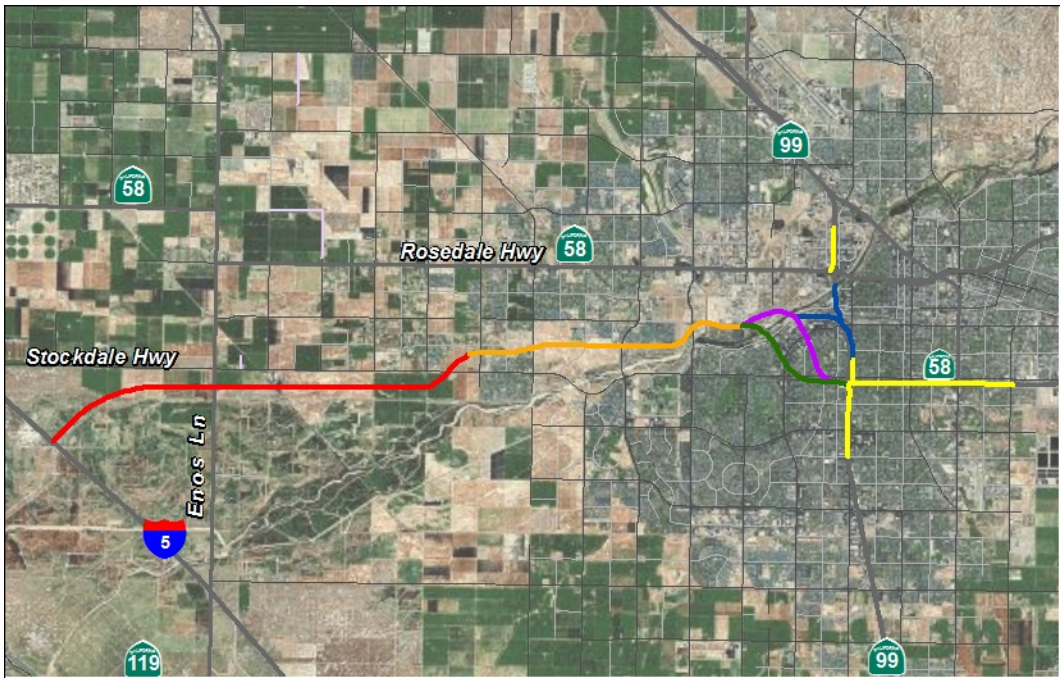
Centennial Corridor Project

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



Caltrans

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.

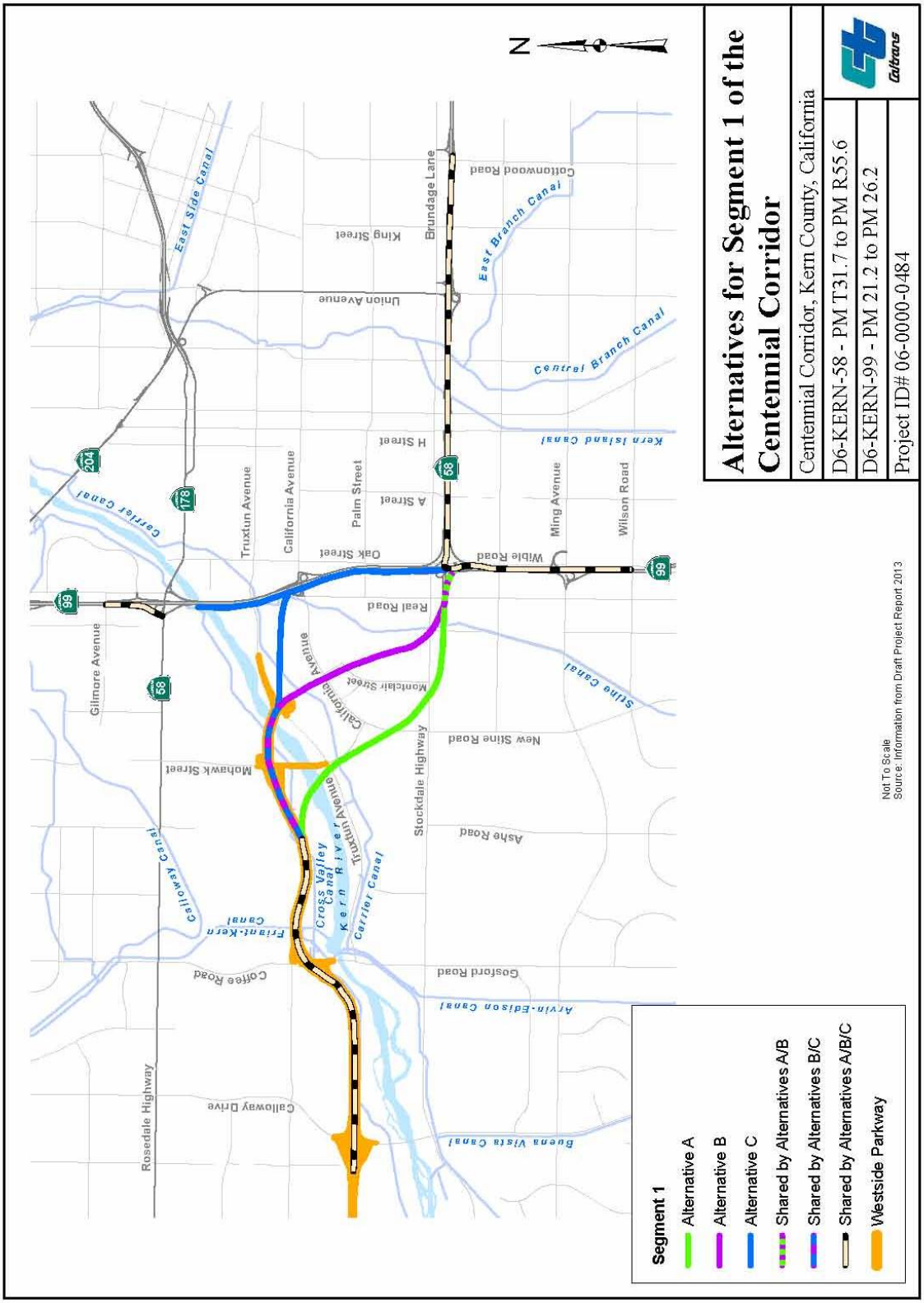

Alternatives for Segment 1 of the Centennial Corridor
Centennial Corridor, Kern County, California
D6-KERN-58 - PM T31.7 to PM R55.6
D6-KERN-99 - PM 21.2 to PM 26.2
Project ID# 06-0000-0484
Caltrans
N
Not To Scale
Source: Information from Draft Project Report 2013
Segment 1
Alternative A
Alternative B
Alternative C
Shared by Alternatives A/B
Shared by Alternatives B/C
Shared by Alternatives A/B/C
Westside Parkway
East Side Canal
King Street
Brundage Lane
Cottonwood Road
East Branch Canal
Union Avenue
Central Branch Canal
Kern Island Canal
H Street
A Street
Palm Street
Truxtun Avenue
California Avenue
Oak Street
Ming Avenue
Wilson Road
Wible Road
Real Road
Gilmore Avenue
Montalvo Street
California Avenue
Stine Canal
New Stine Road
Mohawk Street
Stockdale Highway
Ashe Road
Truxtun Avenue
Cross Valley Canal
Kern River
Carrier Canal
Friant-Kern Canal
Calloway Canal
Coffee Road
Gosford Road
Arvin-Edison Canal
Calloway Drive
Rosedale Highway
Buena Vista Canal
Carrier Canal
204
178
99
58
68

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

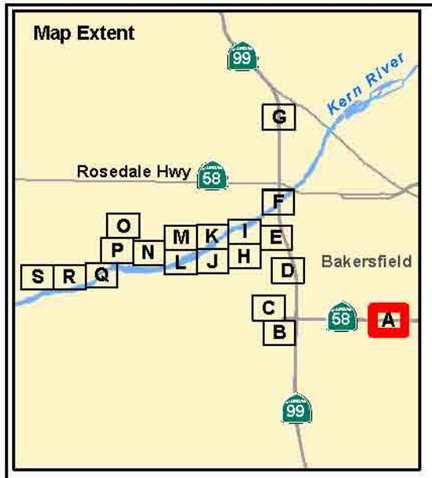
Wetlands Determination: As described in Section 2.0 of this report, an area must exhibit all three wetland parameters, as described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b) and the *1987 Corps of Engineers Wetlands Delineation Manual* (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.



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

200 100 0 200 Feet

1ST ST
L ST
N ST
O ST
P ST
Kern Island Canal
Central Branch Kern Island Canal
BRUNDAGE LN
VERNAL PL
S N ST
RICHLAND ST
DOBRUSKY DR
FIG ST
58
SNYDER LN
BRINK DR
DOBRUSKY DR
PRISCILLA LN
PRISCILLA WAY
S P ST
FERRY ST
REBECCA PL
TERRACE WAY
EL TORO DR
N

Jurisdictional Resources

Centennial Corridor, Kern County, California

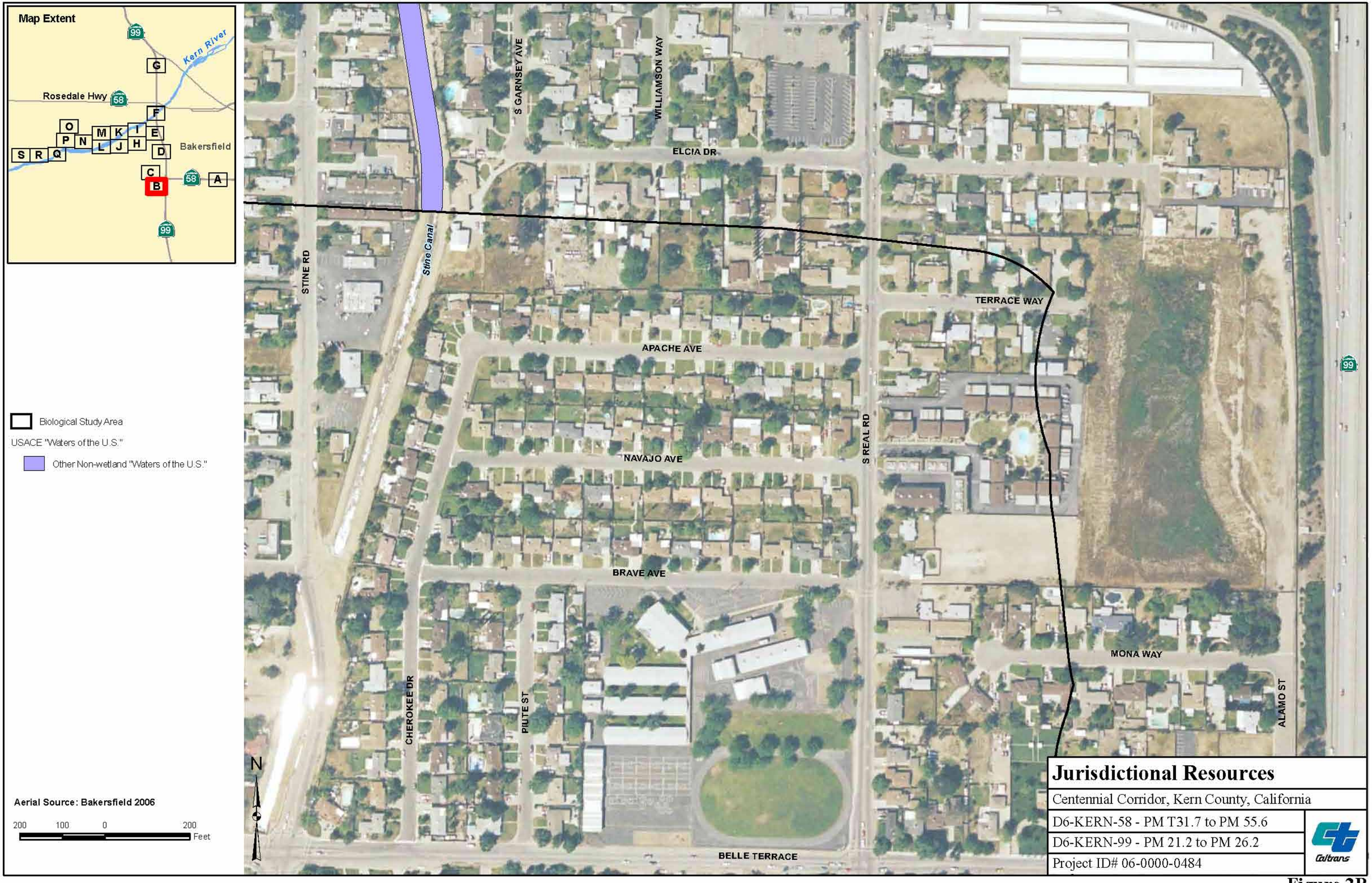
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2A



Jurisdictional Resources

Centennial Corridor, Kern County, California

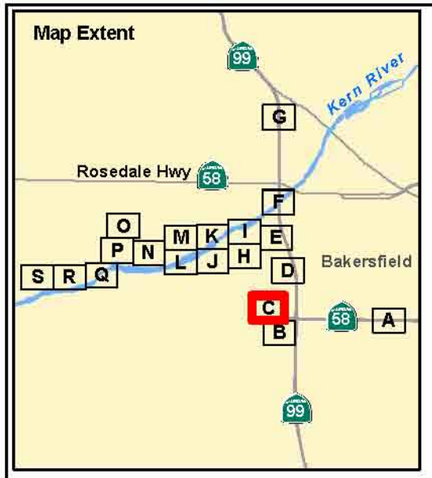
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2B



Biological Study Area

USACE "Waters of the U.S."

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

Aerial Source: Bakersfield 2006

200 100 0 200 Feet

JOSEPH DR
Stine Canal
AMBERWOOD LN
DALEN PL
CANDY ST
DUNLAP ST
N STINE RD
GARNSEY AVE
REAL RD
VERDE ST
FORD AVE
MORRISON ST
STOCKDALE HWY
CURRAN ST
GRIFFITHS ST
JONES ST
STINE RD
WILLIAMSON WAY
S GARNSEY AVE
S REAL RD
PECKHAM AVE
N

Jurisdictional Resources

Centennial Corridor, Kern County, California

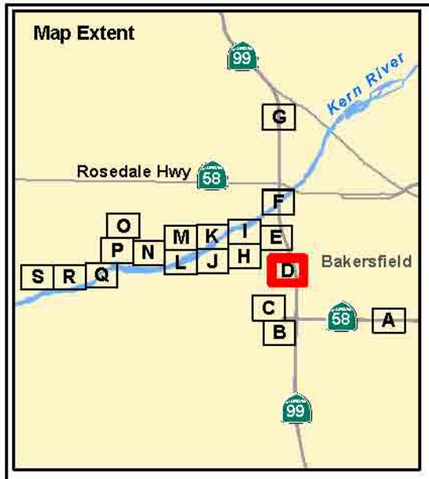
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2C



Biological Study Area

Aerial Source: Bakersfield 2006

200 100 0 200 Feet

N

CHESTER LN

CHESTER LN

CHESTER LN

SAN EMIDIO ST

N STINE RD

PALO VERDE

REAL RD

LOMA VISTA CT

GARNSEY LN

GARNSEY AVE

PALM ST

WESTERN DR

WETHERLEY DR

OAKDALE DR

OAK ST

DRACENA ST

99

Jurisdictional Resources

Centennial Corridor, Kern County, California

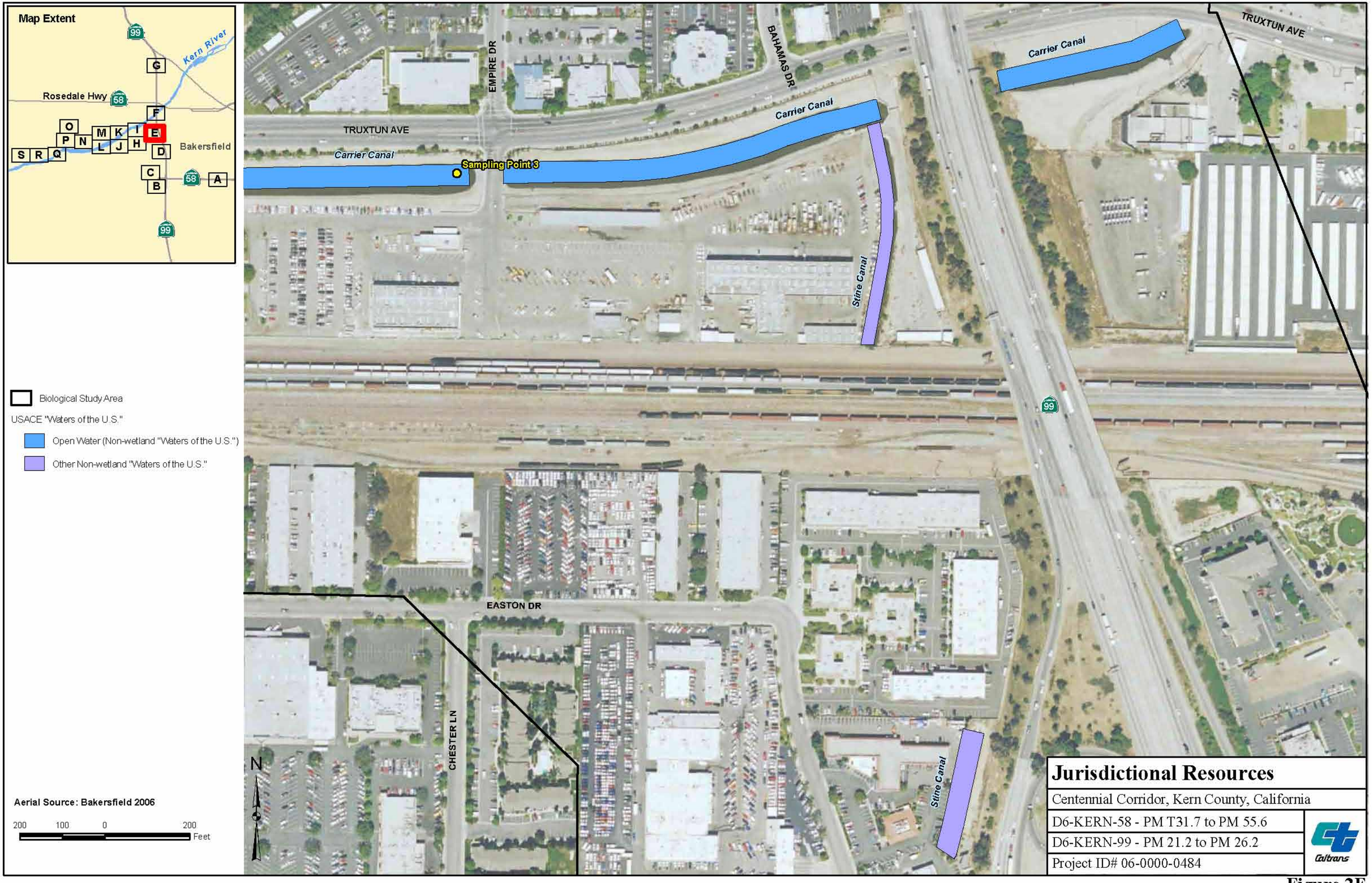
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2D



Jurisdictional Resources

Centennial Corridor, Kern County, California

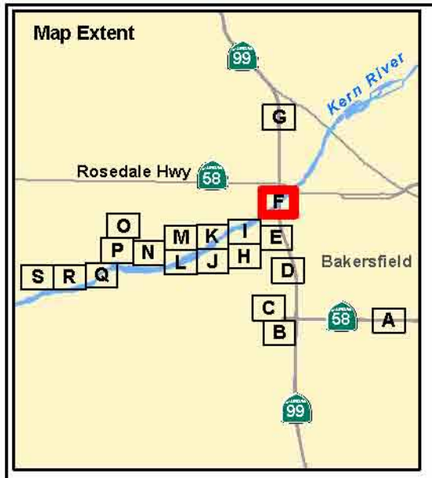
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2E



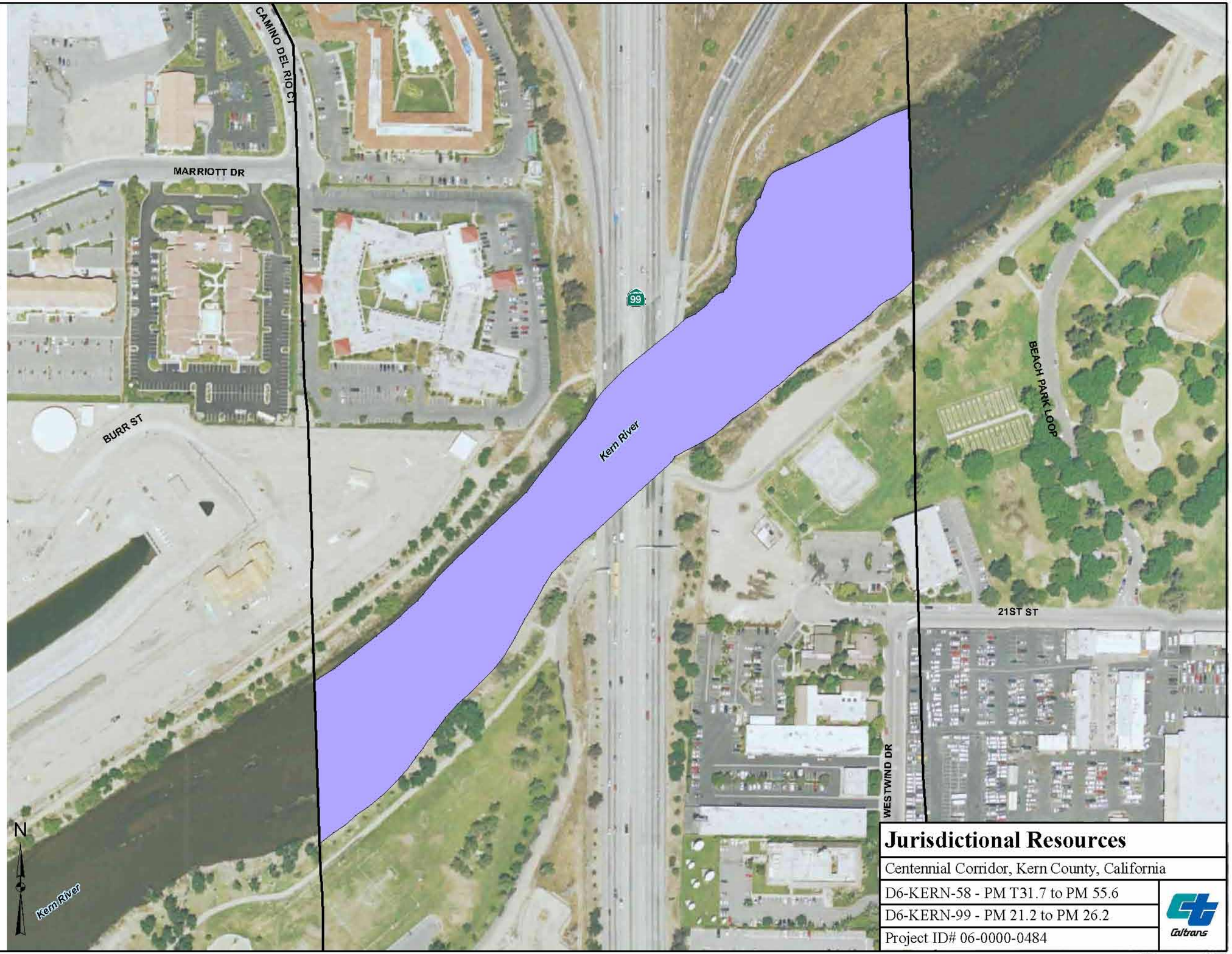
Biological Study Area

USACE "Waters of the U.S."

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

Aerial Source: Bakersfield 2006

200 100 0 200 Feet



Jurisdictional Resources

Centennial Corridor, Kern County, California

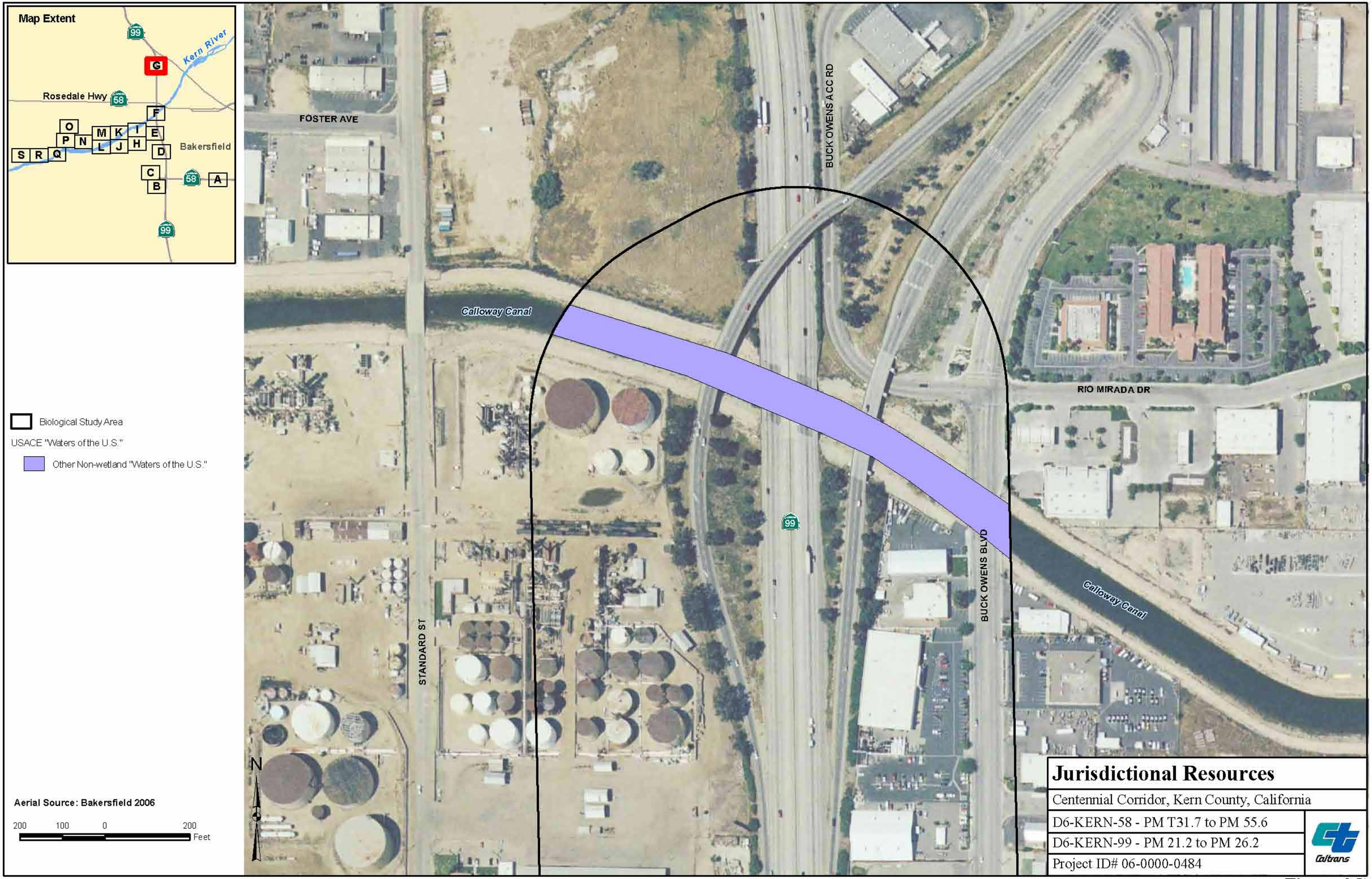
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2F



Jurisdictional Resources

Centennial Corridor, Kern County, California

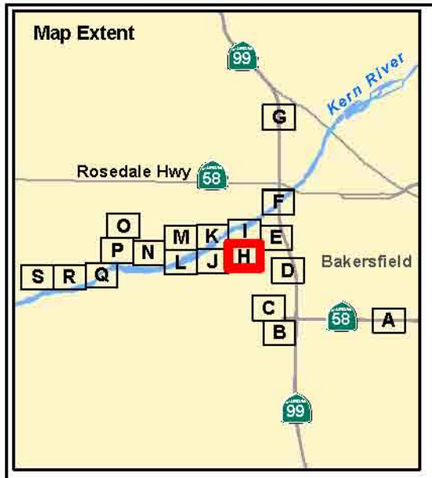
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2G



Biological Study Area

USACE "Waters of the U.S."

Open Water (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

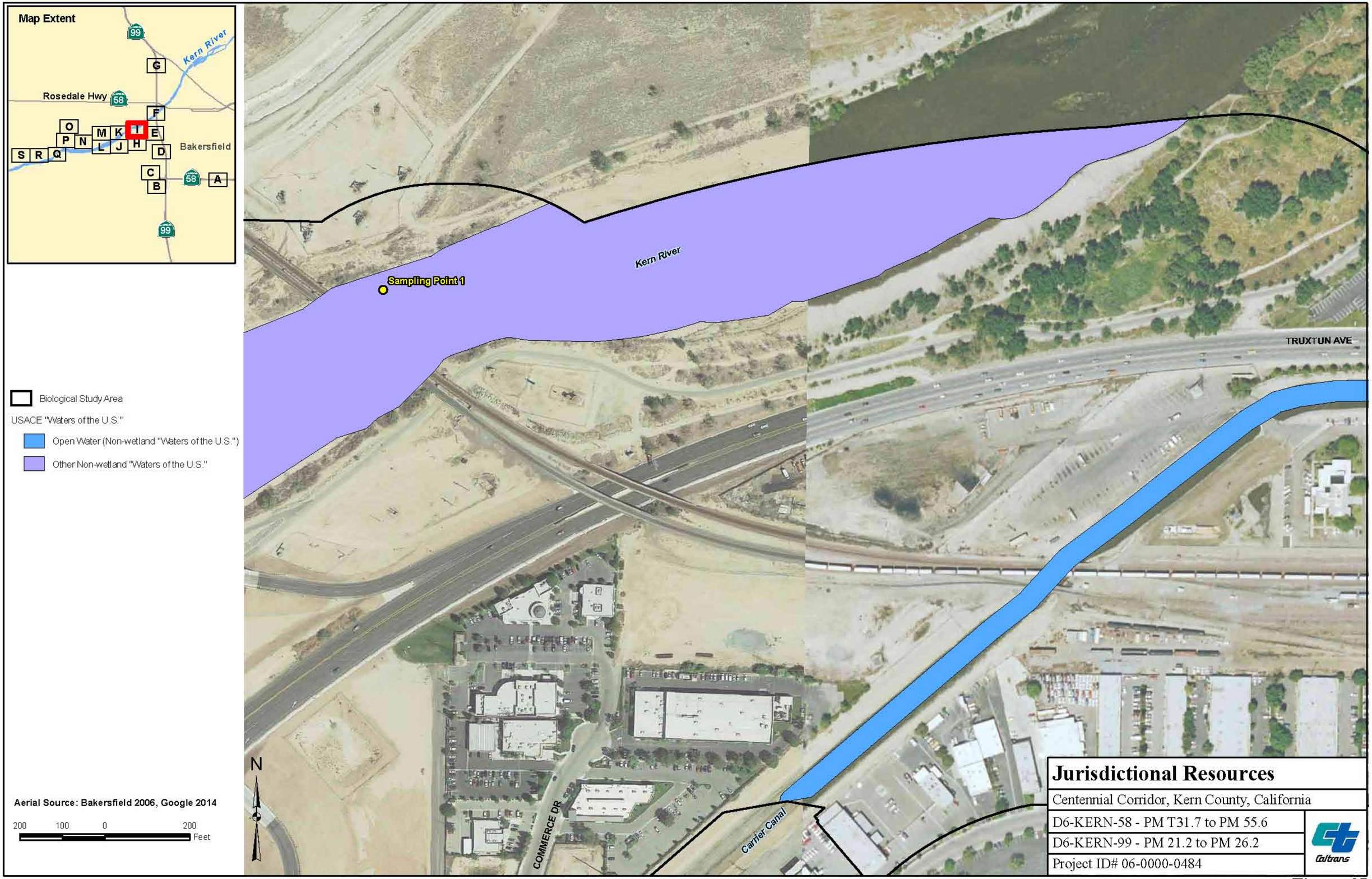
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2H



Jurisdictional Resources

Centennial Corridor, Kern County, California

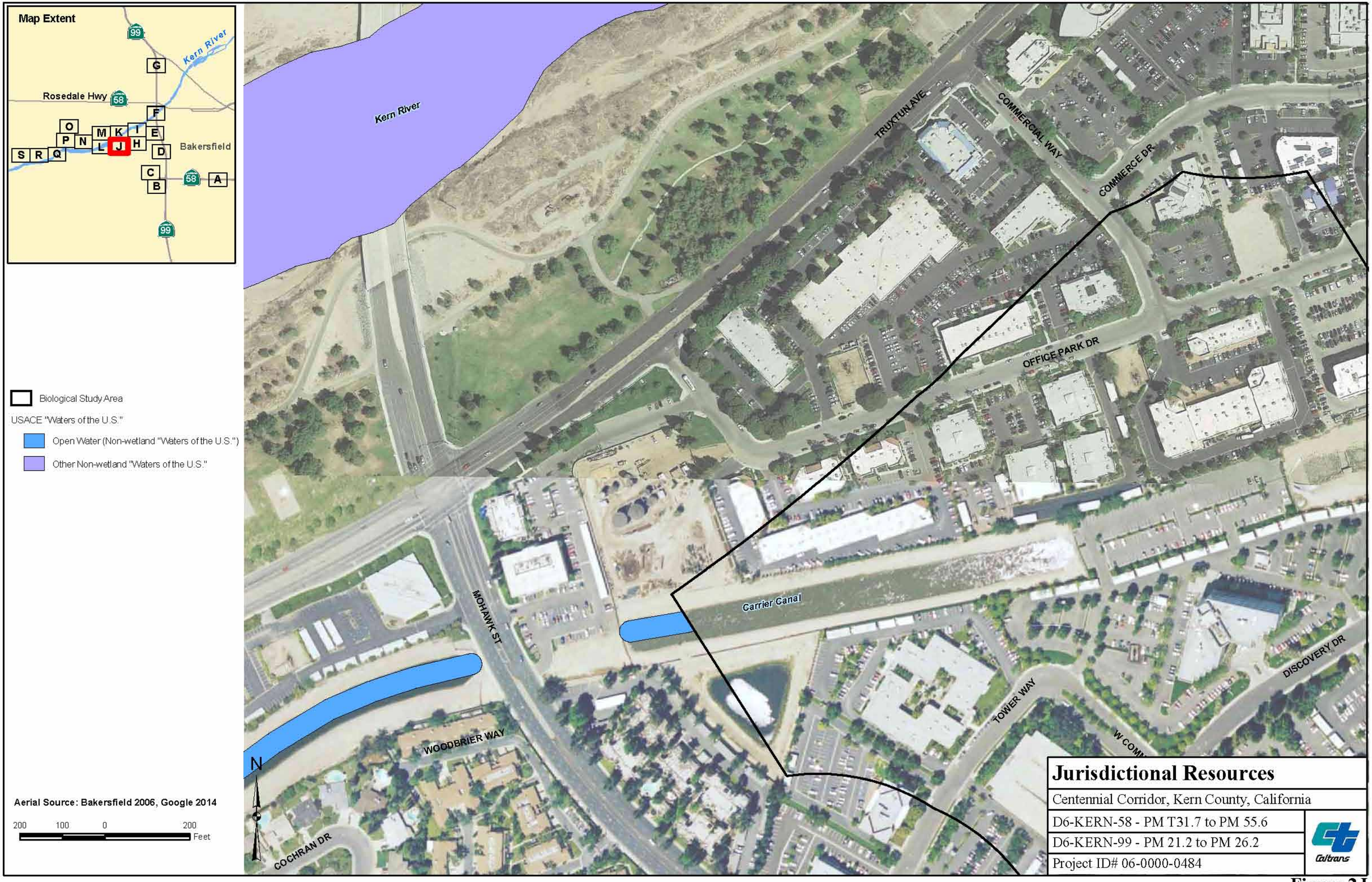
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2I



Jurisdictional Resources

Centennial Corridor, Kern County, California

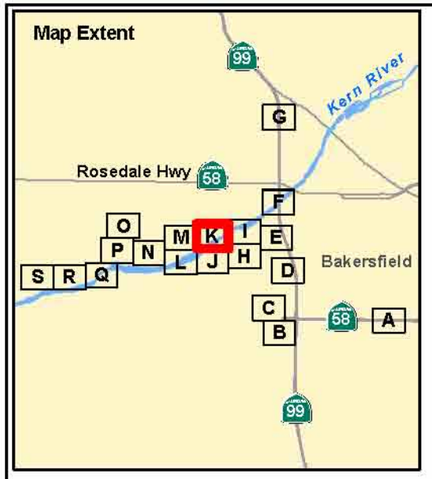
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2J



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

Cross Valley Canal

Sampling Point 2

Kern River

TRUXTUN AVE

Jurisdictional Resources

Centennial Corridor, Kern County, California

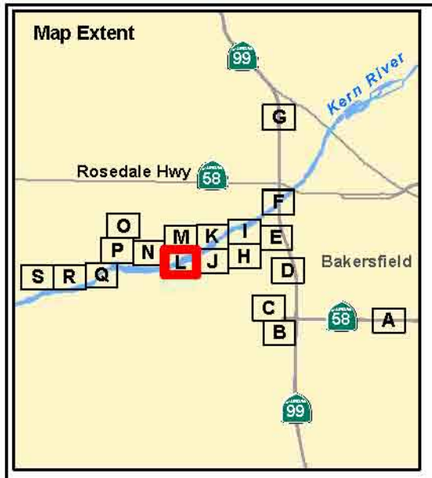
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2K



Biological Study Area

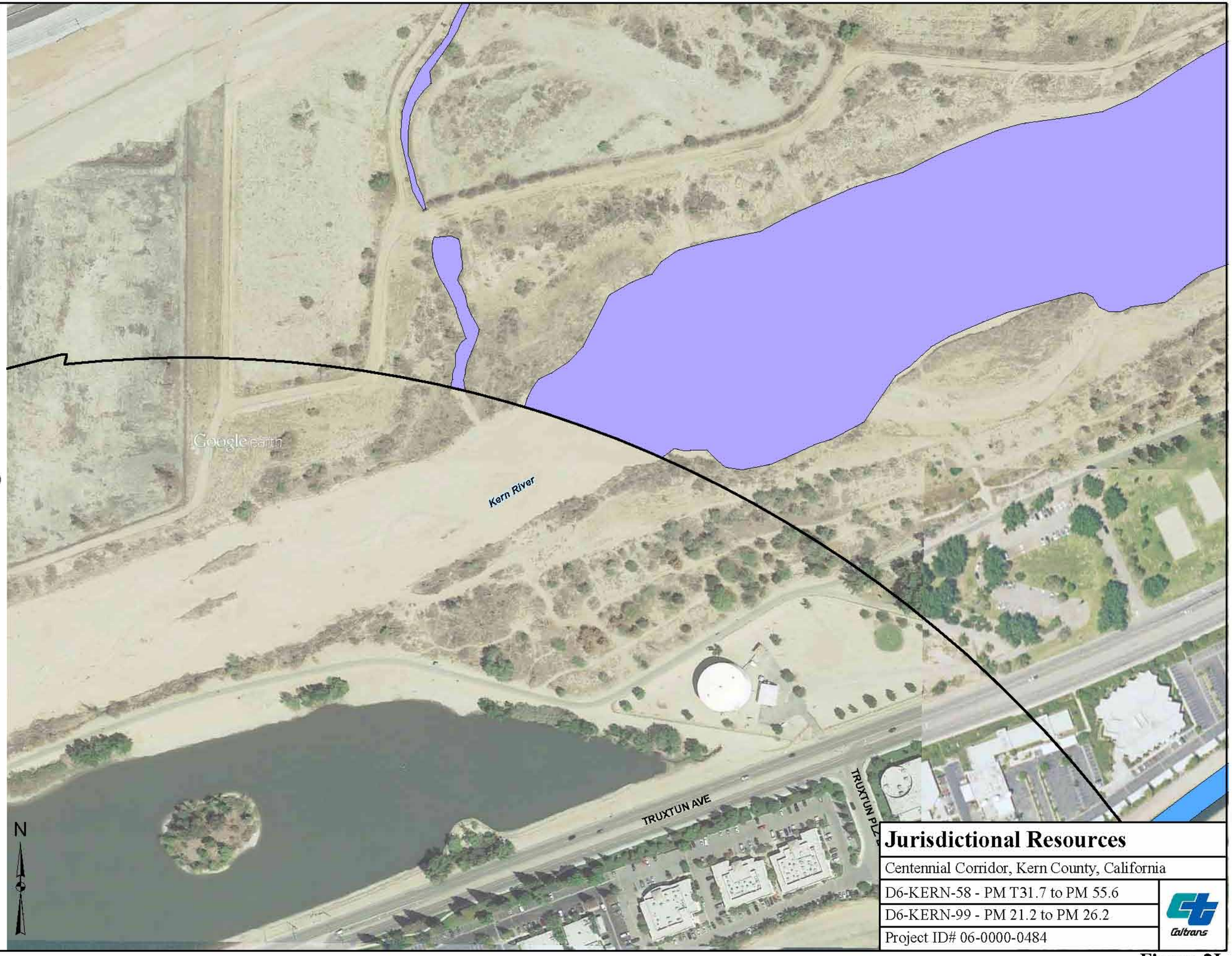
USACE "Waters of the U.S."

Open Water (Non-wetland "Waters of the U.S.")

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

Aerial Source: Google 2014

200 100 0 200 Feet



Jurisdictional Resources

Centennial Corridor, Kern County, California

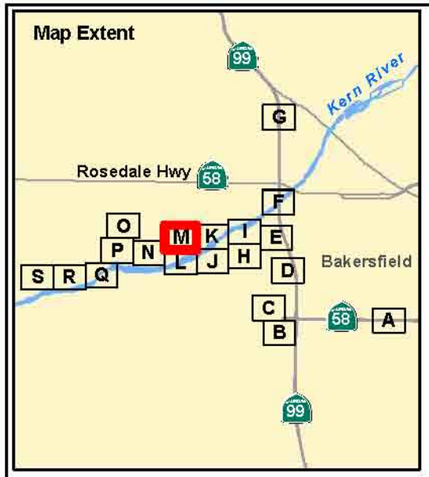
D6-KERN-58 - PM T31.7 to PM 55.6

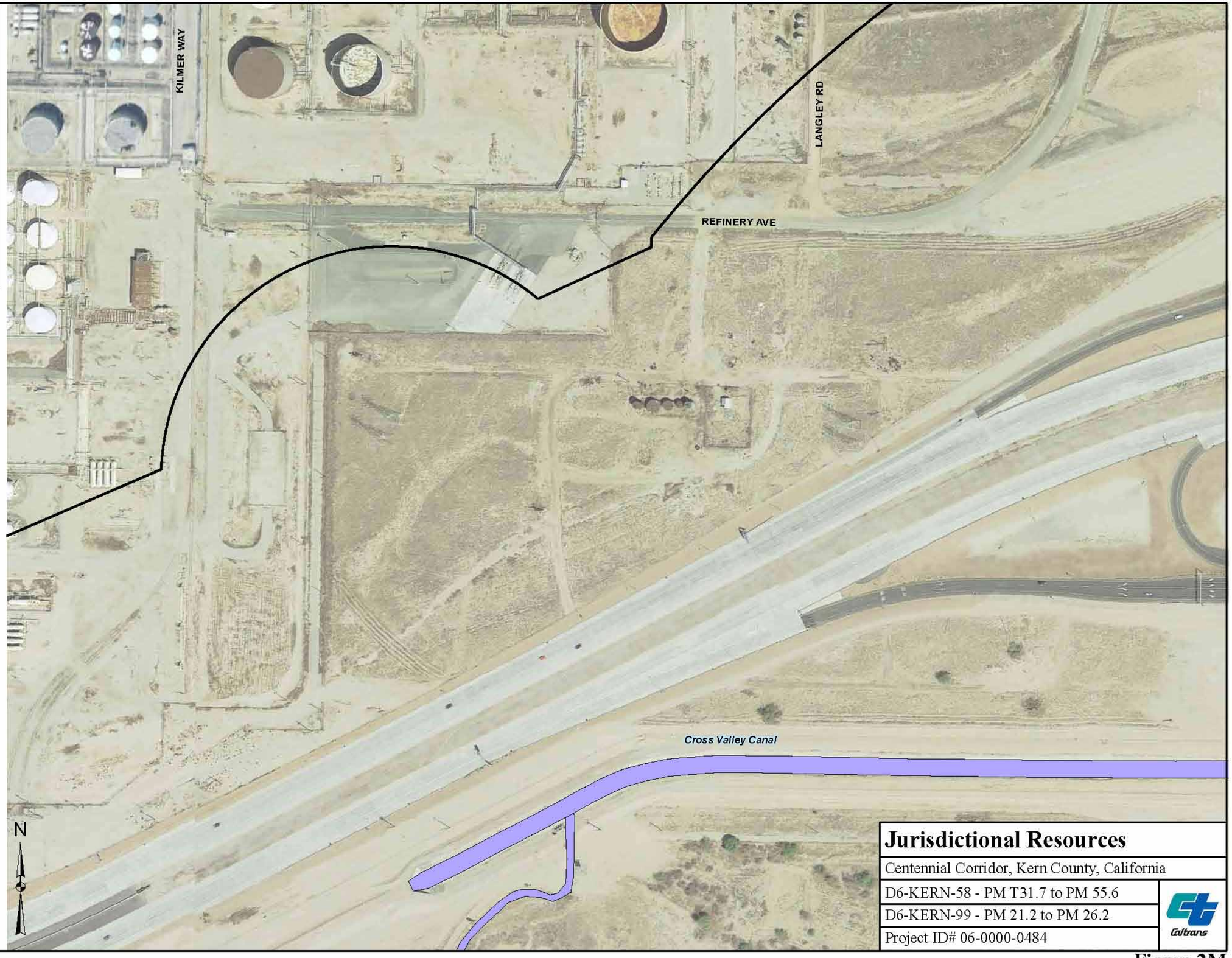
D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2L





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

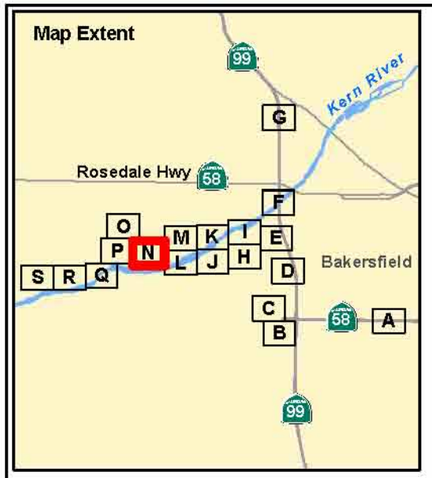
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2M



Biological Study Area

USACE "Waters of the U.S."

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

Cross Valley Canal

N

Aerial Source: Google 2014

200 100 0 200 Feet

Jurisdictional Resources

Centennial Corridor, Kern County, California

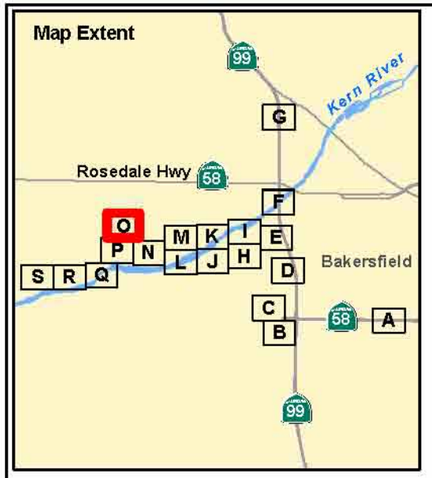
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2N



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

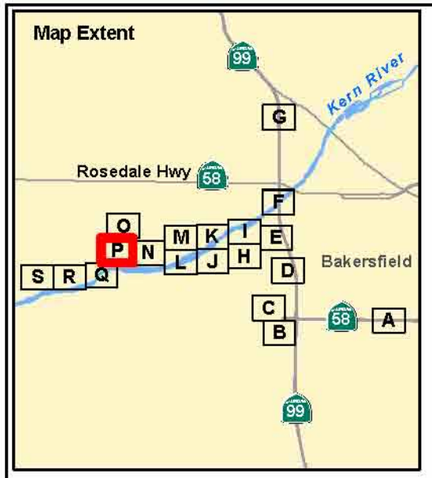
D6-KERN-58 - PM T31.7 to PM 55.6

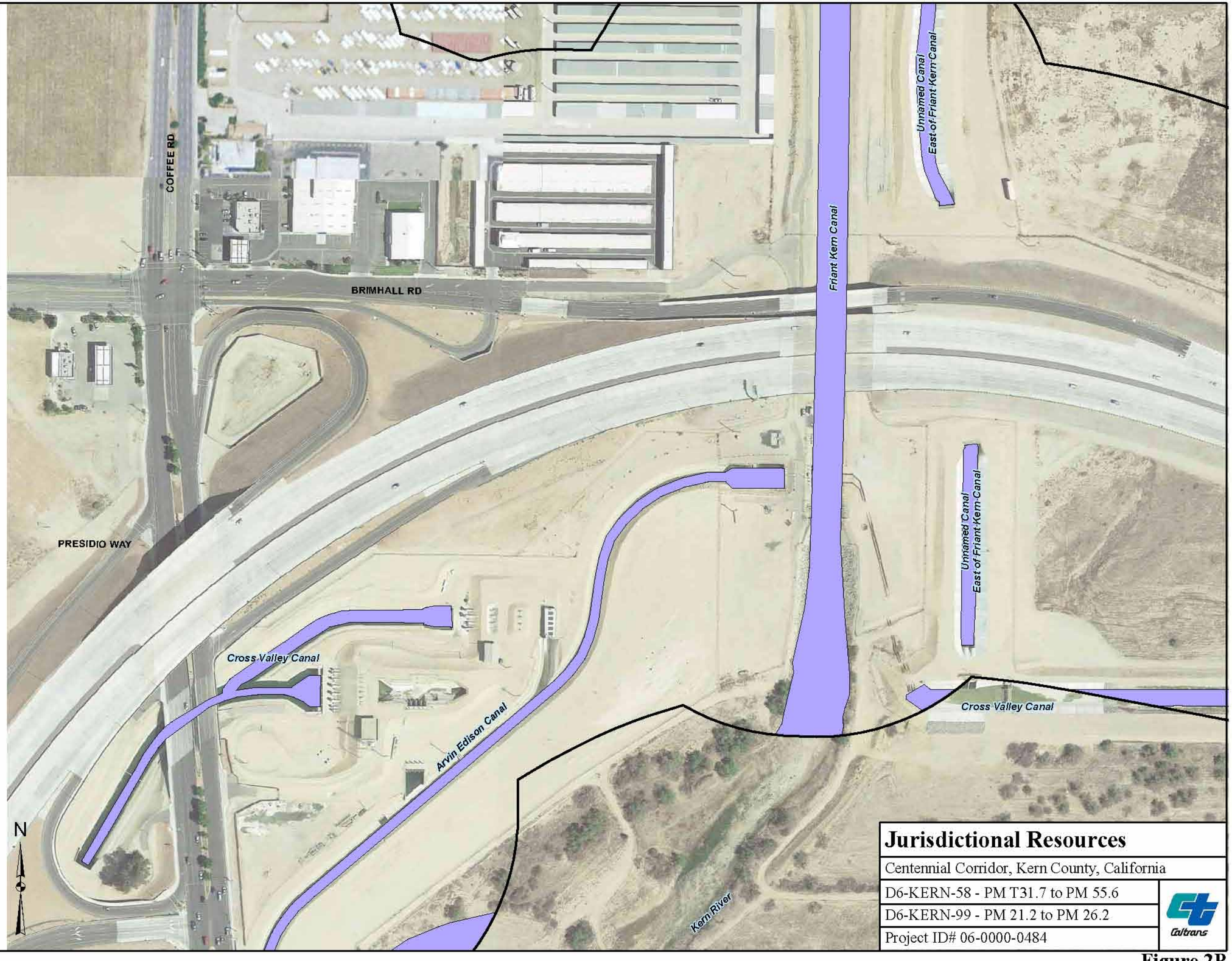
D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2O





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

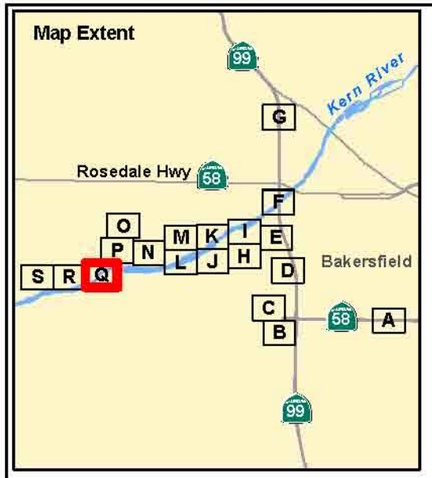
D6-KERN-58 - PM T31.7 to PM 55.6

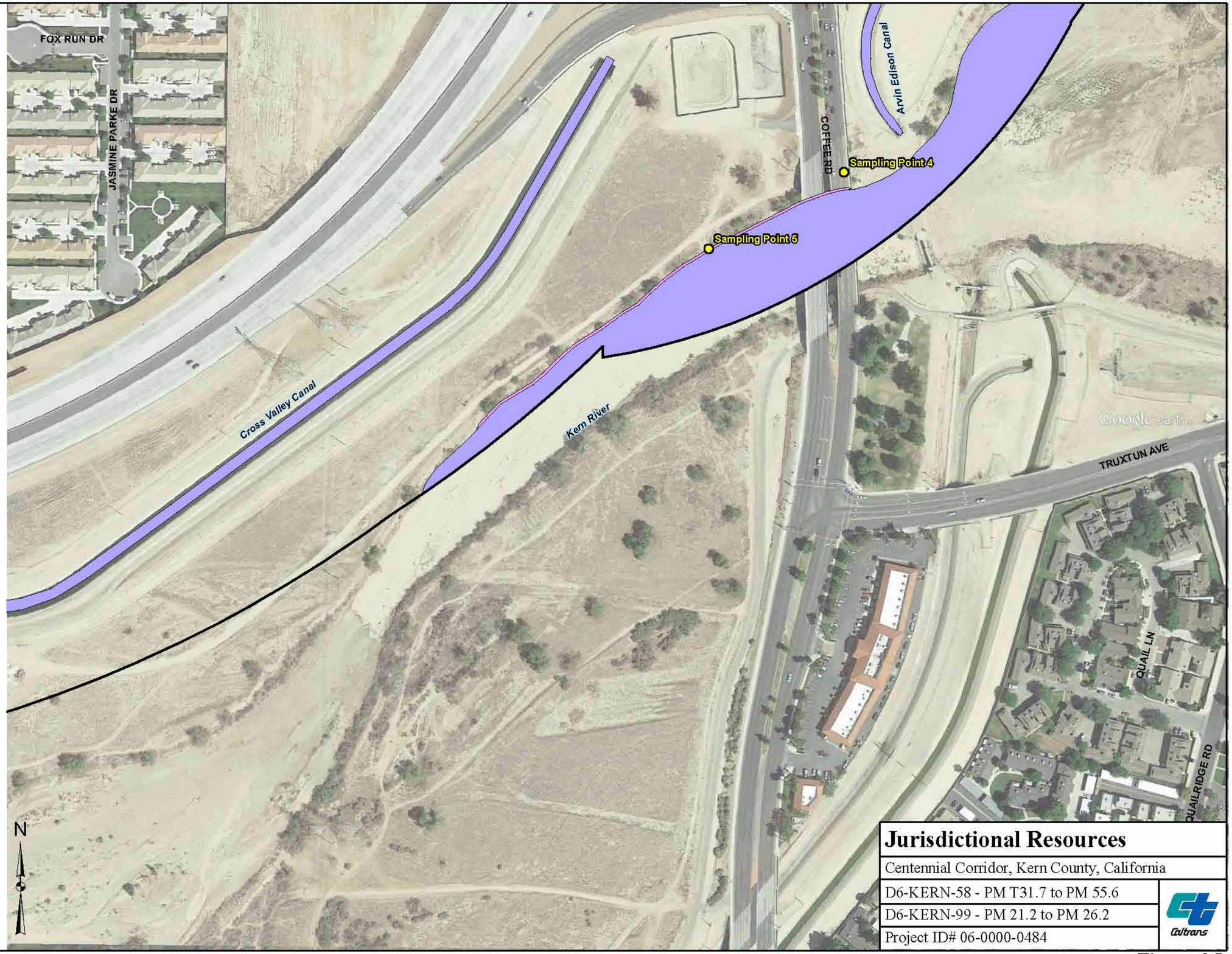
D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2P





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

Jurisdictional Resources

Centennial Corridor, Kern County, California

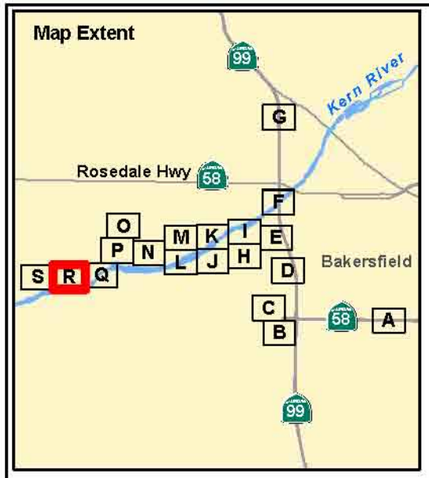
D6-KERN-58 - PM T31.7 to PM 55.6

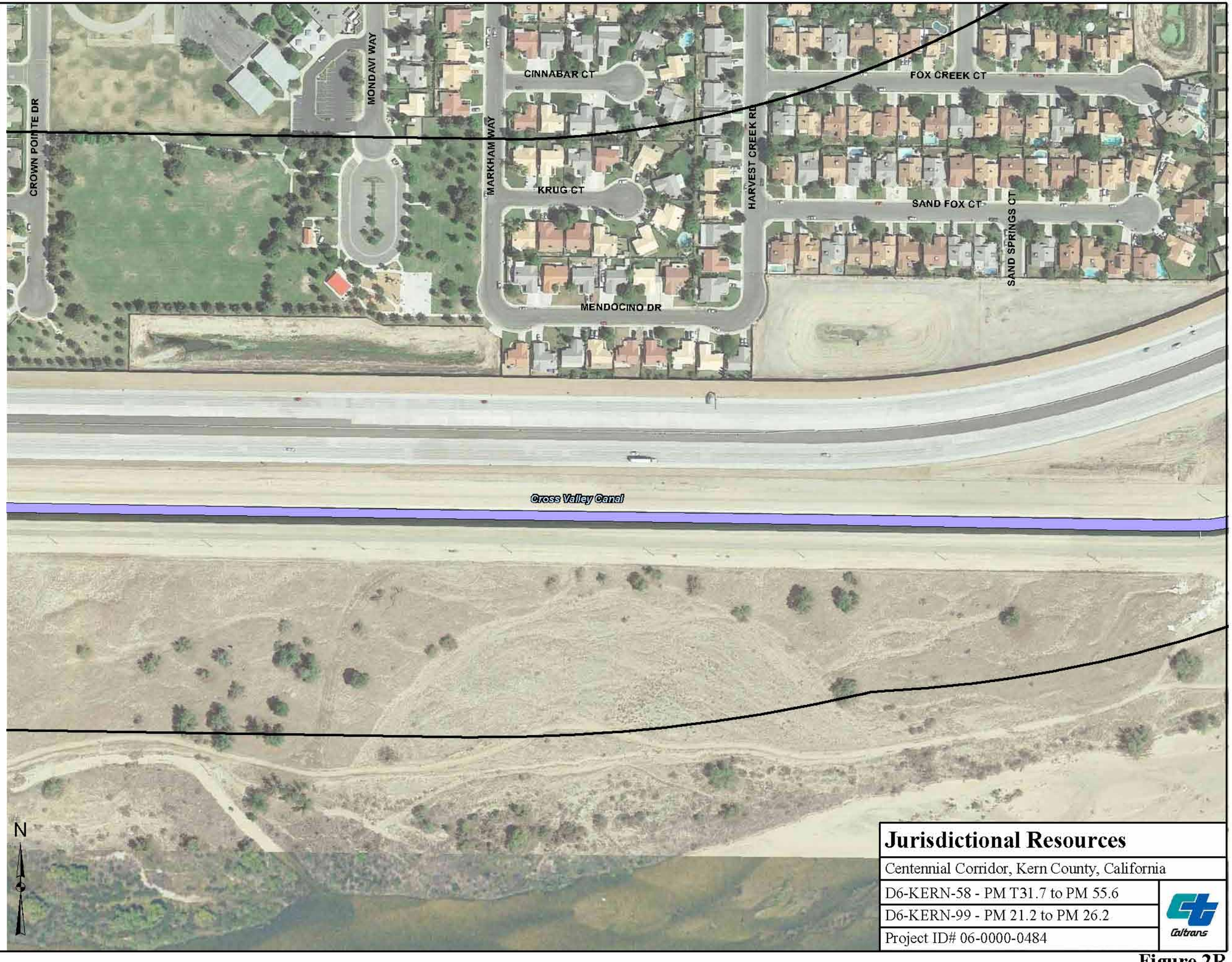
D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2Q





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

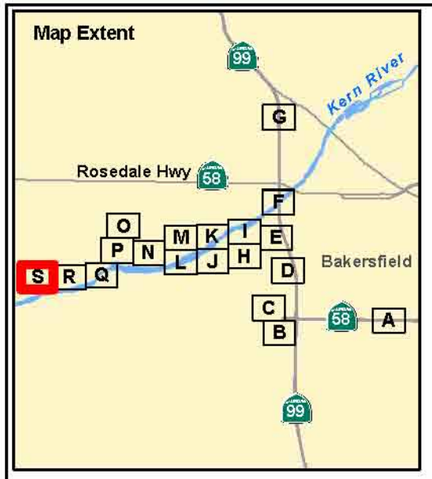
D6-KERN-58 - PM T31.7 to PM 55.6

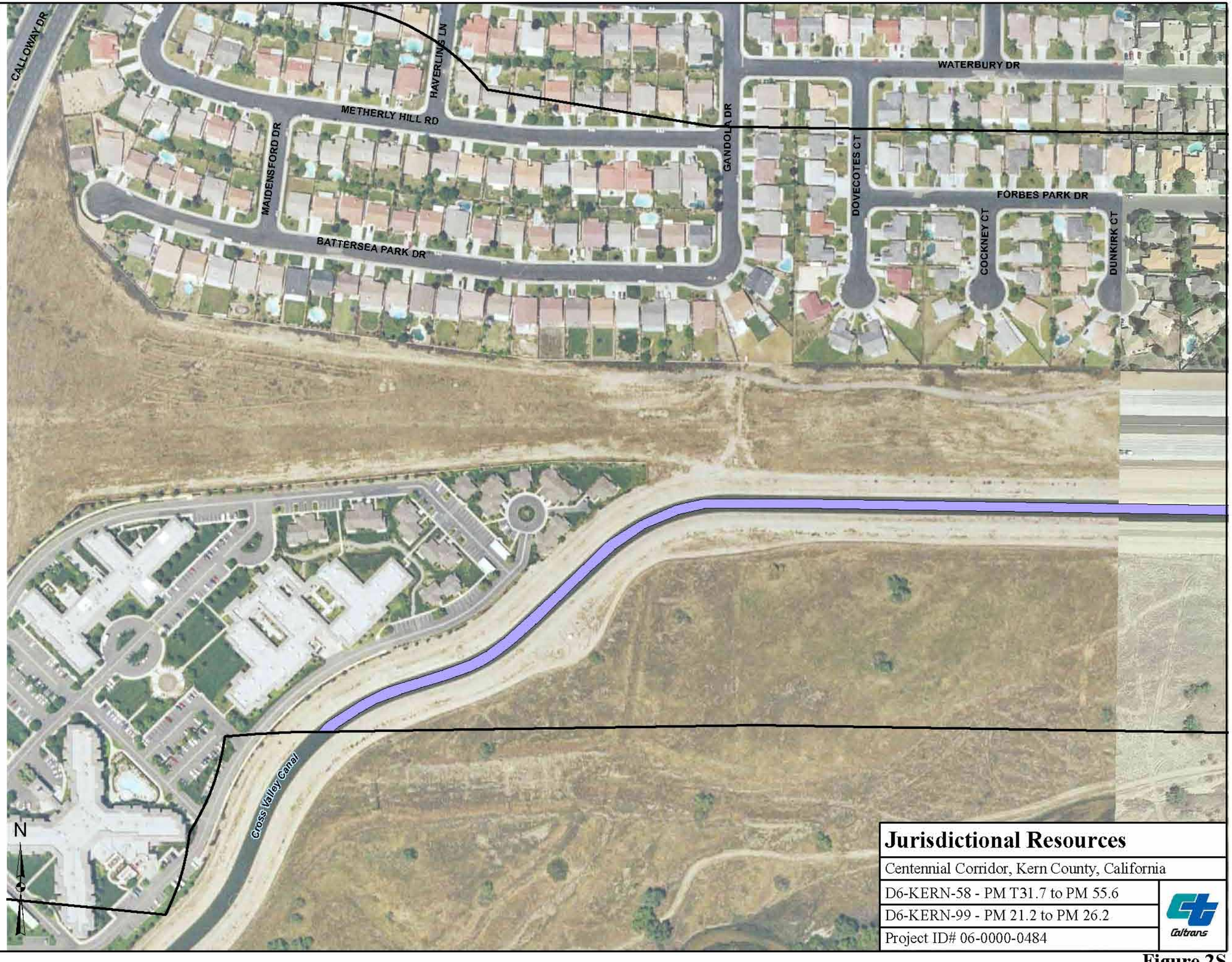
D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2R





Biological Study Area

USACE "Waters of the U.S."

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

Aerial Source: Bakersfield 2006

200 100 0 200 Feet

Jurisdictional Resources

Centennial Corridor, Kern County, California

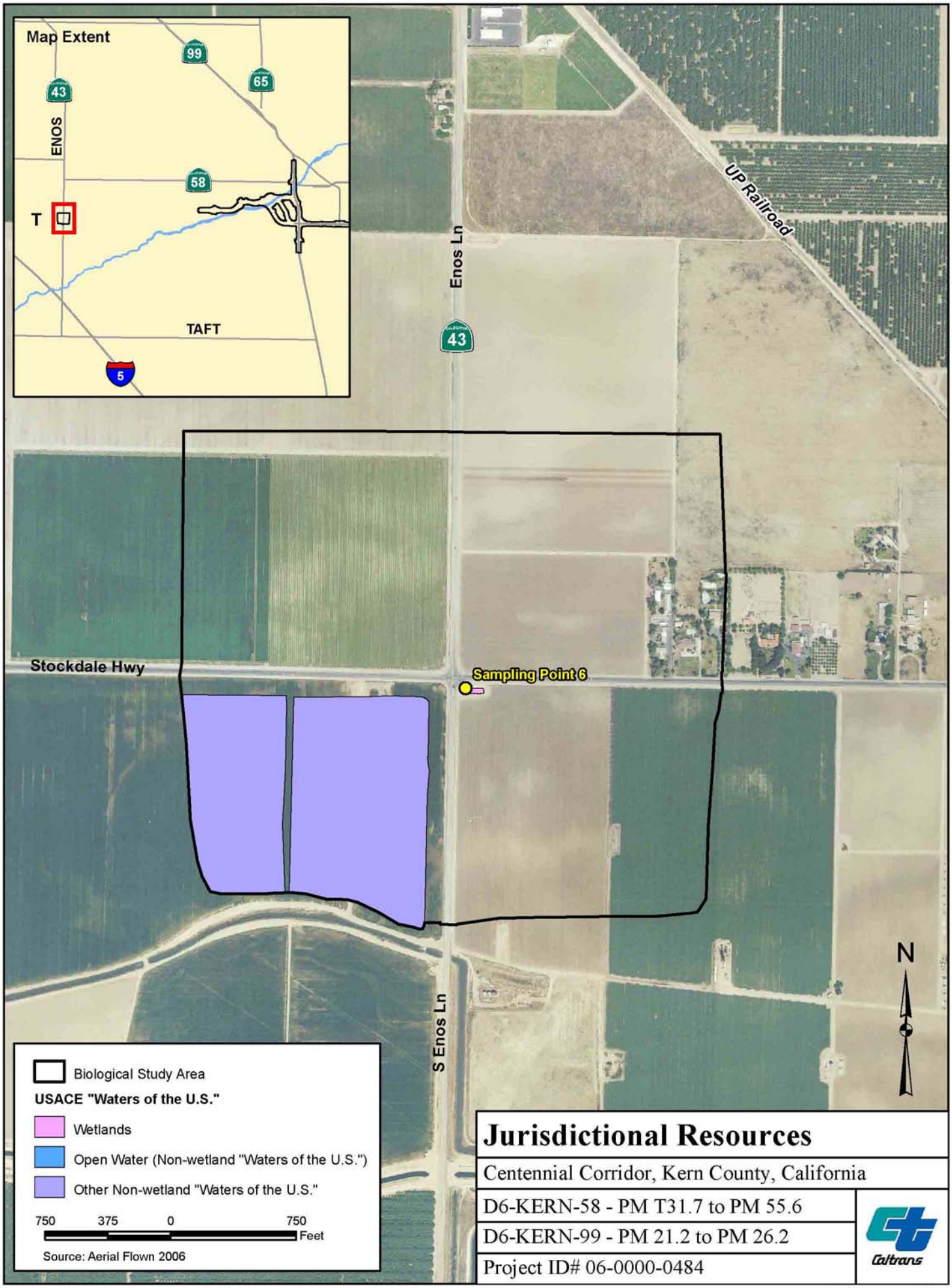
D6-KERN-58 - PM T31.7 to PM 55.6

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Figure 2S



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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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 Features %	Redox Features Type[1]	Redox Features 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: 0 (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)	%	Redox Features Color (moist)	%	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 Rudakevich 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)	%	Redox Features Color (moist)	%	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)	%	Redox Features Color (moist)	%	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)	%	Redox Features Color (moist)	%	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)	%	Redox Features Color (moist)	%	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	Caltrans
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	Caltrans
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

D6-KERN-99 - PM 21.2 to PM 26.2

Project ID# 06-0000-0484

Caltrans

Attachment C

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-wetlanc

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
- ☐ Previous determination(s). File no. and date of response letter:
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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.