

CATEGORICAL EXCLUSION CHECKLIST
City of Bakersfield
12" Water Pipeline over the Friant-Kern Canal near Milepost 147.01

South-Central California Area Office

September 15, 2010

Background: The Friant-Kern Canal (FKC) was constructed by the Bureau of Reclamation (Reclamation) as part of the Central Valley Project to provide supplemental and irrigation water to Fresno, Tulare, and Kern Counties. The FKC stretches over 151.8 miles in a southerly direction from Millerton Lake to its terminus at the Kern River, roughly 4 miles west of the City of Bakersfield (City). On Reclamation's behalf, the FKC is maintained and operated by the Friant Water Authority.

The City has problem areas within its water system grid where the pressure provided for potable water use does not meet zone standards.

Purpose and Need for Action: The City needs to interconnect its water system grid on either side of the FKC in order to meet pressure zone standards and supply quality potable water at a higher desired pressure range.

Proposed Action: Reclamation proposes to issue a 50-year permit to the City, which would allow the installation of a 12" diameter water pipeline to fre-span approximately 80' across the FKC. The water pipeline would be a mortar lined, coated steel pipe and would run parallel to the southern side of Snow Road Bridge in an east/west direction where it crosses the FKC near milepost 147.01 (Figure 1). The Proposed Action is located within the NW1/4 of Section 7, Township 29S, and Range 27E, MDB&M.

A concrete saddle would serve as support foundation for the water pipeline on each side of the FKC and would be placed 9" from the canal lining. The foundation's dimensions are 18" long by 42" wide, with a height of 24" of which 15" would be buried. From each foundation, the water pipeline would extend approximately 100' (of which roughly 90' is within the FKC right-of-way) away from the FKC where it would then connect to the City's water system grid. The water pipeline would be buried in a trench that is at least 5.5' deep by 2.5'.

A 4' wide by 4' tall anti-climb fence would be installed at the canal liner edge on both sides of the canal.

The work would begin as soon as permitted and require approximately 30 days to complete. The contractor performing the work would maintain FKC maintenance road access with temporary backfill and/or plates over open trenches.

Categorical Exclusion: 516 DM 14.5 D (10) Issuance of permits, licenses, easements, and crossing agreements which provide right-of-way over Bureau lands where the action does not allow for or lead to a major public or private action.



Evaluation of Criteria for Categorical Exclusion

- | | | | |
|--|-----------------|-------------------------|-----|
| 1. This action would have a significant effect on the quality of the human environment. | No <u> X </u> | Uncertain <u> </u> | Yes |
| 2. This action would have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources. | No <u> X </u> | Uncertain <u> </u> | Yes |

Evaluation of Exemptions to Actions within Categorical Exclusion

- | | | | |
|--|-----------------|-------------------------|-----|
| 1. This action would have significant impacts on public health or safety. | No <u> X </u> | Uncertain <u> </u> | Yes |
| 2. This action would have significant impacts on such natural resources and unique geographical characteristics as historic or cultural resources; parks, recreation, and refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands; floodplains; national monuments; migratory birds; and other ecologically significant or critical areas. | No <u> X </u> | Uncertain <u> </u> | Yes |
| 3. This action would have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks. | No <u> X </u> | Uncertain <u> </u> | Yes |
| 4. This action would establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects. | No <u> X </u> | Uncertain <u> </u> | Yes |

- | | | | |
|--|-----------------|-------------------------|-----|
| 5. This action would have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects. | No <u> X </u> | Uncertain <u> </u> | Yes |
| 6. This action would have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by the bureau (in coordination with a Reclamation cultural resources professional). | No <u> X </u> | Uncertain <u> </u> | Yes |
| 7. This action would have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated critical habitat for these species. | No <u> X </u> | Uncertain <u> </u> | Yes |
| 8. This action would violate a Federal, State, local, or tribal law or requirement imposed for protection of the environment. | No <u> X </u> | Uncertain <u> </u> | Yes |
| 9. This action would affect Indian Trust Assets (ITA) (To be completed by Reclamation official responsible for ITA). | No <u> X </u> | Uncertain <u> </u> | Yes |
| 10. This action would have a disproportionately high and adverse effect on low income or minority populations. | No <u> X </u> | Uncertain <u> </u> | Yes |
| 11. This action would limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites. | No <u> X </u> | Uncertain <u> </u> | Yes |

12. This action would contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species.

No X Uncertain ____ Yes

NEPA Action: Categorical Exclusion X

Environmental commitments, explanation, and/or remarks:

☒ Yes ☐ No Environmental commitments are required and attached.

- ☒ San Joaquin Kit Fox Avoidance and Minimization Measures
- ☐ Giant Garter Snake Avoidance and Minimization Measures
- ☐ California Tiger Salamander Avoidance and Minimization Measures
- ☐ California Red-Legged Frog Avoidance and Minimization Measures
- ☒ Other: Burrowing Owl Survey Protocol and Mitigation Guidelines

Prepared by:

Michael Inthavong

Date: September 15, 2010

South-Central California Area Office

Regional Archeologist concurrence with Item 7:
See Attachment.

ITA Designee concurrence with Item 10:
See Attachment.

Concur:

Ned M. Grumbly

Date: 02/10/2011

Wildlife Biologist, South-Central California Area Office

Concur:

[Signature]

Date: 2/11/2011

Supervisory, Natural Resources Specialist, South-Central California Area Office

Concur:

David Woodley

Date: 2-13-11

SDM Chief, Resources Management Division, South-Central California Area Office

Approved:

Laura Myers

Date: 2/14/11

Deputy Area Manager, South-Central California Area Office

Inthavong, Michael T

From: Rivera, Patricia L
Sent: Thursday, May 20, 2010 7:38 AM
To: Inthavong, Michael T
Subject: RE: ITA Request Form (CEC-10-42)

Michael,

I reviewed the proposed action to issue a 50-year permit to the City, which would allow the installation of a 12" diameter waterline to freespan approximately 80' across the Friant-Kern Canal (FKC). The waterline would be a mortar lined, coated steel pipe and would run parallel to the southern side of Snow Road Bridge in an east/west direction where it crosses the FKC near milepost 147.01.

A concrete saddle would serve as support foundation for the waterline on each side of the FKC and would be placed 9" from the canal lining. The foundation's dimensions are 18" long by 42" wide, with a height of 24" of which 15" would be buried. From each foundation, the waterline would extend approximately 100' (of which roughly 90' is within the FKC right-of-way) away from the FKC where it would then connect to the City's water system grid. The waterline would be buried in a trench that is at least 5.5' deep by 2.5'.

The proposed action does not have the potential to affect Indian Trust Assets. The nearest ITA is a Public Domain Allotment approximately 40 miles East of the project location.

Patricia

Inthavong, Michael T

From: Ramsey, Dawn
Sent: Monday, September 20, 2010 3:03 PM
To: Inthavong, Michael T
Cc: Barnes, Amy J; Bruce, Brandee E; Dunay, Amy L; Fogerty, John A; Goodsell, Joanne E; Leigh, Anastasia T; Nickels, Adam M; Overly, Stephen A; Perry, Laureen (Laurie) M
Subject: RE: City of Bakersfield Waterline on the Friant-Kern Canal, Kern County, California Section 106 Complete (10-SCAO-228)
Attachments: 10-SCAO-228_SHPOConcurrence.pdf

[10-SCAO-228](#)

Michael:

I received the concurrence letter from the SHPO today. I have attached a copy for your files.

Thanks,
Dawn

From: Ramsey, Dawn
Sent: Wednesday, September 15, 2010 2:35 PM
To: Inthavong, Michael T
Cc: Barnes, Amy J; Bruce, Brandee E; Dunay, Amy L; Fogerty, John A; Goodsell, Joanne E; Leigh, Anastasia T; Nickels, Adam M; Overly, Stephen A; Perry, Laureen (Laurie) M
Subject: City of Bakersfield Waterline on the Friant-Kern Canal, Kern County, California Section 106 Complete (10-SCAO-228)

Tracking No. 10-SCAO-228

Project: City of Bakersfield Waterline on the Friant-Kern Canal, Kern County, California

Michael:

The proposed project to issue a 50-year permit to the city of Bakersfield, which would allow the installation of a 12-inch-diameter waterline to free span approximately 80 feet across the Friant-Kern Canal has the potential to affect historic properties. As a result, Reclamation entered into consultation with the California State Historic Preservation Officer (SHPO) on a finding of no historic properties affected as outlined in the 36 CFR Part 800 regulations.

The consultation package was sent to the SHPO on July 29, 2010 and was marked as received by their office on July 30, 2010. To date we have not received a formal response from the SHPO. As the 30-day period for SHPO review has passed, this email is to inform you that you may proceed with the project.

Once we receive SHPO's concurrence letter, we will forward a copy to you for the project's administrative record. If you have any questions, please feel free to contact me.

Sincerely,
Dawn

Dawn Ramsey Ford
Archaeologist
U.S. Bureau of Reclamation
Mid-Pacific Region
2800 Cottage Way, MP-153
Sacramento, CA 95825

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

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(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov



September 15, 2010

In Reply Refer To: BUR1007300A

Michael, A. Chotkowski
Regional Environmental Officer
United States Department of the Interior
Bureau of Reclamation, Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

BUREAU OF RECLAMATION OFFICIAL FILE COPY RECEIVED		
SEP 17 2010		
CODE	ACTION	SURNAME & DATE
153	✓	Aug 9/20/2010

Re: MP-153, ENV-3.00; City of Bakersfield Waterline on the Friant-Kern Canal, Kern County, California (Tracking #10-SCAO-228)

Dear Mr. Chotkowski:

Thank you for consulting with me regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Bureau of Reclamation (BUR) is the lead Federal agency for this undertaking and is seeking my comments on the effects that the proposed project will have on historic properties. The BUR proposes to permit the installation of a waterline to free span approximately 90 feet across the Friant Kern Canal (FKC) by the City of Bakersfield.

The undertaking will involve construction of a 12-inch diameter waterline to free span across the FKC. Construction will also include installing a concrete saddle to serve as a support foundation for the waterline on each side of the FKC and would be placed nine inches from the canal lining. The foundation's dimensions are 18 inches long by 42 inches wide, with a height of 24 inches, of which 15 inches will be buried. The waterline will extend approximately 100 feet away from the FKC where it will connect to the city's water system grid. The APE totals approximately one acre directly around the new waterline to be constructed. All ground disturbance will take place in fill from the FKC. You have submitted in addition to your letter of July 29, 2010, several maps as evidence of your efforts to identify historic properties in the APE. Native American consultation has been undertaken by the BUR for this undertaking with letters sent out July 20, 2010. No responses have been received to date.

Identification efforts included a records search at the Southern San Joaquin Valley Information Center and search of BUR internal records. Only two cultural resources were located within the APE, the FKC and Snow Road Bridge. Snow Road Bridge has been previously evaluated under the Caltrans Historic Bridge Inventory as not eligible. The Friant Kern Canal was completed in 1951 and spans a distance of 151 miles through Fresno, Tulare, and Kern counties from its diversion works at the Friant Dam on the San Joaquin River. As an important component of the Central Valley Project (CVP) the FKC has been determined to be eligible under criterion A for the National Register

Classification	ENV 300
Project	214
Control No.	10069500
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of Historic Places (NRHP) as a contributing element to the Central Valley Project multiple-property nomination being proposed by the BUR. All work is consistent with previous operation of the FKC and will not affect the ability of the FKC to deliver water, or the qualities that make the canal eligible for listing under Criterion A.

Pursuant to 36 CFR 800.5(c)(1), I have no objection to your finding of No Adverse Effects to historic properties.

Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, especially for contamination mitigation if necessary, the BUR may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact Trevor Pratt of my staff at phone 916-445-7017 or email tpratt@parks.ca.gov.

Sincerely,

Susan H. Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Inthavong, Michael T

From: Gruenhagen, Ned M
Sent: Tuesday, February 08, 2011 3:18 PM
To: Inthavong, Michael T
Cc: Couron, Laura M
Subject: ESA review for CE 10-42 Bakersfield Water line
Attachments: ESA final for CEC 10-042 12inch Waterline over the Friant-Kern Canal near Milepost 147 final 2011.docx; SJKF Clearance Survey 1-25-2011.PDF; burrowing+owl+survey+guidelines.pdf; kitfox_standard_rec_2011.pdf

Michael,

I am headed to Sacramento.

The revised environmental review for CEC 10-42, for the Bakersfield Water line crossing of Friant Kern Canal is attached. Please include the attached new 2011, standard kit fox avoidance measures and those also for burrowing owl. I've left room for attaching these supporting documents to the environmental review document attached.

The CEC can be routed for signature. A survey was received from Live Oak covering listed species and there was no evidence of the presence of listed species.

Please provide me with PDF copy, including Live Oak report that I can send to Service.

Thanks,

Ned

Ned M. Gruenhagen, Ph.D.
Wildlife Biologist
U.S. Department of Interior, Bureau of Reclamation
South-Central California Area Office
1243 N Street
Fresno, CA 93721
Tel. (559) 487-5227
Mobile (559) 284-2735
Fax (559) 487-5397

ESA Effects Analysis for CEC 10-042
City of Bakersfield 12" Water Pipeline over the Friant-Kern Canal near
Milepost 147.01

South-Central California Area Office

September 30, 2010

Proposed Action: Reclamation proposes to issue a 50-year permit to the City, which would allow the installation of a 12" diameter water pipeline to freespan approximately 80' across the Friant-Kern Canal (FKC). The water pipeline would be a mortar lined, coated steel pipe and would run parallel to the southern side of Snow Road Bridge in an east/west direction where it crosses the FKC near milepost 147.01 (Figure 1). The project is located within the NW1/4 of Section 7, Township 29S, and Range 27E, MDB&M.

A concrete saddle would serve as support foundation for the water pipeline on each side of the FKC and would be placed 9" from the canal lining. The foundation's dimensions are 18" long by 42" wide, with a height of 24" of which 15" would be buried. From each foundation, the water pipeline would extend approximately 100' (of which roughly 90' is within the FKC right-of-way (ROW)) away from the FKC where it would then connect to the City's water system grid. The water pipeline would be buried in a trench that is at least 5.5' deep by 2.5'.

The work would begin as soon as permitted and require approximately 30 days to complete. The contractor performing the work would maintain FKC maintenance road access with temporary backfill and/or plates over open trenches.

Additionally, maintenance of the pipeline in the ROW would be conducted. Properly installed and under normal conditions, this type of pipe can have a life span of 75 to 100 years. The maintenance activities would be minimal and would consist of periodic visual inspections, with repairs as needed. The most likely mechanical failure causing the need for repairs would be at the connection fittings that tie the 12" CL&C to the 12" PVC outside the canal crossing. However, should there be some type of pipe failure on the 12" CL&C pipe, isolation valves are installed on both sides of the canal crossing, so this section of pipe can be isolated and necessary repairs made.

Evaluation of Effects from Proposed Action: The action area for the proposed action includes areas within the Reclamation ROW for the FKC, at milepost 147.01, approximately 5 miles from the southern terminus of the FKC. The proposed action would include construction of the water pipeline across the FKC, just south of the Snow Road Bridge, along with supporting concrete saddles in the embankment of the FKC. Soil would be excavated in the edge of the canal levees in the ROW to construct the support saddles; trenches would be dug on either end, extending from the saddles on the inner prism of the canal levees, through these levees to connect with water pipelines outside the ROW. Equipment would be staged on the Reclamation ROW.

The California Natural Diversity Database (CNDDDB 2010) and other sources were consulted about the presence of designated critical habitat and also records of species from the area that are protected under the Endangered Species Act (ESA; 16 USC 1531 et. seq.). The potential for listed species at the site was discussed with biologists from the U.S. Fish and Wildlife Service (Service).

No designated Critical Habitat is present in the action area (CNDDDB 2010). Because no designated Critical Habitat is found in the action area, none would be affected by the proposed action.

The ROW is narrow and is kept free of vegetation. Housing development exists on both sides of the FKC south of the existing bridge crossing over the FKC. North of the bridge, agricultural and residential land use exist.

Listed species known from the vicinity are identified in CNDDDB (2010) records (see Figure 2). The endangered San Joaquin kit fox (*Vulpes macrotis mutica*) is known from the area and may use the FKC ROW as a movement corridor or for limited denning. Besides SJKF, San Joaquin Woolley threads (*Monolopia congdonii*) is known from the area, although records in the area for this species are quite old, with the most recent record being from (1951); several records for this species are characterized in the CNDDDB as potentially extirpated (CNDDDB 2010). Although the San Joaquin woolly-threads is known to colonize bare ground, likely by wind-dispersal of seeds (E. Cypher, pers. comm.) the surrounding land is either in urban development, agricultural use or is highly disturbed (i.e. the FKC ROW), which would prohibit the species from occurring close enough to the action area to colonize it (Reclamation 2007). Two other species that could have been present in the vicinity at one time, but for which the closest records are 4½ to 5 miles away and for which habitat at the site is lacking are the endangered blunt-nosed leopard lizard (*Gambelia sila*) and the endangered Tipton's kangaroo rat (*Dipodomys nitratooides nitratooides*). Vegetation is lacking in the immediate area and the site does not provide habitat for blunt-nosed leopard lizard. Habitat for other listed species from the area also is not present at the site.

Previous work at this site included construction of a new bridge over the FKC. As part of this bridge replacement project, a structure to support movement of SJKF across the FKC was constructed as part of that action, apart from the Snow Road Bridge.

The proposed action would not affect the crossing structure previously developed for SJKF or the undercrossing space allowed under the existing bridge. The pipeline would be buried underground except for the portion over the canal itself, and so would not impede movement or affect SJKF once installed. Additionally, the action would be a temporary daytime disturbance to the area, in an area that is currently heavily disturbed by traffic on Snow Road and activities along the FKC. Because SJKF are nocturnal, the incremental increase in daytime activities in the area would not affect this species if they are not denning in the area. Pending the results of the field survey, if there is no evidence of SJKF, or of the presence of other listed species (e.g. Tipton's kangaroo rat), implementation of the measures and Environmental Commitments identified in the CEC

would avoid effects listed species. There is no critical habitat in the action area and so none would be affected.

The Snow Road Bridge, located north of the proposed water pipeline crossing, could support nests of swallows. Timing of construction is likely to occur before nesting by swallows would be initiated. However, the construction will not interfere with the bridge or the nests of these birds and would therefore not result in take.

ENVIRONMENTAL COMMITMENTS FOR THIS PROJECT INCLUDE:

- Standard kit fox avoidance measures shall be followed (**see attached**).
- A qualified biologist is required to inspect the project area for potential kit fox dens between 14 and 30 days prior to commencement of ground disturbance activities. Findings of the survey shall be provided to Reclamation biologists at Fresno, SCCAO, and also to the US Fish and Wildlife Service (Service) in Sacramento (Attn: to Mr. Tim Kuhn).
- Additionally, the biologist shall inspect the site for the presence of other listed species during the surveys for evidence of kit fox, including the Tipton's kangaroo rat. The area shall also be surveyed at that time for the presence of migratory birds, particularly burrowing owls (*Athene cunicularia*) which might be affected. If no evidence of kangaroo rats (*Dipodomys* species) is discovered, then no further evaluation for listed kangaroo rats is necessary. However, if *Dipodomys* species are present, an evaluation of the site must be made by qualified biologist to determine if individuals present are those of a listed species. If the species present is determined to be protected under the ESA, construction of the project may not be initiated on Reclamation facilities (i.e. in Reclamation's right-of-way) until consultation with Service under the Endangered Species Act (ESA; 16 USC 1531 et seq.) has been completed and is authorized by Reclamation.
- If burrowing owls or other migratory birds (e.g. swallows) are present in the action area, no take of those species are permitted. Take of migratory birds is: "take" shall be construed to mean pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." This definition applies to eggs in nests, nestlings, or nests occupied by eggs or nestlings. If burrowing owls are in the project area, standard avoidance measures (see attached) shall be employed to avoid take of this species, including altering timing of construction to avoid disturbing burrows and nests or nestlings.
- If the project area falls within the Bakersfield Metro Habitat Conservation Plan and is subject to the conditions of the Plan (e.g. for presence of a kit fox den is within 0.25 mile of the site), measures required under the HCP that are required shall be met and any required input on compliance from the US Fish and Wildlife Service must be obtained prior to work being conducted on the project.
- A biologist shall present information on the biology, natural history and protection status of SJKF to project workers before any ground disturbing activities are initiated. Additionally, a fact sheet, with species description, photograph, and text on the natural history of SJKF shall be provided to workers.
- Work on site shall be permitted only during daylight hours.

- If any trenching must remain open outside of daytime hours, and such trenches are more than two feet deep, all such trenched area shall be covered with materials (such as plywood) that would allow animals, including kit fox, to cross such areas unimpeded.
- A biological monitor shall be present during ground disturbing activities. If a listed species is observed, work at the site shall immediately stop and California Department of Fish and Game biologists, and Reclamation biologists at Fresno, SCCAO, shall be notified. No work may continue without additional approval from environmental staff, following consultation with wildlife agencies, as appropriate.
- If a listed species is observed at the project site, work must cease, environmental staff at CDFG and Reclamation must be notified, and further appropriate environmental compliance must be completed before work on the project at the site can resume.
- Lastly, if future maintenance actions other than visual inspection is to be conducted as described in the Project Description, those maintenance actions may proceed only when Reclamation has been notified and Environmental Commitments described herein have been met for each such action. Any maintenance actions to be conducted at Reclamation facilities (i.e. within the Reclamation right-of-way) which require ground disturbance, or are maintenance actions not described herein, shall not be conducted until the effects of those actions are further evaluated by environmental staff at Reclamation and appropriate environmental compliance for those actions have been completed.

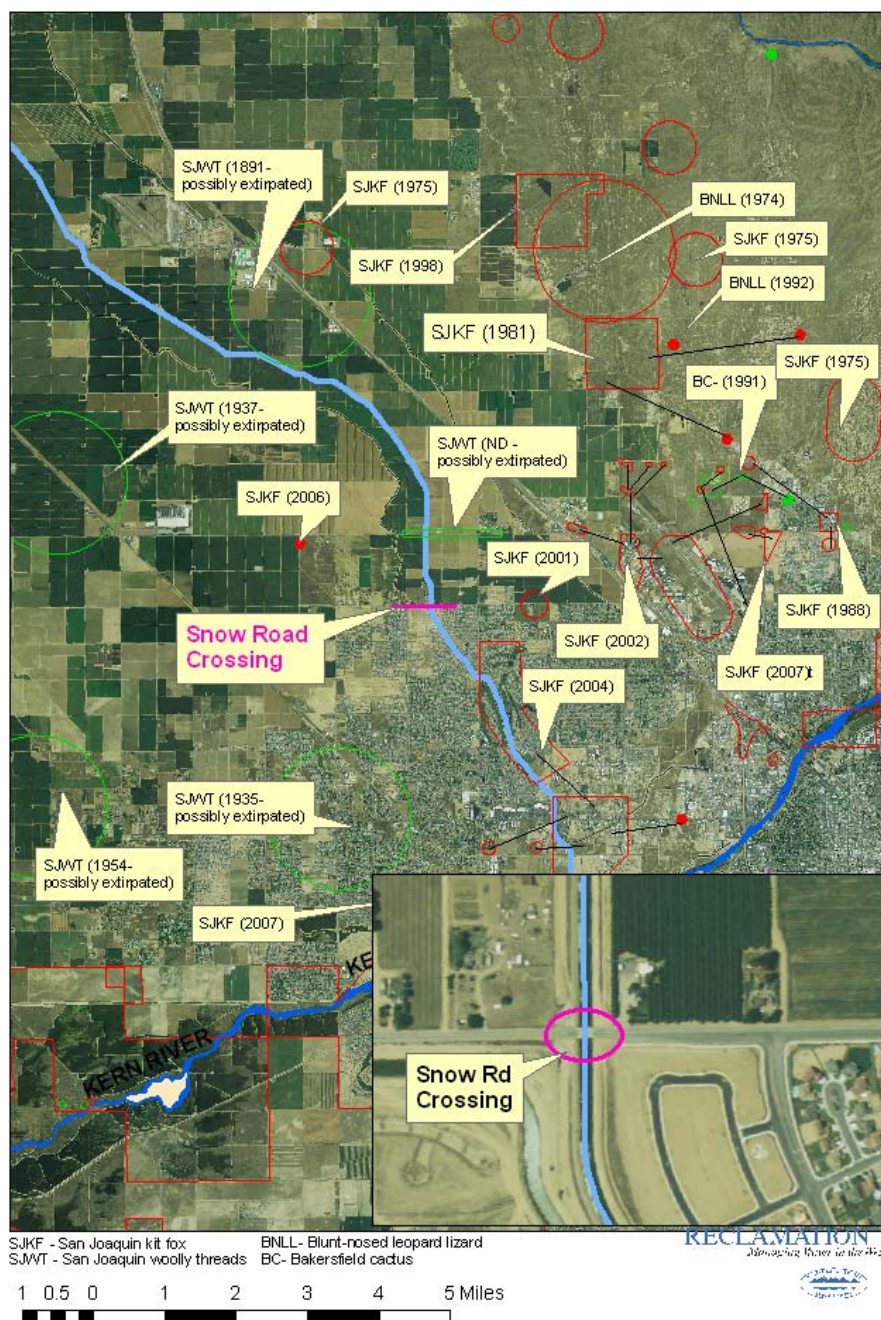
References

- California Natural Diversity Database (CNDDB). 2010. California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch. Sacramento, CA.
- Reclamation (Bureau of Reclamation). 2007. Kern County Bridge Replacement at Snow Road and Friant-Kern Canal. Final Environmental Assessment. EA-05-109. 18pp. + Appendices.

Figure 1. Project Location Map.



Figure 2. Records of Federally Listed Species in the Vicinity of Snow Road Pipeline Crossing of the Friant-Kern Canal at Milepost 147.01- CEC 10-042



Attachment – Kit Fox Avoidance Measures

**U.S. FISH AND WILDLIFE SERVICE
STANDARDIZED RECOMMENDATIONS
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX
PRIOR TO OR DURING GROUND DISTURBANCE**

Prepared by the Sacramento Fish and Wildlife Office
January 2011

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) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** 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. 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). These 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.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process.

All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. 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, the 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. Resumes of biologists should be submitted to the Service for review and approval prior to any survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger 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 utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

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. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, 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 and under no circumstances should the den be disturbed or destroyed without prior authorization. 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 the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. 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

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied <u>and</u> unoccupied)	Service must be contacted

***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. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. 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.

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 or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

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.

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, without further disturbance, from the partially destroyed den.

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.

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 all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. 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 daytime speed limit of 20-mph throughout the site 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. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. 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. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. 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 Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become 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 only 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 securely 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. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
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 a 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 kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.
9. An employee education program should be conducted for any project that has anticipated 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/or 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 previously referenced 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 re-contoured 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 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 guidance.
12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring 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 Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.
13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the 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 below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.
14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

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 at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT “A” - DEFINITIONS

"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.

Appendix I—Definitions for Kit Fox Avoidance and Minimization Measures

“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.

“Harm” - is defined in the Act to include significant habitat modification or degradation that results in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or resting.

“Harass” - is defined in the Act as actions that create the likelihood of injury to listed species to such an extent as to disrupt normal behavior patterns which include, but are not limited to, breeding, foraging, or resting.

“Cumulative Effects” - The cumulative or incremental environmental impact of the effect of the action together with impacts of past, present, and reasonably foreseeable future actions. The action area includes all areas to be affected directly or indirectly by the action, not merely the immediate area involved in the action.

“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 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.

“Habitat” - Habitat refers to the resources and conditions present in an area that; (1) produces occupancy (including foraging areas and dispersal corridors, etc.); or (2) provides potential for occupancy (e.g., listed species who are so reduced in numbers that they cannot use some areas of habitat, but would do so if their numbers were greater and/or they had the opportunity); or (3) was historically occupied; and (4) are important to the survival, reproduction, and/or recovery of the species.

“Habitat Quality” - The quality of the habitat should be considered a continuous variable, ranging from low to medium to high quality habitats, based on the ability to provide resources for survival, reproduction, and recovery, respectively.

“Habitat Value” - The value of the habitat refers to the importance of the habitat to the recovery of kit foxes. This should be considered a continuum with indefinite boundaries or acreage; low, medium, and high.

Attachment – Burrowing Owl Avoidance Measures

BURROWING OWL SURVEY PROTOCOL
AND MITIGATION GUIDELINES

Prepared by:

The California Burrowing Owl Consortium

April 1993

INTRODUCTION

The California Burrowing Owl Consortium developed the following Survey Protocol and Mitigation Guidelines to meet the need for uniform standards when surveying burrowing owl (*Speotyto cunicularia*) populations and evaluating impacts from development projects. The California Burrowing Owl Consortium is a group of biologists in the San Francisco Bay area who are interested in burrowing owl conservation. The following survey protocol and mitigation guidelines were prepared by the Consortium's Mitigation Committee. These procedures offer a decision-making process aimed at preserving burrowing owls in place with adequate habitat.

California's burrowing owl population is clearly in peril and if declines continue unchecked the species may qualify for listing. Because of the intense pressure for development of open, flat grasslands in California, resource managers frequently face conflicts between owls and development projects. Owls can be affected by disturbance and habitat loss, even though there may be no direct impacts to the birds themselves or their burrows. There is often inadequate information about the presence of owls on a project site until ground disturbance is imminent. When this occurs there is usually insufficient time to evaluate impacts to owls and their habitat. The absence of standardized field survey methods impairs adequate and consistent impact assessment during regulatory review processes, which in turn reduces the possibility of effective mitigation.

These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or the resources that support them. The process begins with a four-step survey protocol to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.

Each project and situation is different and these procedures may not be applicable in some circumstances. Finally, these are not strict rules or requirements that must be applied in all situations. They are guidelines to consider when evaluating burrowing owls and their habitat, and they suggest options for burrowing owl conservation when land use decisions are made.

Section 1 describes the four phase Burrowing Owl Survey Protocol. Section 2 contains the Mitigation Guidelines. Section 3 contains a discussion of various laws and regulations that protect burrowing owls and a list of references cited in the text.

We have submitted these documents to the California Department of Fish and Game (CDFG) for review and comment. These are untested procedures and we ask for your comments on improving their usefulness.

SECTION 1 BURROWING OWL SURVEY PROTOCOL

PHASE I: HABITAT ASSESSMENT

The first step in the survey process is to assess the presence of burrowing owl habitat on the project site including a 150-meter (approx. 500 ft.) buffer zone around the project boundary (Thomsen 1971, Martin 1973).

Burrowing Owl Habitat Description

Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement.

Occupied Burrowing Owl Habitat

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Occupancy of suitable burrowing owl habitat can be verified at a site by an observation of at least one burrowing owl, or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992). A site should be assumed occupied if at least one burrowing owl has been observed occupying a burrow there within the last three years (Rich 1984).

The Phase II burrow survey is required if burrowing owl habitat occurs on the site. If burrowing owl habitat is not present on the project site and buffer zone, the Phase II burrow survey is not necessary. A written report of the habitat assessment should be prepared (Phase IV), stating the reason(s) why the area is not burrowing owl habitat.

PHASE II: BURROW SURVEY

1. A survey for-burrows and owls should be conducted by walking through suitable habitat over the entire project site and in areas within 150 meters (approx 500 ft.) of the project impact zone. This 150-meter buffer zone is included to account for adjacent burrows and foraging habitat outside the project area and impacts from factors such as noise and vibration due to heavy equipment which could impact resources outside the project area.

2. Pedestrian survey transects should be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be no more than 30 meters (approx. 100 ft.), and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility. To efficiently survey projects larger than 100 acres, it is recommended that two or more surveyors conduct concurrent surveys. Surveyors should maintain a minimum distance of 50 meters (approx. 160 ft.) from any owls or occupied burrows. It is important to minimize disturbance near occupied burrows during all seasons.
3. If burrows or burrowing owls are recorded on the site, a map should be prepared of the burrow concentration areas. A breeding season survey and census (Phase III) of burrowing owls is the next step required.
4. Prepare a report (Phase IV) of the burrow survey stating whether or not burrows are present.
5. A preconstruction survey may be required by project-specific mitigations no more than 30 days prior to ground disturbing activity.

PHASE III: BURROWING OWL SURVEYS, CENSUS AND MAPPING

If the project site contains burrows that could be used by burrowing owls, then survey efforts should be directed towards determining owl presence on the site. Surveys in the breeding season are required to describe if, when, and how the site is used by burrowing owls. If no owls are observed using the site during the breeding season, a winter survey is required.

Survey Methodology

A complete burrowing owl survey consists of four site visits. During the initial site visit examine burrows for owl sign and map the locations of occupied burrows. Subsequent observations should be conducted from as many fixed points as necessary to provide visual coverage of the site using spotting scopes or binoculars. It is important to minimize disturbance near occupied burrows during all seasons. Site visits must be repeated on four separate days. Conduct these visits from two hours before sunset to one hour after or from one hour before to two hours after sunrise. Surveys should be conducted during weather that is conducive to observing owls outside their burrows. Avoid surveys during heavy rain, high winds (> 20 mph), or dense fog.

Nesting Season Survey. The burrowing owl nesting season begins as early as February 1 and continues through August 31 (Thomsen 1971, Zam 1974). The timing of nesting activities may vary with latitude and climatic conditions. If possible, the nesting season survey should be conducted during the peak of the breeding season, between April 15 and July 15. Count and map all burrowing owl sightings, occupied burrows, and burrows with owl sign. Record numbers of pairs and juveniles, and behavior such as courtship and copulation. Map the approximate territory boundaries and foraging areas if known.

Survey for Winter Residents (non-breeding owls). Winter surveys should be conducted between December 1 and January 31, during the period when wintering owls are most likely to be present. Count and map all owl sightings, occupied burrows, and burrows with owl sign.

Surveys Outside the Winter and Nesting Seasons. Positive results, (i.e., owl sightings)- outside of the above survey periods would be adequate to determine presence of owls on site. However, results of these surveys may be inadequate for mitigation planning because the numbers of owls and their pattern of distribution may change during winter and nesting seasons. Negative results during surveys outside the above periods are not conclusive proof that owls do not use the site.

Preconstruction Survey. A preconstruction survey may be required by project-specific mitigations and should be conducted no more than 30 days prior to ground disturbing activity.

PHASE IV: RESOURCE SUMMARY, WRITTEN REPORT

A report should be prepared for CDFG that gives the results of each Phase of the survey protocol, as outlined below.

Phase I: Habitat Assessment

1. Date and time of visit(s) including weather and visibility conditions; methods of survey.
2. Site description including the following information: location, size, topography, vegetation communities, and animals observed during visit(s).
3. An assessment of habitat suitability for burrowing owls and explanation.
4. A map of the site.

Phase II: Burrow Survey

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.
2. A more detailed site description should be made during this phase of the survey protocol including a partial plant list of primary vegetation, location of nearest freshwater (on or within one mile of site), animals observed during transects.
3. Results of survey transects including a map showing the location of concentrations of burrow(s) (natural or artificial) and owl(s), if present.

Phase III: Burrowing Owl Surveys, Census and Mapping

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.
2. Report and map the location of all burrowing owls and owl sign. Burrows occupied by owl(s) should be mapped indicating the number of owls at each burrow. Tracks, feathers, pellets, or other items (prey remains, animal scat) at burrows should also be reported.
3. Behavior of owls during the surveys should be carefully recorded (from a distance) and reported. Describe and map areas used by owls during the surveys. Although not required, all behavior is valuable to document including feeding, resting, courtship, alarm, territorial, parental, or juvenile behavior.
4. Both winter and nesting season surveys should be summarized. If possible include information regarding productivity of pairs, seasonal pattern of use, and include a map of the colony showing territorial boundaries and home ranges.
5. The historical presence of burrowing owls on site should be documented, as well as the source of such information (local bird club, Audubon society, other biologists, etc.).

Burrowing: Owl Survey Protocol

April 1993

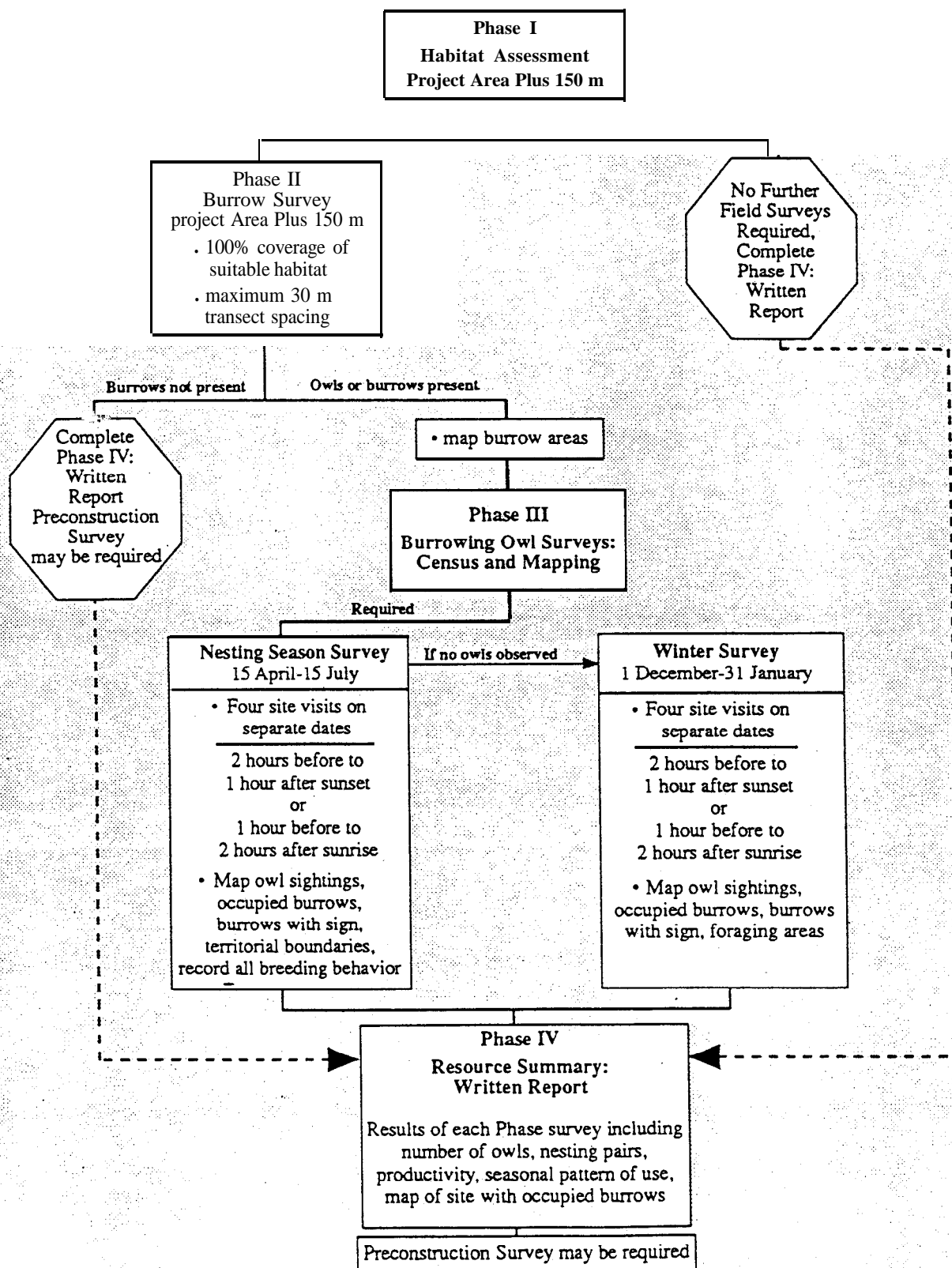


Figure 1.

SECTION 2 BURROWING OWL MITIGATION GUIDELINES

The objective of these mitigation guidelines is to minimize impacts to burrowing owls and the resources that support viable owl populations. These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or their resources. The process begins with a four-step survey protocol (see *Burrowing Owl Survey Protocol*) to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures described below are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.

Mitigation actions should be carried out prior to the burrowing owl breeding season, generally from February 1 through August 31 (Thomsen 1971, Zarn 1974). The timing of nesting activity may vary with latitude and climatic conditions. Project sites and buffer zones with suitable habitat should be resurveyed to ensure no burrowing owls have occupied them in the interim period between the initial surveys and ground disturbing activity. Repeat surveys should be conducted not more than 30 days prior to initial ground disturbing activity.

DEFINITION OF IMPACTS

1. Disturbance or harassment within 50 meters (approx. 160 ft.) of occupied burrows.
2. Destruction of burrows and burrow entrances. Burrows include structures such as culverts, concrete slabs and debris piles that provide shelter to burrowing owls.
3. Degradation of foraging habitat adjacent to occupied burrows.

GENERAL CONSIDERATIONS

1. Occupied burrows should not be disturbed during the nesting season, from February 1 through August 31, unless the Department of Fish and Game verifies that the birds have not begun egg-laying and incubation or that the juveniles from those burrows are foraging independently and capable of independent survival at an earlier date.
2. A minimum of 6.5 acres of foraging habitat, calculated on a 100-m (approx. 300 ft.) foraging radius around the natal burrow, should be maintained per pair (or unpaired resident single bird) contiguous with burrows occupied within the last three years (Rich 1984, Feeney 1992). Ideally, foraging habitat should be retained in a long-term conservation easement.

3. When destruction of occupied burrows is unavoidable, burrows should be enhanced (enlarged or cleared of debris) or created (by installing artificial burrows) in a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.
4. If owls must be moved away from the disturbance area, passive relocation (see below) is preferable to trapping. A time period of at least one week is recommended to allow the owls to move and acclimate to alternate burrows.
5. The mitigation committee recommends monitoring the success of mitigation programs as required in Assembly Bill 3180. A monitoring plan should include mitigation success criteria and an annual report should be submitted to the California Department of Fish and Game.

AVOIDANCE

Avoid Occupied Burrows

No disturbance should occur within 50 m (approx. 160 ft.) of occupied burrows during the non-breeding Season of September 1 through January 31 or within 75 m (approx. 250 ft.) during the breeding Season of February 1 through August 31. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird (Figure 2).

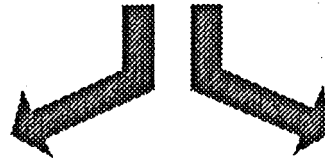
MITIGATION FOR UNAVOIDABLE IMPACTS

On-site Mitigation

On-site passive relocation should be implemented if the above avoidance requirements cannot be met. Passive relocation is defined as encouraging owls to move from occupied burrows to alternate natural or artificial burrows that are beyond 50 m from the impact zone and that are within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls (Figure 3). Relocation of owls should only be implemented during the non-breeding season. On-site habitat should be preserved in a conservation easement and managed to promote burrowing owl use of the site.

Owls should be excluded from burrows in the immediate impact zone and within a 50 m (approx. 160 ft.) buffer zone by installing one-way doors in burrow entrances: One-way doors should be left in place 48 hours to insure owls have left the burrow before excavation. One alternate natural or artificial burrow should be provided for each burrow that will be excavated in the project impact zone. The project area should be monitored daily for one week to confirm owl use of alternate burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags should be inserted into the tunnels

AVOIDANCE



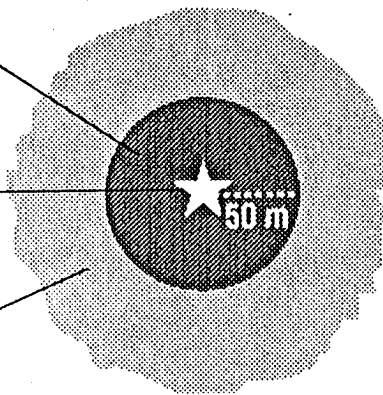
Non-breeding season

1 Sept. - 31 Jan.

No impacts within
50 m of occupied
burrow

Occupied
burrow

Maintain
at least 6.5 acres
foraging habitat



Breeding season

1 Feb. - 31 Aug.

No impacts within
75 m of occupied
burrow

Occupied
burrow

Maintain
at least 6.5 acres
foraging habitat

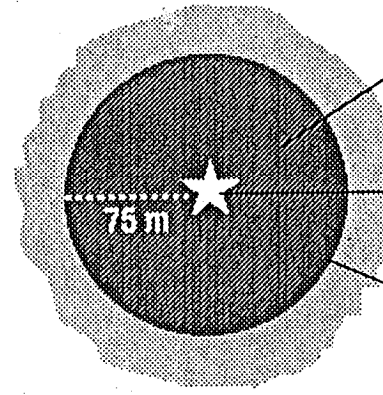


Figure 2. Burrowing owl mitigation guidelines.

ON-SITE MITIGATION IF AVOIDANCE NOT MET

(More than 6.5 acres suitable habitat available)

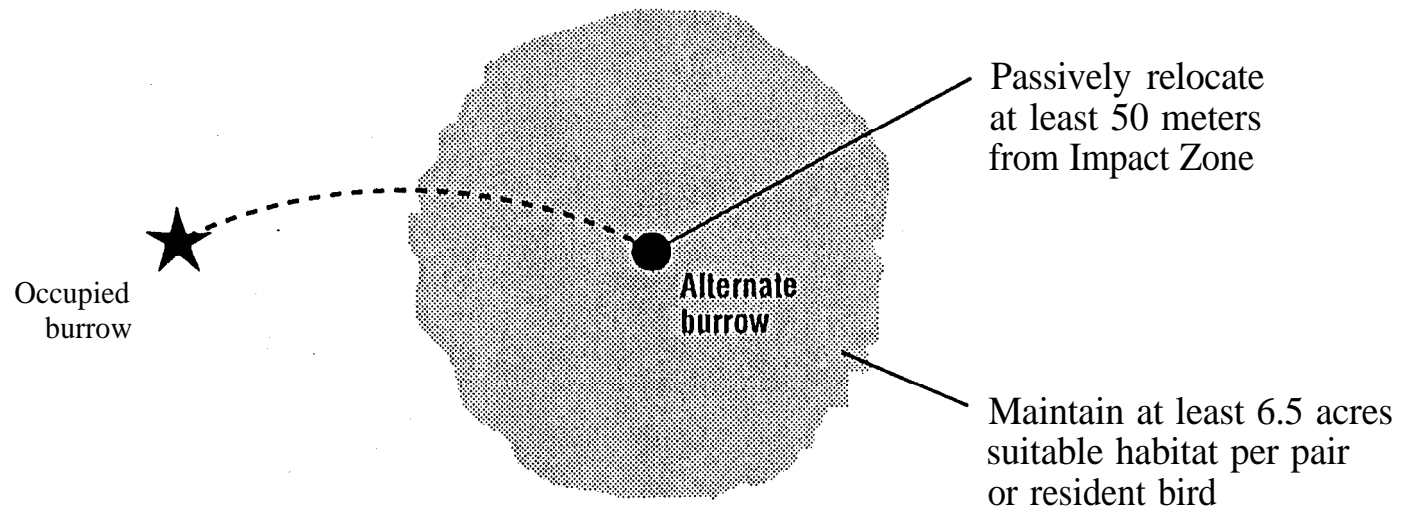


Figure 3. Burrowing owl mitigation guidelines.

during excavation to maintain an escape route for any animals inside the burrow.

Off-site Mitigation

If the project will reduce suitable habitat on-site below the threshold level of 6.5 acres per relocated pair or single bird, the habitat should be replaced off-site. Off-site habitat must be suitable burrowing owl habitat, as defined in the *Burrowing Owl Survey Protocol*, and the site approved by CDFG. Land should be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. Off-site mitigation should use one of the following ratios:

1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.5 (9.75) acres per pair or single bird.
2. Replacement of occupied habitat with habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.
3. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

SECTION 3 LEGAL STATUS

The burrowing owl is a migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter, any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21). Sections 3503, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 - August 15, annually). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) or the loss of habitat upon which the birds depend is considered “taking” and is potentially punishable by fines and/or imprisonment. Such taking would also violate federal law protecting migratory birds (e.g., MBTA).

The burrowing owl is a Species of Special Concern to California because of declines of suitable habitat and both localized and statewide population declines. Guidelines for the Implementation of the California Environmental Quality Act (CEQA) provide that a species be considered as endangered or “rare” regardless of appearance on a formal list for the purposes of the CEQA (Guidelines, Section 15380, subsections b and d). The CEQA requires a mandatory findings of significance if impacts to threatened or endangered species are likely to occur (Sections 21001(c), 21083. Guidelines 15380, 15064, 15065). Avoidance or mitigation must be presented to reduce impacts to less than significant levels.

CEQA AND SUBDIVISION MAP ACT

CEQA Guidelines Section 15065 directs that a mandatory finding of significance is required for projects that have the potential to substantially degrade or reduce the habitat of, or restrict the range of a threatened or endangered species. CEQA requires agencies to implement feasible mitigation measures or feasible alternatives identified in EIR’s for projects which will otherwise cause significant adverse impacts (Sections 21002, 21081, 21083; Guidelines, sections 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a).).

To be legally adequate, mitigation measures must be capable of “avoiding the impact altogether by not taking a certain action or parts of an action”; “minimizing impacts by limiting the degree or magnitude of the action and its implementation”; “rectifying the impact by repairing, rehabilitating or restoring the impacted environment”; “or reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.” (Guidelines, Section 15.370).

Section 66474 (e) of the Subdivision Map Act states “a legislative body of a city or county shall deny approval of a tentative map or parcel map for which a tentative map was not required, if

it makes any of the following findings:... (e) that the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish and wildlife or their habitat". In recent court cases, the court upheld that Section 66474(e) provides for environmental impact review separate from and independent of the requirements of CEQA (Topanga Assn. for a Scenic Community v. County of Los Angeles, 263 Cal. Rptr. 214 (1989).). The finding in Section 66174 is in addition to the requirements for the preparation of an EIR or Negative Declaration.

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