

# **LOW-EFFECT HABITAT CONSERVATION PLAN**

FOR THE

## **PROPOSED STATE ROUTE 99/ CARTMILL AVENUE INTERCHANGE IMPROVEMENTS PROJECT CITY OF TULARE, TULARE COUNTY, CALIFORNIA**

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**October 2012**



ICF International. 2012. *Low-Effect Habitat Conservation Plan for the Proposed State Route 99/Cartmill Avenue Interchange Improvements Project, Tulare County, California*. October. (ICF 06890.06.) Sacramento, CA. Prepared for the City of Tulare, Tulare, CA.

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## Acronyms and Abbreviations

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°F	Fahrenheit
AM/PM	ARCO AM/PM
BMPs	best management practices
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
City	City of Tulare
CWA	Clean Water Act
EAM	Environmental Action Memorandum
EO	Executive Order
ESA	Endangered Species Act
HCP	Habitat Conservation Plan
ICF	ICF International
ITP	incidental take permit
MBTA	Migratory Bird Treaty Act
ml	milliliters
MOA	Memorandum of Agreement
MOU	memorandum of understanding
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWP	nationwide permit
NWR	National Wildlife Refuge
PAL	Project Area Limit
PM	post miles
project	State Route 99/Cartmill Avenue Intersection Improvements Project
project area	project construction area

proposed project	State Route 99/Cartmill Avenue Intersection Improvements Project
ROW	right-of-way
RPW	relatively permanent water
RV	recreational vehicle
RWQCBs	Regional Water Quality Control Boards
SFWO	Sacramento Fish and Wildlife Office
SHPO	State Historic Preservation Officer
SPs	seasonal pools
SR	State Route
Staff Report	California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation
Standardized Recommendations	Standardized Recommendations for the Protection of San Joaquin Kit Fox Prior to or During Ground Disturbance
SWANCC	Solid Waste Agency of Northern Cook County
SWPPP	stormwater pollution prevention plan
TNW	tributaries of navigable waters
U.S.C.	United States Code
USGS	U.S. Geological Survey
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service



### 1.1 Overview

This City of Tulare, State Route 99/Cartmill Avenue Interchange Low-Effect Habitat Conservation Plan (SR 99/Cartmill HCP) has been prepared to satisfy requirements under Section 10 of the federal Endangered Species Act (ESA) for activities associated with construction of the State Route (SR) 99/Cartmill Avenue Intersection Improvements Project (project or proposed project). A Low Effect HCP has been determined to be the appropriate document because the project has a limited scope and would result in minimal or negligible effects to biological and other resource as discussed in the Scope of the HCP section below.

The City of Tulare (City), in conjunction with California Department of Transportation (Caltrans), proposes to modify the existing SR 99/M Street/Cartmill Avenue interchange located between post miles (PM) 31.3 and 32.6 in the city of Tulare, Tulare County (Figure 1-1). The project would replace the overcrossing constructed in the 1950s and improve safety, relieve congestion, provide additional capacity, improve east-west circulation, and improve local access with SR 99 at Cartmill Avenue. No federal funding is being sought for this project. Project funding will come from Measure R sales tax revenues and Proposition 1B funds, with the balance to be provided by the City.

The project would be constructed in a location that supports suitable habitat for vernal pool fairy shrimp (*Branchinecta lynchi*) and San Joaquin kit fox (*Vulpes macrotis mutica*), species that are listed as threatened or endangered, under the ESA. This HCP has been developed to ensure that impacts on these federally listed species are adequately avoided, minimized, and mitigated in accordance with requirements pursuant to ESA Section 10(a)(2)(B).

### 1.2 Scope of the HCP

A low-effect HCP was prepared for the project because the effects of the project on federally listed species and their habitats are minor. The project would result in effects to low quality vernal pool habitat and small acreages of low quality foraging and denning habitat for San Joaquin kit fox. As discussed in Chapter 4, these effects to federally listed species are negligible and minor, prior to implementation of the minimization and mitigation measures (Chapter 5). In addition, effects on all other components of the human environment are also minor. A California Environmental Quality Act (CEQA) Initial Study and proposed Mitigated Negative Declaration was prepared for the project and circulated for public review. No substantial public comments were received. The CEQA analysis concluded that the only resource area on which the project would have a significant impact was Visual Resources, and that impact could be reduced to a less-than-significant level with mitigation. The CEQA environmental analyses also concluded that the incremental impacts of the SR 99/Cartmill HCP, considered together with the impacts other past, present, and reasonably foreseeable future actions (regardless of what agency or person undertakes such other actions) would not result, over time, in significant cumulative impacts to the human environment.

The U.S. Fish and Wildlife Service (USFWS) is normally categorically excluded (exempt) from preparing a National Environmental Policy Act (NEPA) environmental impact statement or environmental assessment before issuing an incidental take permit for a Low Effect HCP (43 CFR 46.215). No extraordinary circumstances that could exclude the use of a NEPA categorical exclusion exist for the proposed SR 99/Cartmill HCP. For example, the project would not result in significant adverse effects to public health or safety. Environmental analyses indicate that the only potential impacts are to visual and biological resources, therefore there would be no adverse impacts to historic or cultural resources (including those eligible for listing in the National Register of Historic Places); parks, recreation or refuge lands; wilderness areas; wild or scenic rivers; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order [EO] 11990), floodplains (EO 11988), national monuments and other minor ecologically significant or critical areas, or migratory birds.

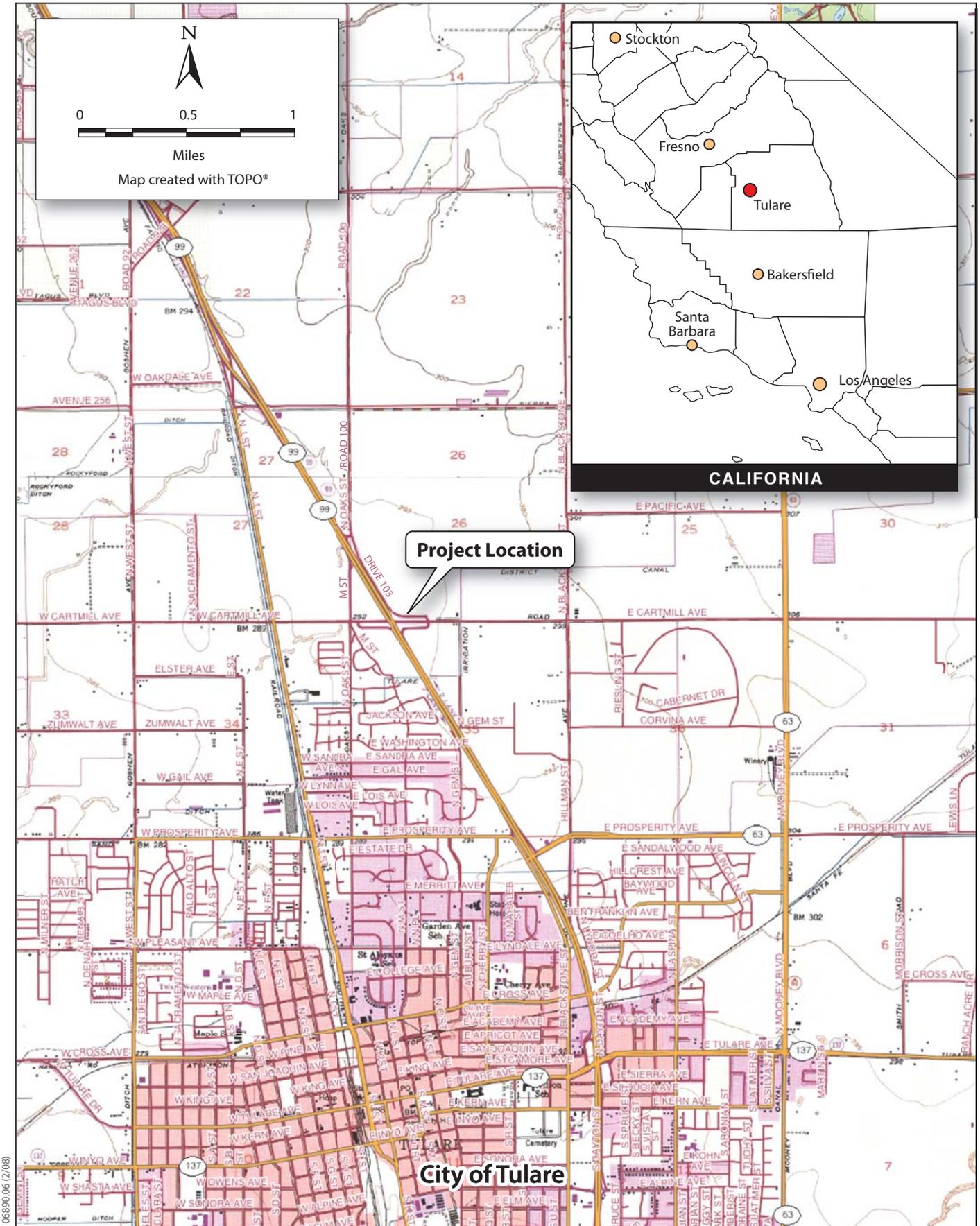
The project does not have highly controversial environmental effects (43 CFR 46.30), involve unresolved conflicts concerning alternative uses of available resources, uncertain or potentially significant environmental effects, or involve unique or unknown environmental risks. The project is a relatively common interchange improvement, and would not establish a precedent for future action or represent a decision in principle about future actions.

The project has independent utility and is not directly related to any other actions with cumulatively significant environmental effects.

The project would not have an adverse effect on wetlands, floodplains, nor is it considered a water development project and therefore does not require compliance with the Fish and Wildlife Coordination Act.

The project does not threaten to violate any federal, state, local, or tribal law or requirement for the protection of the environment. The project does not have a disproportionately high and adverse effect on low income or minority populations (EO 12898). The project would not affect designated critical habitat for any listed or proposed species, as no critical habitat is located in the HCP Permit Area (defined in Section 1.2.2). The project would not affect Indian sacred sites or affect the integrity of such sites (EO 13007). The project would not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area, and does not include actions that may promote the introduction, growth, or expansion of the range of such species (Noxious Weed Control Act, and EO13112).

The improvement of the SR 99/Cartmill Avenue interchange would accommodate existing traffic and traffic from reasonably foreseeable development. It would also accommodate the future planned widening of SR 99 and correct existing non-standard features of the Cartmill Avenue overcrossing. As a transportation project, the SR 99 Cartmill Avenue interchange improvement was designed with consideration of planned development. However, the proposed project is independent of such development in that no proposed development projects rely on this improvement. Similarly, the future widening of SR 99 was considered in project design to avoid constructing structures that would soon be obsolete, but the projects are also not interdependent. Additionally, the SR 99/Cartmill overpass improvement is not a component of the larger development projects, it does not depend on those larger development projects for its justification, and therefore, it is not interrelated to the other projects.



**Figure 1-1**  
**Project Location**



## 1.2.1 Permit Holder/Permit Duration

### Permit Holder

The Section 10(a)(2)(B) permit applicant, and future permit holder (i.e., permittee), is the City of Tulare. Caltrans is the lead agency for CEQA because the project crosses and connects to a state highway (SR 99). However, the City is funding and constructing the project and will maintain the portion of the project that is not within Caltrans right-of-way (ROW). Therefore, the City of Tulare is the permit applicant.

### Permit Duration

HCP implementing regulation (50 Code of Federal Regulations [CFR] Sections 17.22[b] and 17.32[b]) stipulates that the permit duration must be sufficient to provide adequate assurances to the permittee to commit funding necessary for the activities authorized by the permit, including conservation activities and land use restrictions. In determining the duration of the permit, the USFWS must consider the duration of the planned activities, as well as the possible positive and negative effects associated the proposed duration on listed species, including the extent to which the HCP will enhance the habitat or increase the long term survivability of listed species. The addendum to the Handbook for Habitat Conservation Planning and Incidental Take Permitting Process (65 FR 35255-35256), also known as the “5-point policy,” provides additional guidance on determining the duration of the permit term.

The proposed permit duration for this HCP is 5 years. Project construction is expected to take approximately 1 year and would begin in approximately March 2013. The City’s mitigation obligation—purchase of credits at USFWS–approved conservation banks—would be fulfilled upon permit issuance and prior to construction. Mitigation measures, involving impact avoidance and minimization measures as well as restoration of the site as compensation for temporary impacts, would be carried out prior to, during, and immediately following construction (see Chapter 5, Conservation Strategy). The proposed 5-year permit term, expected to end in March 2018, is therefore sufficient to include the duration of all covered activities (purchase of conservation credits, one year of construction, and restoration of the construction site) with some additional time allowed in case unforeseen circumstances result in construction delays.

## 1.2.2 Project Area and Permit Area

### Project Area

USFWS was first contacted regarding this project and HCP in May 2011. The proposed project area initially extended west along Cartmill Avenue to approximately 1,400 feet west of M Street (ending just east of J Street). This was the same project area analyzed in the final SR 99/Cartmill Avenue Interchange Improvements Initial Study/Mitigated Negative Declaration (Department of Transportation and City of Tulare 2012). However, a completely separate road improvement project involving the railroad crossing at the intersection of J Street and Cartmill Avenue was initiated in late 2011 (Cartmill Avenue/UPRR grade separation Notice of Exemption, <http://www.ceqanet.ca.gov/NOEdescription.asp?DocPK=625910>). That separate railroad crossing project replaced an approximately 1,300-foot long section of Cartmill Avenue, including much of Cartmill Avenue west of M Street. As a result of those road changes, engineers redesigned the

western portion of the SR99/Cartmill Avenue Interchange Improvements Project in July 2012. The revised project footprint now extends to approximately 400 feet west of M Street (Figure 1-2). Consequently, the City of Tulare (the permit applicant) now proposes a smaller HCP Permit Area to reflect the smaller project area footprint.

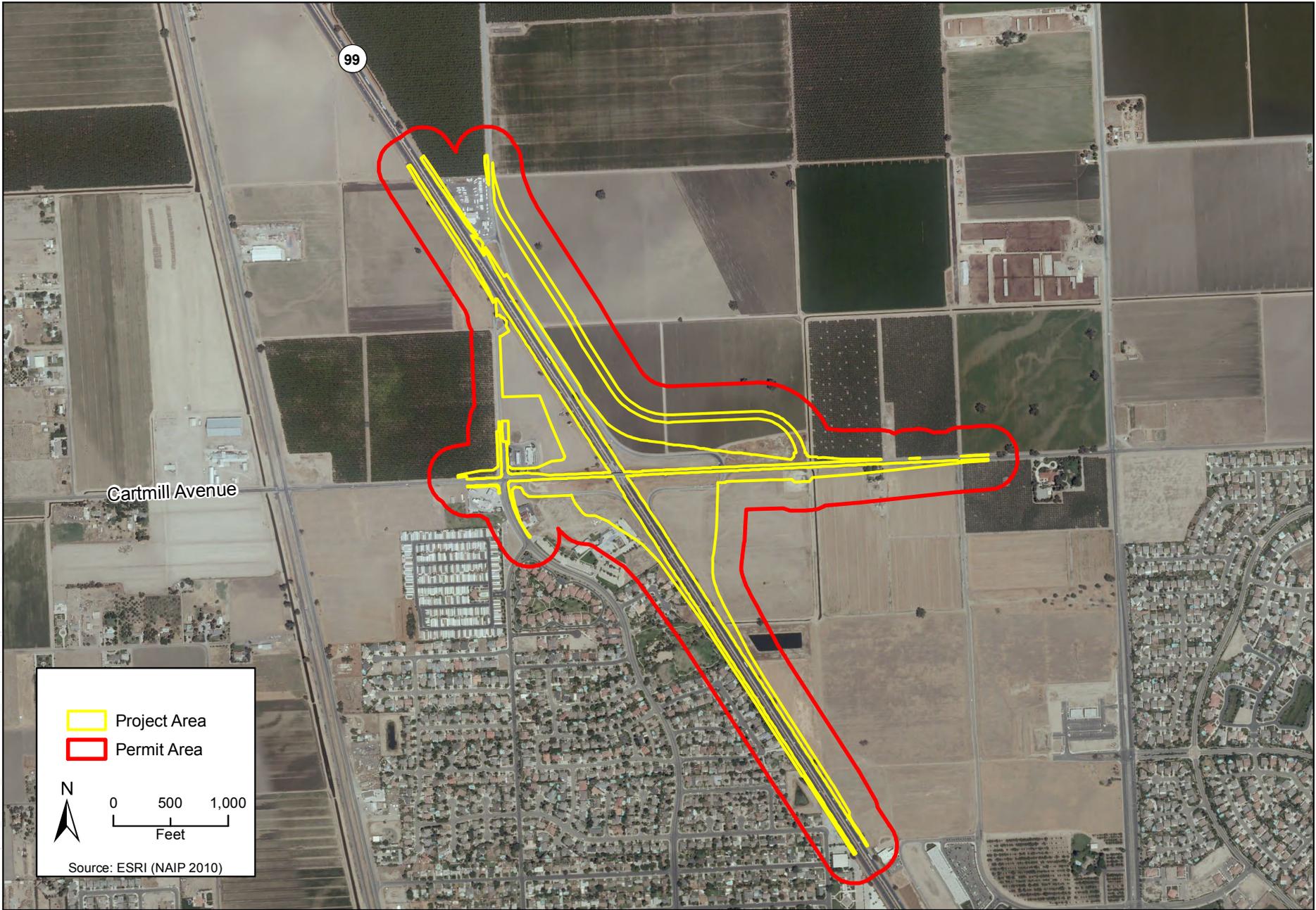
## Permit Area

The Permit Area for this low-effect HCP includes all areas to be directly or indirectly affected by the implementation of the HCP, and not merely the immediate area involved by the HCP covered activities. The Permit Area is located between PMs 31.3 and 32.6 on SR 99 in the city of Tulare, Tulare County, California. The Permit Area encompasses portions of SR 99, Cartmill Avenue, M Street, Road 100, and the surrounding area that may be indirectly affected by the construction and operation of the project. The Permit Area encompasses approximately 216.9 acres, and is comprised of 1) the 54.32-acre project construction area (the project area) and 2) the adjacent 164.58-acre area of potential indirect effects (the indirect effects area) that surround the project construction area.

The project construction area (project area) includes the footprint of the existing road facilities, the footprint of the new facilities, the construction area where equipment will work, the existing ROW, the proposed city and state rights-of-way, and the equipment and materials staging areas (Figure 1-2). Construction would be limited to the area bounded on the south on SR 99 by a point approximately 0.6 mile south of Cartmill Avenue (PM 31.3) and on the north on SR 99 by a point approximately 0.7 mile to the north of Cartmill Avenue (PM 32.6). The limits for improvements on the City's street system include Cartmill Avenue from approximately 400 feet west of M Street to approximately 1,300 feet east of the Tulare Irrigation District Canal; M Street extending approximately 500 feet north and south of Cartmill Avenue; and the new Akers Street (approximately 700 feet east of the existing frontage road) from Cartmill Avenue to approximately 400 feet north of the existing Road 100 on- and off-ramps.

The indirect-effects area is a 250-foot wide area surrounding the project area. Ground disturbance will not occur in this area, but project construction, operation, and maintenance activities may indirectly impact habitat within this area (Figure 1-2). ICF International (ICF) biologists reviewed the potential impact mechanisms associated with the construction, the operation, and future maintenance of the new interchange, as well as the likely biological responses of each covered species to those impact mechanisms. A 250-foot wide indirect effect area was selected because potential effects of the identified impact mechanisms on the covered species are expected to occur within this 250-foot distance (see Chapter 4 for more information.).

Equipment and materials staging during construction will occur within the project area (Figure 2-1). Materials from bridge and roadway demolition will be recycled to the extent feasible. When that is not possible, materials will be disposed of off-site at operational landfills that are approved to receive the particular type of waste via public roads. For example, any hazardous materials would be disposed of at a Class I disposal site. Because the locations of the landfills would depend on the type of waste to be disposed of, and would be selected by the construction contractor, the particular landfills to be used are not known at this time. However, the disposition of the removed materials will be specified in the contract "Special Provisions" to assure that each disposal occurs at a licensed facility. Therefore, no additional species-impacts would occur at the landfill sites that will be used for disposal of project materials. Consequently, the disposal sites are not included as part of in the SR 99/Cartmill HCP Permit Area.



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Figure 1-2  
Permit Area



The SR 99/Cartmill HCP conservation-strategy (Chapter 5) will utilize USFWS-approved conservation-banks. Operational conservation banks have previously consulted with the USFWS on potential impacts of bank operation and management. Therefore, the conservation-bank sites used by the SR 99/Cartmill HCP are not included in the HCP's Permit Area (Figure 1-2).

### 1.2.3 Covered Species

After a review of the California Natural Diversity Database (California Department of Fish and Game 2012) and a list of all federally proposed and listed endangered and threatened species that could occur in the vicinity of the project from the USFWS web site (Appendix A) (U.S. Fish and Wildlife Service 2012), and field surveys of the Permit Area, it was determined that suitable habitat was present in the Permit Area for three federally listed species: vernal pool fairy shrimp (*Branchinecta lynchi*), federally listed as threatened; vernal pool tadpole shrimp (*Lepidurus packardii*), federally listed as endangered; and San Joaquin kit fox (*Vulpes macrotis mutica*), federally listed as endangered and state listed as threatened. Suitable habitat for vernal pool tadpole shrimp is present within two pools (SP-1 and SP-2) in the Permit Area. These pools maintain open water to a sufficient depth and for a sufficient duration (4–9 weeks minimum) to support vernal pool tadpole shrimp. Protocol-level wet-season and dry-season surveys were conducted in SP-1 and SP-2 during 2007–2008 (Appendices B and C). No vernal pool tadpole shrimp were observed during the wet-season surveys and no vernal pool tadpole cysts were found in soil samples collected from SP-1 and SP-2. Based on these survey results, ICF biologists conclude that this species is not present in SP-1 and SP-2. Consequently, vernal pool tadpole shrimp is not covered by this HCP. Vernal pool fairy shrimp and San Joaquin kit fox, which have suitable habitat in the Permit Area and may be affected by the project, and are covered by this HCP.

Ten additional federally listed species were included on the list of federally endangered, threatened, and proposed threatened or endangered species that have the potential to occur in the vicinity of the proposed project that was obtained from the Sacramento USFWS website for the Tulare, Paige, Goshen, and Visalia U.S. Geological Survey 7.5-minute quadrangles (U.S. Fish and Wildlife Service 2012) (Appendix A). There is no suitable habitat in the Permit Area for valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), delta smelt (*Hypomesus transpacificus*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), blunt-nosed leopard lizard (*Gambelia sila*), giant garter snake (*Thamnophis gigas*), Fresno kangaroo rat (*Dipodomys nitratooides exilis*), Tipton kangaroo rat (*Dipodomys nitratooides nitratooides*), California jewelflower (*Caulanthus californicus*), and San Joaquin adobe sunburst (*Pseudobahia peirsonii*). Therefore, these species would not be present in the Permit Area and would not be affected by construction activities.

## 1.3 Regulatory Framework

### 1.3.1 Federal Regulations

#### Federal Endangered Species Act

ESA and its implementing regulations prohibit the take of any fish or wildlife species that is federally listed as threatened or endangered without prior approval pursuant to either Section 7 or Section 10(a)(1)(B) of ESA. ESA defines *take* as “to harass, harm, pursue, hunt, shoot, wound, kill, trap,

capture, or collect, or to attempt to engage in any such conduct.” 50 CFR 17.3 further defines the term “harm” in the *take* definition to mean any act that actually kills or injures a federally listed species, including significant habitat modification or degradation that kills or injures wildlife by significantly impairing essential behavior, including breeding, feeding, or sheltering. “Harass” in the definition of *take* means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

## Section 10—HCP Requirements and Guidelines

ESA Section 10(a) establishes a process for obtaining an incidental take permit (ITP), which authorizes nonfederal entities to incidentally take federally listed wildlife or fish subject to certain conditions. Thus, the HCP process is designed to address non-Federal land, water use, or development activities that do not involve a Federal action that is subject to ESA section 7 consultation.

Incidental take is defined by ESA as take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.” Preparation of a conservation plan, generally referred to as an HCP, is required for all Section 10(a)(1)(B) incidental take permit applications. USFWS and the National Marine Fisheries Service (NMFS) have joint authority under ESA for administering the incidental take program. NMFS has jurisdiction over anadromous fish species, and USFWS has jurisdiction over all other fish and wildlife species.

An HCP has three general phases: (1) the HCP development phase, (2) the permit processing phase, and (3) the HCP implementation phase. During the HCP development phase, the applicant prepares an HCP that integrates the project or activity with the protection of listed species. This phase is typically conducted by the applicant with technical assistance from the USFWS.

ESA Section 10 and regulations require that HCPs submitted in support of an ITP application must include the following information.

- A complete description of the activity sought to be permitted.
- The common and scientific name of the species sought to be covered by the permit.
- Impacts likely to result from the proposed taking of the species for which permit coverage is requested.
- Measures that will be implemented to monitor, minimize, and mitigate the impacts, and the funding that will be made available to undertake such measures; and procedures to deal with changed and unforeseen circumstances.
- Alternatives to the proposed taking that the applicant considered, and why such alternatives are not proposed to be utilized.
- Additional measures USFWS may require as necessary or appropriate for the purposes of the plan.

The USFWS established the category of HCPs called “low-effect HCPs” to expedite permit applications for activities that are minor in scope and impact. Low-effect HCPs are appropriate for projects that (1) will have minor or negligible effects on federally listed, proposed, or candidate species and their habitats that are covered by the HCP, and (2) minor or negligible effects on other environmental resources. Low-effect HCPs and their associated incidental take permits, despite

authorization of some small level of incidental take, individually and cumulatively have a minor or negligible effect on the species covered by the HCP.

The USFWS's determination of whether an HCP qualifies for the low-effect category is based on the anticipated impacts of the proposed project prior to implementation of the mitigation plan. The purpose of the low-effect HCP is to expedite handling of HCPs for activities with inherently low impacts; this category of HCP is not intended for projects with significant potential impacts that are subsequently reduced through mitigation programs.

The HCP development phase concludes and the permit application- processing phase begins when the applicant submits a complete application package to the USFWS. A complete application package for a low-effect HCP consists of (1) the proposed HCP, (2) a completed permit application form, (3) the application fee, and (4) a draft NEPA analysis.

If the USFWS's review of these documents finds them to be statutorily complete, the USFWS will publish a Notice of Receipt of a Permit Application in the Federal Register. USFWS policy requires a minimum 30-day public review and comment period for all low-effect HCPs. The USFWS then prepares an ESA Section 7 Biological Opinion (see "ESA Section 7" below).

After considering any public comments, the USFWS prepares a Set of Findings, which evaluates the Section 10(a)(1)(B) permit application in the context of the permit issuance criteria. ESA Section 10(a)(1)(B) requires a determination by USFWS that all permit issuance criteria have been met. The permit issuance criteria [50 CFR 17.22 (b)(2) and 17.32(b)(2)] are listed below.

- The taking will be incidental.
- The impacts of the incidental take will be minimized and mitigated to the maximum extent practicable.
- Adequate funding for the HCP and funding for procedures to handle unforeseen circumstances will be provided by the applicant.
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
- The applicant will provide additional measures that USFWS requires as being necessary or appropriate.
- USFWS has received assurances, as may be required, that the HCP will be implemented.
- In addition, the USFWS must consider the anticipated duration and geographic scope of the applicant's planned activities, including the amount of listed species habitat that is involved and the degree to which listed species and their habitats are affected.

An implementing agreement is not required for a low-effect HCP.

During the permit post-issuance phase, the permit holder implements the HCP, including monitoring of covered activity effects, funding and monitoring the conservation plan, reporting to the USFWS, and implementing other permit terms and conditions. The USFWS monitors the permittee's compliance with the HCP mitigation requirements and any other terms and conditions included in the permit, as well as the long-term progress and success of the HCP. Correspondence with USFWS about the SR 99/Cartmill Avenue project is provided in Appendix D.

In June 2000, the USFWS and NMFS adopted the “Five-Point Policy” designed to clarify elements of the habitat conservation planning program as it relates to biological goals, monitoring, adaptive management, permit duration, and public participation (65 FR 35242-35257). The Five-Point Policy directs that the following elements be addressed in the development of all habitat conservation plans.

- **Biological Goals and Measureable Objectives:** HCPs are required to define biological goals and objectives that the plan is intended to achieve. Biological goals and objectives clarify the purpose and direction of the plan’s conservation program, including specific measurable targets that the plan is intended to meet. The biological goals and objectives of the SR 99/Cartmill Low Effect HCP are described in Chapter 5.
- **Monitoring:** HCPs are required to include provisions for monitoring to gauge the effectiveness of the plan in meeting the biological goals and objectives and to verify that the terms and conditions of the plan are being properly implemented. The SR 99/Cartmill Low Effect HCP will monitor construction impacts and site restoration as described below in Chapter 5.
- **Adaptive Management:** The Five-Point Policy encourages the inclusion of adaptive management strategies in HCPs in appropriate circumstances to address uncertainty related to species covered by a plan. The agencies describe adaptive management as a “method for examining alternative strategies for meeting measurable biological goals and objectives, and then, if necessary, adjusting future conservation management actions according to what is learned.” As described in Chapter 5, the SR 99/Cartmill Low Effect HCP conservation strategy will mitigate project impact by purchasing credits at USFWS approved conservation banks. The conservation banks monitor and manage species habitat using adaptive management strategies.
- **Permit Duration:** Consistent with the Five-Point Policy, the USFWS and NMFS consider several factors in determining the term of an incidental take permit. The agencies, for instance, take into account the expected duration of the activities proposed for coverage and the anticipated positive and negative effects on covered species that will likely occur during the course of plan implementation. The agencies also factor in the level of scientific and commercial data underlying the proposed operating conservation program, the length of time necessary to implement and achieve the benefits of the operating conservation program, and the extent to which the program incorporates adaptive management strategies. As discussed above in Section 1.2.2, the proposed duration of the SR 99/Cartmill Low Effect HCP incidental take permit is 5 years.
- **Public Participation:** Under the Five Point Policy, the federal fish and wildlife agencies have sought to increase public participation in the HCP process, including greater opportunity for the public to assess, review, and analyze HCPs and associated NEPA documentation. As provided by the Five-Point Policy, a minimum 30-day public comment period is appropriate for low-effect HCPs, including the SR 99/Cartmill Low Effect HCP. Because low-effect HCPs have a categorical exclusion from NEPA, the additional NEPA public participation requirement does not apply to low-effect HCPs.

## Section 7 –Interagency Cooperation

Federal activities (and non-federal activities that receive federal funding or require a federal permit, other than a section 10 permit), typically obtain authority to take listed-species through the consultation process provided under ESA Section 7. ESA Section 7 requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued

existence of any species listed under ESA, or to result in the destruction or adverse modification of its habitat.

The issuance of an ITP by the USFWS is a federal-action, and therefore is subject to Section 7 of the ESA. Consequently, the USFWS must conduct an internal Section 7 consultation on the proposed HCP. Compliance of the HCP with Sections 7 and 10 of the ESA should be regarded as concurrent, integrated processes, not as independent or sequential. The internal consultation is conducted after the applicant submits the complete HCP application package for processing and review.

Provisions of ESA Sections 7 and 10 are similar, but Section 7 requires consideration of several factors not explicitly required by Section 10. Specifically, Section 7 requires consideration of the indirect effects of a project, effects on federally listed plants, and effects on critical habitat. *Indirect effects* are defined as effects that are caused by the proposed action and are later in time, but are still reasonably certain to occur (50 CFR 402.02). The USFWS must also consider the interrelated, interdependent, and cumulative effects analyzed through the Section 7 consultation. Internal consultation on a Section 10 permit-action ensures that issuance of the permit also meets ESA standards under Section 7.

The internal Section 7 consultation terminates with the completion of the Biological Opinion, which provides the USFWS's determination as to whether the proposed permit and implementation of the HCP would likely result in jeopardy to any listed species or would adversely modify designated critical habitat.

## National Environmental Policy Act

NEPA requires that federal agencies analyze the environmental impacts of their actions (in this instance, issuance of an ITP), and include public participation in the planning and implementation of their actions. NEPA compliance is obtained through one of three actions: (1) a categorical exclusion and preparation of an Environmental Action Memorandum (EAM) (allowed for low-effect HCPs), (2) preparation of an environmental assessment (generally prepared for moderate-effect HCPs); or (3) preparation of an environmental impact statement (generally prepared for high-effect HCPs). An EAM is a brief document that explains actions USFWS took to comply with NEPA, and USFWS's reasoning why their permit-action for the low-effect HCP can be categorically excluded from the NEPA. The NEPA process helps federal agencies make informed decisions regarding the environmental consequences of their actions and ensures that measures to protect, restore, and enhance the environment are included, as necessary, as a component of their actions.

## Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) (16 USC 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 CFR 21, 50 CFR 10). Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of MBTA. Examples of permitted actions that do not violate MBTA are the possession of a hunting license to pursue specific gamebirds, legitimate research activities, display in zoological gardens, banding, and other similar activities. USFWS is responsible for overseeing compliance with MBTA, and the U.S. Department of Agriculture's Animal Damage Control Officer makes recommendations on related animal protection issues.

Executive Order 13186 (January 10, 2001) directs each federal agency taking actions having or likely to have a negative impact on migratory bird populations to work with USFWS to develop a memorandum of understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities:

- avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- restore and enhance habitat of migratory birds, as practicable; and
- prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The executive order is designed to assist federal agencies in their efforts to comply with MBTA, and does not constitute any legal authorization to take migratory birds. Measures to avoid and minimize impacts on migratory birds (i.e., removing vegetation during the non-breeding season or conducting preconstruction nest surveys, and preventing spread of noxious weeds) are included in the Initial Study for the project (State of California Department of Transportation and the City of Tulare 2012), and are a component of the SR 99/Cartmill Low Effect HCP conservation strategy, described in Chapter 5. Additionally, Avoidance and Minimization Measure 7 (Restore Temporarily Disturbed Ruderal Grassland Areas) (Chapter 5) in this Low Effect HCP will also minimize impacts on migratory birds.

## Clean Water Act

The federal Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

The CWA empowers the EPA to set national water quality standards and effluent limitations and includes programs addressing both *point-source* and *nonpoint-source* pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. The following sections provide additional details on specific sections of the CWA.

### Permits for Fill Placement in Waters and Wetlands (Section 404)

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States. Waters of the United States refers to oceans, bays, rivers, streams, lakes, ponds, and wetlands, including any or all of the following:

- areas within the ordinary high water mark of a stream, including nonperennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned; and
- seasonal and perennial wetlands, including coastal wetlands.

On January 9, 2001, the U.S. Supreme Court made a decision in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers* (SWANCC) [121 S.Ct. 675, 2001] that affected U.S. Army Corps of Engineers' (USACE) jurisdiction in isolated waters. Based on SWANCC, the USACE no longer has jurisdiction or regulates isolated wetlands (i.e., wetlands that have no hydrologic connection with a water of the United States).

More recently, a federal ruling on two consolidated cases (June 19, 2006; *Rapanos v. United States and Carabell v. U.S. Army Corps of Engineers*), referred to as the Rapanos decision, affects whether some waters or wetlands are considered jurisdictional under the CWA. In these cases, the U.S. Supreme Court reviewed the USACE definition of *waters of the United States* and whether or not it extended out to tributaries of navigable waters (TNW) or wetlands adjacent to those tributaries. The decision provided two standards for determining jurisdiction of water bodies that are not TNWs: 1) if the non-TNW is a relatively permanent water (RPW) or is a wetland directly connected to a RPW, or 2) if the water body has "significant nexus" to a TNW. The significant nexus definition is based on the purpose of the CWA ("restore and maintain the chemical, physical, and biological integrity of the Nation's waters").

Guidance issued by EPA and USACE on the Rapanos decision requires application of the two standards and use of substantially more documentation to support a jurisdictional determination for a water body.

Applicants must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including adjacent wetlands, before proceeding with a proposed activity. The USACE may issue either an individual permit evaluated on a case-by-case basis or a general permit evaluated at a program level for a series of related activities. General permits are preauthorized and are issued to cover multiple instances of similar activities expected to cause only minimal adverse environmental effects. The nationwide permits (NWP) are a type of general permit issued to cover particular fill activities. Each NWP specifies particular conditions that must be met for the NWP to apply to a particular project.

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. The USACE cannot issue an individual permit or verify the use of a general permit until the requirements of NEPA, the ESA, and the National Historic Preservation Act (NHPA) have been met. In addition, the USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401.

A Preliminary Wetland Delineation of the Permit Area was submitted to the USACE (Appendix E). The USACE has taken jurisdiction over two irrigation ditches that run through the Permit Area because they drain to the Tulare Lake Bed, a TNW. The project proponent will be required to obtain a NWP 14 prior to construction. All seasonal pools in the Permit Area (described in Chapter 3) showed positive indicators of wetland hydrology, but not of hydrophytic vegetation or hydric soils. Through the preliminary jurisdictional determination process, the USACE has verified that these features are not wetlands, and therefore would not be subject to regulation under CWA Section 404 (Appendix E).

## **Permits for Stormwater Discharge (Section 402)**

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by EPA. In

California, the State Water Resources Control Board is authorized by EPA to oversee the NPDES program through the Regional Water Quality Control Boards (RWQCBs).

NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent (NOI) to discharge stormwater and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities. In addition, it describes the best management practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

### **Water Quality Certification (Section 401)**

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401. A Section 401 Water Quality Certification from the Central Valley RWQCB would be required for wetlands and waters of the U.S. identified in the SR 99/Cartmill HCP Permit Area.

For each of the above sections of the CWA, the project applicant would obtain and comply with the applicable federal and state permits, and all conditions that are attached to those permits would be implemented as part of the proposed project. The permit conditions would be clearly identified in the in the construction plans and specifications and monitored during and after construction to ensure compliance.

A preliminary jurisdictional determination for the Permit Area has been submitted to the USACE Sacramento District (Appendix E). The project proponent will need to obtain a Section 401 certification for the potential discharge to these features. The seasonal pools, which do not meet all three federal wetland criteria, are not waters of the U.S. and do not require a Section 401 certification.

### **Natural Historic Preservation Act**

Section 106 of the National Historic Preservation Act requires that, before beginning any undertaking, a federal agency must take into account the effects of the undertaking on historic properties and afford the Advisory Council on Historic Preservation an opportunity to comment on these actions (16 U.S.C. 470f). The Section 106 process is presented in 36 CFR 800 and consists of five basic steps:

1. The lead federal agency initiates the process by coordinating with other environmental reviews, consulting with the State Historic Preservation Officer (SHPO), identifying and consulting with interested parties, and identifying points in the process to seek input from the public and to notify the public of proposed actions.

2. Identify cultural resources and evaluate them for National Register of Historic Places (NRHP) eligibility, resulting in the identification of Historic Properties.
3. Assess effects of the project on Historic Properties.
4. The lead federal agency consults with the SHPO and interested parties regarding adverse effects on Historic Properties, resulting in a Memorandum of Agreement (MOA).
5. Proceed in accordance with the MOA.

A historic property is defined as a building, structure, site or object that is listed in or eligible for listing in the NRHP. Eligibility for listing in the NRHP is determined by a property's ability to convey its significance relative to four criteria (36 CFR 60.4).

A cultural resources survey of the SR 99/Cartmill HCP project area indicated that there are no historic buildings or archaeological sites within the proposed project area limits (also called the Project Area Limit [PAL] in Appendix F). The study area for evaluating cumulative cultural resource impacts is the project footprint (HCP project area) and a 0.5-mile radius. The Historical Resources Compliance Report, Historic Resources Evaluation Report, and Archaeological Survey Report prepared for the project in December 2011 did not identify any cultural resources within the project area (Appendix F). There is always the potential that unknown cultural resources could be uncovered during project construction. Caltrans standard measures require that work stop in case of inadvertent discovery of archaeological or human remains, therefore ensuring that no cultural resources would be affected, and no contribution to a cumulative impact.

One historic-age structure, the Tulare Irrigation Canal Segment, Liberty Ditch, and one bridge are located within the SR 99/Cartmill HCP's proposed PAL. The Liberty Ditch has been evaluated and recommended not eligible for listing in the NRHP (Appendix F). The existing Cartmill Avenue bridge has been previously evaluated as part of the Caltrans bridge inventory and is not eligible for listing in the NRHP. The USFWS's Sacramento Fish and Wildlife Office (SFWO) has reviewed the Historical Resources Compliance Report, Historic Resources Evaluation Report, and Archaeological Survey Report. The Caltrans standard measures described in Appendix F, and the results of the Caltrans consultation are acceptable for the purposes of this Low Effect HCP permit (Thomas pers. comm.) .).

Native American coordination was also conducted in support of the cultural resources study, and correspondence can be found in the Appendix A of the Archaeological Survey Report (Appendix F). The Native American Heritage Commission was contacted in November 2008, and a search of its sacred lands database and list of Native American representative for the Permit Area were requested. The sacred lands database search was negative, and a list of six Native American representatives or groups was received. Letters to Native American representatives were sent on December 8, 2008, and telephone calls followed. One return call was received from Mr. John Sartuche of the Wukchumni Tribe. Mr. Sartuche did not have any specific concerns, but requested to be kept informed of the project's progress.

## 1.3.2 State Regulations

### California Endangered Species Act

The California Endangered Species Act (CESA) prohibits the take of endangered and threatened species; however, habitat destruction is not included in the state's definition of *take*. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote

conservation of these species. The California Department of Fish and Game (CDFG) administers the act and authorizes take through Section 2081 incidental take agreements (except for species designated as fully protected). CDFG can adopt a federal biological opinion as a state biological opinion under California Fish and Game Code, Section 2095. In addition, CDFG can write a consistency determination for species that are both federally and state listed if CDFG determines that the avoidance, minimization, and compensation measures will ensure no take of species.

One of the covered species (San Joaquin kit fox) is listed as threatened under CESA. Because the City considers it very unlikely that CESA take would occur, the City will not be applying for a Section 2081 agreement. CDFG reviewed and commented on the project in a May 2012 letter. CDFG identified areas where biological resources could be impacted by the project, without additional biological resource analysis and implementation of associated avoidance and mitigation measures (Appendix D).

## **2.1 Land Use**

The Permit Area is located in the San Joaquin Valley geographic subdivision of the Great Central Valley (Hickman 1993). The topography of the Permit Area is typical of an alluvial fan. The primary land use in the Permit Area is agriculture.

### **2.1.1 Surrounding Land Use**

The Permit Area is located within the City of Tulare, north of the densely populated/developed portion of the city. The Permit Area is surrounded on three sides by agricultural lands (i.e., row crops, fallow fields, orchards). The lands southwest of the interchange primarily contain dense residential development dating to the 1980s and 1990s. The area in the northeast quadrant of the interchange is undeveloped and currently in agricultural production. No development is currently planned for this area.

### **2.1.2 Land Ownership**

Cartmill Avenue and the overcrossing, as well as Road 100 (to be realigned and renamed Akers Street) are the property of the City of Tulare. The off- and on-ramps are located within Caltrans ROW. Adjacent parcels are privately owned.

## **2.2 Covered Activities**

The project would improve the Cartmill Avenue Interchange, correct existing nonstandard features of the Cartmill Avenue overcrossing, realign Akers Street, and tie in to existing roads. The proposed HCP covered activities would include those construction activities necessary to replace the existing Cartmill Avenue overcrossing, construct new northbound off- and on-ramps, realign the frontage road, widen Cartmill Avenue in the vicinity of SR 99 and tie in to the existing roads. These activities are discussed below in Section 2.2.2 *Covered Construction Activities*. The construction, operation, and maintenance of the following elements described below are HCP covered activities. All activities associated with construction and future operation of the project are considered covered activities under the HCP.

### **2.2.1 Project Description**

This section describes the specific features of the proposed project as described in the Initial Study prepared for this project and circulated for public review between April 18 and May 18, 2012. The project would be constructed in a single phase. The proposed improvements are shown in Figure 2-1.

The proposed project would replace the existing Cartmill Avenue overcrossing. The existing structure would be removed and a new structure would be constructed in the same location. The new structure would provide 16.5 feet of vertical clearance, as opposed to the existing 15 feet, and adequate space to accommodate the planned widening of SR 99 (a Caltrans project) identified in the 2011 Regional Transportation Plan for Tulare County (Tulare County Association of Governments 2010: 5-4). The overall width of the overcrossing would be 128 feet, approximately 90 feet wider than the existing structure, and 253 feet long, approximately 150 feet longer than the existing structure. The new 253-foot long Cartmill Avenue overcrossing would extend along Cartmill Avenue between the intersection with existing Akers Street (Road 100) on the east, and the existing M Street intersection on the west (Figure 2-1).

In the northeast quadrant of the interchange, the existing two-lane Road 100 would be removed and replaced with a realigned two-lane frontage road called Akers Street—which would be constructed approximately 700-feet east of the current Road 100. The existing northbound on- and off-ramps at Road 100, which currently provide access to Cartmill Avenue, would be removed, and new on- and off-ramps would be constructed at Cartmill Avenue. A narrow diamond on-ramp (measuring 24 to 36 feet wide) would be constructed within the footprint of the removed Road 100 and would provide the access to northbound SR 99 from westbound Cartmill Avenue. The new Akers Street would then connect to the remaining portion of Road 100 at the north border of the HCP project area. Part of the 0.39-acre retention basin “C” would be excavated along the new northbound on-ramp (Figure 2-1).

In the southeast quadrant of the interchange, the existing northbound off-ramp and the existing Road 100/Cartmill Avenue intersection would be removed. A loop on-ramp (measuring 24 to 30 feet wide) would be constructed, providing access to northbound SR 99 from eastbound Cartmill Avenue. The loop on-ramp would be located within a new diamond off-ramp (measuring 24 to 36 feet wide) that would end in a “T” intersection. The new 0.94-acre retention basin “D” would be excavated within the center of this loop on-ramp. In addition, the new 1.07-acre retention basin “E” would be excavated in an adjacent area, between SR 99, the new on-ramp loop to northbound SR 99, and the new northbound off-ramp (Figure 2-1).

In the southwest quadrant, the existing on-ramp to southbound SR 99 (near M Street) would be removed, and the new 0.45-acre retention basin “H” excavated in that location. A new on-ramp (measuring 26 to 38 feet wide) would be constructed to connect the Cartmill Avenue overpass to southbound SR 99. The new 1.14-acre retention basin “I” would be excavated in the area between Cartmill Avenue, SR 99, and this new southbound on-ramp (Figure 2-1).

In the northwest quadrant, the existing on- and off-ramps to SR-99 at M Street that currently provide highway access to Cartmill Avenue would be removed, leaving the existing cul-de-sac on M Street. A new narrow diamond northbound on-ramp (measuring 24 to 36 feet wide) would be constructed. The existing AM/PM Convenience Store would not be affected, though some of the associated parking lot and the agricultural field on the west side of M Street would be acquired for ROW. The intersection of Cartmill Avenue and M Street would be improved, adding turn lanes. A 3.12-acre area north of the AM/PM would be used temporarily for staging construction equipment and materials. A 0.65-acre retention basin “G” would be excavated along the west side of this new southbound off-ramp (Figure 2-1).

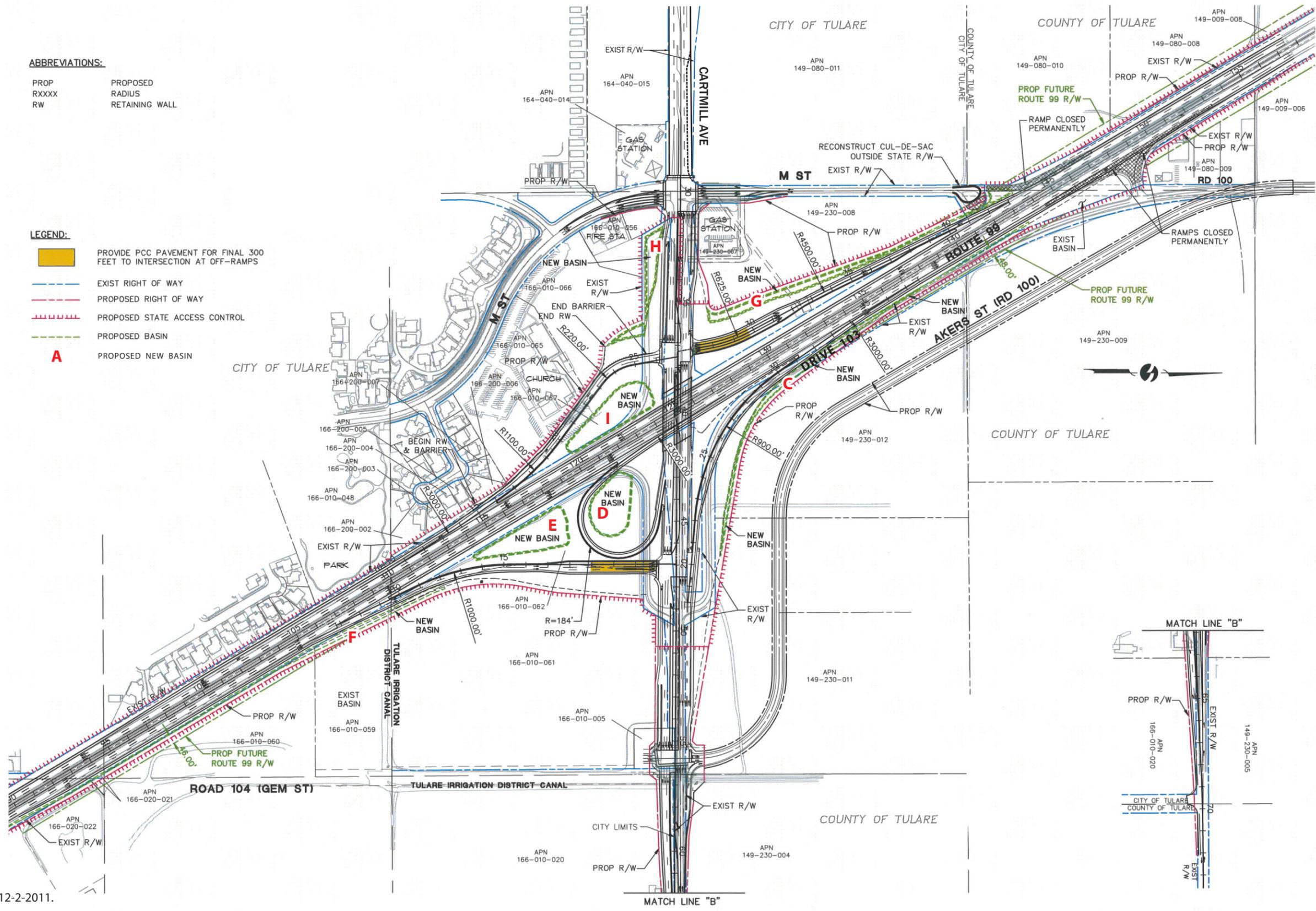
An approximately 2,700-foot long section of Cartmill Avenue would be widened from two lanes (approximately 38 feet wide) to a six-lane divided arterial (approximately 128 feet wide) between

**ABBREVIATIONS:**

PROP PROPOSED  
 RXXXX RADIUS  
 RW RETAINING WALL

**LEGEND:**

-  PROVIDE PCC PAVEMENT FOR FINAL 300 FEET TO INTERSECTION AT OFF-RAMPS
-  EXIST RIGHT OF WAY
-  PROPOSED RIGHT OF WAY
-  PROPOSED STATE ACCESS CONTROL
-  PROPOSED BASIN
-  PROPOSED NEW BASIN



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Source: Omni-Means, 12-2-2011.

**Figure 2-1**  
**Proposed Improvements**



the M Street intersection on the west and the new Akers Street intersection/Tulare Irrigation District Canal crossing on the east. Cartmill Avenue would be transitioned from six lanes to the existing two lanes in a 400-foot section west of M Street, and in a 1,300-foot section east of the new Akers Street intersection/Tulare Irrigation District Canal crossing. The existing M Street intersection would be improved to by adding additional turn lanes and the existing traffic signal and safety lighting at this intersection would be modified to accommodate the newly widened Cartmill Avenue. The new Akers Street intersection would be constructed to accommodate the widened Cartmill Avenue.

All ground-disturbing activities and construction staging would occur within the “project area” boundary as shown on Figure 1-2. Both temporary and permanent ground-disturbing impacts would occur within this project area, and are described in Chapter 4 *Assessment of Affects*.

Construction of the project would be completed within 1 year, including restoration of all temporarily affected areas within the Figure 1-2 construction “project area”, with the exception of the staging area, which would revert back to agricultural uses.

## 2.2.2 Covered Construction Activities

Construction activities covered under this HCP can be classified into the following categories and are discussed below.

1. Preparing for construction.
2. Removing existing facilities and disposing of materials.
3. Widening and improving existing facilities.
4. Constructing new or replacement facilities.
5. Constructing storm-water retention basins and disposing of soil.
6. Restoring lands temporarily disturbed by construction activities.
7. Operating the completed project.
8. Maintaining the completed project.

### Preparing for Construction

Construction preparation will include installing fencing and erosion control measures; removing, storing, and covering soil from SP-1; and moving equipment and supplies on site.

As the first order of work, the boundary of the work area will be fenced with orange barrier fencing (see Avoidance and Minimization Measure 8 in Chapter 5). Additionally, biologically sensitive areas within the work area (i.e., pool SP-2, covered topsoil from SP-1, and any suitable kit fox burrows that can be avoided during construction) will be fenced with orange barrier fencing as described in Avoidance and Minimization Measures 3 and 7.

Erosion control measures will be installed around pool SP-2, as described in Avoidance and Minimization Measure 3.

As described in Avoidance and Minimization Measure 4, the top 3–4 inches of soil in pool SP-1 will be removed and stored in the project area until basin H has been constructed. The top soil will be

kept covered with tarps or other appropriate material until construction of basin H is complete. The stored topsoil will be fenced with orange barrier fencing to protect it from disturbance.

## Removing Existing Facilities and Disposing of Materials

Removal of existing roads and facilities would include the removal of the existing on- and off-ramps at Road 100 and M Street that currently provide access to and from Cartmill Avenue from northbound and southbound SR 99, respectively, as well as the existing eastbound Cartmill Avenue on-ramp to southbound SR 99. It would also include removal of the existing Cartmill Avenue overcrossing.

The disposition of the removed materials will be specified in this project's contract "Special Provisions." To the extent feasible, removed structural sections and fills will be reused within the new project fills. Removed materials to be reused would be stored within the project area boundaries until needed. Any materials not re-used in the project would be disposed of off-site by the construction contractor at an operational disposal facility (landfill) that is approved to receive the particular type of material via public roads. For example, any hazardous materials would be disposed of at a Class I disposal site. Because the location of the landfills would depend on the types of waste to be disposed of, and would be selected by the construction contractor, the particular landfills to be used are not known at this time. As discussed above in Section 1.2.2, impacts to covered species would not occur at any disposal site.

Construction equipment used for these activities would include pneumatic tools, scrapers, bulldozers, backhoes, and heavy trucks. Most of the areas that would be disturbed by these activities would be existing paved roadway areas and areas immediately adjacent to the existing roadways. Equipment operation would occur only within the boundaries of the project area (Figure 1-2).

During construction, a dust control plan will be implemented under the San Joaquin Air Pollution Control District's Regulation VIII. Additionally, Caltrans' Standard Specifications, Section 14.02, which are implemented for all Caltrans projects, would be implemented to further reduce dust during construction.

Construction noise would temporarily and intermittently increase noise levels in the Permit Area. Caltrans' Standard Specifications, Section 14-8.02 (Noise Control), which are implemented for all Caltrans projects, would be implemented to reduce effects from noise during construction. The standard specifications include using mufflers to reduce noise.

## Widening and Improving Existing Facilities

Cartmill Avenue would be widened and the intersection of M Street and Cartmill Avenue would be improved. Approximately 2,600-linear feet of Cartmill Avenue would be widened by 90 feet, between the new Akers Street intersection on the east and existing M Street intersection on the west. Transitioning from the 6-lane portion of Cartmill Avenue to the 2-lane portions east of Akers Street and west of M Street would entail some minor widening of Cartmill Avenue for approximately 250 feet east of Akers Street and 250 feet west of M Street and restriping and minor shoulder work within the existing ROW for approximately another 150 feet west of M Street and 1,000 feet east of Akers Street. The improvements to the intersection of Cartmill Avenue and M Street would require the City to acquire some additional ROW and would result in the permanent and temporary disturbance of some orchard and some ruderal grassland (see Chapter 4). Construction activities

would include grading, compacting and paving. Excavation would be necessary to install traffic signals, lighting conduit, street lights, and other facilities.

Construction equipment used for these activities would include scrapers, bulldozers, backhoes, concrete trucks, and heavy trucks. As discussed above under “Removing Existing Facilities and Disposing of Material”, dust and noise control measures would be implemented.

## **Constructing New or Replacement Facilities**

Constructing new or replacement facilities would include the construction of new and replacement roads (including on- and off-ramps) and of the replacement Cartmill overcrossing. Construction of new roads would include grubbing and clearing vegetation, grading, compacting and paving. Construction equipment used for these activities would include scrapers, bulldozers, backhoes, compacters and concrete trucks. Excavation would be necessary for the installation of street lighting and other facilities. Most of the areas that would be disturbed by these activities are currently ruderal annual grasslands and row crops (see Chapter 4).

Construction of the replacement Cartmill Avenue overcrossing would include the construction of a temporary structure (falsework) used until the construction is sufficiently advanced to support itself. The falsework would then be removed and the construction completed.

Excavation would be necessary to construct an estimated six new overcrossing foundations, and would vary from 5 to 16 feet in depth. As discussed above under “Removing Existing Facilities and Disposing of Material”, dust and noise control measures would be implemented.

## **Constructing Basins and Disposing of Soil**

Seven new retention basins, ranging from 0.39 to 1.14 acres would be excavated. These basins would accommodate and direct storm water runoff from the new interchange. The retention basins would be shallow, designed to accommodate 1 foot of water before draining to existing City of Tulare detention basins or the Tulare Irrigation District railroad ditch. The basins would have gently sloped sides and grass bottoms. They would be dry much of the year; expected to hold water only during and for short periods after storm events.

Construction activities would include grubbing and vegetation removal, excavation, grading, compacting, and vehicle travel. Construction of these retention basins would entail the use of scrapers, bulldozers, backhoes, and compacters. The areas affected would be primarily row crops and ruderal annual grasslands.

The disposition of excavated soil will be specified in this project’s contract “Special Provisions.” To the extent feasible, excavated soil will be reused as fill during the construction of the new facilities.

Upon completion of retention basin “H”, the stored topsoil from SP-1 would be spread over the bottom of retention basin “H” prior to the start of the winter rainy season.

## **Restoration of the Project Area**

When project construction is completed, all temporarily disturbed areas will be re-contoured as needed. As required by Avoidance and Minimization Measure 9 (Chapter 5), all areas, except for the staging area, that are temporarily disturbed by covered activities will be hydroseeded, broadcast seeded, or drill seeded depending on specific site conditions with native, noninvasive species, or

non-persistent hybrids to restore plant cover. Restoration of plant cover on the temporarily disturbed areas will be completed within one year from the date the construction phase ends. These actions will minimize soil-erosion and minimize colonization of the disturbed areas by noxious-weed species. As discussed above under “Removing Existing Facilities and Disposing of Material”, dust and noise control measures would also be implemented during site-restoration activities.

## Operating the Completed Project

Operation of the improved Cartmill Avenue overcrossing would be the same as operation of the existing over crossing. That is, it would convey traffic over SR 99. The project is not expected to change or increase traffic volume on the Cartmill Avenue overcrossing, though it does increase the capacity of Cartmill Avenue to accommodate planned growth. The project also includes improved access ramps from Cartmill Avenue to SR 99, and would replace an existing frontage road with a new road. Operation of traffic on these new access ramps and frontage roads would be similar to the operation of the existing facilities.

## Maintaining the Completed Project

Maintenance of the project would be conducted by the City of Tulare and Caltrans (within the state highway ROW). Existing maintenance actions would continue, and would primarily consist of mowing and watering any landscaping, and repairing roads and repairing associated facilities as necessary. No activities besides mowing and watering are expected to occur outside paved areas. The periodic mowing or other vegetation maintenance activities would occur only within the 4-foot-wide road shoulder on either side of the new roadway pavement, inside dry water-retention basins, and on the new slopes on either side of the new on- and off-ramps to SR 99.

The vast majority of the ROW would be maintained by Caltrans. Caltrans has procedures in place to address threatened and endangered species in the ROW during maintenance. All maintenance personnel are to report anything suspicious, including “holes”, to a designated environmental senior who then sends a biologist out to look at it. This standard, ongoing procedure would identify a potential kit fox or kit fox burrow in the maintenance ROW, in the very unlikely event that this occurs.

The spatial extent of impact mechanisms associated with future road repair activities (from the operation of machinery, application of asphalt or other road materials, noise, dust, night lighting, etc.) would not exceed the boundary of the defined SR 99/Cartmill HCP’s “project area” (Figure 1-2).

### 2.2.3 Staging Area

It is anticipated that a 3.12 acre portion of the northwest interchange quadrant east of M Street would be used for equipment and materials staging (Figures 1-2 and 2-1). This area was cropland in 1994 (Google Earth Inc., accessed July 16, 2012), and is presently fallow. Two seasonal pools (SP-2 and SP-3) are located in or near the proposed staging area. SP-2 would be enclosed with orange barrier fencing to keep construction equipment and personnel out, and with erosion control materials (coir rolls) to avoid any potential water quality or hydrology impacts (see Avoidance and Minimization Measure 2 in Chapter 5). A portion of SP-3 would be permanently impacted and cannot be protected (this feature does not provide habitat for fairy shrimp as discussed in Chapter 2).

### 3.1 Physical Environment

As discussed in Chapter 1, the HCP Permit Area consists of the project area (construction area), where direct impacts would occur, and a 250-foot-wide indirect effects area (Figure 1-2). Potential effects of the project are discussed in Chapter 4.

The Permit Area is located in the San Joaquin Valley geographic subdivision of the Great Central Valley (Hickman 1993) and in the southwestern portion of the San Joaquin Valley vernal pool region (U.S. Fish and Wildlife Service 2005). The U.S. Department of Agriculture, Natural Resources Conservation Service (Soil Survey Staff 2012) has mapped the delineation area as being underlain by Colpien, Nord, and Tagus series soils. All the soils formed from alluvium and are weakly to moderately developed; no subsurface restrictive layer is present. Other salient characteristics of the soil map units are summarized in Table 3-1.

**Table 3-1. Summary of Soil Characteristics in the Project Area**

Soil Map Symbol	Soil Map Unit Name	Landform	Natural Drainage Class	Hydric Status of Primary Component and Inclusions of Map Unit*
109	Colpien loam, 0 to 2 percent slopes	Fan remnants	Moderately well	Primary component: non-hydric Inclusions: all non-hydric
130	Nord fine sandy loam, 0 to 2 percent slopes	Floodplains, alluvial fans	Well	Primary component: non-hydric Inclusions: all but one non-hydric
137	Tagus loam, 0 to 2 percent slopes	Fan remnants	Well	Primary component: non-hydric Inclusions: all non-hydric

Source: Soil Survey Staff 2012.

\* “Primary Component” refers to the soil that makes up approximately 85% or more of the map unit. The remaining soils in the map unit are inclusions.

Climate data from the Visalia weather station indicates that the length of the growing season (based on 28° Fahrenheit [F]) air temperature thresholds at a frequency of 5 years in 10) is year round. The climate in the Permit Area is characterized by hot, dry summers and cool, rainy winters; the mean annual precipitation is approximately 11 inches, and the mean annual air temperature is approximately 63 F (Natural Resources Conservation Service 2011).

The topography of the Permit Area is typical of an alluvial fan. Elevations in the Permit Area range from approximately 285 to 290 feet. There are no creeks or natural drainages in the Permit Area.

The Permit Area is surrounded on three sides by agricultural lands (i.e., row crops, fallow fields, orchards). Dense residential development is located southwest of the interchange.

## 3.2 Biological Resources

### 3.2.1 Biological Surveys

Biological surveys were conducted in 2007, 2008, and 2009 in the HCP Permit Area by ICF biologists. Methods for documenting wetlands and other waters of the United States and conducting botanical and wildlife surveys are described below. A Caltrans Natural Environment Study (NES) was conducted for the project and is included in Appendix E.

#### Waters of the United States

ICF botanist/wetland ecologists Joy Nishida and Jessica Hughes conducted a delineation of wetlands and other waters within the project area on August 7, 2007 to identify features within the project area that are potentially subject to state (Porter-Cologne) and/or the federal CWA regulation. The fieldwork for the 2007 delineation was conducted in accordance with the routine onsite determination method described in the *1987 U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987:42–95) and implementing the supplemental procedures and wetland indicators described in the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region* (U.S. Army Corps of Engineers 2006:12–76).

On March 17 and March 24, 2009, Ms. Hughes conducted a supplemental delineation for areas that were incorporated into the project area as the result of revisions to the project area boundary. The field work for the 2009 delineation was conducted in accordance with the routine onsite determination method described in the *1987 U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987:42–95) and implementing the supplemental procedures and wetland indicators described in the recently finalized *Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region* (U.S. Army Corps of Engineers 2008:13–84). The wetland delineation is included in Appendix E of the NES (Appendix E).

#### Botanical Resources

Ms. Nishida conducted a botanical survey for spring-blooming sensitive plants throughout the project area on May 4, 2007. Ms. Nishida and Ms. Hughes conducted a second botanical survey for summer-blooming sensitive plants known to occur in the project region on August 7, 2007. A list of plant species observed in the project area is included in Appendix C of the NES (Appendix E). Natural communities in the Permit Area were also identified and mapped during the field surveys.

#### Wildlife Resources

ICF Jones & Stokes wildlife biologist Jennifer Haire conducted a habitat-based field assessment for wildlife in the Permit Area on May 4, 2007. Ms. Haire and ICF wildlife biologist Erin Hitchcock revisited the Permit Area on June 11, 2008 to survey the Akers Street portion of the project area and to look for burrows throughout the project area. During habitat-based field assessments, biologists took notes on the general topography of the Permit Area, vegetation present, and amount of human activity/disturbance at the site and recorded wildlife (or wildlife signs) observed during the visit. On

March 17, 2009, Ms. Hitchcock conducted a habitat assessment survey at the western extent of the project area where the project area boundary had been extended.

Wet season protocol surveys for listed vernal pool branchiopods were conducted at two seasonal pools (SP-1 and SP-2) by Ms. Haire under permit TE-795934. Monitoring of the two seasonal pools to determine when they began to hold water commenced on November 15, 2007. By December 19, 2007, both pools were inundated and surveys began at this time. The two pools were surveyed every 2 weeks over the course of the wet season. Both pools were dry by March 26, 2008, and surveys were terminated at this time because no additional rain fell. Ms. Haire and Ms. Hitchcock collected soil samples from the two seasonal pools on June 11, 2008. Soil samples were processed and analyzed by ECORP Consulting Inc. The reports describing the methods and results of these surveys are included in Appendices E and F.

### 3.2.2 Land Cover Types

The distribution of the six land-cover types present in the Permit Area are shown in Figure 3-1 and described below. The acreages of each land cover type in the Permit Area are shown in Table 3-2.

**Table 3-2. Approximate Total Area (Acres) of Existing Land Cover Types in the Permit Area**

Land Cover Type	Project Area (acres)	Indirect Effect Area (acres)	Permit Area Total
Ruderal annual grassland	22.99	24.23	45.22
Agricultural land	25.42	102.17	127.59
Irrigation ditches	0.11	0.57	0.68
Seasonal pools	0.27	0.52	0.79
Created detention basins	0.16	5.36	5.52
Developed land	5.37	31.73	37.10
<b>Total</b>	<b>54.32</b>	<b>164.58</b>	<b>218.90</b>

#### Ruderal Annual Grassland

Ruderal annual grassland within the Permit Area occurs primarily along SR 99 and Cartmill Avenue. The ruderal annual grassland varies from sparsely vegetated to densely vegetated with nonnative annual grasses and ruderal forbs. Plant species commonly observed in the ruderal annual grassland areas were ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), Italian ryegrass (*Lolium multiflorum*), horseweed (*Conyza* sp.), and jointed charlock (*Raphanus raphanistrum*). Because of their proximity to SR 99 and the Cartmill Avenue interchange, the annual grassland has been disturbed in the past and is disked or mowed to control the spread of fire. One road-side seasonal pool (SP-1; described below), is located within the ruderal grassland in the southwest quadrant of the project area.

#### Agricultural Land (Orchard and Row Crops)

Agricultural land-cover types in the Permit Area consist of orchards and row crops. Plum orchards are located on the east side of SR 99 adjacent to a disked field and north of Cartmill Avenue in the northwest corner of the Permit Area. The row crops observed within and immediately adjacent to the Permit Area were corn, alfalfa, and wheat. The corn and alfalfa were located in the northeastern

portion of the Permit Area, and the wheat was located in the southeastern portion of the Permit Area. The field in the northwestern portion of the Permit Area that is bounded by SR 99, Cartmill Avenue, and the southbound SR 99 off-ramp has been fallow and/or recently disked each time field surveys have been conducted. SP-2 and SP-3 are located within this fallow agricultural area.

## Irrigation Ditches

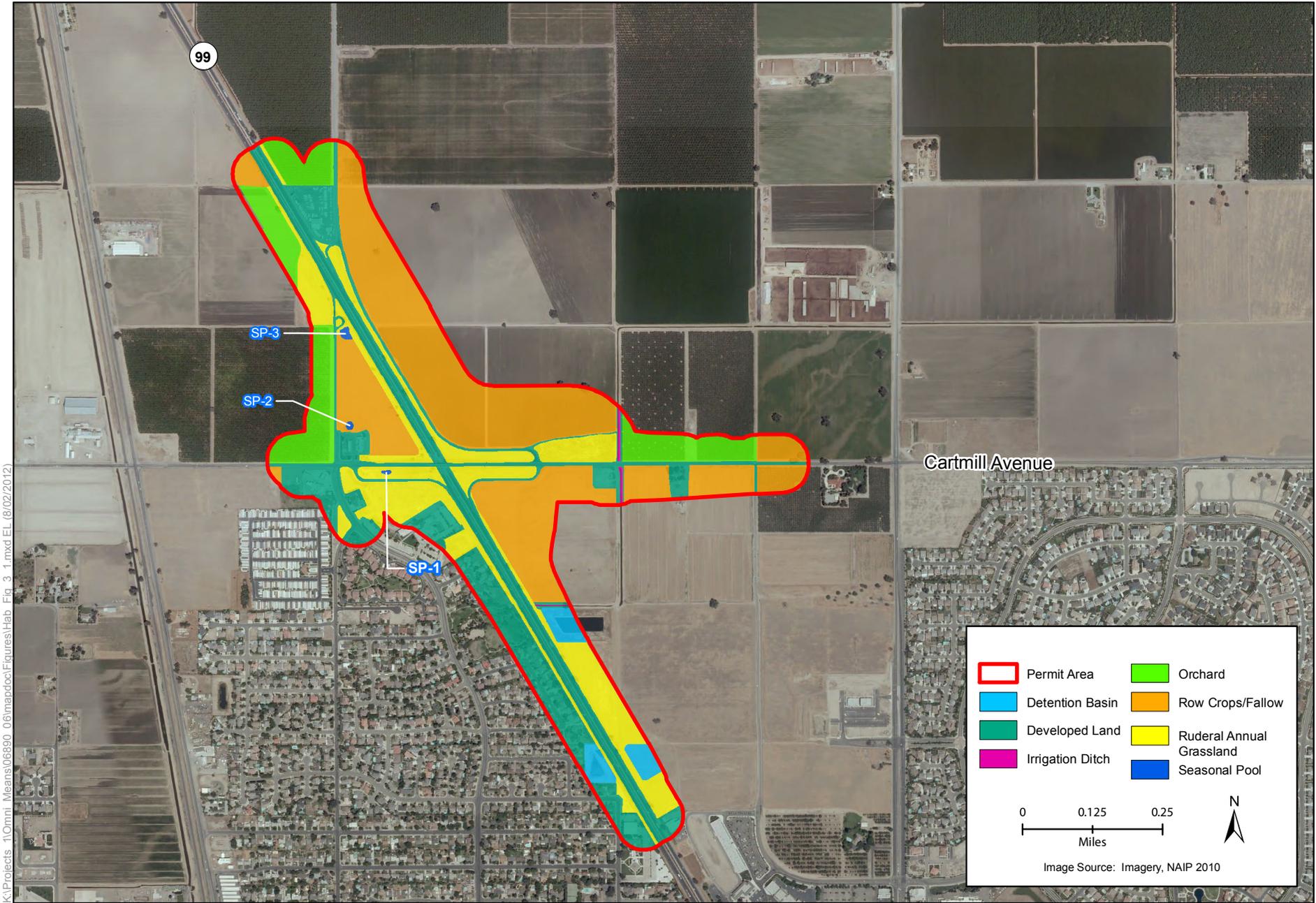
Two irrigation ditches occur in the Permit Area east of the SR 99/Cartmill Avenue interchange (Figure 3-1). The ditches are channels excavated in uplands for the purposes of agriculture that do not appear to replace a previously existing natural drainage feature. The channels of the irrigation ditches are unlined and to have either a U or V shape. The irrigation ditches are largely unvegetated, though there was a small amount of charlock had been growing in the ditch with Russian thistle (*Salsola tragus*) deposited in the ditch by the wind. They had small amounts of water during the May 4, 2007 survey and were dry at the time of the August 7, 2007 survey. These ditches are routinely cleared of vegetation and are repeatedly filled and dried during irrigation activities. Such management of ditches makes them unsuitable habitat for vernal pool branchiopods, as the top soil is scraped to the top of the ditch and the repeated drying and filling would eliminate any cyst bank in the soil.

These ditches drain to the Tulare Lake Bed, which is considered a traditional navigable water based on past use for commerce, and therefore would be subject to regulation under CWA Section 404 (Appendix E). Through the preliminary jurisdictional determination process, the USACE will treat the irrigation ditches as potential waters of the U.S and assume jurisdiction under Section 404 of the CWA.

## Seasonal Pools

Three seasonal pools/wetlands (SPs) occur in the Permit Area and are referred to in this HCP as SP-1, SP-2, and SP-3 (Figure 3-1). SP-1 may be the remnant of a natural pool and was likely modified/created during construction of Highway 99. SP-2 is a small man-made detention basin. SP-3 may be natural but has been repeatedly disturbed by disking of the agricultural area surrounding it.

SP-1 is south of Cartmill Avenue between the Cartmill Avenue overcrossing and the southbound SR 99 on-ramp. SP-1 is a relatively shallow pool (maximum depth estimated to be 12 inches) that is approximately 0.071 acre (90 feet by 36 feet) in size. It has grassy and weedy vegetation along the edges and other areas that have shorter inundation periods. Plant species observed on the edges of SP-1 during the May 4, 2007 and August 7, 2009 botanical surveys were Italian ryegrass, turkey mullein (*Eremocarpus setigerus*), Mexican tea (*Chenopodium ambrosioides*), puncture vine (*Tribulus terrestris*), and Russian thistle. The soil is compacted in the central portion of the pool, and no plants are present. This pool is surrounded by ruderal road-side grassland and developed areas (roadways). Vernal pool branchiopod protocol-level wet-season surveys were conducted in SP-1 every 2 weeks between November 2007 and March 2008. One common fairy shrimp species, the versatile fairy shrimp (*Branchinecta lindahli*), was observed in SP-1 (Appendix B). A vernal pool branchiopod protocol-level dry season survey was conducted on June 11, 2008 (Appendix C). Soil collected from pools SP-1 contained tens to thousands of cysts of the genus *Branchinecta* per 100 milliliters (ml) of soil. At least two morphologically distinct types of *Branchinecta* species cysts were found in the soil samples collected from SP-1. The two types of cysts most closely resembled cysts of two non-listed *Branchinecta* species (the versatile fairy shrimp and the alkali fairy shrimp [*B.*



K:\Projects - 1\Omni Means\06890\_06\mapdoc\Figures\Hab\_Fig\_3\_1.mxd EL (8/02/2012)



**Figure 3-1**  
**Land Cover Types in the Permit Area**



*mackini* ]). In addition, some of the *Branchinecta* cysts were similar in appearance to the federally listed vernal pool fairy shrimp, but a positive identification could not be made (Appendix C).

SP-2 is a small (0.11 acre) retention basin near the intersection of North Oaks Street and Cartmill Avenue, just north of an ARCO AM/PM (AM/PM) gas station, convenience store, and parking lot. Review of aerial photographs show that this basin was created in 2005–2006 when the AM/PM was constructed. SP-2 has a maximum depth of approximately 4 feet and is 80 feet in diameter. It contained water during both the May and August 2007 visits. The basin is moderately vegetated with Bermuda grass (*Cynodon dactylon*), hyssop loosestrife (*Lythrum hyssopifolium*), rabbitsfoot grass (*Polypogon monspeliensis*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), and purslane speedwell (*Veronica peregrina* ssp. *xalapensis*). This pool is surrounded by a fallow agricultural field and developed areas (roadways and the AM/PM and parking lot). Protocol-level wet-season surveys were conducted in SP-2 between November 2007 and March 2008. A single unidentifiable immature fairy shrimp was observed in SP-2. A protocol-level dry season survey was conducted on June 11, 2008. Soil collected from SP-2 was processed and analyzed for cysts. No vernal pool branchiopod cysts were found in soil samples collected from SP-2 (Appendix C).

SP-3 (0.23 acre) is located at the north end of the fallow field in the northwestern portion of the Permit Area that is bounded by SR 99, Cartmill Avenue, and the southbound SR 99 off-ramp. Plant species observed in SP-3 during the botanical surveys conducted on May 4 2007 and August 7 2009 were Bermuda grass, tall flatsedge (*Cyperus eragrostis*), riggut brome, and horseweed. SP-3 is surrounded by a fallow agricultural field that is frequently disked. This seasonal pool is heavily vegetated and did not have standing water during vernal pool branchiopod surveys conducted November 2007 and March 2008, so protocol-level wet season surveys could not be conducted at SP-3. Based on the lack of ponding, SP-3 does not provide habitat for vernal pool branchiopods. A protocol-level dry season survey was not conducted at SP-3.

## Created Detention Basins

Three large (435 x 150 feet, 300 x 150 feet, and 350 x 270 feet) man-made detention basins are located in the southern portion of the Permit Area along SR 99 (Figure 3-1). The existing detention basins are unlined, have steep sides and a level bottom, and capture runoff from the adjacent roadways and a residential development. The basins hold water year-round. The detention basin on the western side of SR 99 (Figure 3-1) was constructed prior to 1994 and was observed to have open water and was vegetated with cattails (*Typha* sp.). The other basins were constructed in 2003 and 2009 and are largely unvegetated. None of these basins are located within the HCP project area and will not be directly impacted by construction of the project.

## Developed Land

Developed areas within the Permit Area consist of houses, gas stations, a fire station, a church, an AM/PM store, a recreational vehicle (RV) center, asphalt parking lots, and roads. Except for the RV center, these areas are mainly located south of Cartmill Avenue and west of SR 99 (Figure 3-1). Landscape vegetation—including turf grass and nonnative trees, shrubs, and herbaceous species—is associated with these developed areas.

### 3.2.3 Covered Species

#### Vernal Pool Fairy Shrimp

##### Geographic Distribution

Vernal pool fairy shrimp is found in southern Oregon and in California, in approximately 32 populations scattered from Shasta County in the north through the Central Valley to the southern border of Tulare County, and along the central Coast Range from northern Solano County to San Benito County. Four disjunct populations occur in San Luis Obispo, Santa Barbara, and Riverside Counties (Eriksen and Belk 1999:92, 125; U.S. Fish and Wildlife Service 2007). The Permit Area is located within the San Joaquin Valley vernal pool region (U.S. Fish and Wildlife Service 2005). In this vernal pool region, the vernal pool fairy shrimp is found at the Grasslands Ecological Area in Merced County, at the Pixley National Wildlife Refuge in Tulare County, and at isolated locations in Kings and Stanislaus Counties.

##### Life History and Habitat Requirements

In California, the vernal pool habitat forms a discontinuous ring around the margins of the Central Valley. The majority of pools are found on the older alluvial terraces along the eastern margin of the Valley. Vernal pool fairy shrimp can inhabit sandstone depression pools but that is atypical. Vernal pool fairy shrimp commonly inhabit vernal pools or vernal pool-like habitats, typically in grassland landscapes. Most commonly, vernal pool fairy shrimp are found in vernal pools or vernal swales, in unplowed grasslands (Eng et al. 1990:257; U.S. Fish and Wildlife Service 2007). The chemical composition of the habitat and temperature variations resulting from pools filling at different times and distribution of pools along altitudinal and longitudinal gradients are the most important factors in determining the distribution of different species fairy shrimp (including vernal pool fairy shrimp), or their appearance from year to year (Eng et al. 1990:273; U.S. Fish and Wildlife Service 2007:5). Vernal pool fairy shrimp sometimes occur in other wetlands that provide habitat characteristics similar to those of vernal pools; these other wetlands include alkaline rain pools, rock outcrop pools, and some disturbed and constructed sites, including tire ruts, ditches, and puddles (59 FR 48136–48153, September 16, 1994; Eriksen and Belk 1999:93, U.S. Fish and Wildlife Service 2007). Occupied habitats range in size from 6-square-foot puddles to pools exceeding 24 acres (Eriksen and Belk 1999:93). Vernal pool fairy shrimp is not found in riverine, marine, or other permanent waters (59 FR 48136–48153, September 16, 1994). Suitable pools must stay inundated long enough for the shrimp to complete their life cycle.

##### Threats

The loss and modification of vernal pool habitat continues to be the primary threat to the vernal pool fairy shrimp (U.S. Fish and Wildlife Service 2007:35). In the San Joaquin Valley region, the vernal pool fairy shrimp is found primarily on private land where it is threatened by direct habitat loss, including urban development and agricultural conversion (U.S. Fish and Wildlife Service 2005: II-199). Loss of vernal pool habitat is expected to continue as urban boundaries expand further, especially through high and low terrace formations on the eastern side of the Central Valley. Vernal pool habitat has been protected through the purchase of land and conservation easements, but the trend of loss of vernal pool habitat has continued. Remnant habitat that has been protected in small parcels is often subject to changed hydrological conditions, invasion by nonnative plants and other

species, increased vegetation growth, and other conditions (such as cessation of grazing or overgrazing), which result in decreased habitat suitability for vernal pool fairy shrimp. These threats are expected to continue as population increases result in urban growth in areas of remaining vernal pool habitat (U.S. Fish and Wildlife Service 2007:35).

### Status in the Permit Area

Vernal pool fairy shrimp was reported to occur approximately 8 miles northwest of the HCP Permit Area, near Goshen. This record (occurrence #111) is from 1992 in which one male was observed (California Department of Fish and Game 2012). This occurrence is located within the San Joaquin Valley vernal pool region (U.S. Fish and Wildlife Service 2005). Nearly all of the land cover between the Permit Area and this occurrence is agriculture. Ruderal grassland areas along Highway 99 between the Permit Area and this occurrence may have suitable vernal pool fairy shrimp habitat similar to the habitat in the Permit Area.

As discussed under the “Seasonal Pools” section, seasonal pools SP-1 and SP-2 provide suitable habitat for vernal pool fairy shrimp. These pools maintain open water to a sufficient depth and for a sufficient duration (3 weeks minimum) to support vernal pool fairy shrimp. SP-3 is heavily vegetated and did not have standing water during surveys conducted and therefore is not considered habitat for vernal pool branchiopods.

Approximately ten protocol-level wet-season surveys were conducted in pools SP-1 and SP-2 between November 2007 and March 2008 (Appendix B). The protocol-level dry season survey was conducted on June 11, 2008. Survey methodology was in accordance with the *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* with guidelines (U.S. Fish and Wildlife Service 1996). Survey methodology and results are included in the 90-day wet-season and dry season survey reports prepared for USFWS (Appendices B and C).

Mr. Pete Balfour of ECORP Consulting, Inc., who is approved by USFWS (permit #TE-012973) to conduct branchiopod cyst identification, examined the processed soil from SP-1 and SP-2 for branchiopod cysts. One common fairy shrimp species, the versatile fairy shrimp (*Branchinecta lindahli*), was observed repeatedly in SP-1 during the wet-season surveys. Soil samples from SP-1 contained tens to thousands of cysts of the genus *Branchinecta* per 100 ml of soil. At least two morphologically distinct types of *Branchinecta* species cysts were found in the soil samples collected from SP-1. The two types of cysts most closely resembled cysts of two non-listed *Branchinecta* species (the versatile fairy shrimp and the alkali fairy shrimp [*B. mackini*]) (Balfour pers. comm.) (Appendix C). In addition, some of the *Branchinecta* cysts were similar in appearance to the federally listed vernal pool fairy shrimp, but a positive identification could not be made because the cyst morphology of that genus can be quite variable (Balfour pers. comm.; Appendix C). Cysts of the versatile fairy shrimp, which were observed during the wet season surveys, can occasionally resemble those of listed species (Balfour pers. comm.).

A single unidentifiable immature fairy shrimp was observed in SP-2. The presence of this individual in SP-2 may have been the result of an accidental transfer of a cyst from SP-1 by ICF earlier in the season (the individual was captured on February 26, 2008) because this individual was the only fairy shrimp observed in this pool during the 2007–2008 wet season surveys and no vernal pool branchiopod cysts were found in soil samples collected from SP-2.

## San Joaquin Kit Fox

### Geographic Distribution

The San Joaquin kit fox historically occurred in alkali scrub/shrub and arid grasslands throughout the level terrain of the San Joaquin Valley floor from southern Kern County north to Tracy in San Joaquin County, and up into more gradual slopes of the surrounding foothills and adjoining valleys of the interior Coast Range (U.S. Fish and Wildlife Service 2010: 1)

By 1998, when the *Recovery Plan for Upland Species of the San Joaquin Valley* (U.S. Fish and Wildlife Service 1998) was completed, local surveys, research projects, and incidental sightings indicated that kit fox inhabited a portion, but not all, of the areas of suitable habitat remaining in the San Joaquin Valley and lower foothills of the coastal ranges, Sierra Nevada, and Tehachapi Mountains. The boundaries of the kit fox's range still extended from southern Kern County north to Contra Costa, Alameda, and San Joaquin Counties on the west, and to the La Grange area, Stanislaus County, on the east side of the Valley. The largest extant populations were known from western Kern County on and around the Elk Hills area and Buena Vista Valley, and the nearby Carrizo Plain Natural Area where relatively level terrain is separated by narrow rugged ranges. (U.S. Fish and Wildlife Service 1998: 124-125; 2010: 11.)

Within the kit fox range, occupied habitat included some of the larger scattered islands of natural land on the Valley floor in Kern, Tulare, Kings, Fresno, Madera, and Merced Counties. San Joaquin kit fox were also known from the valleys of the interior Coast Range in the Pajaro River watershed of Monterey, San Benito, and Santa Clara Counties; in the Salinas River watershed of Monterey and San Luis Obispo Counties; and in the upper Cuyama River watershed of northern Ventura and Santa Barbara Counties and southeastern San Luis Obispo County. Additionally, kit foxes were known to live within the city limits of the city of Bakersfield in Kern County. (U.S. Fish and Wildlife Service 1998: 124; 2010: 11.)

Currently, the entire range of the kit fox appears to be similar to what it was at the time of the 1998 Recovery Plan; however, population structure has become more fragmented, and at least some of the resident satellite subpopulations, such as those at Camp Roberts, Fort Hunter Liggett, Pixley National Wildlife Refuge (NWR), and the San Luis NWR, have apparently been locally extirpated, and portions of the range now appear to be frequented by dispersers rather than resident animals (U.S. Fish and Wildlife Service 2010: 15).

Of the 949 CNDDDB records for San Joaquin kit fox occurrences in 2008, nearly 50 % have been recorded from Kern County, with 10% from Tulare County, 6% from Kings County, 8% from Fresno County, and 9% from San Luis Obispo County. The San Joaquin kit fox has also been recorded from Alameda (1.5%), Contra Costa (2.5 %), Madera (0.7 %), Merced (4.6 %), Monterey (5 %), San Benito (3 %), San Joaquin (2 %), Santa Barbara (1 %), Stanislaus (1 %), and Santa Clara (0.5 %) Counties. Fewer animals have been observed in the more northerly portions of the San Joaquin Valley, and adjoining valleys and foothills, and records suggest a pattern of declining presence over time. (U.S. Fish and Wildlife Service 2010:11.)

### Life History and Habitat Requirements

Natural habitats for San Joaquin kit fox include alkali sink, alkali flat, and grasslands (U.S. Fish and Wildlife Service 2010: 19-20). Monitoring, surveys, and specific studies have provided information to better understand the capacity of kit foxes to use agricultural lands. A study of seven radio-

collared kit fox that were radio tracked for up to 14 months indicates that kit fox are unable to occupy farmland on a long-term basis. Agricultural lands do not provide long-term suitable habitat for kit fox for a variety of reasons. Lands with row crops are subjected to weekly inundation during irrigation, which impedes kit fox foraging and precludes the establishment, maintenance, and use, of earthen dens. Prey abundance is relatively low in row crops, and when land is converted to agricultural uses, prey diversity is reduced, prey species composition changes, and favored prey species such as kangaroo rats disappear. Although kit fox may enter the margins of row crops and further into orchards at night from natural lands, researchers found no evidence that kit fox were able to use farmland, even when it was the predominant available habitat. Natural lands along the California Aqueduct ROW provide several times the small mammal abundance of the surrounding agricultural lands, and accounted for over 48 percent of kit fox nocturnal habitat use and 98 percent of kit fox diurnal (denning) habitat use, even though the natural lands only comprised approximately 5 percent of the available habitat in the study area. It appears that kit fox are permanently displaced from areas where the land is intensively irrigated. (U.S. Fish and Wildlife Service 2010:21.)

Other factors that reduce the suitability of agricultural lands for kit fox include the higher occurrence of red fox and domestic dogs in these areas, pesticide applications, and reduced prey base as a result of rodent control measures. Red fox and domestic dogs compete with or kill kit foxes. Pesticide applications may be harmful to kit fox, while ground squirrel eradication efforts reduce prey availability and may indirectly harm kit fox through poisoning. Although orchards and vineyards have been assumed to provide adequate habitat for kit fox because of their open structure and underlying layer of herbaceous vegetation to support a prey base, food items do not appear to be abundant in orchards and consist primarily of old world rodents in at least some locations. Ground squirrels and pocket gophers may be poisoned in almond and other orchards. Documented use of orchards by kit fox appears to vary and its suitability in supporting kit fox appears limited. (U.S. Fish and Wildlife Service 2010: 21-22).

San Joaquin kit foxes usually prefer areas with loose-textured soils suitable for den excavation (Orloff et al. 1986:62) but are found on virtually every soil type (U. S. Fish and Wildlife Service 1998:129). Where soils make digging difficult, kit foxes may enlarge or modify burrows built by other animals, particularly those of California ground squirrels (Orloff et al. 1986:63; U.S. Fish and Wildlife Service 1998:127). Structures such as culverts, abandoned pipelines, and well casings may also be used as den sites (U. S. Fish and Wildlife Service 1998:127).

The breeding season begins during September and October when adult females begin to clean and enlarge natal or pupping dens. Mating and conception occur between late December and March, and litters of two to six pups are born between late February and late March. (U.S. Fish and Wildlife Service 1998:126.)

The home range of San Joaquin kit foxes are extensive and vary by location. Home range size is thought to be related to prey abundance and studies have shown that mean home range size varies from 1,072 to 5,782 acres. San Joaquin kit foxes appear to disperse readily, with dispersal distances varying greatly (1.1 to 50 miles; these were observed in studies from relatively large areas with little development). Successful dispersal appears to be a key factor for the recovery and survival of kit fox, partly because kit fox populations are becoming more fragmented and successful dispersal among subpopulations helps to maintain genetic diversity, save declining populations, and prevent extinction (U.S. Fish and Wildlife Service 2010: 6, 107-108).

San Joaquin kit fox appear to be strongly linked ecologically to kangaroo rats. In natural areas, kit fox density and population stability are highest in areas with abundant kangaroo rats. In one study in the southern San Joaquin Valley, kangaroo rats were found to be the primary small mammal present at undeveloped and moderately developed sites, while smaller rodents (California pocket mice [*Chaetodipus californicus*], San Joaquin pocket mice [*Perognathus inornatus*], deer mice [*Peromyscus maniculatus*], and house mice [*Mus musculus*]) were found most frequently at an intensively developed site. At the undeveloped sites, the primary prey was always the kangaroo rat, whereas at the developed site, prey consumption was a function of prey availability. Consumption of small rodent and rabbit species occurred concurrently with population increases in those species, suggesting that the ability to exploit a variety of resources on an opportunistic basis enables kit fox to persist in altered environments, and in areas subject to drought-related fluctuations in prey. (U.S. Fish and Wildlife Service 2010: 5.)

Precipitation-mediated changes in prey availability are most often related to changes in vegetation. Low precipitation levels result in reduced seed production, and less food for seed-eating rodents that are prey for kit foxes. In many locations, the kit fox population declines as a response to lower prey abundance, although there generally is a lag-time of one or more years before kit fox declines occur. (U.S. Fish and Wildlife Service 2010: 5-6.)

In some locations, ground squirrels have been identified as the primary prey consumed by the kit fox. In the Bakersfield area, urban kit fox have access to anthropogenic food resources to supplement available natural prey so, in general, food is abundant and kit fox abundance shows little inter-annual variation. (U.S. Fish and Wildlife Service 2010:6.)

## Threats

The loss and modification of natural habitat from agricultural conversion, infrastructure construction, and urban development remains the largest threats to San Joaquin kit fox. Oil extraction and mining activities, changes in wildfire prevalence, and changes to vegetation structure from non-native species and altered grazing regimes also alter kit fox habitat. Solar development in kit fox habitat is an emerging threat that has the potential to substantially affect kit fox population viability. Predation by coyotes and non-native red foxes, appears to be a major and increasing threat to the viability of kit fox populations. In most areas of the kit fox's range, coyotes are the primary cause of kit fox mortality. (U.S. Fish and Wildlife Service 2010: 25, 49.)

Newer formulations of rodenticides and pesticides can subject kit foxes and other non-target wildlife to direct and secondary poisoning, and have been linked to kit fox mortality. Other threats include mortality from accidental shooting, vehicle strikes, off-road vehicle use, and research-related activities. Where populations are small, these types of events could affect the viability of the population and lead to extinction of the population. Increased variability in precipitation and severe weather events resulting from climate change, are expected to reduce prey availability and may also affect vegetation and seed resource availability, which could have threaten kit fox populations. (U.S. Fish and Wildlife Service 2010: 64.)

The effects of roadways on kit fox movement vary depending on the location, size, and volume of vehicle use. Back roads with little vehicle traffic in natural lands generally have little effect on kit fox movement or ecology. Four-lane highways with median barriers generally present a barrier to kit fox movement. Kit fox are known to cross under an elevated section of SR 99 using a railroad underpass in the Bakersfield area. The effect of higher volume roads on kit fox dispersal is not clear

in urban areas such as Bakersfield. (U.S. Fish and Wildlife Service 2010: 35.) Likely road barriers to movement within and/or between kit fox core and satellite areas include Interstates 5, 205, and 580; U.S. 101; and SRs 4, 33, 41, 46, 58, 99, 152, and 198 (U.S. Fish and Wildlife Service 2010: 36).

### **Status in the Permit Area**

The Permit Area is located within the current range of San Joaquin kit fox (U.S. Fish and Wildlife Service 1998:125; 2010: 12-14; California Department of Fish and Game 2012). There are ten CNDDDB occurrence records for San Joaquin kit fox within a 10-mile radius of the project site (California Department of Fish and Game 2012). Nine of these records are from 1975 or earlier. The tenth and closest record (occurrence #1120) is from 1992 for a kit fox population observed in the vicinity of Tulare (1-4 miles from the project area). The CNDDDB presumes the population is extant. Dense residential development and agricultural land are located between this occurrence and the Permit Area.

It was determined during field surveys that suitable denning habitat is present in ruderal annual grasslands is present within the Permit Area. Other land cover types present in the Permit Area did not have suitable burrows present (margins of agricultural fields and irrigation ditches) or are outside of the area that would be impacted by ground disturbing activities (berms and margins of the existing detention basins). Developed areas were not considered suitable denning habitat because they are covered with buildings, asphalt, landscaping, and are not occupied by burrowing rodents.

Ruderal annual grassland, agricultural lands, margins of irrigation ditches, seasonally dry pools, areas around created detention basins in the Permit Area provide suitable foraging habitat for San Joaquin kit fox. These areas also allow for kit fox movement through the Permit Area.

A burrow search was conducted on June 11, 2008 within ruderal annual grassland areas and along margins of agricultural areas (including edges of the irrigation ditches) in the project area to determine if burrows suitable for kit fox were present. Areas without burrows, as identified during the 2007 reconnaissance field survey, or that would not be impacted by ground disturbance were not surveyed. Numerous burrows were observed that were large enough for kit fox (at least 3 inches in diameter) but all appeared to be occupied by ground squirrels based on the presence of individuals entering or exiting these burrows and/or the presence of ground squirrel prints and scat. All of the areas containing burrows were located in ruderal grassland adjacent to busy roads. Therefore, ICF considers the likelihood that an active San Joaquin kit fox den would occur within the Permit Area to be low because of the high amount of vehicle traffic and human disturbance associated with roadside habitats.

ICF, on behalf of the City, considers the Permit Area to be a low-quality movement corridor because of its proximity to SR 99, the extensive amount of urban development to the southwest, and lack of larger blocks of annual grassland in the project vicinity (within 5–10 miles). The California Aqueduct, approximately 12 miles west of the Permit Area and the foothills, approximately 16 miles east of the Permit Area are more likely to be used by dispersing kit foxes traveling north-south.

The priorities established in the *Recovery Plan for Upland Species of the San Joaquin Valley, California* for protecting kit fox include maintaining and enhancing movement corridors; linking natural lands; and protecting existing kit fox habitat located between identified core and satellite populations (U.S. Fish and Wildlife Service 1998: 132-135). The Recovery Plan identified a kit fox linking-corridor in the foothills area east of Highway 99, between the Merced River in the north, south to the

intersection of Highway 99 and Interstate 5. However, the proposed SR 99/Cartmill HCP Permit Area is 15-20 miles west of this linkage-corridor's footprint. In addition, the Recovery Plan identified a kit fox satellite-population (S7) located in the west and southwest portion of Tulare County, but that population boundary is located is approximately 10-miles from the HCP Permit Area. Furthermore, the boundary of kit fox satellite-population S8 in the Sierra-foothills area of Tulare County is 15-20 miles southeast of the HCP Permit-Area boundary (U.S. Fish and Wildlife Service 2010: 14, 115). Therefore, the SR 99/Cartmill HCP is not expected to directly or indirectly impact the implementation of the kit fox recovery strategy, as outlined in in the Recovery Plan and 5-year review.

The high speed traffic and large number of vehicles on SR 99, and the presence of guard rails and dense oleander in the center divide of the highway in the Permit Area would make crossing east to west through the project area difficult for a kit fox. Given the low quality habitat in the Permit Area (small areas of ruderal grassland and the remainder of the project in agricultural production or developed), the proximity to SR 99, the extensive urban development to the south, and the lack of larger blocks of natural habitat in the project vicinity, ICF, on behalf of the City, believe there is a low potential for San Joaquin kit fox to occur in the Permit Area.

## Chapter 4

# Assessment of Effects

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The types of effects that are considered in this HCP, as defined by the ESA, are presented below. The methodologies used to estimate effects are also discussed below.

*Direct effects* are defined as the direct or immediate effects of the project on a species or its habitat. Direct effects may result from the action and may include the effects of interrelated and interdependent actions. An *interrelated action* is an activity that is part of the proposed action and depends on the proposed action for its justification. An *interdependent action* is an activity that has no independent utility apart from the action under consultation (USFWS and National Marine Fisheries Service 1998.)

*Indirect effects* are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Indirect effects may occur outside the area directly affected by the action (USFWS and NMFS 1998).

*Cumulative effects* comprise the effects of future state, local, and private actions not involving a federal action that are reasonably certain to occur within the action area under consideration (USFWS and NMFS 1998).

Direct effects are impacts that occur during project construction. ICF calculated areas directly affected by construction covered-activities by laying a map of the HCP project area (Figure 1-2) over a map of the existing land cover types (Figure 3-1), and calculating the acres of overlap using GIS technology to estimate the acreages of each existing land-cover type that would be directly affected by the construction covered-activities. All direct effects would occur within the HCP's construction project area. Direct effects may be permanent or temporary in nature.

Permanent direct effects are those that convert land cover/habitat to road pavement or other developed surface. Approximately 40.45 acres of the 54.32-acre project area would permanently become road surface, road shoulder, or another developed surface (Table 4-1).

Temporary direct effects are those that disturb land cover/habitat, but will be restored to pre-project conditions within a period of one year. Impacts from construction noise, dust, lighting, ground vibration, equipment movement, worker activities, and other impact mechanisms that would occur only during project construction are also defined as temporary direct-impacts.

Approximately 13.87 acres of the 54.32-acre project area would be temporarily affected by ground-disturbing activities (Table 4-1). The direct temporary impact area includes the 3.12-acre construction equipment staging area that would be located in the northwest quadrant of the interchange (Figure 4-1). The direct temporary impact area also includes the areas adjacent to the directly impacted areas out to 20 feet or to the proposed ROW when the ROW is less than 20 feet where temporary ground-disturbing activities from construction equipment may occur. ICF used the facility footprints presented in Figure 2-1 and GIS technology to calculate the acres of each land cover type that would be temporarily impacted by ground-disturbing construction activities within these areas. All other direct temporary construction impacts (ground vibration, noise, light, dust, etc.) were considered to occur within 20 feet of ground disturbance. As discussed in Chapter 5 (Conservation Strategy) ruderal grassland areas that are temporarily disturbed will be seeded and

restored to annual grassland. Impacts such as noise or dust that would only occur during project construction are also direct temporary impacts.

Indirect effects to vernal pool fairy shrimp are potential effects on habitat located within 250 feet from the project area boundary, which is in accordance with USFWS's *Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans within the Jurisdiction of the Sacramento Field Office, Sacramento* (U.S. Fish and Wildlife Service 1996). One pool (SP-2) is located within 250 feet of the project area; potential indirect effects, such as changes in hydrology, on this pool are discussed below in Section 4.2.2.

A permanent indirect effect to San Joaquin kit fox would result when areas of suitable habitat are no longer accessible to foxes after project construction is complete. This effect is discussed below in Section 4.3.2.

## 4.1 Land Cover

Permanent and temporary impacts on land cover types in the 54.32-acre project area are summarized in Table 4-1 and shown in Figure 4-1.

**Table 4-1. Direct Effects on Land Cover Types in the Project Area (acres)**

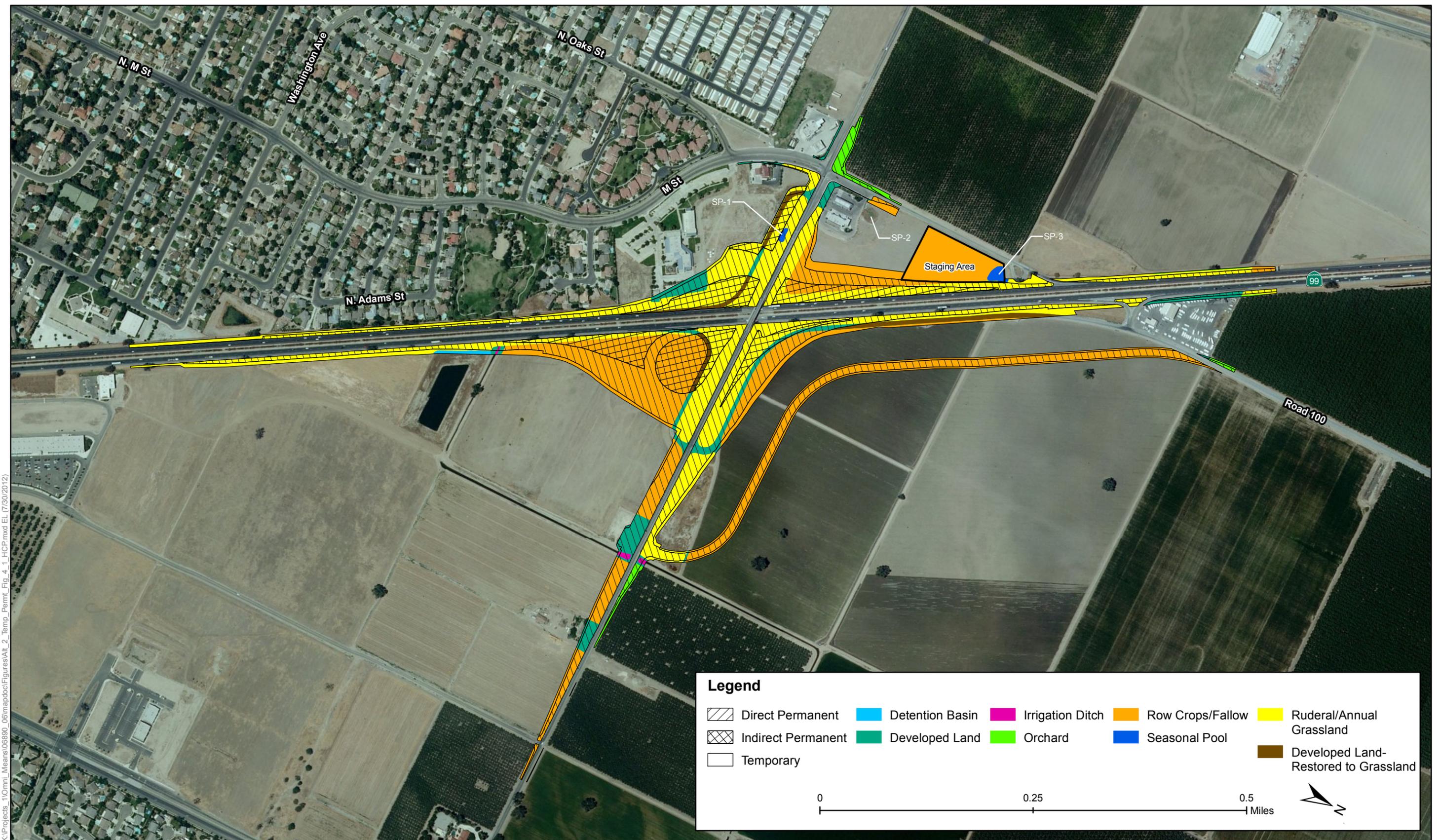
Land Cover Type	Permanent	Temporary	TOTAL
Ruderal annual grassland	19.05	3.94	22.99
Agricultural land	17.32	8.11	25.43
Irrigation ditches	0.08	0.03	0.11
Seasonal pools	0.071	0.19	0.261
Detention basins	0	0.16	0.16
Developed land	3.93	1.44	5.37
<b>TOTAL</b>	<b>40.45</b>	<b>13.87</b>	<b>54.32</b>

## 4.2 Vernal Pool Fairy Shrimp

There are three seasonal pools within the Permit Area. As discussed in Chapter 3, SP-3 does not provide suitable habitat for vernal pool fairy shrimp, and therefore, impacts from construction covered activities on this feature are not relevant to this discussion. SP-1 and SP-2 are located within or just adjacent to the construction project-area, and could be directly or indirectly impacted by the project.

### 4.2.1 Direct Effects

As discussed in Chapter 3, SP-3 does not provide suitable habitat for vernal pool fairy shrimp, and therefore, HCP effects on this feature are not relevant to this effect discussion.



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**Figure 4-1**  
**Impacts from the Proposed Project**  
**on San Joaquin Kit Fox Habitat**



Because the results of the protocol-level surveys have elements that are inconclusive, the City has assumed that SP-1 and SP-2 are occupied by vernal pool fairy shrimp. Potential direct effects (i.e., during construction) on SP-2 include fuel or oil leaks or spills adjacent to the pool that could result in injury or mortality of vernal pool fairy shrimp and further degradation of habitat (this habitat is already degraded). Dirt could also be inadvertently placed in the pool SP-2, filling the habitat or burying cysts. These potential direct effects will be avoided at SP-2 through implementation of Avoidance and Minimization Measures 1-3 (environmental awareness training, monitoring, and fencing) (see Chapter 5).

Construction covered-activities associated with interchange improvements would result in the direct permanent loss (fill) of SP-1 (0.071 acre) (Figure 4-1). Construction of the seven retention basins within the freeway approaches and exits (Figure 2-1) might function as new suitable habitat for vernal pool branchiopods after the project is completed. With approval from USFWS, the City would preserve the top 4 inches of soil of existing seasonal pool SP-1, in order to salvage versatile fairy shrimp cysts before SP-1 is destroyed, and place the soil within new retention basin “H” in the southwest quadrant of the interchange (see Figure 2-1 and Avoidance and Minimization Measure 4 in Chapter 5). Although the City did not design retention basin “H” to function as a “created” vernal pool, the post-project hydrologic conditions in retention basin “H” may provide habitat for the versatile fairy shrimp. Effects on vernal pool fairy shrimp are summarized in Table 4-2.

**Table 4-2. Summary of Effects on Habitat for Vernal Pool Fairy Shrimp**

Seasonal Pool	Permanent (acres)	Temporary (acres)
<b>Direct</b>		
SP-1	0.071	0
SP-2	0	0
SP-4	0	0
<b>Indirect</b>		
SP-1	0	0
SP-2	0	0
SP-4	0	0
<b>Total Impacts</b>	0.071	0

## 4.2.2 Indirect Effects

SP-2 is located within 250 feet of the HCP project area (construction area) boundary and potential indirect effects were evaluated for these pools.

Potential indirect effects on vernal pool fairy shrimp that were considered at SP-2 were changes in hydrology, degradation of habitat from increased human presence, new or increased use of herbicides or pesticides, increased amounts of fuel, oil, and other contaminants, and the introduction of exotic predators. Each of these potential indirect effects is discussed below.

### Changes in Hydrology

Soil compaction and an increased amount of paved surface along Cartmill Avenue and M Street near SP-2 have the potential to modify the existing hydrologic regime of SP-2. The increase in impermeable surface could cause a larger amount of water run-off to enter this pool, and water

could persist (pond) for a longer time (several days or possibly weeks), which might result in more favorable conditions for vernal pool branchiopods by extending the seasonal inundation period. However, it is unlikely that the increased amount of surface runoff would cause the pool to become ponded year round, a condition that would be unsuitable for vernal pool fairy shrimp. There are no proposed retention basins near SP-2 that would intercept water from flowing to SP-2. Because basin SP-2 was designed to catch run-off from the AM/PM parking lot and the lot would not be altered by the project, the hydrologic regime of this pool would be relatively unchanged. Additionally, the quality of this man-made pool is low because of its proximity to the gas station and the existing run-off containing oil, gas, and other contaminants (see discussion below).

## **Degradation of Habitat from Increased Human Presence**

The proposed project would not result in an increase of human presence at SP-2. The project would not change conditions such that there would be an increase in trash or off-road vehicle use at the pool. Because SP-2 is several feet deep, vehicles have not and would not attempt to drive through it on purpose. Degradation of SP-2 from increased human presence would not change as a result of the proposed project and would not be an indirect effect on vernal pool fairy.

## **New or Increased Use of Pesticides or Herbicides**

The proposed project would not result in new or increased use of pesticides and herbicides in or near habitat for vernal pool fairy shrimp. Pesticides and herbicides can have a negative effect on vernal pool branchiopods through mortality or reduced fitness (U.S. Fish and Wildlife Service 1996). Herbicide and pesticide use would not change as a result of construction of the proposed project and would not be an indirect effect on vernal pool fairy shrimp.

## **Increased Amounts of Fuel, Oil, and Other Contaminants**

The increase in impermeable surface after construction of the project has the potential to cause a larger amount of run-off to enter SP-2, as discussed above under “Changes in Hydrology”. The increase of run-off could carry additional fuel, oil, and other contaminants into the pool. However, this basin was designed to catch run-off from the AM/PM parking lot and because the lot would not be altered by the project, it is likely that the existing hydrologic regime of this pool would be relatively unchanged. Furthermore, SP-2 currently catches run-off containing oil, gas, and other contaminants from the gas station parking lot, and therefore is already considered low quality habitat.

## **Introduction of Exotic Predators**

The increase in impermeable surface resulting from construction of the project has the potential to cause a larger amount of run-off to enter SP-2, as discussed above under “Changes in Hydrology”. However, it is unlikely that the increased amount of surface runoff would cause the pool to remain ponded year round, resulting in suitable conditions for bullfrog residence. The proposed project would not create new habitat for exotic predators, or connect habitat containing exotic predators, change the length of inundation (except as discussed above under “Changes in Hydrology”) result in other habitat modifications that would make the potential vernal pool branchiopod habitat more favorable for exotic predators. As discussed in the project description, the seven new basins will be shallow and are designed to release water when it reaches a depth of 1 foot. These seasonal features would not provide suitable habitat for bullfrogs, fish, or other species that require perennial water.

Therefore, the proposed project would not result in indirect effects on vernal pool fairy shrimp from introduction of exotic predators, such as bullfrogs and mosquito fish, which can prey upon vernal pool branchiopods (U.S. Fish and Wildlife Service 1996).

After consideration of the potential indirect effects above, no temporary or permanent indirect effects on vernal pool fairy shrimp are expected to occur.

## 4.3 San Joaquin Kit Fox

### 4.3.1 Direct Effects

#### Direct Effects to Habitat

Construction of the project would result in the direct permanent loss of 26.73 acres of potential San Joaquin kit fox habitat, comprised of ruderal annual grassland (13.21 acres) (potential breeding and foraging habitat), seasonal wetland (0.071 acre) (seasonal foraging habitat), and agricultural land (13.45 acres) (foraging habitat) within the project area (Figure 4-1). It would also result in the temporary disturbance of 12.24 acres, comprised of ruderal annual grassland (3.94 acres) (potential breeding and foraging habitat), seasonal wetland (0.19 acre [from SP-3]) (seasonal foraging habitat), and agricultural land (8.11 acres) (foraging habitat) for San Joaquin kit fox within the project construction area (Figure 4-1). Any existing kit fox habitats located outside the construction project area, but inside the larger Permit Area would not be directly impacted by the project (indirect effects to San Joaquin kit fox are discussed in the next section).

Permanent direct impacts to San Joaquin kit fox were calculated in areas where construction would result in the conversion of ruderal grassland, seasonal pool, and agricultural land to paved or other developed surface. Temporary direct impacts to San Joaquin kit fox were calculated in areas where construction would disturb ruderal grassland, seasonal pool, and agricultural land but disturbed areas would be restored to pre-project conditions within a period of one year. The temporary impact area includes the construction staging area and a 20-foot area outward from the direct permanently impacted area or to the proposed ROW when the ROW is less than 20 feet. Effects to San Joaquin kit fox habitat are summarized in Table 4-3.

**Table 4-3. Summary of Effects on Habitat for San Joaquin Kit Fox**

	Permanent (acres)	Temporary (acres)	Total
<b>Direct</b>			
Ruderal annual grassland	13.21	3.94	
Agricultural land	13.45	8.11	
Seasonal pool	0.071	0.19	
<b>Indirect</b>			
Ruderal annual grassland	5.84	0	
Agricultural land	3.87	0	
Seasonal pool	0	0	
<b>Total</b>	<b>36.44</b>	<b>12.24</b>	<b>48.68</b>

## Direct Effects to Individuals

Because of the proposed project's proximity to SR 99, and because the surrounding area consists of agricultural land and developed areas, the potential for San Joaquin kit fox to den in the project area is low. Construction activities could result in direct harassment, injury, or mortality of individual San Joaquin kit foxes but the potential for those effects are also relatively low.

However, suitable burrows could be damaged or destroyed during construction. Although unlikely, potential direct effects include direct mortality or injury to individuals from construction vehicles or heavy equipment, direct mortality or injury to individuals from den collapse and subsequent suffocation, temporary harassment from noise and human presence associated with construction activities, and harassment of individuals by construction personnel. Additionally, exposed pipes, large excavated holes, or trenches that are left open after construction has finished for the day could entrap San Joaquin kit foxes moving through the construction area.

Because of the low potential for kit fox to occur on the project site, and because avoidance and minimization measures (Avoidance and Minimization Measures 1, 2, and 5-9, as described in Chapter 5) would be implemented at the construction site to minimize and avoid the potential for take, ICF, on behalf of the City, believes that direct take of individual San Joaquin kit fox from the construction, operation, and maintenance of the interchange-improvement project is extremely unlikely to occur.

### 4.3.2 Indirect Effects

Potential indirect effects on San Joaquin kit fox that were considered are 1) loss of access to suitable habitat upon project completion, 2) potential reduction of prey populations as a result of habitat loss, 3) indirect poisoning of kit fox from rodenticide use, and 4) impaired movement/increased mortality from the new overcrossing widened roadway.

#### Loss of Access to Suitable Habitat upon Project Completion

Upon project completion, portions of the HCP project area would become isolated by wider roads and new roadways and would be permanently inaccessible to San Joaquin kit fox. These areas are located between SR 99 and the planned on-ramps and off-ramps (Figure 4-1). The acreage of San Joaquin kit fox habitat that is assumed to be permanently indirectly impacted is 9.71 acres (5.84 acres of ruderal grassland and 3.87 acres of agricultural land) (Table 4-3).

#### Potential Reduction of Prey Populations as a Result of Habitat Loss

Construction activities could cause mortality of rodents presently in the project area, thereby temporarily reducing the amount of prey available to San Joaquin kit fox. Additionally, as described above, 13.21 acres of ruderal annual grassland and 13.45 acres of agricultural land would be permanently removed from construction of the project. The permanent loss of annual grassland and the margins of the agricultural fields may cause a small reduction in prey abundance since a smaller amount of prey habitat would be available. As discussed in Chapter 3, prey abundance is relatively low on agricultural lands. It is expected that rodents would still occupy the 5.84 acres that would become permanently inaccessible to San Joaquin kit fox since rodents are able to utilize relatively small areas of habitat. Additionally, the 3.94 acres of ruderal annual grassland that would be

temporarily affected would be restored with grasses as described in Chapter 5, and would continue to provide grassland habitat for rodents after completion of the project.

Under existing conditions, ICF, on behalf of the City, considers the potential for kit fox to move through or forage in the Permit Area low because of its proximity to SR 99, the presence of dense oleander shrubs in the SR 99 median, the extensive amount of urban development to the southwest, and lack of larger blocks of annual grassland in the project vicinity (within 5-10 miles). As such, the potential minor reduction of prey populations as a result of the loss of ruderal annual grassland would be a minor indirect effect on San Joaquin kit fox.

## **Indirect Poisoning from Rodenticide Use and Disturbance from Maintenance Activities**

Upon project completion, maintenance of the project would be conducted by the City of Tulare and Caltrans (within the state highway ROW). It would primarily consist of mowing and watering any landscaping and repairing roads and associated facilities as necessary. No activities besides mowing and watering are expected to occur outside paved areas. Mowing activities could disturb kit foxes if present within the ROW, but as mentioned previously, this is considered extremely unlikely to occur. The vast majority of the ROW would be maintained by Caltrans. Caltrans has procedures in place to address threatened and endangered species in the ROW during maintenance. All maintenance personnel are to report anything suspicious, including "holes", to a designated environmental senior who then sends a biologist out to look at it. This standard, ongoing procedure will identify a potential kit fox or kit fox burrow in the maintenance ROW, in the very unlikely event that this occurs. Rodenticides would not be used for maintenance of the overpass or the roadway and therefore would not indirectly affect San Joaquin kit fox (also see Avoidance and Minimization Measure 9).

## **Impaired Movement/Increased Mortality from the New Overcrossing**

As discussed in the project description, the new overcrossing would be approximately 90 feet wider than the existing structure and would be constructed as a 6-lane divided arterial roadway. This portion of the roadway, similar to existing conditions, would be elevated and would not affect San Joaquin kit fox ability to cross in this area. The roadway would transition from the overcrossing to four lanes and then two lanes. The flat areas at the ends of the overcrossing (west of M Street and east of realigned Akers Street), where kit foxes would be most likely to cross, would be 88-108 feet wider than existing conditions. As shown in Figure 2-1, the SR 99 on and off ramps would be re-configured and a frontage road will be relocated. The increases in the widths of crossable portions of roads are not expected to increase the potential for vehicle strikes in this area substantially. As discussed previously, ICF, on behalf of the City, does not consider the HCP Permit Area to be a substantial movement corridor for kit foxes and considers the potential for kit foxes to occur in the project vicinity to be low. Therefore, the HCP's potential to result in vehicle strikes or affect potential movement corridors for San Joaquin kit foxes is low, and is not expected to reach the level of harm or harassment of kit foxes, in the Permit Area.

## 4.4 Interrelated and Interdependent Effects

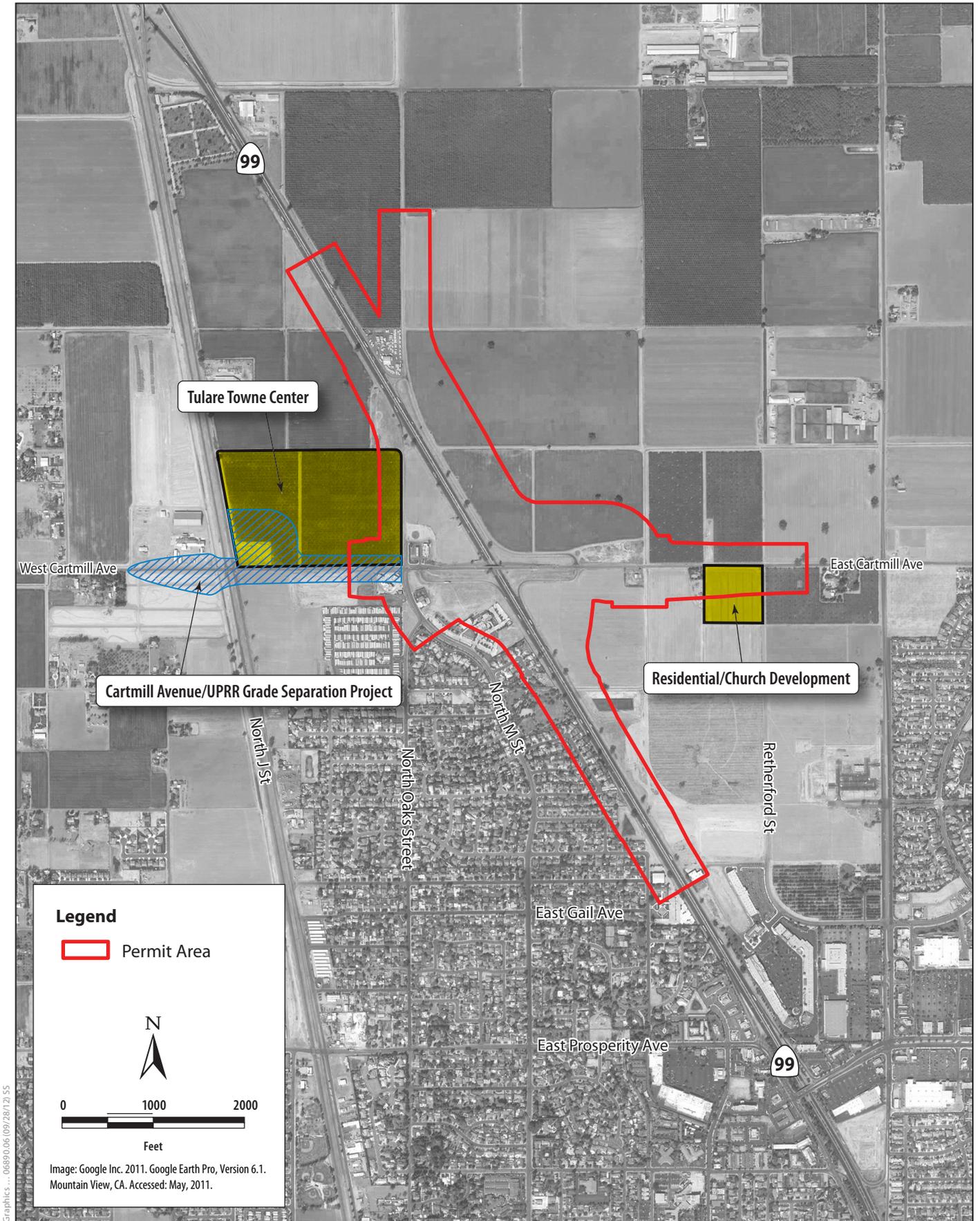
Based on conversations with the City of Tulare, additional development is proposed in the northwest and southeast quadrants of the interchange. The proposed Tulare Towne Center would consist of more than 700,000 square feet of commercial and retail development located in the northwest quadrant of the interchange (Figure 4-2). The project has received conceptual approval and expires in 2014. A church and senior living project is proposed in the southeast quadrant of the interchange, at the southwest corner of Cartmill Avenue and Retherford Street (Figure 4-2). This project has been approved and construction of portions of the project is expected to begin in 2013. These projects are not related to the Cartmill Avenue interchange improvement, except that they are located in the same area. They are not dependent on the improvement of the interchange, though their construction and operation, and associated forecasted traffic, have been considered in the design of the interchange improvements.

## 4.5 Cumulative Effects

Cumulative effects, as defined by the ESA, are the effects of future state, local, and private actions on species or critical habitat, not involving a federal action, that are reasonably certain to occur within the action area under consideration. The action area includes all areas that would be affected directly or indirectly by the HCP covered-activities, and not merely the immediate area involved in the covered activities.

Table 4-4 shows planned projects in and adjacent to the Permit Area. Two new retail/commercial developments were planned for the east side of SR 99: Cartmill Crossing North (APNs 149-230-011, 149-230-014, and 149-260-009) on the north side of Cartmill Avenue, and Cartmill Crossing South (APNs 166-010-005 and 166-010-061) on the south side of Cartmill Avenue. As shown in Table 4-4, these projects have expired or are otherwise no longer in the planning process.

Construction of the Cartmill Avenue/UPRR Grade Separation Project was completed in early 2012, but is addressed here because it would have been considered a future project when the HCP development began in May 2011. During field work for the SR99/Cartmill Avenue Interchange Improvements Project conducted in March 2009, ICF biologists determined that there was a roadside seasonal pool within the project area of the Cartmill Avenue/UPRR Grade Separation Project. This seasonal pool (SP-4; approximately 0.53 acre in size) was originally considered to be located within the Permit Area of this HCP (see discussion under Section 1.2.2) and was addressed in initial administrative drafts of the SR99/Cartmill HCP. The initial Chapter 4 analysis in the draft HCP assumed that SP-4 was occupied by vernal pool fairy shrimp and vernal pool tadpole shrimp (protocol level surveys were not conducted in this pool because this area was added to the project area after protocol level surveys had been completed at other pools in the project area). The filling and/or removal of this pool during construction of the Cartmill Avenue/UPRR Grade Separation Project may have cumulatively contributed to the loss of habitat for vernal pool branchiopods (0.53 acre) in the previous larger Permit Area (however, the quality of this roadside pool was considered low by ICF biologists). Additionally, construction of Cartmill Avenue/UPRR Grade Separation Project resulted in the estimated loss of approximately 16 acres of agricultural lands that provide suitable movement and to a lesser extent, suitable foraging habitat for San Joaquin kit fox.



**Figure 4-2**  
**Other Planned Projects in and Adjacent to the Permit Area**



**Table 4-4. Planned Projects in and Adjacent to the Permit Area**

Name	Jurisdiction	Proposed Uses	Status
Cartmill Avenue/UPRR Grade Separation Project	City of Tulare	Eliminate a railroad grade crossing with an overpass to carry vehicles over the railroad tracks.	Project constructed/completed in early 2012
Cartmill Crossing North	City of Tulare	1.4 million square feet regional commercial	Property being marketed by bank.
Cartmill Crossing South	City of Tulare	233,120 square foot shopping center	Project expired March 2010.
Bethel Assembly of God Church and Harmony Village Senior Living	City of Tulare	29 acre complex including a 60,000 square foot church, 18,300 square foot community center, 82,533 square foot assisted living facility, 88,533 square foot independent living facility, and a 106,110 square foot senior apartment complex	Approved—building plans for the assisted living facility have been submitted. The timing on the church/community center is 2015 and the independent care 2013. The senior apartments are a future project.
Tulare Towne Center	City of Tulare	707,759 square feet of retail/commercial use	Approved—expires in 2014.

Sources: Simoes pers. comm. [A], Simoes pers. comm. [B].

The Bethel Assembly of God Church and Harmony Village Senior Living Project is planned to include a 60,000-square-foot church, an 18,300-square-foot community center, an 82,533-square-foot assisted living facility, an 88,533-square-foot independent living facility, and a 106,110-square-foot senior apartment complex. The development would be located at the southwest corner of Cartmill Avenue and Retherford Street (APNs 166-010-020 and 166-010-103) (Figure 4-2). As a part of that project, a general plan amendment would be necessary to change the zoning from Regional Commercial to Urban Residential and High-Density Residential on 11 acres, from Regional Commercial to Community Commercial on 18 acres, and from Retail Commercial to Multiple Family Residential on 11 acres.

In addition, the Tulare Towne Center has been approved and would be a 707,759-square-foot development of retail/commercial use. The Tulare Towne Center would be located on APN 149-080-011 on the north side of Cartmill Avenue between M and J Streets (Figure 4-2). If not initiated, this project will expire in 2014.

If constructed, the Bethel Assembly of God Church and Harmony Village Senior Living Project and the Tulare Towne Center Project would result in the permanent loss of an estimated 62 acres of agricultural lands that provide suitable foraging and movement habitat for San Joaquin kit fox. Permanent loss of kit fox habitat from these projects and the Cartmill Avenue/UPRR Grade Separation Project when added to the HCP's permanent loss of 36.44 acres of kit fox habitat would cumulatively contribute to a total of an estimated 114.44 acres of permanent loss of potential foraging, breeding, and movement habitat in the Permit Area.

Off-site compensation for permanent and temporary losses of suitable kit fox habitat resulting from the proposed project will partially offset the permanent loss, but a residual cumulative loss of habitat would remain in the Permit Area. However, the quality of habitat preserved through

compensation would be higher than the quality of habitat that currently exists in the Permit Area. Furthermore, the habitat preserved at the conservation bank would benefit San Joaquin kit fox in an area where there is a higher potential for kit fox to occur.

## 4.6 Summary of Effects and Conclusion

The Recovery Plan for Upland Species provides a recovery strategy for San Joaquin kit fox, which includes “working toward the establishment of a viable complex of kit fox populations on private and public lands through its geographic range” and at the same time acquiring new and better information on the kit fox’s current and historical range, use of agricultural lands, the relationship between prey populations and kit fox population dynamics, interactions with red foxes, indirect effects of rodenticide use, and influence of predator control activities (U.S. Fish and Wildlife Service 1998: 132-136).

None of the specific recovery actions listed in the *Recovery Plan for Upland Species of the San Joaquin Valley* (U.S. Fish and Wildlife Service 1998) or the *Recovery Plan for Vernal Pool Ecosystems of California and Oregon* (U. S. Fish and Wildlife Service 2005) directly address the Permit Area or the portion of Tulare County adjacent to the cities of Visalia and Tulare. Additionally, the SR 99/Cartmill HCP Permit Area is not located within any Core Recovery Areas or Satellite Recovery Areas identified in those Recovery Plans. Therefore, construction of the HCP covered activities could not adversely affect the recovery of any federally listed species included in the *Recovery Plan for Upland Species of the San Joaquin Valley* (U.S. Fish and Wildlife Service 1998) or the species included in the *Recovery Plan for Vernal Pool Ecosystems of California and Oregon* (U.S. Fish and Wildlife Service 2005). Considering both the effects of the covered activities and the cumulative effects on the covered species, the City concludes that implementing the HCP covered activities would not appreciably reduce the likelihood of the survival or the recovery of the HCP covered-species in the wild.

# Chapter 5

## Conservation Strategy

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This chapter describes the conservation strategy that the permit applicant (the City of Tulare) will implement to minimize and mitigate effects of the HCP covered-activities on vernal pool fairy shrimp and San Joaquin kit fox to the maximum extent practicable, as required under ESA Section 10(a)(2)(B). The SR 99/Cartmill HCP conservation-strategy is consistent with USFWS's "Five-Point Policy" (65 FR 35242-35257), an addendum to the 1996 HCP Handbook, which expanded requirements for including biological goals and objectives; effects, effectiveness, and permit compliance monitoring; and included adaptive management in HCP conservation strategies.

### 5.1 Biological Goals

In the context of HCPs, biological goals form the guiding principle behind the operating conservation program. Biological goals are the rational behind minimization and mitigation strategies, and should support species recovery goals. The biological goals and objectives of an HCP are commensurate with the specific impacts and the duration of the proposed covered activities. Low-effect HCPs generally have simple measurable biological goals (65 FR 35242).

The biological goals of this low-effect HCP are to 1) avoid or minimize direct impacts to covered species, 2) provide for the continuing protection and existence of vernal pool fairy shrimp and San Joaquin kit fox in Tulare County, and 3) contribute to a regional preserve design by purchasing mitigation credits at USFWS-approved species conservation banks.

### 5.2 Conservation Approach

The HCP conservation approach described in this section is composed of avoidance and minimization measures, and compensatory mitigation.

#### 5.2.1 Ensure Implementation of the Avoidance and Minimization Measures

The City will designate a superintendent or other designee to be responsible for assuring implementation of the avoidance and minimization measures in the HCP, the monitoring plan, and any terms and conditions of the ITP. The superintendent will assure that a copy of this HCP and the ITP is on the project site and accessible to the contractor and the construction workers when construction is taking place. The superintendent's name and telephone number will be provided to USFWS at least 30 calendar days prior to project groundbreaking. It is expected that the superintendent would be on the project site daily.

## 5.2.2 Avoidance and Minimization Measures that Apply to Vernal Pool Fairy Shrimp and San Joaquin Kit Fox

### **Avoidance and Minimization Measure 1. Conduct Environmental Awareness Training**

An experienced qualified biological monitor (approved by USFWS) will conduct environmental awareness training for all onsite project personnel, prior to any ground-disturbing activities. The awareness training will include descriptions of vernal pool fairy shrimp and of San Joaquin kit fox and representative photographs of the species, the species' legal status and protection under the federal and California ESAs, and the penalties for not complying with all avoidance and minimization measures. The superintendent will be the contact for any employee or contractor who might inadvertently kill or injure a federally listed species or who finds one dead, injured or entrapped. The superintendent will be identified as the contact person during the environmental awareness training, and their name and telephone number will be provided to all workers and the USFWS.

### **Avoidance and Minimization Measure 2. Monitor Ground-Disturbing Activities and Conduct Weekly Visits to the Construction Area**

The biological monitor will be onsite during all initial ground-disturbing construction activities and then will conduct weekly visits to the project area to ensure that erosion control features and other protective measures (i.e., orange barrier fencing) are in good working order. If the erosion control features or other protective measures are in need of repair, the monitor will notify the superintendent, who will ensure that the contractor makes the necessary repairs immediately. If the issue is not resolved in a timely manner, the biological monitor will report the problem to USFWS. During weekly monitoring visits, the biological monitor will speak with the contractor and superintendent to inquire if there have been any problems since the last visit and remind the contractor about implementing protective measures such as covering trenches and inspecting pipes for trapped animals (see Avoidance and Minimization Measure 8 below). The monitor will have the authority to stop work, if deemed necessary. The monitor will maintain a monitoring log that will include the dates of inspection, what was observed, any communication regarding repairs that needed to be made, and how and when problems were rectified.

If a federally listed species is found injured or killed, or the monitor stops work because of the threat of injury or mortality of a federally threatened species, the superintendent will contact the USFWS (and CDFG if applicable). The USFWS Sacramento Office and CDFG will be called immediately, and then notified in writing within three working days, of the accidental death or injury to a San Joaquin kit fox during HCP-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 USFWS contact is: Chief of the Conservation Planning Division, Sacramento Fish and Wildlife Office. 2800 Cottage Way, Suite W2605, Sacramento California, 95832-1846. Telephone (916)414-6678 or (916)414-6600.
- 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. Mr. Paul Hoffman's mailing address is 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670.

### 5.2.3 Vernal Pool Fairy Shrimp

Avoidance and minimization efforts would not be feasible for SP-1 because it will be removed during construction of the proposed improvements.

#### Avoidance and Minimization Measures

##### **Avoidance and Minimization Measure 3. Avoid Direct Effects Habitat for Vernal Pool Fairy Shrimp by Installing Barrier Fencing and Erosion Control Measures**

Direct effects on habitat for vernal pool fairy shrimp (SP-2) will be avoided by installing orange barrier fencing and erosion control measures to prevent equipment, soil, or other materials from entering the pool. The barrier fencing and erosion control measures will be placed around SP-2 at the maximum distance practicable, not less than 50 feet and up to 100 feet. The location of the barrier fencing and erosion control measures will be reviewed by a USFWS-approved biologist and identified on the final grading plans and construction specifications. Natural/biodegradable erosion control measures (i.e., coir rolls, straw wattles, use of straw over disturbed areas) will be used. Plastic monofilament netting (erosion control matting) will not be allowed because small animals can become entangled in this type of erosion control material. Coir rolls and straw wattles will be removed before temporarily disturbed areas are restored (see Avoidance and Minimization Measure 9).

##### **Avoidance and Minimization Measure 4. Preserve Top Soil of SP-1 and Place within New Detention Basin H**

Construction of low areas/basins within the freeway approaches and exits might function as suitable habitat for vernal pool branchiopods after the project is completed. With approval from USFWS, the City would preserve the top 3-4 inches of soil from existing pool SP-1 containing resting cysts of the versatile fairy shrimp and place the soil within retention basin "H" once it is constructed (Figure 2-1). This basin was chosen because it is the closest basin to SP-1. Top soil from SP-1 will be removed and stored in the project area until retention basin "H" has been constructed. The top soil will be kept covered with tarps or other appropriate material until construction of the basin is complete. Orange construction barrier fencing will be installed around the covered topsoil. The biological monitor will be onsite to monitor the removal of the topsoil and will check to make sure that the soil is properly covered during periodic monitoring visits to the project site. Upon completion of retention basin "H," the stored topsoil from SP-1 would be spread over the bottom of the basin to the start of the winter rainy season.

#### Compensation

##### **Compensate for Permanent and Temporary Direct Effects and Indirect Effects on Habitat for Vernal Pool Fairy Shrimp**

The amount of compensation proposed for direct effects on vernal pool fairy shrimp is consistent with the compensation amount for similar types of impacts in USFWS's programmatic biological opinion with the Sacramento District USACE (see *Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans within the Jurisdiction of the Sacramento Field Office, Sacramento* [U.S. Fish and Wildlife Service 1996]). The City will compensate for the direct permanent loss of 0.071 acre of habitat (SP-

1) for vernal pool fairy shrimp by purchasing preservation credits equal to 0.213 acre of vernal pool habitat at Wildlands' Deadman Creek Conservation Bank, a USFWS-approved conservation bank in Merced County. The project area is within the vernal pool fairy shrimp service area for this conservation bank. No creation credits would be purchased.

The 0.213 acre of habitat at the conservation bank will be protected in perpetuity for vernal pool fairy shrimp. The project's direct permanent effects on vernal pool fairy shrimp habitat will be more than offset because much higher quality natural vernal pool habitat will be preserved to compensate for impacts to a low quality roadside seasonal pool that is surrounded by development and agriculture.

Prior to the start of construction (expected to be March 2013), the City will provide funding to Wildlands Inc. for preservation credits equivalent to 0.213 acre of vernal pool habitat for vernal pool fairy shrimp at the Deadman Creek Conservation Bank. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and before any construction activities are initiated. The ITP for the SR 99/Cartmill Avenue HCP will become effective after the City provides the USFWS with copies of the credit sale agreement and fund transfer.

Direct permanent and temporary effects to fairy shrimp habitat (SP-2) will be fully avoided through implementation of Avoidance and Minimization Measures 1 and 2, as discussed above. Therefore, no compensation for SP-2 is included in the HCP conservation strategy.

## 5.2.4 San Joaquin Kit Fox

### Avoidance and Minimization Measures

#### **Avoidance and Minimization Measure 5. Avoid San Joaquin Kit Fox Dens by Conducting Preconstruction Den Searches**

The City will retain qualified approved biologists (as determined by USFWS) to conduct a preconstruction survey for potential San Joaquin kit fox dens (U.S. Fish and Wildlife Service 2011). A qualified biologist means a 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. The biologist(s) must be able to identify coyote, red fox, gray fox, and kit fox tracks, and has previously observed kit foxes in the wild, at a zoo, or as a museum mount. Resumes of biologists will be submitted to the USFWS for review and approval prior to the start of the survey.

As described in U.S. Fish and Wildlife Service 2011, the preconstruction survey will be conducted no less than 14 days and no more than 30 days before the beginning of ground disturbance, or any activity likely to affect the San Joaquin kit fox. The biologists will survey the entire HCP Permit Area, as depicted in Figure 1-2. The biologists will conduct den searches by systematically walking 30-foot-wide transects through the Permit Area. If a potential or known den is found during the survey, the biologist will measure the size of the den, evaluate the shape of the den entrances, and note tracks, scat, prey remains, and recent excavations at the den site. The biologists will also determine the status of the dens and map the features. Dens will be classified in one of the following four den status categories defined by USFWS (U.S. Fish and Wildlife Service 2011).

- **Potential den:** Any subterranean hole within the species' range that has entrances of appropriate dimensions and for which available evidence is sufficient to conclude that it is being used or has been used by a kit fox. Potential dens include: (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 have appropriate characteristics for kit fox use; or a human-made structure that otherwise has appropriate characteristics for kit fox use.
- **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 USFWS 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).
- **Known natal or pupping den:** Any den that is used, or has been used at anytime in the past, 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.
- **Known atypical den:** Any human-made structure that 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.

Written results of the survey including the locations of any potential or known San Joaquin kit fox dens will be submitted to the USFWS within five days following the completion of the survey and prior to the start of ground disturbance and/or construction activities.

#### **Avoidance and Minimization Measure 6. Monitor Potential Dens and Avoid Disturbance of all Potential San Joaquin Kit Fox Dens to the Maximum Extent Possible**

If known dens or potential dens are identified within the HCP project area boundary during the preconstruction-surveys, the USFWS-approved biologists will monitor potential dens within the project area for three consecutive nights using tracking media or remote-sensor cameras and will submit monitoring results in a letter report to the USFWS. If determined to be unoccupied, the City will request to excavate those dens that are expected to be directly affected and cannot be avoided. The potential dens within the HCP project-area that cannot be avoided will be removed by careful hand excavation and under the supervision of the approved biologists.

Unoccupied potential dens within the construction area that can be avoided will be protected by orange construction fencing as described below in Avoidance and Minimization Measure 7.

Any potential or known dens identified within the rest of the Permit Area (i.e., the 250 foot indirect effects area) will not be removed, and will be avoided as described below in Avoidance and Minimization Measure 7.

If a San Joaquin kit fox is observed in the Permit Area, or if a den of any category is determined to be occupied, or may be occupied, no work will begin until the USFWS and CDFG are contacted to determine the appropriate course of action. Under no circumstances will an active den be disturbed or be excavated during the kit fox natal season (approximately January 1 to June 14).

#### **Avoidance and Minimization Measure 7. Avoid Potential San Joaquin Kit Fox Dens by Establishing and Observing Exclusion Zones**

After preconstruction surveys and den monitoring has been conducted and before construction activities begin, qualified biologists/monitors will establish and maintain exclusion zones around unoccupied potential and atypical dens that can be avoided within the project area. Four to five flagged stakes will be placed in a radius 50 feet from the den entrance or cluster of entrances to identify potential den locations. If the preconstruction surveys identify a known den, known atypical den, or a known natal/pupping den within the Permit Area, the USFWS and CDFG must be contacted for guidance.

Construction and other project activities will be prohibited or greatly restricted within the exclusion zone. Only essential vehicular operation on existing roads and foot traffic will be permitted. If the exclusion zones cannot be maintained, USFWS must be contacted. The USFWS-approved biological monitor (see Avoidance and Minimization Measure 2) will inspect the exclusion zone stakes/flagging during regular visits to the project site.

Any potential, or atypical dens outside the project area but inside the Permit Area (i.e., within the 250-foot wide indirect effects area) will be protected from construction equipment and construction activities by the orange barrier fencing installed along the Project Area boundary, as described in Avoidance and Minimization Measure 8 below. Construction equipment and off-road traffic outside of the designated project area will be prohibited.

The biological monitor will be onsite during all initial ground-disturbing construction activities and then will visit the construction area weekly to ensure that protective measures (i.e., orange barrier fencing and flagging) are in good working order, and that there is no kit fox activity at potential dens). If the protective measures are in need of repair, the monitor will notify the superintendent, who will have the repairs made immediately. The monitor will have the authority to stop work, if deemed necessary. The monitor will maintain a monitoring log that will include the dates of inspection, what was observed, any communication regarding repairs that needed to be made, and how and when problems were rectified.

#### **Avoidance and Minimization Measure 8. Minimize and Avoid Construction Disturbances to San Joaquin Kit Fox**

- The City will ensure that the superintendent or other designee will implement and maintain the following construction and operational requirements identified in the Standardized Recommendations for the Protection of San Joaquin Kit Fox Prior to or During Ground Disturbance (Standardized Recommendations) (U.S. Fish and Wildlife Service 2011). The contractor will clearly delineate the project area boundaries (Figure 1-2) with orange construction fencing, and will prohibit off-road equipment use outside these boundaries.
- As discussed in Avoidance and Minimization Measure 1, mandatory contractor/worker awareness training will be conducted for all construction personnel. The awareness training will include a description of San Joaquin kit fox by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concern to the contractor and their

employees, or other persons involved with project construction. The program will include the following: a description of the San Joaquin kit fox, representative photographs of the species, a description of kit fox habitat needs, a discussion of nearest kit fox occurrences to the HCP Permit Area; an explanation of the species' legal status and protection under the federal and California ESAs; a discussion of the measures being taken to reduce impacts to kit fox during the project construction an implementation, and the penalties for not complying with avoidance and mitigation requirements. A fact sheet conveying this information will be prepared for distribution to the contractor, their construction workers, the City appointed superintendent, and anyone else that may enter the project area.

- As discussed in Avoidance and Minimization Measures 1 and 2, a representative will be appointed by the City (i.e., the superintendent) who will be the contact for the contractor or any construction worker who might observe a kit fox; inadvertently kills or injures a kit fox; or who observes a dead, injured, or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number will be provided to the USFWS. Any contractor or construction worker who inadvertently kills or injures a San Joaquin kit fox, or finds an entrapped kit fox, will immediately report the incident to this representative. This Representative will contact the CDFG and the Service at the phone numbers listed below.
- The contractor will clearly delineate the project area with orange barrier fencing and prohibit off-road traffic outside these boundaries. Construction equipment and personnel will not enter the rest of the HCP Permit Area (i.e., 250-foot wide indirect effects area).
- To prevent inadvertent entrapment of San Joaquin kit foxes or other animals during the construction phase, the contractor and superintendent will ensure that all excavated steep-walled holes or trenches more than 2 feet deep are covered by plywood or similar materials at the end of each work day. If the holes or trenches cannot be covered, one or more escape ramps constructed of earth fill or wooden planks will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals by the biological monitor during initial ground disturbing activities and by the contractor or superintendent after initial ground disturbing activities are complete. If at any time a trapped or injured kit fox is discovered in the SR 99/Cartmill HCP Permit Area, all work will be temporarily halted until the USFWS and CDFG are contacted to determine the appropriate course of action.
- 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 will 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 in the SR 99/Cartmill HCP Permit-Area, that section of pipe will not be moved until the USFWS and CDFG are contacted to determine the appropriate course of action.
- The contractor will provide closed garbage containers for the disposal of all food-related trash items such as wrappers, cans, bottles, and food scraps. All garbage will be removed daily from the project site.
- No pets, such as dogs or cats, will be allowed in the project area to prevent harassment, mortality of kit foxes, or the destruction of dens.
- No firearms will be allowed in the Permit Area, to protect wild animals.

- The project superintendent (described above under “Ensure Implementation of the Avoidance and Minimization Measures”) will immediately notify the USFWS if the on-site biological monitor, the contractor, or a construction worker observes a dead, injured, or entrapped kit fox in the project area, or if an occupied kit fox den is observed anywhere within the HCP Permit Area (Figure 1-2). All work will be temporarily halted until the CDFG and USFWS are contacted to determine the appropriate course of action.
- As discussed under Avoidance and Minimization Measure 2, the biological monitor will be onsite during all initial ground-disturbing construction activities, and then will conduct weekly visits to the project area to ensure that the protective measures (i.e., orange barrier fencing and flagging, erosion control features) are in good working order. If the protective measures are in need of repair, the monitor will notify the superintendent, who will have the repairs made immediately. The monitor will also check any remaining potential dens identified during the pre-construction survey for any new kit fox activity. The monitor will maintain a construction monitoring log that will include the dates of inspection, what was observed, any communication regarding repairs that needed to be made, and how and when problems were rectified.
- The monitor will have the authority to stop work, if deemed necessary.
- Project-related vehicles will observe a daytime speed limit of 20-mph throughout the HCP Permit Area, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Any night-time construction will be minimized to the extent possible. However if it does occur, then the speed limit will be reduced to 10-mph. Off-road traffic outside of designated HCP Project Areas will be prohibited.
- The USFWS Sacramento Office and CDFG will be called immediately, and then notified in writing within three working days, of the accidental death or injury to a San Joaquin kit fox during HCP-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 USFWS contact is: Chief of the Conservation Planning Division, Sacramento Fish and Wildlife Office. 2800 Cottage Way, Suite W2605, Sacramento California, 95832-1846. Telephone (916)414-6678 or (916)414-6600.
  - 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. Mr. Paul Hoffman’s mailing address is 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670.

Any sightings of kit fox will be reported to the CNDDDB. A copy of the CNDDDB reporting form and a topographic map clearly marked with the location of where the kit fox was observed will also be provided to the USFWS at the address above.

#### **Avoidance and Minimization Measure 9. Avoid Use of Rodenticides and Herbicides in the Project Area**

Use of rodenticides and herbicides in project areas will be restricted during the SR 99/Cartmill HCP construction phase and the project operation and maintenance phase. This is necessary to prevent primary or secondary poisoning of San Joaquin kit foxes and the depletion of prey populations on which they depend. All uses of such compounds will 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. If rodent control must be conducted by the City within the Project Area, zinc phosphide will be used because of a proven lower risk to San Joaquin kit fox.

#### **Avoidance and Minimization Measure 10. Restore Temporarily Disturbed Areas**

Upon completion of construction, all areas that were subject to temporary ground disturbance (including storage and staging areas, temporary roads, any pipeline corridors, areas where existing road or structures were removed, etc.) will be re-contoured, if necessary. After re-contouring, all temporarily disturbed areas, except the staging area, will be hydroseeded, broadcast seeded, or drill seeded depending on specific site conditions with native, noninvasive species, or non-persistent hybrids to restore plant cover to prevent soil erosion or colonization by noxious weeds. Temporarily disturbed areas include permanent indirectly affected areas. Restoration of plant cover on the temporarily disturbed areas will be completed within one year from the date the construction phase ends. The staging area will revert to fallow field or other agricultural uses.

### **Compensation**

#### **Compensate for Permanent and Temporary Direct Effects on Habitat for San Joaquin Kit Fox**

The City can best contribute to recovery of San Joaquin kit fox by providing funding to preserve and protect additional land in areas identified in the recovery plan (U.S. Fish and Wildlife Service 1998). One of the recovery actions identified in the recovery plan is to provide and expand connecting corridors between the Pleasant Valley/Coalinga area in Fresno County and the western edge of the Coastal Range in Kings and Kern Counties. One of the conservation banks (Wildlands' Kreyenhagen Hills Conservation Bank) that the City is proposing to compensate for HCP effects on San Joaquin kit fox habitat is located between the Pleasant Valley/Coalinga area and the Kings County line, which is consistent with this recovery action.

The City will compensate for the direct and indirect permanent loss of 36.44 acres of habitat and the temporary loss of 12.24 acres of habitat for San Joaquin kit fox (Table 4-3) by purchasing preservation credits equal to 58.73 acres of habitat at Wildlands' Sand Creek or Kreyenhagen Hills Conservation Bank, which are USFWS-approved conservation banks. The project area is located just south of the San Joaquin kit fox service area for the Sand Creek Conservation Bank and just east of the Kreyenhagen Hills Conservation Bank. No San Joaquin kit fox credits are available at the Allensworth Conservation Bank, whose service area encompasses the project area. The 58.73 acres of habitat at the conservation bank will be protected and managed in perpetuity for San Joaquin kit fox. The project's direct permanent effects on San Joaquin kit fox habitat will be more than offset because higher quality natural grassland habitat will be preserved to compensate for impacts to low quality roadside ruderal grassland and agricultural land that does not provide long-term suitable habitat for kit fox (U.S. Fish and Wildlife Service 2010:21).

Prior to the start of construction (anticipated ground-disturbance to begin March 2013), the City will provide funding to Wildlands for credits equivalent to 58.73 acres of habitat for San Joaquin kit fox. The transaction will take place through a purchase and sale agreement, and funds must be transferred to Wildlands within 30 days and before any construction activities are initiated. The ITP for the SR 99/Cartmill Avenue HCP will become effective after the City provides the USFWS with copies of the credit sale agreement and fund transfer.

## 5.2.5 Migratory Birds

The following avoidance, minimization, and mitigation measures, from the *State Route 99/Cartmill Avenue Interchange Improvements Initial Study with Mitigated Negative Declaration* (California Department of Transportation and City of Tulare 2012) will be implemented to avoid or reduce impacts to the northern harrier, white-tailed kite, western burrowing owl, and other migratory birds.

### **Remove Trees and Shrubs during the Non-breeding Season or Conduct Preconstruction Nest Surveys**

If necessary, vegetation removal (including mowing existing grasses, grubbing, and clearing of woody vegetation) would occur during the non-breeding season for most migratory birds (generally between September 15 and January 31) to the extent feasible.

If possible, construction activities would start before the nesting season for most birds (generally, the breeding season is February 1 through September 14). Starting construction before the breeding season would establish a level of noise disturbance that would dissuade noise-sensitive raptors and other birds from attempting to nest within or near the HCP Permit Area.

If starting construction activities (including vegetation removal) before the breeding season is not possible, a qualified wildlife biologist with knowledge of the relevant species would do nesting surveys before the start of construction.

A minimum of three separate surveys would be conducted for migratory birds, including raptors. Surveys would include a search of all trees and shrubs, plus grassland/ruderal areas that provide suitable nesting habitat, in the HCP project area. In addition, a 500-foot area around the project area would be surveyed for nesting raptors. Surveys for white-tailed kite nests within a 0.50-mile area would be conducted concurrently with surveys for Swainson's hawk (described below). Surveys should occur during the height of the breeding season (March 1 to June 1), with one survey occurring in each of two consecutive months within this peak period and the final survey occurring within 1 week of the start of construction. If no active nests are found during these surveys, no additional measures are required.

If an active nest is found in the survey area, a no-disturbance buffer would be established around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (September 14) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this date varies by species). The extent of these buffers would be determined by the biologist in coordination with USFWS Pacific Southwest Region's Migratory Bird Division and CDFG; they would depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. No-disturbance buffers for fully protected species may be as large as 0.50 mile. If an active nest of a listed species is found after construction has begun, construction would stop in the area until consultation with CDFG and USFWS has been initiated and appropriate avoidance measures have been determined and implemented.

### **Conduct Surveys for Burrowing Owls and Implement the Mitigation Methods in California Department of Fish and Game Guidelines, if Necessary**

Burrowing owls surveys and take avoidance surveys will be conducted prior to project construction. Burrowing owl surveys are recommended whenever burrowing owl habitat is present on or within 500 feet of a project site. Breeding season and non-breeding season surveys will be conducted in accordance with the methodology described in CDFG's *Staff Report on Burrowing Owl Mitigation* (Staff Report) (California Department of Fish and Game 2012: 28-29). Breeding season surveys will consist of four surveys: 1) one survey between February 15 and April 15, and 2) a minimum of three surveys, at least 3 weeks apart, between April 15 and July 15, with at least one survey after June 15. Non-breeding season surveys will consist of four surveys spread evenly throughout the non-breeding season (September 1–January 31).

A survey report will be prepared at the conclusion of surveys for submission to CDFG. The report will include but is not limited to a description of the proposed project or proposed activity, proposed project start and end dates, and a description of disturbances or other activities occurring on-site or nearby (additional information is in Appendix D of the Staff Report).

If burrowing owls are found during any of the surveys, the City will implement compensatory mitigation best practices as described below. Because ample lead time is necessary for implementing compensation, these efforts should begin as soon as possible after presence of burrowing owls is determined.

Regardless of results from the surveys described above, an initial take avoidance (preconstruction) survey will be conducted no less than 14 days prior to initiating ground disturbing activities (California Department of Fish and Game 2012:29). The City will retain qualified biologists to conduct preconstruction surveys for active burrows according to methodology in CDFG's Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012:28). Burrowing owls may re-colonize a site after only a few days. As such, subsequent take avoidance surveys including, but not limited to, a final survey within 24 hours prior to ground disturbance will be conducted if there are time lapses of a few days between project activities. If no burrowing owls are detected, no further mitigation is required. If burrowing owls are detected, the City will implement avoidance and minimization measures, and monitoring and reporting of such measures, as described in the "Mitigation Methods" section of the CDFG Staff Report, and summarized below.

- Occupied burrows will not be disturbed during the breeding season (February 1–August 31).
- A 250-foot buffer where no construction will occur will be established around occupied burrows unless a qualified biologist determines through non-invasive methods that egg laying and incubation have not begun or that juveniles are foraging independently and are capable of independent survival.
- Avoid impacting burrows occupied during the non-breeding season by migratory or non-migratory resident burrowing owls.
- Avoid destruction of unoccupied burrows and place visible markers near burrows to ensure that they are not collapsed.
- Develop and implement a worker awareness program to increase the on-site worker's recognition of and commitment to burrowing owl protection.
- Conduct additional take avoidance surveys as needed, as described above.

- Conduct on-going surveillance of the project site for burrowing owls during project activities.
- Minimize impacts to burrowing owls and their habitat by using buffer zones, visual screens, and other measures during project activities. Recommended buffer distances in the CDFG's Staff Report will be implemented or site-specific buffers and visual screens will be determined through information collected during site-specific monitoring and consultation with CDFG.

### **Conduct Preconstruction Survey for Swallow Nests and Implement Measures to Deter Nesting**

To avoid impacts on nesting swallows and other bridge-nesting migratory birds that are protected under the MBTA and California Fish and Game Code, the City would implement the following measures:

- The City would hire a qualified wildlife biologist to inspect the Cartmill Avenue overcrossing during the swallows' non-breeding season (September 1 to February 28). If abandoned nests are found, they may be removed. To avoid damaging active nests, removal of nests would occur before the swallows' breeding season begins (March 1).
- If possible, demolition of the Cartmill Avenue overcrossing should occur during the swallows' non-breeding season (September 1 to February 28). If this is not possible, after nests are removed, the undersides of the overcrossing would be covered with 0.5- to 0.75-inch mesh net by a qualified contractor. All net installation would occur before March 1 and would be monitored by a qualified biologist throughout the breeding season (typically several times a week). The netting would be anchored so that swallows cannot attach their nests to the bridge through gaps in the net.
- If netting of the bridges does not occur by March 1 and swallows colonize the bridge, demolition of the structure would not begin before August 31 of that year or until a qualified biologist has determined that the young have fledged and all nest use has been completed.
- If appropriate steps are taken to prevent swallows from building new nests, work can proceed at any time of the year.

### **Conduct Preconstruction Surveys for Swainson's Hawk Nests**

If starting construction activities (including vegetation removal) before the breeding season is not possible, a qualified wildlife biologist with knowledge of Swainson's hawk biology and behavior would do nesting surveys in accordance with the Swainson's Hawk Technical Advisory Committee's (2000) *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* before the start of construction. Surveys would include a search of all trees within a 0.50 mile radius of the project area. If no active nests are found during these surveys, no additional avoidance or minimization measures are required.

### **Avoid and Minimize the Introduction of New Invasive Plant Species**

Implementation of one or more of the following measures would avoid and minimize the introduction of new invasive species into the project area and the spread of invasive plant species to uninfested areas.

- Educate construction supervisors and managers on the importance of controlling and preventing the spread of noxious weed infestations.

- Coordinate with the Tulare County Agricultural Commissioner and/or the Tulare Weed Management Area to ensure that the appropriate best management practices are implemented for the duration of project construction.
- Treat small, isolated infestations with eradication methods that have been approved by or developed in conjunction with the Tulare County Agricultural Commissioner and/or Tulare Weed Management Area to prevent and/or destroy viable plant parts or seed.
- Minimize surface disturbance to the greatest extent feasible to complete the work.
- Use native, noninvasive species or non-persistent hybrids in erosion-control plantings to stabilize site conditions and prevent invasive species from colonizing.
- Use certified, weed-free, imported erosion-control materials (or rice straw in upland areas).

## 5.3 Monitoring and Adaptive Management

### 5.3.1 Monitoring

Monitoring is a mandatory element of all incidental take permits (See 50 CFR 17.22[b] and 17.32[b]). The Five-Point Policy (65 FR 35242–35257) clarifies requirements for a HCP monitoring program. Monitoring programs will vary based on whether they are for low-effect or for large regional HCPs; however, the general elements of each monitoring program are similar. Post-activity or post-construction monitoring, along with a single report at the end of the monitoring period, will often satisfy the monitoring requirements for low-effect HCPs (65 FR 35254). HCP monitoring programs must provide information to (1) evaluate HCP permit compliance, (2) determine if HCP biological goals and objectives are being met, and (3) provide feedback information for any adaptive management strategy. The Five-Point Policy describes compliance monitoring, effects monitoring, and effectiveness monitoring (65 FR 35254-35257).

Compliance monitoring involves verifying that the permittee is carrying out the terms and conditions of the HCP.

Avoidance and Minimization Measure 2 (Section 5.2.2), which applies to both vernal pool fairy shrimp and San Joaquin kit fox, requires a USFWS-approved biological monitor to be present during initial ground-disturbing construction activities and conduct weekly visits the project area to ensure that erosion control features and other protective measures (i.e., orange barrier fencing, kit fox exclusion zones) are in good working order and all avoidance and minimization measures are effectively avoiding impacts to covered species, as designed during development of the HCP's conservation strategy. The biological monitor will maintain a monitoring log that includes the dates of inspection, what was observed, any communication regarding repairs that needed to be made, and how and when problems were rectified. As discussed below in Section 2.3.1 *Reporting*, the City will include the monitoring log to USFWS in the SR 99/Cartmill HCP monitoring report, prepared at the conclusion of construction (see Section 5.3.3 below), and provide it at the request of USFWS anytime during construction.

Additionally, the City will ensure that the measures to avoid and minimize effects to migratory birds will be implemented, as described above. Information on the timing of tree removal and the methods and results of preconstruction surveys for Swainson's hawk, burrowing owl, and other

migratory birds will be provided in reports that will be submitted to USFWS (and CDFG as discussed above or if requested). The reports will be submitted within 2 weeks of the completion of surveys. At the conclusion of construction, the City or its consultant will prepare a report that includes a summary of all migratory bird avoidance and minimization measures implemented, and the effectiveness of the measures before, during, and after construction (see Section 5.3.3 below).

Effects and effectiveness monitoring evaluates the actual effects of the permitted covered activities, and determines whether the operating conservation program effectively minimized, avoided, and mitigated the actual impacts as designed, and is meeting the HCP biological goals and measurable objectives.

This HCP is habitat based, and effects are accordingly measured by how each HCP land-cover type is affected. Effects monitoring will include a post-construction evaluation by the City to quantify the actual acreage of each land-cover type permanently and temporarily affected. The acres of actual impacts will be included in the SR 99/Cartmill HCP initial monitoring report (see Section 5.3.3 below). The post-construction evaluation of permanently and temporarily affected areas will be determined by comparing the as-built drawings to the impacts figure (Figure 4-1) and conducting a site visit to ground-truth that the permanent and temporary impacts do not exceed those shown in the as-built drawings and impacts figure. Additionally, pre- and post-construction photographic documentation associated with the 401, 404, and construction permits will provide documentation for the impacts to the ditches.

Effectiveness monitoring will consist of evaluating and reporting on the effectiveness of each HCP avoidance and minimization measure in avoiding or minimizing impacts. Effectiveness monitoring will include monitoring of the temporarily affected areas to determine the success of the plant seeding covered activity, and to determine if temporarily affected areas are restored to pre-project conditions. The project area will be visited annually by the City or its consultant after restoration is complete, to evaluate the long term success of the restoration. Annual monitoring will continue for the length of the permit term (5 years).

Compensatory mitigation components of this HCP will occur at off-site conservation banks. Each conservation bank conducts effectiveness monitoring of their lands, and reported to the USFWS in annual conservation-bank reports, as required by the conservation bank's Enabling Instrument.

In the unlikely case that actual direct or indirect impact acreages are larger than anticipated in this HCP, the City will purchase additional mitigation credits at the conservation banks specified in this HCP, or at another USFWS-approved conservation bank if credits are no longer available. USFWS will be consulted regarding the purchase of additional credits and their approval for the number of credits and bank used will be required prior to purchase.

## 5.3.2 Adaptive Management

USFWS broadly defines *adaptive management* as a method for examining alternative strategies for meeting measurable biological goals and objectives and then, if necessary, adjusting future conservation management actions according to what is learned. USFWS believes that either active or passive adaptive management can be appropriately applied to HCPs. Active adaptation involves testing a range of alternative strategies, whereas passive adaptation uses information gathered to determine the single best course of action (65 FR 35242–35257). This HCP employs active adaptive

management because mitigation and adaptive management will be occurring at an approved conservation bank.

### 5.3.3 Reporting

Reporting under the HCP monitoring program will adhere to these requirements:

- The City or its consultant will send monthly emails to USFWS prior to and during the one-year construction period, confirming that avoidance and minimization measures are being implemented and indicating if issues have arisen regarding the implementation any of the HCP's avoidance and minimization measures (described above).
- As explained in Avoidance and Minimization Measures 2 and 8, the USFWS and CDFG will be notified immediately by telephone and in writing within one working day if San Joaquin kit fox are observed on the site, if an occupied den of any category is discovered, or if an individual mortality or injury occurs. Notification must include the date, time, precise location of the occurrence/incident (clearly indicated on a U.S. Geological Survey [USGS] 7.5-minute quadrangle and other maps at a finer scale as requested by USFWS), and any other pertinent information. As directed by CDFG and USFWS, dead specimens will be sealed in a zip-lock plastic bag with a listing of the date, time, and location of the find and the name of the person who found it. Bagged specimens will be stored in a freezer in a secure location. Mortality or injury of any covered species would indicate that the operational SR 99/Cartmill HCP is not in compliance with the permit, and all work will be temporarily halted until the USFWS is contacted to determine the appropriate course of action.
- An initial post-construction monitoring report will be submitted to USFWS within 60 days following completion of project construction and site restoration activities. At a minimum, the post-construction report will include:
  - a summary of the all avoidance and minimization measures (described above) that were implemented prior to and during construction,
  - the effectiveness of each avoidance and minimization measure implemented,
  - the actual acres of temporary effects to each land-cover type,
  - the actual acres of permanent effects to each HCP land-cover type,
  - the actual direct and indirect effects to each HCP covered species,
  - the acres of temporary effects restored and hydroseeded,
  - dates that construction fencing and other materials were removed from the site, and
  - a summary of the process used to purchase compensatory mitigation at suitable mitigation banks, and include copies of relevant correspondence between the HCP permit holder and bank operator.
- In addition to the initial post-construction monitoring report, the permit holder (the City) or its consultant will visit the project site annually, and prepare an annual letter report. The annual letter report will describe the effectiveness of the restoration covered activities, and will be submitted to USFWS on the anniversary of the initial monitoring report, or on another date as determined by the USFWS and the City.

- Wildlands will prepare monitoring reports of the conservation areas according to their conservation banking agreements with USFWS.

## 5.4 Summary of Conservation Strategy

The HCP conservation strategy consists of nine avoidance and minimization measures that minimize habitat disturbance and degradation of vernal pool fairy shrimp habitat, avoid injury of San Joaquin kit fox, and compensate for direct and indirect effects on habitat for vernal pool fairy shrimp and foraging and movement habitat for San Joaquin kit fox.

Compensation for direct effects on vernal pool fairy shrimp habitat will be compensated by purchasing preservation credits equal to 0.213 acre of habitat for vernal pool fairy shrimp at the Deadman Creek Conservation Bank.

Compensation for the permanent direct and indirect loss of 36.44 acres and temporary loss of 12.24 acres of habitat for San Joaquin kit fox will be compensated by purchasing preservation credits equal to 58.73 acres of suitable habitat at either the Sand Creek or Kreyenhagen Hills Conservation Bank.

The off-site conservation bank lands are conserved and managed within a large, contiguous habitat blocks and will have high long-term conservation value for the species, thereby offsetting covered-activity effects on covered-species habitats.

## 6.1 Responsibilities

As specified in the HCP Handbook (U.S. Fish and Wildlife Service and National Marine Fisheries Service 1996), an implementing agreement is not required for low-effect HCPs unless requested by the permit applicant. The City understands that, as the permit applicant, it is responsible for implementing this HCP in accordance with commitments for mitigation, monitoring, reporting, and funding described herein and will perform all obligations assigned to it in the Section 10 (a)(1)(B) permit and the HCP document.

The City will track and document compliance with the HCP conservation strategy during and immediately following construction, and will be responsible for preparing compliance reports to be submitted to USFWS. Wildlands will be responsible for monitoring and maintaining the conservation areas, and preparing and submitting monitoring reports to USFWS.

## 6.2 Unforeseen/Changed Circumstances and No Surprises Assurances

Section 10 permit regulations (50 CFR 17.32 [b][1]-[8] and 17.22 [b] [1]-[8]) require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that might arise during the implementation of the HCP permit. In addition, the Habitat Conservation Plan Assurances (“No Surprises”) Rule (63 FR 8859-8873; 69 FR 71723-71731; 50 CFR 17.3) defines *unforeseen circumstances* and *changed circumstances* and describes the obligations of permittees and USFWS.

*Changed Circumstances* are future changes that may occur over the term of the ITP that affect a species or geographic area covered by an HCP, and can be reasonably anticipated and planned for by the HCP developers and the USFWS (50 CFR 17.3). Many changes in circumstances during the term of an HCP permit can reasonably be anticipated and planned for in the HCP (e.g., the listing of a new species; flood, drought, fire, or other natural catastrophic event in areas prone to such events), and HCPs should describe modifications that will be implemented if those reasonably anticipated circumstances arise (63 FR 8868). The scope of the monitoring program should be sufficient to detect reasonably anticipated changes in circumstances that could occur during the term of the permit (63 FR 8866). If additional conservation or mitigation measures are deemed necessary to respond to a Change Circumstance that was provided for in the HCP’s operating conservation strategy, the permittee is expected to implement the measures specified in that HCP (63 FR 8868). An applicant must demonstrate that the HCP has included provision for Changed Circumstances, and must ensure funding for Changed Circumstances (69 FR 71726).

As to potential changed circumstances (e.g., fire, flood, earthquake, or other natural disaster), the very short duration of the ITP permit term makes the occurrence of any such circumstance within the permit period unlikely.

The City and the USFWS have identified three Changed Circumstances that are reasonable to anticipate during the proposed 5-year incidental take permit term for the SR 99/Cartmill HCP:

1. Drought, fire, flood, or another changed circumstance causes all or some of the planted grasses to die (or never germinate), and plant cover is not restored at the site in time to meet the one-year “temporary effect” requirement. If this were to occur, the City would re-seed the area where the vegetation died or never became established.
2. Significant weed invasion occurs in the temporary affected areas or erosion resulting of the constructed project occurs in the HCP Permit Area during the 5-year permit term. If this were to occur, the City would implement measures to remove the weeds (with no or limited use of herbicides as required by Avoidance and Minimization Measure 9) and/or repair the structural problem that is causing erosion to occur.
3. A kit fox begins using the project area during the 5-year term of the ITP, and an occupied den could be impacted by roadway maintenance or vegetation maintenance covered-activities associated with the project. If this were to occur, the maintenance worker would report the observation to Caltrans, who would immediately contact USFWS and CDFG, and provide information on the sighting and submit the location information to CDFG for entry into the CNDDDB. Caltrans would also immediately notify the City. USFWS and CDFG would provide Caltrans and the City with direction on additional measures to be taken.

If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan’s operating conservation program, the USFWS Director will not require any conservation and mitigation measures in addition to those provided for in the HCP without the consent of the applicant/permittee, provided the permittee is properly implementing the conservation plan, and the HCP commitments and provisions are being fully implemented [50 CFR 17.32(b)(5)(ii)].

The purpose of the No Surprises Rule is to provide assurances to nonfederal landowners participating in habitat conservation planning under ESA that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of changed or unforeseen circumstances, without the consent of permittees.

*Unforeseen circumstances* are changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and USFWS at the time of the plan’s negotiation and development and that result in a substantial and adverse change in status of the covered species (50 CFR 17.3). In other words, in the event that *unforeseen circumstances* adversely affect vernal pool fairy shrimp or San Joaquin kit fox in the Permit Area during the term of the permit, and the City is properly implementing all parts of the HCP, the City would not be required to provide additional financial mitigation or additional land use restrictions above those measures specified in the HCP. HCPs are carefully crafted so that unforeseen circumstances are rare, if at all, so the USFWS should be able to successfully address any unforeseen circumstance and the species will not be jeopardized (69 FR 71726).

This SR 99/Cartmill HCP expressly incorporates by reference the permit assurances set forth in the No Surprises Rule adopted by USFWS and published in the Federal Register on February 23, 1998 (63 FR 8859-8873) and on December 10, 2004 (69 FR 71723-7131). Except as otherwise required by law or provided for under the HCP, including those provisions regarding changed circumstances,

no further mitigation of effects of the proposed project on affected covered species may be required from a permittee who is properly implementing the terms of the HCP and the ITP. The HCP will be properly implemented if the commitments and provisions of the HCP and the ITP have been or are being fully implemented by the permittee (the City of Tulare).

As to potential unforeseen circumstances, the very short duration of the ITP makes the occurrence of any such circumstance within the permit period unlikely.

## 6.3 Funding

ESA and its implementing regulations (50 CFR 17 and 222) require that HCPs specify the measures permittees will adopt to ensure adequate funding for the HCP. The City would be responsible for funding all aspects of HCP implementation. Construction-related surveys, biological monitoring, and all restoration costs will be included in the project construction budget. The City will acquire credits from USFWS-approved conservation banks as described in Section 5.2, Conservation Approach. Habitat compensation credits include long-term management and monitoring. The City will provide a copy of the bill of sale to the USFWS prior to affecting vernal pool branchiopod and San Joaquin kit fox habitat at the project site. The City will oversee and pay for the cost of preparation of the post-construction report described in 5.3.3, and subsequent annual reports.

The City will be responsible for funding the HCP, and understands that failure to provide adequate funding to fully implement the terms of this HCP's Conservation Strategy in full could result in temporary permit suspension or permit revocation.

## 6.4 Revisions and Amendments

Two types of changes may be made to the HCP and/or the ITP and/or its associated documents:

- Revisions.
- Amendments.

Revisions and amendments will be processed in accordance with all applicable legal requirements including, but not limited to, ESA, NEPA, and other applicable regulations.

### 6.4.1 Revisions

Revisions to the HCP are changes to the HCP that do not require an amendment to the ITP. Such changes are provided for under the conservation strategy (e.g., adaptive management changes and responses to changed circumstances). Revisions may not modify the scope or nature of activities or actions covered by the ITP; result in operations under the HCP that are significantly different from those contemplated or analyzed in connection with the HCP as approved; result in adverse effects on the environment that are new or significantly different from those analyzed in connection with the HCP as approved; or result in additional take not analyzed in connection with the HCP as approved.

Revisions to the HCP may include, but are not limited to, those listed below.

1. Correction of any maps or exhibits to correct errors in mapping or to reflect previously approved changes to the ITP or HCP.

2. Modifying existing or establishing new incidental take avoidance and minimization measures, after approval from the USFWS.
3. Modifying reporting protocols for monitoring reports.
4. Minor changes to monitoring or reporting protocols.
5. Revising restoration techniques, after approval from the USFWS.
6. Any other modifications to the HCP that meet the criteria listed below.
  - a. Will not result in operations under the HCP that are significantly different from those analyzed in connection with the HCP as approved.
  - b. Will not result in effects on the environment or take effects that are new or significantly different from those analyzed in connection with the HCP as approved.
  - c. Will allow for the approval or execution of agreements to facilitate execution and implementation of the HCP.
  - d. Will allow the permit applicant (the City of Tulare) to delegate any of its duties specified by the HCP to a third party under its direct control.

Revisions may be proposed by USFWS or the City. The party proposing a revision to the HCP will circulate the proposed revision along with an explanation of why the revision is necessary or desirable. In addition, the revision will include a description of why the party believes the effects of the proposed revision are more beneficial than adverse and are not significantly different from those described or anticipated under the HCP as originally adopted. If the City and USFWS agree to the proposed revision, the City will process the revision to the HCP. USFWS will respond in writing to a proposed revision within 60 calendar days of receipt of the request. The responses will (1) concur with the proposed revision; (2) identify additional information necessary to enable USFWS to approve or disapprove the revision; or (3) disapprove the revision. If USFWS disapproves the revision, it must be processed as an amendment to the HCP and ITP. If USFWS disapproves the revision, it will include in its written response an explanation of its determination.

## 6.4.2 Amendments

### Amendments to the HCP

Amendments to the low-effect HCP will require amendments to the ITP. The following summarizes the types of changes that might require an HCP amendment and the procedures for approval.

Amendments may include any of the following types of changes to the HCP.

1. Significant changes to the HCP that were not addressed in the HCP including, but not limited to, the following.
  - a. Changes to the method for calculating compensation for incidental take, which would increase the levels of incidental take permitted for the HCP.
  - b. Changes to funding except as otherwise provided for in the HCP to account for all adjustments for inflation, adaptive management, and changed circumstances.
2. Changes to the covered activities that were not addressed in the HCP as originally adopted, and that do not otherwise meet the revision provisions.

3. Extending the term of the ITP past the 5-year permit duration term.

Specific procedures for requesting amendments to the ITP are described below.

## Amendments to the ITP

Standard amendments to the HCP will require amendment of the ITP. Following receipt of a complete application package for a proposed amendment to the ITP, USFWS will publish a notice of the proposed amendment in the Federal Register as required by ESA. USFWS will use its reasonable efforts to process the proposed amendment within 180 calendar days of publication, except where longer periods are required by law. The amendment will be treated as an original permit application. Such applications typically require submittal of a revised HCP, a completed permit application form with appropriate fees, and preparation of an environmental review document prepared in accordance with NEPA. However, specific document requirements might vary based on the nature of the amendment.

## 6.5 Suspension/Revocation

USFWS may suspend or revoke the ITP if the City fails to implement the HCP in accordance with the terms and conditions of the permits or if suspension or revocation is otherwise required by law. Suspension or revocation of the ITP, in whole or in part, by USFWS will be in accordance with 50 CFR 13.27-29, 17.22(b)(8) and 17.32 (b)(8).

## 6.6 Alternatives

The HCP Handbook Guidelines state that for low-effect HCPs where the project or related effect on endangered and threatened species is minor or negligible, the no-action alternative may be the only alternative analyzed in the HCP. Under the no-action alternative, improvements to the existing SR 99/M Street/Cartmill Avenue interchange would not be made at the project site and the City would not implement the low-effect HCP for vernal pool fairy shrimp and San Joaquin kit fox, or receive a Section 10(a)(1)(B) ITP from USFWS. Therefore, permanent and temporary effects on these species would not occur.

While this no-action alternative would avoid effects on habitat for these species, it is considered infeasible because necessary traffic safety, circulation, access, and capacity improvements could not be completed.

If this project were not constructed, the planned development in the area would continue without an improved interchange, as the new interchange is not necessary for the new development to function. If this project does not replace the Cartmill Avenue overcrossing, it will be necessary to replace it when SR 99 is widened, as planned in the Regional Transportation Plan.

The build alternative examined in the CEQA environmental document for this project but not selected as the preferred alternative resulted in slightly more acres of permanent impacts, and slightly fewer acres of temporary impacts (the build alternative is also evaluated in the NES; see Appendix E). Impacts to habitat for vernal pool fairy shrimp for the build alternative were identical to the proposed project.



## 7.1 Printed References

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## 7.2 Personal Communications

- Balfour, Pete. Vice President, ECORP Consulting Inc., Rocklin, CA. June 16, 2009—letter to Jennifer Haire of ICF International with soil sampling analysis results.
- Simoes, Bonnie [A]. Principal Planner, City of Tulare, Tulare, California. November 4, 2010—E-mail to Lindsay Christensen (ICF International) regarding planned developments.
- Simoes, Bonnie [B]. Principal Planner, City of Tulare, Tulare, California. January 31, 2011—E-mail to Shannon Hill (ICF International) regarding status of surrounding developments.
- Thomas, Mike. Division Chief, Conservation Planning, U.S. Fish & Wildlife Service, Sacramento, California. July 20, 2012—phone conversation with Shahira Ashkar of ICF International regarding Section 106 compliance.