

8.2 Biological Resources

GWF Energy LLC proposes to build and operate the Tracy Peaker Project (TPP), a nominal 169-megawatt (MW) simple-cycle power plant, on a nine-acre, fenced site within a 40-acre parcel in an unincorporated portion of San Joaquin County. The site is located immediately southwest of Tracy, California, and approximately 20 miles southwest of Stockton, California. The TPP would consist of the power plant, two onsite 115-kilovolt (kV) switchyards, an approximately 1,470-foot water supply pipeline (as measured from the fence line), an onsite natural gas supply interconnection, and improvements to an existing dirt access road approximately one mile in length. An approximately 5.2-acre area west of the plant fence line and within the 40-acre parcel would be used for construction laydown and parking. Figure 2-1 shows the regional location of the GWF site. Figure 2-2 shows the immediate site location of the GWF project, including the location of the proposed generating facility and the proposed transmission, water supply, and access routes.

8.2.1 **Applicable Laws, Ordinances, Regulations, and Standards**

This section lists the laws, ordinances, regulations, and standards (LORS) related to biological resources that potentially apply to the proposed Tracy Peaker Project (TPP).

Federal Endangered Species Act. The project must demonstrate compliance with the Federal Endangered Species Act (FESA) of 1973 (as amended) because it is located within habitat areas determined to be currently or historically occupied by the endangered San Joaquin kit fox (*Vulpes macrotis mutica*).

Migratory Bird Treaty Act. Title 16, United States Code, Sections 703–712 prohibit “take” of migratory birds, including nests with viable eggs.

Clean Water Act. The U.S. Army Corps of Engineers (USACE), under Section 404 of the Clean Water Act, regulates discharges of dredged or fill material in “waters of the United States.” The term “waters” includes wetlands and nonwetlands bodies of water that meet specific criteria, as defined in the Code of Federal Regulations (CFR). The definition of “waters of the United States” includes “...intrastate lakes, rivers, streams (including intermittent

streams)...the use, degradation or destruction of which could affect interstate or foreign commerce...” and tributaries of water defined as waters of the United States.

Some intermittent washes may qualify as waters of the United States. Areas that meet the definition of waters of the United States or the definition of wetlands would be under USACE jurisdiction. Any impacts in these areas could require a permit, depending on the type and size of the activity within USACE jurisdiction.

California Environmental Quality Act (CEQA). The effects of the project on environmental resources must be analyzed and assessed as to their significance using criteria provided in various sections and appendices of CEQA. Preparation of this Application for Certification (AFC) would fulfill CEQA requirements.

California Endangered Species Act (CESA). Compliance with the CESA is required because the project area is within habitats currently or historically occupied by the state-threatened San Joaquin kit fox and the endangered Fresno kangaroo rat and blunt-nosed leopard lizard. If field assessments indicate that there is a likelihood of “take” of these species, consultation with the California Department of Fish and Game (CDFG) under Fish and Game Code Sections 2050 and 2091 would be required.

Fish and Game Code. Section 1600 et seq. activity that would divert or obstruct the natural flow or change the bed, bank, or channel of any river, stream, or lake must provide a Streambed Alteration Notification to the CDFG. A Streambed Alteration Notification is also required if streambed material is proposed for removal. A Streambed Alteration Notification may result in a Streambed Alteration Agreement between the project applicant and the CDFG. The CDFG should be notified of any construction in intermittent streams so that the agency can determine whether or not a Streambed Alteration Agreement is necessary.

Section 3503 protects California’s birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 protects California’s birds of prey and their eggs by making it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird. Section 3513 protects California’s migratory birds by making it unlawful to take or possess any migratory nongame bird as

designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird. Sections 3511, 4700, 5050, and 5515 prohibit take of animals that are classified as fully protected in California.

Fish and Game Code. Sections 1900 et seq. designate state rare, threatened, and endangered plants.

California Code of Regulations. Title 14, Sections 670.2 and 670.5 list animals designated as threatened or endangered in California.

8.2.2 Affected Environment

8.2.2.1 Regional Setting

The TPP site is located in the northern San Joaquin Valley, immediately southwest of Tracy, California, in a mixed industrial/agricultural area of western San Joaquin County. The San Joaquin Valley comprises roughly the southern two-thirds of the major north-northwest oriented structural trough and is sometimes referred to as the Central Valley. The Central Valley is located between the Sierra Nevada on the east and the Coast Ranges on the west. The general project area is bounded on the west by the ridges that constitute the Diablo Range and on the east by the flood plain of the San Joaquin River.

The general project region has a Mediterranean climate, with hot, dry summers and cool, moist winters. Summer high temperatures often exceed 100 degrees Fahrenheit (°F), with an average of 110 days per year over 90°F. Winter temperatures in the San Joaquin Valley are mild, with an average of 16 days per year with frost. Rainfall in the Northern Valley averages 7 to 8 inches per year. On average, approximately 90 percent of the rainfall occurs between November 1 and April 1.

The Environmental Assessment prepared by the U.S. Bureau of Reclamation (see Attachment 3.2-3 in this Supplement) states the following, in part:

Historically, the region surrounding the Delta-Mendota Canal Unit contained a diverse and productive patchwork of aquatic, wetland, riparian forest, and surrounding terrestrial habitats that supported abundant

populations of resident and migratory species of wildlife (Tetratich, 2000). Huge herds of pronghorn, tule elk, and mule deer grazed the prairies, and large flocks of waterfowl occurred in the extensive wetlands. The major natural plant communities included grasslands, vernal pools, marshes, and riparian forests.

Today, land uses in the region, including agricultural, residential, and M&I uses, have converted land from native habitats to cultivated fields, grazing, homes, water impoundments, flood control structures, and other developments. Most of the species that occurred historically in the region remain in these same areas, although at lower than historical numbers. Because of the reduction in the acres of habitat available to these species, remnants of habitats such as wetlands and riparian forests are increasingly valuable.

The TPP site is currently not being used for agricultural production, but has been previously used for agricultural purposes for approximately 30 years. Historically, crops grown in the vicinity of the site included grain, flax, and alfalfa. Attachment 3.5-4 in this Supplement provides a ten-year crop history for the proposed TPP site. Principal land uses in the region are row and field crops, pastures, and vineyards. These land uses remain prevalent in the county even though housing and industrial land uses are becoming more common.

Biological surveys were conducted by wildlife biologists and botanists on the nine-acre project site and surrounding buffer areas. The project site is located on intensive agricultural land and has no habitat features that would be of value to any sensitive species. There is no sensitive wildlife or plant resource at the site. Potential foraging and denning habitat for the San Joaquin kit fox was identified near the Delta-Mendota Canal just southwest of the project site. Table 8.2-3 lists the occurrences of each of the sensitive species observed within 1,000 feet of the proposed plant site.

Wildlife species that use the mixed agricultural habitat on the project site tend to occur across all habitat types rather than only a single habitat. Wildlife species that would use the patchwork of changing crops and ruderal vegetation, including the TPP site, are described in Section 8.2.2.3. These species are likely to occur widely and be relatively common because the habitat is highly disturbed.

8.2.2.2 Vegetation

The TPP site is dominated by intensively managed agricultural activities. Most of the access road corridor traverses rangeland with natural vegetation made up of nonnative grasses and forbs.

8.2.2.3 Wildlife

General Wildlife. The ruderal vegetation near the project site could provide marginal habitat for a variety of birds, mammals, and reptiles. Bird species include the red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), burrowing owl (*Athene cunicularia*), and western meadowlark (*Sturnella neglecta*). Mammals occupying this habitat type include the black-tailed hare (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), kangaroo rat (*Dipodomys* spp.), deer mouse (*Peromyscus maniculatus*), kit fox (*Vulpes macrotis*), coyote (*Canis latrans*), bobcat (*Felis rufus*), and American badger (*Taxidea taxus*). Amphibians and reptiles include the western toad (*Bufo boreus*), side-blotched lizard (*Uta stansburiana*), western whiptail (*Cnemidophorus tigris*), and gopher snake (*Pituophis melanoleucus*).

Economically Important Species. One game bird species, the mourning dove (*Zenaida macroura*), potentially occurs at the proposed TPP site. This species has some recreational value to hunters, but has no important economic value. No species of economic importance occur in the TPP area.

Biologically Sensitive Areas. The TPP lies outside any biologically sensitive area.

8.2.2.4 Sensitive Species

Lists of special-status wildlife and plant species known to occur or to potentially occur in the vicinity of the TPP site are shown in Tables 8.2-1 and 8.2-2. These species were identified based on a search of the California Natural Diversity Database, review of unpublished biological reports produced for other projects in the area of the TPP, and staff experience and knowledge of sensitive flora and fauna of the northern San Joaquin Valley. Natural history descriptions of the listed species can be found in Appendix E of the draft Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP). (Note: Appendix E of the

BRMIMP is attached to this AFC Supplement as Attachment 3.2-6. The appendix should be placed at the end of the BRMIMP, which is located in Appendix K6 of the AFC.)

8.2.3 Biological Survey

8.2.3.1 Survey Methodology

Biological surveys at the TPP site were conducted by wildlife biologists and botanists between April 17 and May 16, 2001. Botanical surveys were conducted by Barbara Leitner; resumes of the biological crew are contained in Appendix C of the draft BRMIMP (see Appendix K6 of AFC). (Note: Additional resumes are included in this supplement (Attachment 3.2-2). They should be placed in Appendix C of the BRMIMP.) Surveys were conducted primarily for listed animal species and sensitive plants, following methodologies approved by U.S. Fish and Wildlife Service (USFWS) and CDFG (CDFG, 1990); surveys were performed concurrently for other special-status wildlife species with potential to occur in the area. This section provides a discussion of the survey methodology used during the field review of the project site and access road corridor.

The natural gas pipeline line corridor and facility site were surveyed by walking 50-foot-wide transects in suitable habitat. Additional buffer zones of 500 feet and one mile around the facility site were also surveyed (Figure 8.2-1). Suitable habitat along the access road corridor was surveyed using a method suggested by the California Energy Commission (CEC) (Figure 8.2-1). A 100-foot corridor centered on the access road corridor was surveyed with two 50-foot-wide transects. A primary buffer zone, 500 feet on either side of the corridor, was surveyed by walking 12 transects approximately 80 feet apart. Two meandering transects were walked in a secondary buffer zone, consisting of an additional 500 feet on either side of the primary buffer zone.

During the survey, all dens, burrows, and other evidence of special-status species were noted. A vascular plant list was compiled of all identifiable plant species observed. San Joaquin kit fox potential and known dens, burrowing owl burrows, and locations of other sensitive species were recorded and mapped.

The San Joaquin kit fox dens were classified according to the following USFWS kit fox den definitions (USFWS, 1989):

- **Known Den:** Any existing natural den or human-made structure for which conclusive evidence or strong circumstantial evidence can show that the den is used or has been used at any time in the past by a San Joaquin kit fox.
- **Potential Den:** Any natural den or burrow within the range of the species that has entrances of appropriate dimensions (4 to 12 inches in diameter) to accommodate San Joaquin kit foxes but for which there is little to no evidence of kit fox use.
- **Pupping Den:** Any known San Joaquin kit fox den (as defined above) used by kit foxes to whelp and/or rear their pups.
- **Atypical Den:** Any known San Joaquin kit fox den that has been established in, or in association with, a human-made structure.

8.2.3.2 Results

Figure 8.2-2 shows the general locations of sensitive biological resources. The following sensitive species or resources were found at or near the TPP site and access road corridor:

- San Joaquin kit fox (potential dens)
- Great horned owls
- Loggerhead shrikes
- White-tailed kite
- Barn owls
- Raptor nesting (potential)

The proposed TPP site is currently being managed as intensive agricultural land and has no habitat features that would be of value to any sensitive species. There are no sensitive wildlife or plant resources at the site. The Delta-Mendota Canal area just southwest of the plant site has some potential to support San Joaquin kit fox foraging and denning (Figure 8.2-3). Table 8.2-3 lists the occurrences of each of the sensitive species and their proximity to the proposed plant site, Figure 8.2-3 shows their locations on a 1:6000 scale map.

The access road corridor is located between an alfalfa field/industrial area and nonnative grassland. Table 8.2-4 lists the occurrences of each of the sensitive species and their proximity to the access road corridor, Figure 8.2-4 shows their locations on a 1:6000 scale map. Table 8.2-5 contains a list of the vascular plants and wildlife observed during the survey. California Natural Diversity Data Base (CNDDB) field survey report sheets were completed and can be found in Appendix F of the BRMIMP (see Appendix K6 of the AFC). (Note: Appendix F of the BRMIMP is attached to this AFC Supplement as Attachment 3.2-1. The appendix should be placed at the end of the BRMIMP, which is located in Appendix K6 of the AFC.)

8.2.4 Environmental Consequences/LORS Compliance

8.2.4.1 Construction Phase

San Joaquin Kit Fox. Impacts to San Joaquin kit foxes include destruction of potential dens or permanent and temporary modification of potential habitat. The project would result in the permanent loss of approximately nine acres of intensely managed farmland and less than one acre of disturbed dirt road corridor that will be paved. There would also be 0.67 acres (1,470 feet by 20 feet) of temporary disturbance due to water supply pipeline construction, and 5 acres of temporary disturbance due to plant site construction. The USFWS has required incidental take permits and habitat compensation to mitigate the loss of these types of habitats because San Joaquin kit foxes have been observed using farmland for denning and foraging. Measures contained in the TPP BRMIMP (Appendix K6) would reduce this potential impact to a less-than-significant level.

Nesting Hawks, Owls, and Falcons. If construction occurs during the nesting season (February–July), there is potential for nest abandonment by hawks, owls, and falcons. Measures contained in the TPP BRMIMP would reduce this potential impact to a less-than-significant level.

8.2.4.2 Operations and Maintenance Phase

No adverse environmental consequences are associated with the operations and maintenance phase of the TPP.

8.2.5 Growth-Inducing Impacts

The TPP site is located in an industrial/agricultural area of San Joaquin County. Conversion of agricultural lands to nonagricultural use would be minimal and would be limited to the nine-acre site of the proposed power generating facility. Collectively, these activities are consistent with a trend toward energy-related uses in this part of San Joaquin County. Increased commercial or industrial activity in this area may increase the possibility that lands under agricultural production would be converted to nonagricultural uses. However, the specific characteristics of any future projects are not known at this time, and project applications would undergo appropriate environmental review at the time of submittal of their applications.

8.2.6 Cumulative Impacts

The proposed TPP would not cause a significant change in the character of the region when considered in conjunction with similar, planned projects. The proposed TPP would impact land use in its vicinity by increasing the concentration of industrial activity. However, it would not result in changes to existing land use patterns and is fully consistent with existing zoning. Direct impacts associated with the TPP are extremely minimal, and no significant cumulative impacts on biological resources are expected to result from the TPP. As a result, the cumulative land use impacts are considered insignificant.

8.2.7 Mitigation Measures

With the incorporation of the recommended Conditions of Certification for biological resources as contained in Appendix K, the construction and operation of the project will not result in individually or cumulatively significant impacts to biological resources.

8.2.8 Compliance with Applicable LORS

8.2.8.1 Federal Endangered Species Act

The TPP requires a Section 10 consultation with USFWS. It is anticipated that USFWS would require incidental take permits and habitat compensation to mitigate for the loss of habitat. A draft BRMIMP has been prepared that includes initial estimates of these mitigation

requirements. USFWS will review and approve a final BRMIMP as part of the Section 10 consultation. The TPP has requested coverage under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The TPP will participate in the SJMSCP through the “fee” mitigation program administered by the San Joaquin Council of Governments that will mitigate impacts associated with the TPP.

8.2.8.2 Migratory Bird Treaty Act

The TPP BRMIMP will include measures to reduce any potential impacts to migratory birds to less-than-significant levels.

8.2.8.3 Clean Water Act

No intermittent streams, jurisdictional wetlands, or other “waters of the United States” would be impacted by the project. Therefore, no further action is needed to comply with the Clean Water Act.

8.2.8.4 California Environmental Quality Act

Preparation of this AFC and the subsequent review and licensing by the CEC will conform with CEQA requirements.

8.2.8.5 California Endangered Species Act

There is little or no chance for take of California-listed species. Thus, no CDFG Section 2081 permit will be required.

8.2.8.6 Fish and Game Code

No streams or streambeds would be impacted by the TPP. Therefore, no Streambed Alteration Agreement is required. In addition, a BRMIMP will be prepared to ensure there are no significant impacts.

8.2.9 Other Required Permits/Approvals

The following provides a list of other permits or approvals required:

8.2 BIOLOGICAL RESOURCES

Permit/Approval	Responsible Agency	Schedule
Section 10 Endangered Species Act Compliance	San Joaquin Council of Governments	October 31, 2001

8.2.10 Agency Contacts

Agency	Contact/Title	Telephone
San Joaquin Council of Governments	Jerry Park Regional Planner San Joaquin Council of Governments 6 South El Dorado Street Suite 400 Stockton, CA 95202	(209) 468-3913
U.S. Fish and Wildlife Service	Peter Cross 2800 Cottage Way, W-2605 Sacramento, CA 95825	(916) 441-6655
California Department of Fish Game	Banky Curtis 1701 Nimbus Road, Suite A Rancho Cordova, CA 95670	(916) 358-2899

8.2.11 LORS Conformance

Table 8.2-6 provides a list of AFC subsections where discussion of conformance with each LORS item can be found.

8.2.12 References

California Department of Fish and Game (CDFG). 1990. California Department of Fish and Game Region 4 Survey Methodologies for San Joaquin Kit Fox, Blunt-Nosed Leopard Lizard, San Joaquin Antelope Squirrel, Tipton Kangaroo Rat, and Giant Kangaroo Rat. Compiled by R. Rempel and G. Presley.

U.S. Fish and Wildlife Service (USFWS). 1999. Standardized Recommendations for the Protection of the San Joaquin Kit Fox. Advisory notice issued by USFWS, Sacramento, CA. 6 pp.

TABLES

**Table 8.2-1
Special-Status Wildlife Species with Potential to Occur at the TPP Site**

Species	Status Federal/State	Habitat
<i>Scaphiopus hammondi</i> Western Spadefoot	- /CSC	Intermittent wetlands, vernal pools
<i>Phrynosoma coronatum frontale</i> California horned lizard	- /CSC	Valley grasslands and open saltbush scrub
<i>Rana aurora draytonii</i> California red-legged frog	-/T	Permanent and long-term intermittent wetlands, streams, and ponds
<i>Ambystoma californiense</i> California tiger salamander	-/CSC	Intermittent wetlands, vernal pools
<i>Eremophila alpestris actia</i> California horned lark	-/CSC	Valley grasslands and open saltbush scrub
<i>Athene cunicularia</i> Burrowing owl	- / CSC	Valley grasslands and open saltbush scrub
<i>Lanius ludovicianus</i> Loggerhead shrike	- / CSC	Valley grasslands and saltbush scrub
<i>Toxostoma lecontei</i> LeConte's thrasher	- / CSC	Prefers mature saltbush scrub for nesting
<i>Agelaius tricolor</i> Tricolored blackbird	-/CSC	Permanent and long-term intermittent wetlands, streams and ponds
<i>Perognathus inornatus</i> San Joaquin pocket mouse	- / CSC	Valley grasslands and saltbush scrub
<i>Taxidea taxus</i> American badger	- / CSC	Grassland and scrub habitats of the San Joaquin Valley and surrounding foothills
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	E/T	Grassland and scrub habitats of the San Joaquin Valley and surrounding foothills

E = Endangered
T = Threatened
CSC = California Species of Concern

Table 8.2-2
Special-Status Plant Species with Potential to Occur at the TPP Site

Scientific and Common Name	Listing Status FWS/ DFG/CNPS (1)	Habitat	County Distribution (2)	Flowering Period
Large-flowered fiddleneck <i>Amsinckia grandiflora</i>	FE/CE/1B	Lower portions of steep, protected north- and east-facing slopes in oak woodlands and grasslands	ALA, CCA, SJQ	April-May
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	FSC/--/1B	Playas, grasslands on adobe clay soils, alkaline vernal pools	ALA*, CCA*, MER, MNT*, NAP*, SBT*, SCL*, SFO*, SJQ*, SOL, SON*, STA*, YOL	March-June
Heartscale <i>Atriplex cordulata</i>	FSC/--/1B	Chenopod scrub and sandy, alkaline grasslands	ALA, BUT, CCA*, FRE, GLE, KNG, KRN, MAD, MER, SJQ*, SOL, STA, TUL	May-October
Brittlescale <i>Atriplex depressa</i>	FSC/--/1B	Alkaline or clay grasslands, chenopod scrub, and playas	ALA, CCA, COL, FRE, GLE, KRN, MAD, NER, SOL, STA*, TUL, YOL	May-October
San Joaquin spearscale <i>Atriplex joaquiniana</i>	FSC/--/1B	Alkaline scrub, meadows, and grasslands	ALA, CCA, COL, GLE, MER, NAP, SAC, SBT, SOL*, SJQ*, AOL, RUL*, YOL	April-September
Big-scale balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	FSC/--/1B	Woodland and grassland, sometimes on serpentine soils	ALA, BUT, MPA, NAP, PLA, SCL, TEH	March-June
Big tarplant <i>Blepharizonia plumosa</i> ssp. <i>plumosa</i>	FSC/--/1B	Grasslands on clay soils, with low cover	ALA, CCA(*?), SJQ*, STA*, SOL*	July-October
Pappose spikeweed (Congdon's tarplant) <i>Centromadia parryi</i> ssp. <i>congdonii</i> (= <i>Hemizonia p.</i> ssp. <i>c.</i>)	FC/--/1B	Grasslands with alkaline soils	ALA*, CCA*, MNT, SCL(*?), SCR*, SLO, SOL*	June-November
Slough thistle <i>Cirsium crassicaule</i>	FSC/--/1B	Slow-moving water with saturated soils in various plant communities along canals, and rivers	KNG, KRN, SJQ	June-August
Hispid bird's-beak <i>Cordylanthus mollis</i> ssp. <i>hispidus</i>	FSC/--/1B	Seasonal wetlands in alkali sinks with valley sink scrub, alkali meadows, and alkali marsh communities	ALA, KRN, MER, PLA, SOL	June-July
Palmate-bracted bird's-beak <i>Cordylanthus palmatus</i>	FE/CE/1B	Seasonal wetlands in alkali sinks with valley sink scrub, alkali meadows, and alkali marsh communities.	ALA, COL, FRE, MAD*, SJQ*, YOL	June
Interior California larkspur <i>Delphinium californicum</i> ssp. <i>interius</i>	FSC/--/1B	Mesic woodland	ALA, CCA, SCL, SJQ, SLO	April-June
Recurved larkspur <i>Delphinium recurvatum</i>	FSC/--/1B	Grasslands, woodlands, scrub, vernal pools with alkaline soils	ALA, CCA, COL, FRE, KNG, KRN, MER, SLO, SOL, TUL	March-May

Table 8.2-2 (continued)
Special-Status Plant Species with Potential to Occur at the TPP Site

Scientific and Common Name	Listing Status FWS/ DFG/CNPS (1)	Habitat	County Distribution (2)	Flowering Period
Contra Costa buckwheat <i>Eriogonum truncatum</i>	--/--/1A	Dry slopes of serpentine scrub and chaparral habitats	ALA*, CCA*, SOL*	April-June
Diamond-petaled California poppy <i>Eschscholzia rhombipetala</i>	--/--/1B	Grasslands with clay soils; recently rediscovered	ALA*, CCA*, COL*, SOL*, STA*	March-April
Fragrant fritillary <i>Fritillaria liliacea</i>	FSC/--/1B	Coastal prairie and scrub, grasslands, often on serpentine soils	ALA, CCA, MNT, MRN, SBT, SCL, SFO, SMT, SOL, SON	February-April
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	FSC/CE/1B	Margins of shallow lakes; vernal pools	FRE, LAK, LAS, MAD, MOD, PLA, SAC, SHA, SJQ, SOL, TEH, OR	April-June
Diablo helianthella <i>Helianthella castanea</i>	FSC/--/1B	Oak and riparian woodland, chaparral, grassland, and coastal scrub	ALA, CCA, MRN*, SFO*, SMT	April-June
Brewer's dwarf flax <i>Hesperolinon breweri</i>	FSC/--/1B	Grassy or brushy slopes underlain by serpentine	CCA, NAP, SOL	May-July
Santa Cruz tarweed <i>Holocarpha macradenia</i>	FT/CE/1B	Coastal prairies and grasslands on clay soils	ALA*, CCA, MNT, MRN*, SCR	June-October
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE/--/1B	Vernal pools	ALA*, CCA*, MEN*, NAP, SBA*, SCL*, SOL	March-June
Showy madia <i>Madia radiata</i>	FSC/--/1B	Cismontane woodland and grasslands, occurs as very scattered populations in only a few locations	CCA*, FRE, KNG, KRN, MNT, SBT, SJQ, SLO	March-May
Colusa grass <i>Neostapfia colusana</i>	FT/CE/1B	Large northern claypan vernal pools with alkali soils that remain flooded until early summer.	COL*, MER, SOL, STA, YOL	May-July
Bearded popcornflower <i>Plagiobothrys hystriculus</i>	--/--/1A	Grassy hillsides and plains, vernal pools and alkaline communities.	SOL* (localities from other counties are considered misidentifications)	April-May
Adobe sanicle <i>Sanicula maritima</i>	FSC/CR/1B	Chaparral, coastal prairie, meadow, and grassland habitats on clay or serpentine soils	ALA*, MNT, SFO*, SLO	April-May
Wright's tricocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	--/--/2	Meadows, brackish marshes, riparian forest and vernal pools; often on alkaline soils	COL*, MER*, RIV, SJQ*, SUT*, TX, ++	May-September
Showy Indian clover <i>Trifolium amoenum</i>	FE/--/1B	Grasslands, sometimes serpentine soils	ALA*, MEN*, MRN*, NAP*, SCL*, SOL*, SON	April-June
Caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	--/--/1A	Grasslands in alkaline hills	ALA*, CCA*, GLE*, MNT*, SCL*, SJQ*	March-April
Greene's tuctoria <i>Tuctoria greenei</i>	FE/--/1B	Vernal pools	BUT, FRE*, MAD*, MER, SHA, SJQ*, STA*, TEH, TUL*	May-July

STATUS CODES:

FEDERAL: (U.S. Fish and Wildlife Service)

FE = Listed as Endangered (in danger of extinction) by the Federal Government.

FT = Listed as Threatened (likely to become endangered within the foreseeable future) by the Federal Government.

FP = Proposed for Listing as Endangered or Threatened.

FC = Candidate to become a *proposed* species.

FSC = Federal Species of Concern. May be endangered or threatened, but not enough biological information has been gathered to support listing at this time.

STATE: (California Department of Fish and Game)

CE = Listed as Endangered by the State of California

CT = Listed as Threatened by the State of California

CR = Listed as Rare by the State of California)

California Native Plant Society

List 1A=Plants presumed extinct in California

List 1B=Plants rare, threatened, or endangered in California and elsewhere

List 2= Plants rare, threatened, or endangered in California but more common elsewhere

SOURCE: CNPS 2001.

Table 8.2-3
Sensitive Biological Resource Locations,
Number of Occurrences, and Their Proximity to the Proposed Plant Site

Facility	Resource	Site	Within 500 feet	Within 1,000 feet
Plant Site	Potential kit fox dens	none	3	5
	White-tailed kite	none	none	1
	Barn owl	none	none	1
	Loggerhead shrike	none	none	1
	Great horned owl	none	none	1

Table 8.2-4
Sensitive Biological Resource Locations
Number of Occurrences, and Their Proximity to the Proposed Centerline
of the Access Road Improvement Route

Resource	Number of Locations on Centerline	Number of Locations Within Primary Buffer Zone	Number of Locations Within Secondary Buffer Zone
Potential kit fox dens	4	6	3

Table 8.2-5
Vascular Plants Observed During Biological Surveys

Scientific Name	Common Name
<i>AMARANTHACEAE</i> <i>Amaranthus</i> sp.	AMARANTH FAMILY Amaranth
<i>ANACARDIACEAE</i> <i>Schinus molle</i>	SUMAC OR CASHEW FAMILY Peruvian pepper tree
<i>APIACEAE</i> <i>Ammi visnaga</i> <i>Anthriscus caucalis</i> <i>Conium maculatum</i> <i>Torilis arvensis</i>	CARROT FAMILY Bisnaga Bur-chervil Poison-hemlock Field hedge parsley
<i>ASCLEPIADACEAE</i> <i>Asclepias fascicularis</i>	MILKWEED FAMILY Narrow-leaved milkweed
<i>ASTERACEAE</i> <i>Achyrachaena mollis</i> <i>Carduus pycnocephalus</i> <i>Centaurea solstitialis</i> <i>Chamomilla suaveolens</i> (= <i>Matricaria matricarioides</i>) <i>Cirsium</i> sp. <i>Conyza</i> sp. <i>Grindelia camporum</i> var. <i>camporum</i> <i>Helianthus annuus</i> <i>Hemizonia fitchii</i> <i>Hesperevax sparsiflora</i> var. <i>sparsiflora</i> <i>Holocarpha obconica</i> <i>Hypochaeris glabra</i> <i>Lactuca serriola</i> <i>Microseris acuminata</i> <i>Microseris douglasii</i> var. <i>tenella</i> <i>Picris echioides</i> <i>Senecio vulgaris</i> <i>Silybum marianum</i> <i>Sonchus asper</i> ssp. <i>asper</i> <i>Sonchus oleraceus</i>	SUNFLOWER FAMILY Blow-wives Italian thistle Yellow-star thistle Pineapple weed Thistle Horseweed Gumplant Annual sunflower Fitch's tarplant Erect hesperevax Tarplant Smooth cat's ear Prickly lettuce Sierra foothills microseris Delicate Douglas' microseris Bristly ox-tongue Common senecio Milk thistle Prickly sow-thistle Sow-thistle
<i>BORAGINACEAE</i> <i>Amsinckia eastwoodiae</i> <i>Amsinckia menziesii</i> var. <i>menziesii</i>	FORGET-ME-NOT FAMILY Eastwood's fiddleneck Rancher's fireweed
<i>BRASSICACEAE</i> <i>Brassica nigra</i> <i>Capsella bursa-pastoris</i> <i>Descurainea sofia</i> <i>Hirschfeldia incana</i> (= <i>Brassica geniculata</i>) <i>Lepidium nitidum</i> var. <i>nitidum</i>	MUSTARD FAMILY Black mustard Shepherd's purse Tumble mustard Summer mustard Shining peppergrass

Table 8.2-5 (continued)
Vascular Plants Observed During Biological Surveys

SCIENTIFIC NAME	COMMON NAME
<i>Sisymbrium irio</i>	London rocket
<i>CARYOPHYLLACEAE</i>	PINK FAMILY
<i>Herniaria hirsuta</i> ssp. <i>cinerea</i> (= <i>Paronychia pusilla</i>)	Herniaria
<i>Sagina apetala</i>	Dwarf pearlwort
<i>Stellaria media</i>	Common chickweed
<i>CHENOPODIACEAE</i>	GOOSEFOOT FAMILY
<i>Chenopodium</i> sp.	Lamb's quarters
<i>Salsola tragus</i>	Russian thistle
<i>CONVOLVULACEAE</i>	BINDWEED FAMILY
<i>Convolvulus arvensis</i>	Bindweed, Orchard morning-glory
<i>EUPHORBIACEAE</i>	SPURGE FAMILY
<i>Chamaesyce</i> sp.	Spurge
<i>Eremocarpus setigerus</i>	Turkey mullein
<i>FABACEAE</i>	PEA FAMILY
<i>Astragalus asymmetricus</i>	San Joaquin locoweed
<i>Astragalus gambellianus</i>	Annual locoweed
<i>Lotus wrangellianus</i> (= <i>L. subpinnatus</i>)	Common trefoil
<i>Lupinus</i> sp.	Annual lupine
<i>Medicago polymorpha</i>	California burclover
<i>Medicago sativa</i>	Alfalfa
<i>Trifolium breweri</i>	Brewer's trifolium
<i>Trifolium</i> sp.	Clover
<i>Trifolium willdenovii</i> (= <i>T. tridentatum</i>)	Tomcat clover
<i>GERANIACEAE</i>	GERANIUM FAMILY
<i>Erodium botrys</i>	Filaree
<i>Erodium cicutarium</i>	Redstem filaree
<i>Erodium macrophyllum</i>	Storksbill
<i>Geranium molle</i>	Cranes-bill geranium
<i>HYDROPHYLLACEAE</i>	WATERLEAF FAMILY
<i>Phacelia ciliata</i>	Field phacelia
<i>ISOETACEAE</i>	QUILLWORT FAMILY
<i>Isoetes nuttallii</i>	Nuttall's quillwort
<i>JUNCAGINACEAE</i>	ARROW-GRASS FAMILY
<i>Lilaea scilloides</i>	Flowering-quillwort
<i>LAMIACEAE</i>	MINT FAMILY
<i>Lamium amplexicaule</i>	Henbit
<i>Marrubium vulgare</i>	Horehound

Table 8.2-5 (continued)
Vascular Plants Observed During Biological Surveys

SCIENTIFIC NAME	COMMON NAME
<i>LILLACEAE</i>	LILY FAMILY
<i>Dichelostemma capitatum (=Brodiaea pulchella)</i>	Blue dicks
<i>MALVACEAE</i>	MALLOW FAMILY
<i>Malva nicaeensis</i>	Bull mallow
<i>MYRTACEAE</i>	MYRTLE FAMILY
<i>Eucalyptus camaldulensis</i>	Red gum
<i>Eucalyptus globulus</i>	Blue gum
<i>ONAGRACEAE</i>	EVENING-PRIMROSE FAMILY
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	Four-spot
<i>Epilobium brachycarpum (=E. paniculatum)</i>	Willowherb
<i>PAPAVERACEAE</i>	POPPY FAMILY
<i>Eschscholzia californica</i>	Californica poppy
<i>PLANTAGINACEAE</i>	PLANTAIN FAMILY
<i>Plantain major</i>	Common plantain
<i>POACEAE</i>	GRASS FAMILY
<i>Arundo donax</i>	Giant reed
<i>Avena barbata</i>	Slender oats
<i>Avena fatua</i>	Wild oats
<i>Bromus carinatus</i> var. <i>carinatus</i>	California brome
<i>Bromus catharticus</i>	Rescue grass
<i>Bromus diandrus</i>	Ripgut brome
<i>Bromus hordeaceus</i>	Soft chess
<i>Bromus madritensis</i> ssp. <i>rubens (=B. rubens)</i>	Red brome
<i>Cynodon dactylon</i>	Bermuda grass
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Foxtail barley
<i>Leymus triticoides</i>	Creeping wildrye
<i>Lolium multiflorum</i>	Italian ryegrass
<i>Nassella lepida</i>	Foothill needlegrass
<i>Phalaris paradoxa</i> var. <i>praemorsa</i>	Harding grass
<i>Poa annua</i>	Annual bluegrass
<i>Poa bulbosa</i>	Bluegrass
<i>Poa secunda</i>	Bluegrass
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass
<i>Vulpia bromoides (=Festuca dertonensis)</i>	Fescue
<i>Vulpia microstachys</i> var. <i>pauciflora (=F. reflexa)</i>	Fescue
<i>Vulpia microstachys</i> var. <i>ciliata (=F. eastwoodae)</i>	Vulpia
<i>Vulpia myuros</i> var. <i>hirsuta (=F. megalura)</i>	Zorro grass

Table 8.2-5 (continued)
Vascular Plants Observed During Biological Surveys

SCIENTIFIC NAME	COMMON NAME
<i>POLEMONIACEAE</i> <i>Gilia capitata</i> ssp. <i>capitata</i>	PHLOX FAMILY Gilia
<i>POLYGONACEAE</i> <i>Eriogonum nudum</i> var. <i>nudum</i> <i>Polygonum arenastrum</i> <i>Rumex crispus</i>	BUCKWHEAT FAMILY Naked buckwheat Common knotweed Curly dock
<i>ROSACEAE</i> <i>Prunus amygdalus</i>	ROSE FAMILY Almond
<i>RUBIACEAE</i> <i>Galium</i> sp.	MADDER FAMILY Bedstraw
<i>SALICACEAE</i> <i>Populus fremontii</i> ssp. <i>fremontii</i>	WILLOW FAMILY Fremont cottonwood
<i>TAMARICACEAE</i> <i>Tamarix</i> sp.	TAMARISK FAMILY Tamarisk
<i>URTICACEAE</i> <i>Urtica dioica</i>	NETTLE FAMILY Stinging nettle

**Table 8.2-6
TPP Summary of LORS and Compliance**

Jurisdiction	Authority	Administering Agency	AFC Conformance Section
Federal	Endangered Species Act of 1973; 16 USC § 1531 et. seq.; 50 CFR Parts 17 and 222	USFWS	8.2.8
State	California Endangered Species Act of 1984; California Fish & Game Code §§2050-2091	CDFG	8.2.8
State	California Fish & Game Code §1603	CDFG	8.2.8
State	California Environmental Quality Act: California Public Resources Code §21000 et. seq.	CEC	8.2.8

FIGURES