# Environmental Assessment

# Construction of New Intersection with Turning Lanes on State Highway 165 and Wolfsen Road

**U. S. Fish and Wildlife Service**
**San Luis National Wildlife Refuge Complex**
**Los Banos, California**

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# Environmental Assessment - Construction of new Intersection with Turning Lanes on State Highway 165 and Wolfsen Road

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## I. PURPOSE AND NEED FOR ACTION

### Introduction

This environmental assessment has been prepared for the purpose of assisting the U.S. Fish and Wildlife Service (FWS) in evaluating the alternatives and environmental effects of modifying the existing roadway at the intersection of State Highway 165 (Hwy 165) and Wolfsen Road (County road) in Merced County, California. This roadway modification is needed to improve access to the nearby San Luis National Wildlife Refuge (NWR), and the California Department of Fish and Game's North Grasslands Wildlife Area (WA) and Los Banos WA. This will improve public safety while turning off Hwy 165 onto Wolfsen Road and turning onto Hwy 165 from Wolfsen Road. This assessment is being used to solicit public involvement in the proposed construction project and to determine whether implementing the project will have a significant effect on the quality of the human environment. It is part of the agency's decision-making process in accordance with the National Environment Policy Act (NEPA).

### Proposed Action

The FWS, using funding provided by the Federal Highway Administration (FHWA), proposes to modify the existing roadways at the intersection of Hwy 165 and Wolfsen Road in central Merced County by widening and re-aligning the intersection of the two roads.

### Project History and Existing Conditions

Hwy 165 is a conventional two-lane highway running on a generally north-south alignment west of Interstate 5. The highway begins at Interstate 5 in Merced County and ends at State Highway 99 in Stanislaus County. The project area is in a rural section of the highway where it intersects with Wolfsen Road (E1/2, NW1/4 of Sec. 13 R10E, T9S). The existing roadway alignment of Hwy 165 at that point consists of two 3.7 m (meters [12 ft]) lanes with 0.6-1.1 m (2-3.5 ft) shoulders. Hwy 165 runs along a NE/SW orientation immediately south of the intersection, and at the point of intersection, begins a wide sweeping turn to the west, and changes to a NW/SE orientation north of the intersection. Wolfsen Road, a paved roadway consisting of two 3.7m (12 ft.) lanes, intersects with the northbound lane of Hwy 165 at an angle from the northeast. This forms a Y-shaped intersection rather than having the roads perpendicular to each other. In addition to the state and county roadway infrastructure, two parallel water conveyance canals are present approximately 100 m. northeast of the intersection. These extend in a northwest direction across Hwy 165 and Wolfsen Road (forming a small triangle of land between the highway, county road, and canals). The earthen–lined San Luis Canal (a Grassland Water District water delivery canal) siphons under both roads and continues parallel along the west side of Hwy 165. The concrete-lined San Luis Drain (a Bureau of Reclamation canal to convey agricultural drain water) siphons under Wolfsen Road, turns right and siphons under the San Luis Canal, then turns left, and continues parallel along the east side of Hwy 165.

Hwy 165, at the project site, is bounded on the west by a privately owned duck club and 330 m. north of the intersection by the earthen San Luis Canal. On the east, the highway is bounded by the Los Banos WA south of the intersection, a parcel of land owned by the Bureau of Reclamation ([BOR] U.S. Dept of Interior) immediately north of the intersection, and the concrete-lined San Luis Drain approximately 400 m. north of the intersection. Wolfsen Road is bounded on the west by the BOR parcel, and on the east by the Los Banos WA.

North and southbound traffic turns off and onto the highway to and from Wolfsen Road on a year-round basis. The majority of the traffic consists of the public driving to and from the San Luis National NWR, North Grasslands WA, and Los Banos WA; public agency staff; farm workers/operators associated with adjacent agricultural lands; and commercial vendors. Usage by the public driving to and from the state and federal properties is greatest during the fall through late spring by those participating in various public use programs on those lands (Sept-June).

This turning lane construction project is being proposed due to concerns about highway safety. Over the years there have been numerous injury and non-injury accidents involving vehicles turning off Hwy 165 onto Wolfsen Road Factors that contribute to the risk of accidents at this intersection include a long sweeping turn which limits visibility, that it is a long stretch of two-lane roadway with few other side roads or intersections, extremely narrow road shoulders, periods of dense fog, excess speeds (driving over the speed limit is common on this stretch of road), commercial traffic, and increased traffic volume over time. The volume of traffic is expected to at least double beginning fall 2011 when the San Luis NWR Visitor Center/Administrative Office is scheduled to open.

## II. ALTERNATIVES

**Alternative A - No Action Alternative**
The no action alternative would maintain the roadway alignments of Hwy 165 and Wolfsen Road in their current configurations. The existing intersection would remain unchanged. Turnpockets would not be built at the intersection of the two roads. The public and agency personnel would continue to have to use the main travel lanes while turning their vehicles off the highway onto the County road to access the state and federal areas and adjacent private farmlands.

**Alternative B - Construction of a New Intersection with Turnpockets (Proposed Action)**
A new intersection, 50 m. north of the existing one, would be created for Hwy 165 and Wolfsen Road. Turning lanes would be created by widening Hwy 165 on both sides of the highway north and south of the new intersection site. All construction will likely be within the existing highway right-of-way. The San Luis Canal syphon under Hwy 165 will have to be extended and new headwalls constructed on both sides of the road to allow enough width to construct turning lanes. The existing shoulder on each side of the road would be filled and leveled to accommodate construction of a 3.6 m travel lane and 2.2 m shoulder/foreslope.

On the northbound lane (east side of highway) the new lane would be constructed starting 150 m south of the new intersection. The roadway pavement would be widened at a taper starting at the original alignment at the southern starting point to a point 36.0 m northward. The increased 3.6 m width would be continued for 114.0 m northward to the new intersection. That would allow northbound vehicles to shift to the right out of the main travel lane into the new turn lane, slow down, and then turn right (east) onto Wolfsen Road.

On the southbound lane (west side of highway), the new lane would be constructed starting 345.0 m north of the new intersection and extending 209.0 m south of the intersection. The

roadway pavement would be widened at a taper starting at the original alignment at the northern starting point to a point 195.0 m northward. The increased 3.6 m width would be continued for 164.0 m southward and then, once past the refuge entrance, the road alignment would be tapered back for a distance of 195.0 m to the original alignment northward to the refuge entrance. This would allow creation of a turning island within the original travel lane north of the refuge entrance. Southbound traffic wishing to turn onto Wolfsen Road would continue on the original lane alignment into the turning island, slow down, and turn left (east). The main travel lane for continuing southbound traffic would shift to the right (west) of the existing alignment (new turning island) until past the refuge entrance, and then be shifted to the left (east) back to the original alignment.

The current roadside drainage ditches on both sides of the roadway would be replaced with a covered pipe for the length of the area to be widened. Current alignment would be retained. The filled area immediately adjacent to the new pavement on both sides of the road would be shaped to form a slope down to the existing grade, and the slope re-vegetated to establish a grass cover.

## III. AFFECTED ENVIRONMENT

The affected environment includes the physical areas and species potentially affected by changes that would occur due to implementing the proposed action. This includes wildlife and vegetation resources in the area, as well as species listed as threatened or endangered under the Endangered Species Act. The action area of this EA covers the roadway alignment and right-of-way and 15.2 m (50 ft) beyond.

### Background Information

The project site was originally part of the large floodplain/overflow area associated with the nearby San Joaquin River (6 km to the east). The first road development occurred in the 1800s as a roadway that extended through the site from the town of Los Banos northward to a ranch compound along Salt Slough (part of the Miller and Lux cattle empire) and to the Dickenson Ferry Road. In the 1950s a major flood control levee was constructed along the San Joaquin River that ended the potential for periodic flooding of the site. In the 1960's a state highway (Hwy 165) was constructed extending northward through Los Banos, across the San Joaquin River and to the town of Turlock in the adjacent county. The roadway to the former Miller and Lux ranch compound (now Wolfsen Road) angled off of the new highway alignment and now forms a Y-shaped intersection of Hwy 165 and Wolfsen Road. The San Luis Canal, which approaches from the southeast, pre-dates the highway. It has been enlarged and upgraded over the years, and serves as a major water delivery system for the Grassland Water District. The canal crosses under both Hwy 165 and Wolfsen Road via siphons, and continues parallel along the west side of Hwy 165.

The concrete-lined San Luis Drain is parallel and immediately adjacent (on the west side) to the San Luis Canal. It was built in the late 1960s as a Bureau of Reclamation canal to convey agricultural drain water as part of the San Luis Project. The Drain siphons under Wolfsen Road, turns right (northeast) to siphon under the San Luis Canal, then turns left (northwest), and continues parallel along the east side of Hwy 165. Part of the highly disturbed triangular parcel between the roads and the San Luis Drain is kept un-vegetated gravel roadbase with the rest

being vegetated with nonnative annual grasses and weeds. The site is used by Caltrans to temporarily stockpile gravel and crushed asphalt debris.

**Climate**

The project area lies within the lower Sonoran life zone which is characterized by a desert-steppe climate. Rainfall is seasonal, occurring mainly between the months of December and April and averaging between 7-12 inches annually. Dense fog is a common feature of the winter and spring months. Diurnal temperatures typically range from 36° F to 60° F from December through February and from 56° F to 97° F in June-August, but frequently exceed 100° F.

**Soils**

Geologically the area lies within the historic floodplain of the San Joaquin River and its tributaries. The soils consist of recent basin and stream channel deposits which range from sand to heavy clay. The soils in the immediate project site are mapped as Elnido clay loam, Turlock loam, and Marcuse clay (Nazar 1990).

**Air Quality**

The project site is located within the San Joaquin Valley Air Pollution Control District. The entire district is classified as a "non-attainment area" because it does not meet ambient air quality standards for pollutants. Air pollution within the district comes from a variety of sources. These include industrial facilities, agriculture, vehicles, and consumer products. This pollution is exacerbated by the stagnant air masses that frequent the area. Efforts to reduce emissions from these sources are required by federal and state mandates such as the Federal Clean Air Act Amendments and the California Clean Air Act.

The San Joaquin Valley is the first air basin classified as "serious non attainment" by the Environmental Protection Agency to come into attainment of the Particulate Matter at the 10 micron level or smaller (PM10) standards. PM10's are generated by transportation, agriculture, and industry. Though effective air pollution control programs are still needed, past efforts have brought about an overall improvement in air quality.

**Cultural Resources**

The National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470f) provides for the protection, preservation and consideration of historic and archaeological resources on Federal lands, or lands potentially affected by Federal actions. As the lead Federal agency for this proposed action, the Service has the responsibility to protect these resources, pursuant to section 106 of the NHPA.

The area surrounding the general project site was historically occupied by the Yokut Indian tribes. Archaeological sites of these native people have been found on upland areas surrounding historic wetlands throughout nearby private lands, state wildlife areas, and the federal refuge. An archaeological survey report was prepared by the California Department of Transportation (Caltrans) in 1999 as part of a proposed Hwy 165 widening project in the nearby area (Layland and Silva 1999). That survey included the Hwy 165 and Wolsen Road intersection. No cultural resources were found in the project site being considered as part of this environmental assessment. (Layland and Silva 1999).

**Biological Resources**

The project site is bounded on the east by the Los Banos State Wildlife Area. This state-owned property is administered by the California Department of Fish and Game and is managed for wildlife conservation purposes. The area immediately adjacent to the project site consists of alkaline uplands vegetation with iodine bush (*Allenrolfea occidentalis*) and a mix of native and nonnative grasses and forbs. Approximately 50 m. east of there is a constructed wetland unit managed as a semi-permanent wetland. Dominant vegetation in the wetland unit include emergent tule stands (*Typha spp.* and *Scirpus* spp.) and aquatic plants such as pondweeds (*Potamegetum* spp.) in the deeper water with moist soil food plants such as smartweed (*Polygonum spp.*) along the pond edges.

The property immediately west of the project site is the privately owned Loony Spoony Duck Club. This property is managed as wetlands habitat for private waterfowl hunting and is enrolled in a U.S. Fish and Wildlife Service perpetual conservation easement. The area immediately adjacent to the right of way/roadside ditch consists of alkaline uplands vegetated with non-native annual grasses, salt grass (*Distichilis spicata*), and non-native invasive weeds. It is subject to flooding in late winter/early spring, but is dry most of the year. Approximately 20 m. west of the roadway is a line of mature Gooding's black willows (*Salix goodingii*) that parallels the highway. Immediately west of there is a seasonal managed wetland unit. Dominant vegetation consists of swamp timothy (*Heleochloa schoenoides*) with patches of smartweed and alkali bulrush (*Scirpus robustus*).

The area surrounding the project site supports heavy use by migratory birds including waterfowl, wading birds, shorebirds, and raptors. Common mammals include coyote (*Canis latrans)*, raccoon (*Procyon lotor*), opossum (*Didelphis virginianus*), and California ground squirrel (*Spermophius beecheyi*).

The physical area within and immediately adjacent to the actual project site (construction site) consists of the asphalt highway itself and the highway right-of-way on both sides of the road. The right-of-way consists of altered ground that was disturbed at time of initial road construction and during subsequent maintenance, and a roadway drain ditch that parallels the highway. The ditch is wet and often holds water during the winter season. Vegetation consists primarily of non-native grasses and weeds. Wildlife use of the existing roadway and proposed turning lane construction sites is low due to traffic disturbance and consists primarily of animals crossing the roadway.

**Threatened and Endangered Species**
(FT=Federal Threatened, FE=Federal Endangered, ST–State Threatened, SE=State Endangered)

Conservancy Fairy Shrimp (*Branchinecta conservation*) (FE), Longhorn Fairy Shrimp (*B. longiantenna*) (FE), Vernal Pool Fairy Shrimp (*B. lynchi*) (FT), and Vernal Pool Tadpole Shrimp (*Lepidurus packardi*) (FE): These listed vernal pool invertebrates are known to be present in vernal pools 10 km distant at the San Luis NWR through past sampling done be Refuge and

other agency personnel. No such vernal pool habitat exists within 500 m of the immediate project site.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) (FT): The project area is within the historic range of this species. However, no elderberry shrubs (species required habitat) are present within or anywhere near the project area and no valley elderberry longhorn beetles would be expected in the area.

Central Valley Steelhead (*Oncorhynchus mykiss*) (FT): This species currently utilizes the San Joaquin River and it's major tributaries downstream of the project site. The project site is over 7 km away from the river with no direct connection to the river.

California Tiger Salamander (*Ambystoma californiense*) (FT): California tiger salamanders are known to be present in vernal pools on San Luis NWR through past sampling done by FWS staff and others. However, no such vernal pool habitat exists within 10 km of the project site. The roadway drain ditch adjacent to the highway would provide marginal habitat for salamander larvae during winter but would be completely dry at the time of construction.

California Red-legged Frog (*Rana aurora draytoni*) (FT): This species' historic range included the San Joaquin Valley as well as foothills of the Coast Range and Sierra Nevada Mountains. It still occurs in the foothill areas of extreme west and east portions of Merced County. However this species of frog has been extirpated from the San Joaquin Valley floor due to habitat alteration for agricultural and urban development, and competition/predation by introduced species. It would not be present at the project site.

Blunt-Nosed Leopard Lizard (*Gambelia [=Crotaphytus] sila*) (FE,SE): This species' historic range included the northern San Joaquin Valley. It still occurs in the southern portion of the San Joaquin Valley. There have been no sighting of blunt-nosed leopard lizard in this part of Merced County area in recent years, and it is felt that this species has been extirpated from the local area due habitat alteration for agricultural and urban development.

Giant Garter Snake (*Thamnophis gigas*) (FT,ST): This species is known to occur in Merced County west of the San Joaquin River. Extensive past surveys have been conducted throughout the Grasslands and are currently ongoing. It has not been recorded anywhere near the project site. There is no suitable habitat within the project site.

Bald Eagle (*Haliaeetus leucocephalus*) (FT, SE): This species does not nest in the area but is periodically observed on the Refuge and elsewhere throughout Merced County during the winter and spring months. It is most often seen along the San Joaquin River and large managed wetland complexes.

Swainsons' Hawk (*Buteo swainsoni*) (ST): This species nests in mature trees on the Refuge and surrounding area. It uses open grasslands for foraging. There are no trees in the immediate project site and thus no potential nesting habitat. The project site is currently a heavy traffic area with a high level of disturbance and provides marginal foraging habitat.

Willow flycatcher (*Empidonax traillii*) (SE): The species is an occasional migrant along the San Joaquin River riparian corridor. However, suitable nesting and foraging habitat is not present in the project site.

Greater Sandhill Crane (*Grus canadensis tabida*) (ST): The species is observed infrequently in the general area in association with lesser sandhill cranes. It uses shallow wetlands for roosting, and grassy uplands and agricultural fields for foraging. No suitable habitat is present in the immediate project site.

Bank Swallow (*Riparia riparia*) (ST): The species is observed infrequently in the general area. It nests on cut banks along rivers and sloughs, and forages in the riparian corridors and wetlands. No suitable habitat is present in the immediate project site.

San Joaquin Kit Fox (*Vulpes macrotis mutica*) (FE,ST): Merced County lies within the historic range of San Joaquin kit fox. The species has been recorded in past surveys and telemetry projects in Great Valley Grasslands State Park and San Luis NWR. However, spot-light and scent detection (trained dog) surveys done in recent years have not documented any kit fox in the immediate or general area since the early 1990s. No den sites are known to occur within or near the project site. No records of road-killed kit fox have been documented along that stretch of Hwy 165 or Wolfsen Road. However, kit fox could be potentially present; most likely as individuals moving through the area while foraging.

Giant kangaroo rat (*Dipodomys ingens*) (FE): The historic range of this species was centered in Fresno County and San Luis Obispo County in the southern San Joaquin Valley and extended into the southern edge of Merced County. There is no evidence that giant kangaroo rats were historically or are currently present on the Refuge or elsewhere in the Grasslands.

Fresno kangaroo rat (*Dipodomys nitratoides exilis*) (FE, SE): The historic range of this species extended from Fresno County and Kings County of the southern San Joaquin Valley northward to the Merced River, Merced County. Extensive surveys done on San Luis NWR, Merced NWR, and elsewhere in the Grasslands area in 2008 failed to document the presence the subspecies. Although Fresno kangaroo rats could potentially be present in Merced County, there is no evidence of any extant populations. In addition, there is no suitable habitat for the species within or adjacent to the project site.

Colusa grass (*Neostapfia colusana*) (FT): The historical distribution of this plant species in not well known, but it occurs only within vernal pool basins. There are two known populations in Merced County, both east of the San Joaquin River. There is no suitable habitat for the species within or adjacent to the project site.

Delta Button Celery (*Eryngium racemosum*) (SE): This species is present in heavy clay soils in the floodplain of the adjacent State Park and within the flood control levees of the Refuge. The disturbed road right-of-way that makes up the project site does not constitute suitable habitat for the species.

Succulent Owl's-clover (*Castilleja compestris ssp. Succulenta*) (FT), Hoover's Spurge (*Chamaesyce hooveri*) (FT), San Joaquin Valley Orcutt Grass (*Orcuttia inaequalis*) (FT), Hairy

Orcutt Grass (*O. pilosa*) (FE), Hartweg's Golden Sunburst (*Pseudobahia bahiifolia*) (FT), and Greene's Tuctoria (*Tuctoria greenei*) (FE): All these species are associated with vernal pools and native uplands. There are no known populations of these species anywhere near the project area and no suitable habitat within the project site.

**Traffic and Public Safety**
Use the project site portion of Hwy 165 consists of through traffic and local traffic. The majority of vehicle use consists of passenger cars/light trucks, heavy commercial trucks with trailers, and farm equipment. North and southbound traffic turns off and onto the highway to and from Wolfsen Road on a year-round basis. The majority of the traffic using the intersection consists of the public driving to and from the San Luis National NWR, North Grasslands WA, and Los Banos WA; public agency staff; farm workers/operators associated with adjacent agricultural lands; and commercial vendors. Usage by the public driving to and from the state and federal properties is greatest during the fall through late spring by those participating in various public use programs on those lands (Sept-June).

Over the years there have been numerous injury and non-injury accidents involving vehicles turning off Hwy 165 onto Wolfsen Road Factors that contribute to the risk of accidents at this intersection include a long sweeping turn which limits visibility, that it is a long stretch of two-lane roadway with few other side roads or intersections, extremely narrow road shoulders, periods of dense fog, excess speeds (driving over the speed limit is common on this stretch of road), commercial traffic, and increased traffic volume over time, The volume of traffic is expected to at least double beginning fall 2011 when the San Luis NWR Visitor Center/ Administrative Office is scheduled to open.

**Environmental Justice**: The local community is 50% Hispanic. The western San Joaquin Valley has been identified as underserved by public agencies providing conservation lands and outdoor spaces open to the public. There is an identified dearth of areas, such as parks, for the public to enjoy. This is particularly problematic when considering that the unemployment rate in Merced County is currently just under 20%, which is approximately double the Statewide average. The County's average household income is $30,000, as compared to the state median household income of $60,000 (2007 data).

**Cumulative Effects**
Cumulative effects on the environment result from incremental effects of an action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively substantial, actions taking place over a period of time.

## IV. ENVIRONMENTAL CONSEQUENCES

### Alternative A - No Action

Climate
No impacts potentially contributing to climate change would occur under the no action alternative

Soils
No soil disturbance associated with construction would occur under the no action alternative. Periodic disturbance, such as mowing and invasive weed control, would continue as part of normal roadside maintenance.

Air Quality
No impacts to air quality associated with construction would occur under the no action alternative. Normal operation and maintenance would continue as part of Refuge management.

Cultural
No impacts to cultural resources will occur

Biological Resources
No soil or vegetation disturbance associated with construction would occur in the highway right-of-way. Periodic disturbance would continue to occur as part of normal highway maintenance activities by Caltrans independently of this project. No impacts to wildlife, fish, or threatened and endangered species would occur as part of this project. Any impacts to those species associated with the ongoing highway use and normal maintenance activities would continue independently of this project.

Threatened and Endangered Species
No impacts to wildlife, fish, or threatened and endangered species would occur as part of this project. Any impacts to those species associated with the ongoing highway use and normal maintenance activities would continue independently of this project.

Traffic and Public Safety
This alternative fails to address public and employee safety. Vehicles operated by the general public, agency personnel and farm operators would continue to turn onto Wolfsen Road from the main travel lanes of Hwy 165 with no opportunity to move out of the way of high speed traffic. Vehicles entering Hwy 165 from Wolfsen Road would not have an acceleration lane to merge with traffic. The risk of collisions by following traffic will remain at the same level. However by fall 2011, the opening of the new visitor center and administrative office of San Luis NWR will result in a considerable increase in the amount of traffic (public and agency staff) turning onto and off of Hwy 165 at the intersection with Wolfsen Road. Risk of vehicle collisions with subsequent property damage and human injury/death will increase substantially.

Environmental Justice: No one group or Tribe represented in the community would be disproportionately impacted by not constructing the Hwy 165/Wolfsen Road intersection.

Cumulative Effects: Under the no action alternative, the proposed intersection would not be constructed so there would be no cumulative effects on the environment.

**Alternative B – Construction of New Intersection and Turnpockets (Preferred Alternative)**

Climate

As with any construction project, carbon emissions associated with the manufacture of the construction materials and operation of equipment could potentially contribute to climate change processes.

Soils: Construction activities under the preferred alternative would require grading and site preparation which could result in soil erosion from the project site. Because the project site is relatively flat we do not anticipate that construction activities would result in substantial soil erosion. The grading and site preparation work would be relatively short–term; following construction, disturbed areas would be seeded and mulched to establish a grass cover.

Air Quality: Construction activities under the preferred alternative would temporarily increase dust and other emissions. The appropriate best management practices would be implemented during construction as developed in coordination with the San Joaquin Valley Air Pollution Control District. These may include activities such as covering trucks hauling soil, sand, and other loose materials, limiting traffic speeds on unpaved roads to 15 mph, and replanting vegetation in disturbed areas as quickly as possible.

Cultural Resources

Any ground disturbing components related to the proposed action may have the potential to disturb both exposed and buried cultural resources. Based on the recent surveys conducted by Caltrans (Layland and Silva 1999), there would be no impacts to cultural resources from this project. However if any cultural resources were discovered during earth moving activities, mitigative measures for cultural resources, including compliance with the Programmatic Agreement between the Service, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer (SHPO), would be exercised at site-specific project levels to avoid adverse effects.

Biological Resources

Soil would be imported to and vegetation altered at an existing disturbed site within the highway right-of-way. The fill soil could be obtained from existing spoil piles that were created from dredging water delivery canals on San Luis NWR (approximately 6 km. distant), if soils are suitable, or from a commercial gravel/soil pit on Henry Miller Road (10 km. distant). Use of dirt from Refuge spoil banks would be a resource benefit, because it would allow Refuge lands to restored back to natural grade and planted to native vegetation. Removal of vegetation (primarily non-native) in the highway right-of-way construction site would be a temporary impact because the site would be seeded and mulched to establish a grass cover. Since existing use by wildlife of the roadway and adjacent area is minimal, it is unlikely that this action would have any significant impacts to fish and wildlife resources. The construction will be during the dry summer/fall season so there will be no run-off into the San Joaquin River or any nearby tributaries.

Threatened and Endangered Species

This proposed project would have no adverse impacts to Federal and State listed threatened or endangered species (except to San Joaquin kit fox – see following) described in Section III due to a lack of presence.

Although San Joaquin kit fox could potentially use the project site during foraging activities, it is unlikely that the project would have any adverse impacts on the species. Construction will occur during daylight hours when kit fox are normally not active. Standard avoidance measures to prevent kit fox from being attracted to or potentially being entrapped within the construction site will be employed during implementation of the project. Once completed, the presence of the turnpockets would present no more danger to kit foxes than the existing roadway.

Traffic and Public Safety

This alternative temporarily adversely impacts traffic flow and potentially adversely impact public safety. Construction will occur during summer through late fall. This is a period of high traffic volume on Hwy 165 due to commercial trucks hauling tomatoes and other harvested agricultural products. In addition, there is an increase in the public turning onto and off of Wolfsen Road access state lands during the dove hunting season (September) and state and federal lands during waterfowl season (beginning in October). This risk to the public would be mitigated by construction signage to control traffic, law enforcement presence, and development of local detours.

Once construction is completed, and over the long term, this alternative greatly improves public and employee safety. People operating vehicles could enter a turning lane prior turning onto Wolfsen Road from the main travel lanes of Hwy 165. This would allow the opportunity to move out of the way of high speed traffic. Those entering Hwy 165 from Wolfsen Road would have an acceleration lane to attain road speed and merge with ongoing traffic. The risk of collisions by following traffic would be greatly reduced. Property damage and human injury/death will be reduced.

Environmental Justice: No one group or Tribe represented in the community would be disproportionately impacted by construction of the proposed intersection at that site. Indeed, the proposed project would benefit an underserved community. The western San Joaquin Valley has been identified as underserved by public agencies providing conservation lands and outdoor spaces open to the public. There is an identified dearth of areas, such as parks, for the public to enjoy.

Cumulative Effects

The new intersection and turning lane construction project at the existing Hwy 165/Wolfsen Road intersection is one of six such projects that have been identified as necessary to improve public and employee safety at refuge access points on State Highways 165 and 140. One project, the construction of turning lanes on Hwy 165 at the entrance of the West Bear Creek Unit, was completed in 2010. The other four projects would potentially be constructed at some time in the future depending on funding. None of these projects, singly or combined together would be growth-inducing, but rather a response to increased highway traffic that is independent of the Refuge, the need for the public and employees to safely access the Refuge, the acquisition of new refuge lands, and the ensuing development of public use programs. Because all of these projects would occur on highly disturbed highway right-of-way, impacts to wildlife and other biological resources would be minimal. Public safety would be greatly improved, and potential for property damage and human injury/death reduced significantly.

## V. COORDINATION WITH OTHERS AND ENVIRONMENTAL COMPLIANCE

## Coordination with Others

Extensive coordination with CalTrans has been on-going since 2002. Much consideration was given to joining the federal funding for projects to improve access to units of San Luis NWR with expected and planned state funding for a larger Hwy. 165 improvement project. The expectation was that implementation by CalTrans – with CalTrans handling the planning, contracting, and construction would result in savings due to economy of scale. Several site visits were made with CalTrans engineers and planners, and several meetings were attended by Refuge and Regional staff. However, the larger Hwy. 165 project encountered numerous delays; not the least of which was a determination that the bridge over the San Joaquin River would require replacement rather than widening, driving costs much higher. Due to the availability of funds for the federal projects, it was decided to separate the refuge access improvement projects from the larger CalTrans project. Highway turnpockets at the West Bear Creek Unit entrance were constructed in 2010 by FWS contractors to Caltrans specifications and in coordination with that agency. This project, the construction of a new intersection and turnpockets at the Hwy 165/Wolfsen Road intersection is being coordinated between the agencies in a similar manner. In addition, CalTrans has supplied all their environmental planning documents for our use on both the previous and this road improvement project.

In addition to CalTrans, the Refuge has notified the Grassland Water District, CDFG, and the California Department of Parks and Recreation (CDPR) of our plans to construct a new intersection with safe turn lanes at the Hwy 165/Wolfsen Road intersction. CDFG manages the North Grassland WA and the Los Banos WA which are accessed through Wolfsen Road and co-manages the FWS/CDFG cooperative waterfowl hunting program at San Luis NWR.

This Environmental Assessment will be available for a 30-day public review and comment period from the date of release. Notification will be posted via press release, in the local newspaper, and on the Refuge website.

## Environmental Compliance

The following Executive Orders and Legislative Acts have been reviewed as they apply to the proposed action. The Service would conduct all realty actions in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act.

National Environmental Policy Act (NEPA)
This EA was prepared pursuant to regulations implementing the NEPA (42 USC 4321 *et seq.*). NEPA provides a commitment that Federal agencies would consider environmental effects of their actions. This EA provides information regarding the No-Action Alternative and the proposed action, and environmental impacts. If, after certain key permits are obtained and the final EA is released, the Project is found to have no significant environmental effects, a "finding of no significant impact" would be filed.

Endangered Species Act
The Act (16 USC 1531 *et seq.*), establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants and the preservation of the ecosystems upon

which they depend. Section 7(a) of the Act requires Federal agencies to consult with the Service and NOAA Fisheries on activities that may affect any species listed as threatened or endangered or designated critical habitat under each agency's jurisdiction. This EA describes potential effects of the proposed action on federally listed species. An Intra-Service section 7 evaluation of this project has been completed.

Archeological Resources Protection Act of 1979 (ARPA)
Compliance with the ARPA (16 USC 470 aa e*t seq.*) is necessary for the proposed action an has been completed. A request for cultural resource compliance dated June 23, 2005 was submitted to the Service's Regional Archeologist, Region 1, Portland, Oregon. The Regional Archeologist determined that the Caltrans archeological review for the highway right-of-way was fully adequate, and that a separate review for this intersection and turnpocket construction project was not necessary.

Protection of Wetlands--Executive Order 11990
Executive Order 11990 requires Federal agencies to follow avoidance, mitigation, and preservation procedures with public input before proposing new construction in wetlands. The EA has identified that the restoration actions would not result in the net loss of any wetlands. Implementation of the proposed restoration could enhance wetlands or increase their area, and is in compliance with Executive Order 11990.

Floodplain Management--Executive Order 11988
Executive Order 11988 requires that all Federal agencies take action to reduce the risk of flood loss, to restore and preserve the natural and beneficial values served by floodplains, and to minimize the impact of floods on human safety, health, and welfare. The project is within the 100-year floodplain. The Proposed Action supports the preservation and enhancement of the natural and beneficial values of floodplains, and is in compliance with Executive Order 11988.

## VI. REFERENCES

Layland, D. and S. Silva. 1999. Archaeological survey report for a state route 165 rehabilitation project near Los Banos, Merced County, California. California Dept. of Transportation, Sacramento, California.

Nazar, Paul G. 1990. Soil survey of Merced County, California, western part. U.S.D.A Soil Conservation Service. U.S. Government Printing Office: 1990-261-5567/2001, Washington, D.C.

Figure 1. Project Location Map

Figure 2. Highway 165 Wolfsen Road Intersection – Pre-Project Conditions

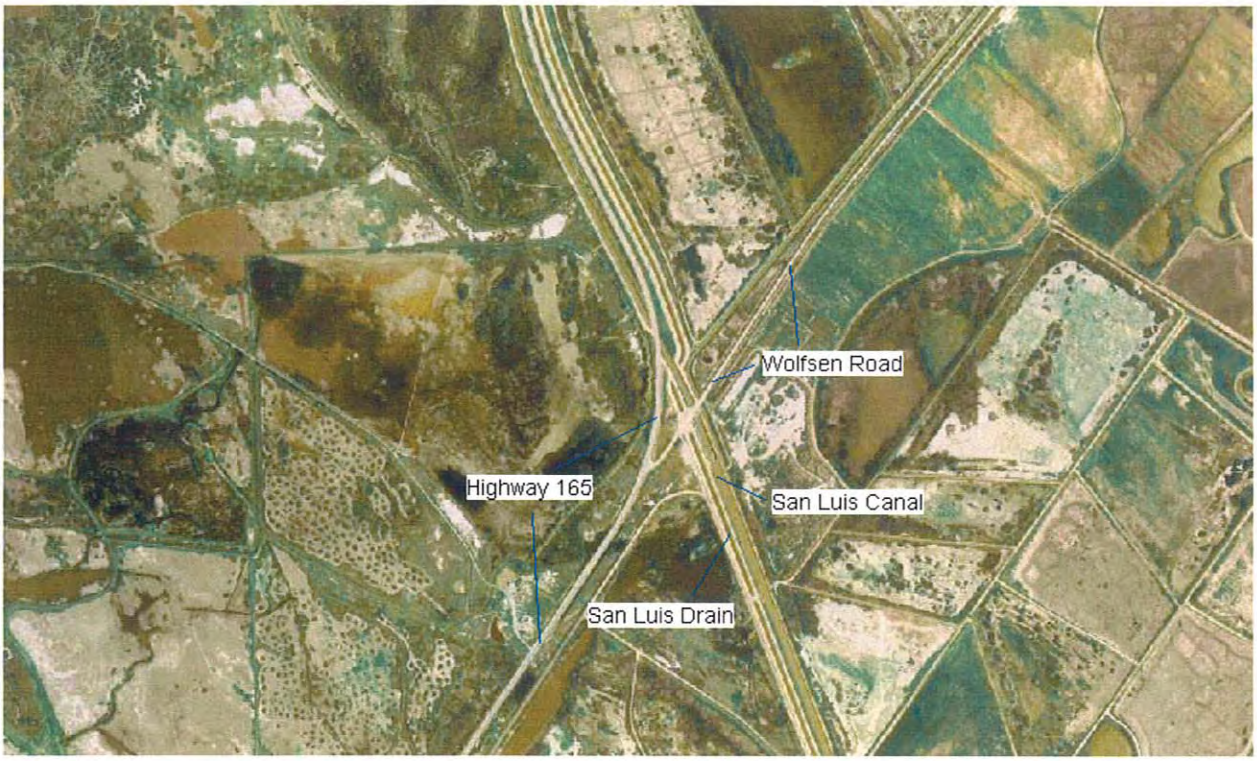
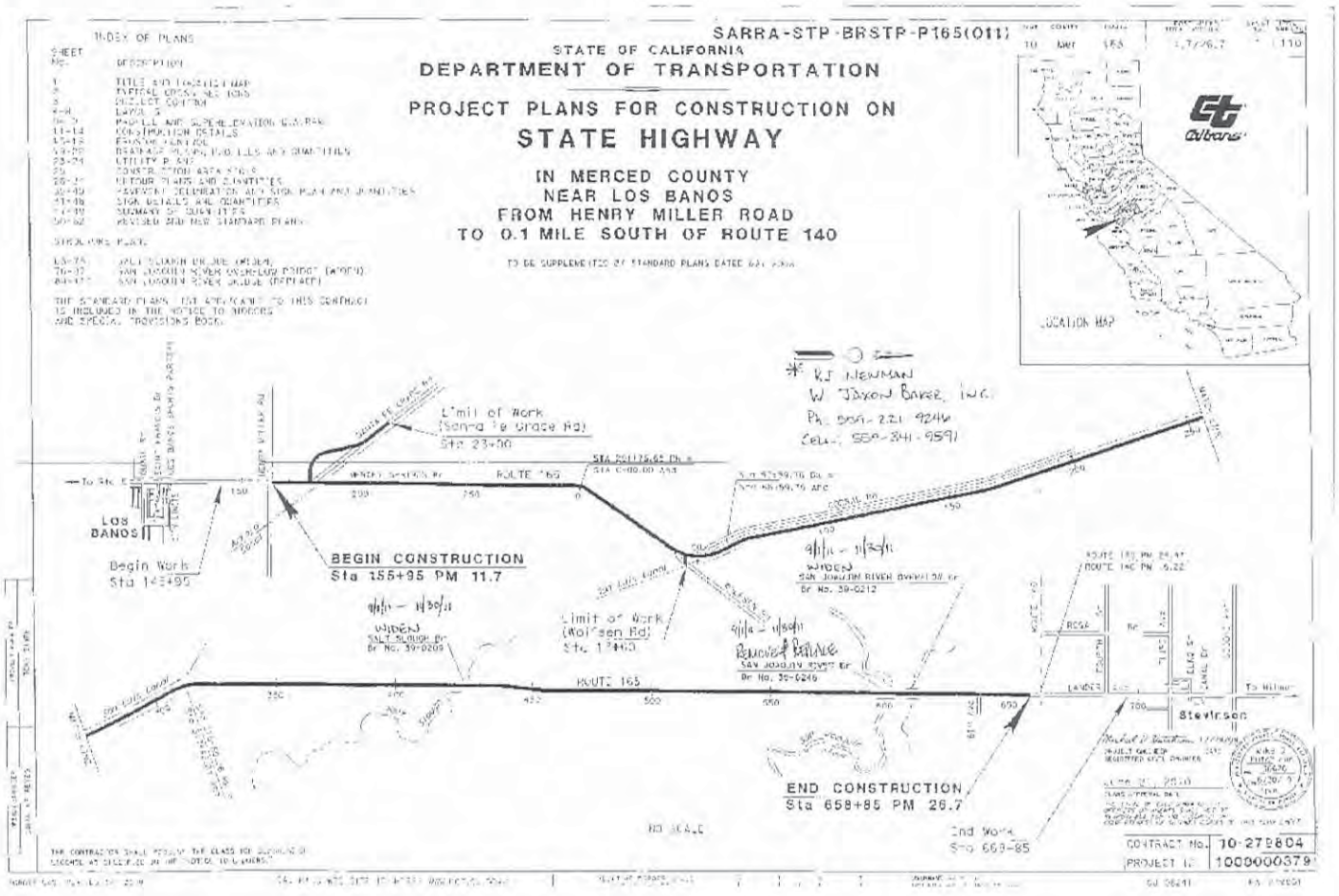


Figure 3. Overview of Highway 165 Caltrans Project



Appendix I.

**U.S. FISH AND WILDLIFE SERVICE**
**STANDARDIZED RECOMMENDATIONS**
**FOR PROTECTION OF THE SAN JOAQUIN KIT FOX**
**PRIOR TO OR DURING GROUND DISTURBANCE**
**Prepared by the Sacramento Fish and Wildlife Office**
**June 1999**

INTRODUCTION

The following document includes many of the San Joaquin kit fox (Vulpes macrotis mutica) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act). Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Formal authorization for the project may be required under either section 7 or section 10 of the Act. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). Such protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service. The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service. All surveys, den destructions, and monitoring described in this document must be conducted by a qualified biologist. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, biologist(s) must be able to identify coyote, red fox, gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount.

**SMALL PROJECTS**

Small projects are considered to be those projects with small foot prints such as an individual infill oil well, communication tower, or bridge repair. These projects must stand alone and not be part of, or in any way connected to huger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features, and make recommendations on situating the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then preconstruction surveys should be conducted.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Surveys should identify kit fox habitat features on the

project site and evaluate use by kit fox and, if possible, and assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol).

Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit. If take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping dens (active or inactive). Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

## OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.). The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project, and those requirements supersede any requirements found in this document.

## EXCLUSION ZONES

The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances. The following radii are minimums, and if they cannot be followed the Service must be contacted:

| | |
|---|---|
| Potential den | 50 feet |
| Known den | 100 feet |
| Natal/pupping den (occupied and unoccupied) | Service must be contacted |
| A typical den | 50 feet |

Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Construction and other project activities should be prohibited or greatly restricted within these exclusion zones. Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited within the exclusion zones.

**DESTRUCTION OF DENS**

Disturbance to all San Joaquin kit fox dens should be avoided to the maximum extent possible. Protection provided by kit fox dens for use as shelter, escape, cover, and reproduction is vital to the survival of the species. Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use. If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities. The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped from the partially destroyed den.
Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction – may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then destruction shall cease and the Service shall be notified immediately.

**CONSTRUCTION AND OPERATIONAL REQUIREMENTS**

Habitat subject to permanent and temporary construction disturbances and other types of project related disturbance should be minimized. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting project goals to be achieved. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a 20-mph speed limit in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 13 of this section must be followed.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in closed containers and removed at least once a week from a construction or project site

5. No firearms shall be allowed on the project site.

6. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets should be permitted on project sites.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as

additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. .The representative will be identified during the employee education program. The representative's name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has expected impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the above-mentioned people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be recontoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.

12. Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

13. The Sacramento Fish and Wildlife Office and CDFG will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during
STANDARD RECOMMENDATIONS 7
project related activities. Notification must include the date, time, and location of the incident or ofthe finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The CDFG contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, California 95814, (916) 654-4262.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service, until July 23, 1999 at:
Endangered Species Division
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340
(916) 979-2710

After July 23, 1999 please direct mail to:
Endangered Species Division
2800 Cottage Way, West 2605
Sacramento, California 95826
(916) 414-6600

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" Of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means" . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.
"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.
"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.
"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.
"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have 'a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.
"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.