	Vernal pool	0.09	Yes	Yes	448
419RSWL01	Vernal pool	0.18	Yes	Yes	449
419RSWL01	Vernal pool	0.24	Yes	Yes	448
422RSWL01	Vernal pool	0.004	Yes	Yes	449
423JWL01	Seasonal wetland	0.4	Yes	Yes	449
423JWL02	Seasonal wetland	0.15	Yes	Yes	449
423KWL01	Vernal Pool	0.02	Yes	Yes	449
423KWL02	Vernal pool	0.004	Yes	Yes	449
423KWL03	Seasonal wetland	0.26	Yes	Yes	449
423RSWL01	Vernal pool	0.002	Yes	Yes	449
423RSWL01	Vernal pool	0.003	Yes	Yes	449
423RSWL01	Vernal pool	0.01	Yes	Yes	449
423RSWL01	Vernal pool	0.01	Yes	Yes	449
423RSWL01	Vernal pool	0.01	Yes	Yes	449
423RSWL01	Vernal pool	0.02	Yes	Yes	449
423RSWL01	Vernal pool	0.02	Yes	Yes	449
423RSWL01	Vernal pool	0.03	Yes	Yes	449
423RSWL01	Vernal pool	0.03	Yes	Yes	449
423RSWL01	Vernal pool	0.04	Yes	Yes	449

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
423RSWL01	Vernal pool	0.04	Yes	Yes	449
423RSWL01	Vernal pool	0.05	Yes	Yes	449
423RSWL01	Vernal pool	0.06	Yes	Yes	449
423RSWL01	Vernal pool	0.16	Yes	Yes	449
423RSWL01	Vernal pool	0.19	Yes	Yes	449
423RSWL01	Vernal pool	0.2	Yes	Yes	449
423RSWL01	Vernal pool	0.21	Yes	Yes	449
423RSWL01	Vernal pool	0.6	Yes	Yes	449
423RSWL01	Vernal pool	1.23	Yes	Yes	449
BN129WL06	Vernal pool	0.03	Yes	Yes	449
BN129WL12	Vernal pool	0.05	Yes	Yes	449
BN129WL13	Vernal pool	0.22	Yes	Yes	449
BN129WL14	Vernal pool	0.01	Yes	Yes	449
BN130WL01	Vernal pool	0.57	Yes	Yes	449
BN130WL02	Vernal pool	0.01	Yes	Yes	449
BN130WL03	Vernal pool	0.02	Yes	Yes	449
BN130WL04	Vernal pool	0.02	Yes	Yes	449
BN130WL05	Vernal pool	0.005	Yes	Yes	449
BN130WL06	Vernal pool	0.03	Yes	Yes	449
BN130WL07	Vernal pool	0.01	Yes	Yes	449
BN130WL08	Vernal pool	0.06	Yes	Yes	449
BN130WL09	Vernal pool	0.01	Yes	Yes	449
BN130WL10	Vernal pool	0.06	Yes	Yes	449
BN130WL11	Vernal swale	0.06	Yes	Yes	449
BN130WL12	Vernal swale	0.06	Yes	Yes	449
CCE127WL	Vernal pool	0.02	Yes	Yes	448
CCE127WL	Vernal pool	0.21	Yes	Yes	449
PI011WL	Vernal swale	0.89	Yes	Yes	449
423JWL03	Seasonal wetland	3.65	Yes	Yes	450, 453
423KWL04	Seasonal wetland	0.57	Yes	Yes	450
412OW08	Retention/Detention basin	2.09	Yes	Yes	451, 452
434KWL02	Seasonal wetland	0.14	Yes	Yes	454, 455
434KWL01	Seasonal wetland	0.3	Yes	Yes	455
439KWL02	Seasonal wetland	1.08	Yes	Yes	455, 456, 458
439EOW01	Retention/Detention basin	0.57	Yes	Yes	456, 458
439KWL01	Seasonal wetland	0.31	Yes	Yes	458

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
444DOW01	Retention/Detention basin	0.23	Yes	Yes	461
CCE128OW	Retention/Detention basin	0.08	Yes	Yes	463, 465
447JWL01	Seasonal wetland	0.26	Yes	Yes	464
CCE129OW	Retention/Detention basin	0.1	Yes	Yes	464, 466
CCE212OW	Retention/Detention basin	0.07	Yes	Yes	465, 466
453AOW01	Retention/Detention basin	0.62	Yes	Yes	468, 469
457AOW01	Retention/Detention basin	0.07	Yes	Yes	469, 471
BN136OW01	Retention/Detention basin	0.12	Yes	Yes	470, 472
468PIOW01	Retention/Detention basin	0.02	Yes	Yes	476
468JWL01	Seasonal wetland	0.04	Yes	Yes	478
470JWL01	Seasonal wetland	0.2	Yes	Yes	478
471DOW01	Canals/Ditches	0.01	Yes	Yes	479
475PIOW01	Retention/Detention basin	5.18	Yes	Yes	480, 531
AB016AWL01	Vernal pool	1.24	Yes	Yes	483
AB016AWL02	Vernal pool	0.31	Yes	Yes	483
AB016AWL03	Vernal pool	0.06	Yes	Yes	483
AB017AWL01	Vernal pool	0.14	Yes	Yes	483
AB017AWL02	Vernal pool	0.2	Yes	Yes	483, 484
AB017AWL03	Vernal pool	0.31	Yes	Yes	483, 484
AB018BWL02	Vernal swale	2.42	Yes	Yes	483, 484, 485
WH140OW01	Canals/Ditches	0.17	Yes	Yes	483
AB017AWL05	Vernal pool	0.03	Yes	Yes	484
AB017AWL06	Vernal swale	0.07	Yes	Yes	484
AB017AWL07	Vernal pool	0.14	Yes	Yes	484
AB017AWL08	Vernal pool	0.11	Yes	Yes	484
AB017AWL09	Vernal swale	0.01	Yes	Yes	484
AB018AWL01	Vernal pool	0.04	Yes	Yes	484
AB018AWL02	Vernal pool	0.15	Yes	Yes	484
AB018AWL03	Vernal swale	0.03	Yes	Yes	484
AB018AWL04	Vernal swale	0.32	Yes	Yes	484
AB018BWL01	Canals/Ditches	4.22	Yes	Yes	484, 485, 489, 490
AB018AWL05	Vernal pool	0.66	Yes	Yes	485
AB018AWL06	Vernal pool	0.48	Yes	Yes	485
386FWL01	Seasonal wetland	0.02	Yes	Yes	489
386FWL01	Seasonal wetland	0.08	Yes	Yes	489

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386FWL01	Seasonal wetland	0.21	Yes	Yes	489, 490
AB019BOW0 1	Retention/Detention basin	0.04	Yes	Yes	489
AB020BWL01	Seasonal wetland	0.58	Yes	Yes	489, 490
385FOW01	Canals/Ditches	0.09	Yes	Yes	490
ACE03OW	Canals/Ditches	0.21	Yes	Yes	490
CCE213OW	Retention/Detention basin	0.05	Yes	Yes	491
BN150OW02	Canals/Ditches	0.59	Yes	Yes	499, 501
BN150WL02	Vernal Pool	0.12	Yes	Yes	499, 501
BN150WL01	Vernal Pool	0.49	Yes	Yes	501
BN151OW01	Canals/Ditches	0.19	Yes	Yes	501
BN151WL01	Vernal Pool	1.43	Yes	Yes	501
BN151WL02	Vernal Pool	2.89	Yes	Yes	501
AB037PIOW0 1	Canals/Ditches	0.89	Yes	Yes	509
BN153WL01	Vernal Pool	0.46	Yes	Yes	509
BN153WL02	Vernal Pool	0.21	Yes	Yes	509
BN153WL04	Vernal Pool	1.2	Yes	Yes	511
AB040BOW0 1	Canals/Ditches	0.19	Yes	Yes	512
AB040BOW0 2	Retention/Detention basin	0.1	Yes	Yes	512
AB040PIOW0 1	Retention/Detention basin	0.68	Yes	Yes	512
AB044BOW0 1	Retention/Detention basin	0.15	Yes	Yes	516
AB044BOW0 2	Retention/Detention basin	0.17	Yes	Yes	516
AB045PIOW0 1	Retention/Detention basin	0.09	Yes	Yes	518, 520
475AOW01	Canals/Ditches	0.07	Yes	Yes	530
475AOW01	Canals/Ditches	0.07	Yes	Yes	530, 531
AB056BOW0 1	Canals/Ditches	0.28	Yes	Yes	530
475AOW01	Canals/Ditches	0.11	Yes	Yes	531
475DOW01	Canals/Ditches	0.08	Yes	Yes	531
475DOW02	Canals/Ditches	0.09	Yes	Yes	531
478AOW01	Seasonal riverine	1.55	Yes	Yes	532, 533, 535, 536

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478DOW01	Canals/Ditches	0.02	Yes	Yes	534
479AOW01	Retention/Detention basin	0.08	Yes	Yes	534
BN162OW01	Retention/Detention basin	0.88	Yes	Yes	537
489AOW01	Retention/Detention basin	0.17	Yes	Yes	538
490AOW01	Canals/Ditches	3.29	Yes	Yes	539, 541, 542, 543, 544
491AOW01	Canals/Ditches	0.59	Yes	Yes	539, 540, 544
492AOW02	Retention/Detention basin	0.24	Yes	Yes	539
412OW09	Retention/Detention basin	0.08	Yes	Yes	541
490ASW01	Retention/Detention basin	1.61	Yes	Yes	543
490AOW02	Retention/Detention basin	0.09	Yes	Yes	544
491AOW02	Retention/Detention basin	0.08	Yes	Yes	544
493AOW01	Retention/Detention basin	0.2	Yes	Yes	546
495PIOW01	Retention/Detention basin	0.05	Yes	Yes	549
499PIOW01	Retention/Detention basin	0.24	Yes	Yes	553, 557
498PIOW02	Retention/Detention basin	0.05	Yes	Yes	556
502PIOW01	Retention/Detention basin	0.07	Yes	Yes	557
ACE04OW	Canals/Ditches	0.19	Yes	Yes	557, 560, 561
ACE05OW	Canals/Ditches	0.08	Yes	Yes	560, 561
507BOW01	Retention/Detention basin	0.17	Yes	Yes	562
CCE131OW	Retention/Detention basin	0.98	Yes	Yes	563
BN168OW01	Retention/Detention basin	0.04	Yes	Yes	564
506PIOW01	Retention/Detention basin	0.06	Yes	Yes	565
507PIOW01	Retention/Detention basin	1.44	Yes	Yes	566
512PIOW01	Retention/Detention basin	0.87	Yes	Yes	566, 569
516BOW01	Retention/Detention basin	0.17	Yes	Yes	567
KM006BOW0 2	Retention/Detention basin	0.17	Yes	Yes	570
KM006BOW0 3	Retention/Detention basin	0.27	Yes	Yes	570, 572
KM006PIOW 01	Retention/Detention basin	0.19	Yes	Yes	570
CCE133OW	Retention/Detention basin	0.13	Yes	Yes	572, 573
KM006BOW0 1	Retention/Detention basin	0.06	Yes	Yes	572
540PIOW01	Canals/Ditches	0.05	Yes	Yes	573
540PIOW02	Canals/Ditches	0.05	Yes	Yes	573
540PIOW03	Canals/Ditches	0.12	Yes	Yes	573, 574

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CCE210OW	Canals/Ditches	0.35	Yes	Yes	573, 575
KM008BOW0 1	Canals/Ditches	0.06	Yes	Yes	573, 575
CCE134OW	Canals/Ditches	0.13	Yes	Yes	574
BN182OW01	Retention/Detention basin	0.15	Yes	Yes	575
CCE209OW	Retention/Detention basin	0.21	Yes	Yes	575
CCE225OW	Canals/Ditches	0.05	Yes	Yes	575
CCE226OW	Canals/Ditches	0.01	Yes	Yes	575
KM008BOW0 2	Retention/Detention basin	0.31	Yes	Yes	575
CCE208OW	Retention/Detention basin	0.15	Yes	Yes	576
CCE136OW	Retention/Detention basin	1.09	Yes	Yes	577
550PISW01	Retention/Detention basin	0.03	Yes	Yes	579
557PISW01	Retention/Detention basin	0.55	Yes	Yes	579
412OW10	Retention/Detention basin	0.3	Yes	Yes	581
565AOW01	Retention/Detention basin	0.22	Yes	Yes	586
ACE08OW	Canals/Ditches	0.02	Yes	Yes	586
ACE09OW	Canals/Ditches	0.03	Yes	Yes	586
576PIOW01	Retention/Detention basin	0.09	Yes	Yes	589
CCE138OW	Canals/Ditches	0.86	Yes	Yes	589
582PIOW01	Retention/Detention basin	0.08	Yes	Yes	591
591PIOW01	Retention/Detention basin	0.05	Yes	Yes	595
CCE132OW	Canals/Ditches	0.14	Yes	Yes	604, 605
544DOW01	Retention/Detention basin	0.1	Yes	Yes	609
560COW02	Retention/Detention basin	0.14	Yes	Yes	616
CCE137OW	Retention/Detention basin	0.13	Yes	Yes	619
585COW01	Retention/Detention basin	0.06	Yes	Yes	622
BN176OW01	Retention/Detention basin	0.22	Yes	Yes	624, 625
CCE139OW	Retention/Detention basin	0.41	Yes	Yes	624
603GOW01	Retention/Detention basin	0.15	Yes	Yes	626
604HOW03	Retention/Detention basin	1.18	Yes	Yes	628, 633
612BOW01	Retention/Detention basin	0.04	Yes	Yes	630
612BOW02	Retention/Detention basin	0.31	Yes	Yes	630
612PIOW01	Retention/Detention basin	0.08	Yes	Yes	630
CCE142OW	Retention/Detention basin	0.05	Yes	Yes	630
CCE143OW	Retention/Detention basin	0.1	Yes	Yes	630
CCE144OW	Retention/Detention basin	0.17	Yes	Yes	630

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CCE147OW	Retention/Detention basin	0.32	Yes	Yes	630
615BOW01	Retention/Detention basin	0.1	Yes	Yes	633
622BOW01	Retention/Detention basin	1.11	Yes	Yes	636, 637
CCE149OW	Canals/Ditches	0.41	Yes	Yes	639
622BOW02	Retention/Detention basin	1.8	Yes	Yes	640, 641
CCE150OW	Retention/Detention basin	0.12	Yes	Yes	646
BN190OW01	Retention/Detention basin	0.1	Yes	Yes	651
CCE151OW	Retention/Detention basin	0.27	Yes	Yes	654
639PIOW01	Retention/Detention basin	0.56	Yes	Yes	657
646PIOW01	Retention/Detention basin	0.05	Yes	Yes	658, 659
646PIOW02	Retention/Detention basin	0.57	Yes	Yes	664
CCE207OW	Retention/Detention basin	0.78	Yes	Yes	667, 674
660BOW01	Retention/Detention basin	0.1	Yes	Yes	672
660BOW02	Retention/Detention basin	0.1	Yes	Yes	672
659BOW03	Canals/Ditches	0.11	Yes	Yes	677
665AOW02	Retention/Detention basin	0.01	Yes	Yes	682
665AOW04	Canals/Ditches	0.17	Yes	Yes	682
665AOW07	Retention/Detention basin	0.13	Yes	Yes	682
676DOW02	Canals/Ditches	3.44	Yes	Yes	682, 683, 685, 686, 687, 688
670AOW03	Retention/Detention basin	2.17	Yes	Yes	683, 685
670AOW01	Retention/Detention basin	0.08	Yes	Yes	685
670AOW02	Retention/Detention basin	0.39	Yes	Yes	685
671AOW01	Retention/Detention basin	0.01	Yes	Yes	686
676DOW05	Canals/Ditches	1.45	Yes	Yes	687, 688, 691
675AOW01	Retention/Detention basin	0.07	Yes	Yes	688
676DOW03	Canals/Ditches	0.5	Yes	Yes	688, 689
677DOW01	Canals/Ditches	0.06	Yes	Yes	689
676DOW01	Canals/Ditches	0.03	Yes	Yes	691
676DOW04	Canals/Ditches	0.2	Yes	Yes	691
676DOW06	Retention/Detention basin	0.13	Yes	Yes	691
682DOW01	Retention/Detention basin	0.18	Yes	Yes	692
682DOW02	Retention/Detention basin	0.08	Yes	Yes	693
685AOW01	Canals/Ditches	0.52	Yes	Yes	696, 697
685AOW03	Retention/Detention basin	1.28	Yes	Yes	696
685ASW02	Retention/Detention basin	0.21	Yes	Yes	696

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CCE153OW	Retention/Detention basin	0.14	Yes	Yes	700
691DOW01	Retention/Detention basin	0.13	Yes	Yes	703
691PIOW01	Retention/Detention basin	0.19	Yes	Yes	703
691PIOW02	Retention/Detention basin	0.11	Yes	Yes	703
CCE224OW	Canals/Ditches	0.03	Yes	Yes	703
691DOW02	Retention/Detention basin	0.58	Yes	Yes	706
692DWL01	Seasonal wetland	0.51	Yes	Yes	706
694BOW01	Retention/Detention basin	0.23	Yes	Yes	711
698DOW01	Retention/Detention basin	0.37	Yes	Yes	715
PI03OW	Retention/Detention basin	0.07	Yes	Yes	718
702GOW01	Retention/Detention basin	1.11	Yes	Yes	722
702GOW01	Retention/Detention basin	1.11	Yes	Yes	722
703DSW01	Retention/Detention basin	0.36	Yes	Yes	722
703DSW01	Retention/Detention basin	0.36	Yes	Yes	722
704DOW01	Canals/Ditches	0.42	Yes	Yes	722, 723
704DOW02	Canals/Ditches	0.01	Yes	Yes	722
704DOW02	Retention/Detention basin	0.1	Yes	Yes	722
704DOW03	Canals/Ditches	0.25	Yes	Yes	722
707DOW01	Canals/Ditches	0.89	Yes	Yes	723
707DOW02	Canals/Ditches	1.18	Yes	Yes	723, 724
707DOW04	Seasonal riverine	0.64	Yes	Yes	723
707DOW03	Canals/Ditches	2.94	Yes	Yes	724, 725
710COW01	Retention/Detention basin	0.35	Yes	Yes	725
713COW01	Seasonal riverine	23.89	Yes	Yes	725, 726, 727, 728
713COW03	Canals/Ditches	6.14	Yes	Yes	725, 726, 727, 728
BN204OW01	Retention/Detention basin	2.9	Yes	Yes	725
BN204OW02	Canals/Ditches	0.12	Yes	Yes	725, 726
BN204OW03	Retention/Detention basin	7.96	Yes	Yes	725, 726
718COW01	Canals/Ditches	5.05	Yes	Yes	728, 729, 730
718CWL01	Seasonal wetland	0.24	Yes	Yes	728
719COW01	Seasonal riverine	0.13	Yes	Yes	728, 729
721COW02	Canals/Ditches	0.31	Yes	Yes	730, 731
722COW01	Retention/Detention basin	0.4	Yes	Yes	730, 731
CCE154OW	Canals/Ditches	0.65	Yes	Yes	730
732BOW01	Canals/Ditches	0.59	Yes	Yes	736

Feature ID	Feature Type	Area <sup>a</sup> (acres)	Jurisdiction - Federal	Jurisdiction - State	Appendix A Figure Page Number
736BOW01	Retention/Detention basin	0.35	Yes	Yes	737, 738
KTG_005	Canals/Ditches	0.01	Yes	Yes	749
KTG_515	Retention/Detention basin	0.03	Yes	Yes	746
KTG_005	Canals/Ditches	0.02	Yes	Yes	747
KTG_005	Canals/Ditches	0.58	Yes	Yes	747
KTG_005	Canals/Ditches	1.18	Yes	Yes	745, 746, 747
KTG_002	Retention/Detention basin	0.01	Yes	Yes	748, 749
KTG_004	Emergent wetland	0.002	Yes	Yes	749
KTG_005	Canals/Ditches	1.38	Yes	Yes	747, 748, 749
<b>Total Canal/Ditch</b>					<b>199.58 acres<sup>b</sup></b>
<b>Total Reservoir</b>					<b>117.58 acres<sup>b</sup></b>
<b>Total Retention/Detention basin</b>					<b>160.75 acres<sup>b</sup></b>
<b>Seasonal riverine</b>					<b>58.33 acres<sup>b</sup></b>
<b>Total Open Waters</b>					<b>536.20 acres<sup>b</sup></b>
<b>Emergent Wetland</b>					<b>0.92 acres</b>
<b>Seasonal wetland</b>					<b>43.56 acres<sup>b</sup></b>
<b>Vernal pool</b>					<b>77.90 acres<sup>b</sup></b>
<b>Vernal swale</b>					<b>17.96 acres<sup>b</sup></b>
<b>Total Wetland Waters</b>					<b>140.45 acres<sup>b</sup></b>
<b>Total Federal Waters</b>					<b>676.54 acres<sup>b</sup></b>

<sup>a</sup> These area values are rounded. For features with an area greater than 0.01 acres, acreage values are rounded to the hundredth of an acre. If the area of the feature is less than 0.01 acre, the acreage is rounded to one significant figure.

<sup>b</sup> The acreage totals have been generated by summing the actual acreage values and rounding to the nearest whole number, not by summing the rounded values presented in this table.

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**Appendix D**  
**Photographs of Representative Aquatic**  
**Features in the Wetland Study Area**



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## **D.      Photographs of Representative Jurisdictional Features          in the Wetland Study Area**

### **D.1     Federal Jurisdiction (Army Corps of Engineers)**

#### **D.1.1   Wetlands**

##### **A.    EMERGENT WETLAND**



**Photo 1**

**B. SEASONAL WETLAND**



**Photo 2**



**Photo 3**

**C. CANAL**



**Photo 4**



**Photo 5**



**Photo 6**



**Photo 7**

**D. SEASONAL RIVERINE**



**Photo 8**



**Photo 9**

**E. DITCH**



**Photo 10**



**Photo 11**

**F. RETENTION/DETENTION BASIN**



**Photo 12**



**Photo 13**

**G. RESERVOIR**



**Photo 14**

## D.2 State Jurisdiction

### D.2.1 State Waters

#### A. RIPARIAN



**Photo 15**



**Photo 16**

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**Appendix E**  
**USACE ORM Data Form**



This appendix contains confidential information and has therefore not been included on the website.