

APPENDIX G: JULY 27, 2018, BIOLOGICAL OPINION (LOCALLY GENERATED ALTERNATIVE)

This page intentionally left blank



United States Department of the Interior



In Reply Refer to:
08ESMF00-
2012-F-0247-5

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

JUL 27 2018

Mr. Mark McLoughlin
Director of Environmental Services
California High-Speed Rail Authority
770 L Street, Suite 620
Sacramento, California 95814

Subject: Reinitiation of Formal Consultation on the California High-Speed Train System:
Fresno to Bakersfield Section Project, Fresno, Tulare, Kings, and Kern Counties
Biological Opinion (08ESMF00-2012-F-0247)

Dear Mr. McLoughlin:

This letter is in response to the May 9, 2018 letter from the California High-Speed Rail Authority (Authority), on behalf of the Federal Railroad Administration (FRA), requesting reinitiation of formal consultation with the U.S. Fish and Wildlife Service (Service) on the California High-Speed Train System: Fresno to Bakersfield Section Project (project), in Fresno, Tulare, Kings, and Kern Counties, California. Your request was received by the Service on May 11, 2018 via email correspondence. At issue are revisions of effects on the following federally-listed species and critical habitats:

The federally-listed as endangered:

- San Joaquin kit fox (*Vulpes macrotis mutica*) (kit fox);
- Fresno kangaroo rat (*Dipodomys nitratoides exilis*);
- Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*) (TKR);
- Buena Vista Lake ornate shrew (*Sorex ornatus relictus*) (shrew);
- blunt-nosed leopard lizard (*Gambelia sila*) (lizard);
- vernal pool tadpole shrimp (*Lepidurus packardii*) (tadpole shrimp) and designated critical habitat;
- California jewelflower (*Caulanthus californicus*);
- Kern mallow (*Eremalche kernensis*); and
- San Joaquin woolly threads (*Monolopia condonii*).

and the federally-listed as threatened:

- Central California distinct population segment of the California tiger salamander (*Ambystoma californiense*) (central California salamander) and designated critical habitat;
- vernal pool fairy shrimp (*Branchinecta lynchi*) (fairy shrimp) and designated critical habitat; and
- Hoover's spurge (*Chamaesyce hooveri*).

This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act) and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR §402).

The Service previously issued the February 28, 2013 *Biological Opinion on the California High-Speed Train System: Fresno to Bakersfield Section Project*, Fresno, Tulare, Kings, and Kern Counties (Service File Number 08ESMF00-2012-F-0247) (2013 FB-BO). The 2013 FB-BO analyzed the project's effects on federally-listed species under several potential project alignments. Due to the design/build nature of the project, design refinements occur as construction progresses. In addition, acquisition of right-of-way provides access for surveys and updated habitat mapping. These changes in project description and effects to federally-listed species are addressed through reinitiation of formal consultation. We have previously amended the 2013 FB-BO as follows:

- April 1, 2014: Addressed administrative edits requested by the Authority and FRA, evaluated changes to the project description due to slight changes in the project footprint, and added habitat preservation and restoration activities proposed on the site known at the time as the Fagundes Compensatory Mitigation Site (FCMS).
- July 28, 2017: Evaluated the project's effects on the shrew, removed the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), addressed effects to TKR, lizards, and salamanders due to burrow excavation and relocation activities required under the project's Incidental Take Permit from the California Department of Fish and Wildlife (CDFW), evaluated changes to the project design as a result of the Early Work Variations, and refined effects to the Hoover's spurge.

In considering your request, we based our evaluation on the following: (1) the May 9, 2018 letter requesting reinitiation of formal consultation and the enclosed May 2018 *Fresno to Bakersfield Section Administrative Draft Supplemental Environmental Impact Report/Environmental Impact Statement Biological Assessment* (biological assessment), prepared by the Authority; (2) the April 2015 *Fresno to Bakersfield Compensatory Mitigation Plan*, prepared by URS/HMM/Arup Joint Venture; (3) draft site-specific mitigation plans, prepared by Westervelt Ecological Services; (4) email and telephone correspondence between representatives of the Service, the Authority, and Environmental Science Associates (consultant); and (5) additional information available to the Service.

This reinitiation addresses a new potential alternative alignment, referred to as the Fresno to Bakersfield Locally Generated Alternative (F-B LGA), between the city of Shafter and the city of Bakersfield. Under the F-B LGA, there may be overall minor increases in loss of habitat for the kit fox, the shrew, and the lizard and decreases in loss of habitat for the TKR and the fairy shrimp. In addition, the habitat compensation proposal by the Authority has been modified to include five new mitigation sites, replacing the previous FCMS proposal. The Service has determined that these revisions do not change our jeopardy determination provided in the 2013 FB-BO. New paragraphs are added to their corresponding sections and page numbers. Minor changes in text (i.e., individual numbers or sentences) are shown as underlined for added text and strike-out for deleted text. The 2013 FB-BO is amended as follows.

On page 5, in chronological order within **Consultation History**, add:

- July 21, 2015: In a meeting with representatives of the Service, the Environmental Protection Agency, CDFW, and the Central Valley Regional Water Quality Control Board, the Authority introduced the F-B LGA and elicited agency feedback.
- April 7, 2017: In a meeting with representatives of the Service, FRA, and the Authority, the F-B LGA survey methodology, anticipated impacts, and conservation strategies were discussed.
- April 5, 2018: In a meeting with representatives of the Service, FRA, the Authority, and the consultant, a strategy for reinitiation was discussed.
- May 11, 2018: The Service received the May 9, 2018 letter requesting reinitiation of formal consultation with the biological assessment enclosed.
- May 29, 2018: The Service received an email from the consultant providing additional information regarding changes in habitat impacts for federally-listed species.
- July 12, 2018: The Service received an email from the consultant providing additional information regarding changes in habitat impacts for the kit fox.
- July 23, 2018: The Service received a phone call from the consultant clarifying the effects to federally-listed species due to management of the mitigation sites.

BIOLOGICAL OPINION

On page 17, replace **Figure 1. Fresno to Bakersfield project footprint** with Figure 1 on the following page.

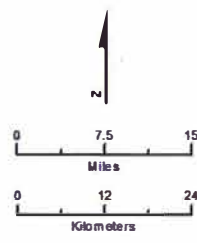
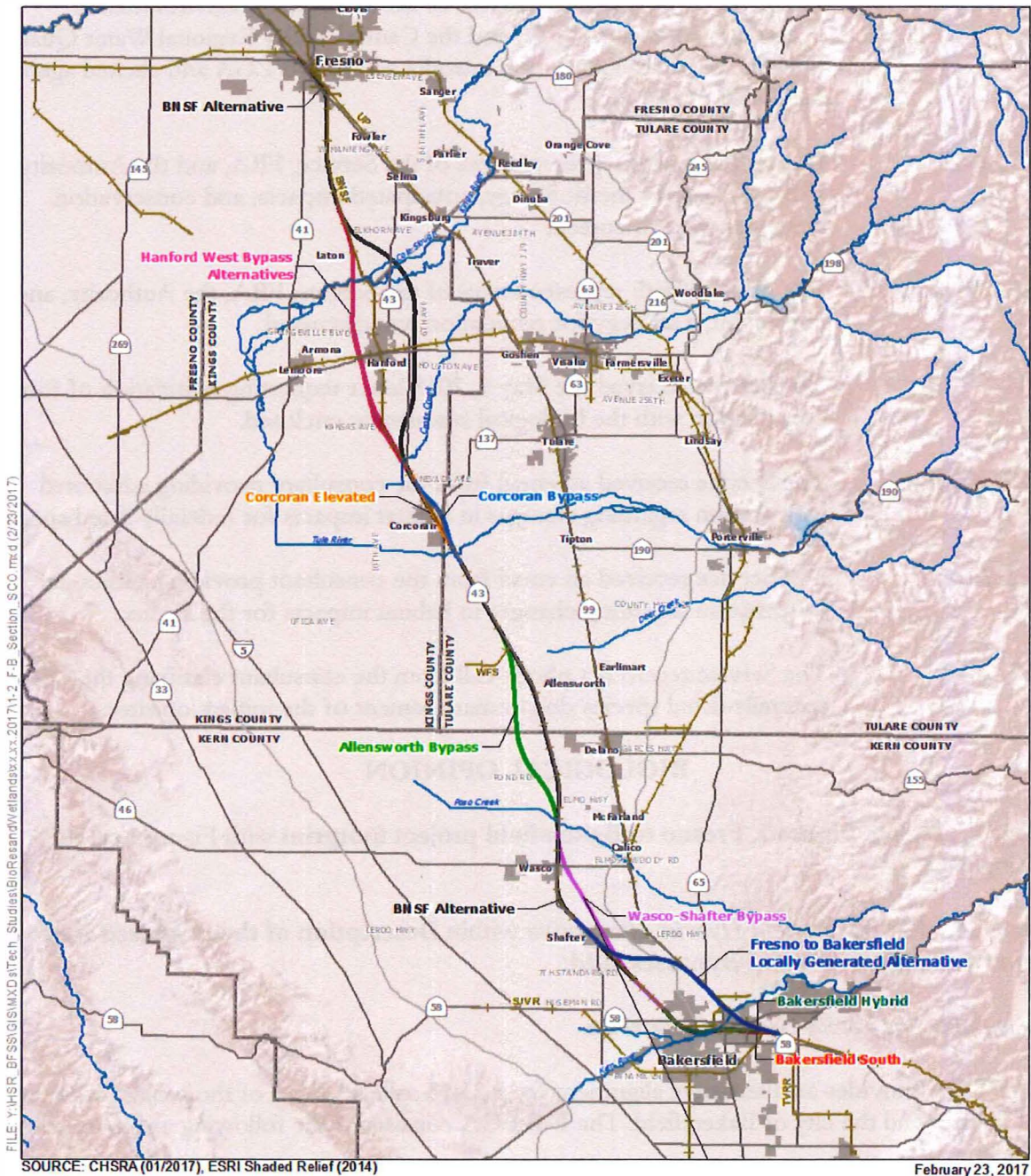
On page 24, after *Bakersfield Hybrid Alternative* within **Description of the Proposed Action, Alternative Alignments and Bypasses**, add:

Fresno to Bakersfield Locally Generated Alternative

The F-B LGA provides an alternative alignment for a 23.13-mile segment of the project between the city of Shafter and the city of Bakersfield. The F-B LGA consists of the following characteristics and elements:

- The total length of the F-B LGA alignment includes 10.52 miles on embankment or at-grade, 0.43 mile on bridges, 0.31 mile on steel truss, 1.97 miles on retained fill, and 9.90 miles on viaduct. No length of the alignment will be below grade or in a trench;
- The average height of the viaduct is 60 feet above existing ground;
- Straddle bents will be constructed in various locations where center support columns cannot be used in order to avoid constraints, such as roadways;

Figure 1. Fresno to Bakersfield project footprint.



- | | |
|---|----------------------|
| Alternative Alignments | Stream/River |
| BNSF Alternative | Canal/Aqueduct |
| Hanford West Bypass Alternatives 1 & 2 | Existing rail line |
| Allensworth Bypass | County boundary |
| Bakersfield Hybrid | Community/urban area |
| Corcoran Elevated | |
| Corcoran Bypass | |
| Wasco-Shafter Bypass | |
| Bakersfield South | |
| Fresno to Bakersfield Locally Generated Alternative | |

- The F-B LGA alignment crosses several existing railroads, including various Burlington Northern Santa Fe Railway (BNSF) and Union Pacific Railroad tracks, one major waterway, the Kern River within the city of Bakersfield, and seven canals;
- The F-B LGA includes 43 road crossings, with 41 undercrossings and 2 overcrossings. Of these road crossings, 12 are within the city of Shafter, 30 will be within the city of Bakersfield, and one (7th Standard Road) will be co-located in the two cities;
- The existing interchange of 7th Standard Road and State Route (SR) 99 will be modified, including the addition of a new westbound to southbound on-ramp;
- The F-B LGA will require multiple roadway modifications in the cities of Shafter and Bakersfield, generally including addition of protective barriers, curbs, sidewalks, and medians. In some cases, the roadway traffic network will be modified where crossings are closed, and new crossings are constructed;
- The F-B LGA F Street Station will be located at the intersection of F Street and SR 204 in the city of Bakersfield. Circulation improvements that are part of the station plan include: elimination of the at-grade intersection of F Street and SR 204 and lowering of the F Street roadway below SR 204, a new roadway providing access from the 30th Street and Alder Street intersection, realignment of the Chester Avenue and 34th Street intersection, and conversion of the Chester Avenue and 32nd Street intersection to a right-in/right-out driveway into the station site;
- One infrastructure maintenance facility is proposed to be located in the city of Shafter between Fresno Avenue and Poplar Avenue; and
- Two electrical stations will be built within urban Bakersfield: one along Windsong Street in a barren lot, and a second in a barren lot bordered by 14th and S Streets, a canal, and an existing railway.

On page 31, replace **FCMS: Project Description** with:

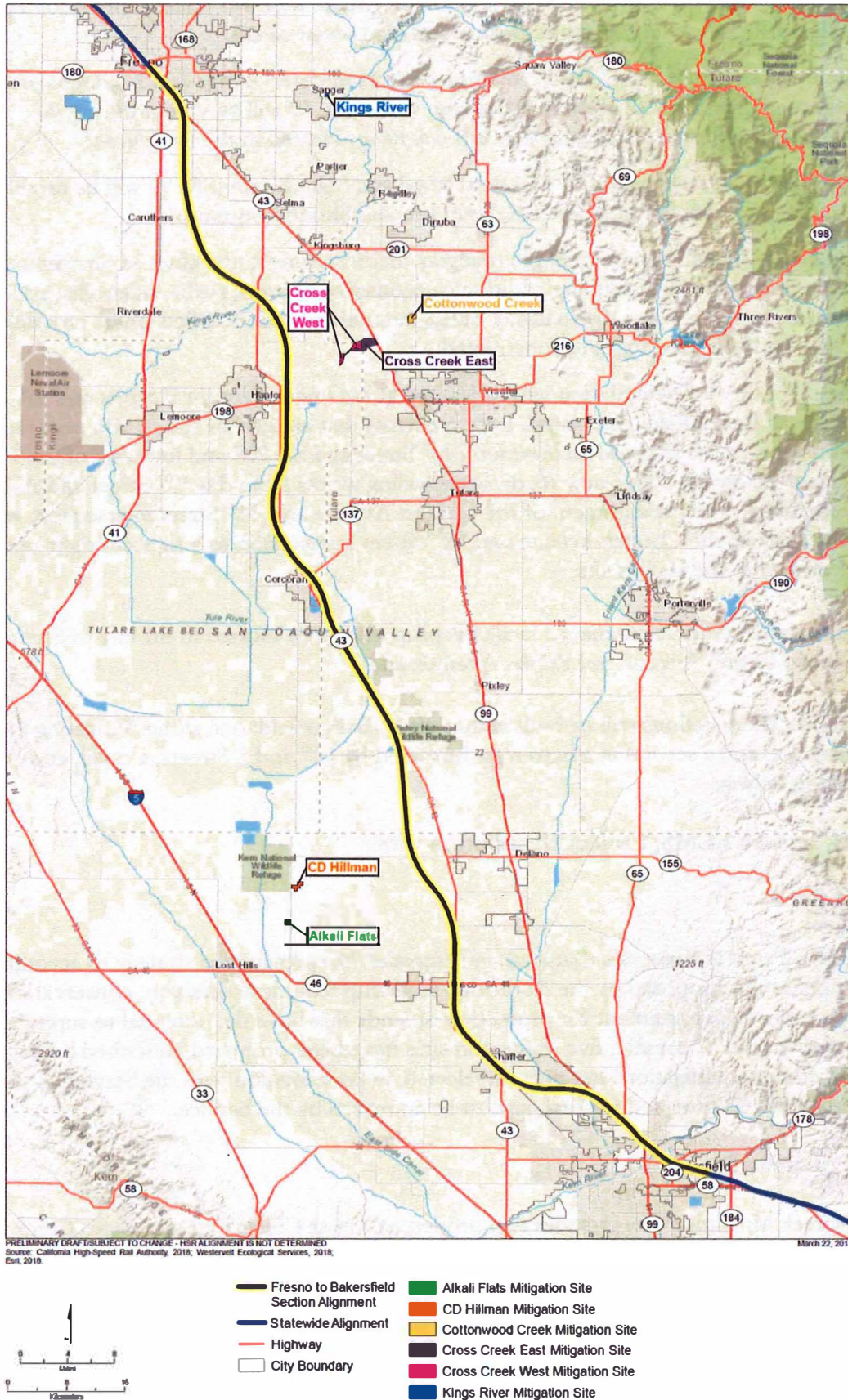
Mitigation Sites

The April 2015 *Fresno to Bakersfield Compensatory Mitigation Plan* presented a strategy to accomplish the habitat compensation proposed by the Authority, including fee-title acquisition, conservation easement, or other legal agreement for protection of lands that have the potential to support federally-listed species. Currently, five mitigation sites have been proposed, described below (Figure 3). Additional mitigation sites may be selected, in coordination with the Service. A detailed mitigation plan will be prepared for each site, to be approved by the Service.

Cross Creek Mitigation Site

The Cross Creek Mitigation Site includes two properties, Cross Creek East and Cross Creek West (the former FCMS), totaling approximately 1,220 acres. The site is located 9 miles south of the city of Kingsburg, in Tulare and Kings Counties. Habitat on the site is composed of wetlands, including vernal pools, seasonal streams, and annual grassland. The majority the site will be preserved, with long-term management intended to maintain and enhance the functions and values of the habitat for federally-listed species found on-site. In addition, activities have been proposed to improve existing riparian habitat on-site, including the installation of exclusion fencing and replanting of native plants

Figure 3. Locations of Proposed Mitigation Sites.



along the creek corridor. The *Fresno to Bakersfield Project Section Cross Creek Mitigation Site Final Mitigation Package*, including a Compensatory Mitigation Plan and Long Term Management Plan, was finalized in June 2018.

Cottonwood Creek Mitigation Site

The Cottonwood Creek Mitigation Site is located within the eastern portion of the Tulare-Buena Vista watershed, north of the city of Visalia. The 247-acre site is composed of wetlands, including vernal pools, intermittent drainages, annual grassland, mesic grassland, and agriculture (dry-farmed winter wheat). In addition to preservation of existing habitat, additional activities are proposed, including wetland rehabilitation, enhancement, and creation. Rehabilitation will entail removing the existing cultivation and introducing grazing of disturbed wetlands on the site. Enhancement will entail excavating deeper areas in existing, very shallow seasonal wetlands to increase their value to vernal pool species. Establishment will entail the excavation of vernal pool basins in uplands that historically did not contain vernal pools.

Grading associated with enhancement and establishment will occur during the dry season. In total, proposed activities on the Cottonwood Creek Mitigation Site will result in approximately 3.6 acres of wetland rehabilitation, excavation of 8.5 acres of vernal pools consisting of a combination of enhancement and establishment, and preservation of approximately 100 acres of wetlands. Enhancement and establishment also will include application of inoculum from vernal pools after excavation.

Kings River Mitigation Site

The Kings River Mitigation Site is approximately 53 acres located in the floodplain of the Kings River, just east of the city of Sanger. Seasonal riverine, seasonal wetland, and emergent marsh habitat will be re-established, rehabilitated, and enhanced. Wetland habitat will be re-established by grading upland portions of the site that are either within peak groundwater levels or adjacent to existing wetlands that support adequate surface hydrology to allow for expansion. After excavation of the re-establishment areas to design elevation, these areas will be planted with native riparian and wetland plant species and seeded with native grasses. Rehabilitation will be accomplished by either excavation or alteration of the existing management regime. Enhancement will take place by the removal of soil plugs to allow wetlands to hydrologically reconnect to adjacent features, as well as planting native wetland and riparian vegetation.

CD Hillman Mitigation Site

The CD Hillman Mitigation Site is located on the east side of Corcoran Road, approximately 2 miles south of Garces Highway in the Wasco area of northern Kern County. The site is composed of 239 acres of annual grassland, shadscale scrub, alkali sink scrub, and seasonal wetlands. The site will primarily be preserved, with long-term management intended to maintain and enhance the functions and values of the habitat for federally-listed species found on-site. In addition, treatment of invasive tamarisk will occur. Translocation of TKR from portions of the construction area may occur on the mitigation site following a site-specific plan developed in coordination with the Service.

Alkali Flats Mitigation Site

The Alkali Flats Mitigation Site is 158 acres, located approximately 4 miles south of the Kern National Wildlife Refuge and composed of an alkali sink community, including alkali rain pools. The only known previous use of the site is periodic grazing. No habitat restoration activities are planned at this site. Fencing will be installed along Corcoran Road and two debris piles will be removed.

On page 52, under **Action Area**, replace with:

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." For the purposes of the effects assessment, the action area includes the CHST-FB alignment footprint, lands surrounding it, the Early Work Variations area, and the ~~405-acre FCMS~~ all Service-approved mitigation sites.

Several potential alignments have been identified in the Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement for the proposed project. These alternatives include varying siting for not only rail alignments, but also other project infrastructure, including passenger stations, power delivery structures, maintenance-of-way facilities, operations control centers, and a Heavy Maintenance Facility. Since an alternative has not been selected to date for all components of the Fresno to Bakersfield Section, this biological opinion includes a project description and effects analysis for all alternative alignments, and assesses effects to federally-listed species based on a range of impacts from minimum to maximum (expressed in acreages). Regardless of the final alignment selected, project impacts will be similar geographically as well as in general nature and magnitude.

The project footprint extends to the physical limits of the construction activities associated with the proposed action. The project footprint includes all areas that will be permanently or temporarily affected by the proposed action. The footprint consists of the limits of cut and fill plus all access roads and areas required for operating, storing, and refueling construction equipment. The estimated project footprint for the CHST-FB Project alignment is expected to be no greater than approximately 7,189 acres.

The estimated length of the Fresno to Bakersfield alignment will extend up to 117 miles. The area affected by disturbance from noise and vibrations, dust, and lighting during project construction is expected to extend up to 1,000 feet from both sides of the track. Associated project structures, such as roadway improvements, overcrossings, related ancillary facilities, and other permanent project elements, are included in the estimated project action area for the CHST- FB Project. The project action area for the Fresno to Bakersfield alignment, including the project footprint, the Early Work Variations area, and the ~~405-acre FCMS~~ mitigation sites is currently estimated to be no greater than ~~48,856~~ 50,368 acres, which will be considered for the purposes of this opinion. Additional mitigation sites may be selected, in coordination with the Service, which will be considered part of the action area upon Service acceptance. Activities on these sites are expected to be similar in general nature and magnitude of those analyzed in this opinion.

On page 65, under **Environmental Baseline**, *San Joaquin kit fox*, at the end of second paragraph, **add**:

As of June 2018 no kit fox have been detected during preconstruction surveys or burrow monitoring and excavations within any portions of CP 2-3 or CP 4 that have been evaluated, including 851.00 acres of suitable habitat that has been reported as impacted.

On pages 65 and 66, under **Environmental Baseline**, *San Joaquin kit fox*, **replace** third paragraph **with**:

San Joaquin kit foxes are expected to occur within all areas of suitable habitat throughout the CHST-FB project action area. An estimated ~~5,401.23~~ 5,475.18 acres of habitat (alkali desert scrub, annual grassland, pasture, barred, urban Bakersfield, and agricultural lands) occurs within the 7,189-acre CHST-FB Project alignment footprint. Approximately ~~1,770.46~~ 1,771.09 of the ~~5,401.23~~ 5,472.18 acres (~~~33~~ 32 percent) occur within satellite and corridor areas. Highly suitable habitat for the kit fox supports denning, foraging, and breeding; in the CHST-FB project action area it is composed of annual grasslands, alkali desert scrub, pasture, and barren land cover, as mapped for this project. Approximately ~~768.94~~ 795.04 acres of the ~~5,401.23~~ 5,472.18 acres (~~~14~~ 15 percent) of habitat is considered highly suitable for use by the kit fox (Table 4) About ~~52~~ 51 percent (~~403.34~~ 403.94 acres) of the ~~768.94~~ 795.04 acres of highly suitable habitat occurs within satellite and corridor areas. The remaining ~~4,632.29~~ 4,677.14 acres of kit fox habitat consists of agricultural and urban habitats between Fresno and Bakersfield (Table 4).

On page 69, under **Environmental Baseline**, San Joaquin kit fox, replace Table 4 **with**:

Table 4. Range of potential habitat for the San Joaquin kit fox.

Land Prioritization ¹	CWHR Vegetation Community or Wildlife Association	Impact Type	Areas of Effect (Acres) ²	
			MIN	MAX
Southwestern Tulare County Satellite Area	Natural		86.26	165.01
	Annual Grassland	Direct	86.12	112.59
	Alkali Desert Scrub	Direct	0.07	37.40
	Barren	Direct	0	9.98
	Pasture	Direct	0.07	5.04
	Valley Oak Woodland	Direct	0	0
	Agriculture		511.36	687.86
	Agriculture/Crop	Direct	184.72	209.39
	Dryland Grain Crop	Direct	30.17	38.70
	Deciduous Orchard	Direct	228.81	255.10
	Evergreen Orchard	Direct	0	0
	Irrigated Grain Crop	Direct	10.69	75.75
	Irrigated Row and Field Crop	Direct	0	0
	Irrigated Hayfield	Direct	56.97	108.2
Vineyard	Direct	0	0-	
Urban/BNSF		0	0	
BNSF	Direct	0	0	
Urban Development	Direct	0	0	
Metropolitan Bakersfield Satellite Area (Urban Bakersfield)	Natural		214.77	51.72
	Annual Grassland	Direct	34.67	36.55 <u>36.17</u>
	Alkali Desert Scrub	Direct	40.13 <u>0</u>	11.14
	Barren	Direct	169.11 <u>17.05</u>	169.32
	Pasture	Direct	0.86 <u>0</u>	1.15

Metropolitan Bakersfield Satellite Area (Urban Bakersfield)	Valley Oak Woodland	Direct	0	0
	Agriculture		0	0
	Agriculture/Crop	Direct	0	0
	Dryland Grain Crop	Direct	0	0
	Deciduous Orchard	Direct	0	0
	Evergreen Orchard	Direct	0	0
	Irrigated Grain Crop	Direct	0	0
	Irrigated Row and Field Crop	Direct	0	0
	Irrigated Hayfield	Direct	0	0
	Vineyard	Direct	0	0
	Urban/BNSF		249.62	238.34
	BNSF	Direct	13.5	2.22
	Urban development	Direct	236.12	287.89
Linkage Area	Natural		0	20.15
	Annual Grassland	Direct	0	1.27
	Alkali Desert Scrub	Direct	0	0
	Barren	Direct	0	18.88
	Pasture	Direct	0	0
	Valley Oak Woodland	Direct	0	0
	Agriculture		104.69	377.73
	Agriculture/Crop	Direct	3.01	96.55
	Dryland Grain Crop	Direct	0	0
	Deciduous Orchard	Direct	88.81	92.49
	Evergreen Orchard	Direct	0	0
	Irrigated Grain Crop	Direct	7.90	25.80
	Irrigated Row and Field Crop	Direct	0	6.08
	Irrigated Hayfield	Direct	4.97	29.83
	Vineyard	Direct	0	126.98
	Urban/BNSF		0	0
	BNSF	Direct	0	0
Urban development	Direct	0	0	
Remainder Areas (Outside of Recovery Areas)	Natural		164.34	365.63
	Annual Grassland	Direct	111.05	184.46
	Alkali Desert Scrub	Direct	2.03	9.16
	Barren	Direct	28.58	134.24
	Pasture	Direct	22.69	37.77
	Valley Oak Woodland	Direct	0	0
	Agriculture		1,643.94	3,265.14
			1,477.49	3,309.99
	Agriculture/Crop	Direct	159.49	155.75
	Dryland Grain Crop	Direct	34.85	10.89
	Deciduous Orchard	Direct	733.19	628.02
	Evergreen Orchard	Direct	3.42	3.42
	Irrigated Grain Crop	Direct	160.47	158.14
	Irrigated Row and Field Crop	Direct	37.62	29.68
	Irrigated Hayfield	Direct	242.04	218.75
	Vineyard	Direct	272.84	513.54
	Urban/BNSF		0	0
BNSF	Direct	0	0	
Urban development	Direct	0	0	

¹Land Prioritization categories are based on the *Recovery Plan of the Upland Species of the San Joaquin Valley, California* (Service 1999) and the *San Joaquin kit fox 5-Year Review* (Service 2010).

²The MIN-MAX tables presented within the Biological Assessment are not representative of any one alignment. The total acres of the table may exceed the project footprint because the sum of the maximum values is calculated across all potential project alignments.

On page 71, under **Environmental Baseline**, *Tipton kangaroo rat*, **replace** first line with:

Between ~~367.18~~ 221.18 and 468.02 acres of potentially suitable habitat, such as alkali desert scrub, annual grassland, barren, and pasture land, for the Tipton kangaroo rat occurs within the project action area (Table 5).

On page 71, under **Environmental Baseline**, *Buena Vista Lake ornate shrew*, **replace** first paragraph

About ~~76.81~~ 79.99 acres of highly suitable habitat for the shrew occurs within the project action area (Table 5). This includes the more mesic areas of moist soil associated with rivers, creeks, canals, and water impoundments, and the associated riparian and emergent wetland vegetation with extensive cover and leaf litter (about ~~39.02~~ 40.56 acres), and the more xeric annual grassland and alkali desert scrub with varying amounts and types of cover and substrate within 200 feet of rivers, creeks, canals, water impoundments and other water sources (about ~~37.79~~ 39.43 acres). In addition, about 51.18 acres of marginal habitat for the shrew occurs within the project action area (Table 5). This habitat could be used by the shrew for movement and dispersal, or in the absence of more highly suitable habitat, although the extent to which they might use these areas is currently unknown.

On page 72, under **Environmental Baseline**, *Blunt nosed leopard lizard*, **replace** first line with:

Between 26.57 and ~~108.47~~ 120.82 acres of potentially suitable habitat for the blunt-nosed leopard lizard, such as alkali desert scrub, annual grassland, barren lands, and valley foothill riparian occurs within the project action area (Table 5).

On page 72, under **Environmental Baseline**, *Blunt nosed leopard lizard*, **replace** third paragraph with:

In 2017, protocol surveys were conducted on a total of 625.73 acres within CP 2-3. No lizards were detected. Protocol surveys were conducted in two areas on CP 4 in 2016 and 2017. In 2016, one lizard was detected within the construction footprint, along County Line Road. In addition, four lizards were detected in the same survey area, along an access road east of the action area. In 2017, each survey area was able to be expanded, covering a total of 68.65 acres. Both adult and juvenile lizards were detected in the same area as the previous year, indicating that lizards are successfully breeding in the area.

On page 73, under **Environmental Baseline**, *Vernal pool fairy shrimp*, **replace** third line of first paragraph with:

Wetland delineation surveys identified between ~~233.182~~ 29.77 acres of potentially suitable seasonal wetland and vernal pool habitat that could support the fairy shrimp within the project action area (Table 5).

On page 74, under Environmental Baseline, replace Table 5 with:

Table 5. Range of potential federally-listed species habitat within the Fresno to Bakersfield alignment of the project (excluding mitigation properties)

Species	Habitat Type	Impact Type	Areas of Effect*	
			MIN	MAX
Tipton kangaroo rat	Alkali desert scrub, annual grassland, barren and pasture	Direct	367.18 221.18	468.02
Buena Vista Lake ornate shrew	More mesic Highly Suitable: moist soil associated with rivers, creeks, canals, water impoundments; associated riparian, emergent wetland vegetation; with cover and leaf litter	Direct	-	39.02 <u>40.56</u>
	More xeric Highly Suitable: grasslands, alkali desert scrub, alkali sink scrub within ~ 200 feet of rivers, creeks, canals, water impoundments, other water sources		-	37.79 <u>39.43</u>
Central California tiger salamander	AQUATIC: Vernal pools/seasonal wetlands	Direct	6.2	18.30
	UPLAND: alkali desert scrub, annual grasslands, pasture surrounding vernal pools/seasonal wetlands		18.6	18.70
Blunt-nosed leopard lizard	Alkali desert scrub, annual grassland, barren and valley foothill riparian	Direct	26.57	108.47 <u>120.82</u>
Vernal pool fairy shrimp	Vernal pools/seasonal wetlands	Direct	2.33 <u>1.82</u>	29.77
		Indirect	14.55 <u>14.46</u>	103.52
Vernal pool tadpole shrimp	Vernal pools/seasonal wetlands (delineated within the geographic range of the species)	Direct	0.0041	0.0041
		Indirect	0.0560	0.0560
California jewelflower	Unsurveyed alkali desert scrub, annual grassland, and pasture in Fresno County	Direct	0	15.00
Hoover's spurge	Vernal pools/seasonal wetlands in Tulare County	Direct and Indirect bisected	-	6.11
Kern mallow	Unsurveyed alkali desert scrub, annual grassland, and pasture in Tulare and Kern counties	Direct	0	217.93
San Joaquin woolly-threads	Unsurveyed alkali desert scrub, annual grassland, and pasture in Fresno, Kings, and Kern counties	Direct	0	491.77

On pages 78 to 81, replace the entire section **FCMS: Environmental Baseline** with:

Mitigation Sites: Environmental Baseline

Cross Creek Mitigation Site

The Cross Creek Mitigation Site provides 804.16 acres of annual grassland habitat for the kit fox. The closest kit fox occurrence in the CNDDDB is on a neighboring parcel, east of the southern

portion of the mitigation site. No kit fox were detected during camera surveys conducted on the mitigation site in June 2017.

The site also provides 1,183.53 acres of upland habitat and at least 2.4 acres of aquatic habitat for the salamander. The entire site is within the Southern San Joaquin Region, Unit 5 of designated critical habitat for the salamander. There is a 1999 occurrence in the CNDDDB of egg masses in the southwestern corner of the mitigation site. The closest known population is approximately 10 miles upstream on the Stone Corral Reserve. No salamanders were detected during surveys conducted on the mitigation site between December 2016 and April 2017.

In addition, the mitigation site provides 172.81 acres of wetland habitat suitable for the fairy shrimp and the tadpole shrimp. The site falls within the Cross Creek core area of the San Joaquin Valley Vernal Pool Region. The entire site is within critical habitat unit 26A for the fairy shrimp and 18A for the tadpole shrimp. There are three known occurrences of the fairy shrimp and six known occurrences of the tadpole shrimp on the mitigation site. During surveys conducted between December 2016 and March 2017, fairy shrimp were detected in 55 wetland features, and tadpole shrimp were found in 23 features.

No federally-listed plants were detected during surveys conducted on the Cross Creek Mitigation Site in August 2016 and April 2017.

Cottonwood Creek Mitigation Site

The Cottonwood Creek Mitigation Site provides 132.68 acres of annual grassland habitat for the kit fox. The closest kit fox occurrence in the CNDDDB is approximately 0.5 mile south of the site, along the St. John's River. No kit fox were detected during camera surveys conducted on the mitigation site in June 2017.

The site has the potential to provide 226.25 acres of upland habitat and some aquatic habitat for the salamander; however the current build-up of thatch onsite may preclude use by salamanders. The entire site is within the Southern San Joaquin Region, Unit 5 of designated critical habitat for the salamander. The closest known population is approximately 4.5 miles upstream on the Stone Corral Reserve. No salamanders were detected during a one-day targeted survey in April 2017 or during surveys for vernal pool branchiopods conducted on the mitigation site between December 2016 and April 2017.

In addition, the mitigation site provides 3.8 acres of wetland habitat suitable for the fairy shrimp and the tadpole shrimp. The site falls within the Cross Creek core area of the San Joaquin Valley Vernal Pool Region. The entire site is within critical habitat unit 26A for the fairy shrimp and 18A for the tadpole shrimp. There is one known occurrence in the CNDDDB for each of the fairy shrimp and the tadpole shrimp on the mitigation site. During surveys conducted in March 2017, tadpole shrimp were detected in six features. Although fairy shrimp were not detected, the limited survey was conducted late in the season. Based on the known occurrence and detections on the nearby Cross Creek Mitigation Site, it is likely that fairy shrimp may be found on the site.

No federally-listed plants were detected during surveys conducted on the Cottonwood Creek Mitigation Site in April, May, and September 2017.

Kings River Mitigation Site

Based on the habitat requirements of the federally-listed species known to occur in the vicinity of the Kings River Mitigation Site, none are currently expected to utilize the riparian and floodplain habitat on the mitigation site.

CD Hillman Mitigation Site

The CD Hillman Mitigation Site is directly across Corcoran Road from the Kern National Wildlife Refuge (NWR) and within the Tulare Basin Wildlife Management Area, which was established to protect and manage key habitats for sensitive species in the Tulare Basin. The site is also located within a core area for the protection of natural lands identified in the *Recovery Plan for Upland Species of the San Joaquin Valley, California*.

The mitigation site provides 230.82 acres of alkali sink community habitat for the kit fox. There are three known occurrences of the kit fox in the CNDDDB within 1 mile of the mitigation site. San Joaquin kit fox scat was detected on the mitigation site during transect surveys conducted in January and June 2017, indicating that kit fox are present on site.

The alkali sink community on the mitigation site also provides habitat for the TKR. Small mammal trapping conducted in June 2017 did not detect TKR, instead capturing 62 Heermann's kangaroo rats. However concurrent trapping on the adjacent parcel to the east detected TKR, including one individual within 100 meters of the site. Due to the presence of suitable habitat, nearby occurrences, and cyclic nature of kangaroo rat populations, it is likely that TKR are present on the mitigation site, at least in some years.

The mitigation site also provides habitat for the lizard, particularly in higher upland habitat that is not inundated during wet winter seasons. There are 14 known occurrences in the CNDDDB within 5 miles of the mitigation site. Three transect surveys conducted during 2017 failed to detect lizards on site.

Kern mallow was documented on the CD Hillman Mitigation Site during a 2017 botanical survey.

Alkali Flats Mitigation Site

The Alkali Flats Mitigation Site is adjacent to parcels of the Semitropic Ridge Preserve managed by the Center for Natural Lands Management and within the Tulare Basin Wildlife Management Area, which was established to protect and manage key habitats for sensitive species in the Tulare Basin. The site is also located within a core area for the protection of natural lands identified in the *Recovery Plan for Upland Species of the San Joaquin Valley, California*.

The mitigation site provides 157.05 acres of alkali sink community habitat for the kit fox. There are multiple known occurrences of the kit fox in the CNDDDB within 5 miles of the mitigation site. At least two San Joaquin kit fox were documented on site during a camera trapping effort in June 2017.

The alkali sink community on the mitigation site also provides habitat for the TKR and the lizard. Small mammal trapping conducted on the mitigation site in June 2017 detected 22 unique TKR, including reproductively active individuals. During transect surveys conducted in June 2017, one

lizard was detected. In addition, two lizards were incidentally observed during a site visit in late March 2018.

No federally-listed plants were detected during surveys conducted on the Alkali Flats Mitigation Site in August 2017.

On page 82, under **Effects of the Proposed Action**, *San Joaquin kit fox*, *Effects associated with construction activities*, **replace** the first three full paragraphs **with**:

The potentially suitable habitats occur as fragments or patches throughout the relatively narrow, linear project action area, primarily within Fresno, Tulare, Kings, and Kern Counties.

Approximately ~~768.94~~ 795.04 acres of the ~~5,401.23~~ 5,472.18 acres (~ ~~14~~ 15 percent) of suitable habitat along the alignment is considered to be highly suitable for use by the San Joaquin kit fox (alkali desert scrub, annual grassland, pasture, barren lands, summed from Table 4). The remaining ~~4,632.29~~ 4,677.14 acres of San Joaquin kit fox habitat consists of agricultural and urban habitats between Fresno and Bakersfield (Table 4). The ~~768.94~~ 795.04 acres of highly suitable habitat that will be permanently lost as a result of the CHST-FB Project, including the Early Work Variations, represents a small fraction of the remaining highly suitable habitat within Fresno, Tulare, Kings, and Kern Counties (Cypher pers. comm. 2013).

Habitat loss and alteration may occur through degradation and placement of hardscape over suitable denning or foraging habitat as a result of the CHST-FB alignment component of the project. It is reasonably likely that construction activities will result in the destruction of dens. Highly suitable habitat that supports denning and breeding is essential for persistence of San Joaquin kit fox populations (Service 2010; Cypher et al. 2013; Cypher et al. 2014). Approximately ~~768.94~~ 795.04 acres of high quality habitat for the San Joaquin kit fox will be permanently lost as a result of the CHST-FB alignment project action area and the Early Work Variations. High quality habitat already is extensively fragmented throughout the CHST-FB alignment component of the project action area. Although the total habitat loss will be spread out over the length of the alignment, the permanent loss resulting from the 100-foot wide CHST-FB alignment footprint will decrease available resources for San Joaquin kit foxes utilizing those areas.

Habitat loss and alteration may occur through degradation and placement of hardscape over suitable denning or foraging habitat as a result of the CHST-FB alignment component of the project. It is reasonably likely that construction activities will result in the destruction of dens. Highly suitable habitat that supports denning and breeding is essential for persistence of San Joaquin kit fox populations (Service 2010; Cypher et al. 2013; Cypher et al. 2014).

Approximately ~~755~~ 795.04 acres of high quality habitat for the San Joaquin kit fox will be permanently lost as a result of the CHST-FB alignment project action area. High quality habitat is already extensively fragmented throughout the CHST-FB alignment component of the project action area. Although the total habitat loss will be spread out over length of the alignment, the permanent loss resulting from the 100-foot wide CHST-FB alignment footprint will decrease available resources for San Joaquin kit foxes utilizing those areas.

On page 83, **replace Effects of the Proposed Action, San Joaquin kit fox, FCMS: Construction Activities for Habitat Restoration, with:**

Effects associated with habitat restoration at mitigation sites

Due to the limited restoration activities and the conservation measures proposed, no adverse effects to the kit fox are expected to occur on any of the mitigation sites. Together, the mitigation sites will provide 387.87 acres of alkali sink community and 936.84 acres of annual grassland habitat for the kit fox that will be protected and managed for the conservation of the species in perpetuity.

On page 89, under **Effects of the Proposed Action, Tipton kangaroo rat, Effects associated with construction activities, replace** the first line of the first full paragraph **with:**

Construction of the CHST-FB Project will result in the permanent loss of between ~~367.18~~ 221.18 and 468.02 acres of potential habitat for the Tipton kangaroo rat (Table 5).

On page 89, under **Effects of the Proposed Action, Tipton kangaroo rat**, after the last full paragraph, **add:**

Effects associated with habitat restoration at mitigation sites

Due to the limited restoration activities at the CD Hillman and Alkali Flats Mitigation Sites and the conservation measures proposed, no adverse effects to the TKR are expected to occur. Together, the mitigation sites will provide 387.87 acres of alkali sink community habitat for the TKR that will be protected and managed for the conservation of the species in perpetuity.

On page 91, under **Effects of the Proposed Action, Tipton kangaroo rat, Conservation measures for the Tipton kangaroo rat, replace** first paragraph **with:**

Implementation of the proposed conservation measures is expected to significantly reduce adverse effects to Tipton kangaroo rats during project construction, maintenance, and operational activities. However, some mortality of Tipton kangaroo rats may still occur because they may be difficult for operators of maintenance equipment and vehicles to observe. ~~The CHST-FB Project will result in the permanent loss of up to 168.02 acres of habitat for the Tipton kangaroo rat (Table 5).~~ The FRA and the Authority have proposed to mitigate for the final calculated permanent habitat loss for Tipton kangaroo rat through the acquisition of permittee-responsible mitigation sites within Tulare, Kings, and Kern counties that will be protected in perpetuity through conservation easements. These lands will be protected and managed for the conservation of the Tipton kangaroo rat and provide habitat for breeding, feeding, or sheltering commensurate with or better than habitat lost as a result of the proposed project.

On page 91, under **Effects of the Proposed Action, Buena Vista Lake ornate shrew, Effects associated with construction activities**, at the end of the first paragraph, **add:**

Up to 40.56 acres of suitable mesic habitat, 39.43 acres of suitable xeric habitat, and 51.18 acres of marginal habitat will be permanently lost as a result of construction of the project (Table 5).

On page 91, under **Effects of the Proposed Action, Buena Vista Lake ornate shrew, Conservation measures for the Buena Vista Lake ornate shrew**, **replace** first paragraph **with**:

Implementation of the proposed conservation measures is expected to significantly reduce adverse effects to BVLOSs during project construction, maintenance, and operational activities. However, some mortality of BVLOS may still occur because they are cryptic and difficult for operators of maintenance equipment and vehicles to see; they have been previously documented running across active construction sites. ~~The CHST FB Project will result in the permanent loss of up to 76.81 acres of highly suitable habitat for the BVLOS (Table 5). In addition, the CHST FB Project will result in the permanent loss of up to 51.18 acres of marginal habitat that may be used by BVLOS for movement and dispersal or in the absence of more highly suitable habitat.~~ The FRA and the Authority have proposed to mitigate for the final calculated disturbance to highly suitable habitat for BVLOS through the acquisition of permittee-responsible mitigation sites within Tulare, Kings, and Kern counties that will be protected in perpetuity through conservation easements. These lands will be protected and managed for the conservation of the BVLOS and provide habitat for breeding, feeding, or sheltering commensurate to or better than habitat lost as a result of the proposed project. In addition, avoidance and minimization measures will be implemented at all highly suitable habitat locations, as well as at all marginal habitat locations. Compensatory habitat mitigation will not be provided for those areas characterized as marginal habitat for BVLOS for which use and degree of suitability are unknown.

On page 92, **replace Effects of the Proposed Action, California tiger salamander, FCMS: Construction Activities for Habitat Restoration**, **with**:

Effects associated with habitat restoration at mitigation sites

Construction activities associated with the proposed wetland and riparian restoration will occur ~~within 33.6 acres of the 405-acre FCMS on the Cottonwood Creek and Cross Creek Mitigation Sites, respectively.~~ Construction activities will occur over a short duration (less than 3 months) during the dry season. Disturbance to upland habitat during construction activities is expected to be minimal ~~within the Vernal Pool Preservation Area on the Cottonwood Creek Mitigation Site~~ because established routes for movement of equipment will be designated and monitored by the Service-approved biologist. Pre-construction surveys for potentially occupied burrows may be used to designate areas to be avoided by construction equipment and workers. However, some central California tiger salamanders that were not detected while inhabiting burrows during preconstruction surveys may suffer injury or mortality if the burrows are crushed by construction equipment. The FRA and the Authority are proposing to develop a plan for relocating central California tiger salamanders from burrows within work areas to burrows in upland habitat that will not be disturbed by construction activities. The relocation plan will be submitted to the Service for review and approval prior to implementation. It is reasonably likely that central California tiger salamanders will be subject to harassment during the relocation.

Effects to the central California tiger salamander resulting from disturbance generated by use of construction equipment and construction activities are expected to be minimal and temporary because the proposed habitat restoration will occur over a short duration (less than 3 months) during the summer months, and there is sufficient alternative habitat available for use and movement by the this species within the ~~FCMS~~ mitigation sites.

The Authority has proposed conservation measures, such as use of Service-approved biological monitors and daily inspections of construction areas to avoid injury and mortality of central California tiger salamander. ~~The FCMS will provide 7.6 acres of preserved vernal habitat, 8.7 acres of vernal pool restoration, and 365.7 acres of upland habitat to support breeding, foraging, and sheltering for the central California tiger salamander, and will be protected and managed for the conservation of this species in perpetuity. Together, the mitigation sites will provide over 2.4 acres of aquatic breeding habitat and 1,409.78 acres of upland habitat for the salamander that will be protected and managed for the conservation of the species in perpetuity.~~

On page 93, under **Effects of the Proposed Action, California tiger salamander; Conservation measures for the central California tiger salamander**, **replace** second paragraph **with**:

~~The CHST FB Project will result in the permanent loss of up to 18.7 acres of upland habitat and 18.3 acres of aquatic habitat for the Central California tiger salamander (Table 5). The FRA and the Authority have proposed to mitigate for the final calculated permanent habitat loss for Central California tiger salamander through the purchase of mitigation credits at an approved conservation bank or the acquisition of permittee-responsible mitigation sites within Fresno, Tulare, and Kings counties that will be protected in perpetuity through conservation easements. These lands will be protected and managed for the conservation of the Central California tiger salamander and provide habitat for breeding, feeding, or sheltering commensurate with or better than habitat lost as a result of the proposed project.~~

On page 94, under **Effects of the Proposed Action, Blunt-nosed leopard lizard, Effects associated with construction activities**, **replace** second paragraph **with**:

Access to suitable habitat such as alkali desert scrub, annual grasslands, and barren habitats will become restricted or permanently lost due to permanent structures associated with the CHST-FB Project. The project will result in the permanent loss of up to 120.82 acres of suitable habitat for the lizard (Table 5). Movement of blunt-nosed leopard lizards within the project action area may be altered as a result of these effects.

On page 95, under **Effects of the Proposed Action, Blunt-nosed leopard lizard**, after the first paragraph, **add**:

Effects associated with management activities at mitigation sites

Due to the limited restoration activities at the CD Hillman and Alkali Flats Mitigation Sites and the conservation measures proposed, no adverse effects to the lizard are expected to occur. Together, the mitigation sites will provide 387.87 acres of alkali sink community habitat for the lizard that will be protected and managed for the conservation of the species in perpetuity.

On page 95, under **Effects of the Proposed Action, Blunt-nosed leopard lizard, Conservation measures for the blunt-nosed leopard lizard**, **replace** first paragraph **with**:

Implementation of the proposed conservation measures will significantly reduce adverse effects to blunt-nosed leopard lizards during project construction, maintenance, and operational activities. However, some mortality of blunt-nosed leopard lizards may still occur because they may be difficult for operators of maintenance equipment and vehicles to observe. ~~The CHST FB Project will result in the permanent loss of up to 108.47 acres of suitable habitat for blunt~~ -

nosed leopard lizards (Table 5). The FRA and the Authority have proposed to mitigate for the final calculated permanent habitat loss for blunt-nosed leopard lizard through the acquisition of permittee-responsible mitigation sites within Tulare, Kings, and Kern counties that will be protected in perpetuity through conservation easements. These lands will be protected and managed for the conservation of the blunt-nosed leopard lizard and provide habitat for breeding, feeding, or sheltering commensurate with or better than habitat lost as a result of the proposed project.

INCIDENTAL TAKE STATEMENT

On page 105, under **Amount or Extent of Take**, *San Joaquin kit fox*, **replace with:**

It is not possible to quantify the number of individual San Joaquin kit foxes that will be taken as a result of the proposed project because this species is relatively sparsely distributed and we believe that the number of individual foxes impacted will be relatively small. Therefore, the amount of habitat for this species that will be affected as a result of the CHST-FB Project will be used as a surrogate for quantifying take. The Service anticipates that any San Joaquin kit foxes that may be in the section of the action area undergoing construction at any given time, a total area of ~~11,941~~ 11,536 acres (including the project footprint, and areas within 200 feet of the project footprint, and the 405-acre FCMS) will be harassed by project activities in areas undergoing construction, operations, and maintenance activities which will result in the likelihood of injury by annoying foxes to such an extent as to significantly disrupt normal behavior patterns. In addition, the Service anticipates that ~~768.94~~ 795.04 acres of highly suitable habitat will be directly impacted and permanently lost as a result of the CHST-FB Project alignment resulting in harm to the species by significantly impairing essential behaviors, including breeding, foraging, and denning. Upon implementation of the Reasonable and Prudent Measures, incidental take associated with the CHST-FB Project in the form of harm over ~~11,941~~ 11,536 acres, and harm of the San Joaquin kit fox caused by the loss of ~~768.94~~ 795.04 acres of highly suitable habitat, will become exempt from the prohibitions described under section 9 of the Act.

On page 105, under **Amount or Extent of Take**, *Buena Vista Lake ornate shrew*, **replace with:**

It is not possible to quantify the number of individual BVLOS that will be taken as a result of the proposed project because it is small, cryptic, difficult to detect, limited survey efforts have been conducted and its current distribution across the landscape is not well known, and its life history is not well understood. Further, the specific habitat requirements of BVLOS are poorly defined, and the potential distribution of the species is difficult to delineate or predict (Cypher 2016). The amount of BVLOS highly suitable habitat that will be impacted as a result of the CHST-FB Project will be used as a surrogate for quantifying take. The Service anticipates that ~~39.02~~ 40.56 acres of more mesic and ~~37.79~~ 39.43 acres of more xeric highly suitable habitat will be directly affected and permanently lost as a result of the CHST-FB Project alignment resulting in harm to the species by significantly impairing essential behaviors, including breeding, foraging, and sheltering. The Service further anticipates that an additional 51.18 acres of marginal habitat will be directly affected. Upon implementation of the Reasonable and Prudent Measures, these levels of incidental take associated with the CHST-FB Project in the form of harm, capture, injury, and death of the BVLOS caused by habitat loss, construction activities, transport, handling and holding during relocation from the construction footprint, and any required CRM mitigation activities will become exempt from the prohibitions described under section 9 of the Act.

Accordingly, the Service will consider take exceeded if more than ~~39.02~~ 40.56 acres of more mesic and ~~37.79~~ 39.43 acres of more xeric highly suitable habitat is permanently lost as a result of the proposed action.

On page 106, under **Amount or Extent of Take**, *blunt-nosed leopard lizard*, **replace with:**

It is not possible to quantify the number of individual blunt-nosed leopard lizards that will be taken as a result of the proposed project because the number of individuals within the project action area is unknown. The anticipated loss of individuals of this species also may be difficult to quantify due to seasonal fluctuations in their numbers, random environmental events, changes in their habitat, or additional environmental disturbances. Therefore, the amount of habitat for this species that will be affected as a result of the CHST-FB Project will be used as a surrogate for quantifying take. The Service anticipates that up to ~~108.47~~ 120.82 acres of suitable habitat for the blunt-nosed leopard lizard will be permanently lost as a result of the CHST-FB Project. Upon implementation of the Reasonable and Prudent Measures, these levels of incidental take associated with the CHST-FB Project in the form of harm, capture, injury, and death of the blunt-nosed leopard lizard caused by habitat loss, construction activities, exclusion from active construction areas, and any required ground-disturbing CRM mitigation activities or burrow excavation activities will become exempt from the prohibitions described under section 9 of the Act.


REINITIATION - CLOSING STATEMENT

This concludes reinitiation of formal consultation on the California High-Speed Train System: Fresno to Bakersfield Section Project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required and will be requested by the federal agency or by the Service where discretionary federal agency involvement or control over the action has been retained or is authorized by law and:

- (a) If the amount or extent of taking specified in the incidental take statement is exceeded;
- (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
- (c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or
- (d) If a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions regarding this correspondence, please contact Lily Douglas, Senior Fish and Wildlife Biologist (lily_douglas@fws.gov), or Catrina Martin, Chief, Infrastructure Division (catrina_martin@fws.gov) at the letterhead address, (916) 414-6701, or by e-mail.

Sincerely,


for Jennifer M. Norris, Ph.D.
Field Supervisor

cc:

Marlys A. Osterhues, Federal Railroad Administration, Washington, D.C.