PROVOST&PRITCHARD
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MEMORANDUM

To:	Steph Thisius North of the River Recreation & Park District
From:	Jenny McCarthy
Subject:	Biological Desktop Review for Parcel Merger, Zone Change, and Annexation Assistance for Austin Creek Park
Date:	January 21, 2026

PROJECT BACKGROUND AND LOCATION

North of the River Recreation & Parks District (District) is applying for a parcel merger, zone change, and annexation for the future creation of Austin Creek Park. These parcels (APN 529-012-10 and 529-012-11) are located at the northeast corner of Austin Creek Ave. and Jenkins Rd. in Bakersfield, California. The parcels total approximately 9.3 acres and are currently under the District's service and the City's sphere of influence, with the goal to incorporate the parcels into the City of Bakersfield jurisdiction. See Appendix A for a map of the project site.

STUDY METHODOLOGY

Provost & Pritchard Consulting Group biologist, Jenny McCarthy, conducted a desktop analysis of potential Project-related impacts to biological resources based on the resources known to occur, or with potential to occur, within the Project site. Sources of information used in preparation of this analysis included: CDFW's California Natural Diversity Database (CNDDB; see Appendix B for the species list) and California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; Jepson Herbarium's online database (i.e., Jepson eFlora); United States Fish and Wildlife Service's (USFWS) Environmental Conservation Online System (ECOS), Information for Planning and Consultation (IPaC; see Appendix C for the species list) system, and National Wetlands Inventory (NWI); iNaturalist; NatureServe Explorer's online database; United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) Web Soil Survey, California Herps website; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region. No field survey was conducted. The assessment of habitats within the site was completed utilizing satellite and historical imagery. Recommendations were then developed to avoid any potential impacts to protected resources that may occur on or near the site.

EXISTING CONDITIONS

As follows are details on the topography, climate, waters, soils, and biotic habitats of the site.

TOPOGRAPHY

The Project site is located within the United States Geological Survey *Rosedale* 7.5-minute quadrangles. The Project site is located in the southeast and southwest section corner of Section 29, Township 26 south, Range 21 East, in the center portion of Kern County. The topography within the site is relatively flat, with elevations of approximately 365 feet above mean sea level.

CLIMATE

Like most of California, the site experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. In the summer, average high temperatures range between 91- and 99 degrees Fahrenheit (°F), but do not often exceed 105 °F, and the humidity is generally low. Winter temperatures are often below 41°F during the day and rarely exceed 66°F. On average, the City of Bakersfield receives approximately 7 inches of precipitation in the form of rain yearly, most of which occurs between October and May, (Weather Spark) and the site would be expected to receive similar amounts of precipitation.

WATERS

The nearest surface water feature is a stormwater basin that is adjacent to the Project site on Jenkins Rd. and will not be impacted by project activities.

SOILS

Two soil mapping units representing one soil type were identified within the Project sites (see Appendix D for the Web Soil Survey Report). The soil was Milham which contained sandy loam and 0 to 2 percent slopes MLRA 17. This soil is well drained with medium runoff, moderate to slow permeability, and is predominantly non-hydric according to the Major Land Resource Area of California. This soil is used for wildlife habitat, livestock grazing, and row crops.

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions, hydrophytic vegetation can be supported. Hydric soil ratings are derived from specific soil properties as well as climate, parent material, vegetation, landform type, and biological activity of a certain location. Both of the major soil mapping units and minor soil units located on the Project sites were identified as non-hydric.

BIOTIC HABITAT

The Project site appears to consist mostly of an agricultural field and ruderal field habitat. A majority of the project would take place in an agricultural field that contains a pre-existing dirt road along the perimeter of the agricultural field. Adjacent to the agricultural field is a ruderal field that appears to contain scattered shrubs throughout the habitat. The agricultural field and ruderal field could provide foraging habitat for songbirds, such as white-crowned sparrow (*Zonotrichia leucophrys*) and house finch (*Haemorhous mexicanus*), and nesting habitat for ground-nesting birds such as horned lark (*Eremophila alpestris*) and killdeer (*Charadrius vociferus*). Both fields could also provide foraging habitat for nocturnal species such as striped skunk (*Mephitis mephitis*) and coyote (*Canis latrans*).

SENSITIVE RESOURCES

As follows are details on the special status species, migratory birds, designated habitat and communities, and wildlife movement corridors, and native wildlife nursery sites that could be impacted by Project-related activities.

SPECIAL STATUS SPECIES

A query of the CNDDB for occurrences of special status plant and animal species was conducted for the *Rosedale* USGS 7.5-Minute quadrangle and for the eight surrounding USGS quadrangles*: Rio Bravo, Oildale, Tupman, Stevens, North of Oildale, Famoso, Gosford, and Wasco* A query of the IPaC was also completed for the site and their potential to occur within the site These species are listed in
below.

Table 1: List of Special Status Plants with Potential to Occur on the Site and/or in the Vicinity

Species	Status*	Habitat	Occurrence within the Site
Alkali mariposa-lily (*Calochortus striatus*	CNPS 1B	Found in the Sierra Nevada foothills, the Desert Mountains, and the Mojave Desert in alkaline meadows, ephemeral washes, and moist creosote-bush scrub in chaparral, alkali scrub communities, meadows, and seeps. Found at elevations between 200 and 500 feet. Sometimes associated with vernal pools. Blooms April – June.	**Absent**. The required habitat is absent from the Project site.
Alkali-sink goldfields (Lasthenia chrysantha)	CNPS 1B	Found growing in alkali soils in the San Joaquin Valley and throughout the Delta-Bay region of California in low and flooded areas at elevations below 200 feet. Blooms March – June.	**Absent**. The Project site is outside the elevational range of this species.
Bakersfield cactus (*Opuntia basilaris* var. *treleasei*)	FE, CE, CNPS 1B	Found in coarse or cobbly well-drained granitic sand within grasslands at elevations between 350 and 500 feet. Blooms March – April.	**Absent.** The required habitat is absent from the Project site.
Bakersfield smallscale (*Atriplex tularensis*)	CE, CNPS 1A	Historically found in the southernmost portion of the San Joaquin Valley in valley sink scrub habitat and associated with saltgrass. Grows at elevations between 250 and 700 feet. Blooms June – October.	**Absent.** The required habitat is absent from the Project site.
California jewelflower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and western Transverse Ranges in sandy soils. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 200 and 6,100 feet. Blooms February – April.	**Absent.** The required habitat is absent from the Project site.
California satintail (*Imperata brevifolia*)	CNPS 2B	Often found in wet springs, meadows, streambanks, and floodplains, and can also be found in coastal scrub, riparian scrub, Mojavean desert scrub, chaparral, and alkali seeps at elevations below 1,600 feet. Blooms September – May.	**Absent.** The required habitat is absent from the Project site.
Heartscale (*Atriplex cordulata* var. *cordulata*)	CNPS 1B	Found in the Central Valley in saline or alkaline soils within shadscale scrub, valley grassland, and wetland-riparian communities at elevations below 250 feet. Blooms June – July.	**Absent.** The required habitat is absent from the Project site.

Species	Status*	Habitat	Occurrence within the Site
Hispid salty bird's-beak (*Chloropyron molle* ssp. *hispidum*)	CNPS 1B	Grows in the damp, alkali soils of meadows, playas, and sinks in the San Joaquin Valley and Delta-Bay region of California. Found at elevations below 450 feet. Blooms June – July.	**Absent.** The required habitat is absent from the Project site.
Horn's milk-vetch (*Astralagus hornii* var. *hornii*)	CNPS 1B	This facultative species is most frequently found in the San Joaquin Valley and foothills of the Sierra Nevada in the alkali soils of lake margins, meadows, seeps, and playas at elevations between 200 and 1,000 feet. Blooms May – September.	**Absent.** The required habitat is absent from the Project site.
Kern mallow (*Eremalche parryi* ssp. *kernensis*)	FE, CNPS 1B	Occurs in the San Joaquin Valley and the Southern Inner Coast Ranges in eroded hillsides and alkali flats and often on dry, open, sandy to clay soils and within alkali scrub communities at elevations between 200 and 4,300 feet. Blooms March – May.	**Absent.** The required habitat and soil are absent from the Project site.
Mason's neststraw (*Stylocline masonii*)	CNPS 1B	Occurs in a variety of habitats across central California: from the coastal range to the foothills of the Sierra Nevada. Found in chenopod scrub and woodland habitats at elevations between 300 and 4,000 feet. Blooms March – June.	**Absent.** The required habitat is absent from the Project site.
Oil neststraw (*Stylocline citroleum*)	CNPS 1B	Occurs in valley and foothill areas of central and southern California in oil-producing areas. Grows in clay soils at elevations between 150 and 1,000 feet. Blooms March – April.	**Absent.** The required habitat and soil are absent from the Project site.
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in chenopod scrub, cismontane woodland, and grassland habitats on poorly drained, fine, alkaline soils; often in valley saltbush or valley chenopod scrub communities at elevations between 100 and 2,600 feet. Blooms March – June.	**Absent.** The required habitat and soil are absent from the Project site.
San Joaquin woollythreads (*Monolopia congdonii*)	FE, CNPS 1B	Occurs in the San Joaquin Valley in sandy soils on alkaline or loamy plains in valley and foothill grassland and alkali scrub communities at elevations between 150 and 2,800 feet. Blooms February – May.	**Absent.** The required habitat and soil are absent from the Project site.

Species	Status*	Habitat	Occurrence within the Site
Slough thistle (*Cirsium crassicaule*)	CNPS 1B	Found in the San Joaquin Valley in freshwater sloughs, marshes, and riverbanks at elevations below 300 feet. Blooms March – June.	**Absent.** The Project site is outside of the elevational range of this species.
Tejon poppy (*Eschscholzia lemmonii* ssp. *kernensis*)	CNPS 1B	Occurs in the grasslands of the southern portion of the San Joaquin Valley and the foothills of the Transverse Ranges at elevations between 650 and 3,300 feet. However, observations in the vicinity are well above this range, at up to 5,300 feet. Blooms March – May.	**Absent.** The Project site is outside of the elevational range of this species.

Table 2: List of Special Status Animals with Potential to Occur on the Site and/or in the Vicinity

Species	Status*	Habitat	Occurrence within the Site
American badger (*Taxidea taxus*)	CSSC	Prefers drier open stages of shrub, forest, and herbaceous habitats with friable soils to burrow, but can be found within numerous habitats throughout California, including the margins of agricultural lands. Needs a sufficient prey base of burrowing rodents.	**Unlikely.** This species may pass through the area but is unlikely to den within the Project site due to the lack of suitable habitat. The most recent recorded observation occurred 6.5 miles north-northeast of the Project site in 2025.
Bakersfield legless lizard (*Anniella grinnelli*)	CSSC	Can be found burrowing in moist, sandy soil within grassland, sand/dune, or chaparral habitats. Fallen logs, woody debris, and leaf litter under trees and bushes in sunny areas often indicate suitable habitat. The current known range is restricted to the east side of the Carrizo Plain and within the city limits of Bakersfield.	**Absent.** No suitable habitat is visible within the Project site.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Occurs in the San Joaquin Valley region in expansive, arid areas with scattered vegetation. Today they inhabit non-native grassland and alkali sink scrub communities of the valley floor marked by poorly drained, alkaline, and saline soils. They can be found at elevations ranging from approx. 100 to 2,600 feet. They are absent from areas with steep slopes and dense vegetation, and areas subject to seasonal flooding. Adults may excavate shallow	**Absent.** No suitable habitat is visible within the Project site.

Species	Status*	Habitat	Occurrence within the Site
		burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	
Buena Vista Lake ornate shrew (*Sorex ornatus relictus*)	FE, CSSC	Prefers moist soils, inhabiting marshes, swamps, and riparian shrublands in the Tulare Basin. Uses stumps, logs, and leaf litter for cover.	**Absent.** No suitable habitat is visible within the Project site.
Burrowing owl (*Athene cunicularia*)	CCE, CSSC	Resides in open, dry grasslands, deserts, scrublands, and other areas with low growing vegetation. Nests and roosts underground in existing burrows created by mammals, most often by ground squirrels, and human-made structures.	**Possible**. The ruderal habitat could provide burrowing habitat for this species, pending the availability of small mammal burrows. The nearest recorded observation occurred three miles west of the Project site in 2006.
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Typically nests in cavities in canyon or cliff faces but has also been recorded nesting in giant sequoias in Tulare County. Requires vast expanses of open savannah, grassland, and/or foothill chaparral in mountain ranges of moderate altitude. Forages for carrion up to 100 miles from their roost/nest sites.	**Absent.** No suitable habitat is visible within the Project site.
California glossy snake (*Arizona elegans occidentalis*)	CSSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas with loose soil for easy burrowing. This species occurs near the Pacific Coast ranges from the eastern part of the San Francisco Bay Area south to northwestern Baja California but is absent along the central coast.	**Absent.** No suitable habitat is visible within the Project site.
Coast horned lizard (*Phrynosoma blainvillii*)	CSSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.	**Absent.** No suitable habitat is visible within the Project site.
Crotch's bumble bee (*Bombus crotchii*)	CCE	Occurs throughout coastal California, as well as east to the Sierra Nevada-Cascade crest, and south into Mexico. Food plant genera include snapdragons, scorpionweeds, primroses, poppies, and	**Absent.** No suitable habitat is visible within the Project site.

Species	Status*	Habitat	Occurrence within the Site
		buckwheats. Nests are often located underground in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees. This species overwinters under leaf litter or soft soil.	
Giant gartersnake (*Thamnophis gigas*)	FT, CT	Occurs in marshes, sloughs, canals, ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking. This species uses small mammal burrows adjacent to aquatic habitats for hibernation in the winter and to escape from excessive heat in the summer.	**Absent**. The Project site is outside the current range of this species.
Giant kangaroo rat (*Dipodomys ingens*)	FE, CE	Inhabits annual grassland communities with few or no shrubs and well-drained, sandy-loam soils on gentle slopes on the western side of the San Joaquin Valley.	**Absent.** No suitable habitat is visible within the Project site.
Le Conte's thrasher (*Toxostoma lecontei*)	CSSC	Primarily resides in desert habitats in the Mojave and Sonoran deserts, including open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub. Nests 2-8 feet above the ground in dense, spiny shrub or densely branched cacti.	**Absent.** No suitable habitat is visible within the Project site.
Least Bell's vireo (*Vireo bellii pusillus*)	FE, CE	This migratory species breeds in southern California. Breeding habitat consists of dense, low, shrubby, riparian vegetation in the vicinity of water or dry river bottoms. By the early 1980s, this species was extirpated from most of its historic range in California, including the Central Valley.	**Absent.** No riparian habitat is visible within the Project site.
Monarch butterfly (*Danaus plexippus*)	FPT	Roosts in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Larval host plants consist of milkweeds. Winter roost sites extend along the Pacific Coast from northern Mendocino to Baja California, Mexico.	**Absent.** No overwinter sites or larval host plants are visible within the Project site.
Mountain plover - nesting	CSSC	Breeds on open plains at moderate elevations outside of	**Absent.** No suitable habitat is visible within the Project site.

Species	Status*	Habitat	Occurrence within the Site
(*Charadrius montanus*)		California. Winters in short-grass plains and fields, plowed or fallow fields, and sandy deserts within California. Prefers flat, bare ground with burrowing rodents.	
Nelson's antelope squirrel (*Ammospermophilus nelsoni*)	CT	Found in the western San Joaquin Valley on dry, sparsely vegetated, loamy soils. Relies heavily on existing small mammal burrows.	**Absent.** No suitable habitat is visible within the Project site.
Northwestern pond turtle (*Actinemys marmorata*)	FPT, CSSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	**Absent.** No suitable habitat is visible within the Project site.
San Joaquin coachwhip (*Masticophis flagellum ruddocki*)	CSSC	Found in open dry habitats with little or no tree cover in valley grassland and saltbush scrub communities in the San Joaquin Valley from the Grapevine north into the inner South Coast Ranges and to Alameda County. Relies on mammal burrows for refuge and oviposition sites.	**Absent.** No suitable habitat is visible within the Project site.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Opportunistically forages in a variety of habitats. Dens in burrows within alkali sink, valley grassland, and woodland habitats in valleys and adjacent foothills and in human-made structures in cities, rangeland, and agricultural areas. Occurs in the San Joaquin Valley and other smaller valleys to the west.	**Possible.** The ruderal habitat within the Project site could provide suitable denning habitat for this species. Furthermore, the City of Bakersfield has the densest population of urban kit foxes, increasing the likelihood of this species presence. The nearest recorded observation occurred 2.5 miles north of the Project site in 2006.
Short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*)	CSSC	Inhabit grasslands with scattered shrubs and desert-shrub associations on powdery soils. They inhabit highly saline soils around Soda Lake on the Carrizo Plain, and less saline soils elsewhere. In the Panoche Valley, San Benito County, this species is found on gently sloping and rolling, low hilltops that have some shrubs. Over most of their range, they are generally more numerous in lighter, powdery soils such as the sandy bottoms and banks of arroyos and other sandy areas.	**Absent.** No suitable habitat is visible within the Project site.

Species	Status*	Habitat	Occurrence within the Site
Swainson's hawk (*Buteo swainsoni*)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Absent.** No suitable forging or nesting habitat is visible within the Project site. There is, however, suitable nesting habitat within 0.5 miles of the Project site.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Inhabits saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. This species needs soft friable soils to burrow.	**Absent.** No suitable habitat is visible within the Project site.
Tricolored blackbird (*Agelaius tricolor*)	CT, CSSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found foraging in dairy farm feed fields.	**Absent.** No suitable nesting habitat is visible within the Project site.
Tulare grasshopper mouse (*Onychomys torridus tularensis*)	CSSC	Typically inhabits arid shrubland communities in hot, arid grassland and shrubland associations.	**Absent.** No suitable habitat is visible within the Project site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal and seasonal pools, with clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** No seasonal pools or vernal pools are visible within the Project site.
Western mastiff bat (*Eumops perotis californicus*)	CSSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	**Absent**. No roosting habitat is visible within the Project site.
Western spadefoot (*Spea hammondii*)	FPT, CSSC	The majority of the time this species is terrestrial and occurs in small mammal burrows and soil cracks, sometimes in the bottom of dried pools. Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal or seasonal pools, that hold water for a minimum of three weeks, are necessary for breeding.	**Absent.** No suitable breeding or adult habitat is visible within the Project site.

Species	Status*	Habitat	Occurrence within the Site
White-tailed kite (*Elanus leucurus*)	CFP	Occurs in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Often occurs in open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Absent**. No suitable habitat is visible within the project site.

***EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES**

Possible: Species not observed on the site, but it could occur there from time to time.
Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the site and precluded from occurring there due to absence of suitable habitat.

STATUS CODES

FE	Federally Endangered	CT	California Threatened
FT	Federally Threatened	CE	California Endangered
FPT	Federally Threatened (Proposed)	CCE	California Endangered (Candidate
		CFP	California Fully Protected
		CSSC	California Species of Special Concern

CNPS LISTING

1A	Plants presumed extinct in California.		
1B	Plants rare, threatened, or endangered in California and elsewhere.	2B	Plants rare, threatened, or endangered in California, but more common elsewhere.

KERN COUNTY GENERAL PLAN

The Kern County General Plan (Kern County General Plan) contains the following goals and policies related to the project:

1.10.5 Threatened and Endangered Species

Policies

29. The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

31. Under the provisions of the California Environmental Quality Act (CEQA), the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.

SENSITIVE HABITAT FEATURES, COMMUNITIES, AND REGULATED WATERS

As follows are details on the natural communities of special concern, riparian habitat, designated critical habitat, and wildlife movement corridors and native wildlife nursery sites.

NATURAL COMMUNITIES OF SPECIAL CONCERN AND RIPARIAN HABITAT

No natural communities of species concern and/or riparian habitat were identified on CDFW's CNDDB rare find, and no riparian habitat was observed from Google Earth.

DESIGNATED CRITICAL HABITAT

According to the IPaC, designated critical habitat is absent from the Project site and vicinity.

WILDLIFE MOVEMENT CORRIDORS AND NATIVE WILDLIFE NURSERY SITES

Most of the Project site is disturbed by agricultural activities, and the surrounding area is engulfed by encroaching suburban development. Wildlife movement corridor features are therefore absent from the Project site.

The Project site lacked any large trees or buildings that could serve as a roosting site or maternity roosting site for bats.

RECOMMENDATIONS

While there is a potential for San Joaquin kit fox and burrowing owl to occur on the Project site, this project would not result in any physical disturbance to either species. Therefore, no mitigation is recommended at this time.

If you have any questions or need further information, please do not hesitate to contact me at jmccarthy@ppeng.com.

Sincerely,



Jenny McCarthy
Biologist

APPENDICES:

Appendix A – Aerial Map
Appendix B - CNDDB Species List
Appendix C - IPaC Species List
Appendix D – Soil Mapper

REFERENCES

Kern County General Plan. (n.d.). *General Plans & Elements*. Retrieved from https://kernplanning.com/planning/planning-documents/general-plans-elements/

Weather Spark. (2025, 23 Decemeber). *Weather Spark*. Retrieved from https://weatherspark.com/y/1451/Average-Weather-in-Bakersfield-California-United-States-Year-Round

Appendix A- Aerial Map



0 250 500

Feet

Aerial Map

Austin Creek Park Annexation

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Appendix A

Appendix B – CNDDB SPECIES LIST

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Rosedale (3511942) OR Rio Bravo (3511943) OR Oildale (3511941) OR Tupman (3511933) OR Stevens (3511932) OR Gosford (3511931) OR North of Oildale (3511951) OR Famoso (3511952) OR Wasco (3511953))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Actinemys marmorata northwestern pond turtle	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Ammospermophilus nelsoni Nelson's (=San Joaquin) antelope squirrel	AMAFB04040	None	Threatened	G2G3	S3	
Anarhynchus montanus mountain plover	ABNNB03100	None	None	G3	S2	SSC
Anniella grinnelli Bakersfield legless lizard	ARACC01050	None	None	G2G3	S2S3	SSC
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Astragalus hornii var. hornii Horn's milk-vetch	PDFAB0F421	None	None	GUT1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
Atriplex cordulata var. cordulata heartscale	PDCHE040B0	None	None	GNRT2	S2	1B.2
Atriplex coronata var. vallicola Lost Hills crownscale	PDCHE04371	None	None	G4T3	S3	1B.2
Atriplex tularensis Bakersfield smallscale	PDCHE04240	None	Endangered	GX	SX	1A
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Calochortus striatus alkali mariposa-lily	PMLIL0D190	None	None	G3	S2S3	1B.2
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Chloropyron molle ssp. hispidum hispid salty bird's-beak	PDSCR0J0D1	None	None	G2T1	S1	1B.1
Cirsium crassicaule slough thistle	PDAST2E0U0	None	None	G1	S1	1B.1
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dipodomys ingens giant kangaroo rat	AMAFD03080	Endangered	Endangered	G1G2	S2	
Dipodomys nitratoides brevinasus short-nosed kangaroo rat	AMAFD03153	None	None	G2T1T2	S1S2	SSC
Dipodomys nitratoides nitratoides Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G2T1T2	S2	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Eremalche parryi ssp. kernensis Kern mallow	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eriastrum hooveri Hoover's eriastrum	PDPLM03070	Delisted	None	G3	S3	4.2
Eschscholzia lemmonii ssp. kernensis Tejon poppy	PDPAP0A071	None	None	G5T2	S2	1B.1
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
Great Valley Mesquite Scrub Great Valley Mesquite Scrub	CTT63420CA	None	None	G1	S1.1	
Helminthoglypta callistoderma Kern shoulderband	IMGASC2080	None	None	G1	S1	
Imperata brevifolia California satintail	PMPOA3D020	None	None	G3	S3	2B.1
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Masticophis flagellum ruddocki San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S3	SSC
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Onychomys torridus tularensis Tulare grasshopper mouse	AMAFF06021	None	None	G5T1T2	S1S2	SSC
Opuntia basilaris var. treleasei Bakersfield cactus	PDCAC0D055	Endangered	Endangered	G5T1	S1	1B.1
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G3	S2S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Sorex ornatus relictus Buena Vista Lake ornate shrew	AMABA01102	Endangered	None	G5T1	S1	SSC
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Stylocline citroleum oil neststraw	PDAST8Y070	None	None	G3	S3	1B.1
Stylocline masonii Mason's neststraw	PDAST8Y080	None	None	G1	S1	1B.1
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
Toxostoma lecontei Le Conte's thrasher	ABPBK06100	None	None	G4	S3	SSC
Valley Saltbush Scrub Valley Saltbush Scrub	CTT36220CA	None	None	G2	S2.1	
Valley Sink Scrub Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S3	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 52

Appendix C - IPAC SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 12/29/2025 23:20:13 UTC
Project Code: 2026-0031155
Project Name: Austin Creek Park Annexation

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2026-0031155
Project Name: Austin Creek Park Annexation
Project Type: Recreation - New Construction
Project Description: North of the River Recreation & Parks District (District) in the City of Bakersfield is proposing a parcel merger, zone change, and annexation to merge to parcels of vacant land, APN 529-012-10 and 529-012-11. These parcels are located in the northeast corner of Austin Creek Ave and Jenkins Rd. After the merger is complete, the District plans to develop the Austin Creek Park. This iPaC review is preliminary as part of a biological desktop review that was requested by the City prior to completing a CEQA report. There will be an additional iPaC review for the development of the Austin Creek Park as part of the CEQA process once the parcel merger is finalized.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.40257865,-119.15443682392487,14z



Counties: Kern County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME STATUS

Buena Vista Lake Shrew *Sorex ornatus relictus* Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1610
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf

Giant Kangaroo Rat *Dipodomys ingens* Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6051
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf

San Joaquin Kit Fox *Vulpes macrotis mutica* Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2873
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf

Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides* Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7247
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf

BIRDS

NAME STATUS

California Condor *Gymnogyps californianus* Endangered

Population: Wherever found, except where listed as an experimental population
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/8193
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf

REPTILES

NAME STATUS

Blunt-nosed Leopard Lizard *Gambelia silus* Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/625
General project design guidelines:

NAME	STATUS
https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf	
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111 General project design guidelines: https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Western Spadefoot *Spea hammondii* Population: Northern DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425 General project design guidelines: https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743 General project design guidelines: https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf	Proposed Threatened

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498 General project design guidelines: https://ipac.ecosphere.fws.gov/project/GJVVTLQW75C5BFJEDRGMEYUEMA/documents/generated/11271.pdf	Threatened

FLOWERING PLANTS

NAME	STATUS
San Joaquin Wooly-threads *Monolopia (=Lembertia) congdonii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3746	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Jenny McCarthy
Address: 1518 Mill Rock Way, Suite 100
City: Bakersfield
State: CA
Zip: 93311
Email jmccarthy@ppeng.com
Phone: 7073842510

Appendix D -NRCS SOIL REPORT

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Kern County, California, Northwestern Part

Austin Creek Park Annexation



December 31, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:2,510 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kern County, California, Northwestern Part
Survey Area Data: Version 18, Sep 2, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 12, 2022—Mar 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
196	Milham sandy loam, 0 to 2 percent slopes MLRA 17	9.2	100.0%
Totals for Area of Interest		**9.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

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. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Kern County, California, Northwestern Part

196—Milham sandy loam, 0 to 2 percent slopes MLRA 17

Map Unit Setting

National map unit symbol: 2ss91
Elevation: 200 to 1,200 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 63 to 65 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Milham and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Milham

Setting

Landform: Terraces, fan remnants, plains, alluvial fans
Landform position (three-dimensional): Tread, rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 4 inches: sandy loam
Bk - 4 to 10 inches: sandy loam
Btk1 - 10 to 22 inches: loam
Btk2 - 22 to 49 inches: clay loam
2Ck - 49 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to moderately saline (0.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 25.0
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: R017XG043CA - Loamy 6-8" P.Z.
Hydric soil rating: No

Minor Components

Kimberlina

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Panoche

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Garces

Percent of map unit: 5 percent
Landform: Rims on basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

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