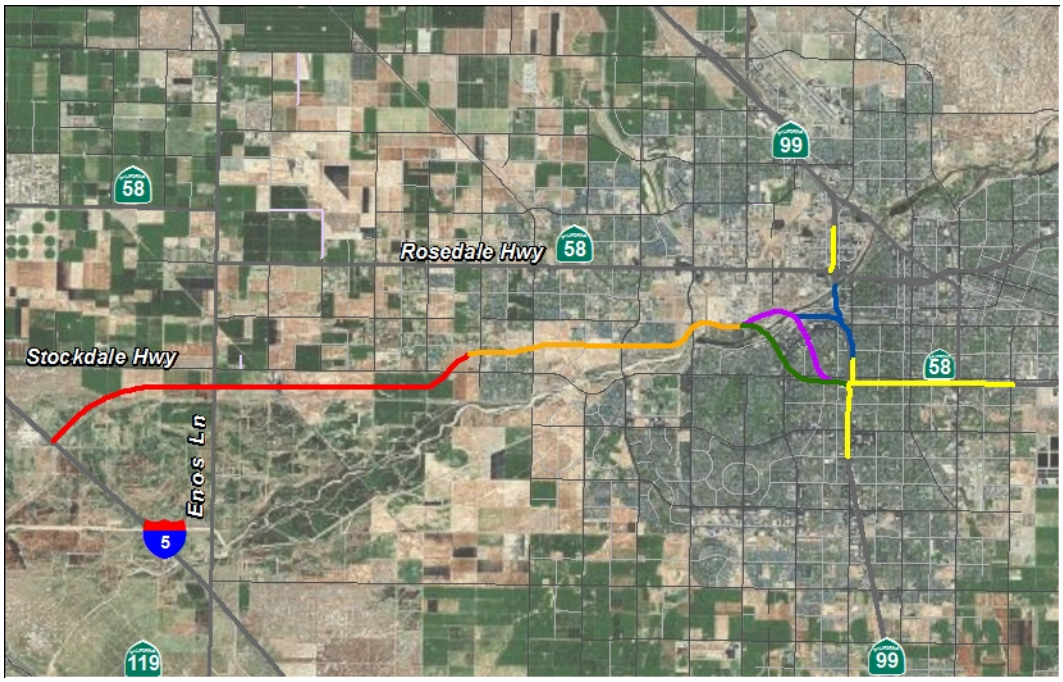
Appendix E Jurisdictional Delineation

Centennial Corridor Project

State Route 99 to Interstate 5

KERN COUNTY, CALIFORNIA
District 06 - KERN – 58 - PM T31.7 to PM R55.6
District 06 - KERN – 99 - PM 21.2 to PM R26.2
Project ID# 06-0000-0484

Final Jurisdictional Delineation – USACE



February 2015

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Summary

This Jurisdictional Delineation Report has been prepared to describe the mapped resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE). The survey area for this delineation covers Segment 1 of the Centennial Corridor biological study area (BSA); this includes three build Alternatives and intersection improvements at Stockdale Highway and State Route (SR) 43 (known locally as Enos Lane). Details concerning existing federal jurisdictional resource conditions and project impacts to these resources are shown in Tables 1 and 2. The impact discussion of this report focuses on the preferred Alternative B.

A total of 135.763 acres of "Waters of the U.S." (WOUS), of which 0.195 acre is wetlands, are present in Segment 1 of the BSA. Alternative B would impact 4.432 acres of WOUS (0.009 acre permanent, 4.423 acres temporary), no wetlands would be impacted. There will be no jurisdictional impacts due to the intersection improvements at Stockdale Highway and SR 43.

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Chapter 1. Introduction

This Jurisdictional Delineation has been prepared to provide baseline data concerning the type and extent of resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE) for the Centennial Corridor Project (hereafter referred to as "the project") located at the southern end of the San Joaquin Valley in the City of Bakersfield and unincorporated Kern County, California (see Figure 3 in the Natural Environment Study [NES]). The project includes the construction of improvements in Segment 1, minor modifications to Segment 2, and intersection improvements at Stockdale Highway and State Route (SR) 43 (known locally as Enos Lane).

1.1. Project Description and Location

The California Department of Transportation (Caltrans) proposes to establish a new alignment for SR 58, which would provide a continuous route along SR 58 from Cottonwood Road on existing SR 58, east of SR 99, to Interstate 5. Improvements to SR 99 would also be required to accommodate the connection with SR 58. The project is divided into three segments: Segment 1 extends from SR 58 (East) to the Westside Parkway and includes three build alternatives and a No-Build Alternative; Segment 2 is the Westside Parkway, which is a local limited-access highway that was recently constructed (Mohawk Street to Heath Road); and Segment 3 would extend from Heath Road, west to I-5 (See Figure 1 in the NES). Improvements at Stockdale Highway will be analyzed as an interim connection until Segment 3 is built. This report addresses USACE jurisdictional resources within the project's Biological Study Area (BSA). The BSA for the project includes the alignment and alternatives plus a 500-foot buffer area on either side of the project right-of-way. In addition, the BSA includes the intersection of Stockdale Highway and SR 43.

Segment 1 is located on the U.S. Geological Survey's (USGS') Gosford, Lamont, Oildale, Stevens, and Tupman 7.5-minute topographic quadrangle maps in the Mt. Diablo Meridian (see Figures 5A–5C in the NES). Segment 1 of the BSA occurs in the Tulare-Buena Vista Lakes watershed (hydrologic unit code [HUC] 18030012). The Kern River and multiple canals cross Segment 1; detention basins are located at Stockdale Highway and SR 43. Topography on site is relatively flat, with an elevation range of approximately 325 to 400 feet above mean sea level.

The three build alternatives (Alternatives A, B, and C) within Segment 1 propose new alignments that would extend from Cottonwood Road on the existing SR 58 (East)

and connect I-5 via the Westside Parkway (Figure 1). Alternatives A and B would be west of SR 99, and Alternative C would parallel SR 99 to the west. Under Alternative A, the eastern end of the Westside Parkway mainline would be realigned to conform to the Alternative A alignment, and ramp connections would be provided to the Mohawk Street interchange. Under Alternatives B and C, the alignments would connect to the Westside Parkway by extending the mainline lanes built as part of the Westside Parkway project. Detailed descriptions of the alternatives are provided on the following subsections.

Common Design Features of the Build Alternatives

The build alternatives would connect SR 58 (East) to the east end of the Westside Parkway by means of a six-lane freeway. All the build alternatives would involve a route adoption to include the selected Segment 1 alignment and the Westside Parkway into the State Highway System as SR 58. In Segment 3, there would be a temporary route adoption of Stockdale Highway as the interim SR 58 connection to Interstate 5 until the ultimate alignment (the Cross Valley Canal alignment addressed in the 2001 EIS/EIR) is constructed, which would occur at a later date. Though the alignment and design characteristics vary by alternative, the three build alternatives have the following common design features:

Segment 1

All the alternatives would provide the following connections between SR 58 and SR 99 using high speed connection ramps:

- Northbound SR 99 to westbound and eastbound SR 58.
- Southbound SR 99 to eastbound SR 58.
- Eastbound SR 58 to southbound SR 99.
- Westbound SR 58 to southbound and northbound SR 99.

Direct connector ramps from southbound SR 99 to westbound SR 58 are not being provided as part of this project. However, to accommodate this movement, the southbound SR 99/Rosedale Highway off-ramp would have two lanes off the freeway and be widened to four lanes at the intersection with Rosedale Highway. Additionally, an auxiliary lane would be provided on SR 99 from south of Gilmore Avenue to the SR 58 (Rosedale Highway) off-ramp. Direct connector ramps from eastbound SR 58 to northbound SR 99 are not being provided as part of this project.

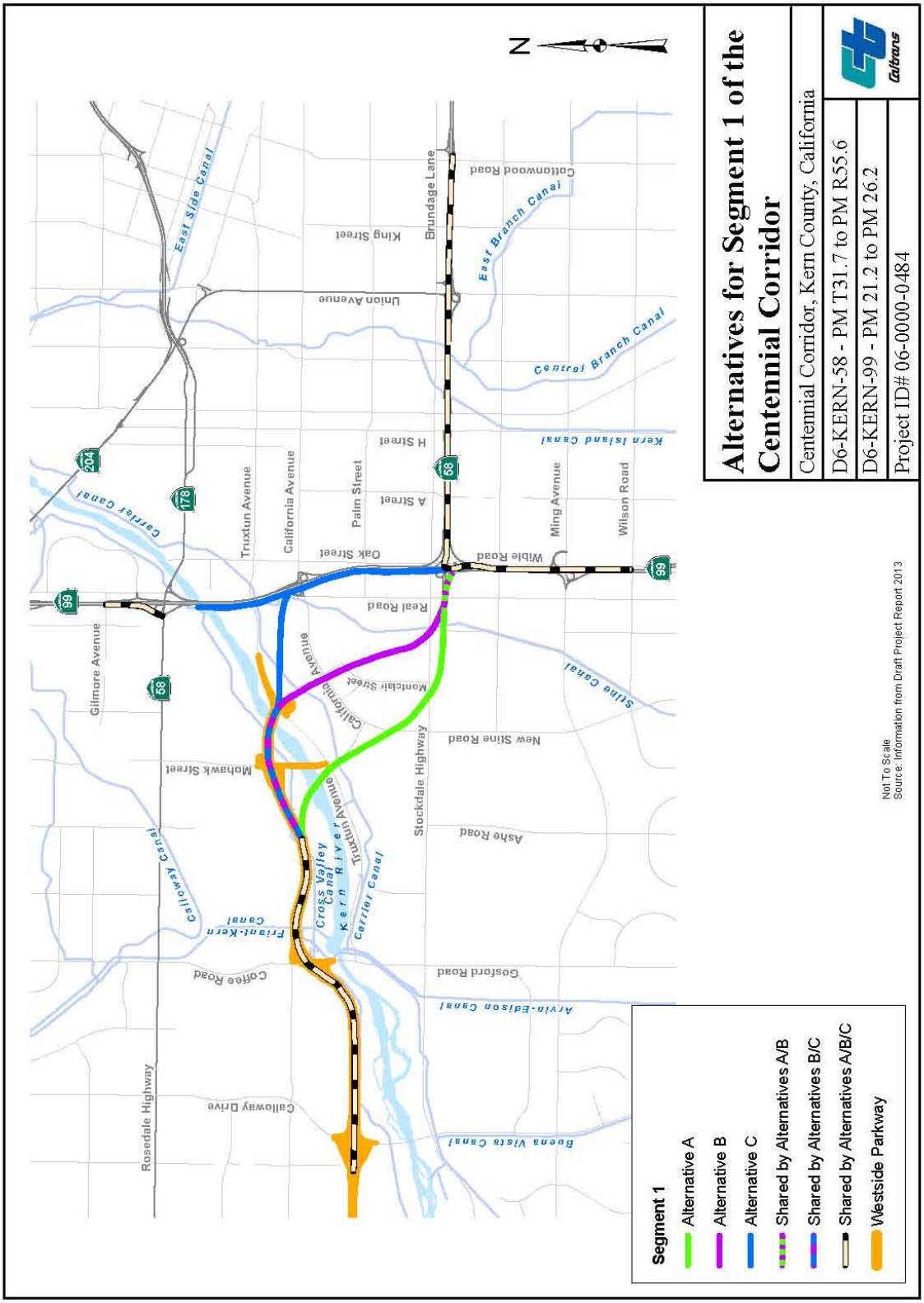

Alternatives for Segment 1 of the Centennial Corridor
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM R55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans
N
Segment 1
Alternative A
Alternative B
Alternative C
Shared by Alternatives A/B
Shared by Alternatives B/C
Shared by Alternatives A/B/C
Westside Parkway
Not To Scale
Source: Information from Draft Project Report 2013
Cottonwood Road
Brundage Lane
King Street
Union Avenue
East Side Canal
East Branch Canal
Central Branch Canal
Kern Island Canal
H Street
A Street
Oak Street
Wible Road
Ming Avenue
Wilson Road
Truxtun Avenue
California Avenue
Palm Street
Carrier Canal
Real Road
Montclair Street
Stine Canal
New Stine Road
Stockdale Highway
Ashe Road
Mohawk Street
Gilmore Avenue
Calloway Canal
Friant-Kern Canal
Cross Valley Canal
Kern River
Gosford Road
Arvin-Edison Canal
Coffee Road
Calloway Drive
Rosedale Highway
Buena Vista Canal
204
178
58
99

Figure 1

The project would require the widening of the South P Street Undercrossing and the westbound SR 58 Grade Separation over SR 99. In addition, the Stockdale Highway off-ramp from southbound SR 99 and the Wible Road on- and off-ramps on SR 99, located just south of the existing SR 58/SR 99 interchange, would be removed.

Unique Design Features of the Build Alternatives

Alternative A

Alternative A would travel westerly from the existing SR 58/SR 99 interchange for about 1 mile south of Stockdale Highway, where it would turn northwesterly and go over Stockdale Highway/Montclair Street, California Avenue/Lennox Avenue, Truxtun Avenue, and the Kern River before joining the eastern end of the Westside Parkway near the Mohawk Street interchange.

A link would be provided from northbound SR 99 to westbound SR 58 and from eastbound SR 58 to southbound SR 99 via high-speed connectors. No direct connector ramps would be built from southbound SR 99 to westbound SR 58 or from eastbound SR 58 to northbound SR 99. Southbound SR 99 would be widened to accommodate the additional traffic from eastbound SR 58 to the southbound SR 99 connector. The existing westbound SR 58 to southbound SR 99 loop-ramp connector would be realigned and would connect to the proposed eastbound SR 58 to southbound SR 99 connector before merging onto southbound SR 99. The existing southbound SR 99 to eastbound SR 58 connector and northbound SR 99 to eastbound SR 58 would be preserved with some changes.

The limits of widening on SR 99 would extend to the Wilson Road overcrossing. On northbound SR 99, a three-lane exit would be provided just north of Wilson Road to carry the northbound SR 99 to westbound SR 58 traffic on two lanes and the Ming Avenue on- and off-ramp traffic on the third lane. All ramps in this area would have to be realigned to provide for the additional lanes. The Wible Road on- and off-ramps just south of the existing SR 58/SR 99 interchange, which is in conflict with the Caltrans standards of interchange spacing, would have to be removed to accommodate this design. The Stockdale Highway off-ramp on the southbound SR 99 to eastbound SR 58 connector would be removed as well. Under this concept, SR 58 would also lose its link with Real Road. Also, Alternative A would provide an auxiliary lane on southbound SR 99 from south of Gilmore Avenue to the Rosedale Highway off-ramp.

The median widening to provide an auxiliary lane along the Westside Parkway would extend westerly from the connection point with Centennial Corridor between Coffee Road and Mohawk Street to the Coffee Road off-ramp.

Other features with this alternative includes: 1) the construction of 19 soundwalls; 2) construction of a park and ride facility off Mohawk Street, between California Avenue and Truxtun Avenue to replace the facility that would be displaced by the project; 3) seven infiltration basins would be placed throughout the study area to retain stormwater runoff for water quality improvement purposes; and 4) 48 retaining walls of varying sizes located throughout the study area.

Alternative B

Alternative B would run westerly from the existing SR 58/SR 99 interchange to about 1,000 feet south of Stockdale Highway, where it would turn northwesterly and span Stockdale Highway/Stine Road, California Avenue, Commerce Drive, Truxtun Avenue, and the Kern River before joining the east end of Westside Parkway between the Mohawk Street and Coffee Road interchanges. This alignment would depress SR 58 between California Avenue and Ford Avenue. Overcrossings are proposed at Marella Way and La Mirada Drive to ease traffic circulation.

Alternative B proposes the same connections to SR 99 as Alternative A and would require similar improvements on SR 99 and existing SR 58.

The median widening to provide an auxiliary lane along the Westside Parkway would extend westerly from the connection point with Centennial Corridor between Coffee Road and Mohawk Street to the Coffee Road off-ramp. Modifications would be required to the eastbound Mohawk Street off-ramp, westbound Truxtun Avenue on-ramp and reconstruction of the eastbound Mohawk Street loop on-ramp. In addition, construction of the proposed westbound Mohawk Street off-ramp and realignment of the Cross Valley Canal maintenance access road from Mohawk Street would be required.

Other features with this alternative includes: 1) the construction of 24 soundwalls; 2) construction of a park and ride facility north of California Avenue, next to the Centennial Corridor, to replace the facility that would be displaced by the project; 3) eight infiltration basins would be placed throughout the study area to retain stormwater runoff for water quality improvement purposes; 4) 42 retaining walls of varying sizes located throughout the study area; and 5) bridge crossing across Carrier Canal.

Alternative C

Near the existing SR 58/SR 99 interchange, Alternative C would turn north and run parallel to the west of SR 99 for about 1 mile. The freeway would turn west and span the BNSF Railway rail yard, Truxtun Avenue, and the Kern River. This alternative proposes undercrossings at Brundage Lane, Oak Street, SR 99, Palm Avenue, and California Avenue.

Connections would be provided from eastbound SR 58 to southbound SR 99 and from northbound SR 99 to westbound SR 58. The existing westbound SR 58 to southbound SR 99 loop-ramp connector would connect to the proposed eastbound SR 58 to southbound SR 99 connector before merging onto southbound SR 99. The southbound SR 99 Ming Avenue off-ramp would be relocated north of the eastbound SR 58 to southbound SR 99 connector to facilitate weaving between the Ming Avenue off-ramp and the eastbound SR 58 to southbound SR 99 connector traffic. A connector would be provided east of northbound SR 99 from Brundage Lane to south of California Avenue to facilitate weaving between westbound SR 58 to northbound SR 99 traffic with northbound SR 99 to westbound SR 58 traffic.

Improvements on SR 99 would extend from the Wilson Road overcrossing (south of the SR 58/SR 99 interchange) to the Gilmore Avenue overcrossing (north of the SR 58/SR 99 interchange). A collector-distributor (C-D) road system would provide access from westbound SR 58 to northbound SR 99, as well as from northbound SR 99 to westbound SR 58. The Wible Road on- and off-ramps just south of the existing SR 58/SR 99 interchange would have to be removed to accommodate the northbound SR 99 auxiliary lane. The Stockdale Highway off-ramp on the southbound SR 99 to eastbound SR 58 connector would be removed as well. Under this concept, southbound SR 99 would also lose its link with Real Road.

The median widening to provide an auxiliary lane along Westside Parkway would extend westerly from the connection point with Centennial Corridor between Coffee Road and Mohawk Street to the Coffee Road off-ramp. Modifications would be required to the eastbound Mohawk Street off-ramp, westbound Truxtun Avenue on-ramp and reconstruction of the eastbound Mohawk Street loop on-ramp. In addition, construction of the proposed westbound Mohawk Street off-ramp and realignment of the Cross Valley Canal maintenance access road from Mohawk Street would be required.

Other features with this alternative includes: 1) the construction of 17 soundwalls; 2) construction of a park and ride facility at Real Road and Chester Lane to replace the facility that would be displaced by the project; 3) eleven infiltration basins would be placed throughout the study area to retain stormwater runoff for water quality improvement purposes; and 4) 42 retaining walls of varying sizes located throughout the study area.

Identification of a Preferred Alternative

Many impacts are the same or similar in magnitude for all three alternatives. When determining a preferred alternative, the comparison focuses on those areas where the impacts are different or one alternative has greater impacts than the other alternatives. For the Centennial Corridor project, the distinguishing areas are the number of displacements and parcel acquisitions; impacts to community cohesion, parks, wetlands, cultural resources, and Section 4(f) property; and cost.

As presented, Alternative A has the greatest number of displacements of the three alternatives and is the most expensive. It would have the greatest impact on wetlands. It affects a park and the Rancho Vista Historic District, both Section 4(f) properties.

In comparing Alternatives B and C, Alternative B has more displacements, which are mostly residential, whereas Alternative C displaces more businesses. Alternative C would cost over $100 million more than Alternative B. Alternative B has more community cohesion impacts because the alignment would bisect the Westpark neighborhood (in a diagonal manner), eliminating several east-west roadways and therefore changing the development. Alternative C would concentrate most of its residential displacements in two environmental justice communities, with the largest concentration of single-family home displacements in the environmental justice community south of Saunders Park. Alternative C would be above ground level in the Saunders Park neighborhood, while Alternative B would be below ground level in the Centennial Park neighborhood. Alternative C would also have direct impacts on Saunders Park, a Section 4(f) property in an environmental justice community. Alternative B would have no impact on parklands.

The legal requirements of the Department of Transportation Act of 1966 require that parkland be avoided unless there is no feasible and prudent alternative. Alternative B is a feasible and prudent alternative that avoids parkland and other Section 4(f) properties, such as historic properties. In addition, Alternative B has the least impact on wetlands. It is also the least expensive alternative, costing over $100 million less

than the other alternatives.Therefore, after comparing and weighing the benefits and impacts of Alternatives A, B, and C, Caltrans identified Alternative B as the recommended preferred alternative prior to the circulation of the draft environmental document.

On December 9, 2014, Caltrans and the Project Development Team compared and weighed the benefits and impacts of all of the feasible alternatives, costs, engineering design considerations, and public comments received. Based on the information provided, the Project Development Team confirmed the selection of Alternative B as the Preferred Alternative.

Segment 2

The Westside Parkway would be incorporated into the State Highway System with each of the Build Alternatives. Improvements to connect Centennial Corridor to the Westside Parkway would extend from where each build alternative connects at the eastern end of Westside Parkway towards the west ending at the Calloway Drive interchange. The proposed improvements would widen the Westside Parkway by constructing one additional lane in the median to provide auxiliary lanes. In the westbound direction, the median widening would extend from east of the Friant Kern Canal through the Calloway Drive interchange. The limits of the added lane in the eastbound direction would differ between each alternative as described in the Unique Design Features of the Build Alternatives section. With each build alternative, modifications to the westbound diamond off-ramp to Calloway Drive and the eastbound loop on-ramp from Coffee Drive would be required.

Though the improvements described above are physically located in Segment 2, construction would be undertaken as part of Segment 1 construction to facilitate traffic operations between the Westside Parkway and the Centennial Corridor.

Segment 3

With each build alternative, the Stockdale Highway/SR 43 intersection would be widened and traffic signals would be added to control the traffic movements. SR 43 would be widened to add a dedicated left-turn lane in both directions. Stockdale Highway would be widened to add a dedicated left-turn lane and a shared through/right-turn lane in both directions. Though physically located in Segment 3, these improvements would be built as part of Segment 1 to ensure adequate traffic operations at this intersection.

1.2. Regulatory Authority

1.2.1. Summary of Regulations

1.2.1.1. U.S. Army Corps of Engineers

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into "Waters of the U.S." (WOUS) under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. This permitting authority applies to all WOUS where the material (1) replaces any portion of a WOUS with dry land or (2) changes the bottom elevation of any portion of any WOUS. These fill materials would include sand, rock, clay, construction debris, wood chips, and materials used to create any structure or infrastructure in these Waters. The selection of disposal sites for dredged or fill material is done in accordance with Section 404(b)(1) guidelines, which were developed by the U.S. Environmental Protection Agency (USEPA).

Waters of the United States

WOUS can be divided into three categories: territorial seas, tidal waters, or non-tidal waters. The term WOUS is defined by the *Code of Federal Regulations* (CFR, Title 33, Navigation and Navigable Waters; Part 328, Definition of Waters of the United States; Section 328.3, Definitions) and includes:

1. All waters that have, are, or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, or streams (including intermittent streams); mudflats; sand flats; wetlands; sloughs; prairie potholes; wet meadows; playa lakes; or natural ponds where the use, degradation, or destruction of which could affect interstate or foreign commerce;
4. All impoundments of waters otherwise defined as WOUS under the definition;
5. All tributaries of waters identified above;
6. The territorial seas; and
7. All wetlands adjacent to waters (other than waters that are themselves wetlands) identified above.

Ordinary High Water Mark

The landward limit of tidal WOUS is the high-tide line. In non-tidal waters where adjacent wetlands are absent, jurisdiction extends to the ordinary high water mark (OHWM). The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas"
(33 CFR §328.3[e]).

Wetlands

A wetland is a subset of jurisdictional *waters* and is defined by the USACE and the USEPA as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR §328.3[b]). Wetlands generally include swamps, marshes, bogs, and areas containing similar features. The definition and methodology for identifying wetland resources can be found in the USACE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008c), a supplement to the USACE's *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The methodology contained in this supplement was used to identify the type and extent of wetland resources within the boundaries of the project site.

On June 19, 2006, a majority of the U.S. Supreme Court overturned two Sixth Circuit Court of Appeals decisions, finding that certain wetlands constituted WOUS under the CWA. Justice Scalia argued that WOUS should not include channels through which water flows intermittently or ephemerally, or channels that periodically provide drainage for rainfall. He also stated that a wetland may not be considered "adjacent to" remote WOUS based on a mere hydrologic connection. On June 5, 2007, the USACE published a memorandum that provides guidance to both the USEPA regions and the USACE districts that implement the Supreme Court's decision in the Rapanos cases (which address the jurisdiction over WOUS under the CWA).[1] The memorandum includes a chart that summarizes its key points, which is

[1] Consolidated cases: Rapanos v. United States & Carabell v. United States refer to the U.S. Supreme Court's decision concerning USACE jurisdiction over waters of the United States under the Clean Water Act.

intended to be used as a reference tool along with a complete discussion of issues and guidance furnished throughout the memorandum.

In summary, the USACE and the USEPA will assert jurisdiction over the following waters: (1) traditional navigable waters (TNW); (2) wetlands adjacent to a TNW; (3) relatively permanent, non-navigable tributaries of a TNW that typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and (4) wetlands that directly abut such tributaries.

The USACE and the USEPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW: (1) non-navigable tributaries that are not relatively permanent; (2) wetlands adjacent to non-navigable tributaries that are not relatively permanent; and (3) wetlands adjacent to but that do not directly abut a relatively permanent, non-navigable tributary.

The USACE and the USEPA generally will not assert jurisdiction over the following features: (1) swales or erosional features (e.g., gullies or small washes characterized by low volume, infrequent, or short duration flow) and (2) ditches (including roadside ditches) excavated wholly within and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE and the USEPA will apply the significant nexus standard defined as follows:

1. A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs.
2. A significant nexus includes consideration of hydrologic and ecological factors.

Chapter 2. Methodology

Regulatory Specialists Gary Medeiros and Allison Rudalevige conducted a jurisdictional delineation of Alternatives A, B, and C on September 24, 2008; following an expansion of the BSA, additional areas in these Alternatives were surveyed on December 1, 2011, by Ms. Rudalevige and Biologist Jason Mintzer. The Stockdale Highway/SR 43 portion of the BSA was surveyed on December 1, 2011, by Ms. Rudalevige and Mr. Mintzer. Following construction of Westside Parkway, mapping was updated for the canals affected by the construction using high-resolution aerial imagery that reflected new conditions; a field survey was conducted on August 27, 2014, by Ms. Rudalevige and Biologist Sean Noonan to ground-truth the updated jurisdictional boundaries in the vicinity of the Westside Parkway. It should be noted that the 2014 survey did not update conditions along the entire alignment, instead, it focused on only those areas where conditions had changed as a result of the Westside Parkway project. Note that the presence or absence of surface water in canals may have changed between the original fieldwork in 2008 and the 2014 revisions; however, mapping presented in this delineation reflects the original condition.

The jurisdictional delineation was conducted in accordance with the requirements of the USACE and the CDFW, and is based on (1) the current regulations, policies, and guidance letters provided by these regulatory agencies; (2) the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b); and (3) the *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The delineation results presented in this report represent the regulatory specialists' best effort and professional judgment to determine the type and extent of the USACE jurisdictional boundaries in Segment 1. It should be noted that the delineation results presented in this report must be reviewed and concurred upon by the USACE in order to obtain a final jurisdictional determination concerning their respective jurisdictional boundaries.

The three-parameter approach used to identify USACE wetlands is summarized in Sections 2.1 through 2.3; literature reviewed for the preparation of the delineation is outlined in Section 2.4; and the field delineation is outlined in Section 2.5.

2.1. Vegetation

Hydrophytic vegetation (or hydrophytes) is defined as any macrophytic plant that "grows in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content; plants typically found in wet habitats" (Environmental Laboratory 1987). Specifically, these plant species have specialized morphological, physiological, or other adaptations for surviving in permanently saturated to periodically saturated soils where oxygen levels are very low or the soils are anaerobic. The USACE—as part of an interagency effort with the USEPA, the U.S. Fish and Wildlife Service (USFWS), and the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS)—has approved a new National Wetland Plant List (NWPL) (Lichvar and Kartesz 2009) to replace the National List of Plant Species that Occur in Wetlands (Reed 1988). The NWPL went into effect on June 1, 2012, and is to be used to determine whether the hydrophytic vegetation parameter is met when conducting wetland determinations under the Clean Water Act and the Wetland Conservation Provisions of the Food Security Act. The NWPL is also intended to be used for wetland restoration, establishment, and enhancement projects. This report utilized the indicator statuses for the Arid West Supplement portion of the NWPL.

The following revisions were made to the Reed (1988) pursuant to the NWPL:

1. The USACE eliminated the "probability-of-occurrence" categories (e.g., <1 percent, 1-33 percent, 34-66 percent, 67-99 percent, and >99 percent) due to the lack of numerical data to support these ratings.
2. The USACE determined that, because the wetland plant indicator statuses have shifted from a series of numerical categories to qualitative definitions, the use of +/– suffixes is difficult to apply accurately. Adding finer-scale +/– ratings implies there are data to support their assignments, which is generally not the case. Therefore, to improve the accuracy of the overall list, the USACE decided to drop the +/– suffixes.

Lichvar and Gillrich (2011) provide updated technical definitions of wetland plant indicator status categories as part of the procedures used in updating the NWPL:

- ***Obligate Wetland (OBL):*** These wetland-dependent plants (herbaceous or woody) require standing water or seasonally saturated soils (14 or more consecutive days) near the surface to assure adequate growth,

development, and reproduction and to maintain healthy populations. These plants are of four types:

- *submerged:* plants that conduct virtually all of their growth and reproductive activity under water.
- *floating:* plants that grow with leaves and most often their vegetative and reproductive organs floating on the water surface.
- *floating-leaved:* plants that are rooted in sediment but also have leaves that float on the water surface.
- *emergent:* herbaceous and woody plants that grow with their bases submerged and rooted in inundated sediment or seasonally saturated soil and their upper portions, including most of the vegetative and reproductive organs, growing above the water level.

- ***Facultative Wetlands (FACW):*** These plants depend on and predominantly occur with hydric soils, standing water, or seasonally high water tables in wet habitats for assuring optimal growth, development, and reproduction and for maintaining healthy populations. These plants often grow in geomorphic locations where water saturates soils or floods the soil surface at least seasonally.
- ***Facultative (FAC):*** These plants can occur in wetlands or non-wetlands. They can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.
- ***Facultative Upland (FACU):*** These plants are not wetland dependent. They can grow on hydric and seasonally saturated soils, but they develop optimal growth and healthy populations on predominantly drier or more mesic sites. Unlike FAC plants, these plants are non-wetland plants by habitat preference.
- ***Obligate Upland (UPL):*** These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

The following are three procedures for determining hydrophytic vegetation: Indicator 1, “Dominance Test”, using the “50/20 Rule”; Indicator 2, “Prevalence

Index"; or Indicator 3, "Morphological Adaptation", as identified in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008c). Hydrophytic vegetation is present if any indicator is satisfied. If none of the indicators are satisfied, then hydrophytic vegetation is absent unless (1) indicators of hydric soil and wetland hydrology are present and (2) the site meets the requirements for a problematic wetland situation.

Dominance Test: Vegetative cover is estimated and is ranked according to its dominance. Dominant species are the most abundant species for each stratum of the community (i.e., tree, sapling/shrub, herb, or woody vine) that individually or collectively amount to 50 percent of the total coverage of vegetation plus any other species that, by itself, accounts for 20 percent of the total vegetation cover (also known as the "50/20 Rule"). These species are recorded on the "Wetland Determination Data Form – Arid West Region" (see Attachment A). The wetlands indicator status of each species is also recorded on the data forms based on the *National List of Plant Species that Occur in Wetlands* (Reed 1988). While originally based on the 1988 list, the wetlands indicator status has been revised based on the 2014 National List of Plant Species that Occur in Wetlands (Lichvar and Gillrich 2011). If greater than 50 percent of the dominant species across all strata are OBL, FACW or FAC species, the criterion for wetland vegetation is considered to be met.

Prevalence Index: The prevalence index considers all plant species in a community, not just the dominant ones. The prevalence index is the average of the wetland indicator status of all plant species in a sampling plot. Each indicator status category is given a numeric code (OBL=1, FACW=2, FAC=3, FACU=4, and UPL=5) and is weighted by the species' abundance (percent cover). Hydrophytic vegetation is present if the prevalence index is 3.0 or less.

Morphological Adaptation: Morphological adaptations, such as adventitious roots (i.e., roots that take advantage of the wet conditions) and shallow root systems, must be observed on more than 50 percent of the individuals of a FACU species for the hydrophytic vegetation wetland criterion to be met.

2.2. Soils

The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as a soil that is formed under conditions of saturation, flooding, or ponding that occurs long enough during the growing season to develop anaerobic conditions (or

conditions of limited oxygen) at or near the soil surface and that favor the establishment of hydrophytic vegetation (USDA NRCS 2008). It should be noted that hydric soils created under artificial conditions of flooding and inundation sufficient for the establishment of hydrophytic vegetation would also meet this hydric soils indicator.

The soil conditions are verified by digging test pits along each transect to a depth of at least 20 inches (except where a restrictive layer occurs in areas containing hard pan, cobble, or solid rock). It should be noted that at some sites, it may be necessary to make exploratory soil test pits up to 40 inches in depth to more accurately document and understand the variability in soil properties and hydrologic relationships on the site. Soil test pit locations are usually dug within the drainage invert or at the edge of a drainage course within vegetated areas. Soil extracted from each soil test pit is then examined for texture and color using the standard plates within the Munsell Soil Color Chart (1994) and recorded on the Data Form. The Munsell Soil Color Chart aids in designating soils by color labels based on gradations of three simple variables: hue, value, and chroma. Any indicators of hydric soils such as the following are also recorded on the Data Form: redoximorphic features (i.e., areas where iron is reduced under anaerobic conditions and oxidized following a return to aerobic conditions); buried organic matter; organic streaking; reduced soil conditions; gleyed (i.e., soils having a characteristic bluish-gray or greenish-gray in color) or low-chroma soils; or sulfuric odor. If hydric soils are found, progressive pits are dug along the transect moving laterally away from the active channel area until hydric soil features are no longer present within the top 20 inches of the soil.

2.3. Hydrology

Wetlands hydrology is represented by either (1) all of the hydrological elements or characteristics of areas permanently or periodically inundated or (2) areas containing soils that are saturated for a sufficient duration of time to create hydric soils suitable for the establishment of plant species that are typically adapted to anaerobic soil conditions. The presence of wetland hydrology is evaluated at each intersect by recording the extent of observed surface flows, the depth of inundation, the depth to saturated soils, and the depth to free water in soil test pits. In instances where stream flow is divided into multiple channels with intervening sandbars, the entire area between the channels is considered within the OHWM. Therefore, an area containing these features would meet the indicator requirements for wetland hydrology.

2.4. Literature

Prior to conducting the jurisdictional delineation, the following documents were reviewed to identify areas that may fall under agency jurisdiction: the USGS Gosford, Lamont, Oildale, Stevens, and Tupman 7.5-minute topographic quadrangles; color aerial photography provided by Aerials Express (April 2006) and Google Earth (April 2008, October 2009, and April 2011); the Soil Survey Geographic Database for Kern County, California, Northwestern Part (USDA NRCS 2007); and the National Hydric Soils List (USDA NRCS 2009). A description of this literature is provided below.

USGS Topographic Quadrangle: USGS quadrangle maps show geological formations and their characteristics; they describe the physical settings of an area through topographic contour lines and other major surface features. These features include lakes, streams, rivers, canals, buildings, roadways, landmarks, and other features that may fall under the jurisdiction of one or more regulatory agencies. In addition, the USGS maps provide topographic information that is useful in determining elevations, latitude and longitude, and Universal Transverse Mercator Grid (UTM) coordinates for a project site.

The USGS quadrangle maps (see Exhibits 5A–5C of the NES) show that the Kern River crosses Segment 1 of the BSA. During periods of high flow, the Kern River flows to Buena Vista Lake approximately 15 aerial miles southwest of Segment 1. Eight canals cross Segment 1 at multiple locations: the Arvin-Edison Canal, the Calloway Canal, the Carrier Canal, the Central Branch Kern Island Canal, the Cross Valley Canal, the Friant-Kern Canal, the Kern Island Canal, and the Stine Canal. Pioneer Canal runs immediately south of the detention basin on the southwest corner of the intersection of Stockdale Highway and SR 43.

The Arvin-Edison Canal collects water from the Friant-Kern Canal and discharges near SR 99 east of Maricopa Highway. Water from the Kern River is diverted into the Calloway Canal just east of the BSA; the canal ends just northeast of Wasco in the vicinity of Poso Creek. The Carrier Canal runs parallel to the southern side of the Kern River and carries water from the Kern River and Levee Canal east of Segment 1 to the Kern River Canal west of Segment 1; the Kern River Canal discharges into the Kern River near Buena Vista Lake. The Central Branch Kern Island Canal is an offshoot of the Kern Island Canal and carries water to the Kern Lakebed approximately 15 miles south of Segment 1. The Cross Valley Canal runs parallel to the northern side of the Kern River and carries water from the California Aqueduct to Bakersfield. The Friant-Kern Canal empties into the Kern River at the western end of

Segment 1 and carries water from Millerton Lake north of Fresno. The Kern Island Canal carries water from the Kern River to Kern Lake. The Stine Canal carries water from the Carrier Canal and ends south of Bakersfield.

Color Aerial Photography: An existing color aerial photograph of Segment 1 of the BSA was reviewed prior to the September 24, 2008, December 1, 2011, and August 27, 2014 site visits. The aerial photograph was useful in identifying the extent of the drainages and any riparian vegetation that may be present in the area.

The Kern River, various canals, and detention basins are shown on the aerial photograph. Inundation is visible in the river, canals, and detention basin in the BSA. Vegetation is visible along the banks of the Kern River; the canals and detention basins appear to be unvegetated or have herbaceous vegetation or open water.

U.S. Department of Agriculture: The presence of hydric soil is one of the chief indicators of jurisdictional wetlands. The soil survey data for Segment 1 were reviewed and it was determined that the U.S. Department of Agriculture (USDA) mapped the soils as Cajon loamy sand (0 to 2 percent slopes); Cajon sandy loam, overblown (0 to 2 percent slopes); Excelsior sandy loam; Kimberlina-Urban land-Cajon complex (0 to 2 percent slopes); Panoche-Urban land complex (0 to 2 percent slopes); riverwash; urban land; Wasco sandy loam; and Wasco fine sandy loam (USDA NRCS 2007); Figures 6A–6C the NES show the soil data for Segment 1. Excelsior soils and riverwash are identified as hydric (Reed 1988). A brief description of the soil types is provided in Attachment B of this report.

2.5. Jurisdictional Delineation

In September 2008, the USACE issued the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. This regional supplement is designed for use with the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). Both the 1987 Wetlands Manual and the Arid West Supplement to the manual provide technical methods and guidelines for determining the presence of WOUS and wetland resources. A three-parameter approach is used to identify wetlands and requires evidence of wetland hydrology, hydrophytic vegetation, and hydric soils. Wetlands generally include swamps, marshes, bogs, and similar areas. In order to be considered a wetland, an area must exhibit at least minimal hydric characteristics within the three parameters. However, problem areas may periodically or permanently lack certain indicators due to seasonal

or annual variability of the nature of the soils or plant species on site. Atypical wetlands lack certain indicators due to recent human activities or natural events. Guidance for determining the presence of wetlands in these situations is presented in the regional supplement. Non-wetland WOUS are delineated based on the limits of the OHWM, which can be determined by a number of factors including erosion, the deposition of vegetation or debris, and changes in vegetation.

During the field survey, jurisdictional areas containing vegetation, soils, and evidence of hydrology were recorded on a 1 inch equals 200 feet (1″=200′) aerial photograph (aerial date for the 2008 and 2011 surveys was 2006; aerial date for the 2014 surveys was 2014). It should be noted that the original delineation was mapped on a 2006 aerial photograph. Open water in the Kern River, canals, and detention basins is variable based on the time of year and annual precipitation. The 2008 survey was conducted during a dry time of year (fall); the Kern River and some of the canals were dry, differing from the 2006 aerial which showed these features as containing open water. During the 2008 surveys, open water was mapped as it was observed in the field at the time of this survey. The 2011 survey was conducted during a wetter time of year (winter) following recent rain events; open water was present in the Kern River Floodplain and in some of the canals. The 2014 survey was conducted in a dry time of year in the third year of drought conditions. To provide consistency between the 2008, 2011, and 2014 survey results, combined and presented herein, open water observed in 2011 and 2014 was not differentiated from other non-wetland WOUS. Photographs of the jurisdictional areas were taken and are presented in Attachment C.

Chapter 3. Results

3.1. Summary of Drainages

In Segment 1 of the BSA, the Kern River consists of an open, sandy wash that was either very sparsely vegetated or essentially devoid of vegetation at the time of the survey. Open water was not observed in the Kern River during the 2008 survey. Flowing water was present in an active channel in the Kern River during the 2011 survey.

The Arvin-Edison Canal and the Friant-Kern Canal are concrete-lined. The Calloway Canal, the Carrier Canal, the Central Branch Kern Island Canal, the Cross Valley Canal, the Kern Island Canal, and the Stine Canal are unlined (i.e., soft-bottom) with varying amounts of upland vegetation. Most of the canals were dry at the time of the 2008 survey; surface water was observed in the Carrier, Friant-Kern, and Kern Island Canals during the 2008 survey. Two additional canals have been created since construction of the Westside Parkway and were noted during the 2014 field visit: (1) an unvegetated, concrete-lined branch of the Cross Valley Canal at the Arvin Edison Canal and (2) an unvegetated, unnamed, concrete-lined canal just east and parallel to the Friant-Kern Canal. These canals are similar in nature to those listed above (e.g., Carrier Canal).

Two detention basins occur near SR 99, which were dry at the time of the 2008 survey. Two detention basins occur at the intersection of Stockdale Highway and SR 43. The basin on the southwest corner of the intersection contained surface water at the time of the 2011 survey. The small basin at the southwest corner of the intersection was dry at the time of the 2011 survey; vegetation was present along the margins and bottom of this basin.

3.2. Vegetation

Vegetation was formally analyzed at three locations in the Kern River (Sampling Points 1, 4, and 5); at two canal locations (Sampling Points 2 and 3); and at one detention basin at the intersection of Stockdale Highway and SR 43 (Sampling Point 6) (Attachment A).

At Sampling Point 1, vegetative cover was less than five percent; therefore, this area was considered to be unvegetated and the hydrophytic vegetation criterion for wetlands was not met. Vegetation at Sampling Points 2 and 3 primarily consisted of upland species. Therefore, vegetation at these points did not pass the Dominance Test and, in both cases, the prevalence index was greater than 3.0. In addition, the vegetation in these areas did not show morphological adaptations to wetland conditions. Therefore, the hydrophytic vegetation criterion for wetlands was not met in these areas.

Vegetation at Sampling Points 4, 5, and 6 were dominated by hydrophytic plant species, including black willow (*Salix gooddingii*) (OBL) and mule fat (FACW) along the Kern River, and duckweed (*Lemna* sp.) (OBL) in the detention basin. All three areas passed the Dominance Test. Therefore, the hydrophytic vegetation criterion for wetlands was met in these areas.

3.3. Soil

Soils present at Sampling Points 1, 4, and 5 are sandy, sandy clay, or sandy loam. Hydric soil indicators were not observed at Sampling Point 1 or 4; the sandy redox indicator of hydric soils was observed at Sampling Point 5 (Attachment A). Soils in the Kern River are naturally problematic (i.e., vegetated sandbars within a floodplain are considered "naturally problematic" [USACE 2008b]). If indicators of hydrophytic vegetation and wetland hydrology are both found to be present, this sampling point may be considered a wetland. In addition, the USDA determined that the Kern River is underlain by riverwash, a hydric soil (USDA NRCS 2007, 2009). The soil at Sampling Points 1 and 4 matches the description (see Attachment B) of this soil type.

Soils present at Sampling Points 2 and 3 did not exhibit hydric soil indicators (Attachment A). Prominent mottles were observed at a depth of 18 to 20 inches in Sampling Point 2; however, these mottles must be present at a shallower depth for them to be considered an indicator of hydric soil. The USDA determined that these areas are underlain by Cajon loamy sand, which is not considered hydric (USDA NRCS 2007, 2009). The soils sampled at these locations fall within the range of hue, value, and chroma of the Cajon series; however, the exact soil taxonomy was not determined during the delineation. The hydric soil criterion for wetlands was not met in these areas.

Soils present at Sampling Point 6 did not exhibit hydric soil indicators (Attachment A). However, the detention basin appears to be seasonally ponded. This represents a problematic hydric soil situation. If indicators of hydrophytic vegetation and wetland hydrology are both found to be present, this sampling point may be considered a wetland. The USDA determined that this area is underlain by Wasco fine sandy loam, which is not considered hydric (USDA NRCS 2007, 2009). The soil sampled at this location does not fall within the range of hue, value, and chroma of the Wasco series; however, the exact soil taxonomy was not determined during the delineation and the detention basin has been man-altered, possibly resulting in a different soil type.

3.4. Hydrology

The Kern River exhibited multiple primary and secondary indicators of wetland hydrology along its length (Attachment A). These include surface water (during the 2011 survey), a high water table, drift deposits (riverine), drainage patterns, and inundation visible on aerial imagery (April 2006). Therefore, the hydrology criterion for wetlands was met in the Kern River.

The canals exhibited multiple primary and secondary indicators of wetland hydrology, including aquatic invertebrates, water marks, drainage patterns, and inundation visible on aerial imagery (April 2006) (Attachment A). Therefore, the hydrology criterion for wetlands was met in each canal.

The smaller detention basin at the intersection of Stockdale Highway and SR 43 exhibited one primary and two secondary indicators of wetland hydrology: inundation visible on aerial imagery, saturation visible on aerial imagery, and the FAC-Neutral test (Attachment A). Therefore, the hydrology criterion for wetlands was met in the detention basin.

Chapter 4. Jurisdictional Delineation

4.1. U.S. Army Corps of Engineers Determination

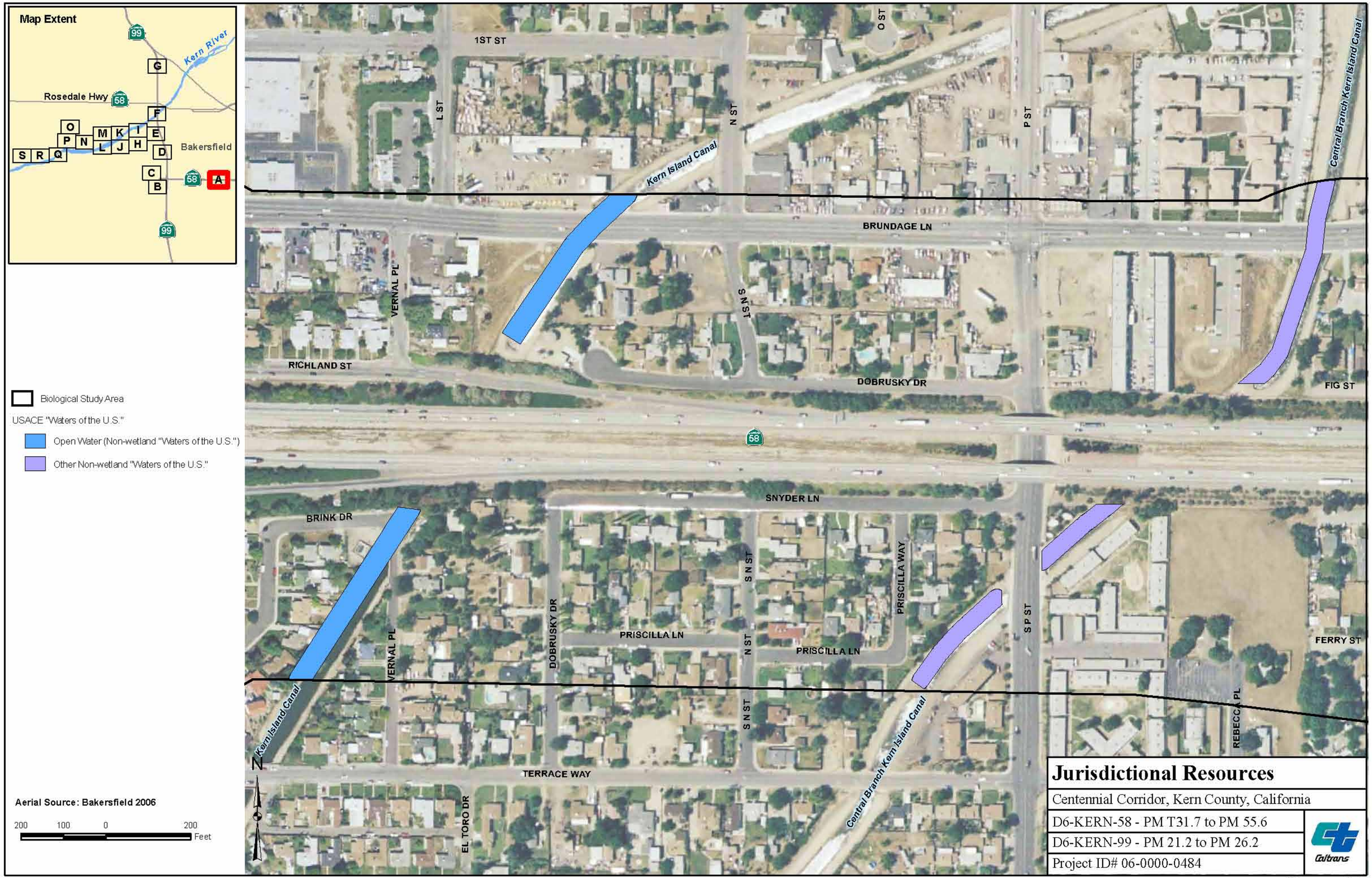
Wetlands Determination: As described in Section 2.0 of this report, an area must exhibit all three wetland parameters, as described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b) and the *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) in order to be considered a jurisdictional wetland. As discussed in Section 3.0 above, a portion of the Kern River and the smaller detention basin at Stockdale Highway and SR 43 contained all three wetland parameters. The remainder of the Kern River exhibited evidence of hydrology; however, the area did not contain hydrophytic vegetation and so is not considered a wetland. When present, vegetation in the canals was not hydrophytic. In addition, no hydric soils were present in the canals. Based on the field observations and data collection, a total of approximately 0.195 acre of wetland WOUS occur in Segment 1 and at Stockdale Highway and SR 43 (Figures 2A–2T; Table 1).

Based on current project design plans, Alternative B would not impact any wetland WOUS (Figures 2A–2T; Table 2). There will be no jurisdictional impacts due to the intersection improvements at Stockdale Highway and SR 43.

"Waters of the U.S." (Non-Wetland) Determination: The Kern River and various canals exhibit evidence of hydrology sufficient to document that the OHWM meets the criteria for USACE jurisdictional waters. Based on field observations and data collection, a total of approximately 135.763 acres of USACE jurisdictional non-wetland WOUS occur in Segment 1 and at Stockdale Highway and SR 43 (Figures 2A–2T; Table 1).

Preliminary Jurisdictional Determination forms are provided for (1) the Kern River, (2) canals, and (3) basins within the BSA (Attachment D). Appendix A to the Preliminary Jurisdictional Determination forms provides detailed information on individual drainages/water bodies within the BSA; note that the descriptions provided in Appendix A describe conditions within the BSA, and not the full extent of the drainage from origin to termination.

Based on current project design plans, Alternative B would impact 4.432 acres of non-wetland WOUS (0.009 acre permanent, 4.423 acres temporary) (Figures 2A–2T; Table 2). There will be no jurisdictional impacts due to the intersection improvements at Stockdale Highway and SR 43.


Map Extent
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Kern Island Canal
Central Branch Kern Island Canal
BRUNDAGE LN
VERNAL PL
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RICHLAND ST
DOBRUSKY DR
FIG ST
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BRINK DR
PRISCILLA LN
PRISCILLA WAY
S P ST
FERRY ST
REBECCA PL
TERRACE WAY
EL TORO DR
N
Biological Study Area
USACE "Waters of the U.S."
Open Water (Non-wetland "Waters of the U.S.")
Other Non-wetland "Waters of the U.S."
Aerial Source: Bakersfield 2006
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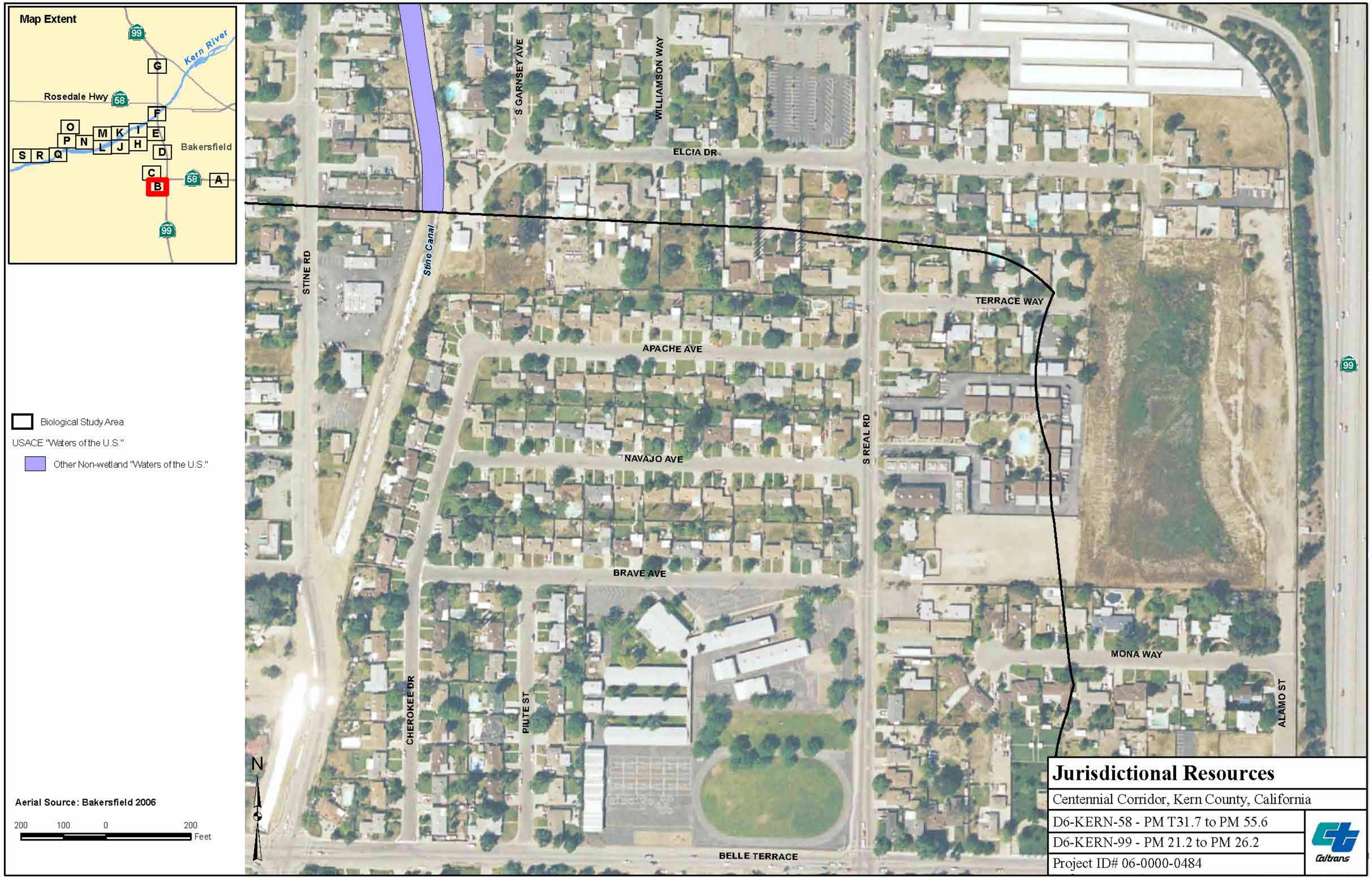
Feet
Jurisdictional Resources
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM 55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans

Figure 2A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USACE "Waters of the U.S."
Other Non-wetland "Waters of the U.S."
Aerial Source: Bakersfield 2006
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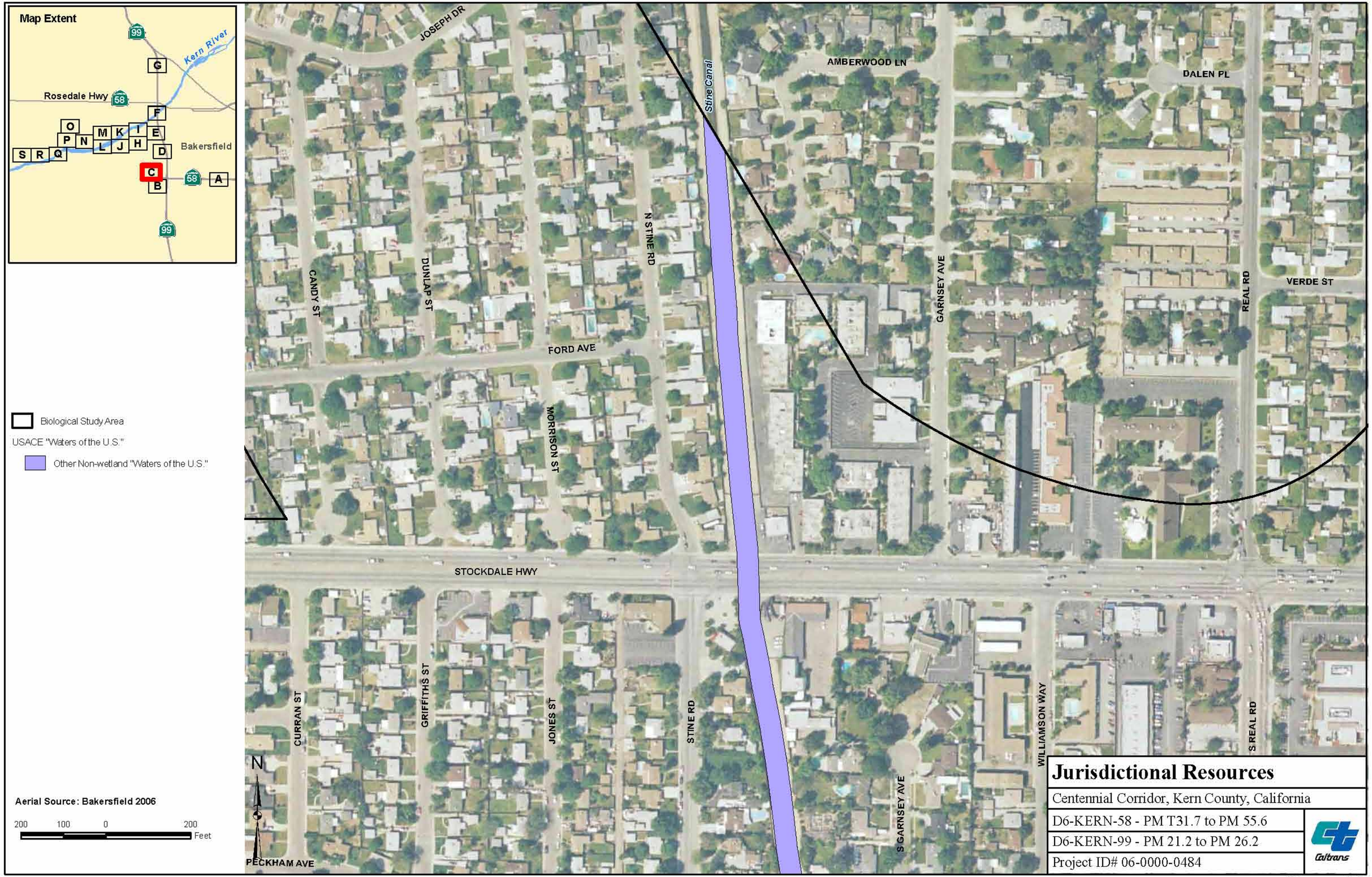
Stine Canal
TERRACE WAY
APACHE AVE
NAVAJO AVE
S REAL RD
BRAVE AVE
MONA WAY
ALAMO ST
CHEROKEE DR
PIUTE ST
BELLE TERRACE
Jurisdictional Resources
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM 55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans

Figure 2B



Jurisdictional Resources

Centennial Corridor, Kern County, California

D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2C

Jurisdictional Resources

Centennial Corridor, Kern County, California

D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

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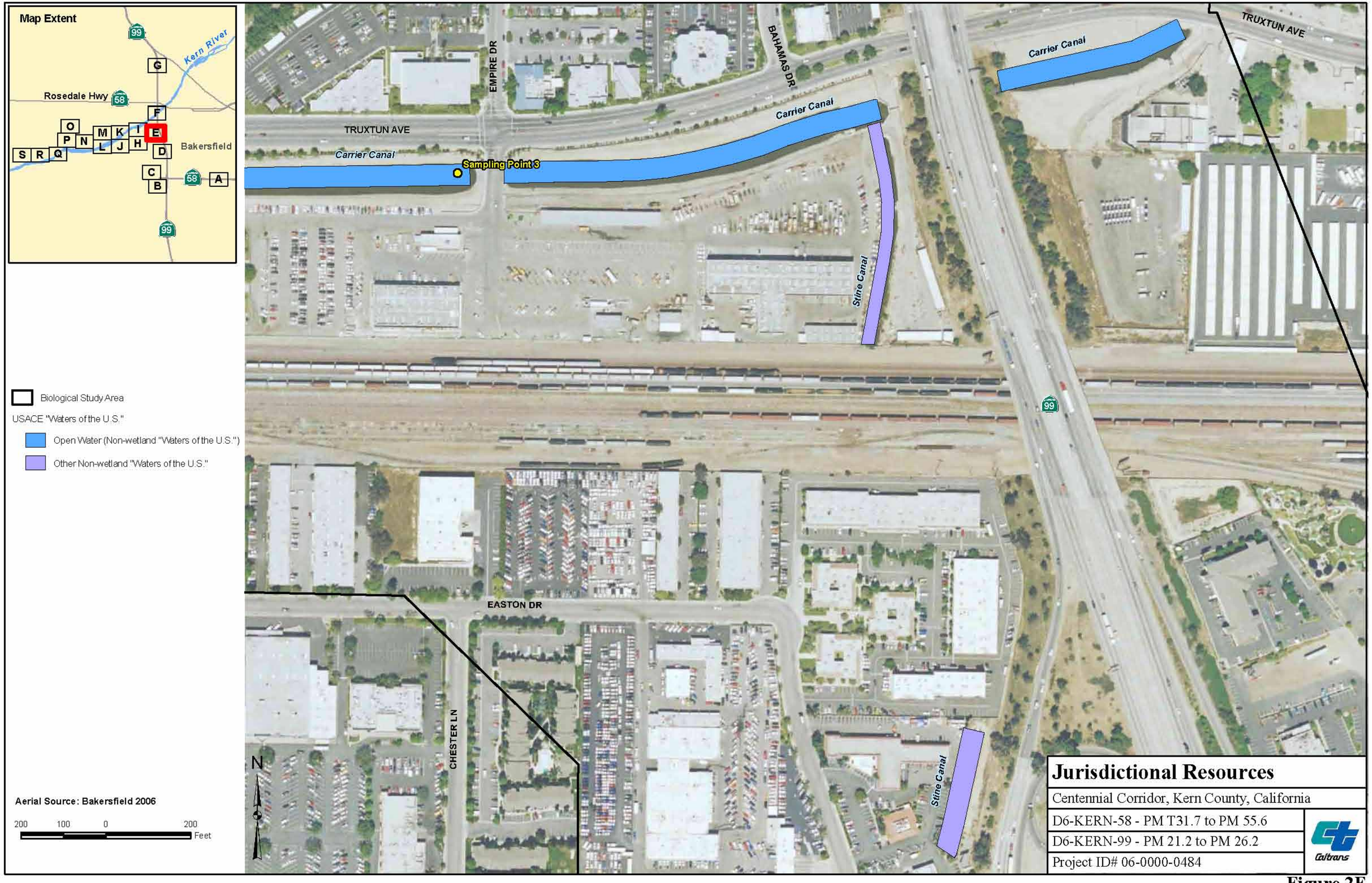
Figure 2D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Rosedale Hwy
Bakersfield
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TRUXTUN AVE
EMPIRE DR
BAHAMAS DR
Carrier Canal
Sampling Point 3
Stine Canal
EASTON DR
CHESTER LN
N
Biological Study Area
USACE "Waters of the U.S."
Open Water (Non-wetland "Waters of the U.S.")
Other Non-wetland "Waters of the U.S."
Aerial Source: Bakersfield 2006
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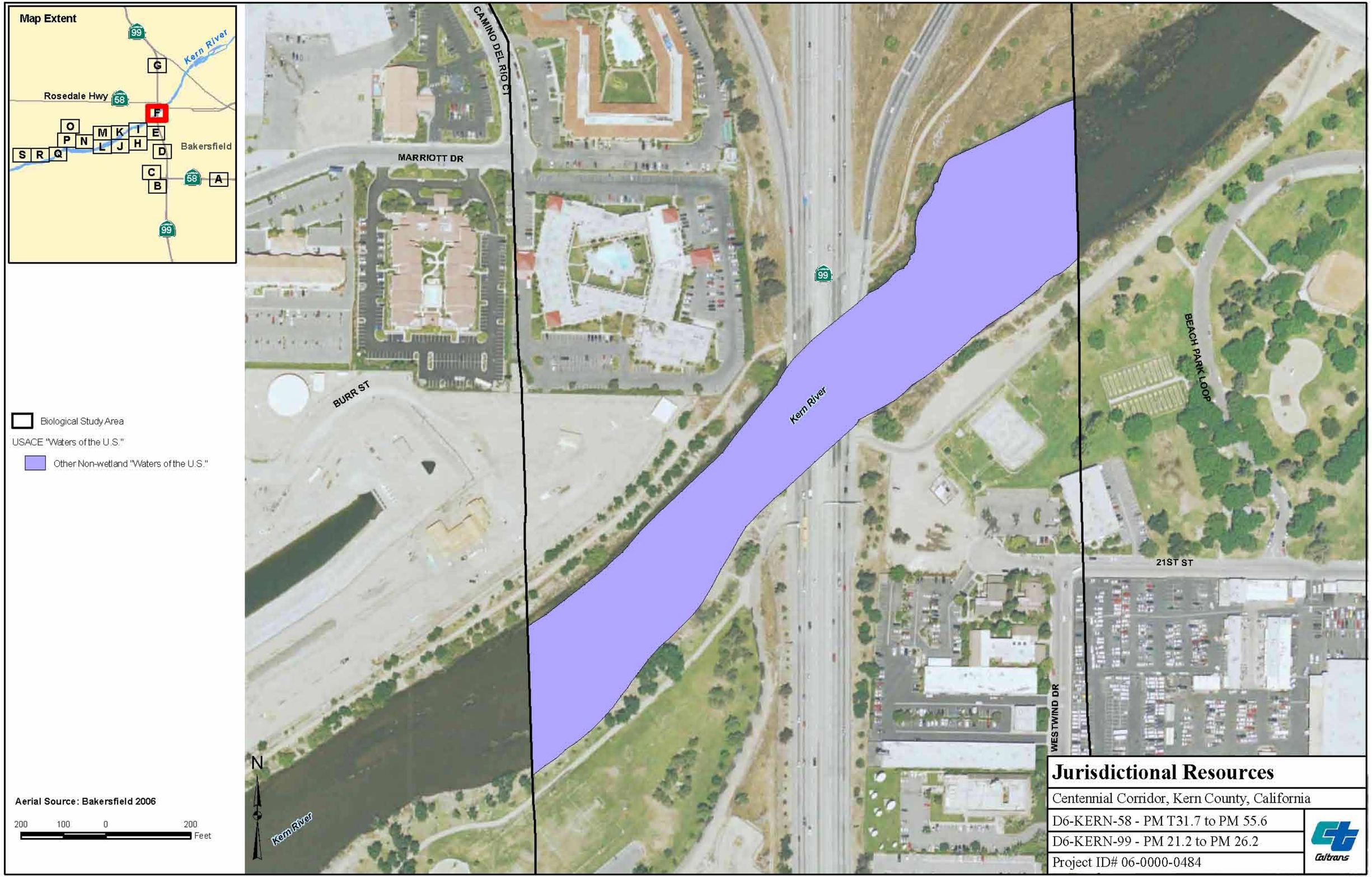
Feet
Jurisdictional Resources
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM 55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans

Figure 2E



Jurisdictional Resources

Centennial Corridor, Kern County, California

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D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

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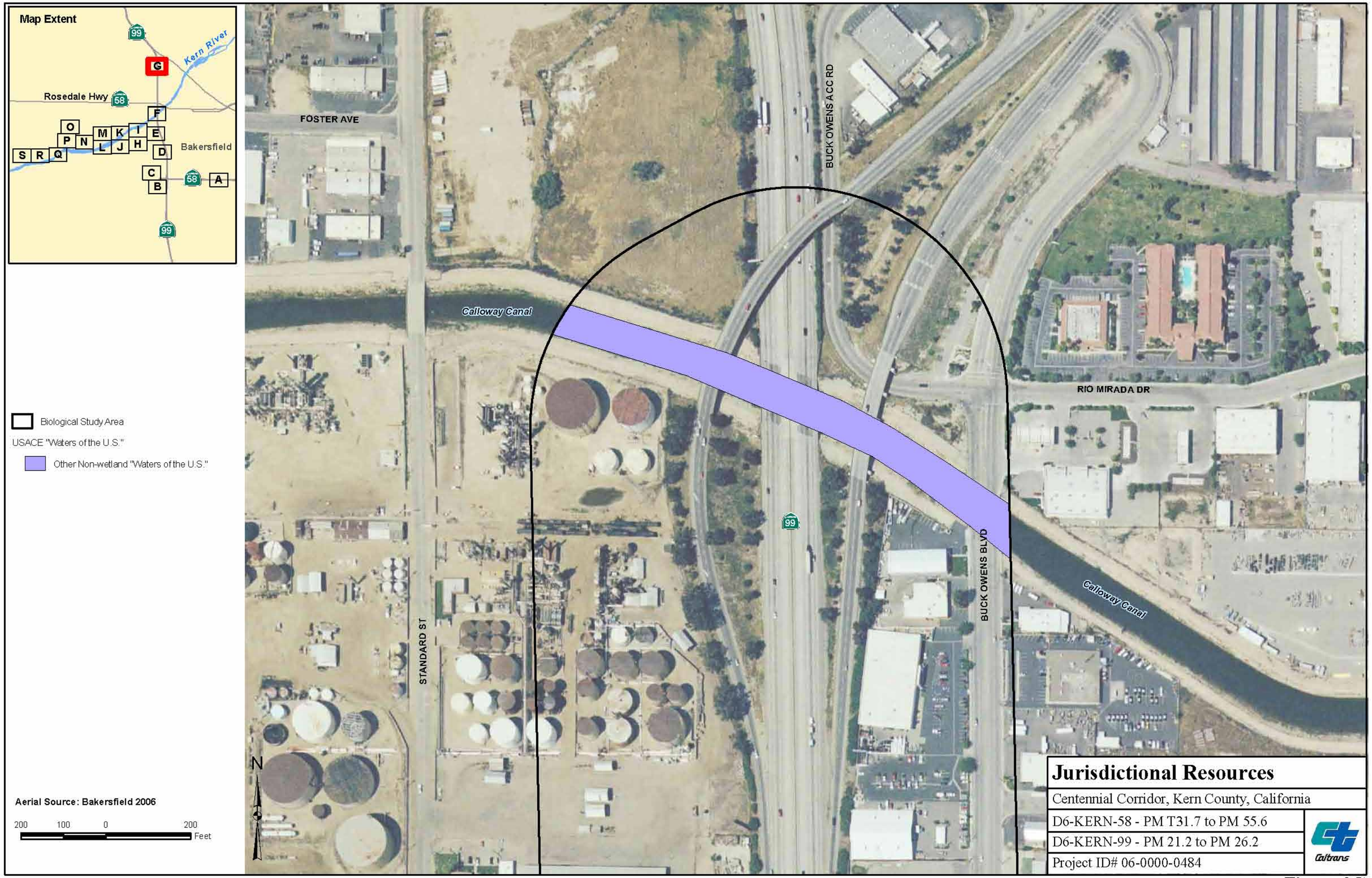

Jurisdictional Resources

Centennial Corridor, Kern County, California

D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

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Figure 2G

Jurisdictional Resources

Centennial Corridor, Kern County, California

D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

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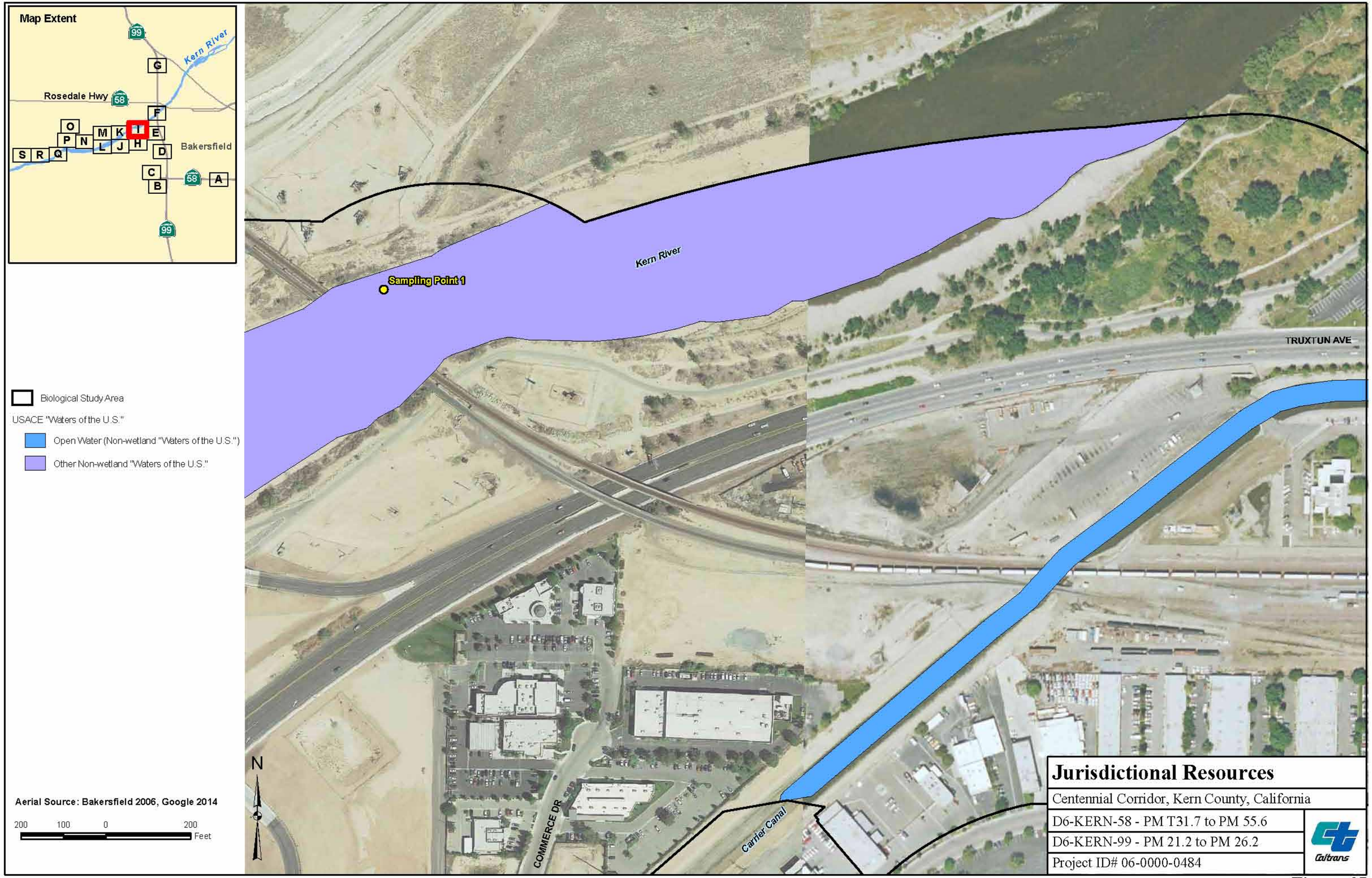
Figure 2H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Rosedale Hwy
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Kern River
Sampling Point 1
TRUXTUN AVE
COMMERCE DR
Carrier Canal
N
Biological Study Area
USACE "Waters of the U.S."
Open Water (Non-wetland "Waters of the U.S.")
Other Non-wetland "Waters of the U.S."
Aerial Source: Bakersfield 2006, Google 2014
200 100 0 200
Feet
Jurisdictional Resources
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM 55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans

Figure 2I

Map Extent
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Kern River
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Rosedale Hwy
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Bakersfield
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Kern River
TRUXTUN AVE
COMMERCIAL WAY
COMMERCE DR
OFFICE PARK DR
Carrier Canal
MOHAWK ST
WOODBRIER WAY
TOWER WAY
DISCOVERY DR
COCHRAN DR
N
Biological Study Area
USACE "Waters of the U.S."
Open Water (Non-wetland "Waters of the U.S.")
Other Non-wetland "Waters of the U.S."
Aerial Source: Bakersfield 2006, Google 2014
200 100 0 200
Feet
Jurisdictional Resources
Centennial Corridor, Kern County, California
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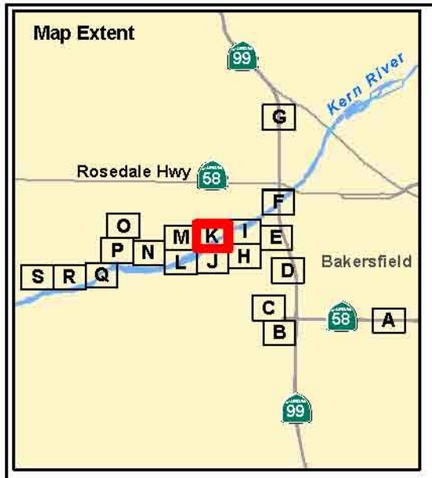
Figure 2J



Biological Study Area

USACE "Waters of the U.S."

Other Non-wetland "Waters of the U.S."

Aerial Source: Google 2014

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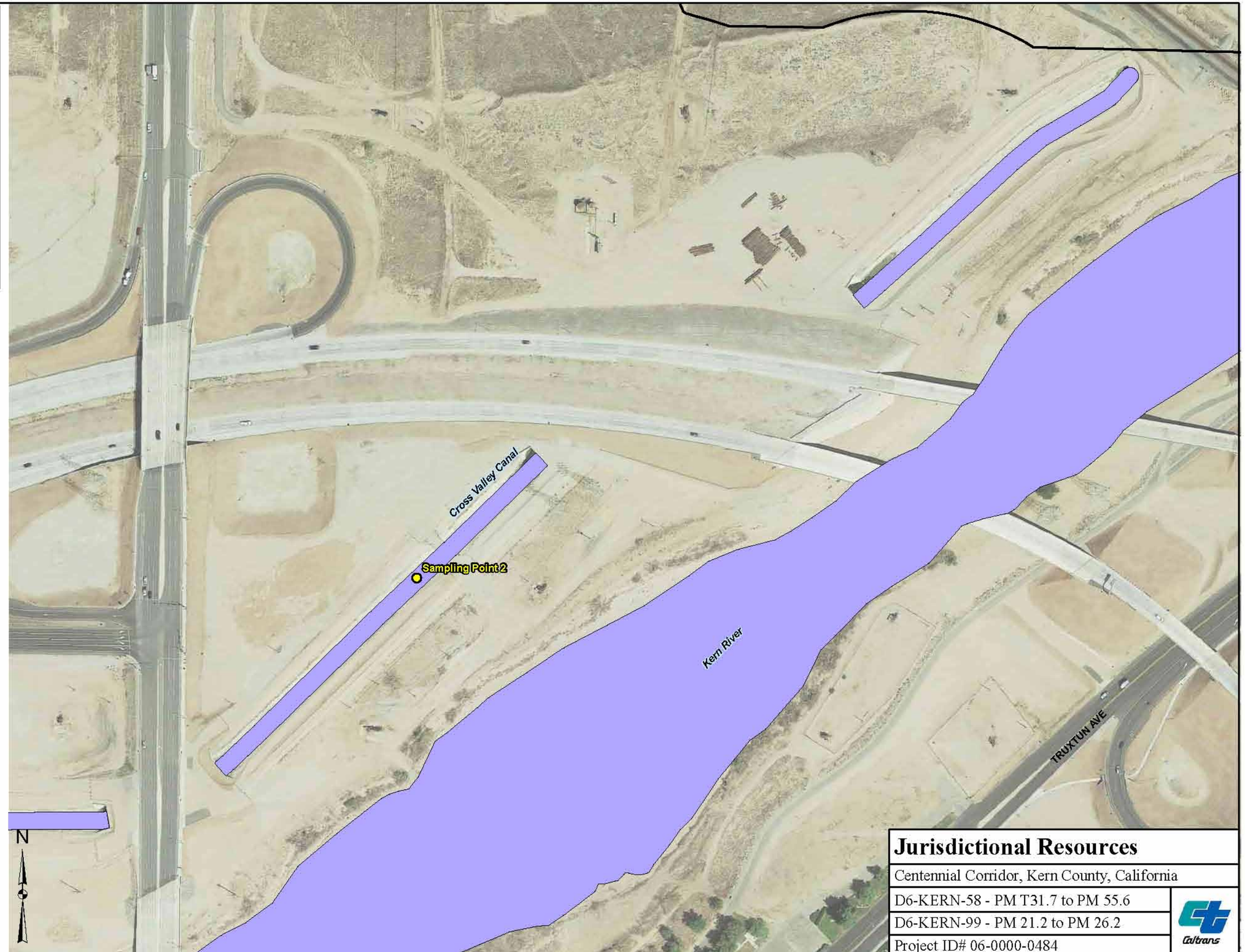

Jurisdictional Resources

Centennial Corridor, Kern County, California

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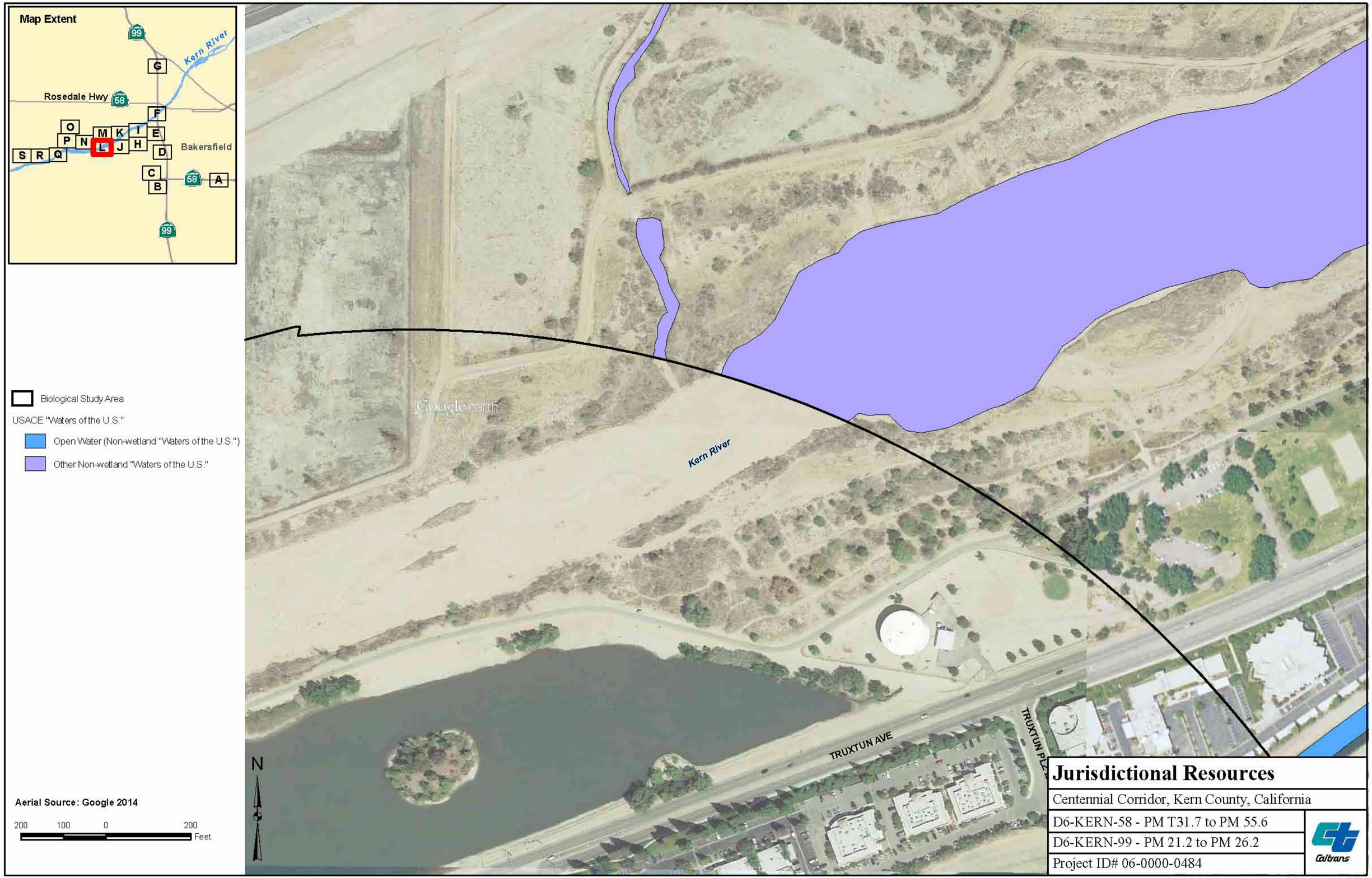
Project ID# 06-0000-0484

Caltrans

Figure 2K



Jurisdictional Resources

Centennial Corridor, Kern County, California

D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Figure 2L

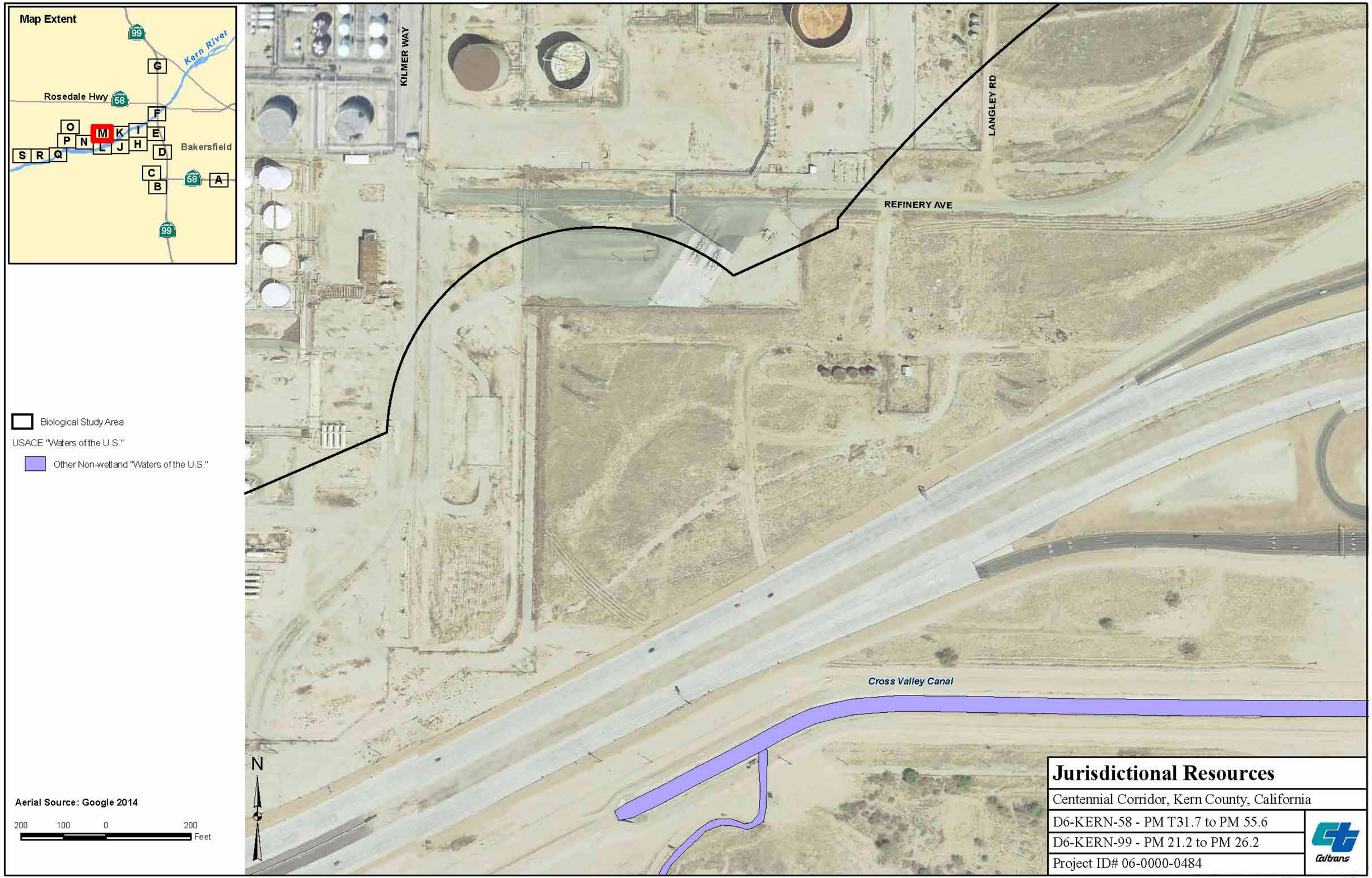
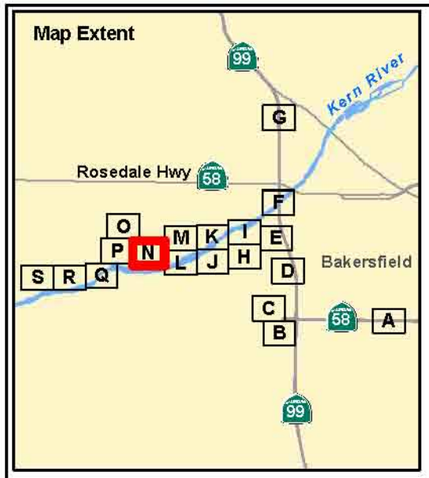

Map Extent
99
Kern River
G
Rosedale Hwy
58
F
O
M
K
I
E
P
N
L
J
H
Bakersfield
S
R
Q
D
C
58
A
B
99
KILMER WAY
LANGLEY RD
REFINERY AVE
Cross Valley Canal
Biological Study Area
USACE "Waters of the U.S."
Other Non-wetland "Waters of the U.S."
Aerial Source: Google 2014
200 100 0 200
Feet
N
Jurisdictional Resources
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM 55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans

Figure 2M



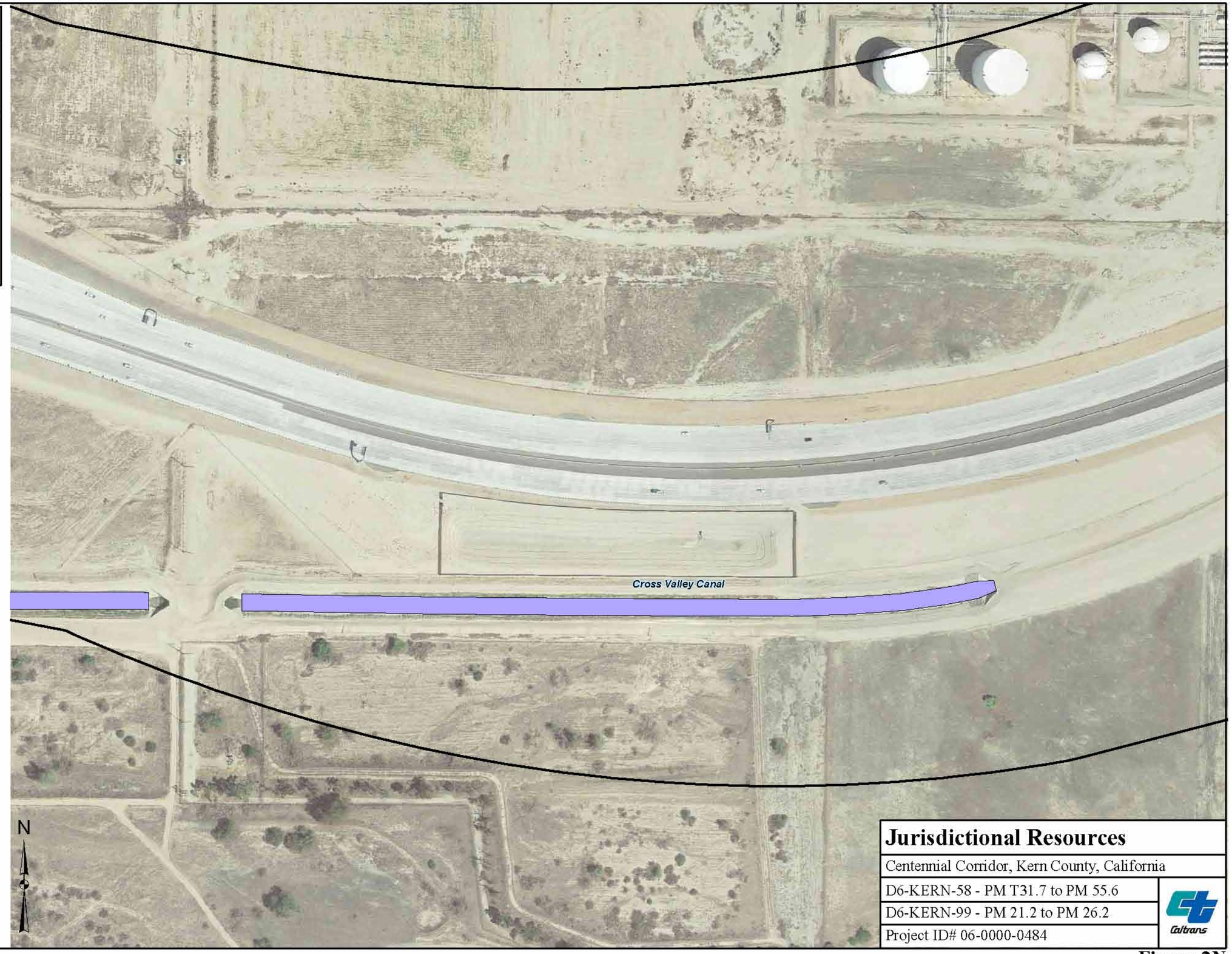
Biological Study Area

USACE "Waters of the U.S."

Other Non-wetland "Waters of the U.S."

Aerial Source: Google 2014

200 100 0 200 Feet



Jurisdictional Resources

Centennial Corridor, Kern County, California

D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2N

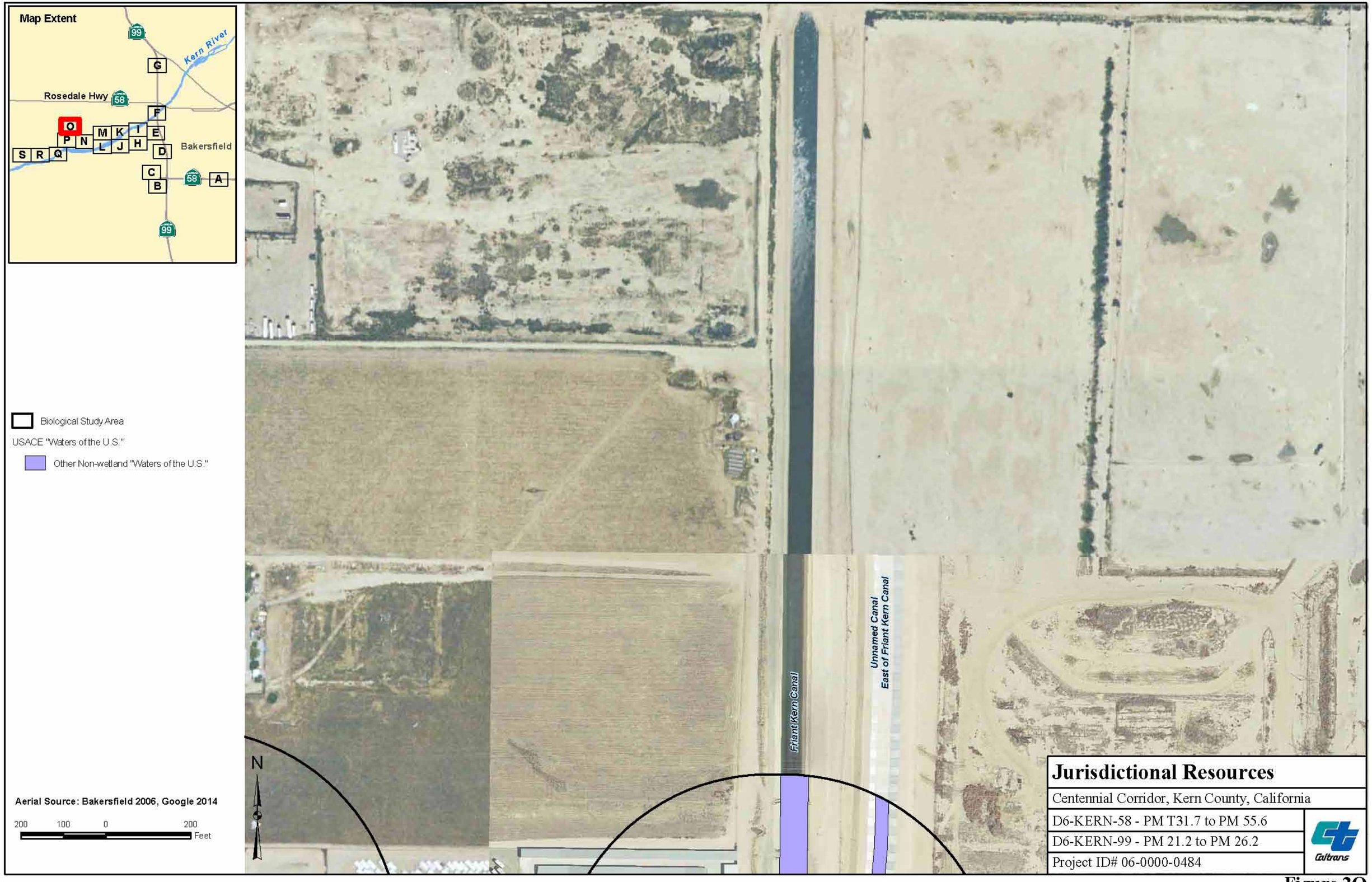
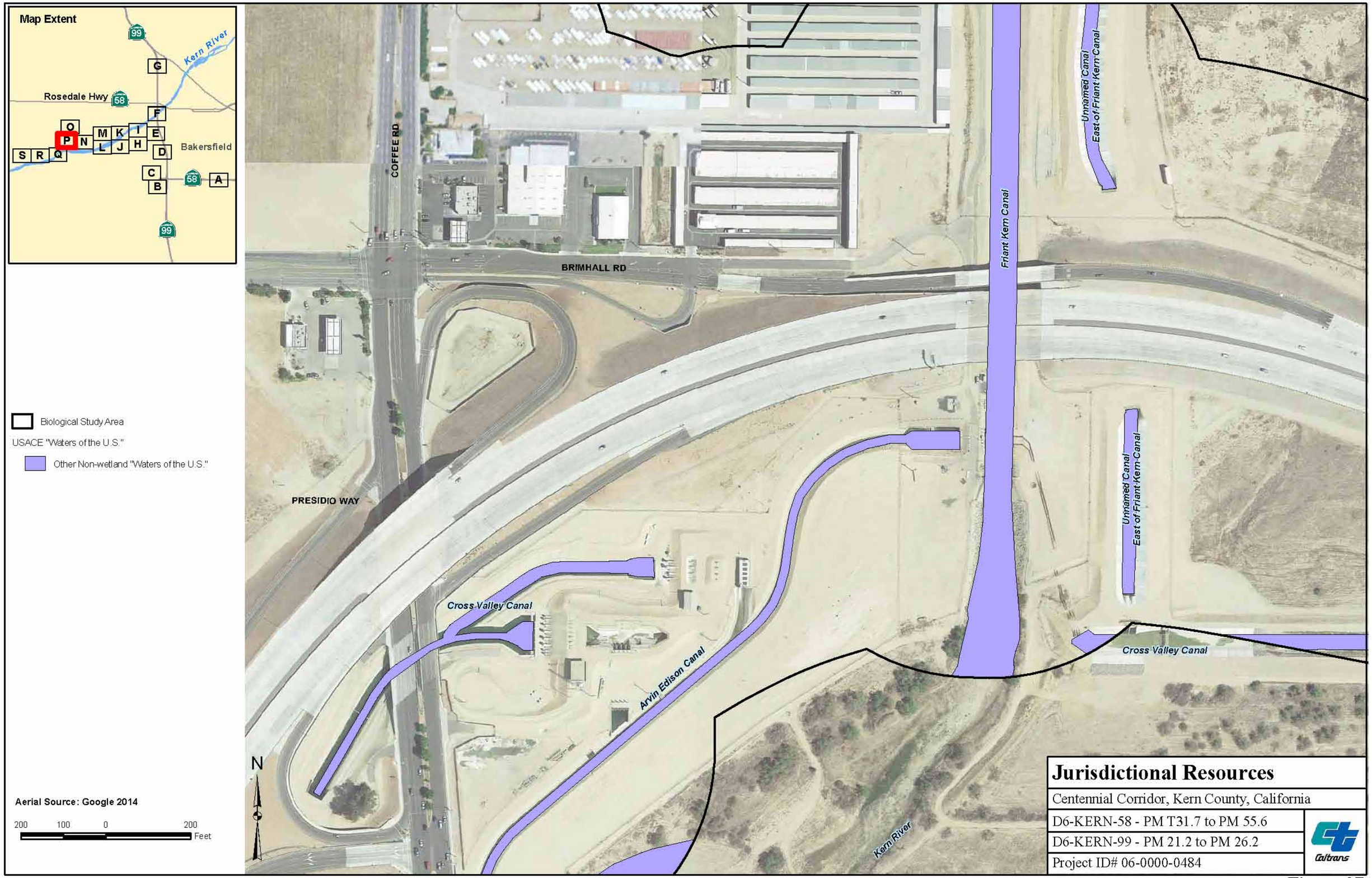

Map Extent
99
Kern River
G
Rosedale Hwy
58
F
O
P
N
M
K
I
E
S
R
Q
L
J
H
D
Bakersfield
C
B
58
A
99
Biological Study Area
USACE "Waters of the U.S."
Other Non-wetland "Waters of the U.S."
Aerial Source: Bakersfield 2006, Google 2014
200 100 0 200
Feet
N
Friant Kern Canal
Unnamed Canal
East of Friant Kern Canal
Jurisdictional Resources
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM 55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans

Figure 2O



Jurisdictional Resources

Centennial Corridor, Kern County, California

D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2P

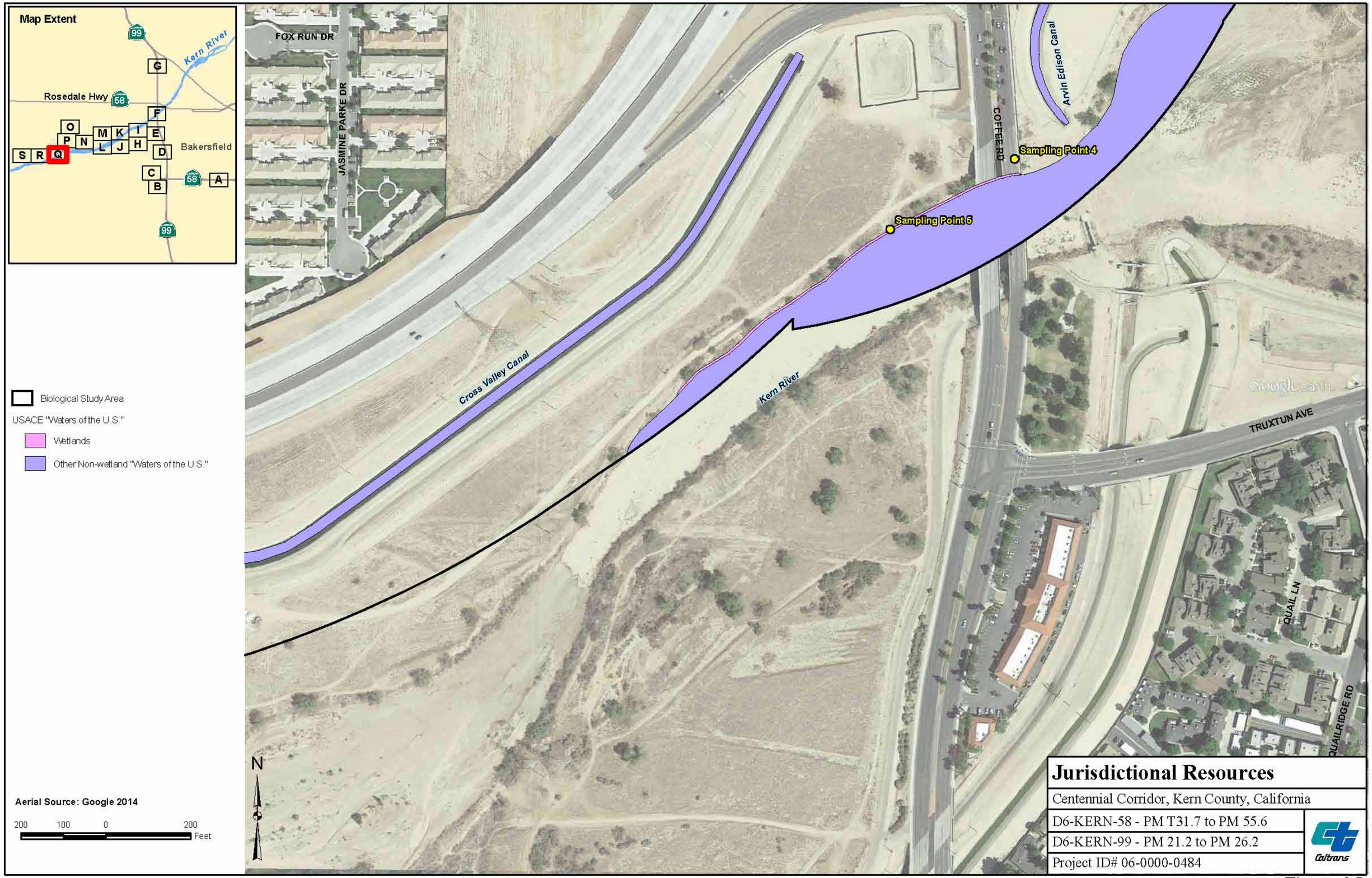
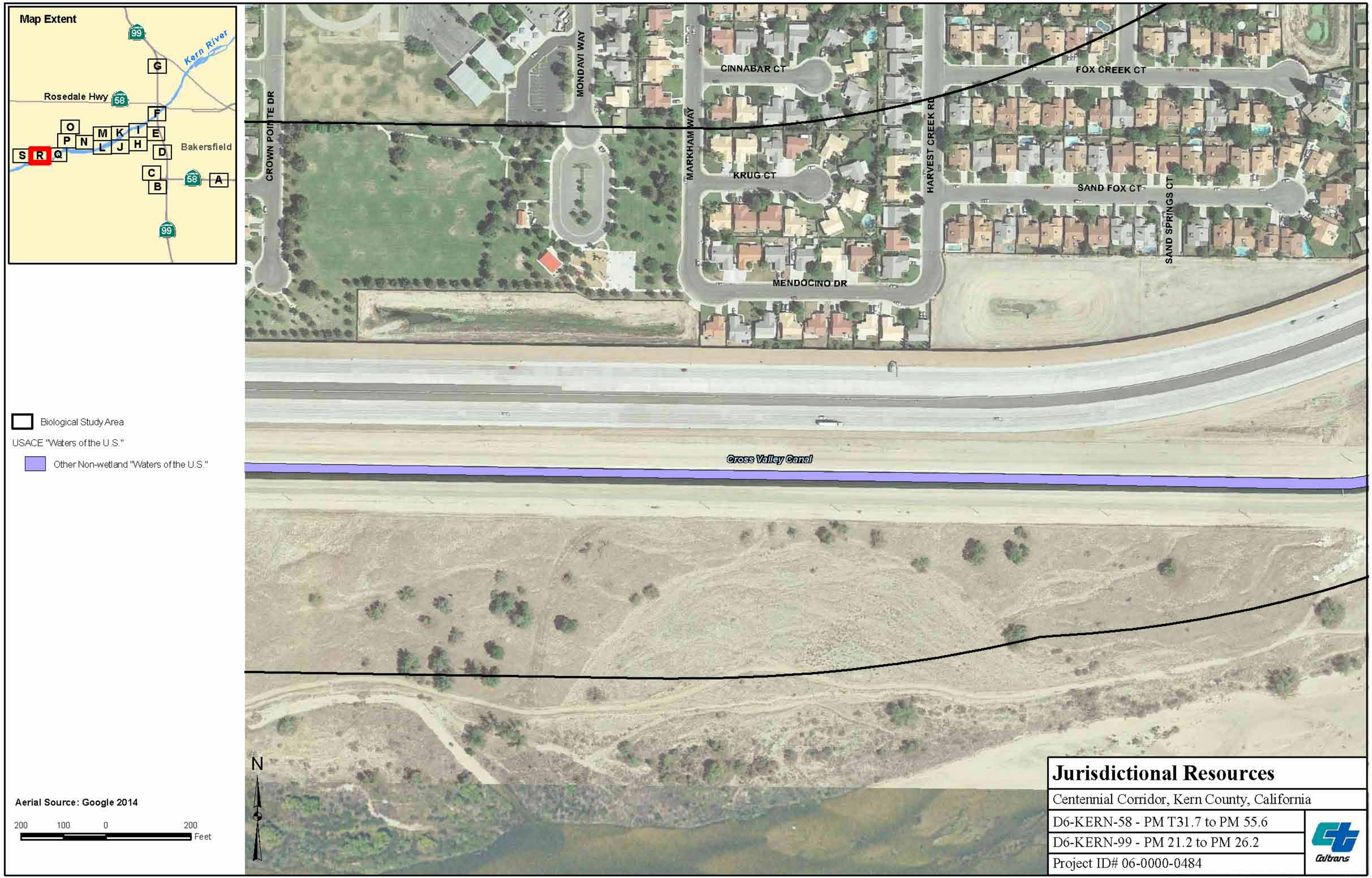

Map Extent
Kern River
Rosedale Hwy
Bakersfield
G
F
O
P
N
M
K
I
E
L
J
H
S
R
Q
D
C
B
A
99
58
FOX RUN DR
JASMINE PARKE DR
COFFEE RD
Arvin Edison Canal
Sampling Point 4
Sampling Point 5
Cross Valley Canal
Kern River
TRUXTUN AVE
QUAIL LN
QUAIL RIDGE RD
Biological Study Area
USACE "Waters of the U.S."
Wetlands
Other Non-wetland "Waters of the U.S."
Aerial Source: Google 2014
200 100 0 200
Feet
N
Jurisdictional Resources
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM 55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans

Figure 2Q



Jurisdictional Resources

Centennial Corridor, Kern County, California

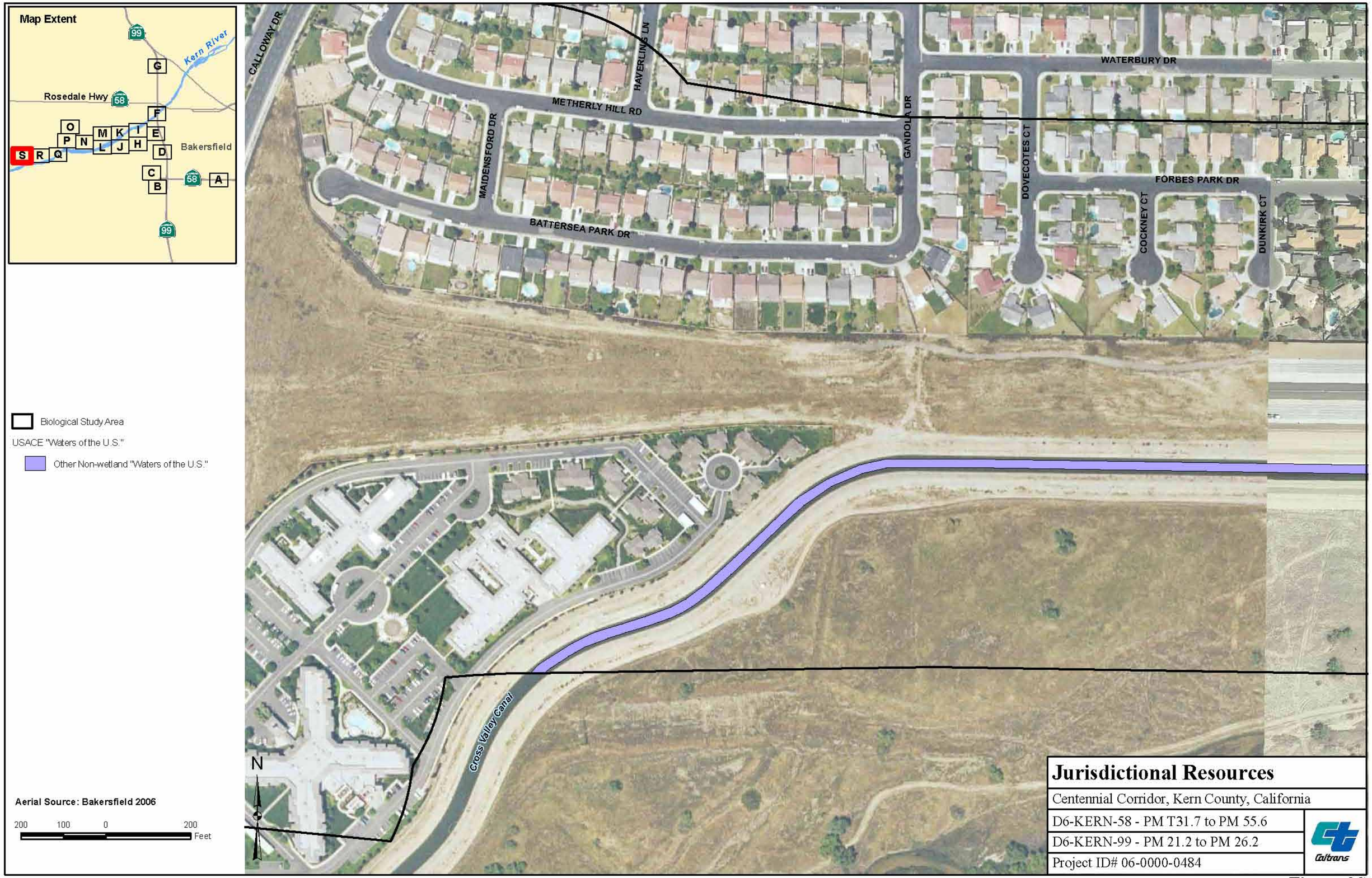
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2R



Jurisdictional Resources

Centennial Corridor, Kern County, California

D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2S

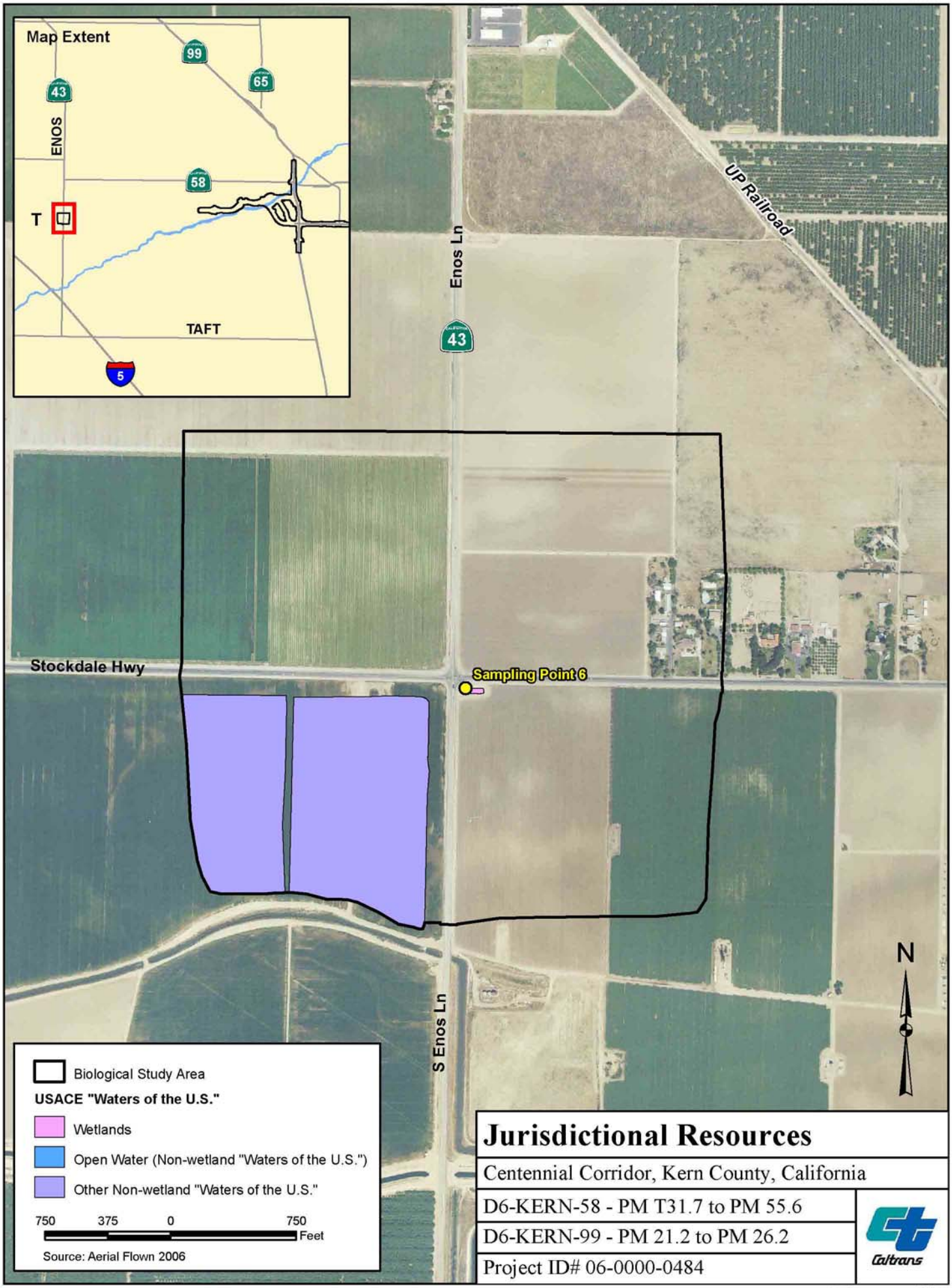

Map Extent
99
65
43
ENOS
58
T
TAFT
5
Enos Ln
43
UP Railroad
Stockdale Hwy
Sampling Point 6
S Enos Ln
N
Biological Study Area
USACE "Waters of the U.S."
Wetlands
Open Water (Non-wetland "Waters of the U.S.")
Other Non-wetland "Waters of the U.S."
750 375 0 750
Feet
Source: Aerial Flown 2006
Jurisdictional Resources
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM 55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans

Figure 2T

Table 1
Waters Under the Jurisdiction of the U.S. Army Corps of Engineers

Drainage/Water Body	USACE Jurisdiction (acres)			
	Wetland "Waters of the U.S."	Open Water	Other Non-wetland "Waters of the U.S."	Total
Kern River	0.112	–	68.740	68.852
Arvin-Edison Canal	–	–	0.924	0.924
Calloway Canal	–	–	2.312	2.312
Carrier Canal	–	6.786	–	6.786
Central Branch Kern Island Canal	–	–	0.938	0.938
Cross Valley Canal	–	–	8.977	8.977
Friant-Kern Canal	–	–	3.058	3.058
Unnamed Canal East of Friant-Kern Canal	–	–	0.732	0.732
Kern Island Canal	–	1.051	–	1.051
Stine Canal	–	–	3.251	3.251
Detention Basins	–	–	–	0.000
Stockdale Highway and State Route 43	0.083	–	38.799	38.882
Total	**0.195**	**7.837**	**127.731**	**135.763**

Table 2
Alternative B Impacts on Waters of the U.S. Under the Jurisdiction of the U.S. Army Corps of Engineers

Waters of the U.S.	Existing (Acres)	Permanent Structural Impact (Acres)[a]	Temporary Construction Impact (Acres)[b]	Total Impacts (Acres)
Kern River				
Wetlands	0.112	0.000	0.000	0.000
Other Waters	68.740	0.009	3.421	3.430
Arvin-Edison Canal				
Other Waters	0.924	0.000	0.000	0.000
Calloway Canal				
Other Waters	2.312	0.000	0.000	0.000
Carrier Canal				
Other Waters	6.786	0.000	0.418	0.418
Central Branch Kern Island Canal				
Other Waters	0.938	0.000	0.000	0.000
Cross Valley Canal				
Other Waters	8.977	0.000	0.000	0.000
Friant-Kern Canal				
Other Waters	3.058	0.000	0.000	0.000
Kern Island Canal				
Other Waters	1.051	0.000	0.000	0.000
Stine Canal				
Other Waters	3.251	0.000	0.584	0.584
Unnamed Canal				
Other Waters	0.732	0.000	0.000	0.000
Stockdale Highway and State Route 43				
Wetlands	0.083	0.000	0.000	0.000
Other Waters	38.799	0.000	0.000	0.000
Total USACE	***135.763***	***0.009***	***4.423***	***4.432***

[a] Temporary impacts refer to construction access and staging areas; the temporary impact includes the areas under the bridges that will be accessed during construction.
[b] Permanent structural impacts are due to proposed structures.

Chapter 5. Preparers

Gary A. Medeiros, Associate Principal, Regulatory Services. Bachelor of Arts, Social Ecology, University of California, Irvine. 31 years of experience in natural resources policy planning, regulatory permitting, and permit compliance. Contribution: conducted the jurisdictional delineation.

Allison Rudalevige, Ecologist and Regulatory Technician. Master of Science, Biology, University of California, Riverside; 11 years of experience in biological and jurisdictional resources. Contribution: Conducted the jurisdictional delineation (and updates) and prepared the Jurisdictional Delineation Report.

Jason Mintzer, Wildlife Biologist. Master of Arts, Education, Vanguard University, Costa Mesa, California; California Biology/Life Science Teaching Credential, California Commission on Teacher Credentialing; 9 years of experience in herpetology. Contribution: Assisted with the jurisdictional delineation.

Amber Oneal Heredia, Senior Project Manager, Natural Resources. Master of Science, Biology, University of California, Riverside, 17 years of experience in biological resources. Contribution: Updated the Jurisdictional Delineation Report to include revisions based on channel realignment following completion of Westside Parkway.

Johnnie F. Garcia, Geographic Information Systems Specialist. Bachelor of Arts, Geography, University of California, Santa Barbara; 4 years of Geographic Information Systems Technician. Contribution: Prepared figures and calculated acreage information used in the Jurisdictional Delineation.

Chris Starbird, Geographic Information Systems Specialist. Bachelor of Arts, Geography, University of California, Santa Barbara; 13 years of Geographic Information Systems Technician. Contribution: Prepared figures and calculated acreage information used in the Jurisdictional Delineation.

Julia R. Black, Technical Writer. Bachelor of Arts, English, California State University, Fullerton; 12 years of writing and editing experience. Contribution: Performed technical editing of the Jurisdictional Delineation.

Sheryl A. Kristal, Senior Word Processor; Microsoft Office Specialist. General Studies, Golden West College; 9 years of word processing experience. Contribution: Formatted the Jurisdictional Delineation.

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(J.S. Wakeley, R.W. Lichvar, and C.V. Noble, Eds.). Vicksburg, MS: U.S. Army Engineer Research and Development Center.

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Attachment A Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Centennial Corridor-Segment 1 City/County: Bakersfield / Kern Sampling Date: 9/24/08
Applicant/Owner: California Department of Transportation State: CA Sampling Point: 1
Investigator(s): Gary Medeiros, Allison Rudalevige Section, Township, Range: 27, T29S, R27E
Landform (hillslope, terrace, etc.): riverbed Local relief (concave, convex, none): _____ Slope (%): <5
Subregion (LRR): C Lat: 35.373236 Long: -119.057169 Datum: NAD83
Soil Map Unit Name: Riverwash NWI classification: R4USJ
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil X, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Kern River contains vegetated sandbars within the floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Cynodon dactylon	~2%	Y	FAC
2. Portulaca deraceae	~2%	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	~4 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum ~96 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
Total Number of Dominant Species Across All Strata: _____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
Vegetative cover less than 5%; therefore area considered "unvegetated".

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/3	100					sand	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soils naturally problematic; however, wetland hydrology and hydrophytic vegetation are not both present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Centennial Corridor - Segment 1 City/County: Bakersfield / Kern Sampling Date: 9/24/08
Applicant/Owner: California Department of Transportation State: CA Sampling Point: 2
Investigator(s): Gary Medeiros, Allison Rudalevige Section, Township, Range: 27, T29S, R27E
Landform (hillslope, terrace, etc.): Canal Local relief (concave, convex, none): _____ Slope (%): <5
Subregion (LRR): C Lat: 35.370523 Long: -119.064113 Datum: NAD83
Soil Map Unit Name: Cajon loamy sand (0-2% Slopes) NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Cross Valley Canal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Hirschfeldia incana	60	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species	60	x 5 = 300
Column Totals:	60 (A)	300 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5Y 4/3	100					sandy	
18-20	2.5Y 4/3	60	10YR 5/4	40	C	M	clayey loam	prominent mottles

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- X Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Freshwater clams present in soil test pit (B13).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Centennial Corridor - Segment 1 City/County: Bakersfield / Kern Sampling Date: 9/24/08
Applicant/Owner: California Department of Transportation State: CA Sampling Point: 3
Investigator(s): Gary Medeiros, Allison Rudalevige Section, Township, Range: 26, T29S, R27E
Landform (hillslope, terrace, etc.): Canal Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): C Lat: 35.372698 Long: -119.047779 Datum: NAD83
Soil Map Unit Name: Cajon loamy sand (0-2% slopes) NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Carrier Canal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Portulaca oleraceae	<1	n	FAC
2. non-native grass	25	y	UPL
3.			
4.			
5.			
6.			
7.			
8.			
	26 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 75 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	1	x 3 = 3
FACU species		x 4 =
UPL species	25	x 5 = 125
Column Totals:	26 (A)	128 (B)

Prevalence Index = B/A = 4.9

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					silty loam	
6-10	10YR 4/2	100					loamy sand	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: Cobble

Depth (inches): 10

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 0

Water Table Present? Yes X No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Aerial image from April 2006 (B7).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Centennial Corridor City/County: Bakersfield/Kern Sampling Date: 12/1/2011

Applicant/Owner: Caltrans State: CA Sampling Point: 4

Investigator(s): Allison Rudalevige Section, Township, Range: 33, T29S, R27E

Landform (hillslope, terrace, etc.): riverine Local relief (concave, convex, none): none Slope (%): 0-1

Subregion (LRR): CA Lat: 35.36394074 Long: -119.09164273 Datum: NAD83

Soil Map Unit Name: Riverwash NWI classification: R4USJ

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil ✓, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes ✓ No _____**
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

Kern River

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix gooddingii	50	yes	OBL
2.			
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Cynodon dactylon	<1	no	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	1	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 99 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	50	x 1 = 50
FACW species		x 2 =
FAC species	1	x 3 = 3
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	51 (A)	53 (B)

Prevalence Index = B/A = 1.04

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ✓ No _____**

Remarks:

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 7/4	100					sand	
6-20	5Y 3/2	100					sandy clay	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

This area is a vegetated sandbar within the floodplain of the Kern River. This represents a problematic hydric soil situation. Because hydrophytic vegetation and wetland hydrology are present, this problematic soil will be considered hydric.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ✓ No ___ Depth (inches): 12

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Centennial Corridor City/County: Bakersfield/Kern Sampling Date: 12/1/2011

Applicant/Owner: Caltrans State: CA Sampling Point: 5

Investigator(s): Allison Rudalevige Section, Township, Range: 32, T29S, R27E

Landform (hillslope, terrace, etc.): river bank Local relief (concave, convex, none): none Slope (%): 0-1

Subregion (LRR): CA Lat: 35.36347713 Long: -119.09262115 Datum: NAD83

Soil Map Unit Name: Riverwash NWI classification: R4USJ

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

Bank of the Kern River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix gooddingii	5	yes	OBL
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix gooddingii	30	yes	OBL
2. Baccharis salicifolia (B. viminea)	20	yes	FACW
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Xanthium strumarium	<1	no	FAC
2. Artemisia douglasiana	5	no	FACW
3. Eichhornia crassipes	5	no	OBL
4. Polygonum lapathifolium	10	no	OBL
5. non-native grass	40	yes	UPL
6.			
7.			
8.			
	61 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	50	x 1 = 50
FACW species	25	x 2 = 50
FAC species	1	x 3 = 3
FACU species	0	x 4 = 0
UPL species	40	x 5 = 200
Column Totals:	116 (A)	303 (B)

Prevalence Index = B/A = 2.61

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5Y 3.2	90	7.5YR 5/8	10	C	M	loamy sand	prominent mottles

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ✓ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ✓ No ___ Depth (inches): 18

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Centennial Corridor City/County: Bakersfield/Kern Sampling Date: 12/1/2011

Applicant/Owner: Caltrans State: CA Sampling Point: 6

Investigator(s): Allison Rudalevige Section, Township, Range: 36, T29S, R25E

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): CA Lat: 35.35418462 Long: -119.25184043 Datum: NAD83

Soil Map Unit Name: Wasco fine sandy loam NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil ✓, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes ✓ No _____**
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Lemna sp.	75	yes	OBL
2. Echinochloa crus-galli	12	no	FACW
3. Eclipta prostrata [E. alba]	10	no	FAC+
4. Sisymbrium sp.	2	no	UPL
5.			
6.			
7.			
8.			
	99 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	75	x 1 = 75
FACW species	12	x 2 = 24
FAC species	10	x 3 = 30
FACU species		x 4 =
UPL species	2	x 5 = 10
Column Totals:	99 (A)	139 (B)

Prevalence Index = B/A = 1.40

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ✓ No _____**

Remarks:

Duckweed (Lemna sp.) covers the entire bottom of the depression in a mat. It is partially dried out but still green near the bottom. Sisymbrium sp. not identified; assumed to be UPL.

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5Y 3/2	97	N3/	3	D	M	silty clay	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Detention basin appears to be seasonally ponded. This represents a problematic hydric soil situation. Because hydrophytic vegetation and wetland hydrology are present, this problematic soil will be considered hydric.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

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

Aerial photos from Google Earth show surface water and/or saturation on 4/30/2011, 10/21/2009, and 4/30/2008.

Remarks:

Attachment B Soil Survey

The soils classifications identified below were obtained from the Soil Survey Geographic Database for Kern County, California, Northwestern Part (U.S. Department of Agriculture, Natural Resources Conservation Service 2007).

Cajon Series

The Cajon series is a mixed, thermic Typic Torripsamment. It consists of very deep, somewhat excessively drained soils that formed in sandy alluvium from dominantly granitic rocks. Cajon soils are on alluvial fans, fan aprons, fan skirts, inset fans and river terraces. Slopes are 0 to 15 percent. The average annual precipitation is about 6 inches and the mean annual temperature is about 65 degrees Fahrenheit (°F).

Range in Characteristics:

The soil is usually dry from mid March to mid December and is not continuously moist for as long as 90 days in the winter. Soil temperature ranges from 59°F to 72°F, and usually is not below 47°F at any time. Rock fragments are mostly gravel size and they make up as much as 35 percent though many pedons have less than 15 percent gravel. There is weak stratification of sandy material in some or all parts. Typically the soil is slightly effervescent to strongly effervescent throughout although some pedons are noneffervescent in the A horizon. Typically the profile is slightly alkaline or moderately alkaline although some pedons are neutral. Some pedons are strongly alkaline and mildly saline-alkali to strongly saline-alkali. Electrical conductivity ranges up to 16 ds/m and the SAR to 20.

The A horizon hue is 10YR or 2.5Y. Value ranges from 5 through 7 (dry) and 3 through 6 (moist). Chroma ranges from 2 through 6 (dry and moist). Soil texture is coarse sand, loamy coarse sand, sand, and loamy sand. Some pedons have sandy loam overblown phases. Some pedons have as much as 60 percent gravel within 2 inches.

The C horizon hue is 10YR or 2.5Y. Value ranges from 5 through 7 (dry) and 3 through 6 (moist). Chroma ranges from 2 through 6 (dry and moist). Soil texture is coarse sand, loamy coarse sand, sand, loamy sand, fine sand, or loamy fine sand or their gravelly or cobbly equivalents. Some pedons have a sandy loam horizon at a depth of more than 40 inches.

Drainage and Permeability:

Cajon soils are somewhat excessively drained; runoff is negligible to low; and permeability is rapid. Cajon soils with sandy loam surface textures have moderately rapid over rapid permeability. Flooding is none to rare.

Excelsior Series

The Excelsior series is a coarse-loamy, mixed, superactive, calcareous, thermic Typic Torrifluvent. It consists of very deep, well drained soils on alluvial fans and bars and channels on flood plains. These soils formed in mixed alluvium dominantly from igneous and calcareous sedimentary rocks. Slope is 0 to 2 percent. The mean annual temperature is about 63°F and the mean annual precipitation is about 7 inches.

Range in Characteristics:

The soil moisture control section of 8 to 20 inches is dry in all parts from April 1 through December and is not continuously moist for 90 consecutive days. The organic matter is less than 1 percent at the surface and decreases irregularly with increasing depth. The mean annual soil temperature ranges from 61 to 65°F.

The A horizon has color of 10YR 5/2, 5/3, 6/2, 6/3, 7/2; 2.5Y 6/2 or 7/2. Moist color is 10YR 4/2 or 5/2; or 2.5Y 4/2 or 5/2. The soil texture is loamy sand, sandy loam, fine sandy loam or loam. Calcium carbonate equivalent is 0 to 3 percent. It is noneffervescent to strongly effervescent with disseminated carbonates. Electrical conductivity is 0 to 8 decisiemens per meter. Sodium adsorption ratio is 0 to 13. Electrical conductivity and sodium adsorption ratio are affected by agricultural practices. Reaction is slightly alkaline to strongly alkaline. Eroded phases are present in some areas.

The C horizon has color of 10YR 6/2, 6/3, 7/2, or 7/3; or 2.5Y 6/2, 6/4, 7/2 or 7/4. Moist color is 10YR 4/2, 4/3, 5/2; 2.5Y 4/2, 5/2 or 5/4. Texture is stratified loamy sand, sandy loam, fine sandy loam, loam and silt loam. Few fine distinct relict redoximorphic masses of iron accumulation occur in the lower C horizon in some pedons. Calcium carbonate equivalent is 1 to 5 percent. It is very slightly effervescent to violently effervescent and has disseminated and/or segregated carbonates. Electrical conductivity is 0 to 16 decisiemens per meter. Sodium adsorption ratio is 0 to 80. Electrical conductivity and sodium adsorption ratio are affected by agricultural practices. Reaction is moderately alkaline or very strongly alkaline

Drainage and Permeability:

Excelsior soils are well drained. They have negligible to medium runoff and moderate to slow permeability, with slow permeability in saline-sodic horizons.

Kimberlina Series

The Kimberlina series is a coarse-loamy, mixed, superactive, calcareous, thermic Typic Torriorthent. It consists of very deep, well drained soils on flood plains and recent alluvial fans. These soils formed in mixed alluvium derived dominantly from igneous and/or sedimentary rock sources. Slope is 0 to 9 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 64°F.

Range in Characteristics:

The soil between the depths of 8 and 24 inches is dry all the time from April until mid-January and is moist in all parts for less than 60 consecutive days in the winter. Mean annual soil temperature is 62 to 67°F. Rock fragment content is 0 to 25 percent and is usually less than 2 inches in diameter. Some pedons have few to common gypsum crystals, which occur where gypsum has been added to the soil by farmers.

The A horizon has color of 10YR 5/3, 6/2, 6/3, 6/4, 7/2, 7/3, or 7/4; or 2.5Y 5/2, 6/2, 6/4 or 7/2. Moist color is 10YR 4/2, 4/3, 4/4, or 5/2; or 2.5Y 4/2. Texture is loamy sand, loamy fine sand, fine sandy loam, sandy loam or loam and may have a gravelly modifier. Clay content averages 5 to 20 percent. Calcium carbonate equivalent is 0 to 5 percent. Reaction is neutral to moderately alkaline. Organic matter content is less than 1 percent.

The C horizon has color of 10YR 5/2, 5/3, 6/2, 6/3, 6/4, 7/2, 7/3, or 7/4; or 2.5Y 5/2, 6/2, 6/3, 6/4 or 7/2. Moist color is 10YR 4/2, 4/3, 4/4, 5/2, 5/3, or 5/4; or 2.5Y 3/2, 4/2, 4/4, 5/2 or 5/3. Texture is sandy loam or fine sandy loam and may have a gravelly modifier. Clay content averages 10 to 18 percent. Carbonates are disseminated but some pedons also have segregated carbonates. Some pedons may not have carbonates in some parts of the profile but the 10 to 20 inch calcareous class control section is always calcareous. Reaction is neutral to moderately alkaline. Organic matter is less than 0.5 percent and decreases regularly with increasing depth. Organic matter content is less than 0.2 percent below 49 inches depth.

The 2C horizon, where present, is similar to the C horizon and has weakly defined thick stratification of silt loam, loam, or sandy clay loam textures, but distinct thin stratification is not present. Some pedons have texture of loamy sand or loamy fine sand and do not have silt loam, loam or sandy clay loam

Drainage and Permeability:

Kimberlina soils are well drained; have negligible to medium runoff; and have moderately rapid and moderate permeability; however, saline-sodic phases and soils with sandy clay loam substratums have moderately slow permeability.

Panoche

The Panoche series is a fine-loamy, mixed, superactive, thermic Typic Haplocambid. It consists of very deep, well drained soils on alluvial fans and floodplains. These soils formed in loamy calcareous alluvium from sedimentary rock. Slope is 0 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 63°F.

Range in Characteristics:

The soil between the depths of 5 and 15 inches becomes moist in some part in the latter part of December and stays moist until about the end of February or March. It is usually dry the rest of the year. Mean annual soil temperature is about 60 degrees to 66°F. The soil temperature is always above 47°F. Coarse fragments are generally less than 5 percent, though some pedons have thin strata with up to 35 percent below 40 inches. Organic matter is less than 1 percent and decreases regularly with increasing depth. They generally are calcareous below a depth of 1 to 7 inches. Some pedons are weakly stratified while others are very uniform in texture.

The A horizon has color of 10YR 5/2, 5/3, 5/4, 6/2, 6/3, 6/4, 7/3, 7/4; 2.5Y 5/2, 5/4 or 6/2. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, 5/2, 5/3, 5/4; 2.5Y 4/2, 4/4 or 5/2. Texture is sandy loam, loam, clay loam or silty clay loam. Clay content is 15 to 35 percent. Most pedons have subangular blocky or prismatic structure but those that have been plowed are often massive. Reaction is slightly alkaline or moderately alkaline.

The Bw horizon has color of 10YR 5/2, 5/3, 5/4, 6/2, 6/3, 6/4, 7/3, 7/4; 2.5Y 5/2, 5/4 or 6/2. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, 5/2, 5/3, 5/4; 2.5Y 4/2, 4/4 or 5/2. Texture is sandy loam, loam, clay loam or silty clay loam. Clay content is 18 to 35 percent. Most pedons have subangular blocky or prismatic structure. Reaction is slightly alkaline or moderately alkaline.

The Bk and Bky horizons, when present, have color of 10YR 5/2, 5/3, 5/4, 6/2, 6/3, 6/4, 7/3, 7/4; 2.5Y 5/2, 5/4, 6/2, 6/4 or 7/2. Moist color is 10YR 4/2, 4/3, 4/4, 5/2, 5/3, 5/4; 2.5Y 4/2, 4/4, 5/2 or 5/4. Texture is sandy loam, fine sandy loam, loam, clay loam, silty clay loam or sandy clay loam. The sand fraction of the sandy clay loam

consists of 50 to 80 percent fine and very fine sands. Sandy loam texture may occur below a depth of 50 inches. Clay content is 18 to 35 percent. Gypsum crystals are present in some pedons. Bk horizons with segregated carbonates are present in most pedons and calcium carbonate equivalent is less than 5 percent. Reaction is slightly alkaline or moderately alkaline.

The C horizon, when present, has color of 10YR 5/2, 5/3, 5/4, 6/2, 6/3, 6/4, 7/3, 7/4; 2.5Y 5/2, 5/4, 6/2 or 6/4. Moist color is 10YR 4/2, 4/3, 5/2, 5/3, 5/4; 2.5Y 4/2, 4/4, 5/2 or 5/4. Texture is loam, clay loam, silty clay loam or sandy clay loam in the lower part. The sand fraction of the sandy clay loam consists of 50 to 80 percent fine and very fine sands. Clay content is 18 to 35 percent. Reaction is moderately alkaline or strongly alkaline.

Drainage and Permeability:

Panoche soils are well drained, have negligible to medium runoff, and have moderate permeability.

Riverwash

Riverwash consists of areas of sand and gravel that are adjacent to or occur as islands within the Kern River and small intermittent streams. During periods when the water level is normal, parts of these areas are inundated. Under flood conditions, nearly all of these areas are flooded. At present, however, floods on the Kern River generally are controlled by a large dam. Riverwash supports little, if any, vegetation, but in places there are a few scattered annual grasses, forbs, and willows and some brushy plants. This map unit has limited value for livestock grazing and has no value for farming. It has its greatest value as recreational sites and as a source of aggregate material for road building or general construction.

Urban Land

This map unit consists of areas covered by asphalt, concrete, buildings, or other impervious surfaces. Examples are parking lots, shopping and business centers, and industrial parks. These areas are mainly located near the downtown business district in the City of Bakersfield. Included in this unit are small areas of soil that are similar to the Kimberlina fine sandy loam, Cajon loamy sand, and Wasco sandy loam that have either been cut or filled for foundations, roads, buildings, or other structures. Included areas make up about 5 percent of the total acreage. Examination and identification of soils or soil-like material in this unit are impractical.

Wasco Series

The Wasco series is a coarse-loamy, mixed, superactive, nonacid, thermic Typic, Torriorthent. It consists of very deep, well drained soils on recent alluvial fans and flood plains. These soils formed in mixed alluvium derived mainly from igneous and/or sedimentary rock sources. Slope is 0 to 5 percent slopes. The mean annual precipitation is about 6 inches and the mean annual temperature is about 64°F.

Range in Characteristics:

The soil between the depths of 8 and 24 inches is dry in all parts from mid-April until mid-January and is continuously moist in some parts for 60 to 90 consecutive days in the winter. Mean annual soil temperature is 62 to 67°F. The soil temperature is never below 47°F in the San Joaquin Valley. Some pedons have disseminated carbonates at depths below 16 to 40 inches. Rock fragment content is 0 to 15 percent. Rock fragments are less than 0.5 inch in diameter. Organic matter is less than 1 percent in the upper part of the profile and decreases regularly with increasing depth. Organic matter content is less than 0.2 percent below 49 inches depth.

The A horizon has color of 10YR 5/2, 5/3, 5/4, 6/2, 6/3, 6/4; or 2.5Y 5/2 or 6/2. Moist color is 10YR 3/3, 4/2, 4/3, 5/2; or 2.5Y 4/2 or 5/2. Texture is sandy loam or fine sandy loam. Reaction is slightly acid to moderately alkaline.

The C horizon has color of 10YR 5/3, 5/4, 6/3, 6/4, 7/2; or 2.5Y 5/2, 5/4, 6/2, 7/2 or 7/4. Moist color is 10YR 3/3, 4/2, 4/3, 5/3; or 2.5Y 4/2, 4/4, 5/2, 5/4 or 6/2. Texture is coarse sandy loam, sandy loam or fine sandy loam. Some pedons have thick stratification below a depth of 40 inches with texture of loamy sand to silt loam. Distinct thin stratification is not present. Reaction is neutral to moderately alkaline.

Drainage and Permeability:

Wasco soils are well drained; have negligible or very low runoff; and have moderately rapid permeability.

Soil Complexes

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

The Kimberlina-Urban land-Cajon complex is found on alluvial fans and plains. The vegetation in areas not cultivated is mainly annual grasses and forbs. This complex is composed of 35 percent Kimberlina fine sandy loam, 30 percent Urban land, and 20 percent Cajon loamy sand.

The Panoche-Urban land complex is found on alluvial fans at elevations between 200 and 1,300 feet above msl. The mean annual precipitation is 5 to 7 inches and the mean annual air temperature is 63°F. The complex is composed of 45 percent Panoche soil and 35 percent Urban land. The parent material is derived from igneous and sedimentary rock. These soils are well drained.

Attachment C Site Photographs

Sept. 2008 - Kern River east of State Route 99 facing west.

Sept. 2008 - Cross Valley Canal at sampling point 2 facing west.

Site Photographs	
Centennial Corridor, Kern County, California	
D6-KERN-58 - PM T31.7 to PM 55.6	Caltrans
D6-KERN-99 - PM 21.2 to PM 26.2	
Project ID# 06-0000-0484	

Attachment C

Sept. 2008 - Carrier Canal near eastern end of the biological study area.

Sept. 2008 - Kern Island Canal near eastern end of the biological study area.

Site Photographs	
Centennial Corridor, Kern County, California	
D6-KERN-58 - PM T31.7 to PM 55.6	
D6-KERN-99 - PM 21.2 to PM 26.2	
Project ID# 06-0000-0484	

Attachment C

Sept. 2008 - Stine Canal between Stockdale Highway and California Avenue facing north-east.

Sept. 2008 - Stine Canal before entering culvert at State Route 99 and California Avenue facing south.

Site Photographs	
Centennial Corridor, Kern County, California	
D6-KERN-58 - PM T31.7 to PM 55.6	
D6-KERN-99 - PM 21.2 to PM 26.2	
Project ID# 06-0000-0484	

Attachment C

Sept. 2008 - Small detention basin at the intersection of Stockdale Highway and Enos Lane.

Sept. 2008 - Large detention basin at the intersection of Stockdale Highway and Enos Lane.

Site Photographs	
Centennial Corridor, Kern County, California	
D6-KERN-58 - PM T31.70 to PM 55.6	Caltrans
D6-KERN-99 - PM 21.2 to PM 26.2	
Project ID# 06-0000-0484	

Attachment C

Aug. 2014 - Post-project condition of a canal realigned by Westside Parkway, 2014. Looking northeast at Cross Valley Canal from Mohawk Street.

Aug. 2014 - Post-project condition of a canal realigned by Westside Parkway. Looking north at Unnamed Canal East of Friant Kern Canal from Brimhall Road off-ramp.

Site Photographs	
Centennial Corridor, Kern County, California	
D6-KERN-58 - PM T31.7 to PM 55.6	Caltrans
D6-KERN-99 - PM 21.2 to PM 26.2	
Project ID# 06-0000-0484	

Attachment D Preliminary Jurisdictional Determination Forms

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there "*may be*" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Sacramento District | File/ORM #: | PJD Date:

State: CA | City/County: Bakersfield/Kern

Nearest Waterbody: Kern River

Location: TRS, LatLong or UTM: see Attachment A

Name/ Address of Person Requesting PJD: California Department of Transportation
c/o Richard Putler
District 6
P.O. Box 12616
Fresno, CA 93728-2616

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: linear ft | width | 38.799 acres | Stream Flow: N/A

Wetlands: 0.083 acre(s) | Cowardin Class: Palustrine, emergent

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: N/A | Non-Tidal: N/A

☐ Office (Desk) Determination
☐ Field Determination: | Date of Field Trip:

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: CalTrans 2013
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite quad name: Gosford, Lamont, Oildale, Stevens, Tupman
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: USDA NRCS 2007 for Kern County, CA
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☐ Aerial (Name & Date): ☑ Other (Name & Date): CalTrans 2013
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office: Sacramento District | File/ORM #: | PJD Date:

State: CA | City/County: Bakersfield/Kern | Person Requestinq PJD: CalTrans

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
1	35.3635833	-119.041722	Palustrine, emergent	0.00	
2	35.349671	-119.041098	Palustrine, emergent	0.00	
3	35.354142	-119.251739	Palustrine, emergent	0.083	Non-Section 10 wetland
4	35.352361	-119.253956	Palustrine, emergent	38.799	Non-Section 10 non-wetlan

Notes:

Multiple drainages/water bodies are present within the Biological Study Area. Separate Preliminary Jurisdictional Determination forms have been prepared for (1) the Kern River, (2) canals, and (3) basins. Four basins are located within the Biological Study Area: (1) detention basin - north, (2) detention basin - south, (3) Stockdale Highway and State Route 43 - eastern basin, and (4) Stockdale Highway and State Route 43 - western recharge basin. See Attachment A for detailed information on each basin.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there "*may be*" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Sacramento District | File/ORM #: | PJD Date: u

State: CA | City/County: Bakersfield/Kern

Nearest Waterbody: Kern River

Location: TRS, LatLong or UTM: see Attachment A

Name/ Address of Person Requesting PJD: California Department of Transportation
c/o Richard Putler
District 6
P.O. Box 12616
Fresno, CA 93728-2616

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 41,675 linear ft | width | 28.029 acres | Stream Flow: Per. (seasonal)

Wetlands: acre(s) | Cowardin Class:

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: N/A | Non-Tidal: N/A

☐ Office (Desk) Determination
☐ Field Determination: | Date of Field Trip:

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: CalTrans 2013
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite quad name: Gosford, Lamont, Oildale, Stevens, Tupman
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: USDA NRCS 2007 for Kern County, CA
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☐ Aerial (Name & Date): ☑ Other (Name & Date): CalTrans 2013
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office: Sacramento District | File/ORM #: | PJD Date:

State: CA | City/County: Bakersfield/Kern | Person Requestinq PJD:

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource

Notes:

Multiple drainages/water bodies are present within the Biological Study Area. Separate Preliminary Jurisdictional Determination forms have been prepared for (1) the Kern River, (2) canals, and (3) basins. See Attachment A for detailed information on the canals within the Biological Study Area, including latitude/longitude, Cowardin Class, Estimated Amount of Aquatic Resource in Review Area, and Class of Aquatic Resource.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there "*may be*" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Sacramento District | File/ORM #: | PJD Date:

State: CA | City/County: Bakersfield/Kern

Nearest Waterbody: Kern River

Location: TRS, LatLong or UTM: see Attachment A

Name/ Address of Person Requesting PJD: California Department of Transportation
c/o Richard Putler
District 6
P.O. Box 12616
Fresno, CA 93728-2616

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 17,595 linear ft | width | 68.740 acres | Stream Flow: Ephemeral

Wetlands: 0.112 acre(s) | Cowardin Class: Riverine

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: N/A | Non-Tidal: N/A

☐ Office (Desk) Determination
☐ Field Determination: | Date of Field Trip:

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: CalTrans 2013
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite quad name: Gosford, Lamont, Oildale, Stevens, Tupman
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: USDA NRCS 2007 for Kern County, CA
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☐ Aerial (Name & Date): ☑ Other (Name & Date): CalTrans 2013
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IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

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1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office: Sacramento District | File/ORM #: | PJD Date:

State: CA | City/County: Bakersfield/Kern | Person Requestinq PJD: CalTrans

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
1			Riverine	68.740	Non-Section 10 non-wetlanc
1			Riverine	0.112	Non-Section 10 wetland

Notes:

Multiple drainages/water bodies are present within the Biological Study Area. Separate Preliminary Jurisdictional Determination forms have been prepared for (1) the Kern River, (2) canals, and (3) basins. See Attachment A for detailed information on the Kern River.

APPENDIX A

SUMMARY OF JURISDICTIONAL RESOURCES WITHIN THE BIOLOGICAL STUDY AREA

APPENDIX A

SUMMARY OF JURISDICTIONAL RESOURCES WITHIN THE BIOLOGICAL STUDY AREA

Drainage/ Water Body	County	Township; Range; Section(s)	Upstream Coordinates (Latitude, Longitude)[1]	Downstream Coordinates (Latitude, Longitude)[2]	Length (Feet)[3]	Width (Feet)[4]	Hydrologic Regime[5]	Likely Jurisdictional Status	Potential USACE Jurisdiction (acres)		Cowardin Class	Section 10 Water	Origin/Termination	Approximate Distance to RPW (River Miles)[6]	Flow Route to RPW	Depth Estimate (feet)	Side Slope Estimate	Primary Substrate	Hydrologic Indicators	Chemical Characteristics	Biological Characteristics
									Wetland "Waters of the U.S."	Non-wetland "Waters of the U.S."											
Kern River	Kern	T29S; R27E; S26, 27, 32, 33, 34	35.380331, -119.042885	35.362302, -119.094270	17,595	150-400	Actively managed; currently ephemeral but historically relatively permanent	Jurisdictional	0.112	68.740	Riverine; Freshwater Forested/Shrub Wetland	No	Kings-Kern Divide/Buena Vista Lake Bed	N/A	N/A	Unknown	Gently sloping	riverwash	Water marks; drift deposits; bed and bank	Unknown	Wetland, riparian and upland vegetation
Arvin-Edison Canal	Kern	T29S, R27E, S33	35.367732, -119.087746	35.364211, -119.091270	1,910	15	Actively managed	Jurisdictional	–	0.924	Riverine	No	Friant-Kern Canal/percolation basin east of Arvin	<1 (upstream)	Artificial drainage aboveground and via culverts	Unknown	Trapezoidal	concrete-lined	Water marks; bed and bank	Unknown	Unvegetated
Calloway Canal	Kern	T29S, R27E, S14 and 23	35.397706, -119.043100	35.398974, -119.046365	1,130	37	Actively managed	Jurisdictional	–	2.312	Riverine	No	Kern River/reservoir	1 (upstream)	Artificial drainage aboveground and via culverts	Unknown	Trapezoidal	soft-bottom	Water marks; bed and bank	Unknown	Riparian and upland vegetation
Carrier Canal	Kern	T29S; R27E; S26, 34, 35	35.373700, -119.042106	35.363007, -119.067661	9,050	50	Actively managed	Jurisdictional	–	6.786	Riverine	No	Kern River/Kern River	11 (downstream), 2 (upstream)	Artificial drainage aboveground and via culverts	Unknown	Trapezoidal	soft-bottom	Water marks; bed and bank	Unknown	Upland vegetation
Central Branch Kern Island Canal	Kern	T29S, R28E, S31; T30S, R28E, S06	35.354180, -119.009519	35.350944, -119.012645	1,560	38	Actively managed	Jurisdictional	–	0.938	Riverine	No	Kern River/Kern Lakebed farmland	6 (upstream)	Artificial drainage aboveground and via culverts	Unknown	Trapezoidal	soft-bottom	Water marks; bed and bank	Unknown	Unvegetated
Cross Valley Canal	Kern	T29S; R27E; S27, 31,32,33, 34	35.371260, -119.063235	35.359898, -119.113107	16,435	35	Actively managed	Jurisdictional	–	8.977	Riverine	No	California Aqueduct/possibly Kern River	<1 (downstream)	Artificial drainage aboveground and via culverts	Unknown	Trapezoidal	soft-bottom	Water marks; bed and bank.	Unknown	Upland vegetation
Friant-Kern Canal	Kern	T29S, R27E, S28 and 33	35.371050, -119.087442	35.366502, -119.087458	1,645	60	Actively managed	Jurisdictional	–	3.058	Riverine	No	Millerton Lake/Kern River	<1 (downstream)	Artificial drainage aboveground and via culverts	Unknown	Trapezoidal	concrete-lined	Water marks; bed and bank.	Unknown	Unvegetated
Unnamed Canal East of Friant-Kern Canal	Kern	T29S, R27E, S28 and 33	35.370946, -119.086717	35.366758, -119.086411	1,550	30	Actively managed	Jurisdictional	–	0.732	Riverine	No	Calloway Canal/Cross Valley Canal	<1 (downstream)	Artificial drainage aboveground and via culverts	Unknown	Trapezoidal	concrete-lined	Bed and bank.	Unknown	Unvegetated
Kern Island Canal	Kern	T29S R28E, S31; T30S, R28E, S06	35.354092, -119.015043	35.350916, -119.017560	1,370	52	Actively managed	Jurisdictional	–	1.051	Riverine	No	Kern River/Kern Lakebed farmland	6 (upstream)	Artificial drainage aboveground and via culverts	Unknown	Trapezoidal	soft-bottom	Water marks; bed and bank.	Unknown	Unvegetated
Stine Canal	Kern	T29S, R27E, S26, 35; T30S, R27E, S02	35.372946, -119.044461	35.350895, -119.046817	7,025	40	Actively managed	Jurisdictional	–	3.251	Riverine	No	Carrier Canal/reservoir	<1 (downstream)	Artificial drainage aboveground and via culverts	Unknown	Trapezoidal	soft-bottom	Water marks; bed and bank.	Unknown	Upland vegetation

APPENDIX A

SUMMARY OF JURISDICTIONAL RESOURCES WITHIN THE BIOLOGICAL STUDY AREA

Drainage/ Water Body	County	Township; Range; Section(s)	Upstream Coordinates (Latitude, Longitude)[1]	Downstream Coordinates (Latitude, Longitude)[2]	Length (Feet)[3]	Width (Feet)[4]	Hydrologic Regime[5]	Likely Jurisdictional Status	Potential USACE Jurisdiction (acres)		Cowardin Class	Section 10 Water	Origin/Termination	Approximate Distance to RPW (River Miles)[6]	Flow Route to RPW	Depth Estimate (feet)	Side Slope Estimate	Primary Substrate	Hydrologic Indicators	Chemical Characteristics	Biological Characteristics
									Wetland "Waters of the U.S."	Non-wetland "Waters of the U.S."											
Detention Basin - North	Kern	T29S, R27E, S35	35.363583, -119.041722[7]	N/A	N/A	N//A	Ephemeral Pond; Nuisance flow	Isolated Water	–	–	Freshwater Pond	No	N/A	No connection	N/A	Unknown	Basin	soft-bottom	Bed and bank.	Unknown	Wetland and riparian
Detention Basin - South	Kern	T30S, R27E, S02	35.349671, -119.041098[7]	N/A	N/A	N//A	Ephemeral Pond; Nuisance flow	Isolated Water	–	–	Freshwater Pond	No	N/A	No connection	N/A	Unknown	Basin	soft-bottom	Bed and bank.	Unknown	Wetland and riparian
Stockdale Highway and State Route 43 – Eastern Basin	Kern	T30S, R25E, S01	35.354142, -119.251739[7]	N/A	N/A	N//A	Actively managed; ephemeral pond	Jurisdictional	0.083	–	Freshwater Pond	No	Pioneer Canal	7 (upstream)	Culvert	Unknown	Basin	soft-bottom	Bed and bank.	Unknown	Upland vegetation
Stockdale Highway and State Route 43 – Western Recharge Basin	Kern	T30S, R25E, S02	35.352361, -119.253956[7]	N/A	N/A	N//A	Actively managed; ephemeral pond	Jurisdictional	–	38.799	Freshwater Pond	No	Irrigation Pipeline	Unknown	Culvert	Unknown	Basin	soft-bottom	Bed and bank.	Unknown	Wetland vegetation

USACE: U.S. Army Corps of Engineers; CDFW: California Department of Fish and Wildlife; N/A: Not Applicable; "–" indicates jurisdictional resource not present in that drainage.

[1] Upstream end of the drainage within the Biological Study Area.
[2] Downstream end of the drainage within the Biological Study Area.
[3] Approximate length of the drainage from the upstream end to the downstream end, including surface flow and below-ground flow through culverts.
[4] Approximate width of the drainage; range is given when drainage width changes within the Biological Study Area.
[5] Hydrology is actively managed in all drainages/water bodies with water diverted from the Kern River for municipal water supplies and irrigation. Hydrology within canals is considered relatively permanent based upon review of historic aerial imagery (Google Earth 1994 to present), which indicates that canals exhibit surface water periodically, including during the dry season. Hydrology is considered ephemeral when it occurs only during and immediately following precipitation events. Nuisance flow varies and is dependent on runoff from the surrounding developments.
[6] Distance measured from Biological Study Area to nearest connection (upstream and/or downstream) to the Kern River for canals. Distance measured from the western basin at Stockdale Highway and State Route 43 to the Kern River via the Pioneer Canal. N/A for the Kern River itself.
[7] Center point of water body.

Appendix F Biological Opinion (USFWS 2015, 2013, 1999, 2005, 2008)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2013-F-0373-R001

FEB 24 2015

Ms. Dena Gonzalez
Chief, Central Region Biology Branch
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: Reinitiation of Formal Consultation for the Centennial Corridor Project (part of the Thomas Roads Improvement Program [TRIP]), City of Bakersfield, Kern County, California (California Department of Transportation EA 06-48460, 06-KERN-58-PM T31.7 to PM 55.6; 06-KERN-99-PM 21.2 to PM 26.2)

Dear Ms. Gonzalez:

This is the U.S. Fish and Wildlife Service's (Service) response to the California Department of Transportation's (Caltrans) request to reinitiate formal consultation on its proposed action to provide Federal oversight of the Centennial Corridor Project (project) in Kern County, California. The project is part of the larger Thomas Roads Improvement Program (TRIP), a cooperative effort among the City of Bakersfield, County of Kern, Kern Council of Governments, and Caltrans. The Service issued a biological opinion to Caltrans on December 20, 2013 (Service file number 08ESMF00-2013-F-0373), which addressed effects to the federally-listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*). Subsequently, the Service issued a letter on April 16, 2014, which notified Caltrans of several minor errors in the biological opinion and revised these errors (Service file number 08ESMF00-2013-F-0373).

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 16, 2012. Caltrans was approved to participate in the MAP-21 Surface Transportation Project Delivery Program through the National Environmental Policy Act (NEPA) assignment Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and Caltrans (effective October 1, 2012), as codified in 23 U.S.C. 327. The MOU allows Caltrans to assume the FHWA's responsibilities under NEPA as well as FHWA's consultation and coordination responsibilities under Federal environmental laws for the majority of transportation projects in California.

Your initial October 10, 2014 letter was received in this office on October 17, 2014. In this letter, you requested to reinitiate consultation and to amend the biological opinion to address the impacts on the San Joaquin kit fox from additional construction activities associated with the installation of permanent soundwalls and the use of temporary k-rail barriers. Following further project discussion between Caltrans and the Service, Caltrans sent a revised letter, dated January 28, 2015, and received in our office on February 2, 2015, in which it 1) clarified its request to reinitiate consultation;

2) modified its discussion of temporary k-rail; and 3) modified its proposed avoidance and minimization measures in regard to k-rail design.

This response was prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

In reviewing the request, the Service has relied upon: (1) Caltrans' October 10, 2014, letter and supporting documents (e.g. maps, design plans); (2) the Service's December 20, 2013 biological opinion; (3) email and telephone correspondence between Caltrans and the Service; (4) Caltrans' January 28, 2015, revised letter; and (5) other information available to the Service.

The following section supplements the information presented in the **Proposed Project** on pages 6-8 of the December 20, 2013 biological opinion and pertains to Caltrans' proposed addition of new construction activities:

> Caltrans proposes to install approximately 42,000-feet (ft.) of new soundwalls, and to replace, in-kind, just under 4,000-ft. of existing soundwalls at various locations along the project's extent. These noise attenuation structures are generally installed in areas adjacent to high-density residential neighborhoods where road noise is expected to cause significant disturbance to residents. The structures also will serve to keep children and pets in these residential neighborhoods from accessing the busy roadways. Caltrans' proposed soundwall activities will take place in residential areas located 1) between the southern end of the new Westside Parkway/Truxtun Avenue intersection and the State Route (SR) 99/SR 58 intersection (i.e., the new Centennial Corridor alignment); 2) between the SR 99/SR 58 intersection and Cottonwood Road at the eastern end of the project area; and 3) between the SR 99/SR 58 intersection and Wilson Road at the southern end of the project area. The soundwalls that are due to be replaced in-kind will be situated at the southern end of the project area, along a segment of SR 99 between Ming Avenue and SR 58.
>
> Caltrans expects to use temporary concrete k-rail barriers during construction. K-rail is a common traffic control safety measure used to separate the construction areas from roadways and vehicle traffic. These barrier structures will be present for the duration of construction but will be removed once the project is completed.

The following section supplements the information presented in the <u>Proposed Avoidance and Minimization Measures</u> on pages 8-13 of the December 20, 2013 biological opinion, and pertains to the additional conservation measures Caltrans has proposed to minimize the effects to the San Joaquin kit fox from the installation of k-rail on-site:

- Caltrans will install modified k-rail barriers that facilitate San Joaquin kit fox movement and passage across the roadways. Openings in the barriers will be spaced every seven segments of k-rail; segments are 20-ft. long, so intervals will be spaced approximately every 140-ft. One, or a combination, of two design options will be implemented. Designs include:
    - A Modified Type K segment with one 8-inch diameter hole cast or bored into a typical rail segment.
    - A Type L passageway that off-sets a segment of k-rail via a gap measuring between 8-inches and 5-ft.

> Caltrans acknowledges that the aforementioned designs are only temporary solutions for addressing the issues of roadway permeability and wildlife passage; over the long-term, Caltrans will commit to conducting crash-test and safety studies on alternative design options in order to provide the most effective solutions for addressing San Joaquin kit fox movement across the roadscape.

The following section supplements the information presented in the **Effects of the Proposed Action** on pages 16-18 of the December 20, 2013 biological opinion, and pertains to the evaluation of effects from the proposed installation of soundwalls and temporary k-rail barriers:

> Soundwall installation (including both the addition of new soundwalls and the replacement in-kind of existing soundwalls) will be restricted to high-density residential areas where the San Joaquin kit fox is less likely to occur. These areas normally would have (or already have) impermeable fencing due to the safety issues associated with placing residential neighborhoods adjacent to busy roadways with high traffic speeds and volumes. Therefore, Caltrans does not expect new soundwall installation to create additional barriers to San Joaquin kit fox movement; neither is this activity likely to contribute to an increase in habitat fragmentation for the species. In fact, the project area contains a number of existing movement corridors that Caltrans believes will facilitate connectivity in the landscape for the San Joaquin kit fox; there are 18 potential crossing features, six of which are associated with the SR 58 Gap Closure Project (EA 06-0G850), which overlaps with a portion of the Centennial project area (eastern side), and three of which are associated with the Westside Parkway Project (EA 06- 48460), which also overlaps with a portion of the Centennial project area (western side). Potential crossing features include road, railroad, and canal under-crossings; culverts at irrigation canals; and bridges. The distance between these crossing features ranges between 600-ft. and 2,500-ft.
>
> The k-rail barriers proposed for use throughout the project area as a means of temporary traffic control and safety are likely to prevent the San Joaquin kit fox from making successful road crossings. The San Joaquin kit fox is reasonably likely to occur in and/or use the action area given that 1) the action area is located within the San Joaquin kit fox Metropolitan Bakersfield satellite recovery area (Service, 2010)[1]; 2) habitat within the action area contains areas of suitable non-native grasslands, ruderal lands, and agricultural lands for the species; and 3) potential dens and San Joaquin kit fox sign have been found within the action area. Those individuals traversing the project area are therefore at high risk of encountering a k-rail barrier and becoming trapped between it and the roadway. Consequently, they are likely to end up being injured or killed by vehicles. Caltrans will reduce this risk by modifying the k-rail design to include one, or a combination, of two types of passageways. Openings will be situated at 140-ft. intervals, thereby continuing to provide a degree of roadway permeability and a means for the San Joaquin kit fox potentially to move through the barrier.

On page 19 of the December 20, 2013 biological opinion, the **Amount or Extent of Take** is being modified as follows. Segments of new text are shown by an underline:

> It is infeasible for the Service to quantify the exact number of San Joaquin kit foxes that will be taken as a result of the proposed action because the number of individuals in the action area is unknown and estimates of population density in the action area are unavailable. In instances in which the number of individuals that may be taken cannot be determined, the

[1] U.S. Fish and Wildlife Service. 2010. San Joaquin Kit Fox (*Vulpes macrotis mutica*) 5-Year Review: Summary and Evaluation. Sacramento Fish and Wildlife Office, Sacramento, California. 122 pp.

Service may quantify take in the amount of lost or disturbed habitat as a result of the project action; since take is expected to result from these effects to habitat, the quantification of habitat becomes a direct surrogate for the species that will be taken. Therefore, the Service anticipates take incidental to the project as the 76.83 ac of suitable San Joaquin kit fox habitat that will be lost and disturbed. Dens may be destroyed as a result of project construction and a small number of dens could also be disturbed by activities associated with the SHP. Upon implementation of the *Reasonable and Prudent Measures*, *Terms and Conditions*, and the *Proposed Avoidance and Minimization Measures* considered herein, incidental take within this acreage in the form of harm due to new freeway construction, freeway and intersection improvements, sump activities, and other associated construction work leading to habitat loss and disturbance, as well as den excavation and destruction; and in the forms of injury and mortality due to vehicle strikes stemming from traffic on the new freeway and from the presence of permeable temporary barrier structures, will become exempt from the prohibitions described under section 9 of the Act.

Reinitiation – Closing Statement

The conclusion of the jeopardy analysis for the December 20, 2013 biological opinion, and the April 16, 2014 notification letter, is unchanged: the action is not likely to jeopardize the continued existence of the San Joaquin kit fox. This concludes the reinitiation of formal consultation for the Centennial Corridor Project. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained or is authorized by law and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

Please contact Jen Schofield, Wildlife Biologist, or Thomas Leeman, Chief, San Joaquin Valley Division, at (916) 414-6600 if you have any questions regarding this letter.

Sincerely,

Kenneth Sanchez
Assistant Field Supervisor

cc:
Craig Bailey, California Department of Fish and Wildlife, Fresno, California

United States Department of the Interior

FISH AND WILDLIFE SERVICE
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Sacramento, California 95825-1846

In Reply Refer To:
08ESMF00-2013-F-0373

DEC 20 2013

Mr. Javier Almaguer
Chief, Central Region Biology South Branch
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: Formal Consultation for the Centennial Corridor Project (part of the Thomas Roads Improvement Program [TRIP]), City of Bakersfield, Kern County, California (California Department of Transportation EA 06-48460; 06-KERN-58-PM T31.7 to PM 55.6; 06-KERN-99-PM 21.2 to PM 26.2)

Dear Mr. Almaguer:

This is the U.S. Fish and Wildlife Service's (Service) response to the California Department of Transportation's (Caltrans) request for initiation of formal consultation on the proposed Centennial Corridor Project (project) in Kern County, California.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 16, 2012. Caltrans was approved to participate in the MAP-21 Surface Transportation Project Delivery Program through the National Environmental Policy Act (NEPA) assignment Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and Caltrans (effective October 1, 2012), as codified in 23 U.S.C. 327. The MOU allows Caltrans to assume the FHWA's responsibilities under NEPA as well as FHWA's consultation and coordination responsibilities under Federal environmental laws for the majority of transportation projects in California.

This project is part of the larger Thomas Roads Improvement Program (TRIP), a collection of six road improvement projects designed to meet the long-term transportation needs of the greater City of Bakersfield (City) area; four projects have already completed consultation and one other is beginning consultation. TRIP is a cooperative effort between the City, County of Kern, Caltrans, and the Kern Council of Governments. Your letter, dated July 16, 2013, providing additional information and requesting the initiation of formal consultation, was received in this office on July 22, 2013. At issue are potential effects to the federally-listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*). This document represents the Service's biological opinion on the effects of the proposed project on the listed species. This document has been

prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*) (Act).

The findings and recommendations of this biological opinion are based on: (1) the consultation between Caltrans and the Service; (2) the biological opinions for the first four TRIP projects for which consultation has been completed: the *Morning Drive/State Route 178 Interchange Project*, issued to Caltrans on August 18, 2011, the *State Route 58 Rosedale Highway Widening Project*, issued to Caltrans on April 24, 2012, the *SR 178 Widening Project*, issued to Caltrans on August 10, 2012, and the *24th Street Improvement Project*, issued to Caltrans on September 21, 2012; and (3) other information available to the Service.

Caltrans has determined that the project is likely to adversely affect the San Joaquin kit fox. The Service has reviewed the proposed project and concurs with Caltrans' determination.

Caltrans has determined that the proposed project will have no effect on the California jewelflower (*Caulanthus californicus*), the Kern mallow (*Eremalche kernensis*), the San Joaquin woolly-threads (*Monolopia congdonii*), and the Bakersfield cactus (*Opuntiabasilaris* var. *treleasei*) based on the results of botanical surveys and the distance of recorded occurrences from the project footprint. Focused botanical surveys were conducted for the corridor portion of the project first in 2008 on March 24, 27, and 28, and on May 15, 21, and 22; and then in 2009 from March 24-27 and from May 5-7. Additional, more recent focused botanical surveys were conducted at the Stockdale Highway/State Route 43 (Enos Lane) intersection portion of the project on March 27 and June 4, 2012. No detections of the species were made at either location. Surveys were conducted in the appropriate blooming periods and followed standard methods in accordance with the California Department of Fish and Wildlife's (CDFW; formerly the California Department of Fish and Game [CDFG]) revised 2009 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*, and the California Native Plant Society's 2001 *Botanical Survey Guidelines*.

According to the California Natural Diversity Database (CNDDB; CDFW, 2013), the closest recorded historic occurrence of the California jewelflower to the project footprint is approximately 4.5 miles (mi) away. Additionally, the closest two recorded occurrences of the Kern mallow (dating from 1994 and 2008) are approximately 1.4 mi and 1.6 mi from the project footprint, respectively; the closest recorded occurrence of the San Joaquin woolly-threads (dating from 2009) is approximately 1.4 mi from the footprint; and the closest recorded occurrence of the Bakersfield cactus (dating from 1989) is approximately 4.2 mi from the project footprint.

Because habitat in the project area is still considered to be marginally suitable and provides the potential for these species to establish in the future, Caltrans has incorporated an additional minimization measure specifically addressing these plants. The measure is further described under the *Proposed Avoidance and Minimization Measures* section.

If changes are made to the proposed project or if new information becomes available such that adverse effects to the California jewelflower, the Kern mallow, the San Joaquin woolly-threads, and the Bakersfield cactus have occurred, or are likely to occur, then Caltrans must initiate

formal consultation for these listed plant species. The remainder of this biological opinion will address the effects of the proposed project on the San Joaquin kit fox.

Consultation History

TRIP background and coordination

November 20, 2007. The Service, Caltrans, AECOM, Parsons/TRIP, the CDFW, and the City (participating agencies) met. Parsons/TRIP requested that AECOM develop a strategy memo addressing compliance with the Act; Caltrans and the Service agreed that TRIP should take a project-specific approach. All participants agreed that a San Joaquin kit fox technical study for all TRIP projects should be conducted by AECOM, in conjunction with support from the Endangered Species Recovery Program (ESRP); such a study would be useful for supporting conclusions in future TRIP project BAs.

August 26, 2008. AECOM presented preliminary results of the San Joaquin kit fox surveys to the participating agencies. This included a presentation of the methodologies, data, and effects analysis strategy and mitigation options. The Service identified habitat connectivity and the maintenance of corridors connecting San Joaquin kit fox populations as a major issue facing the species in Bakersfield. Participants discussed potential compensatory mitigation options, including culverts, refugia, and artificial kit fox dens.

September 10, 2009. The participating agencies met. Discussion focused on the early July 2009, *Draft Thomas Roads Improvement Program San Joaquin Kit Fox Life History, Effects Analysis, and Conceptual Mitigation Strategy* (2009 Draft Strategy Plan).

October 7, 2009. The Service issued a concurrence letter approving the conceptual framework for the San Joaquin kit fox compensation strategy plan outlined in the 2009 Draft Strategy Plan.

February 26, 2010. The Service received two hard copies of the comprehensive February 2010 *Draft Thomas Roads Improvement Program San Joaquin Kit Fox Effects Analysis, Mitigation Strategy, and Implementation Plan* (2010 Draft Implementation Plan).

March 11, 2010. The participating agencies met at the CDFW office in Fresno to discuss the 2010 Draft Implementation Plan; topics included an overview of the 2010 Draft Implementation Plan, potential issues with the Metro-Bakersfield Habitat Conservation Plan (MBHCP) expiration date, and funding for the proposed Sump Habitat Program (SHP).

April 12-13, 2010. AECOM sent an electronic-mail (e-mail) to the Service and the CDFW to request guidance on what AECOM could use as a template for developing a long term management plan for the SHP. AECOM suggested using the U.S. Army Corps of Engineers' (Corps) template. The Service replied on April 13 to confirm that this was acceptable, and provided a management plan outline illustrating what the Service would expect to see in a potential management plan.

May 5, 2010. An informal conference call was held between AECOM and the Service to discuss recent developments that would be covered in the upcoming meeting that the Service would be unable to attend: Parsons/TRIP had successfully presented the six projects to the MBHCP Trust Group; the real estate meeting between AECOM and the City resulted in the discovery that easements on four of the 19 sumps were owned outright by the City, four were owned by the City but had deed restrictions; and 11 were not owned by the City. AECOM also had specific questions regarding what the Service would look for in the upcoming BA.

May 11, 2010. The participating agencies met at the CDFW office in Fresno to discuss the SHP.

July 14, 2010. A meeting was held at the SFWO amongst all the participating agencies. Parties agreed on the content of the project BA regarding avoidance and minimization measures and a general description of the SHP, compensation, eventual inclusion of a third chapter in the 2010 Draft Implementation Plan describing the finalized SHP in detail, endowment/easement updates, and schedules.

August 18, 2010. The participating agencies met at the CDFW's Fresno office to discuss the latest developments in compliance, BA preparation, and the SHP. Major topics included TRIP eligibility for participation in the MBHCP, BA content, and further details concerning the SHP (e.g. easement and program management, endowments, and sump selection).

September 15, 2010. The CDFW contacted the Service with information concerning language in accordance with the California Endangered Species Act (CESA) that the CDFW would like to see included in the project biological opinion so that it would be able to issue a Consistency Determination (CD) and avoid undertaking a lengthier 2081 Incidental Take Permit process. The Service responded to discuss this information with the CDFW.

September 30, 2010. The Service, AECOM, Parsons/TRIP, and Caltrans held a conference call to discuss paying MBHCP compensation fees for the six TRIP projects in advance of the 2014 MBHCP expiration. Although the construction schedule for at least one project is not anticipated to begin until after 2014, it still could be compensated for prior to the expiration date. In a revised September 1, 2010, letter which included details of all six projects and compensation ratios, a blanket concurrence from the MBHCP Trust Group to use the MBHCP was given to the City and Caltrans. The Service suggested that an MOU with all parties involved could be implemented for paying fees in advance and provided an MOU template to AECOM.

October 22, 2010. The Service met internally to discuss the need for an MOU/memorandum of agreement (MOA) between the Service, Caltrans and the City regarding MBHCP compensation. It decided that it would be more appropriate to have an agreement between the City and Caltrans and the MBHCP Trust Group to avoid pre-decisional commitments by the Service.

December 8, 2010. The Service e-mailed Caltrans to request a copy of the *Draft Thomas Roads Improvement Program Mitigation for Cumulative Effects to the San Joaquin Kit Fox* (Draft SHP Plan), dated September 2, 2010, which outlines the basic conceptual framework for the proposed SHP. Caltrans e-mailed a copy and stated this would later be incorporated into a third chapter in the 2010 Draft Implementation Plan.

January 20, 2011. The Service e-mailed Caltrans and AECOM to provide them with an update on what the SFWO had concluded regarding the concerns with CDs, CESA language, and BOs: the Service stated it would not include the CDFW's conditions in the Terms and Conditions of its biological opinions; however, the CDFW's conditions could be included in the project description and conservation measures. The Service does not have the authority to use the type of language the CDFW is looking for (e.g. financial assurances, letters of credit) as terms and conditions to minimize incidental take.

January 25, 2011. E-mails were exchanged between AECOM, the CDFW, and the ESRP concerning fence design for the SHP. The CDFW was concerned that the proposed 8x8 inch gaps were too big and would allow predator species in the sump locations. The CDFW suggested that 4x6 inch or 5x5 inch gaps would be more appropriate. The ESRP responded that 4x6 inch openings would be fine, but 6x6 inch openings would be better for the San Joaquin kit fox and would still exclude predators. AECOM noted that the gap design objective for the sumps was different from that for the road design modifications (keeping predators out versus maintaining movement and permeability).

March 21, 2011. Caltrans informed the Service that following a meeting with the CDFW to discuss the project, Caltrans had decided not to pursue a 2081 Incidental Take Permit or a CD under CESA with the CDFW, as it had determined that take of the San Joaquin kit fox, as defined under CESA, could be avoided.

June 22, 2011. A meeting was held at the SFWO and attended by the Service, AECOM, Parsons/TRIP, the City, and Caltrans. Participants discussed updates regarding the status of the TRIP projects, the SHP, conservation easements and endowments, future work products, and possible additional funding support for the TRIP projects.

July 1, 2011. AECOM e-mailed draft notes from the June 22 meeting for circulation and comment.

January 30, 2012. A meeting was held at the SFWO and attended by the Service, AECOM, Parsons/TRIP, the City, and Caltrans. Participants discussed updates regarding the status of all the TRIP projects, the resolution of encumbrances, options for providing long-term conservation assurances, potential funding mechanisms, the proposed schedule for continued development and eventual implementation of the SHP, and preparation of the Long-Term Management Plan.

February 20, 2012. AECOM e-mailed draft notes and action items from the January 30 meeting for circulation and comment.

Project-specific coordination

April 16, 2013. The Service received a letter from Caltrans requesting initiation of formal consultation for the current project. The request included a biological assessment (BA) titled *Centennial Corridor Project, State Route 99 to Interstate 5 Biological Assessment,* dated March 2013, and prepared by the consultant, BonTerra Consulting.

May 16, 2013. The Service emailed Caltrans to inquire why three different alternatives were presented in the BA. The Service emphasized that it could not consult on multiple alternatives and therefore consultation could not proceed until an alternative was selected and a specific project defined.

May 20 - June 3, 2013. The Service and Caltrans continued to discuss the issue of the alternatives.

June 5, 2013. Caltrans informed the Service that it had selected Alternative B.

June 18, 2013. The Service emailed Caltrans with a request for additional information and clarifications regarding the BA.

July 22, 2013. The Service received a letter from Caltrans responding to the Service's June 18 request for additional information and inquiring if the project was now deemed complete such that Caltrans could initiate formal consultation. Included with the letter were a comment resolution form and a revised copy of the BA.

July 24, 2013. The Service confirmed with Caltrans that the project initiation package was considered complete and that formal consultation was initiated on July 22.

November 21, 2013. The Service emailed Caltrans to follow-up with several project clarification questions.

December 6, 2013. Caltrans emailed the Service the consultant's responses to the Service's November 21 request.

BIOLOGICAL OPINION

Proposed Project

The City, in coordination with Caltrans, proposes to construct a new freeway corridor connecting the eastern end of a local freeway, known as the Westside Parkway, to the existing State Route (SR) 58 (East) freeway. In conjunction with this, the project also proposes to improve the intersection at Stockdale Highway and SR 43 (known locally as Enos Lane) in order to accommodate additional traffic. The purpose of the project is to improve route continuity along SR 58 between SR 99 and Interstate (I)-5 within Metropolitan Bakersfield and wider Kern County. SR 58 is a critical highway in the State transportation network used by interstate travelers, commuters, and truckers, but it currently lacks continuity in central Bakersfield, which results in severe traffic congestion and reduced levels of service on adjoining highways and local streets.

Centennial Corridor (Segment 1)

Caltrans has selected the approximately 8.6 mi long Alternative B as the build alternative for the corridor construction. This will involve building a six-lane freeway heading west from the

Centennial Corridor (Segment 1)

Caltrans has selected the approximately 8.6 mi long Alternative B as the build alternative for the corridor construction. This will involve building a six-lane freeway heading west from the existing SR 58/SR 99 interchange for approximately 1,000 feet (ft.) along an alignment situated south of Stockdale Highway, then heading northwest and spanning Stockdale Highway/Stine Road, California Avenue, Commerce Drive, Truxtun Avenue, and the Kern River, and finally joining the east end of the Westside Parkway between the Mohawk Street and Coffee Road interchanges. The segment of SR 58 between California Avenue and Ford Avenue will be depressed (the roadway will be below grade) in order to minimize the visual effects of the corridor on the surrounding neighborhood. Overcrossings are proposed at Marella Way and La Mirada Drive to facilitate improved traffic circulation.

Alternative B also includes adding connections to SR 99 and improvements to SR 99 and the existing segment of SR 58. Linkages will be provided from northbound SR 99 to westbound SR 58 and from eastbound SR 58 to southbound SR 99 via high-speed connectors. Southbound SR 99 will be widened to accommodate additional traffic heading from eastbound SR 58 to the southbound SR 99 connector. The limits of widening on SR 99 will extend to the Wilson Road overcrossing. Ramps will need to be realigned to accommodate the additional constructed lanes. Several on- and off-ramps (e.g. Wible Road, south of the SR 58/SR 99 interchange; Stockdale Highway, on southbound SR 99 to eastbound SR 58 connector) are presently in conflict with Caltrans' standards of interchange spacing, and so will be removed.

Excavation associated with Alternative B will reach a maximum depth of 25 ft. near SR 58 between Stephens Drive and H Street in order to accommodate the widened ramps, as well as between California Avenue and Ford Avenue where the freeway will be constructed below the existing grade. On SR 99, the maximum depth of excavation will be approximately 18.5 ft. between Belle Terrace and Ming Avenue.

Stockdale Highway/SR 43(Enos Lane) Interchange

Improvements will include widening the intersection and adding signals to control traffic. This intersection currently operates at a deficient level of service due to its existing configuration. When the corridor segment of the project connects to the Westside Parkway, traffic volumes will increase on Stockdale Highway, so the improvements at this intersection are needed to accommodate the anticipated additional traffic demand. SR 43 will be expanded to add a dedicated left-turn lane in both directions, while Stockdale Highway will be widened to add a dedicated left-turn lane and a shared through/right-turn lane in both directions.

Other Project Elements

Detours, utilities, and drainage: Traffic detours will be implemented on existing streets; further details regarding these routes will be developed during later project design phases. The relocation and reconstruction of utilities and drainage facilities within the project right-of-way (ROW) will include power poles, underground utilities, and storm drains. Utility relocations are expected to be done without interruption to services and drainage improvements will involve

operational Best Management Practices (BMPs). Eight new drainage basins will be installed throughout the project area to retain stormwater while six existing basins will be modified.

Borrow, Staging and Access: All borrow, disposal, vehicle access, staging, storage, utility relocations, and other construction activities will occur within the defined limits of disturbance, i.e. the project footprint.

Scheduling: According to Caltrans' anticipated project schedule, design was expected to begin in mid-2013 and be completed by mid-2015. Construction is then anticipated to start in 2016 and continue year-round through 2018.

Proposed Avoidance and Minimization Measures

According to the BA, the Draft SHP Plan, the 2010 Draft Implementation Plan, and measures previously established in the Morning Drive/SR 178 Interchange Project, SR 58 Rosedale Highway Widening Project, SR 178 Widening Project, and 24th Street Improvement Project biological opinions, in addition to further discussion with Caltrans, the City and Caltrans propose to implement protection provisions in order to minimize adverse effects to the San Joaquin kit fox. Several of these are developed, in part, from the Service's most recent guidelines; currently, this is the January 2011 *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (Recommendations). Additional measures are developed to be project- or program-specific:

1. Caltrans will include Special Provisions that include the avoidance and minimization measures of this biological opinion when soliciting contractor bid packages.

2. Prior to project groundbreaking, a Service-approved biologist(s) will conduct updated protocol-level botanical surveys within the project footprint during the appropriate blooming periods for the following four species: the California jewelflower, the Kern mallow, the San Joaquin woolly-threads, and the Bakersfield cactus. Surveys will be conducted in accordance with the most current protocols accepted by the Service. The intention will be to discover any changes in, or new additions to, the floristic composition of federally-listed plant species at the project site.

3. Caltrans and the City will follow the construction and on-going operational requirements described in the Service's Recommendations.

4. No less than 30 days but no more than 60 days prior to road construction, a Service-approved biologist(s) will conduct preconstruction surveys for San Joaquin kit fox dens both in the project footprint and within 200 ft. of the footprint, inclusive of any utilities relocations. A letter report and map of known and potential San Joaquin kit fox dens will be submitted to the Service prior to the start of ground disturbance and/or construction activities. Repeat clearance surveys will be conducted no more than 14 days before construction or after any delays in construction of over two weeks. Any new known or potential San Joaquin kit fox dens identified in the interim will be reported to the Service in a letter report and map. If no new known or potential San Joaquin kit fox dens are

approved biologist(s), and general survey findings. Records will be submitted to the Service upon request.

5. Disturbance to all San Joaquin kit fox dens will be avoided to the maximum extent possible. If known or potential dens are identified within the footprint during the 60-day and/or 14-day preconstruction surveys, Caltrans will request to monitor and excavate those dens that are expected to be affected directly by the project and cannot be avoided. Active dens will not be excavated during the natal season (approximately January 1 - June 30). The Service-approved biologist(s) will monitor potential dens for three consecutive nights using tracking medium and/or a remote sensor camera, will submit monitoring results in a letter report to the Service, and also will oversee the hand excavation of dens that have been determined vacant following approval by the Service. The Service-approved biologist(s) also will submit results of den excavation and exclusion activities in a letter report to the agencies. The following measures will be applied to dens that are not excavated:

    a. Dens that are identified during preconstruction surveys of the project footprint boundary and a 200 ft. area outside of the project footprint will be monitored and protected by an exclusion zone around dens, as measured outward from the entrance or cluster of entrances of each den.

        i. Potential and atypical dens within 50 ft. of the project footprint will be protected with a 50 ft. zone delineated by flagged stakes;

        ii. Known dens within 100 ft. of the project footprint will be protected with a 100 ft. zone. To ensure protection, the exclusion zone will be demarcated by fencing/flagging that does not prevent access to the den by the San Joaquin kit fox. Acceptable designs will have openings for San Joaquin kit fox ingress/egress but will keep humans and equipment out, e.g. wooden posts connected with caution tape; orange construction cones; orange construction fencing with a mesh size less than 2 inches in diameter (to prevent the San Joaquin kit fox from becoming entangled in the fencing) with gaps every 50 ft. Fencing/flagging will be maintained until all construction-related disturbances have been terminated. At that time, all fencing/flagging will be removed to avoid attracting subsequent attention to the dens.

    b. If natal/pupping dens are discovered either within the project footprint or within 200 ft. of the project footprint, Caltrans will immediately notify the Service.

6. The Service-approved biologist(s) will conduct a worker environmental awareness program for all construction crews prior to ground-disturbing activities, with the purpose of informing all crew members of the potential for the San Joaquin kit fox to occur on-site, the effects on the species from construction activities, how to minimize effects to the species, and the penalties for non-exempted take. The training will be repeated to all new

crew members and annually to all crew members working in San Joaquin kit fox habitat. Crew members will sign an attendance sheet and confirm that they understand the protection measures and construction restrictions. Training materials and records of attendees will be submitted to the Service.

7. The Service-approved biologist(s) will monitor road construction on a daily basis and will verify that construction complies with the measures laid out in this biological opinion. The Service-approved biologist(s) will maintain a log of daily monitoring notes that can be summarized and transmitted to the Service by request.

8. Permeable fencing will be installed along the proposed ROW in all areas where there is known San Joaquin kit fox activity and lower traffic speeds/volumes. Permanent exclusionary fencing will be installed along the proposed ROW in high-density residential areas and/or in areas with higher traffic speeds/volumes. In all areas in need of new permeable fencing, at least one design option featured below will be adopted to provide the San Joaquin kit fox with passage and movement opportunities, and to minimize the potential to disrupt species movement and habitat fragmentation of the project area:

    a. Elevate the bottom of the fence 5 inches above ground to allow unobstructed movement by the San Joaquin kit fox under the fence.

    b. Install ground-level 8 x 8 inch wide gaps no more than 100 ft. apart along the length of the fence to allow for San Joaquin kit fox movement at regular intervals along the ROW.

    c. Install fencing with a minimum mesh size of 3.5 x 7 inches, preferably 5 x 12 inches, to allow unlimited movement through the fence.

9. Curbed medians will be used as part of the project design and their height will be no greater than 10 inches. Either 6-inch high curbed medians with low vegetation or 10-inch high un-vegetated curbed medians will be constructed so as not to obstruct the visual field of the San Joaquin kit fox near the roadway. Curbed medians less than 10 inches in height and which require landscaping will be planted with low-level vegetation (i.e. less than 6 inches tall at maturity), or be mowed frequently to prevent overgrowth and provide an unobstructed line of sight for the species, or will have gaps installed measuring no less than 4 ft. wide every 12 ft. in areas landscaped with trees and shrubs.

    a. If required, landscaping will be designed in conjunction with the curbed median design in order to allow unobstructed visibility to the San Joaquin kit fox and to maintain and/or enhance opportunities for movement across the roadway.

10. Median barriers will be required in some areas of the project for the purpose of public safety. The Caltrans-designed modified median barrier type 60/S will be used. Caltrans' type 60/S design previously has been utilized in other projects (e.g. reinitiated Biological

Opinion for the State Route 99 Goshen to Kingsburg 6-Lane Project, in Tulare and Fresno Counties; Service File number 81420-2009-F-0752) and includes 9-inch radius openings (semicircular openings 9 inches high x 18 inches wide) spaced every 150 ft. to allow passage by the San Joaquin kit fox. Maintaining permeability in this manner will also reduce the potential to disrupt species movement and connectivity in the project area.

11. In areas of known San Joaquin kit fox activity and high traffic volumes and/or speeds, existing San Joaquin kit fox movement corridors like the canal channels and the Kern River, as well as railroad ROWs (e.g. BNSF), will be preserved through the use of bridges and/or culverts to facilitate crossings. Some segments of the canals under the new roadways will be converted from trapezoidal channels to box culverts; other segments of the canals with existing box culverts will be extended. Toe-of-road fill and bridge support walls will be maintained and new walls will be designed no less than 20 ft. from the centerlines of canal access roads and railroads.

    a. An elevated bridge currently exists at the location where the Westside Parkway crosses the trapezoidal channel of the Friant-Kern Canal. Species access will continue to be provided along an elevated access road located parallel to the canal.

    b. An above-grade bridge will be constructed over the trapezoidal channel of the Stine Canal. This will allow the species to move freely below the roadway.

    c. An above-grade bridge (westbound Mohawk St. off-ramp) will be constructed over the Cross Valley Canal, which exists as a double box culvert. The Kern River corridor is located proximate to the canal and so it provides existing access for the species in the area; no additional crossing features are proposed at this canal site.

    d. Two design options are proposed for the location where the new roadway will cross the Carrier Canal: 1) box culvert → if this design is chosen, a crossing structure (with proposed 5 x 5 inch mesh size and 10 inch diameter escape pipes within a 60 inch diameter crossing culvert) will be installed to connect the access roads on the north side of the canal; 2) bridge → if this design is chosen, no additional crossing features will be necessary since the elevated bridge above the trapezoidal canal will allow the species to move freely below the roadway.

The MBHCP Trust Group provided a letter to the City, dated December 3, 2010, in which it approved the ongoing use of the MBHCP for proposed compensation obligations for all TRIP projects; it also permitted payment to occur on an individual project basis after the approval of the final environmental document (FED) for each project. The City will pay the appropriate fee amount to the Trust Group and the Trust Group will acquire the required acreage amounts to be protected in perpetuity.

12. Caltrans will verify that the City compensates for the permanent loss of 11.28 ac and temporary disturbance to 65.55 ac of habitat consisting of non-native grassland, riparian woodland/Great Valley cottonwood riparian forest, ruderal/disturbed areas, desiccated waterways, detention basins, and agricultural land suitable for the San Joaquin kit fox by purchasing 105.95 ac (using a 3:1 compensation ratio for permanent effects and 1.1:1 compensation ratio for temporary effects) through the MBHCP.

    a. Prior to construction, the limits of affected habitat acreage by vegetation type will be verified and delineated on a map, and submitted for approval to the Service. This will be done prior to its submittal to the City Planning Department for fee payment.

13. Upon completion of project construction, all areas subject to temporary ground disturbance, including storage and staging areas, will be restored to original grade and contour. Appropriate methods and plant species used to re-vegetate will be determined on a site-specific basis in consultation with re-vegetation experts.

14. To minimize opportunistic predatory effects to the San Joaquin kit fox, the City and Caltrans will condition contracts with contractors to require that trash be removed at least once daily from project areas and disposed of off-site so as not to attract predator species like coyotes (*Canis latrans*) and bobcats (*Lynx rufus*) to the project area.

15. The City and Caltrans will condition contracts with contractors to require that contained water sources, which are inaccessible to the San Joaquin kit fox (e.g. elevated water trucks), be used for dust control and other construction water activities.

The SHP will provide long-term habitat conservation for the urban San Joaquin kit fox population in the metro-Bakersfield area by focusing on sumps (i.e. stormwater drainage basins); sumps in Bakersfield are a functional habitat type for the species and many sumps are either currently known to support San Joaquin kit fox dens or offer potential denning opportunities. The City, in coordination with Caltrans, proposes to utilize the SHP to minimize collective effects to the San Joaquin kit fox engendered by all six TRIP road improvement projects. Conservation measures of the SHP include the installation of artificial dens in selected sumps, the enhancement of San Joaquin kit fox habitat by controlling vegetation in and around dens, the increase of San Joaquin kit fox accessibility to sumps through installation of fence/gate openings (with proposed dimensions of 6 x 6 inches to exclude predators like coyotes and medium- to large-sized dogs), and the reduction in the potential for effects to the species associated with regular maintenance activities and predation. The City provided a letter of commitment to the Service, dated August 10, 2010, fully supporting and providing assurance of the implementation and management of the SHP and its conservation efforts.

16. The basic conceptual framework for the SHP is described in the September 2010 Draft SHP Plan, which addresses five core conservation goals in detail that are integral to the implementation and success of the SHP: 1) the selection of sumps that maintain San Joaquin kit fox accessibility and/or habitat (i.e. those of high/medium conservation

priority based on the relative potential for minimizing program-level effects); 2) the installation and maintenance of San Joaquin kit fox enhancement features (i.e. fence/gate gaps, artificial dens, conservation zones, signs, and enhancement maintenance and repair); 3) the management of sump vegetation compatible with San Joaquin kit fox presence and/or use (i.e. performance of routine maintenance outside the San Joaquin kit fox natal season and the use of hand tools in conservation zones and new active dens); 4) the biological monitoring and reporting of results (i.e. pre-maintenance surveys; den monitoring and supervised den excavation; environmental awareness training; maintenance monitoring; annual enhancement inspection; annual San Joaquin kit fox sump use monitoring; and annual reporting); and 5) the provision of long-term conservation assurances (i.e. individual conservation easements for each sump; a perpetual non-wasting endowment for management, maintenance, and monitoring costs associated with ongoing implementation; and a Service-approved Long-Term Management Plan. The proposed easement and endowment holder(s) will be Service-approved third-party organizations). Further details in regards to these five core measures can be found in the Draft SHP Plan.

a. The SHP will continue to be updated, refined, and ultimately finalized through an ongoing collaborative consultation process involving Caltrans, the City, Parsons/TRIP, and the Service over the course of the final remaining TRIP project.

b. The finalized SHP will be established and implemented within one year of the approval of the FED for the last of the six TRIP projects; the City will fully fund the SHP within one year of this approval. Caltrans and the City will share responsibility for the SHP; Caltrans will adhere to the proposed avoidance and minimization measures and terms and conditions of this biological opinion and will be responsible for the overall implementation of the SHP, while the City will be responsible for enhancing sumps and conducting long term management of the SHP. A Service-approved third-party will be responsible for administering endowment funds and providing compliance oversight with the terms of the conservation easements for each sump in the SHP.

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area for this project is composed of the project footprint, which includes the limits of construction for the proposed freeway corridor (alternative B) and the Stockdale Highway/SR 43 intersection within the existing and proposed Caltrans ROW, plus a temporary construction area extending 25 ft. out from the edge of the construction boundaries to allow for equipment maneuvering. Habitat types within the footprint include non-native grassland, riparian woodland/Great Valley Cottonwood riparian forest, disturbed/ruderal land, agricultural areas, developed/ornamental areas, waterways (e.g. segments of the Kern River and canals), and detention basins. The action area also includes portions of these lands that extend approximately 200 ft. from the project

footprint which will experience further-reaching effects of new road construction and intersection improvements such as noise and visual disturbance.

Analytical Framework for the Jeopardy/No Jeopardy Determination

In accordance with policy and regulation, the following analysis relies on four components to support the jeopardy/no jeopardy determination for the San Joaquin kit fox: (1) the *Status of the Species*, which evaluates the species' range-wide conditions, the factors responsible for those conditions, and its survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the species in the action area, the factors responsible for that condition, and the role of the action area in the species' survival and recovery; (3) the *Effects of the Action*, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the species.

In accordance with policy and regulation, the jeopardy/no jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the species' current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the San Joaquin kit fox in the wild.

The following analysis places an emphasis on consideration of the range-wide survival and recovery needs of the species and the role of the action area in meeting those needs as the context for evaluating the significance of the effects of the proposed Federal action, combined with cumulative effects, for purposes of making the jeopardy/no jeopardy determination. In short, a non-jeopardy determination is warranted if the proposed action is consistent with maintaining the role of habitat for the species' populations in the action area for the survival and recovery of the species.

Status of the Species

Refer to the *San Joaquin Kit Fox (Vulpes macrotis mutica) 5-Year Review: Summary and Evaluation* (Service, 2010) for the current Status of the Species. The 5-Year Review provides a description of the species, including its distribution, habitat requirements and other life history information, current threats, an analysis of progress made in recovering the species, and recommendations for recovery actions over a future five year period.

The urban Bakersfield San Joaquin kit fox population is the only substantial population of the species known to occur outside the core areas of western Kern, Carrizo Plain Natural Area, and Ciervo-Panoche (Cypher and Warrick, 1993; Cypher *et al.*, 2000), which contain significantly greater areas of less disturbed natural habitat. The Bakersfield population therefore comprises a important satellite population also identified as significant for recovery of the species.

According to the CNDDB (2013) there are 48 recorded occurrences of the San Joaquin kit fox within the Gosford, Lamont, Tupman. and Stevens United States Geological Survey (USGS) 7.5 minute quadrangles, in which the action area is located; these numerous species observations are

located all around the project site. The closest record is from 2006 and is located approximately 0.7 mi from the project footprint. Within the vicinity of the action area, one potential den, four presumed active dens, and six incidences of San Joaquin kit fox sign were identified during a survey conducted in September 2008 by AECOM; these were all found in open spaces along the Kern River between approximately Mohawk Street and 24th Street. Data adapted from Bjurlin *et al.* (2005) in the 2010 Draft Implementation Plan also identified three nearby instances of San Joaquin kit fox vehicle-related mortalities on the south side of the Kern River near Mohawk Street and Truxtun Avenue.

As an area where the San Joaquin kit fox has adapted to the urban environment, traffic-related incidents have been and will continue to be the primary source of mortality in Bakersfield (Cypher, 2000; Bjurlin *et al.*, 2005). Other dangers posed by the urban environment of the metro-Bakersfield area include predation from domestic dogs and entanglement in playing field and schoolyard equipment like soccer nets. We are aware of eight separate Federal actions concerning effects to the San Joaquin kit fox, located in the immediate vicinity of the action area, that have previously completed consultation with the Service: the Westside Parkway Project (Service file number 1-1-98-F-0139; as reinitiated and amended 1-1-00-F-0185, 1-1-04-F-0194, 81420-2008-F-0368-27, 81420-2008-F-0368-28); the reinitiation of Phase 4 of the Westside Parkway Project (Service file number 81420-2008-F-0368-R001-1); the California Avenue On-Ramp Project (Service file number 81420-2011-I-0527-1); the SR 58 Rosedale Highway Widening Project (Service file number 08ESMF00-2012-F-0049); the 24th Street Improvement Project (Service file number 08ESMF00-2012-F-0290); the Cawelo Water District Calloway Canal Lining Project (Service file number 08ESMF00-2013-I-0135); the Big West-Flying J Clean Fuels Refinery Upgrade Project (Service file number 81420-2008-F-0616); and the Bakersfield Emergency Bridge and Utility Repair Project (Service file number 08ESMF00-2012-IE-0601).

Environmental Baseline

Contiguous tracts of undisturbed habitat suitable for the San Joaquin kit fox existed in the action area to a greater extent prior to the origination and expansion of urban development in central Bakersfield. It is reasonably likely that the conversion of natural lands to residential, industrial, commercial, and agricultural areas and the introduction of transportation infrastructure such as the initial construction of SR 99 and SR 58, in addition to networks of arterial roads, have affected the species. Ongoing urbanization has continued to result in habitat loss and fragmentation while roadway- and vehicle-related risks pose threats of injury and mortality to the species. Of the habitat types that will be affected directly by the project, non-native grassland comprises approximately 66 percent of the total action area acreage still considered to be suitable for use by the San Joaquin kit fox; ruderal/disturbed areas comprise approximately 23 percent of the total acreage; and segments of waterways (e.g. the Kern River channel and canal beds), riparian woodland/Great Valley Cottonwood riparian forest, three detention basins, and agricultural lands make up the remaining total habitat.

Despite the continuation of these effects, the action area nevertheless provides suitable denning and foraging habitat for the San Joaquin kit fox; furthermore, San Joaquin kit fox sign has been

identified in the action area. Although the CNDDB (2013) has no records of the species or its sign within the action area, information from the MBHCP database, as illustrated in the 2010 Draft Implementation Plan, shows that there are multiple San Joaquin kit fox records documented within the proposed corridor footprint. The corridor portion of the project was surveyed on September 17, 2008, and the Stockdale Highway/SR 43 intersection portion was surveyed more recently on April 4, 2012 since this additional component of the project was added after the initial surveys were conducted. Surveys followed a methodology established for all of the TRIP projects and approved by the Service and the CDFW as described in the 2010 Draft Implementation Plan. These surveys identified three potential dens in the corridor portion of the project along the Kern River near Mohawk Street and adjacent grasslands and in City Basin 143, as well as two incidences of San Joaquin kit fox sign.

San Joaquin kit foxes in Bakersfield have been found to move along linear habitat features. The Kern River corridor is an established natural movement corridor that the San Joaquin kit fox utilizes in the action area. The river channel consists of an open, sandy wash, with segments either sparsely vegetated or else devoid of vegetation. Segments of five constructed, unlined canals and one concrete-lined canal run through the action area; according to the 2010 Draft Implementation Plan, these canals (Cross Valley, Carrier, Stine, Kern Island, Central Branch Kern Island, and Friant-Kern) also serve as recognized movement corridors for the San Joaquin kit fox. At the time of vegetation mapping surveys in the spring of 2008 and 2009, four of these canals, with the exceptions of the Cross Valley and Friant-Kern Canals, did not contain water, but signs indicated that they do so intermittently. They also appeared to be regularly maintained by disking or mowing.

The Service anticipates that the San Joaquin kit fox is reasonably certain to occur in the action area based on the biology and ecology of the species; the presence of suitable habitat for denning and foraging, and known corridors for movement; and the documentation of San Joaquin kit fox sign in the action area.

Effects of the Proposed Action

Habitat Loss and Disturbance

The proposed project is likely to result in a number of adverse effects to the San Joaquin kit fox. Construction work, such as the excavation, filling, and paving activities associated with constructing the new freeway corridor, adding connections to SR 99, improving existing segments of SR 99 and SR 58, and improving the Stockdale Highway/SR 43 intersection will result in the permanent loss of 11.28 ac of suitable habitat for the San Joaquin kit fox; there also will be temporary disturbance to 65.55 ac of suitable habitat due to activities such as grading, staging, and access. Temporary disturbance is defined here as a short-term event in which effects do not degrade the habitat beyond its ability to recover after completion of project construction. Because the project is anticipated to last for significantly longer than one year, the disturbance to habitat areas will be ongoing and therefore the habitat will likely take longer to recover. Therefore, it is reasonable to expect this disturbance to result in harm to the San Joaquin kit fox.

Based on currently available information, there are three potential dens within the project footprint that are likely to be permanently eliminated during construction. If a large number of known or potential dens are identified in the project footprint during preconstruction surveys and require excavation (following appropriate monitoring), their destruction would remove shelter and cover for the species. This would be reasonably likely to adversely affect local San Joaquin kit fox survival by reducing the number and distribution of escape refuges from predators.

To offset the loss of habitat, the City, through participation in the MBHCP, will purchase conservation land that is of commensurate or higher quality to the habitat lost due to project construction, ensuring that the species can continue to breed, feed, shelter, and meet all its life cycle functions. The MBHCP's goal is to acquire, preserve, and enhance large, contiguous native habitats that support listed and sensitive species like the San Joaquin kit fox. The City, in coordination with Caltrans, is also developing the SHP, a comprehensive and extensive conservation plan specifically designed to address habitat loss and effects to the San Joaquin kit fox. The SHP will reduce and minimize the collective construction effects deriving from the six TRIP projects in the metro-Bakersfield area by protecting and enhancing sumps (identified as a crucial habitat type for the urban Bakersfield San Joaquin kit fox population) located throughout the City through easement holdings. Participation in the MBHCP and implementation of the SHP will preserve and enhance suitable San Joaquin kit fox habitat and will contribute to protecting and managing the habitat for the conservation of the species in perpetuity. These lands also will help maintain the geographic distribution of the species and will contribute to the recovery of the species.

Entombment and Strikes

Since suitable denning habitat and potential San Joaquin kit fox dens exist in the action area, it is important that effects are reduced to the greatest extent possible. With the implementation of proposed conservation measures such as preconstruction surveys, den monitoring, exclusion zones, and hand excavation of vacant dens, the risk of crushing or entombing the San Joaquin kit fox in dens (natural and man-made) during groundbreaking activities and construction is not reasonably likely to occur.

The proposed conservation measures are designed to minimize the risk of construction vehicle strikes. Therefore, it is not reasonably likely that the species will be hit by project equipment or vehicles while occupying or moving through the action area.

Road Mortality

Injury and mortality are likely to occur to the San Joaquin kit fox when individuals attempt to cross roads. Each highway and roadway associated with the construction of the new corridor and the accompanying improvements (e.g. SR 99, SR 58, Westside Parkway) is already an existing hazard for this widely ranging, dispersing species, and each highway/roadway will continue to be a hazard for the San Joaquin kit fox. With the creation of the Centennial Corridor, this too will introduce hazards to the species and it is reasonably likely that the species will be struck by vehicles on the new roadway.

However, to reduce the risk of injury and mortality to the San Joaquin kit fox that will stem specifically from vehicle strikes on the new roadway, Caltrans has developed the best available information to incorporate into the project through discussions with the ESRP, the Service, the CDFW, the City, and a previous consultant, AECOM. Using various methods of on-site project design modifications relating to permeability and connectivity, Caltrans has integrated measures believed to present the greatest value to the species in the context of the project. Because the action area is known to be used by the San Joaquin kit fox, and a portion of the new corridor alignment is within a known San Joaquin kit fox concentration area (Cypher, pers. comm., 2009a), the primary objectives of these modifications are to provide opportunities for the San Joaquin kit fox to cross the roadway in spite of construction effects; to minimize the potential for an increase in vehicular injury and mortality (although it is not possible to quantify the extent to which these will be minimized); and to maintain San Joaquin kit fox movement through preserving existing physical corridors such as the Kern River and canals that the species can safely continue to utilize.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The Service is not aware of any future non-Federal actions currently planned specifically in the action area that will further directly affect the San Joaquin kit fox or remove or disturb its habitat.

Conclusion

Conservation measures set forth for implementation before, during, and following project work; project design modifications; and the SHP, which is intended to address the collective effects resulting from this and five other TRIP projects in the metro-Bakersfield area, will all serve to minimize both program- and project-level effects and the extent of take associated with the San Joaquin kit fox. After reviewing the current status of the San Joaquin kit fox, the environmental baseline for the action area for the species, the effects of the proposed project on the species, and the cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of the San Joaquin kit fox.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by FWS regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations

as an act which actually kills or injures wildlife. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described are nondiscretionary, and must be undertaken by Caltrans for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to assume and implement the terms and conditions, or (2) fails to require any of its contractors to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

Amount or Extent of Take

It is infeasible for the Service to quantify the exact number of San Joaquin kit foxes that will be taken as a result of the proposed action because the number of individuals in the action area is unknown and estimates of population density in the action area are unavailable. In instances in which the number of individuals that may be taken cannot be determined, the Service may quantify take in the amount of lost or disturbed habitat as a result of the project action; since take is expected to result from these effects to habitat, the quantification of habitat becomes a direct surrogate for the species that will be taken. Therefore, the Service anticipates take incidental to the project as the 76.83 ac of suitable San Joaquin kit fox habitat that will be lost and disturbed. Dens may be destroyed as a result of project construction and a small number of dens could also be disturbed by activities associated with the SHP. Upon implementation of the *Reasonable and Prudent Measures*, *Terms and Conditions*, and the *Proposed Avoidance and Minimization Measures* considered herein, incidental take within this acreage in the form of harm due to new freeway construction, freeway and intersection improvements, sump activities, and other associated construction work leading to habitat loss and disturbance, as well as den excavation and destruction; and in the form of injury and mortality due to vehicle strikes on the new freeway, will become exempt from the prohibitions described under section 9 of the Act.

Effect of the Take

The Service has determined that the level of anticipated take is not likely to jeopardize the continued existence of the San Joaquin kit fox.

Reasonable and Prudent Measures

The following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed action on the San Joaquin kit fox.

1. All of the conservation measures proposed in the BA, the Draft SHP Plan, the *Project Description*, and as supplemented and modified in the Terms and Conditions below, must be fully implemented.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans, the City, as well as any contractor acting on the City's behalf, must comply with the following Terms and Conditions, which implement the reasonable and prudent measure described above. These Terms and Conditions are nondiscretionary.

The following Terms and Conditions implement Reasonable and Prudent Measure one:

1. Caltrans shall be responsible for implementing all measures described in this biological opinion. Term and Condition 3.b., which applies to contractor activities, shall be conditioned in contracts for the work.

2. In order to promote both effective communication and implementation of the terms and conditions, the lead Service-approved biologist shall meet weekly with the Resident Engineer and contractor to review the week's upcoming ground-disturbing activities - including any possible changes from the project as analyzed in this biological opinion - as well as the measures that will be implemented to minimize effects to listed species. These meetings shall be documented and reported every two weeks to Caltrans; Caltrans in turn will report this information to the Service, as described in Term and Condition 3a.

3. In order to monitor whether the amount or extent of incidental take anticipated from implementation of the project is approached or exceeded, Caltrans shall adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, Caltrans must immediately reinitiate formal consultation as per 50 CFR 402.16.

    a. For those components of the action that will result in habitat loss or degradation whereby incidental take in the form of harm is anticipated, Caltrans shall provide updates every two weeks to the Service with a precise accounting of the total acreage of habitat affected and the number of dens lost. Updates also shall include any information about changes in project implementation that result in habitat disturbance or other effects to the species not described in the *Project Description* and not analyzed in this biological opinion.

    b. For those components of the action that result in direct encounters between listed species and project workers and their equipment whereby incidental take in the

form of harassment, harm, injury, or death is likely, Caltrans shall immediately contact the Service's SFWO at (916) 414-6600 to report the encounter. If an encounter occurs after normal working hours, Caltrans shall contact the SFWO at the earliest possible opportunity the next working day. When injured or killed individuals of the listed species are found, Caltrans shall follow the steps outlined in the *Salvage and Disposition of Individuals* section.

c. Before construction starts on this project, the Service shall be provided with the final documents related to protection of conservation acres, including MBHCP fee payment of habitat conservation acreage. Easement and endowment documentation for each sump included in the SHP will be established following the approval of the FED for the last of the six TRIP projects. The City will fully fund the SHP within one year of that approval.

d. A post-construction report detailing compliance with the project design criteria and proposed conservation measures described under the *Project Description* section of this biological opinion shall be provided to the Service within 60 calendar days of completion of the project. The report shall include: (1) dates of project groundbreaking and completion; (2) pertinent information concerning the success of the project in meeting the conservation measures; (3) an explanation of failure to meet such measures, if any; (4) known project effects on the San Joaquin kit fox, if any; (5) observed incidences of injury to or mortality of the San Joaquin kit fox, if any; (6) the number of dens lost, if any; and, (7) any other pertinent information.

Salvage and Disposition of Individuals

In the case of an injured and/or dead San Joaquin kit fox, the Service shall be notified of events within one day and the animal shall be handled only by a Service-approved biologist. Injured animals shall be cared for by a licensed veterinarian or other Service-approved person. In the case of a dead San Joaquin kit fox, the animal shall be preserved, as appropriate, and shall be bagged and labeled (i.e. species type; who found or reported the incident; when the report was made; when and where the incident occurred; and if possible, cause of death). Carcasses shall be held in a secure location, such as a freezer or cooler, until instructions are received from the Service regarding the disposition of the specimen or until the Service, or another appropriate agency or Service-approved person, takes custody of the specimen. Caltrans must report to the Service within one calendar day any information about take or suspected take of federally-listed species not exempted in this opinion. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal. The Service contacts are Daniel Russell, Deputy Assistant Field Supervisor, Endangered Species Program, Sacramento, at (916) 414-6600 and the Service's Law Enforcement Division at (916) 569-8444.

Any contractor or employee who, during routine operations and maintenance activities inadvertently kills or injures a listed wildlife species must immediately report the incident to his

representative at his contracting/employment firm and to Caltrans. This representative must contact the Service within one calendar day.

CONSERVATION RECOMMENDATIONS

Conservation recommendations are suggestions of the Service regarding discretionary measures to minimize or avoid further adverse effects of a proposed action on listed, proposed, or candidate species or on designated critical habitat, or regarding the development of new information. They may also serve as suggestions on how action agencies can assist species conservation in furtherance of their responsibilities under section 7(a)(1) of the Act, or recommend studies improving an understanding of a species' biology or ecology. Wherever possible, conservation recommendations should be tied to tasks identified in recovery plans. The Service is providing you with the following conservation recommendations:

1. Caltrans should continue to include culverts, tunnels, or other structures along roads and highways, particularly in core and satellite population areas to allow for the safe passage of the San Joaquin kit fox. Crossing structures contribute to creating safe dispersal corridors for multiple wildlife species, and will help reduce wildlife road mortalities and enhance public safety. Caltrans is encouraged to explore designs and include photos, plans, and other information in its BAs concerning the incorporation of wildlife passageway designs into its projects.

2. Caltrans should report new sightings of the San Joaquin kit fox or its dens to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location in which the animals were observed also should be provided to the Service.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes the Service's review of the proposed Centennial Corridor Project, as outlined in your letter. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained or is authorized by law and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or an extent not considered in this biological opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

Please contact Jen Schofield, Fish and Wildlife Biologist, or Thomas Leeman, Chief, San Joaquin Valley Division, at the letterhead address or at (916) 414-6600 if you have any questions regarding this letter.

Sincerely,

Jennifer Norris
Field Supervisor

cc:
Annee Ferranti, California Department of Fish and Wildlife, Fresno, California