

E.1.2 Biological Resources

E.1.2.1 Regional Setting for All Southwest Powerlink Alternatives

“SWPL Alternatives” are defined in Section E.1. They are located in the Colorado Desert and South Coast bioregions.

Vegetation Communities

The SWPL Alternatives would cross desert scrub, chaparral, coastal and montane scrub, grassland, oak woodland and forest, riparian scrub, woodland, and forest habitats. Vegetation communities are described in Section D.2.1.2.2. Detailed vegetation mapping for the SWPL Alternatives can be found in Appendix 8J. A generalized vegetation map for all of the SWPL Alternatives is presented in Figure E.1.2-1.

Special Status Plant Species Overview. A list of special status plant species with potential to occur in the SWPL Alternatives was created based on published literature, sources readily available on the Internet, California Natural Diversity Database (CNDDDB) records searches, United States Department of Agriculture (USDA) Forest Service records searches (USDA, 2007), State and federal species lists, and habitat field surveys. For the SWPL Alternatives, special-status plant species are defined as plants that:

- Have been designated as either rare, threatened, or endangered by CDFG or USFWS, and are protected under either the FESA or CESA;
- Have been designated as California Native Plant Society (CNPS) List 1A (presumed extinct), List 1B (rare, threatened, or endangered in California and elsewhere; eligible for State listing), or List 2 (rare, threatened, or endangered in California but more common elsewhere; eligible for State listing);
- Are designated as sensitive species by the BLM; and/or
- Are designated as sensitive species by the USDA Forest Service for the Cleveland National Forest; and/or
- Species that otherwise meet the definition of rare, threatened, or endangered under the California Environmental Quality Act.

Table E.1.2-1 (at the end of this section) presents a description of the species that could be affected along the SWPL Alternatives. For each species, its status and habitat requirements are described, as well as the likelihood of its occurrence along each of the four SWPL Alternatives.

Special Status Wildlife Species Overview. A list of special status wildlife species with potential to occur in the SWPL Alternatives was created based on published literature and sources readily available on the Internet, CNDDDB records searches, USDA Forest Service records searches (USDA, 2007), State and federal species lists, and habitat field surveys. For the SWPL Alternatives, special-status wildlife species are defined as wildlife that:

- Have been designated as either rare, threatened, or endangered by CDFG or USFWS, and are protected under either the FESA or CESA;
- Are identified by CDFG as species of concern or fully protected species and includes fish and wildlife species that do not have State or federal threatened or endangered status but may still be threatened with extinction;

- Are designated as sensitive species by the BLM;
- Are designated as sensitive species by the USDA Forest Service for the Cleveland National Forest;
- Species that are San Diego County sensitive (i.e., Hermes copper butterfly [*Lycaena hermes*] for this project); and/or
- Species that otherwise meet the definition of rare, threatened, or endangered under the California Environmental Quality Act.

Each species, its status, and habitat requirements are presented in Table E.1.2-2 (at the end of this section).

Cleveland National Forest Land Management Plan

The revised Land and Resource Management Plans (Forest Plan) for the southern California national forests describe the strategic direction at the broad program-level for managing the land and its resources over the next 10 to 15 years. The Land Management Plan identifies forest goals and desired conditions for resources. Goals applicable to this analysis of biological resources for this project include:

- Goal 2.1 (Reverse the trend of increasing loss of natural resource values due to invasive species)
- Goal 6.2 (Provide ecological conditions to sustain viable populations of native and desired nonnative species) (USDA, 2005).

The Cleveland National Forest (CNF) Land Management Plan states that one of the desired conditions is that habitats for federally listed species are conserved and listed species are recovered or are moving toward recovery (USDA, 2005). Habitats for sensitive species and other species of concern shall be managed to prevent downward trends in populations or habitat capability, and to prevent federal listing. Part 3 of the Land Management Plan (p. 11) indicates that when reviewing new projects in riparian areas, a 5-step Project Screening Process for Riparian Conservation Areas shall be applied, which is discussed in more detail below (USDA, 2005). Active and inactive raptor nest areas shall be protected and, when appropriate, a no-disturbance buffer around active nest sites will be required from nest-site selection to fledging (Part 3, p. 7). Provisions for raptor safety must be included when issuing authorizations for new powerlines (Part 3, p. 9). Provisions to minimize the presence or spread of invasive non-native plants must be implemented (Part 1, p. 32). To prevent the introduction and control invasive species, ground disturbance shall be limited to the minimum area necessary during project activities and a Noxious Weed Management Strategy shall be implemented (Part 3, p. 100). CNF will actively pursue status determination and long-term protection for sensitive plants. Riparian zone standards and guidelines apply to aquatic, wetland, and upland riparian zones for areas above the high water mark whether mapped or not, and a 100-foot buffer zone will be allotted to all bodies of water. All activities shall not result in more than 30 percent reduction in the potential ground cover vegetation within riparian zones at any given time. Construction and reconstruction of existing facilities can occur in a riparian zone only when any unacceptable conflicts or impacts will be mitigated, and riparian-dependent resources can be protected. New roads for utility corridors including within riparian areas will only be allowed where necessary. Utility companies will adhere to the practices recommended in the most current version of "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1981."

Figure E.1.2-1. Biological Resources Overview: Southwest Powerlink Alternatives
[CLICK HERE TO VIEW](#)

Riparian Conservation Areas

Part 2, Appendix B of the Forest Plan directs that the CNF manage Riparian Conservation Areas (RCAs) to maintain or improve conditions for riparian dependent resources (USDA, 2005). RCAs include aquatic and terrestrial ecosystems and lands adjacent to perennial, intermittent, and ephemeral streams, as well as around meadows, lakes, reservoirs, ponds, wetlands, vernal pools, seeps, springs and other bodies of water. Riparian dependent resources are those natural resources that owe their existence to the area, such as fish, amphibians, reptiles, fairy shrimp, aquatic invertebrates, plants, birds, mammals, soil and water quality (USDA, 2005).

Part 3, Appendix E of the Forest Plan identifies a Five-Step Screening Process for RCAs that is used to ensure that RCAs are recognized, emphasized, and managed appropriately during new project planning and implementation (USDA, 2005). The five-step process identifies the methodologies utilized to identify the appropriate buffer distance for each RCA:

1. The width of the RCA is defined based on the type of stream (e.g., 328 feet (100 meters) on each side of perennial streams).
2. Additional protective RCA widths may be needed if individual species or suites of species are present
3. The project must be screened against the riparian and aquatic desired conditions and recovery plans for federally listed riparian species to determine if the project is either neutral or will move the area closer towards the desired conditions. At this point, the project may move forward to Step 4 or be denied, modified, or require the completion of a land management plan amendment.
4. The project would be screened against the forest plan riparian management objectives to ensure the project incorporates one or more of the listed strategies. One component of this is to evaluate physical and biological characteristics of the stream.
5. The project applicant is required to reference the Forest Service handbook for specific guidance regarding the management tactics to apply when conducting activities within RCAs.

Management Indicator Species (MIS)

The National Forest Management Act of 1982 requires that the USDA Forest Service address Management Indicator Species (MIS) during the development of forest plans (USDA, 2005). Twelve MIS were selected for habitat types and issues shown below and their overall population status and trends on the CNF will be monitored by the USDA Forest Service along with other indicators of progress toward achieving desired conditions for biological resources.

On the Cleveland National Forest (CNF) the following 12 indicator species and associated habitat types/management issues have been assigned to measure management success. A MIS report was prepared and included an analysis project impacts on MIS for the SRPL Alternatives that occur on CNF lands (Appendix 8M).

- Mountain lion – Fragmentation
- Arroyo toad – Aquatic habitat
- Engelmann oak – Oak regeneration
- Valley oak – Oak regeneration
- Coulter pine – Coulter pine forest
- California black oak – Montane conifer forest
- Mule deer – Healthy diverse habitats
- Song sparrow – Riparian habitat
- Blue oak – Oak regeneration
- Bigcone douglas fir – Bigcone douglas fir forest
- California spotted owl – Montane conifer forest
- White fir – Montane conifer forest

Mountain lion (fragmentation). The mountain lion (*Puma concolor*) is selected as an MIS to monitor the effects of forest activities and uses on a landscape-level scale to determine effects of habitat fragmentation and habitat linkages (USDA, 2005). The general health of this species largely depends on current deer populations and this solitary animal prefers large areas of undisturbed habitat that supports a stable prey base. Populations of this species on CNF lands are low primarily because this species requires large home ranges and has limited social interaction (USDA, 2005). The greatest concern to this species is loss of habitat and connectivity between home ranges. Suitable range for this species occurs in each of the SWPL Alternatives and this species is expected to be present throughout the SWPL Alternatives.

Mule deer (healthy diverse habitats). Mule deer are common on the CNF and the majority of the SWPL Alternatives on NFS Lands support habitat that could be utilized by this species. These animals occupy a wide range of habitats but prefer to forage and shelter near riparian areas, meadows, open scrub, early-successional chaparral, and oak woodlands. While these species occupy most habitats, late successional chaparral typically is not preferred for foraging. Mule deer on NFS lands use dense vegetation for cover and forage mainly in the open sagebrush and edge habitats that occur along the route. These species are able to move along an elevational gradient to maximize use of climatic conditions and forage availability during different seasons. Movement usually occurs in the fall and spring and roughly the same routes are used by the same herds year after year. On the CNF, the current deer herd is believed to include approximately 2,230 mule deer (USDA, 2005). Mule deer have been chosen as an indicator of the effectiveness of forest management strategies on landscape patterns in chaparral age class diversity (USDA, 2005). This species was observed in 2007 throughout all of the SWPL Alternatives that cross NFS lands.

Arroyo toad (aquatic habitat). No designated critical habitat for this species is located in San Diego County. The arroyo toad occurs in semi-arid regions including valley-foothill, desert riparian, and desert wash habitat. This species breeds in shallow, gravelly streams, and rivers with sandy banks that typically contain willows, cottonwoods, and sycamores, and it has been known to utilize upland habitat within 2000 meters (6,562 feet) of breeding habitat for foraging and wintering (USFWS, 2005b). The arroyo toad was chosen as an indicator of the health of aquatic habitat on the CNF.

This species was found in the San Diego River, upstream of the El Capitan Reservoir, and in Cottonwood Creek, downstream of the confluence with Kitchen Creek, during focused surveys completed in 2007. It is also known to occur in Kitchen Creek, La Posta Creek, Potrero Creek, Pine Valley Creek, Peterson Creek, Sweetwater River, and Cedar Creek on NFS lands (USFS, 2007; CDFG CNDDDB, 2007). Suitable habitat for this species is also present in Horse Canyon and in King, Conejos, Boulder Creeks on CNF lands.

Song sparrow (riparian habitat). The song sparrow was selected as a MIS for riparian areas because its abundance is expected to be responsive to management actions and to indicate trends in the status of the riparian biological community, particularly bird species. The primary threat to the song sparrow and other riparian birds is the destruction of habitat, loss of water in riparian areas, and human disturbance (USDA, 2005). Long term monitoring of song sparrow populations will provide a measure of forest management success in increasing the quality of riparian areas. This species was found in nearly all of the riparian habitats during 2007 surveys on CNF lands.

Engelmann oak (oak regeneration). Engelmann oak, a deciduous species, has a small natural range and is the only species of subtropical white oaks in California (USDA, 2005). This species most commonly occurs in savannas with grassland understory on valley floors, foothill slopes and raised stream terraces within riparian corridors in the northwestern Peninsular Range in San Diego and Orange

Counties (Sawyer and Keeler-Wolf, 1995). This MIS was chosen as an indicator of oak regeneration within the CNF. Monitoring of this species, the saplings in particular, will measure the success of the forest management strategies (USDA, 2005). Engelmann oaks were found as scattered individuals and as Engelmann oak woodland on CNF lands on the I-8, Route D, and Modified Route D Alternatives.

The following MIS species are not discussed because they are not expected to be affected by the SWPL Alternatives: Blue oak (oak regeneration), valley oak (oak regeneration), bigcone Douglas-fir (bigcone Douglas-fir forest), coulter pine (coulter pine forest), California spotted owl (montane conifer forest), California black oak (montane conifer forest), and white fir (montane conifer forest).

Vegetation Management

The California Department of Forestry and Fire Protection, the Federal Energy Regulatory Commission, the North American Electric Reliability Council, and the CPUC regulate clearance requirements between transmission lines and vegetation. Trees either need to be trimmed or removed based on the transmission line height above the ground (some lines sag more than others). If more than 25 to 30 percent of a tree's crown must be trimmed, then the entire tree is removed. The number and species of trees and shrubs that need to be removed was determined by SDG&E following a sampling strategy intended to be robust enough to extrapolate numbers from other areas of similar vegetation. Areas chosen by SDG&E for sampling were within the SWPL Alternatives' ROW and initially based on aerial photo imagery that indicated some variation in vegetation density. Sampled areas were also selected by SDG&E considering representative, tree-dominated vegetation communities (e.g., oak woodlands). Tree data collected by SDG&E in the field included tree species and trunk diameter at breast height. It is anticipated that many trees that occur in canyons would be spanned by the project and would not need trimming or removal. Since SDG&E did not determine which spans would avoid trees, all were considered to impact trees. This approach likely contributed to an overestimation of the impacts. The final design of the project, specifically tower locations, would have a significant effect on the ultimate number of trees (and shrubs) that would require removal or trimming.

Impacts Common to All Alternatives

Several general impacts to biological resources would occur with the SWPL Alternatives, and impact significance would be the same as for the Proposed Project due to their similar ecology and the wide-ranging nature of the impacts. These impacts are Impact B-3, Impact B-4, Impact B-6, and Impact B-8. For these impacts, the mitigation measures presented for the Proposed Project would also be required for this alternative. Brief descriptions of the impacts have been included in this section and detailed discussion of each of these impacts is presented in the analysis of Biological Resources for the Proposed Project in Sections D.2.5 through D.2.16.

Impact B-3: Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species (Class II)

Implementation of BIO-APM-23 would ensure that the Proposed Project and alternatives would only remove the minimum amount of vegetation necessary for the construction of structures and facilities and that topsoil located in areas containing sensitive habitat with little no non-native species would be conserved during excavation and reused as cover on temporarily disturbed areas to facilitate re-growth of native vegetation and hinder the establishment of non-native species should non-native seeds be present in the temporarily disturbed areas. Implementation of BIO-APM-25 would ensure that disturbed

soils would be revegetated with an appropriate seed mix that does not contain invasive, non-native plant species.

Although the reuse of topsoil can be effective, it may not be appropriate if there are any non-native species present. Furthermore, it is not always possible to obtain seed mixes that are absolutely free of invasive, non-native plant (weed) species. Therefore, the Proposed Project and alternatives would have a substantial adverse effect on riparian or other sensitive vegetation communities if weed species are introduced (Significance Criterion 2.b.), and the impact is considered significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-2a, and B-3a that include habitat restoration/compensation, a pre-construction weed inventory, and a Weed Control Plan.

Mitigation Measures for Impact B-3: Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-3a** Prepare and implement a Weed Control Plan.

Impact B-4: Construction activities would create dust that may result in degradation of vegetation (Class III)

Construction activities such as grading, tower footing excavation, and driving of heavy equipment on unpaved roadways would result in increased levels of blowing dust that may settle on surrounding vegetation. Increased levels of dust on plants can significantly impact plants' photosynthetic capabilities and degrade the overall vegetation community. Implementation of BIO-APM-3 would ensure that, in addition to regular watering to control fugitive dust created during clearing, grading, earth-moving, excavation, or other construction activities that could interfere with plant photosynthesis, a 15-mile-per-hour speed limit would be observed on dirt access roads to reduce dust. This would ensure that the Proposed Project and the alternatives would not result in a substantial adverse effect on riparian or other sensitive vegetation communities (Significance Criterion 2.b.) through the spread of fugitive dust (Significance Criterion 2.c.) and would render the potential impact from dust to a level of adverse but less than significant (Class III). No mitigation is required.

Impact B-6: Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality (Class III)

Direct mortality of small mammals; reptiles; eggs and nestlings of bird species with small, well-hidden nests and other less mobile species would likely occur during construction of the Proposed Project and the alternatives. This action would result primarily during habitat clearing, earth removal, grading, digging, and equipment movement. More mobile species like birds and larger mammals are expected to disperse into nearby habitat areas during construction.

Noise, dust, and visual disturbances from increased human activity, and exhaust fumes from heavy equipment used during construction would result in habitats adjacent to the construction zone being temporarily unattractive to wildlife. Construction would affect wildlife in adjacent habitats by interfering with breeding or foraging activities, altering movement patterns, or causing animals to temporarily avoid areas adjacent to the construction zone. Nocturnally active (i.e., active at night) wildlife would be affected less by construction than diurnally active (i.e., active during the day) species since construction would occur primarily during daylight hours (there may be some exceptions if construction occurs in the desert during the summer months).

Wildlife species are most vulnerable to disturbances during their breeding seasons. These disturbances would result in nest, roost, or territory abandonment and subsequent reproductive failure if these disturbances were to occur during an affected species' breeding season.

The use of access roads by construction/maintenance vehicles would result in accidental road-killed wildlife if these species were to be on the roads when they are used. Diurnally active reptiles and small mammals such as desert cottontails and California ground squirrels are the most likely to be subject to vehicle-caused mortality.

All of these impacts to general wildlife from the Proposed Project and alternatives would be significant according to Significance Criterion 4.a. (prevent access to foraging habitat, breeding habitat, water sources, or other areas necessary for survival and reproduction) and Significance Criterion 4.d. (adversely affect animal behavior through increased noise or nighttime lighting); however, with implementation of the following APMs, as set forth in Table D.2-5, the impacts would be adverse but less than significant (Class III), and no mitigation is required. Impacts to listed or sensitive wildlife species are addressed separately for each alternative below.

These APMs would be implemented as part of the Proposed Project and alternatives to address impacts to wildlife from construction activities, including the use of access roads: BIO-APM-2 through BIO-APM-4, BIO-APM-7, BIO-APM-9, BIO-APM-16, BIO-APM-24, BIO-APM-26, and BIO-APM-29. These APMs include personnel training, restricting work to within predetermined limits of construction, prohibiting litter, clearing brush and trimming trees outside the breeding season, covering construction holes/trenches overnight and inspecting them for wildlife prior to filling, sloping excavations to provide a wildlife escape route, reducing construction night lighting, and keeping vehicle traffic to minimum volume and speed.

Impact B-8: Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act; Class II)

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing or possessing migratory birds is unlawful.

The following APMs would be implemented as part of the Proposed Project and alternatives to minimize or prevent potential loss of nesting birds: BIO-APM-2 through 6, BIO-APM-9, BIO-APM-16, BIO-APM-18, and BIO-APM-27. These APMs include personnel training, restricting work to within predetermined limits of construction, building roads at right angles to streambeds, complying with wildlife/habitat protection regulations, surveying for nests prior to clearing brush, trimming trees outside the nesting season, designing structures and access roads to avoid or minimize impacts, and removing existing raptor nests from structures outside the raptor breeding season. However, these APMs either do not define the breeding season dates or do not include dates that cover the entire breeding season.

Even with the APMs, the Proposed Project and alternatives would violate the Migratory Bird Treaty Act if it resulted in the killing of migratory birds or caused the destruction or abandonment of migratory bird nests and/or eggs (Significance Criterion 1.g). This could occur through the removal of vegetation and/or through vehicle and foot traffic or excessive noise associated with construction. Violation of the Migratory Bird Treaty Act is a significant impact that is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-8a. Wherever the mitigation measure set forth is more specific or restrictive than the APMs, the mitigation measure takes precedence.

Mitigation Measure for Impact B-8: Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act; Class II)

B-8a **Conduct pre-construction surveys and monitoring for breeding birds.**

E.1.2.2 Environmental Setting

The I-8 Alternative is located in the Colorado Desert and South Coast bioregions. This alternative is 92.7 miles long and would replace 131 miles of the Proposed Project. The first overhead segment would begin at the Imperial Valley Substation and would be approximately 71.5 miles. The alternative would be underground along Alpine Road for approximately 8 miles. The second overhead segment would be approximately 13 miles long. Approximately the first 35 miles of this alternative would consist primarily of desert scrub habitats, including Sonoran desert scrub, Sonoran creosote bush scrub, stabilized and partially stabilized desert sand dunes, desert dry wash woodland, desert pavement, badlands, Sonoran wash scrub, Sonoran mixed woody scrub, Sonoran mixed woody and succulent scrub, acacia scrub, semi-desert chaparral, and Peninsular juniper woodland and scrub. The predominant vegetation community along the remainder of the route is chaparral. Vegetation communities found along this alternative route are described in detail in Section D.2.1.2.2. Detailed vegetation mapping for the I-8 Alternative can be found in Appendix 8J. A generalized vegetation map for all of the SWPL Alternatives is presented in Figure E.1.2-1.

Since a formal delineation has not yet been conducted, the precise presence and extent of waters and wetlands at this time is unknown. However, the following vegetation communities that were identified during vegetation mapping along the alternative route are often jurisdictional: Sonoran wash scrub, mesquite bosque, mule fat scrub, southern willow scrub, southern cottonwood-willow riparian forest, southern riparian forest, and southern coast live oak riparian woodland.

Overview of Special Habitat Management Areas. The first 30 miles of the I-8 Alternative occurs almost entirely on BLM lands. The portion of the I-8 Alternative between approximately MP I8-51 and MP I8-71 occurs primarily on USFS lands. The remainder of the alternative traverses a variety of private and public lands. This alternative would cross the Yuha Basin ACEC, Campo Indian Reservation, La Posta Indian Reservation, and Guatay Mountain Research Natural Area. It would also pass adjacent to the Coyote Mountains Wilderness, Jacumba Wilderness, Table Mountain ACEC, Carrizo Gorge Wilderness, Existing Pine Creek Wilderness, Proposed Eagle Peak Wilderness Area, Proposed Guatay Mountain Research Natural Area, Guatay Mountain Critical Biological Area, Guatay Mountain Special Interest Area, Proposed Viejas Mountain Research Natural Area, Viejas Mountain Critical Biological Area, Viejas Indian Reservation, El Capitan Preserve, San Vicente Highlands, and Sycamore Canyon Preserve.

Designated Critical Habitat. The I-8 Alternative would cross Peninsular bighorn sheep (PBS) critical habitat in two areas: between MP I8-15.8 to MP I8 17.9 (Coyote Mountains) and between MP I8-22.8 and MP I8-30.4 (In-ko-pah Gorge). The I-8 Alternative is located within Quino checkerspot butterfly (QCB) critical habitat (Unit 4 – Jacumba Unit) between MP I8-20 and MP I8-25; this unit supports the Jacumba Occurrence Complex, a population center that occurs in a unique high-desert region of juniper woodlands (USFWS, 2002). The I-8 Alternative would cross a portion of final critical habitat for coastal California gnatcatcher (Unit 1 – San Diego MSCP) between MP I8-70 and MP I8-72.

Special Status Plant Species. Table E.1.2-1 contains the status information and habitat requirements for special status plant species.

One listed plant species (State listed as rare) was observed along the I-8 Alternative in 2007: Orcutt's brodiaea. Two listed species were assumed to be present where the I-8 Alternative would cross USDA Forest Service-modeled habitat (USDA, 2007): San Diego thorn-mint and San Bernardino bluegrass.

- San Diego thorn-mint (assumed present)
- San Bernardino bluegrass (assumed present)
- Orcutt's brodiaea

The following non-listed sensitive plants were observed along the I-8 Alternative in 2007:

- Delicate clarkia
- San Diego sunflower

The following three federal and/or State listed as rare, threatened, or endangered plant species have a moderate to high potential to occur within the vicinity of the I-8 Alternative. Although the Spring 2007 rare plant surveys for this species were negative, the species may occur within the alignment due to the fact that the surveys were conducted during a year of very low rainfall.

- Dunn's mariposa lily
- Dehesa nolina
- Gander's ragwort

The following 40 non-listed, sensitive plant species have a moderate to high potential to occur within the vicinity of the I-8 Alternative:

- Peninsular manzanita
- Jacumba milk-vetch
- San Diego milk-vetch
- Ayenia
- Payson's jewel-flower
- Lakeside ceanothus
- Long-spined spineflower
- Tecate cypress
- Tecate tarplant
- Palmer's goldenbush
- Vanishing wild buckwheat
- Rock nettle
- Sticky geraea
- Mission Canyon bluecup
- San Diego gumplant
- Ramona horkelia
- Mexican hulsea
- Slender-leaved ipomopsis
- Robinson's pepper-grass
- Lemon lily
- Parish's meadowfoam
- Desert beauty
- Orcutt's linanthus
- Pygmy lotus
- Mountain Springs bush lupine
- Creamy blazing star
- Felt-leaved monardella
- Hall's monardella
- Baja navarretia
- Chaparral nolina
- Moreno currant
- Southern skullcap
- Desert spikemoss
- Hammitt's clay-cress
- Laguna Mountains jewel-flower
- Southern jewel-flower
- San Bernardino aster
- Parry's tetracoccus
- Velvety false lupine
- Coastal triquetrella

Special Status Wildlife Species. Table E.1.2-2 contains the status information and habitat requirements for special status wildlife species.

One listed wildlife species, willow flycatcher, was observed along the I-8 Alternative. The willow flycatcher was determined to be a migrant and the subspecies was not determined. An additional listed

wildlife species, arroyo toad, was not observed, but was assumed to be present because dry weather conditions prevented surveys from being conducted.

- Arroyo toad (assumed presence)
- Willow flycatcher (migrant)

The following ten non-listed sensitive wildlife species were observed along the I-8 Alternative in 2007:

- Coast (San Diego) horned lizard
- Cooper's hawk
- Golden eagle
- Loggerhead shrike
- Northern harrier
- Southern California rufous-crowned sparrow
- Yellow warbler
- White-tailed kite
- Yellow-breasted chat
- San Diego black-tailed jackrabbit

The following eight federal and/or State listed as rare, threatened, or endangered wildlife species, or highly sensitive wildlife species, have a moderate to high potential to occur within the vicinity of the I-8 Alternative:

- Quino checkerspot butterfly
- Barefoot banded gecko
- Flat-tailed horned lizard
- Swainson's hawk
- Southwestern willow flycatcher
- Coastal California gnatcatcher
- Least Bell's vireo
- Peninsular bighorn sheep

The following 48 non-listed sensitive wildlife species have a moderate to high potential to occur along the I-8 Alternative:

- Hermes copper butterfly
- Coast Range newt
- Western spadefoot
- Large-blotched salamander
- Coast patch-nosed snake
- Coastal rosy boa
- Colorado Desert fringe-toed lizard
- Coronado skink
- Red-diamond rattlesnake
- Belding's orange-throated whiptail lizard
- San Diego mountain kingsnake
- San Diego ringneck snake
- Silvery legless lizard
- Two-striped garter snake
- Bell's sage sparrow
- California horned lark
- Coastal cactus wren
- Ferruginous hawk (wintering)
- Purple martin
- Sharp-shinned hawk (wintering)
- Tri-colored blackbird
- White-faced ibis
- American badger
- Colorado Valley woodrat
- Dulzura pocket mouse
- Fringed myotis
- Long-eared myotis
- Long-legged myotis
- Jacumba little pocket mouse
- Mexican long-tongued bat
- Northwestern San Diego pocket mouse
- Pallid bat
- Pallid San Diego pocket mouse
- Pocketed free-tailed bat
- Ringtail
- San Diego desert woodrat

- Grasshopper sparrow
- Gray vireo
- Le Conte’s thrasher
- Least bittern
- Long-eared owl
- Prairie falcon
- Small-footed myotis
- Southern grasshopper mouse
- Townsend’s big-eared bat
- Western mastiff bat
- Western red bat
- Yuma myotis

E.1.2.3 Environmental Impacts and Mitigation Measures

Table E.1.2-3 summarizes the biological resource impacts of the Interstate 8 Alternative.

Table E.1.2-3. Impacts Identified – Alternatives – Biology

Impact No.	Description	Impact Significance
Interstate 8 Alternative (including I-8 Substation)		
B-1	Construction activities would result in temporary and permanent losses of native vegetation	Class I, II, and III
B-2	Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality	Class II
B-3	Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species	Class II
B-4	Construction activities would create dust that may result in degradation of vegetation	Class III
B-5	Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants	Class I
B-6	Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality	Class III
B-7	Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (includes impacts B-7A through B-7O for individual wildlife resources)	Class I, II, No Impact
B-8	Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act)	Class II
B-9	Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites	Class II, No Impact
B-10	Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species	No impact (electrocution), I, II (collision)
B-11	Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers	Class II
B-12	Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality	Class I, II, III
ALL Options		
B-1	Construction activities would result in temporary and permanent losses of native vegetation	Class I, II, and III
B-2	Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality	Class II
B-3	Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species	Class II
B-4	Construction activities would create dust that may result in degradation of vegetation	Class III
B-5	Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants	Class I

Table E.1.2-3. Impacts Identified – Alternatives – Biology

Impact No.	Description	Impact Significance
B-6	Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality	Class III
B-7	Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (includes impacts B-7D through B-7K for individual wildlife resources)	Class I, II, No Impact
B-8	Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act)	Class II
B-9	Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites	Class II, No Impact
B-10	Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species	No impact (electrocution) I, II (collision)
B-11	Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers	Class III
B-12	Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality	Class II, III

This section presents a discussion of impacts and mitigation measures for the I-8 Alternative, including the I-8 substation, as a result of construction, operation, and maintenance of the project.

Impacts and Mitigation Measures for Interstate 8 Alternative (including the Interstate 8 Substation)

Impacts and the required mitigation measures that differ from the Proposed Project are addressed below.

Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation (Class I for sensitive vegetation, RCAs, vegetation management, and type conversion; Class III for non-sensitive vegetation)

Construction of the I-8 Alternative would cause both temporary (during construction from vegetation clearing) and permanent (displacement of vegetation with project features such as towers and permanent access roads) impacts to vegetation communities (see Table E.1.2-4). Construction activities would also result in the alteration of soil conditions, including the loss of native seed banks and changes in topography and drainage, such that the ability of a site to support native vegetation after construction is impaired. Desert ecosystems are especially sensitive to ground disturbance and can take decades to recover, if at all.

Table E.1.2-4 presents the impacts to vegetation communities, mitigation ratios, and mitigation acreages for the I-8 Alternative. [These impacts and the corresponding mitigation requirements listed in Table E.1.2-4 are based on preliminary project design and would likely be revised during final project design.](#) The communities listed in Table E.1.2-4 are described in detail in Section D.2.1.2.2. The mitigation ratios for this alternative are the same as those for the Proposed Project, based on the rationale described in Section D.2.5.1.

The following APMs, as set forth in Table D.2-5, would be implemented to avoid or minimize impacts to vegetation communities: BIO-APM-1 and 2, BIO-APM-4 through BIO-APM-6, **BIO-APM-16**, BIO-APM-17, BIO-APM-20, BIO-APM-23, and BIO-APM-25. These APMs include avoiding or compensating impacts to sensitive vegetation communities, personnel training, restricting work to within predetermined limits of construction, limiting construction of access roads, minimizing impacts by mowing vegetation or

leaving it in place instead of clearing it (where possible), conserving and reusing sensitive habitat topsoil, and revegetating with appropriate seed mixes.

Table E.1.2-4. Impacts to Vegetation Communities and Required Mitigation – Interstate 8 Alternative

Vegetation Communities	Permanent Impacts			Temporary Impacts				Total Offsite Mitigation
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration	Offsite Mitigation	
Non-Native Vegetation, Developed Areas, and Disturbed Habitat								
Developed	7.50	0	0.00	21.74	0	0.00	0.00	0.00
Disturbed habitat	40.42	0	0.00	43.25	0	0.00	0.00	0.00
Intensive agriculture – dairies, nurseries, chicken ranches	0.00	0	0.00	15.51	0	0.00	0.00	0.00
Extensive agriculture – field/pasture, row crops	0.94	0	0.00	40.80	0	0.00	0.00	0.00
Unvegetated habitat-badlands	14.27	0	0.00	27.20	0	0.00	0.00	0.00
Unvegetated habitat-badlands, disturbed	0.45	0	0.00	0.19	0	0.00	0.00	0.00
Unvegetated habitat-desert pavement	9.10	0	0.00	4.94	0	0.00	0.00	0.00
Unvegetated habitat-desert pavement, disturbed	0.50	0	0.00	0.18	0	0.00	0.00	0.00
Subtotal	73.18	—	0.00	153.81	—	0.00	0.00	0.00
Desert Scrub and Dune Habitats								
Desert saltbush scrub	0.53	2:1	1.06	0.19	2:1	0.19	0.19	1.25
Sonoran creosote bush scrub	34.36	2:1	68.72	119.75	2:1	119.75	119.75	188.47
Sonoran creosote bush scrub – disturbed	2.67	2:1	5.34	11.69	2:1	11.69	11.69	17.03
Sonoran creosote bush scrub – open	0.00	2:1	0.00	0.00	2:1	0.00	0.00	0.00
Sonoran desert scrub	2.69	2:1	5.38	1.11	2:1	1.11	1.11	6.49
Sonoran desert mixed scrub	14.77	2:1	29.54	3.72	2:1	3.72	3.72	33.26
Sonoran desert mixed scrub-disturbed	0.00	2:1	0.00	0.00	2:1	0.00	0.00	0.00
Sonoran mixed woody scrub	6.22	2:1	12.44	6.53	2:1	6.53	6.53	18.97
Sonoran mixed woody scrub – disturbed	0.80	2:1	1.60	0.39	2:1	0.39	0.39	1.99
Sonoran mixed woody and succulent scrub	9.07	2:1	18.14	11.64	2:1	11.64	11.64	29.78
Sonoran wash scrub	2.36	2:1	4.72	0.55	2:1	0.55	0.55	5.27
Stabilized and partially stabilized desert sand dunes – disturbed	0.85	2:1	1.70	0.00	2:1	0.00	0.00	1.70
Subtotal	74.32	—	148.64	155.57	—	155.57	155.57	304.21
Coastal and Montane Scrub Habitats								
Big sagebrush scrub	0.69	1.5:1	1.04	2.20	1:1	2.20	0.00	1.04
Coastal sage scrub – inland form	1.58	1.5:1	2.37	7.41	1:1	7.41	0.00	2.37
Coastal sage scrub – inland form – disturbed	0.09	1.5:1	0.14	0.00	1:1	0.00	0.00	0.14
Coastal sage-chaparral scrub	0.38	1.5:1	0.57	14.42	1:1	14.42	0.00	0.57

Table E.1.2-4. Impacts to Vegetation Communities and Required Mitigation – Interstate 8 Alternative

Vegetation Communities	Permanent Impacts			Temporary Impacts				Total Offsite Mitigation
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration	Offsite Mitigation	
Coastal sage-chaparral scrub – disturbed	0.15	1.5:1	0.23	0.03	1:1	0.03	0.00	0.23
Diegan coastal sage scrub	0.59	1.5:1	0.89	14.22	1:1	14.22	0.00	0.89
Diegan coastal sage scrub – burned	12.85	1.5:1	19.28	7.88	1:1	7.88	0.00	19.28
Diegan coastal sage scrub – disturbed	3.42	1.5:1	5.13	4.40	1:1	4.40	0.00	5.13
Subtotal	19.75	—	29.65	50.56	—	50.56	0.00	29.65
Grasslands and Meadows								
Alkali meadow	0.00	2:1	0.00	0.00	1:1	0.00	0.00	0.00
Native grassland	0.24	2:1	0.48	0.02	1:1	0.02	0.00	0.48
Non-native grassland	31.58	1:1	31.58	37.36	1:1	37.36	0.00	31.58
Meadow	0.00	2:1	0.00	0.00	1:1	0.00	0.00	0.00
Valley needlegrass grassland	0.24	2:1	0.48	0.18	1:1	0.18	0.00	0.48
Valley needlegrass grassland – disturbed	0.01	2:1	0.02	0.06	1:1	0.06	0.00	0.02
Wildflower field – disturbed	0.06	2:1	0.12	0.00	1:1	0.00	0.00	0.12
Subtotal	32.13	—	32.68	37.62	—	37.62	0.00	32.68
Chaparrals								
Chamise chaparral	27.52	1:1	27.52	23.00	1:1	23.00	0.00	27.52
Chamise chaparral – burned	4.34	1:1	4.34	6.00	1:1	6.00	0.00	4.34
Northern mixed chaparral	95.27	1:1	95.27	82.28	1:1	82.28	0.00	95.27
Northern mixed chaparral – burned	4.88	1:1	4.88	25.85	1:1	25.85	0.00	4.88
Northern mixed chaparral – disturbed	1.87	1:1	1.87	1.87	1:1	1.87	0.00	1.87
Red shank chaparral	6.78	1:1	6.78	4.09	1:1	4.09	0.00	6.78
Scrub oak chaparral	2.08	1:1	2.08	1.58	1:1	1.58	0.00	2.08
Semi-desert chaparral	14.99	1:1	14.99	7.13	1:1	7.13	0.00	14.99
Semi-desert chaparral – disturbed	0.14	1:1	0.14	0.75	1:1	0.75	0.00	0.14
Southern mixed chaparral	0.43	1:1	0.43	4.50	1:1	4.50	0.00	0.43
Southern mixed chaparral – burned	24.08	1:1	24.08	17.80	1:1	17.80	0.00	24.08
Southern mixed chaparral – disturbed	1.87	1:1	1.87	0.48	1:1	0.48	0.00	1.87
Subtotal	184.25	—	184.25	175.33	—	175.33	0.00	184.25
Woodlands and Forests								
Coast live oak woodland	42.60	23:1	85.20	25.41	2:1	25.41	25.41	110.61
Coast live oak woodland – burned	0.12	23:1	0.24	0.00	2:1	0.00	0.00	0.24
Engelmann oak woodland	0.14	23:1	0.28	0.00	2:1	0.00	0.00	0.28
Peninsular juniper woodland and scrub	0.95	2:1	1.90	0.34	1:1	0.34	0.00	1.90
Subtotal	43.81	—	87.62	25.75	—	25.75	25.41	113.03

Table E.1.2-4. Impacts to Vegetation Communities and Required Mitigation – Interstate 8 Alternative

Vegetation Communities	Permanent Impacts			Temporary Impacts				Total Offsite Mitigation
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration	Offsite Mitigation	
Herbaceous Wetlands, Freshwater, and Streams								
Freshwater	0.00	3:1	0.00	0.00	2:1	0.00	0.00	0.00
Subtotal	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Riparian Scrubs								
Mesquite bosque	0.06	3:1	0.18	0.03	2:1	0.03	0.03	0.21
Mule fat scrub	0.15	3:1	0.45	0.63	2:1	0.63	0.63	1.08
Southern willow scrub	0.10	3:1	0.30	0.46	2:1	0.46	0.46	0.76
Tamarisk scrub – disturbed	0.38	3:1	1.14	0.00	2:1	0.00	0.00	1.14
Subtotal	0.69	—	2.07	1.12	—	1.12	1.12	3.19
Riparian Forests and Woodlands								
Southern coast live oak riparian forest	0.06	3:1	0.18	0.00	2:1	0.00	0.00	0.18
Southern cottonwood-willow riparian forest	0.09	3:1	0.27	5.97	2:1	5.97	5.97	6.24
Southern riparian forest	0.11	3:1	0.33	0.00	2:1	0.00	0.00	0.33
Riparian woodland	0.21	3:1	0.63	0.11	2:1	0.11	0.11	0.74
Subtotal	0.47	—	1.41	6.08	—	6.08	6.08	7.49
GRAND TOTAL	428.60	—	486.32	605.84	—	452.03	188.18	674.50

Even with implementation of the APMs, however, impacts to sensitive vegetation communities would be significant according to Significance Criterion 2.a (substantial adverse effect on a riparian habitat or other sensitive natural community by temporarily or permanently removing it during construction, grading, clearing, or other activities). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence. Impacts to sensitive vegetation communities are not mitigable to less than significant levels (Class I) because adequate land may not be available to compensate for the impacts. Impacts to non-sensitive vegetation (i.e., non-native vegetation, developed areas, and disturbed habitat) would be adverse but less than significant (Class III), and no mitigation is required unless impacts occur in designated critical habitat for a federal listed species (i.e., only critical habitat with constituent elements of the species' habitat, and not developed land, for example) or in a FTHL MA or FTHL habitat outside an MA (see Impacts B-7A and B-7M). Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to sensitive vegetation communities.

Mitigation Measure B-1a includes mitigation ratios required by the various resource agencies, provides more specific information on the required habitat restoration plans, includes the BLM, CPUC, and USDA Forest Service as approving agencies, requires preparation of a habitat management plan, and requires a Property Analysis Record that will identify funding requirements for management of mitigation sites in perpetuity. Mitigation Measure B-1c requires biological monitoring.

Some of the vegetation communities impacted occur within preserves that are part of regional conservation plans. Impacts to these areas are significant according to Significance Criterion 6.a. (conflict with

the provisions of local, regional, or state habitat conservation plans and State Park policies/programs by placing development in preserves) and Significance Criterion 6.b. (impact biologically sensitive lands or preserves). The I-8 Alternative's consistency with applicable plans/policies/programs is discussed in Section D.16 (Policy Consistency).

Riparian Conservation Areas (RCAs). ~~Impacts to RCAs are not allowed on NFS lands, in accordance with the Forest Plan (USDA, 2005). The five-step screening process, as described in Section E.1.2.1, was used to identify RCAs along the I-8 Alternative. The RCA analysis, including the five-step screening process, is provided in Appendix 8Q.~~ The I-8 Alternative would impact RCAs (0.6 acres of permanent impacts and 0.2 acres of temporary impacts) through the construction of access roads, pull sites, staging areas. BIO-APM-2, BIO-APM-4 through 6, BIO-APM-16 through 18, BIO-APM-20, and BIO-APM-23 would be applied to minimize or avoid significant impacts to RCAs. Even with implementation of the APMs, however, the impacts would be considered significant and not mitigable (Class I) according to Significance Criteria 2 (substantial adverse effect on a riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the Wildlife Agencies) and 3.b. (failure to provide a wetland buffer adequate to protect the function and values of existing wetlands) if the final project could not be designed to avoid RCAs. Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to RCAs.

Vegetation Management (Loss of Trees). SDG&E has estimated based on preliminary project design that 307 non-native trees (9 acacia, 36 eucalyptus, 176 locust, 36 pine, and 50 tamarisk trees) and up to approximately 1,600 native trees (155 creosote, 746 desert willow, 120 ironwood, 135 mesquite, 1 elderberry, and 443 oak trees) would be removed to maintain proper clearance between vegetation and the transmission lines along the entire length of this alternative. With final project design, these estimates will likely be reduced. The loss of a native tree or shrub that contains an active bird nest would be a violation of the Migratory Bird Treaty Act and a significant impact, but one that is mitigable to less than significant levels (Class II). See discussion in Impact B-8 (Construction activities would result in a potential loss of nesting birds [violation of the Migratory Bird Treaty Act]) for how construction activities (including tree/shrub removal) would result in a potential loss of nesting birds and violation of the Migratory Bird Treaty Act. The loss of native trees and shrubs would be a significant impact (Class I) for these reasons:

- it can have a substantial adverse effect on candidate, sensitive, or special status species (Significance Criterion 1);
- it can have a substantial adverse effect on riparian habitat or other sensitive natural community (Significance Criterion 2);
- it can have a substantial adverse effect on federally protected water quality or wetlands (Significance Criterion 3);
- it can interfere with wildlife movement or the use of native wildlife nursery sites (Significance Criterion 4); and
- it can conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Significance Criterion 5; see discussion in Section D.16).

SDG&E has ~~stated~~ estimated based on preliminary project design that this alternative would require trimming of 198 non-native trees (acacia, brisbane box, eucalyptus, and pine) and up to approximately 168 native trees (10 willow and 159 oak trees). With final project design, these estimates will likely be reduced. The trimming of a native tree or shrub that contains an active bird nest would be a violation of

the Migratory Bird Treaty Act and a significant impact that is mitigable to less than significant levels (Class II). See discussion in Impact B-8 for how construction activities (including tree trimming) would result in a potential loss of nesting birds and violation of the Migratory Bird Treaty Act.

Trimming ~~up to~~ more than 30 percent of a native tree's crown would diminish the tree's value as wildlife habitat and could cause harm to the tree leading to its decline or death. Therefore, native tree trimming would be significant according to Significance Criteria 1, 2, 4, and 5 listed above. The loss and trimming of this large number of native trees is considered significant impacts that would not be mitigable to less than significant levels (Class I) because adequate mitigation land required by Mitigation Measure B-1a for restoration and/or acquisition may not be available. However, Mitigation Measure B-1a is required to reduce the impacts to the greatest extent possible.

Type Conversion. As discussed in Section D.15, the construction and operation of new transmission lines in areas with high fire risk could cause wildfires, and could reduce the effectiveness of fire fighting efforts. Fires cause direct loss of vegetation communities, wildlife habitat, and wildlife species. Although periodic fires are part of the natural ecosystem, fires burning too frequently can have significant long-term ecological effects such as degradation of habitat (temporal loss of habitat and non-native plant species invasion) and loss of special status species. The biodiversity of most of San Diego County southern California is uniquely adapted to low rainfall, rugged topography, and wildfires. However, fires have become more frequent with growth in the human population, creating a situation in which vegetation communities (and, therefore, habitats for plant and animal species) are changed dramatically and may not recover. Plants in the desert are not adapted to fire, and they sometimes take years or decades to re-establish in burned areas. Desert areas that are burned are more susceptible to invasion by non-native species, such as grasses or mustards, that can form a continuous cover of fine fuels that dry out in early summer. This cover of fine fuels makes the area more likely to burn again in the near future. Areas dominated by these species also often have a prolonged fire season because the fuels dry quick and earlier in the season.

This change in vegetation community is called "type conversion" and ~~can occur to any native vegetation community. When burned too frequently, vegetation communities are often taken over by highly flammable, weedy, non-native plant species that burn even more often and provides~~ minimal habitat value for native plant and animal species, especially those of special status. For example, the coastal California gnatcatcher is dependent primarily on coastal sage scrub vegetation which, if burned too many times, can convert to non-native grassland or disturbed habitat that would preclude its use by the gnatcatcher. Type conversion occurs when multiple disturbances allow the colonization of non-native plant species into a landscape previously dominated by native vegetation. When multiple disturbances, such as wildfires, occur at an intensity and frequency outside of the natural range of variability of a native ecosystem, these conditions tend to suppress regrowth of native vegetation and favor long-term dominance of non-native, early-successional plants. Because chaparral is typically dominated by non-sprouting obligate seeding species and requires a minimum time to develop an adequate seed bank for regeneration, this sensitive vegetation type is vulnerable to fires at intervals of less than 10 years. If the project were to cause a fire, or inhibit fighting of fires, and this leads to type conversion of sensitive vegetation communities, the impact would be significant according to Significance Criterion 1 (substantial adverse effect through habitat modification on any species identified as candidate, sensitive, or special status) and/or Significance Criterion 2 (substantial adverse effect on a riparian habitat or other sensitive natural community). Extensive mitigation for fire risk is presented in Section D.15. However, not all fires can be prevented. Although future fires may not cause type conversion in all instances, the impact must be considered significant because of the severity of potential habitat loss. This impact is not mitigable to less than significant levels (Class I). Implementation of the vegetation

management program (described above) would reduce the fire risk of the project, although not to a less than significant level. In addition, Mitigation Measure B-1k (Re-seed disturbed areas after a transmission line caused fire) would reduce the likelihood of type conversion from a project-caused fire, though not to a less than significant level.

Mitigation Measures for Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation

B-1a Provide restoration/compensation for affected sensitive vegetation communities. Mitigation ratios and mitigation acreages for the I-8 Alternative are provided in Table E.1.2-4.

B-1c Conduct biological monitoring.

B-1k Re-seed disturbed areas after a transmission line caused fire.

Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II)

Direct and/or indirect impacts to jurisdictional waters and possibly wetlands (i.e., areas regulated by the ACOE and Regional Water Quality Control Board RWQCB and/or CDFG) could occur from construction of the I-8 Alternative. Impacts to jurisdictional areas can not be clearly defined until a final route is selected that includes project-specific features and final engineering. At that time, a formal delineation would be conducted to determine those impacts so that SDG&E can apply for permits from the ACOE, Regional Water Quality Control Board (RWQCB), and CDFG. Since a formal delineation has not yet been conducted, the precise presence and extent of waters and wetlands at this time is unknown. However, the following vegetation communities identified during vegetation mapping for this alternative are often jurisdictional: Sonoran wash scrub, mesquite bosque, mule fat scrub, southern willow scrub, southern cottonwood-willow riparian forest, southern riparian forest, and southern coast live oak riparian woodland.

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent significant impacts to jurisdictional waters and wetlands: BIO-APM-1 and BIO-APM-2, BIO-APM-4, BIO-APM-5, BIO-APM-16, and BIO-APM-18. These APMs include avoiding or compensating impacts to jurisdictional waters and wetlands, personnel training, restricting work to within predetermined limits of construction, limiting construction of access roads, avoiding clear-cut tree removals in riparian areas if possible, building streambed crossings at right angles to streambeds, and restricting the length of access roads that parallel streambeds.

Even with implementation of the APMs, this alternative could have a significant impact on regulated jurisdictional areas according to Significance Criterion 3.a. (substantial adverse effect on water quality or wetlands as defined by the ACOE and/or CDFG). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence. These impacts would be considered significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1c and B-2a.

Mitigation Measures for Impact B-2: Construction activities result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality

B-1c Conduct biological monitoring.

B-2a Provide restoration/compensation for affected jurisdictional areas. See Table E.1.2-4

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I)

Listed or sensitive (special status) plant species impacts would result from direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during construction. Focused plant species surveys were conducted in spring/summer of 2007 only where ROE permission was granted. One listed (Orcutt's brodiaea [SR]) and two non-listed sensitive (San Diego sunflower and delicate clarkia) plant species were observed along the I-8 Alternative during 2007 (Appendix 8J-11 and 8J-14). Additionally, two listed species are assumed to be present based on USDA Forest Service modeled habitat (USDA, 2007): San Diego thorn-mint and San Bernardino bluegrass. However, as with the Proposed Project, the results of the surveys are inconclusive because the poor rainfall conditions may have prevented special status plants from germinating or resprouting so they could not be observed.

The following 43 special status plant species have moderate to high potential to occur along the alternative based on the habitats present and/or documented CNDDDB, USFWS, and USDA Forest Service records: Peninsular manzanita, Jacumba milk-vetch, San Diego milk vetch, ayenia, Dunn's mariposa lily, Payson's jewel-flower, Lakeside ceanothus, long-spined spineflower, Tecate cypress, Tecate tarplant, Palmer's goldenbush, vanishing wild buckwheat, rock nettle, sticky geraea, Mission Canyon bluecup, San Diego gumplant, Ramona horkelia, Mexican hulsea, slender-leaved ipomopsis, Robinson's peppergrass, lemon lily, Parish's meadowfoam, desert beauty, Orcutt's linanthus, pygmy lotus, Mountain Springs bush lupine, creamy blazing star, felt-leaved monardella, Hall's monardella, Baja navaretia, chaparral nolina, Dehesa nolina, Moreno currant, southern skullcap, desert spikemoss, Gander's ragwort, Hammitt's clay-cress, Laguna Mountains jewel-flower, southern jewel-flower, San Bernardino aster, Parry's tetracoccus, velvety false lupine, and coastal triquetrella. Five of these are federal and/or State listed: Dunn's mariposa lily (SR), Dehesa nolina (SE), and Gander's ragwort (SR). For more specific information about the special status plant species and their listing or sensitivity statuses, see Table E.1.2-1.

The following APMs, as set forth in Table D.2-5, would be implemented for this alternative to address potential impacts to listed or sensitive plant species or their habitats: BIO-APM-1 through 6, BIO-APM-8, BIO-APM-13, BIO-APM-18, and BIO-APM-22. These APMs include detailed surveys, avoidance or relocation/restoration or compensation (acquisition and preservation of land), personnel training, restricting work to within predetermined limits of construction, limiting construction of access roads, complying with wildlife/habitat protection regulations, clearly delineating plant population boundaries, notifying the Wildlife Agencies when such plants are to be removed in the work area, prohibiting the collection of plants, designing structures and access roads to avoid or minimize impacts, and salvaging plants where avoidance is not feasible.

Even with implementation of the APMs, the I-8 Alternative would impact the following special status plant species:

San Diego Thorn-mint. USDA Forest Service modeled habitat (USDA, 2007) for San Diego thorn-mint ([an annual herb](#)) occurs near MP I8-74.5. It is assumed that the species is present throughout the modeled habitat due to inconclusive surveys in 2007. However, construction near MP I8-74.5 would be underground in a roadway and the species is not expected to be impacted by the I-8 Alternative.

San Bernardino Bluegrass. USDA Forest Service modeled habitat (USDA, 2007) for San Bernardino bluegrass ([a rhizomatous herb](#)) occurs at the Interstate-8 Substation. It is assumed that the species is present throughout the modeled habitat due to inconclusive surveys in 2007 and that permanent impacts would occur as a result of the substation construction.

Delicate Clarkia. Delicate clarkia ([an annual herb](#)) occurs between MPs I8-81.6 and I8-81.9 (Appendix 8J, Figure Ap.8J-16). Approximately 3 individuals were observed at this location. The I-8 Alternative would not impact this species as it is not present where temporary or permanent disturbance would occur.

Orcutt's Brodiaea. Orcutt's brodiaea ([a bulbiferous herb](#)) occurs to the south of I8-65.0 in the vicinity of the I-8 Substation (Appendix 8J, Figure Ap.8J-13). Approximately 100 and 253 individuals were observed in two locations. The I-8 Alternative would not impact Orcutt's brodiaea as it does not occur within the limits of where temporary or permanent impacts would occur.

San Diego Sunflower. San Diego sunflower ([a perennial herb](#)) occurs at MP I8-60.4 (Appendix 8J, Figure Ap.8J-12). One individual was observed at this location. The I-8 Alternative would not impact this species as it is not present within the limits of where temporary or permanent disturbances would occur.

Even with implementation of the APMs, the impacts would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened) and Significance Criterion 1.b. (impact that would affect the number or range or regional long-term survival of a sensitive or special status plant species).

With the exceptionally dry weather conditions in 2007, the assumption is made that special status plant species are present and impacted by this alternative. Since it is not possible to adequately assess the amount of impact to the special status plant species, the impacts are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-5a is required to, at least in part, compensate for impacts to special status plant species.

Mitigation Measures for Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-4.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas. See Table E.1.2-4.
- B-5a** Conduct rare plant surveys and implement appropriate avoidance/minimization/mitigation strategies.

Impact B-7: Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I – construction impacts to sensitive species; Other impact classes depend on species; see individual discussions)

The I-8 Alternative would impact the following listed or highly sensitive wildlife species: FTHL (Impact B-7A), PBS (Impact B-7B), golden eagle (Impact B-7H), QCB (Impact B-7J), arroyo toad (Impact B-7K), and barefoot banded gecko (Impact B-7O). This alternative could also impact burrowing owl (Impact B-7C), least Bell's vireo (Impact B-7D), southwestern willow flycatcher (Impact B-7E), bald eagle (Impact

B-7I), and coastal California gnatcatcher (Impact B-7M). Impacts to these species are discussed in detail below. Impacts to the listed Swainson's hawk are discussed in Impact B-10.

The following listed or highly sensitive species that are addressed for the Proposed Project are not addressed for the I-8 Alternative because they either do not occur, or have low potential to occur, in the alternative study area: desert pupfish (Impact B-7F), desert tortoise (Impact B-7G), Stephens' kangaroo rat (Impact B-7L), and San Diego and/or Riverside fairy shrimp (Impact B-7N).

The I-8 Alternative would impact the following non-listed, sensitive wildlife species and their habitats: Coast (San Diego) horned lizard, Cooper's hawk, loggerhead shrike, northern harrier, rufous-crowned sparrow, white-tailed kite, yellow-breasted chat, yellow warbler, and San Diego black-tailed jackrabbit (Appendix 8J). This alternative also has the potential to impact the 50 non-listed, sensitive wildlife species with moderate to high potential to occur (listed at the beginning of E.1.2.2 [Special Status Wildlife Species]) should they be present.

Coast (San Diego) horned lizard. Five coast (San Diego) horned lizards were observed along the I-8 Alternative. One individual was observed at each of the following locations: MPs I8-54.4, I8-70.1, and I8-84.8, and two horned lizards were observed at MP I8-85.8 (Appendix 8J, Figures Ap.8J-11, Ap.8J-16, and Ap.8J-17). The horned lizard would be impacted by the removal of vegetation and habitat modification, and individuals of the species could also be killed if they are within the construction zone and are crushed by equipment.

Cooper's hawk. Cooper's hawks were observed in three locations along the I-8 Alternative: MPs I8-79.8, I8-89.6, and I8-92.6 (Appendix 8J, Figures Ap.8J-16, Ap.8J-17, and Ap.8J-18). This species could possibly breed along this alternative (Unitt, 2004) and construction would cause indirect noise impacts to breeding Cooper's hawks if construction were to occur in or adjacent to its breeding habitat (riparian and oak woodlands) during the general avian breeding season (see Impact B-8). Also, the Cooper's hawk would be impacted by the removal of vegetation and habitat modification in the area.

Loggerhead shrike. Loggerhead shrikes were observed in two locations along the I-8 Alternative at MPs I8-22.0 and I8-35.1 (Appendix 8J, Figures Ap.8J-5 and Ap.8J-8). Construction would cause indirect noise impacts to the loggerhead shrike if construction were to occur in or adjacent to the species habitat during the general avian breeding season (see Impact B-8). In addition, this species would be indirectly impacted through removal of vegetation and habitat modification.

Northern harrier. One northern harrier was observed near MP I8-91.7 (Appendix 8J, Figure Ap.8J-18). This species could possibly breed along this alternative (Unitt, 2004) and would be impacted if construction occurred at or near a nest location (this species nests on the ground; see Impact B-8). In addition, this species would be indirectly impacted through removal of vegetation and habitat modification.

Southern California rufous-crowned sparrow. Rufous-crowned sparrows were observed in two locations along the I-8 Alternative at MPs I8-74.0 and I8-86.0 (Appendix 8J, Figures Ap.8J-15 and Ap.8J-17). Additional southern California rufous-crowned sparrows were observed in the vicinity of the I-8 Alternative and are also mapped. Construction would cause indirect noise impacts to the species if construction were to occur in or adjacent to habitat during the general avian breeding season (see Impact B-8). In addition, this species would be indirectly impacted through removal of vegetation and habitat modification.

White-tailed kite. White-tailed kites were observed in two locations along the I-8 Alternative: MPs I8-89.5 and I8-91.6 (Appendix 8J, Figures Ap.8J-17 and Ap.8J-18). This species could possibly breed along this alternative (Unitt, 2004) and would be impacted if construction were to occur in or adjacent

to its breeding habitat (woodlands/forests) during the general avian breeding season (see Impact B-8). In addition, this species would be indirectly impacted through removal of vegetation and habitat modification.

Yellow-breasted chat. One yellow-breasted chat was observed along the San Diego River at MP I8-82.1 (Appendix 8J, Figure Ap.8J-16). Construction would cause indirect noise impacts that would impact yellow-breasted chat breeding if construction were to occur in or adjacent to the chat's habitat (riparian woodlands/forests) during the general avian breeding season (see Impact B-8). In addition, this species would be impacted indirectly through removal of vegetation and habitat modification.

Yellow warbler. Five yellow warblers were observed along I-8 Alternative at MPs I8-58.4, I8-63.4, I8-74.2, I8-77.6, and I8-82.1 (Appendix 8J, Figures Ap.8J-12, Ap.8J-13, Ap.8J-15, and Ap.8J-16). Additional yellow warblers were observed in the vicinity of the I-8 Alternative and are also mapped. Construction would cause indirect noise impacts that would impact yellow warbler breeding if construction were to occur in or adjacent to the warbler's habitat (riparian and oak woodlands/forests) during the general avian breeding season (see Impact B-8). In addition, this species would be impacted indirectly through removal of vegetation and habitat modification.

San Diego black-tailed jackrabbit. San Diego black-tailed jackrabbits were observed in seven locations along the I-8 Alternative at MPs I8-29.0, I8-29.6, I8-31.0, I8-32.1, I8-33.5, I8-35.0, and I8-40.3 (Appendix 8J, Figures Ap.8J-7, Ap.8J-8, and Ap.8J-9). Additional San Diego black-tailed jackrabbits were observed in the vicinity of the I-8 Alternative and are also mapped. This species would be impacted indirectly through removal of vegetation and habitat modification.

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife: BIO-APM-2 through 4, BIO-APM-7, BIO-APM-14, BIO-APM-16, BIO-APM-24, BIO-APM-26, BIO-APM-27, and BIO-APM-29. These APMs include personnel training, restricting work to within predetermined limits of construction, prohibiting litter, identifying environmentally sensitive tree trimming locations, inspecting trenches/excavations twice daily and removing of trapped animals, covering construction holes/trenches overnight and inspecting them for wildlife prior to filling, sloping excavations to provide a wildlife escape route, removing raptor nests when inactive, reducing construction night lighting, and keeping vehicle traffic to minimum volume and speed.

Even with implementation of the APMs, the I-8 Alternative would have a substantial adverse effect on listed and sensitive wildlife species and their habitats according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the Wildlife Agencies). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Most of the non-listed special status species' habitats are sensitive vegetation communities (Table E.1.2-4); the mitigation for the loss of the sensitive vegetation communities (Mitigation Measure B-1a) would normally compensate for the potential loss of these sensitive species and their habitats. However, since adequate land required by Mitigation Measure B-1a may not be available, the impacts to non-listed sensitive wildlife species are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7a is required to compensate, at least in part, for impacts to non-listed, sensitive wildlife species and their habitats.

Mitigation Measures for Impact B-7: Direct or Indirect Loss of Listed or Sensitive Wildlife or a Direct Loss of Habitat for Listed or Sensitive Wildlife

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-4.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas. See Table E.1.2-4.
- B-7a** Ensure that all steep-walled trenches or excavations used during construction shall be covered to prevent the entrapment of wildlife (e.g., reptiles and small mammals).

Impact B-7A: Direct or indirect loss of flat-tailed horned lizard or direct loss of habitat (Class I)

The first seven miles of the I-8 Alternative would cross one of the FTHL MAs, which are believed to be the core areas for maintaining self-sustaining populations of FTHLs in perpetuity. The FTHL habitat also occurs outside of the MA, between MP I8-7.0 and MP I8-23.0 (BLM, 2007). Focused surveys for this species were not conducted. Although FTHL were not observed during vegetation mapping surveys or rare plant surveys conducted between February and May 2007, the species is assumed to be present throughout FTHL MAs and FTHL habitat outside of the MAs by the BLM.

Interstate 8 Alternative construction would impact approximately 8.1 acres of FTHL MAs (6.4 acres of temporary impact and 1.7 acres of permanent impact through habitat removal) and would cause harm or harassment, and direct disturbance to FTHLs (mortality and loss of habitat). This alternative would also impact approximately 101.1 acres of FTHL habitat outside of MAs (59.3 acres of temporary impact and 41.8 acres of permanent impact through habitat removal) and would cause harm or harassment, and direct disturbance to FTHLs (mortality and loss of habitat).

These impacts are significant according to Significant Criterion 1.c. (substantial adverse effect on FTHL MAs) and Significant Criterion 1.f. (directly or indirectly cause the mortality of a special status wildlife species). These impacts are significant and not mitigable to less than significant levels (Class I) because it is unknown if enough mitigation land is available to compensate for the impacts. Implementation of Mitigation Measures B-1a, B-1c, B-2a, B-7a, and B-7b is required to, at least in part, compensate for impacts to the FTHL and its habitat.

Potential indirect impacts of this alternative include increased predation of FTHLs by round-tailed ground squirrels (*Spermophilus tereticaudus*), that are attracted to roads, and increased predation of FTHLs by loggerhead shrikes that perch on transmission towers and lines (Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003; see Impact B-11 for a specific discussion of common raven predation). These impacts would be significant according to Significance Criterion 1.f. (directly or indirectly cause the mortality of a special status wildlife species). Mitigation in the form of habitat compensation would be required for impacts from the increased predation as described in Mitigation Measure B-7b per the compensation requirements of the Flat-Tailed Horned Lizard Rangewide Management Strategy that accounts for "indirect deleterious impacts" (Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003). However, this impact is significant and not mitigable to less than significant levels (Class I) because adequate mitigation land required in Mitigation Measure B-7b may not be available to compensate the impact.

Mitigation Measures for Impact B-7A: Direct or indirect loss of flat-tailed horned lizard or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7a** Ensure that all steep-walled trenches or excavations used during construction shall be covered to prevent the entrapment of wildlife (e.g., reptiles and small mammals).
- B-7b** Implement avoidance/mitigation/compensation according to the Flat-Tailed Horned Lizard Rangelwide Management Strategy. For the I-8 Alternative, the required mitigation for FTHL impacts (if offsite acquisition is the method of compensation) is 213.6 acres.

Impact B-7B: Direct or indirect loss of Peninsular bighorn sheep or direct loss of habitat (Class I)

As noted in Section D.2.11, eight PBS ewe groups are known to occur (USFWS, 1999a). The southernmost known PBS ewe group occurs north of I-8 in Carrizo Canyon, which includes portions of the Tierra Blanca, In-ko-pah, Coyote, and Jacumba Mountains. Historically, a ewe group occurred along the Mexican border, but has disappeared since the 1980s; the loss was poorly documented but was likely the result of the construction of I-8 in the mid-1960s, railroad activity, livestock grazing, poaching, and fire suppression (USFWS, 2000a). The I-8 Alternative would cross through two areas where there are known PBS sightings, In-ko-pah Gorge and the Coyote Mountains. PBS have recently been documented in at least 3 locations south of Interstate 8 in the vicinity of In-ko-pah Gorge between MP I8-22.8 and MP I8-27.7 (USFWS, 2006). At its closest point (MP I8-17.0), the I-8 Alternative is approximately 3 miles to the southeast of documented PBS sightings in the Coyote Mountains. These areas are considered part of the Carrizo Canyon ewe group. Although no PBS were observed during vegetation mapping and rare plant surveys, the species is assumed to occur throughout the designated PBS critical habitat.

The I-8 Alternative would impact approximately 64.5 acres of PBS critical habitat (25.4 acres of temporary impact and 39.1 acres of permanent impact through habitat removal) during project construction. Impacts to critical habitat would occur from tower pads, access roads, and pull sites between MP I8-15.8 to MP I8-17.9 and between MP I8-22.8 and MP I8-30.4. These impacts are significant according to Significance Criterion 1.d (substantial adverse effect on designated critical habitat for a federal listed species through temporary or permanent disturbance).

As analyzed in Impact B-1, the impacts to the habitat itself are significant and not mitigable to less than significant levels (Class I) because suitable PBS replacement critical habitat, or other suitable habitat as determined by the Wildlife Agencies and BLM, may not be available.

Although construction of I-8 preceded the later disappearance of PBS along the Mexican border, rams still continue to be found occasionally and the area is considered the southern distributional limits of the U.S. population (USFWS, 2000a). It is unknown whether I-8 Alternative access roads, tower structures, or other project features would be perceived by PBS as barriers.

As mentioned in Section D.2.11, human and construction activity and project features in PBS habitat could cause bighorn to avoid affected areas and could interfere with the use of resources such as escape terrain; water; mineral licks; rutting, lambing, or feeding areas; the use of traditional movement routes, and/or could cause physiological stress or increased predation, all of which could adversely affect

survival and recovery of the species. These impacts are significant according to the following Significance Criteria: 1.a.) substantial adverse effect through any impact to one or more individuals of a federal or State listed species; 1.f.) substantial adverse effect by any impact that directly or indirectly causes the mortality of special-status wildlife species; 4.a.) substantial adverse effect by preventing access to foraging habitat, breeding habitat, water sources, etc.; 4.b.) substantial adverse effect by interfering with connectivity between blocks of habitat or block or interfere with a wildlife corridor; and 4.c.) substantial adverse effect by fragmenting a species' population. Based on the high sensitivity of this species and evidence that shows that human activities significantly affect it, these impacts would be significant and not mitigable to less than significant levels (Class I).

Mitigation Measures B-1a, B-1c, B-2a, and B-7c would minimize impacts on PBS, although not to less than significant levels. One aspect of this mitigation is to minimize seasonal impacts to PBS (i.e., the period during which PBS are most sensitive to disturbance). The other aspect deals with the overall impacts to the population affected by the project. One of the goals for recovery of the PBS is to reconnect the entire range of the PBS metapopulation. A metapopulation maintains stability through unobstructed movement between geographically separated subpopulations. This interchange allows natural levels of genetic heterogeneity and demographic augmentation that compensates for temporary declines at the subpopulation level and maintains population stability over time across the entire metapopulation.

Mitigation Measures for Impact B-7B: Direct or indirect loss of Peninsular bighorn sheep or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7c** **Minimize impacts to Peninsular bighorn sheep and provide compensation for loss of critical habitat.** For the I-8 Alternative, the required mitigation for PBS impacts includes offsite purchase of 246.2 acres and onsite restoration of 25.4 acres. All other PBS mitigation described in Mitigation Measure B-7c for the Proposed Project (Section D.2.11) is also required for the I-8 Alternative.

Impact B-7C: Direct or indirect loss of burrowing owl or direct loss of habitat (Class II)

Protocol burrowing owl surveys were carried out between MP I8-0 and MP I8-5.7 in Imperial County in the spring/summer of 2007. The results of the surveys were negative. No surveys were required in San Diego County because of the low potential for this species to occur along the I-8 Alternative.

Although the survey results were negative, construction of the I-8 Alternative could impact burrowing owls and/or their habitat if burrowing owls occupy the habitat prior to construction. Impacts to burrowing owls, their burrows, or their foraging habitat would be significant according to Significance Criterion 1.f. (substantial adverse effect on a special-status wildlife species through direct or indirect impacts). These impacts are significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7d, which would not allow disturbance to burrows and surrounding foraging habitat or would passively relocate owls (i.e., encourage owls to move from occupied burrows) to alternate burrows outside the impact zone. It would also replace impacted habitat with suitable habitat, and all mitigation would be managed for burrowing owls in perpetuity.

All of the potential burrowing owl habitat was surveyed in 2007. It is reasonable to assume that the likelihood of occupied burrows or burrowing owls being found in the areas during pre-construction survey

required in Mitigation Measure B-7d is low. The mitigation presently outlined in Mitigation Measure B-7d would need to be revised if occupied burrows or burrowing owls are found. With the small number of acres likely required for mitigation (if any), the fact that the mitigation does not have to consist of any particular vegetation type (it just has to be suitable for burrowing owls), and with the mitigation options available per the CDFG (see Mitigation Measure B-7d below), it is expected that appropriate mitigation land would be available to satisfy the mitigation requirement.

Mitigation Measures for Impact B-7C: Direct or indirect loss of burrowing owl or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7d** Conduct burrowing owl surveys, and implement appropriate avoidance/minimization/compensation strategies. A pre-construction survey shall be conducted from MP I8-0 through MP I8-5.7 by a qualified biologist to determine the presence or absence of the burrowing owl in the construction zone plus 250 feet beyond. If the burrowing owl is absent, then no mitigation is required. If the burrowing owl is present, the burrowing owl mitigation described in Mitigation Measure B-7d for the Proposed Project (Section D.2.11) would be required.

Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat (Class II)

Focused surveys for the least Bell's vireo were conducted at MP I8-51.0 (La Posta Creek), I8-52.3 (unnamed meadow), I8-54.7 (Kitchen Creek), I8-58.4 (Cottonwood Creek), I8-63.5 (Pine Valley Creek), I8-67.3 (Sweetwater River), I8-74.1 (Viejas Creek), I8-77.6 (Alpine Creek), I8-82.2 (San Diego River), and I8-89.7 (San Vicente Creek). The 2007 survey results were negative.

Focused surveys for the least Bell's vireo were not conducted for the staging area that would be constructed along Willow Road (and the San Diego River), south of MP I8-86.8 (Appendix 8J, Figure Ap.8J-17). The least Bell's vireo is assumed to be present at this location because suitable habitat is present.

Impacts to the least Bell's vireo or its occupied breeding habitat from habitat removal or disturbance from construction of the I-8 Alternative where the vireo is assumed to occur include 6.0 acre of temporary disturbance to riparian breeding habitat. Construction of the I-8 Alternative would result in impacts to riparian vegetation with the potential to support least Bell's vireo should the species breed near the survey locations listed above at a later date. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to least Bell's vireo or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e. Mitigation Measure B-7e requires a pre-construction survey for the species be conducted if construction activities would occur during the least Bell's vireo breeding season. The pre-construction survey required in Mitigation Measure B-7e would conclusively define all the impacts to the least Bell's vireo from construction of the I-8 Alternative. The mitigation in Mitigation Measure B-7e may need to be reduced based on the results of this survey. It is expected that adequate mitigation land would be available to satisfy the mitigation required in Mitigation Measure B-7e because of the

small number of acres needed and because this type of mitigation for the least Bell's vireo is typically available and regularly provided in San Diego County.

Additionally, least Bell's vireo breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on vireo breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7e** Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies. For the I-8 Alternative, the required mitigation for habitat assumed to be occupied by least Bell's vireo includes 6.0 acres of onsite restoration and 12.0 acres of offsite acquisition and preservation of occupied least Bell's vireo habitat. All other least Bell's vireo mitigation described in Mitigation Measure B-7e for the Proposed Project (Section D.2.11) is also required for the I-8 Alternative.

Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat (Class II)

Focused surveys for the southwestern willow flycatcher were conducted at MP I8-51.0 (La Posta Creek), I8-52.3 (unnamed meadow), I8-54.7 (Kitchen Creek), I8-58.4 (Cottonwood Creek), I8-63.5 (Pine Valley Creek), I8-67.3 (Sweetwater River), I8-74.1 (Viejas Creek), and I8-82.2 (San Diego River).

One willow flycatcher was observed and heard vocalizing approximately 100 feet south of MP I8-67.3 (Sweetwater River) on May 24, but was not detected during subsequent surveys. The willow flycatcher was presumed to be using the habitat while migrating through the area. Additionally, no impacts would occur to the riparian habitat along the Sweetwater River as a result of the I-8 Alternative. Survey results at the remaining sites were negative.

Focused surveys for the southwestern willow flycatcher were not conducted for the staging area that would be constructed along Willow Road (and the San Diego River), south of MP I8-86.8 (Appendix 8J, Figure Ap.8J-17). The southwestern willow flycatcher is assumed to be present at this location because suitable habitat is present.

Impacts to the southwestern willow flycatcher or its occupied breeding habitat from habitat removal or disturbance from construction of the I-8 Alternative where the flycatcher is assumed to occur include 6.0 acre of temporary disturbance to riparian breeding habitat. Construction of the I-8 Alternative would result in impacts to riparian vegetation with the potential to support southwestern willow flycatcher should the species breed near the survey locations listed above at a later date. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or

abandonment of migratory bird nests and/or eggs). Any direct impact to southwestern willow flycatcher or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e. Mitigation Measure B-7e requires a pre-construction survey for the species be conducted if construction activities would occur during the southwestern willow flycatcher breeding season. The pre-construction survey required in Mitigation Measure B-7e would conclusively define all the impacts to the southwestern willow flycatcher from construction of the I-8 Alternative. The mitigation in Mitigation Measure B-7e may need to be reduced based on the results of this survey. It is expected that adequate mitigation land would be available to satisfy the mitigation required in Mitigation Measure B-7e because of the small number of acres needed and because this type of mitigation for the flycatcher is typically available and regularly provided in San Diego County.

Additionally, southwestern willow flycatcher breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on southwestern willow flycatcher breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7e** Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies. For the I-8 Alternative, the required mitigation for habitat assumed to be occupied by southwestern willow flycatcher includes 6.0 acres of onsite restoration and 12.0 acres of offsite acquisition and preservation of occupied southwestern willow flycatcher habitat. All other southwestern willow flycatcher mitigation described in Mitigation Measure B-7e for the Proposed Project (Section D.2.11) is also required for the I-8 Alternative.

Impact B-7H: Direct or indirect loss of golden eagle or direct loss of habitat (Class I)

As noted in Section D.2.11, the golden eagle is very sensitive to human activity, especially in the vicinity of its nest site, and even distant construction activity (or maintenance activity; see Impact B-12) could cause abandonment of a nest, subsequent reproductive failure, and continuing decline of the species. These impacts would be significant according to Significance Criteria 1.e (substantial adverse effect on the breeding success of the golden eagle), 1.f (directly or indirectly cause the mortality of a special status species), 1.g (result in the abandonment of migratory bird nests and/or eggs), and 1.h (result in take of bald or golden eagles, eagle eggs or any part of an eagle). Human activity within 4,000 feet of a nest site is considered significant and not mitigable to less than significant levels (Class I), especially if there is direct line-of-sight between the nest site and the human activity, or if the human activity occurs above the nest site in elevation. An exception to this is if the activity within 4,000 feet of the nest site (without direct line-of-sight and activity is below the nest site) occurs where there is already an existing disturbance such as a road or utility corridor.

Two golden eagle nest areas would be affected by the I-8 Alternative. The specific locations of these nest areas are not disclosed in this EIR/EIS (nor are the MPs within 4,000 feet of the nest areas) in order to protect the golden eagle. SDG&E will be made aware of the MPs subject to mitigation in an unpublished document. Nest locations, for purposes of this document, were provided by the Wildlife Research Institute (Bittner, 2007).

One of these nest areas occurs approximately 1,500 feet from the I-8 Alternative. There is direct line-of-sight between this nest area and the project and construction would occur above the nest site in elevation. Impacts to this eagle pair would be significant and not mitigable to less than significant levels (Class I) because of the distance between the nest area and the project (less than 4,000 feet), the direct line-of-sight that would occur, and because construction would occur above the nest. Implementation of Mitigation Measure B-7h, which states that no construction or maintenance activities shall occur during the eagle breeding season, is still required to minimize the impact.

The second nest site is located approximately 2,000 feet from the I-8 Alternative and there is direct line-of-sight between the nest area and the project. Impacts to this eagle pair would be significant and not mitigable to less than significant levels (Class I) because of the distance between the nest area and the project (less than 4,000 feet) and the direct line-of-sight that would occur. Mitigation Measure B-7h is still required to minimize the impact.

Impacts/mitigation relating to golden eagles and electrocution/collision with transmission towers/lines is discussed in Impact B-10 below.

Mitigation Measure for Impact B-7H: Direct or indirect loss of golden eagle or direct loss of habitat

B-7h **Implement appropriate avoidance/minimization strategies for eagle nests.**

Impact B-7I: Direct or indirect loss of bald eagle or direct loss of habitat (No Impact)

The I-8 Alternative would cross USDA Forest Service modeled habitat for bald eagle (USDA, 2007) at MP I8-51.0 (La Posta Creek) and I8-82.2 (San Diego River). Additionally, the I-8 Alternative would occur within 4,000 feet of USDA Forest Service modeled habitat (USDA, 2007) at I8-54.7 (Kitchen Creek), I8-63.5 (Pine Valley Creek), I8-67.3 (Sweetwater River), and between I8-80 to I8-82 (adjacent to El Capitan Reservoir).

Bald eagle is seen occasionally in winter at Morena Reservoir, which is approximately 3 miles to the southwest, and Corte Madera Lake, which is approximately 3 miles to the southwest (Appendix 8C). At its closest point (I8-61.6), the I-8 Alternative is approximately 4,000 feet away from reported bald eagle sightings (USDA, 2007). There is a low potential that bald eagles would use the areas above for foraging during the winter.

The bald eagle is not known to and is not expected to nest within or adjacent to the I-8 Alternative (Bittner, 2007). The species is not known to nest at Morena Reservoir or Corte Madera Lake (Bittner, 2007). No impacts to bald eagle as a result of the I-8 Alternative are expected.

Impacts/mitigation relating to bald eagles and electrocution/collision with transmission towers/lines is discussed in Impact B-10 below.

Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat (Class I)

Protocol surveys for the quino checkerspot butterfly (QCB) were not conducted in 2007 for the I-8 Alternative because the butterfly flight season was not preceded by adequate rainfall. As a result, no presence/absence data for this species is available for this alternative and a precise impact determination cannot be adequately made.

Recent QCB observations (1998 and 2000) were made near Jacumba within and directly adjacent to the I-8 Alternative (USFWS, 2006). Recent QCB observations (2001 and 2005) were made east and west of Highway 67, approximately 0.8 miles east and 1.2 miles west of MP I8-92.3 the I-8 Alternative (USFWS, 2006). A historic QCB observation (1972) was made near Pine Valley approximately 1 mile northwest of MP I8-62.5 of the I-8 Alternative (USFWS, 2006). The I-8 Alternative would cross approximately 4 miles of QCB critical habitat near Jacumba, between approximately MP I8-34.3 and MP I8-38.3 (Critical Habitat Unit 4, Jacumba Unit).

The I-8 Alternative, from MP I8-28 to MP I8-42, occurs within USFWS protocol Survey Area 1. The I-8 Alternative, from MP I8-42 to MP I8-92.8, occurs within USFWS protocol Survey Area 2. Survey Areas 1 and 2 are areas where protocol surveys are required in suitable QCB habitat (USFWS, 2002a). Suitable QCB habitat includes shrub communities such as coastal sage scrub, chaparral, and desert scrub with 50 percent or less shrub cover and the potential to support dot-seed plantain (*Plantago erecta*) or other larval host plants.

The I-8 Alternative would impact 23.5 acres of QCB Critical Habitat (6.9 acres of temporary impact and 16.6 acres of permanent impact through habitat removal). Since no protocol surveys were completed for the I-8 Alternative, all critical habitat is assumed to be occupied by QCB. With the lack of definitive survey data and impacts to QCB critical habitat, the I-8 Alternative would have a significant impact on this species according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed as endangered or threatened) and Significance Criterion 1.d. (temporary or permanent disturbance of designated critical habitat for federal listed species). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7i are required to, at least in part, mitigate for impacts to the QCB butterfly and its habitat. Mitigation Measure B-7i requires a pre-construction survey for the species be conducted within any designated USFWS QCB survey area. Since adequate land required by Mitigation Measure B-7i may not be available, the impacts are considered significant and not mitigable to less than significant levels (Class I).

Mitigation Measures for Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7i** Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies. For the I-8 Alternative, the required mitigation for impacts to designated critical habitat includes 6.9 acres of onsite restoration and 20.3 acres of offsite acquisition and preservation of acres of QCB critical habitat or other habitat acceptable to Wildlife Agencies, BLM, or other applicable agencies. Impacts to QCB critical habitat must be mitigated within the same Critical Habitat Unit where the impacts occurred. Furthermore, should the Proposed Rule issued on January 17, 2008 by the USFWS to

revise the area of designated critical habitat for the Quino be adopted by USFWS prior to construction, the impacts to critical habitat shall be recalculated by a qualified biologist (see Mitigation Measure B-1c), and the required number of acres of compensation/restoration land required by this mitigation measure shall be revised based on the ratios set forth in Mitigation Measure B-7i. The recalculations and revisions to the required mitigation shall be submitted to the CPUC, BLM, and the Wildlife Agencies for review and approval prior to the commencement of construction in critical habitat. All other QCB mitigation described in Mitigation Measure B-7i for the Proposed Project (Section D.2.11) is also required for the I-8 Alternative.

Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat (Class II)

Focused surveys in 2007 were conducted for the arroyo toad at MP I8-51.0 (La Posta Creek), I8-63.5 (Pine Valley Creek), I8-67.3 (Sweetwater River), I8-74.1 (Viejas Creek), and I8-82.2 (San Diego River). Surveys at the MP I8-51.0, I8-74.1, and I8-82.2 were conducted by listening for calling arroyo toads from public roads because ROE permission was not granted or because a locked gate (I8-82.2). Auditory only surveys are not conclusive enough to show arroyo toads are absent from a site; therefore, the species is assumed to be present at MPs I8-51.0, I8-74.1, and I8-82.2 and all habitat within 1 km of each of these sites is assumed to be occupied, in accordance with USFWS (1999).

Results of the focused toad surveys were negative along the I-8 Alternative. However, arroyo toads have been documented less than 1 km away from MP I8-63.5 (USDA, 2007) and MP-67.3 (CDFG CNDDDB, 2007). The arroyo toad sighting at MP I8-63.5 is a USDA Forest Service record from 1993 and is approximately 300 feet away from the Interstate 8 Alternative. Survey results at I8-63.5 were negative and crayfish were noted throughout the survey area. The arroyo toad sighting at I8-67.3 is a CNDDDB record from 2001 that is approximately 2,000 feet away from the Interstate 8 Alternative. Although the survey results at I8-67.3 were negative, the habitat is considered suitable because of the presence of sandy benches, shallow pools, and open vegetation cover. Therefore, the arroyo toad is assumed to be present at MP I8-67.3 and all habitat within 1 km of this site is assumed to be occupied, in accordance with USFWS (1999).

Suitable habitat was also present at MP I8-54.8. Arroyo toad surveys at this site were not conducted in 2007 because no surface water was present at the time of the habitat assessment. With a lack of surface water, arroyo toads may not emerge during the breeding season and a negative survey result would not be conclusive. An arroyo toad was documented approximately 1.5 miles downstream (to the southwest, downstream of the confluence of Kitchen Creek and Cottonwood Creek) for the I-8: West Buckman Springs Option (see Impact B-7K for the West Buckman Springs Option in Section E.1.2.2). Arroyo toads are also known to occur approximately 2 miles upstream of MP I8-54.8 (CDFG CNDDDB, 2007). Therefore, arroyo toad is assumed to be present at I8-54.8 and all habitat within 1 km is assumed to be occupied by the species, in accordance with USFWS (1999).

Impacts to the arroyo toad or its occupied breeding or burrowing habitat from habitat removal or disturbance from construction (e.g., crushing of toads with construction equipment) of the I-8 Alternative where the arroyo toad is assumed to be present include 0.2 acres of permanent impacts to riparian breeding habitat, 13.0 acres of temporary impacts to upland burrowing habitat, and 28.1 acres of permanent impacts to upland burrowing habitat. The pre-construction survey required in Mitigation Measure B-7j would conclusively define all the impacts to the arroyo toad from construction of the I-8 Alternative (i.e., if appropriate climatic conditions are present to encounter arroyo toads). The mitigation in Mitigation Measure B-7j may be reduced based on the results of this survey. It is expected that

adequate mitigation land would be available to satisfy the mitigation requirement because of the small number of acres needed and because this type of mitigation for the arroyo toad is typically available and regularly provided in San Diego County.

Impacts to arroyo toad would be significant according to Significance Criterion 1.a. (substantial adverse effect, either directly or indirectly, on one or more individuals of a federal or State listed species through habitat modification). These impacts would be significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7j.

Mitigation Measures for Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7j** Conduct arroyo toad surveys, and implement appropriate avoidance/minimization/compensation strategies. For the I-8 Alternative, the required mitigation for arroyo toad occupied habitat includes 13.0 acres of onsite restoration and 69.8 acres of offsite acquisition and preservation of occupied toad habitat consisting of 0.6 acres of breeding habitat and 69.2 acres of upland burrowing habitat. All other arroyo toad mitigation described in Mitigation Measure B-7j for the Proposed Project (Section D.2.11) is also required for the I-8 Alternative.

Impact B-7M: Direct or indirect loss of coastal California gnatcatcher or direct loss of habitat (Class II)

Focused surveys for the coastal California gnatcatcher were conducted along the I-8 Alternative between MPs I8-75.2 and 76.3, between I8-77.4 and 78.0, at I8-85.6, and between I8-91.7 and I8-92.5. The coastal California gnatcatcher was not found along the I-8 Alternative. Potential coastal California gnatcatcher habitat is believed to occur at MPs I8-81.7 and I8-86.8, where ROE permission was not granted, and in the absence of survey data, it is assumed that habitat capable of supporting the species is occupied by the coastal California gnatcatcher.

Construction of the I-8 Alternative would result in habitat loss for the coastal California gnatcatcher where the species is assumed to be present (MP I8-81.7 and I8-86.8). Impacts to occupied gnatcatcher habitat include temporary disturbance to 3.5 acres and permanent impacts to 5.5 acres. Impacts to coastal California gnatcatcher designated critical habitat, excluding extensive agriculture, include 7.5 acres of temporary disturbance (all of which is assumed to be occupied by the gnatcatcher) and 2.0 acres of permanent impact (0.8 acres is assumed to be occupied by the gnatcatcher).

Direct and indirect impacts to the gnatcatcher and its occupied or critical habitat from habitat removal and construction activity would be significant according to the following Significance Criteria: 1.a.) substantial adverse effect through any impact to one or more individuals of a federal or State listed species; 1.d.) temporary or permanent disturbance of designated critical habitat for federal listed species; and 1.g.) substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs.

Any direct impact to the gnatcatcher and its occupied or critical habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1c (Conduct biological monitoring) and B-7l which requires removing habitat outside the breeding season, restoring/com-

pensating for any temporary or permanent losses of habitat, and monitoring for disturbance of nesting activities and taking action to stop the disturbance. It is expected that appropriate mitigation land would be available to satisfy the mitigation requirement because of the small number of acres needed and because this type of mitigation for the coastal California gnatcatcher is typically available and regularly provided in San Diego County. The pre-construction survey required in Mitigation Measure B-71 would conclusively define all the impacts to the coastal California gnatcatcher from construction of the I-8 Alternative. The mitigation in Mitigation Measure B-71 may be reduced based on the results of this survey.

Additionally, gnatcatcher breeding can be affected by excessive construction noise (considered to be 60 dB(A) Leq at the edge of occupied habitat by the USFWS [American Institute of Physics, 2005]). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on gnatcatcher breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7M: Direct or indirect loss of coastal California gnatcatcher or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-71** Conduct coastal California gnatcatcher surveys and implement appropriate avoidance/minimization/compensation strategies. For the I-8 Alternative, the required mitigation for the loss of coastal California gnatcatcher occupied habitat includes 3.5 acres of onsite restoration and 9.0 acres offsite acquisition and preservation of occupied habitat for the gnatcatcher. The required mitigation for the loss of designated gnatcatcher critical habitat includes 7.5 acres of onsite restoration and 4.0 acres offsite acquisition and preservation of designated critical habitat for the gnatcatcher (1.6 acres of occupied critical habitat and 2.4 acres of unoccupied critical habitat). All other coastal California gnatcatcher mitigation described in Mitigation Measure B-71 for the Proposed Project (Section D.2.11) is also required for the I-8 Alternative.

Impact B-7O: Direct or indirect loss of barefoot banded gecko or direct loss of habitat (Class I)

This State-listed threatened species is known only from five localities in eastern San Diego County and western Imperial County. The natural history of this gecko is not well known; it is secretive and nocturnal and hides by day in deep crevices. It is active in fairly cool ambient temperatures during periods of increased humidity, typically spring through fall. It hibernates through the winter (CaliforniaHerps.com, 2007).

No surveys were conducted for this species. If surveys were conducted, and the species was not found, the survey result would have to be considered false negative because of the species' highly elusive nature. The barefoot banded gecko is, therefore, assumed to be present along the I-8 Alternative from approximately MP I8-23 through MP 39. Any impact to the barefoot banded gecko or its habitat would be significant according to Significance Criterion 1.a. (substantial adverse effect, either directly or indirectly, on one or more individuals of a federal or State listed species through habitat modification) and not mitigable to less than significant levels (Class I) since the extent of the impacts that would occur is unknown. Implementation of Mitigation Measures B-1a (that requires all construction to remain within

delineated construction limits) and B-1c (Conduct biological monitoring) would provide some protection for this species but is not adequate to mitigate impacts to less than significant levels.

Mitigation Measures for Impact B-70: Direct or indirect loss of barefoot banded gecko or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.

Impact B-9: Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II for bat colonies; No Impact for linkages, wildlife movement corridors, or fish movement)

The I-8 Alternative would not significantly impact or restrict general wildlife movement. This alternative would implement BIO-APM-2, BIO-APM-3, BIO-APM-5, BIO-APM-18, and BIO-APM-29, as described in Table D.2-5, to minimize or prevent potential adverse effects to linkages or wildlife corridors, the movement of fish, and native wildlife nursery sites. Due to the intermittent locations of construction activity, and since impacts to native habitats at each structure location would be relatively small, wildlife would not be prevented from moving around any project equipment within the transmission corridor (No Impact). Surface water resources along the I-8 Alternative include desert washes and other streams, the majority of which are dry at most times and unlikely to support fish populations. The majority of these watercourses would be spanned by the transmission lines, and impacts would occur in accordance with BIO-APM-5 that limits impacts to watercourses through project design. Therefore, the I-8 Alternative is not expected to affect the movement of fish (No Impact).

Even with implementation of the APMs, bat nursery colonies would still be significantly impacted by the I-8 Alternative if humans approach an active nursery colony, if entrances to nursery colony sites become blocked, if construction involves blasting or drilling that causes substantial vibration of the earth/rock surrounding an active nursery colony, or if a structure such as a bridge is disturbed by construction. These colonies could be located in rock crevices, caves, or culverts; inside/under bridges; in other man-made structures; and in trees (typically snags or large trees with cavities). A bat nursery colony site is where pregnant female bats assemble (or one bat if it's of a solitary species) to give birth and raise their pups.

The impacts to bat nursery colonies would be significant according to Significance Criterion 4 (impede the use of native wildlife nursery sites). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence. This impact is significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-9a which includes surveying for bat colonies; prohibiting approach of, or entrance to, an active nursery colony site; and implementation of methods to minimize potential indirect impacts to a colony site from falling rock or substantial vibration.

Impacts associated with PBS traditional movement routes are explained in Impact B-7B.

Mitigation Measure for Impact B-9: Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites

B-9a Survey for bat nursery colonies.

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No Impact for electrocution; Class I for collision for listed species; Class II for collision for non-sensitive species or daytime migration)

The types of potential impacts related to collision are the same as those described for the Proposed Project in Section D.2.5.10. It is anticipated that the I-8 Alternative would not present an electrocution risk to birds.

Mortality as a result of collision with I-8 Alternative project features would be greatest where the movements of migrating birds are the most concentrated. However, there is no known concentrated movement of migrating birds in Imperial County or San Diego County in the vicinity of this alternative (Unitt, 2007), and there is a lack of any topography to funnel migrating birds through the vicinity of this alternative. Most observations of migrating birds are of scattered individuals and small flocks (particularly Swainson's hawk).

However, there is no known concentrated movement of migrating birds in Imperial Valley or San Diego County in the vicinity of this alternative; most observations are of scattered individuals and small flocks. Given the lack of any topography to funnel migrating birds through the vicinity of this alternative, the migration is probably scattered (Unitt, 2007).

Even so, since most birds migrate at night, and migration corridors have never been studied systematically (their use by birds has had to be pieced together from anecdotes), there is no way to know how many birds and what species of birds could actually be impacted by collision with the project transmission lines, towers, poles, or static wires. There is no way to know because much of the migration occurs at night when it cannot be seen, and birds that collide with transmission line features and fall to the ground are often taken away by predators/scavengers before morning. Therefore, as with the Proposed Project, it is assumed that some migrating species could be federal or State listed or of other special status, and their mortality would be a significant impact that is not mitigable to less than significant levels (Class I) according to the following Significance Criteria: 1.a. (substantial adverse effect through any impact to one or more individuals of a federal or State listed species), 1.f. (directly or indirectly cause the mortality of candidate, sensitive, or special status wildlife species), and 1.g. (result in the killing of migratory birds). Also, like the Proposed Project, for non-sensitive species or species that migrate during the day, collision would be significant according to Significance Criteria 1.f. and 1.g. but would be mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-10a.

Mitigation Measure for Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species collide with transmission lines

B-10a Utilize collision-reducing techniques in installation of transmission lines. There is no highly utilized avian flight path along this alternative; therefore, no marking of the overhead lines is required. All other mitigation that is required in Mitigation Measure B-10a for the Proposed Project (Section D.2.14), not related to the installation of markers, shall be implemented.

Impact B-11: Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (Class II)

The new towers that would result from the I-8 Alternative would result in an increase in potential nesting sites for common ravens in portions of the alternative where the FTHL occur and a potential increase in predation of this species by ravens.

An increase in common ravens as a result of providing additional towers for nesting would impact the FTHL (see Impact B-7A) through increased predation. This impact would be significant according to Significance Criterion 1.c. (substantial adverse effect on FTHL MAs by permanent disturbance) and Significance Criterion 1.f. (indirectly cause the mortality of special-status wildlife species). The impact would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-11a.

Mitigation Measure for Impact B-11: Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens

B-11a Prepare and implement a raven control plan. A Raven Control Plan shall be prepared and implemented for the I-8 Alternative where it occurs in FTHL MAs and FTHL habitat outside of MAs. The raven control plan shall include the use of raven perching/nesting deterrents (such as those manufactured by Prommel Enterprises, Inc. [www.ZENAdesign.com], Mission Environmental [www.missionenviro.co.za], or Kaddas Enterprises, Inc. [www.kaddas.com]) and/or shall describe the procedure for obtaining a permit from the USFWS Law Enforcement Division to legally remove ravens. The plan shall identify the purpose of conducting raven control; provide training in how to identify raven nests and how to determine whether a nest belongs to a raven or a raptor species; describe the seasonal limitations on disturbing nesting raptors; and describe procedures for documenting the activities on an annual basis. SDG&E shall obtain approval of this plan from the USFWS prior to the start of construction. SDG&E shall work with the USFWS until approval of a plan is obtained.

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class I for Peninsular bighorn sheep; Class II for other special-status wildlife and nesting birds; Class III for barefoot banded gecko and non-sensitive wildlife)

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent disturbance to wildlife and wildlife mortality during project maintenance: BIO-APM-3, BIO-APM-4, BIO-APM-6, BIO-APM-7, BIO-APM-9, BIO-APM-10 through BIO-APM-13, and BIO-APM-16. These APMs include restricting work to within existing access roads; observing a 15-mile-per hour speed limit on dirt roads; complying with regulations protecting wildlife and its habitat; prohibiting litter; conducting a pre-activity survey prior to brush clearing around project facilities (if it has been two years since the last clearing); prohibiting harm to, and feeding of, wildlife; and identifying environmentally sensitive tree trimming locations. With implementation of the APMs, impacts to non-sensitive wildlife would be adverse but less than significant (Class III). No mitigation is required.

These types of impacts would occur from maintenance: impacts to nesting birds if vegetation is cleared during the breeding season; impacts to eagles if maintenance activities occur within 4,000 feet of an active eagle nest; mortality of special status species from grading, vegetation clearing, or use of access roads; and/or adverse effects to Peninsular bighorn sheep from maintenance activities that cause sheep to avoid affected areas.

Even with implementation of the APMs, disturbance to wildlife and potential wildlife mortality would be significant according to Significance Criteria 1.a. (impacts to one or more listed species), 1.c. (disturbance to FTHL MAs), 1.d. (disturbance of critical habitat), 1.e. (impacts to breeding eagles), 1.f. (impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species), 1.g. (violation of the Migratory Bird Treaty Act), 1.h. (violation of the Bald Eagle Protection Act), and 2.b. (substantial adverse effect on riparian or other sensitive vegetation communities if weed species are introduced). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence. Impacts to eagles and other special-status wildlife species from maintenance activities are significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measures B-7b, B-7h, and B-12a.

Impacts to PBS and its critical habitat (see Impact B-7B) from maintenance activities could cause PBS to avoid affected areas and could interfere with the use of resources such as escape terrain; water; mineral licks; rutting, lambing, or feeding areas; the use of traditional movement routes, and/or could cause physiological stress or increased predation. All of these potential effects could adversely affect survival and recovery of the species and are significant and not mitigable to less than significant levels (Class I), although Mitigation Measure B-7c is required to minimize the impacts.

Maintenance activities would impact nesting birds (violation of Migratory Bird Treaty Act) if vegetation is cleared during the general avian breeding season (February 15 through September 15) or the raptor breeding season (January 1 through September 15). This impact would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a.

Maintenance activities would impact the coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and burrowing owl if the noise threshold (i.e., 60 dB[A] Leq hourly) is met or exceeded at the edge of their nesting territories during their breeding seasons. Maintenance activities would also impact the golden eagle if activities would occur within 4,000 feet of an active golden eagle nest. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-7h and B-12a.

Maintenance activities would cause disturbance to, and possible mortality of FTHL, arroyo toad, and QCB. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-7b, B-12b, and B-12c.

Impacts to barefoot banded gecko from maintenance activities would be adverse but less than significant (Class III) because the species is not known to be impacted by noise and is unlikely to occur on a maintained access road, tower pad, or other work area. No mitigation is required.

Mitigation Measures for Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality

- B-3a** Prepare and implement a Weed Control Plan.
- B-7b** Implement avoidance/mitigation/compensation according to the Flat-Tailed Horned Lizard Rangewide Management Strategy.
- B-7c** Minimize impacts to Peninsular bighorn sheep and provide compensation for loss of critical habitat.
- B-7h** Implement appropriate avoidance/minimization strategies for eagle nests.

- B-12a** Conduct maintenance activities outside the general avian breeding season.
- B-12b** Conduct maintenance when arroyo toads are least active.
- B-12c** Maintain access roads and clear vegetation in quino checkerspot butterfly habitat.

E.1.2.4 Interstate 8 Alternative Substation

The Interstate 8 Alternative Substation would be used if the adopted transmission line route requires a conversion to 230 kV to allow the underground segment through Alpine. It would be located southeast of Descanso on private land adjacent to Cleveland National Forest land. The 500 kV line would enter the substation from the east, and a double-circuit 230 kV transmission line would exit the substation to the west after conversion from 500 to 230 kV. A temporary Pulling Site is located southwest of the Substation.

The Substation would cover 37.24 acres and is dominated by non-native grassland; coast live oak woodland and northern mixed chaparral are also present on the substation site (Figure Ap.8J-13). The Pulling Site is approximately 15.1 acres and is dominated by northern mixed chaparral; coast live oak woodland and non-native grassland are also present (Figure Ap.8J-13). The impacts on the Interstate 8 Alternative Substation territory are included in the discussion of Impacts B-1 through B-12 for the Interstate 8 Alternative (Section E.1.2.3).

E.1.2.5 Interstate 8 Route Options

Campo North Option

Environmental Setting

The Campo North Option is in the Colorado Desert bioregion and would only be used in combination with the I-8 Alternative, diverging west at MP I8-44.5. The option is 1.3 miles long and would replace 1.5 miles of the I-8 Alternative.

Vegetation Communities. The predominant vegetation community along this option is chaparral. Other vegetation communities in this option include sage scrub, grasslands, and oak woodlands. Vegetation communities that are found along this option are described in detail in Section D.2.1.2.2. Detailed vegetation mapping for the Campo North Option can be found in Appendix 8J. A generalized vegetation map for all of the SWPL Alternatives is presented in Figure E.1.2-1.

Overview of Special Habitat Management Areas. This option would cross the Campo Indian Reservation.

Designated Critical Habitat. This option would not cross designated critical habitat.

Special Status Plant Species. No additional listed or special status plant species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the Campo North Option.

Special Status Wildlife Species. No additional listed or special status wildlife species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the Campo North Option.

Environmental Impacts and Mitigation Measures

This section presents a discussion of impacts and mitigation measures for the Campo North Option as a result of construction, operation, and maintenance of the project.

Several general impacts to biological resources would occur with this option, and impact significance would be the same as for the Proposed Project. For these impacts, the mitigation measures presented for the Proposed Project would also be required for this option. Discussion of each of these impacts is presented in the Proposed Project impact analysis in Sections D.2.5 to D.2.16.

- Impact B-3 (Construction activities would result in the introduction of invasive, non-native, or noxious plant species; Class II), Mitigation Measure B-1a (Provide restoration/compensation for affected sensitive vegetation communities), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas), and Mitigation Measure B-3a (Prepare and implement a Weed Control Plan)
- Impact B-4 (Construction activities would create dust that would result in degradation of vegetation; Class III)
- Impact B-6 (Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality; Class III)
- Impact B-8 (Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act; Class II), Mitigation Measure B-8a (Conduct pre-construction surveys and monitoring for breeding birds))

Several other general impacts to biological resources would occur with this option, and impact significance would be the same as for the Interstate 8 Alternative. For these impacts, the mitigation measures presented for the Interstate 8 Alternative would also be required for this option. Discussion of each of these impacts is presented in the Interstate 8 Alternative impact analysis in Section E.1.2.2.

- Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II), Mitigation Measure B-1c (Conduct biological monitoring), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas)
- Impact B-9: Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II for bat colonies; No Impact for linkages, wildlife movement corridors, or fish movement), Mitigation Measure B-9a (Survey for bat nursery colonies)

Impacts and the required mitigation measures that differ from the Proposed Project and the Interstate 8 Alternative are addressed below.

Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation (Class I for sensitive vegetation, vegetation management, and type conversion; Class III for non-sensitive vegetation)

Construction of the Campo North Option would cause both temporary (during construction from vegetation clearing) and permanent (displacement of vegetation with project features such as towers and permanent access roads) impacts to vegetation communities (see Table E.1.2-5). These impacts and the corresponding mitigation requirements listed in Table E.1.2-5 are based on preliminary project design and would likely be revised during final project design. The communities listed in Table E.1.2-5 that are

found along this option route are described in detail in Section D.2.1.2.2. Construction activities would also result in the alteration of soil conditions, including the loss of native seed banks and changes in topography and drainage, such that the ability of a site to support native vegetation after construction is impaired.

Table E.1.2-5. Impacts to Vegetation Communities and Required Mitigation – Campo North Option

Vegetation Communities	Permanent Impacts			Temporary Impacts				Total Offsite Mitigation
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration	Offsite Mitigation	
Non-Native Vegetation, Developed Areas, and Disturbed Habitat								
Developed	0.25	0	0.00	0.16	0	0.00	0.00	0.00
Disturbed habitat	0.00	0	0.00	0.00	0	0.00	0.00	0.00
Subtotal	0.25	--	0.00	0.16	--	0.00	0.00	0.00
Grasslands and Meadows								
Non-native grassland	0.02	1:1	0.02	0.02	1:1	0.02	0.00	0.02
Subtotal	0.02	--	0.02	0.02	--	0.02	0.00	0.02
Coastal and Montane Scrub Habitats								
Diegan coastal sage scrub – inland form	0.00	1.5:1	0.00	0.00	1:1	0.00	0.00	0.00
Subtotal	0.00	--	0.00	0.00	--	0.00	0.00	0.00
Chaparrals								
Northern mixed chaparral	2.27	1:1	2.27	0.68	1:1	0.68	0.00	2.27
Northern mixed chaparral – burned	0.42	1:1	0.42	0.00	1:1	0.00	0.00	0.42
Red shank chaparral	0.00	1:1	0.00	0.00	1:1	0.00	0.00	0.00
Subtotal	2.69	--	2.69	0.68	--	0.68	0.00	2.69
Woodlands and Forests								
Coast live oak woodland	0.05	3:1	0.15	0.00	3:1	0.00	0.00	0.15
Subtotal	0.05	—	0.15	0.00	—	0.00	0.00	0.15
Herbaceous Wetlands, Freshwater, and Streams								
Freshwater	0.00	1:1	0.00	0.00	1:1	0.00	0.00	0.00
Subtotal	0.00	—	0.00	0.00	—	0.00	0.00	0.00
GRAND TOTAL	3.01	--	2.86	0.86	--	0.70	0.00	2.86

The following APMs, as set forth in Table D.2-5, would be implemented to avoid or minimize impacts to vegetation communities: BIO-APM-1 and 2, BIO-APM-4 through BIO-APM-6, **BIO-APM-16**, BIO-APM-17, BIO-APM-20, BIO-APM-23, and BIO-APM-25. Even with implementation of the APMs, however, the impacts to sensitive vegetation communities would be significant according to Significance Criterion 2.a (substantial adverse effect on a riparian habitat or other sensitive natural community by temporarily or permanently removing it during construction, grading, clearing, or other activities). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Impacts to sensitive vegetation communities are not mitigable to less than significant levels (Class I) because adequate mitigation land may not be available to compensate for the impacts. Impacts to devel-

oped areas and disturbed habitat would be adverse but less than significant (Class III), and no mitigation is required. Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to sensitive vegetation communities.

Vegetation Management (Loss of Trees). SDG&E made no estimates as to how many trees or shrubs would be removed or trimmed as part of vegetation management for this option. However, there are several native woodland communities present along the route (see Table E.1.2-5) that support trees that would likely require either removal or trimming. The impact significance (Class I for native species and Class II for non-native species) and required mitigation associated with vegetation management (Mitigation Measure B-1a) for this option is the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Type Conversion. As discussed in Section E.1.2.2 for the Interstate 8 Alternative, the construction and operation of new transmission lines in areas with high fire risk could cause wildfires, and could reduce the effectiveness of fire fighting efforts. The impacts and mitigation associated with type conversion for the Campo North Option are the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measures for Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation

B-1a Provide restoration/compensation for affected sensitive vegetation communities. Mitigation ratios and mitigation acreages for the Campo North Option are provided in Table E.1-5.

B-1c Conduct biological monitoring.

B-1k Re-seed disturbed areas after a transmission line caused fire.

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I)

Listed or sensitive (special status) plant species impacts would result from direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during construction. Focused plant species surveys were not conducted for this option in 2007 because the option was not finalized during the rare plant survey period.

No additional listed or special status plant species beyond those listed in Section E.1.2.2 for the Interstate 8 Alternative are expected to occur in the Campo North Option. Table E.1.2-1 contains specific information about the special status plant species and their listing or sensitivity statuses.

The following APMs, as set forth in Table D.2-5, would be implemented for this option to address potential significant impacts to listed or sensitive plant species or their habitats: BIO-APM-1 through 6, BIO-APM-8, BIO-APM-13, BIO-APM-18, and BIO-APM-22. Even with implementation of the APMs, the impacts would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened) and Significance Criterion 1.b. (impact that would affect the number or range or regional long-term survival of a sensitive or special status plant species).

With the exceptionally dry weather conditions in 2007, the assumption is made that special status plant species are present and impacted by this alternative. Since it is not possible to adequately assess the amount of impact to the special status plant species, the impacts are considered significant and not miti-

gable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-5a is required to, at least in part, compensate for impacts to special status plant species.

Mitigation Measures for Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-5.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-5a** Conduct rare plant surveys and implement appropriate avoidance/minimization/mitigation strategies.

Impact B-7: Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I - construction impacts to sensitive species; Other impact classes depend on species; see individual discussions)

The Campo North Option would not impact the following listed or highly sensitive wildlife species: FTHL, PBS, burrowing owl, least Bell's vireo, southwestern willow flycatcher, desert pupfish, desert tortoise, golden eagle, bald eagle, arroyo toad, Stephens' kangaroo rat, coastal California gnatcatcher, San Diego and/or Riverside fairy shrimp, and barefoot banded gecko. Therefore, Impacts B-7A through B-7O are not discussed, with the exception of Impact B-7J (QCB), which is discussed in detail below.

The Campo North Option also has the potential to impact the 42 non-listed, sensitive wildlife species with moderate to high potential to occur should they be present: Hermes copper butterfly, Coast (San Diego) horned lizard, coast patch-nosed snake, coastal rosy boa, Coronado skink, red-diamond rattlesnake, Belding's orange-throated whiptail lizard, San Diego mountain kingsnake, San Diego ringneck snake, silvery legless lizard, Bell's sage sparrow, California horned lark, Cooper's hawk, ferruginous hawk, grasshopper sparrow, gray vireo, loggerhead shrike, long-eared owl, northern harrier, prairie falcon, rufous-crowned sparrow, sharp-shinned hawk, white-tailed kite, American badger, Dulzura pocket mouse, fringed myotis, long-eared myotis, long-legged myotis, Jacumba little pocket mouse, northwestern San Diego pocket mouse, pallid bat, pallid San Diego pocket mouse, pocketed free-tailed bat, ringtail, San Diego black-tailed jackrabbit, San Diego desert woodrat, small-footed myotis, southern grasshopper mouse, Townsend's big-eared bat, western mastiff bat, western red bat, and Yuma myotis.

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife: BIO-APM-2 through 4, BIO-APM-7, BIO-APM-14, BIO-APM-16, BIO-APM-24, BIO-APM-26, BIO-APM-27, and BIO-APM-29. Even with implementation of the APMs, the Campo North Option would have a substantial adverse effect on listed and sensitive wildlife species and their habitats according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the Wildlife Agencies). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Most of the non-listed special status species' habitats are sensitive vegetation communities (Table E.1.2-5); the mitigation for the loss of the sensitive vegetation communities (Mitigation Measure B-1a)

would normally compensate for the potential loss of these sensitive species and their habitats. However, since it adequate land required by Mitigation Measure B-1a may not be available, the impacts to non-listed sensitive wildlife species are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7a is required to compensate, at least in part, for impacts to non-listed, sensitive wildlife species and their habitats.

Mitigation Measures for Impact B-7: Direct or Indirect Loss of Listed or Sensitive Wildlife or a Direct Loss of Habitat for Listed or Sensitive Wildlife

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-5.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7a** Ensure that all steep-walled trenches or excavations used during construction shall be covered to prevent the entrapment of wildlife (e.g., reptiles and small mammals).

Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat (Class I)

Although the Campo North Option was finalized after the 2007 QCB survey season, protocol surveys for the QCB would not have been conducted in 2007 because the butterfly flight season was not preceded by adequate rainfall. As a result, no presence/absence data for this species is available for this option; therefore a precise impact determination cannot be adequately made.

Recent QCB observations (2005) were made approximately 4 miles to the southwest of the Campo North Option (USFWS, 2006). The Campo North Option would not cross QCB critical habitat; the nearest critical habitat is approximately 6 miles to the southeast.

The entire Campo North Option is within USFWS protocol Survey Area 2, an area in which protocol surveys are required in suitable QCB habitat. While it is unlikely that the Campo North Option would impact very much (if any) QCB-occupied habitat within Survey Area 2 given the very limited number of recent sightings, with the lack of definitive survey data, the Campo North Option would have a significant impact on this species according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed as endangered or threatened). Since adequate land required by Mitigation Measure B-7i may not be available, the impacts are considered significant and not mitigable to less than significant levels (Class I). However, Mitigation Measures B-1a, B-1c, B-2a, and B-7i are required to, at least in part, minimize impacts to the QCB.

Mitigation Measures for Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-5.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7i** Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No Impact for electrocution; Class I for collision for listed species; Class II for collision for non-listed sensitive species or daytime migration)

The types of potential impacts related to collision are the same as those described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2). It is anticipated that the Campo North Option would not present an electrocution risk to birds. There is no known concentrated movement of migrating birds in San Diego County in the vicinity of this option (Unitt, 2007), and there is a lack of any topography to funnel migrating birds through the vicinity of this option. The impact significance (Class I for listed species and Class II for non-sensitive species) and required mitigation associated with vegetation management (Mitigation Measure B-10a) for this option is the same as that described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measure for Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species collide with transmission lines

B-10a Utilize collision-reducing techniques in installation of transmission lines. There is no highly utilized avian flight path along this option; therefore, no marking of the overhead lines is required. All other mitigation that is required in Mitigation Measure B-10a for the Proposed Project (Section D.2.14), not related to the installation of markers, shall be implemented.

Impact B-11: Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (Class III)

Common ravens have been documented to prey on the desert tortoise and the FTHL (Liebezeit et al., 2002; Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003), which do not occur along this option. The common raven has not been documented to prey on any other listed or sensitive wildlife in the vicinity of this option (Liebezeit et al., 2002), although the predation may still occur but would be adverse but less than significant (Class III). No mitigation is required.

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class II for special-status wildlife and nesting birds; Class III for non-sensitive wildlife)

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent disturbance to wildlife and wildlife mortality during project maintenance: BIO-APM-3, BIO-APM-4, BIO-APM-6, BIO-APM-7, BIO-APM-9, BIO-APM-10 through BIO-APM-13, and BIO-APM-16. With implementation of the APMs, impacts to non-sensitive wildlife would be adverse but less than significant (Class III). No mitigation is required.

These types of impacts would occur from maintenance: impacts to nesting birds if vegetation is cleared during the breeding season; impacts to eagles if maintenance activities occur within 4,000 feet of an active eagle nest; mortality of special status species from grading, vegetation clearing, or use of access roads; and/or adverse effects to Peninsular bighorn sheep from maintenance activities that cause sheep to avoid affected areas.

Even with implementation of the APMs, disturbance to wildlife and potential wildlife mortality would be significant according to Significance Criteria 1.f. (impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species) and 1.g. (violation of the Migratory Bird Treaty Act). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except

where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence. Impacts to special-status wildlife species from maintenance activities are significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measure B-12a.

Maintenance activities would impact nesting birds (violation of Migratory Bird Treaty Act) if vegetation is cleared during the general avian breeding season (February 15 through September 15) or the raptor breeding season (January 1 through September 15). This impact would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a.

Maintenance activities would cause disturbance to, and possible mortality of QCB. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12c.

Mitigation Measures for Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality

B-12a Conduct maintenance activities outside the general avian breeding season.

B-12c Maintain access roads and clear vegetation in quino checkerspot butterfly habitat.

Buckman Springs Underground Option

Environmental Setting

The Buckman Springs Underground Option is in the South Coast bioregion and would only be used in combination with the I-8 Alternative, diverging north at MP I8-54.6 (MP BSU-0). The option is 2.7 miles long and would replace 2.5 miles of the I-8 Alternative. The majority of this option is underground with the exception of short stretches of transmission line that would occur between the Interstate 8 Alternative and the overhead-underground transition structures at MP BSU-0.2 and BSU-2.6 (see Figure Ap.8J-19).

Vegetation Communities. The predominant vegetation community along this alternative is chaparral. Other vegetation communities in this alternative include big sagebush scrub, coast live oak woodlands, and southern cottonwood-willow riparian forest. Vegetation communities are described in Section D.2.1.2.2. Detailed vegetation mapping for the Buckman Springs Underground Option can be found in Appendix 8J. A generalized vegetation map for all of the SWPL Alternatives is presented in Figure E.1.2-1.

Since a formal delineation has not yet been conducted, the precise presence and extent of waters and wetlands at this time is unknown. However, the following vegetation communities that were identified during vegetation mapping along the option route are often jurisdictional: southern cottonwood-willow riparian forest.

Overview of Special Habitat Management Areas. This option would cross the Cleveland National Forest.

Designated Critical Habitat. This option would not cross designated critical habitat.

Special Status Plant Species. No listed plant species were observed along this option in 2007. One non-listed sensitive plant species was observed: Sticky geraea.

No additional listed or special status plant species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the Buckman Springs Underground Option.

Special Status Wildlife Species. One listed wildlife species (Arroyo toad; assumed presence) was assumed to be present along this option in 2007 because dry weather conditions prevented surveys from being conducted.

No additional listed or special status wildlife species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the Buckman Springs Underground Option.

Environmental Impacts and Mitigation Measures

This section presents a discussion of impacts and mitigation measures for the Buckman Springs Underground Option as a result of construction, operation, and maintenance of the project.

Several general impacts to biological resources would occur with this option, and impact significance would be the same as for the Proposed Project. For these impacts, the mitigation measures presented for the Proposed Project would also be required for this option. Discussion of each of these impacts is presented in the Proposed Project impact analysis in Sections D.2.5 to D.2.16.

- Impact B-3 (Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species; Class II), Mitigation Measure B-1a (Provide restoration/compensation for affected sensitive vegetation communities), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas), and Mitigation Measure B-3a (Prepare and implement a Weed Control Plan)
- Impact B-4 (Construction activities would create dust that would result in degradation of vegetation; Class III)
- Impact B-6 (Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality; Class III)
- Impact B-8 (Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act; Class II), Mitigation Measure B-8a (Conduct pre-construction surveys and monitoring for breeding birds))

Several other general impacts to biological resources would occur with this option, and impact significance would be the same as for the Interstate 8 Alternative. For these impacts, the mitigation measures presented for the Interstate 8 Alternative would also be required for this option. Discussion of each of these impacts is presented in the Interstate 8 Alternative impact analysis in Section E.1.2.2.

- Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II), Mitigation Measure B-1c (Conduct biological monitoring), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas)
- Impact B-9: Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II for bat colonies; No Impact for linkages, wildlife movement corridors, or fish movement), Mitigation Measure B-9a (Survey for bat nursery colonies)

Impacts and the required mitigation measures that differ from the Proposed Project are addressed below.

Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation (Class I for sensitive vegetation, vegetation management, type conversion, and RCAs; Class III for non-sensitive vegetation)

Construction of the Buckman Springs Underground Option would cause both temporary (during construction from vegetation clearing) and permanent (displacement of vegetation with project features such as towers and permanent access roads) impacts to vegetation communities (see Table E.1.2-6). These impacts and the corresponding mitigation requirements listed in Table E.1.2-6 are based on preliminary project design and would likely be revised during final project design. Construction activities would also result in the alteration of soil conditions, including the loss of native seed banks and changes in topography and drainage, such that the ability of a site to support native vegetation after construction is impaired.

Table E.1.2-6. Impacts to Vegetation Communities and Required Mitigation – Buckman Springs Underground Option

Vegetation Communities	Permanent Impacts			Temporary Impacts				Total Offsite Mitigation
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration	Offsite Mitigation	
Non-Native Vegetation, Developed Areas, and Disturbed Habitat								
Developed	1.33	0	0.00	0.23	0	0.00	0.00	0.00
Disturbed habitat	0.32	0	0.00	0.00	0	0.00	0.00	0.00
Subtotal	1.65	—	0.00	0.23	—	0.00	0.00	0.00
Coastal and Montane Scrub Habitats								
Big sagebrush scrub	0.09	1.5:1	0.14	0.00	1:1	0.00	0.00	0.14
Subtotal	0.09	—	0.14	0.00	—	0.00	0.00	0.14
Chaparrals								
Chamise chaparral	12.34	1:1	12.34	2.76	1:1	2.76	0.00	12.34
Northern mixed chaparral	12.29	1:1	12.29	4.55	1:1	4.55	0.00	12.29
Northern mixed chaparral – disturbed	1.02	1:1	1.02	0.13	1:1	0.13	0.00	1.02
Subtotal	25.65	—	25.65	7.44	—	7.44	0.00	25.65
Woodlands and Forests								
Coast live oak woodland	0.00	3:1	0.00	0.00	3:1	0.00	0.00	0.00
Subtotal	0.00	—	0.00	0.00	—	0.00	0.00	0.00
Riparian Forests and Woodlands								
Southern cottonwood-willow riparian forest	0.21	3:1	0.63	0.00	2:1	0.00	0.00	0.63
Subtotal	0.21	—	0.63	0.00	—	0.00	0.00	0.63
GRAND TOTAL	27.60	—	26.42	7.67	—	7.44	0.00	26.42

The following APMs, as set forth in Table D.2-5, would be implemented to avoid or minimize impacts to vegetation communities: BIO-APM-1 and 2, BIO-APM-4 through BIO-APM-6, BIO-APM-16, BIO-APM-17, BIO-APM-20, BIO-APM-23, and BIO-APM-25. Even with implementation of the APMs, however, the impacts to sensitive vegetation communities would be significant according to Significance Criterion 2.a (substantial adverse effect on a riparian habitat or other sensitive natural community by temporarily or permanently removing it during construction, grading, clearing, or other activities). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall

still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Impacts to sensitive vegetation communities are not mitigable to less than significant levels (Class I) because adequate mitigation land may not be available to compensate for the impacts. Impacts to developed areas and disturbed habitat would be adverse but less than significant (Class III), and no mitigation is required. Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to sensitive vegetation communities.

Riparian Conservation Areas (RCAs). ~~Impacts to RCAs are not allowed on NFS lands, in accordance with the Forest Plan (USDA, 2005). The five-step screening process, as described in Section E.1.2.1, was used to identify RCAs along the Buckman Springs Underground Option. The RCA analysis, including the five-step screening process, is provided in Appendix 8Q.~~ The Buckman Springs Underground Option would impact RCAs (0.5 acres of permanent impacts) through the construction of an access road across Kitchen Creek at MP BSU-0.1. BIO-APM-2, BIO-APM-4 through 6, BIO-APM-16 through 18, BIO-APM-20, and BIO-APM-23 would be applied to minimize or avoid significant impacts to RCAs. Even with implementation of the APMs, however, the impacts would be considered significant and not mitigable (Class I) according to Significance Criteria 2 (substantial adverse effect on a riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the Wildlife Agencies) and 3.b. (Failure to provide a wetland buffer adequate to protect the function and values of existing wetlands) if the final project could not be designed to avoid RCAs. Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to RCAs.

Vegetation Management (Loss of Trees). This alternative occurs underground with the exception of one span that would occur at the start of this option and one span at the end of this option. SDG&E has estimated based on preliminary project design that zero non-native trees and up to approximately four native oak trees would be removed to maintain proper clearance between vegetation and the transmission lines along the entire length of this option. SDG&E has estimated based on preliminary project design that zero non-native trees and up to approximately three native trees (one oak tree and two willow trees) would be trimmed to maintain proper clearance between vegetation and the transmission lines along the entire length of this option. The impact significance (Class I for native species and Class II for non-native species) and required mitigation associated with vegetation management (Mitigation Measure B-1a) for this option is the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Type Conversion. As discussed in Section E.1.2.2 for the Interstate 8 Alternative, the construction and operation of new transmission lines in areas with high fire risk could cause wildfires, and could reduce the effectiveness of fire fighting efforts. The impacts and mitigation associated with type conversion for the Buckman Springs Underground Option are the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measures for Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. Mitigation ratios and mitigation acreages for the Buckman Springs Underground Option are provided in Table E.1.2-6.
- B-1c** Conduct biological monitoring.

B-1k Re-seed disturbed areas after a transmission line caused fire.

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I)

Listed or sensitive (special status) plant species impacts would result from direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during construction. Focused plant species surveys were conducted in spring/summer of 2007 only where ROE permission was granted. One non-listed sensitive plant species were observed along the Buckman Springs Underground Option during 2007: sticky geraea (Appendix 8J-18). However, as with the Proposed Project, the results of the surveys are inconclusive because the poor rainfall conditions may have prevented special status plants from germinating or resprouting so they could not be observed.

No additional listed or special status plant species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the Buckman Springs Underground Option. Additionally, the Buckman Springs Underground Option would not cross USDA Forest Service modeled habitat (USDA, 2007) for any listed species. Table E.1.2-1 contains specific information about the special status plant species and their listing or sensitivity statuses.

The following APMs would be implemented for this option to address potential significant impacts to listed or sensitive plant species or their habitats: BIO-APM-1 through 6, BIO-APM-8, BIO-APM-13, BIO-APM-18, and BIO-APM-22. Even with implementation of the APMs, the Buckman Springs Underground Option would impact the following special status plant species:

Sticky Geraea. Sticky geraea occurs at MP BSU-0.4, between BSU-1.0 and BSU-1.2, and between BSU-2.2 and BSU-2.3 (Appendix 8J, Figure Ap.8J-19). Approximately 66, 920, and 30 individuals were observed in these locations, respectively. The Buckman Springs Underground Option would impact 1,016 individuals of this species as a result of vegetation clearing for the underground ROW.

Even with implementation of the APMs, the impacts would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened) and Significance Criterion 1.b. (impact that would affect the number or range or regional long-term survival of a sensitive or special status plant species).

With the exceptionally dry weather conditions in 2007, the assumption is made that special status plant species are present and impacted by this alternative. Since it is not possible to adequately assess the amount of impact to the special status plant species, the impacts are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-5a is required to, at least in part, compensate for impacts to special status plant species.

Mitigation Measures for Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-6.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-5a** Conduct rare plant surveys and implement appropriate avoidance/minimization/mitigation strategies.

Impact B-7: Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I – construction impacts to sensitive species; Other impact classes depend on species; see individual discussions)

The Buckman Springs Underground Option would impact the following listed or highly sensitive wildlife species: quino checkerspot butterfly (Impact B-7J) and arroyo toad (Impact B-7K). This option could also impact least Bell's vireo (Impact B-7D), southwestern willow flycatcher (Impact B-7E), and bald eagle (Impact B-7I). Impacts to these species are discussed in detail below.

The following listed or highly sensitive species that are addressed for the Proposed Project are not addressed for the Buckman Springs Underground Option because they either do not occur, or have low potential to occur, in the alternative study area: flat-tailed horned lizard (Impact B-7A), Peninsular bighorn sheep (Impact B-7B), burrowing owl (Impact B-7C), desert pupfish (Impact B-7F), desert tortoise (Impact B-7G), golden eagle (Impact B-7H), Stephens' kangaroo rat (Impact B-7L), coastal California gnatcatcher (Impact B-7M), San Diego and/or Riverside fairy shrimp (Impact B-7N), and barefoot banded gecko (Impact B-7O).

Although no non-listed, sensitive wildlife species were observed along the Buckman Springs Underground Option, the option has the potential to impact the 59 non-listed, sensitive wildlife species with moderate to high potential to occur (listed at the beginning of E.1.2.2 [Special Status Wildlife Species]) should they be present.

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife: BIO-APM-2 through 4, BIO-APM-7, BIO-APM-14, BIO-APM-16, BIO-APM-24, BIO-APM-26, BIO-APM-27, and BIO-APM-29. Even with implementation of the APMs, the Buckman Springs Underground Option would have a substantial adverse effect on listed and sensitive wildlife species and their habitats according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the Wildlife Agencies). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Most of the non-listed special status species' habitats are sensitive vegetation communities (Table E.1.2-6); the mitigation for the loss of the sensitive vegetation communities (Mitigation Measure B-1a) would normally compensate for the potential loss of these sensitive species and their habitats. However, since adequate land required by Mitigation Measure B-1a may not be available, the impacts to non-listed sensitive wildlife species are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7a is required to compensate, at least in part, for impacts to non-listed, sensitive wildlife species and their habitats.

Mitigation Measures for Impact B-7: Direct or Indirect Loss of Listed or Sensitive Wildlife or a Direct Loss of Habitat for Listed or Sensitive Wildlife

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-6.
- B-1c** Conduct biological monitoring.

- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7a** Ensure that all steep-walled trenches or excavations used during construction shall be covered to prevent the entrapment of wildlife (e.g., reptiles and small mammals).

Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat (Class II)

Focused surveys for the least Bell's vireo were conducted at MP BSU-0.2 (Kitchen Creek). The results of the surveys were negative.

Construction of the Buckman Springs Underground Option would result in impacts to riparian vegetation with the potential to support least Bell's vireo should the species breed near the survey location listed above at a later date. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to least Bell's vireo or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e.

Additionally, least Bell's vireo breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on vireo breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7e** Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat (Class II)

Focused surveys for the southwestern willow flycatcher were conducted MP BSU-0.2 (Kitchen Creek). The results of the surveys were negative.

Construction of the Buckman Springs Underground Option would result in impacts to riparian vegetation with the potential to support southwestern willow flycatcher should the species breed near the survey location listed above at a later date. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to southwestern willow flycatcher or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e.

Additionally, southwestern willow flycatcher breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on southwestern willow flycatcher breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7e** Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7I: Direct or indirect loss of bald eagle or direct loss of habitat (No Impact)

The Buckman Springs Underground Option would cross within 4,000 feet USDA Forest Service modeled habitat for bald eagle (USDA, 2007) at MP BSU-0.0 (Kitchen Creek).

Bald eagles are also known to winter near Morena Reservoir, which is approximately 4 miles to the southwest of this option, and Corte Madera Lake, which is approximately 5 miles to the west (Appendix 8C). At its closest point (at MP BSU-2.7), the Buckman Springs Underground Option is approximately 2 miles away from reported bald eagle sightings (USDA, 2007). There is a low potential that bald eagles would use the habitat along Kitchen Creek for foraging during the winter.

The bald eagle is not known to and is not expected to nest within or adjacent to the Buckman Springs Underground Option (Bittner, 2007). The species is not known to nest at Morena Reservoir or Corte Madera Lake (Bittner, 2007). No impacts to bald eagle as a result of the Buckman Springs Underground Option are expected.

Impacts/mitigation relating to bald eagles and electrocution/collision with transmission towers/lines is discussed in Impact B-10 below.

Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat (Class I)

Protocol surveys for the QCB were not conducted in 2007 for the Buckman Springs Underground Option because the butterfly flight season was not preceded by adequate rainfall. As a result, no presence/absence data for this species is available for this alternative; therefore a precise impact determination cannot be adequately made.

The entire Buckman Springs Underground Option occurs within USFWS protocol Survey Area 2, an area in which protocol surveys are required in suitable QCB habitat. The closest QCB observation was made in 2004, approximately 4 miles south of the Buckman Springs Underground Option (USFWS, 2006). No critical habitat for this species occurs along this option; the nearest critical habitat is approximately 13 miles southwest of the Buckman Springs Underground Option.

While it is unlikely that the Buckman Springs Underground Option would impact very much (if any) QCB-occupied habitat within Survey Area 2 given the very limited number of recent sightings, with the lack of definitive survey data, the Buckman Springs Underground Option would have a significant impact on this species according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed as endangered or threatened) and is not mitigable to less than significant levels. Since adequate land required by Mitigation Measure B-7i may not be available, the impacts are considered significant and not mitigable to less than significant levels (Class I). However, Mitigation Measures B-1a, B-1c, B-2a, and B-7i are required to, at least in part, minimize impacts to the QCB.

Mitigation Measures for Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7i** Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat (Class II)

Suitable arroyo toad habitat was present at MP BSU-0.1 (Kitchen Creek). Arroyo toad surveys at this site were not conducted in 2007 because no surface water was present at the time of the habitat assessment. As described in Section E.1.2.2 for the I-8 Alternative, arroyo toads may not emerge during the breeding season when surface water is lacking and a negative survey result would not be conclusive. An arroyo toad was documented approximately 1.5 miles downstream (to the southwest; downstream of the confluence of Kitchen Creek and Cottonwood Creek) for the I-8: West Buckman Springs Option (see Impact B-7K for the West Buckman Springs Option in Section E.1.2.2). Arroyo toads are also known to occur approximately 2 miles upstream of BSU-0.1 (CDFG CNDDDB, 2007). Therefore, arroyo toad is assumed to be present at BSU-0.1 and all habitat within 1 km is assumed to be occupied by the species, in accordance with USFWS (1999).

Permanent impacts to arroyo toads and their habitat include an access road that would be constructed across Kitchen Creek. Impacts to the arroyo toad or its occupied breeding or burrowing habitat from habitat removal or disturbance from construction (e.g., crushing of toads with construction equipment) where the toad is assumed to occur include: 0.2 acres of permanent impacts to riparian breeding habitat as well as 2.8 acres of temporary disturbance to upland burrowing habitat and 7.7 acres of permanent impact to upland burrowing habitat. The pre-construction survey required in Mitigation Measure B-7j would conclusively define if there would be impacts to the arroyo toad in the areas of assumed toad presence from construction (i.e., if appropriate climatic conditions are present to encounter arroyo toads). The requirements in Mitigation Measure B-7j may be reduced based on the results of this survey. It is expected that adequate mitigation land would be available to satisfy the mitigation requirement because of the small number of acres needed and because this type of mitigation for the arroyo toad is typically available and regularly provided in San Diego County.

Impacts to arroyo toad or its occupied breeding or burrowing habitat would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened). These impacts would be significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7j.

Mitigation Measures for Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7j** Conduct arroyo toad surveys, and implement appropriate avoidance/minimization/compensation strategies. The required mitigation for arroyo toad occupied habitat includes 2.8 acres of onsite restoration and 18.8 acres of offsite acquisition and preservation of occupied toad habitat consisting of 0.6 acres of breeding habitat and 18.2 acres of upland burrowing habitat. All other arroyo toad mitigation described in Mitigation Measure B-7j for the Proposed Project (Section D.2.11) is also required for the Buckman Springs Underground Option.

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No Impact for electrocution; Class I for collision for listed species; Class II for collision for non-sensitive species or daytime migration)

Although the majority of the Buckman Springs Underground Option would be underground, portions of the option would be overhead. The types of potential impacts related to collision are the same as those described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2). It is anticipated that the Buckman Springs Underground Option would not present an electrocution risk to birds. There is no known concentrated movement of migrating birds in San Diego County in the vicinity of this option (Unitt, 2007), and there is a lack of any topography to funnel migrating birds through the vicinity of this option. The impact significance (Class I for listed species and Class II for non-sensitive species) and required mitigation associated with vegetation management (Mitigation Measure B-10a) for this option is the same as that described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measure for Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species collide with transmission lines

- B-10a** Utilize collision-reducing techniques in installation of transmission lines.

Impact B-11: Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (Class III)

Although the majority of the Buckman Springs Underground Option would be underground, portions of the option would be overhead. Common ravens have been documented to prey on the desert tortoise and the FTHL (Liebezeit et al., 2002; Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003), which do not occur along this alternative. The common raven has not been documented to prey on any other listed or sensitive wildlife in the vicinity of this option (Liebezeit et al., 2002), although the predation may still occur but would be adverse but less than significant (Class III). No mitigation is required.

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class II for special-status wildlife and nesting birds; Class III for non-sensitive wildlife)

Although the majority of the Buckman Springs Underground Option would be underground, maintenance activities would include the need to maintain the permanent access road along the ROW as well

as maintenance activities at the overhead-underground transition structures. The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent disturbance to wildlife and wildlife mortality during project maintenance: BIO-APM-3, BIO-APM-4, BIO-APM-6, BIO-APM-7, BIO-APM-9, BIO-APM-10 through BIO-APM-13, and BIO-APM-16. With implementation of the APMs, impacts to non-sensitive wildlife would be adverse but less than significant (Class III). No mitigation is required.

These types of impacts would occur from maintenance: impacts to nesting birds if vegetation is cleared during the breeding season; and/or mortality of special status species from grading, vegetation clearing, or use of access roads.

Even with implementation of the APMs, disturbance to wildlife and potential wildlife mortality would be significant according to Significance Criteria 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species), 1.f. (impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species), 1.g. (violation of the Migratory Bird Treaty Act), and 2.b. (substantial adverse effect on riparian or other sensitive vegetation communities if weed species are introduced). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence. Impacts to special-status wildlife species from maintenance activities are significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measure B-12a.

Maintenance activities would impact nesting birds (violation of Migratory Bird Treaty Act) if vegetation is cleared during the general avian breeding season (February 15 through September 15) or the raptor breeding season (January 1 through September 15). This impact would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a.

Maintenance activities would impact the least Bell's vireo and southwestern willow flycatcher if the noise threshold (i.e., 60 dB[A] Leq hourly) is met or exceeded at the edge of their nesting territories during their breeding seasons. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a.

Maintenance activities would cause disturbance to, and possible mortality of arroyo toad and QCB. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-12b and B-12c.

Mitigation Measures for Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality

- B-3a** Prepare and implement a Weed Control Plan.
- B-12a** Conduct maintenance activities outside the general avian breeding season.
- B-12b** Conduct maintenance when arroyo toads are least active.
- B-12c** Maintain access roads and clear vegetation in quino checkerspot butterfly habitat.

West Buckman Springs Option

Environmental Setting

The West Buckman Springs Option is in the South Coast bioregion and would only be used in combination with the I-8 Alternative, diverging north at MP I8-53.6 (MP BSW-0). The option is 5.6 miles long and would replace 5 miles of the I-8 Alternative.

Vegetation Communities. The predominant vegetation community along this alternative is chaparral. Other vegetation communities in this alternative include sage scrub, grasslands, oak woodlands, riparian woodland, and non-vegetated channel. Vegetation communities are described in Section D.2.1.2.2. Detailed vegetation mapping for the West Buckman Springs Option can be found in Appendix 8J. A generalized vegetation map for all of the SWPL Alternatives is presented in Figure E.1.2-1.

Since a formal delineation has not yet been conducted, the precise presence and extent of waters and wetlands at this time is unknown. However, the following vegetation communities that were identified during vegetation mapping along the option route are often jurisdictional: non-vegetated channel and riparian woodland.

Overview of Special Habitat Management Areas. This option would cross the Cleveland National Forest.

Designated Critical Habitat. This option would not cross designated critical habitat.

Special Status Plant Species. No listed plant species were observed along this alternative in 2007. One non-listed sensitive plant species was observed: sticky geraea

No additional listed or special status plant species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the West Buckman Springs Option.

Special Status Wildlife Species. One listed wildlife species was observed along this alternative in 2007: Arroyo toad. Three non-listed sensitive wildlife species were observed:

- Orange-throated whiptail lizard
- White-tailed kite
- Cooper's hawk

No additional listed or special status wildlife species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the West Buckman Springs Option.

Environmental Impacts and Mitigation Measures

This section presents a discussion of impacts and mitigation measures for the West Buckman Springs Option as a result of construction, operation, and maintenance of the project.

Several general impacts to biological resources would occur with this option, and impact significance would be the same as for the Proposed Project. For these impacts, the mitigation measures presented for the Proposed Project would also be required for this option. Discussion of each of these impacts is presented in the Proposed Project impact analysis in Sections D.2.5 to D.2.16.

- Impact B-3 (Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species; Class II), Mitigation Measure B-1a (Provide restoration/compensation for affected sensitive vegetation communities), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas), and Mitigation Measure B-3a (Prepare and implement a Weed Control Plan)

- Impact B-4 (Construction activities would create dust that would result in degradation of vegetation; Class III)
- Impact B-6 (Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality; Class III)
- Impact B-8 (Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act; Class II)), Mitigation Measure B-8a (Conduct pre-construction surveys and monitoring for breeding birds)

Several other general impacts to biological resources would occur with this option, and impact significance would be the same as for the Interstate 8 Alternative. For these impacts, the mitigation measures presented for the Interstate 8 Alternative would also be required for this option. Discussion of each of these impacts is presented in the Interstate 8 Alternative impact analysis in Section E.1.2.2.

- Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II), Mitigation Measure B-1c (Conduct biological monitoring), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas)
- Impact B-9: Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II for bat colonies; No Impact for linkages, wildlife movement corridors, or fish movement), Mitigation Measure B-9a (Survey for bat nursery colonies)

Impacts and the required mitigation measures that differ from the Proposed Project are addressed below.

Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation (Class I for sensitive vegetation, vegetation management, type conversion, and RCAs; Class III for non-sensitive vegetation)

Construction of the West Buckman Springs Option would cause both temporary (during construction from vegetation clearing) and permanent (displacement of vegetation with project features such as towers and permanent access roads) impacts to vegetation communities (see Table E.1.2-7). These impacts and the corresponding mitigation requirements listed in Table E.1.2-7 are based on preliminary project design and would likely be revised during final project design. Vegetation communities listed in Table E.1.2-7 are described in Section D.2.1.2.2. Construction activities would also result in the alteration of soil conditions, including the loss of native seed banks and changes in topography and drainage, such that the ability of a site to support native vegetation after construction is impaired.

The following APMs, as set forth in Table D.2-5, would be implemented to avoid or minimize impacts to vegetation communities: BIO-APM-1 and 2, BIO-APM-4 through BIO-APM-6, BIO-APM-16, BIO-APM-17, BIO-APM-20, BIO-APM-23, and BIO-APM-25. Even with implementation of the APMs, however, the impacts to sensitive vegetation communities would be significant according to Significance Criterion 2.a (substantial adverse effect on a riparian habitat or other sensitive natural community by temporarily or permanently removing it during construction, grading, clearing, or other activities). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Impacts to sensitive vegetation communities are not mitigable to less than significant levels (Class I) because adequate mitigation land may not be available to compensate for the impacts. Impacts to devel-

oped areas and disturbed habitat would be adverse but less than significant (Class III), and no mitigation is required. Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to sensitive vegetation communities.

Riparian Conservation Areas (RCAs). ~~Impacts to RCAs are not allowed on NFS lands, in accordance with the Forest Plan (USDA, 2005). The five-step screening process, as described in Section E.1.2.1, was used to identify RCAs along the West Buckman Springs Option. The RCA analysis, including the five-step screening process, is provided in Appendix 8Q.~~ The West Buckman Springs Option would impact RCAs (0.1 acres of permanent impacts) through the construction of an access road across Cottonwood Creek (MP BSW-1.4). BIO-APM-2, BIO-APM-4 through 6, BIO-APM-16 through 18, BIO-APM-20, and BIO-APM-23 would be applied to minimize or avoid significant impacts to RCAs. Even with implementation of the APMs, however, the impacts would be considered significant and not mitigable (Class I) according to Significance Criteria 2 (substantial adverse effect on a riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the Wildlife Agencies) and 3.b. (Failure to provide a wetland buffer adequate to protect the function and values of existing wetlands) if the final project could not be designed to avoid RCAs. Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to RCAs.

Table E.1.2-7. Impacts to Vegetation Communities and Required Mitigation – West Buckman Springs Option

Vegetation Communities	Permanent Impacts			Temporary Impacts				Total Offsite Mitigation
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration	Offsite Mitigation	
Non-Native Vegetation, Developed Areas, and Disturbed Habitat								
Developed	0.04	0	0.00	10.91	0	0.00	0.00	0.00
Disturbed habitat	0.38	0	0.00	0.00	0	0.00	0.00	0.00
Subtotal	0.42	—	0.00	10.91	—	0.00	0.00	0.00
Coastal and Montane Scrub Habitats								
Big sagebrush scrub	0.67	1.5:1	1.01	0.34	1:1	0.34	0.00	1.01
Diegan coastal sage scrub – inland form	1.02	1.5:1	1.53	0.18	1:1	0.18	0.00	1.53
Diegan coastal sage scrub – inland form – disturbed	0.00	1.5:1	0.00	0.00	1:1	0.00	0.00	0.00
Subtotal	1.69	—	2.54	0.52	—	0.52	0.00	2.54
Grasslands and Meadows								
Native grassland – disturbed	0.36	2:1	0.72	0.19	1:1	0.19	0.00	0.72
Non-native grassland	0.48	1:1	0.96	10.86	1:1	10.86	0.00	0.96
Subtotal	0.84	—	1.68	11.05	—	11.05	0.00	1.68
Chaparrals								
Chamise chaparral	8.02	1:1	8.02	10.16	1:1	10.16	0.00	8.02
Northern mixed chaparral	6.63	1:1	6.63	8.66	1:1	8.66	0.00	6.63
Red shank chaparral	0.04	1:1	0.04	0.19	1:1	0.19	0.00	0.04
Scrub oak chaparral	0.10	1:1	0.10	0.00	1:1	0.00	0.00	0.10
Subtotal	14.79	—	14.79	19.01	—	19.01	0.00	14.79
Woodlands and Forests								
Coast live oak woodland	0.22	3:1	0.66	8.04	3:1	8.04	16.08	16.74
Subtotal	0.22	—	0.66	8.04	—	8.04	16.08	16.74

Table E.1.2-7. Impacts to Vegetation Communities and Required Mitigation – West Buckman Springs Option

Vegetation Communities	Permanent Impacts			Temporary Impacts			Total Offsite Mitigation	
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration		Offsite Mitigation
Herbaceous Wetlands, Freshwater, and Streams								
Non-vegetated channel	0.01	1:1	0.01	0.00	1:1	0.00	0.00	0.01
Subtotal	0.01	—	0.01	0.00	—	0.00	0.00	0.01
Riparian Forests and Woodlands								
Riparian woodland	0.08	3:1	0.24	0.00	2:1	0.00	0.00	0.24
Subtotal	0.08	—	0.24	0.00	—	0.00	0.00	0.24
GRAND TOTAL	18.05	—	19.92	49.53	—	38.62	16.08	36.00

Vegetation Management (Loss of Trees). SDG&E has estimated based on preliminary project design that four non-native trees and up to approximately 11 native oak trees would be removed to maintain proper clearance between vegetation and the transmission lines along the entire length of this alternative. SDG&E has estimated based on preliminary project design that eight non-native trees and up to approximately seven native trees (three oak trees and four willow trees) would be trimmed to maintain proper clearance between vegetation and the transmission lines along the entire length of this alternative. The impact significance (Class I for native species and Class II for non-native species) and required mitigation associated with vegetation management (Mitigation Measure B-1a) for this option is the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Type Conversion. As discussed in Section E.1.2.2 for the Interstate 8 Alternative, the construction and operation of new transmission lines in areas with high fire risk could cause wildfires, and could reduce the effectiveness of fire fighting efforts. The impacts and mitigation associated with type conversion for the West Buckman Springs Option are the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measures for Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation

B-1a Provide restoration/compensation for affected sensitive vegetation communities. Mitigation ratios and mitigation acreages for the West Buckman Springs Option are provided in Table E.1.2-7.

B-1c Conduct biological monitoring.

B-1k Re-seed disturbed areas after a transmission line caused fire.

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I)

Listed or sensitive (special status) plant species impacts would result from direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during construction. Focused plant species surveys were conducted in spring/summer of 2007 only where ROE permission was granted. One non-listed sensitive plant species were observed along the West Buckman Springs Option during 2007: sticky geraea (Appendix 8J-17). However, as with the Proposed Project, the results of the surveys are inconclusive because the poor rainfall condi-

tions may have prevented special status plants from germinating or resprouting so they could not be observed.

No additional listed or special status wildlife species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the West Buckman Springs Option. Additionally, the West Buckman Springs Option would not cross USDA Forest Service modeled habitat (USDA, 2007) for any listed species. Table E.1.2-1 contains specific information about the special status plant species and their listing or sensitivity statuses.

The following APMs would be implemented for this alternative to address potential significant impacts to listed or sensitive plant species or their habitats: BIO-APM-1 through 6, BIO-APM-8, BIO-APM-13, BIO-APM-18, and BIO-APM-22. Even with implementation of the APMs, the West Buckman Springs Option would impact the following special status plant species:

Sticky Gerarea. Approximately 25 sticky gerarea plants were observed at MP BSW-0.8 and 1 sticky gerarea was observed at BSW-1.7 (Appendix 8J, Figure Ap.8J-20). The West Buckman Springs Option would impact the 25 plants at BSW-0.8 as a result of vegetation clearing for a pull site.

Even with implementation of the APMs, the impacts would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened) and Significance Criterion 1.b. (impact that would affect the number or range or regional long-term survival of a sensitive or special status plant species).

With the exceptionally dry weather conditions in 2007, the assumption is made that special status plant species are present and impacted by this alternative. Since it is not possible to adequately assess the amount of impact to the special status plant species, the impacts are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-5a is required to, at least in part, compensate for impacts to special status plant species.

Mitigation Measures for Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-7.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-5a** Conduct rare plant surveys and implement appropriate avoidance/minimization/mitigation strategies.

Impact B-7: Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I – construction impacts to sensitive species; Other impact classes depend on species; see individual discussions)

The West Buckman Springs Option would impact the following listed or highly sensitive wildlife species: golden eagle (Impact B-7H), QCB (Impact B-7J), and arroyo toad (Impact B-7K). This option could also impact least Bell's vireo (Impact B-7D), southwestern willow flycatcher (Impact B-7E), and bald eagle (Impact B-7I). Impacts to these species are discussed in detail below.

The following listed or highly sensitive species that are addressed for the Proposed Project are not addressed for the West Buckman Springs Option because they either do not occur, or have low potential

to occur, in the alternative study area: FTHL (Impact B-7A), PBS (Impact B-7B), burrowing owl (Impact B-7C), desert pupfish (Impact B-7F), desert tortoise (Impact B-7G), Stephens' kangaroo rat (Impact B-7L), coastal California gnatcatcher (Impact B-7M), San Diego and/or Riverside fairy shrimp (Impact B-7N), and barefoot banded gecko (Impact B-7O).

The West Buckman Springs Option would impact the following non-listed, sensitive wildlife species and their habitats: orange-throated whiptail lizard, Cooper's hawk, and white-tailed kite (Appendix 8J, Figure 8J-20). This option also has the potential to impact the other 55 non-listed, sensitive wildlife species with moderate to high potential to occur (listed at the beginning of E.1.2.2 [Special Status Wildlife Species]) should they be present.

Orange-throated whiptail lizard. One orange-throated whiptail lizard was observed at MP BSW-1.3 (Appendix 8J, Figure Ap.8J-20). This alternative would impact 1 individual of this species through habitat modification and the removal of habitat. In addition, individuals could be killed if they are within the construction and are crushed by equipment.

Cooper's hawk. One Cooper's hawk was observed at MP BSW-1.3 (Appendix 8J, Figure Ap.8J-20). This species could possibly breed along this alternative (Unitt, 2004) and would be indirectly impacted by noise if construction were to occur in or adjacent to its breeding habitat during the general avian breeding season. The Cooper's hawk would also be affected by the removal of riparian breeding vegetation that would occur as a result of construction of an access road across Cottonwood Creek (BSW-1.3).

White-tailed kite. One white-tailed kite was observed at MP BSW-1.4 (Appendix 8J, Figure Ap.8J-20). This species could possibly breed along this alternative (Unitt, 2004) and would be impacted by noise if construction were to occur in or adjacent to its breeding habitat during the general avian breeding season. This species would also be indirectly affected by the removal of riparian breeding vegetation that would occur as a result of construction of an access road across Cottonwood Creek (BSW-1.3).

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife: BIO-APM-2 through 4, BIO-APM-7, BIO-APM-14, BIO-APM-16, BIO-APM-24, BIO-APM-26, BIO-APM-27, and BIO-APM-29. Even with implementation of the APMs, the West Buckman Springs Option would have a substantial adverse effect on listed and sensitive wildlife species and their habitats according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the Wildlife Agencies). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Most of the non-listed special status species' habitats are sensitive vegetation communities (Table E.1.2-7); the mitigation for the loss of the sensitive vegetation communities (Mitigation Measure B-1a) would normally compensate for the potential loss of these sensitive species and their habitats. However, since adequate land required by Mitigation Measure B-1a may not be available, the impacts to non-listed sensitive wildlife species are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7a is required to compensate, at least in part, for impacts to non-listed, sensitive wildlife species and their habitats.

Mitigation Measures for Impact B-7: Direct or Indirect Loss of Listed or Sensitive Wildlife or a Direct Loss of Habitat for Listed or Sensitive Wildlife

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-7.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7a** Ensure that all steep-walled trenches or excavations used during construction shall be covered to prevent the entrapment of wildlife (e.g., reptiles and small mammals).

Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat (Class II)

Focused surveys for the least Bell's vireo were conducted at MP BSW-1.4 (Cottonwood Creek). The results of the surveys were negative.

Construction of the West Buckman Springs Option would result in impacts to riparian vegetation with the potential to support least Bell's vireo should the species breed near the survey location listed above at a later date. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to least Bell's vireo or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e.

Additionally, least Bell's vireo breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on vireo breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7e** Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat (Class II)

Focused surveys for the southwestern willow flycatcher were conducted at MP BSW-1.4 (Cottonwood Creek). The results of the surveys were negative.

Construction of the West Buckman Springs Option would result in impacts to riparian vegetation with the potential to support southwestern willow flycatcher should the species breed near the survey location listed above at a later date. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed

species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to southwestern willow flycatcher or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e.

Additionally, southwestern willow flycatcher breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on southwestern willow flycatcher breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7e** Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7H: Direct or indirect loss of golden eagle or direct loss of habitat (Class I)

One golden eagle nest area would be affected by the West Buckman Springs Option. The specific location of this nest area is not disclosed in this EIR/EIS (nor are the MPs within 4,000 feet of the nest area) in order to protect the golden eagle. SDG&E will be made aware of the MPs subject to mitigation in an unpublished document. Nest locations, for purposes of this document, were provided by the Wildlife Research Institute (Bittner, 2007).

The nest area occurs approximately 4,000 feet from the West Buckman Springs Option. There is direct line-of-sight between this nest area and the West Buckman Springs Option and construction would occur above the nest site in elevation. Impacts to this eagle pair would be significant and not mitigable to less than significant levels (Class I) because of the distance between the nest area and the project (less than 4,000 feet), the direct line-of-sight that would occur, and because construction would occur above the nest. Implementation of Mitigation Measure B-7h is still required to minimize the impact.

Impacts/mitigation relating to golden eagles and electrocution/collision with transmission towers/lines is discussed in Impact B-10 below.

Mitigation Measure for Impact B-7H: Direct or indirect loss of golden eagle or direct loss of habitat

- B-7h** Implement appropriate avoidance/minimization strategies for eagle nests.

Impact B-7I: Direct or indirect loss of bald eagle or direct loss of habitat (No Impact)

The West Buckman Springs Option would cross USDA Forest Service modeled habitat for bald eagle (USDA, 2007) at MP BSW-1.4 (Cottonwood Creek).

Bald eagles are also known to winter near Morena Reservoir, which is approximately 2 miles to the southwest of this option, and Corte Madera Lake, which is approximately 4 miles to the west (Appendix 8C). At its closest point (at MP BSW-5.6), the West Buckman Springs Option is approximately 7,000 feet away from reported bald eagle sightings (USDA, 2007). There is a low potential that bald eagles would use the habitat along Cottonwood Creek for foraging during the winter.

The bald eagle is not known to and is not expected to nest within or adjacent to the West Buckman Springs Option (Bittner, 2007). The species is not known to nest at Morena Reservoir or Corte Madera Lake (Bittner, 2007). No impacts to bald eagle as a result of the West Buckman Springs Option are expected.

Impacts/mitigation relating to bald eagles and electrocution/collision with transmission towers/lines is discussed in Impact B-10 below.

Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat (Class I)

Protocol surveys for the QCB were not conducted in 2007 for the West Buckman Springs Option because the butterfly flight season was not preceded by adequate rainfall. As a result, no presence/absence data for this species is available for this alternative; therefore a precise impact determination cannot be adequately made.

The entire West Buckman Springs Option occurs within USFWS protocol Survey Area 2, an area in which protocol surveys are required in suitable QCB habitat. The closest QCB observation was made in 2004, approximately 3 miles south of the West Buckman Springs Option (USFWS, 2006). No critical habitat for this species occurs along this option; the nearest critical habitat is approximately 11 miles southwest of the West Buckman Springs Option.

While it is unlikely that the West Buckman Springs Option would impact very much (if any) QCB-occupied habitat within Survey Area 2 given the very limited number of recent sightings, with the lack of definitive survey data, the West Buckman Springs Option would have a significant impact on this species according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed as endangered or threatened). Since adequate land required by Mitigation Measure B-7i may not be available, the impacts are considered significant and not mitigable to less than significant levels (Class I). However, Mitigation Measures B-1a, B-1c, B-2a, and B-7i are required to, at least in part, minimize impacts to the QCB.

Mitigation Measures for Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7i** Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat (Class II)

Focused surveys in 2007 were conducted for the arroyo toad at MP BSW-1.4 (Cottonwood Creek), which contained suitable habitat and surface water at the time of the habitat assessment. The arroyo toad was found in Cottonwood Creek approximately 400 feet downstream on where the option would cross the

creek. All potential breeding and upland habitat within 1 km of known arroyo toad locations is considered occupied by the arroyo toad (USFWS, 1999).

Impacts to the arroyo toad or its occupied breeding or burrowing habitat from habitat removal or disturbance from construction (e.g., crushing of toads with construction equipment) of the West Buckman Option where the arroyo toad is known to occur include 0.1 acres of permanent impacts to riparian breeding habitat, 4.2 acres of permanent impacts to upland burrowing habitat, and 4.4 acres of temporary impacts to upland burrowing habitat. These impacts would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened). These impacts would be significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7j. It is expected that adequate mitigation land would be available to satisfy the mitigation requirement because of the small number of acres needed and because this type of mitigation for the arroyo toad is typically available and regularly provided in San Diego County.

Mitigation Measures for Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7j** Conduct arroyo toad surveys, and implement appropriate avoidance/minimization/compensation strategies. For the West Buckman Springs Option, the required mitigation for arroyo toad occupied habitat includes 4.4 acres of onsite restoration and 13.1 acres of offsite acquisition and preservation of occupied toad habitat consisting of 0.3 acres of breeding habitat and 12.8 acres of upland burrowing habitat. All other arroyo toad mitigation described in Mitigation Measure B-7j for the Proposed Project (Section D.2.11) is also required for the West Buckman Springs Option.

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No Impact for electrocution; Class I for collision for listed species; Class II for collision for non-listed sensitive species or daytime migration)

The types of potential impacts related to collision are the same as those described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2). It is anticipated that the West Buckman Springs Option would not present an electrocution risk to birds. There is no known concentrated movement of migrating birds in San Diego County in the vicinity of this option (Unitt, 2007), and there is a lack of any topography to funnel migrating birds through the vicinity of this option. The impact significance (Class I for listed species and Class II for non-sensitive species) and required mitigation associated with vegetation management (Mitigation Measure B-10a) for this option is the same as that described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measure for Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species collide with transmission lines

- B-10a** Utilize collision-reducing techniques in installation of transmission lines. There is no highly utilized avian flight path along this option; therefore, no marking of the overhead lines is required. All other mitigation that is required in Mitigation Measure B-10a for the Proposed Project (Section D.2.14), not related to the installation of markers, shall be implemented.

Impact B-11: Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (Class III)

Common ravens have been documented to prey on the desert tortoise and the FTHL (Liebezeit et al., 2002; Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003), which do not occur along this alternative. The common raven has not been documented to prey on any other listed or sensitive wildlife in the vicinity of this option (Liebezeit et al., 2002), although the predation may still occur but would be adverse but less than significant (Class III). No mitigation is required.

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class II for special-status wildlife and nesting birds; Class III for non-sensitive wildlife)

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent disturbance to wildlife and wildlife mortality during project maintenance: BIO-APM-3, BIO-APM-4, BIO-APM-6, BIO-APM-7, BIO-APM-9, BIO-APM-10 through BIO-APM-13, and BIO-APM-16. With implementation of the APMs, impacts to non-sensitive wildlife would be adverse but less than significant (Class III). No mitigation is required.

These types of impacts would occur from maintenance: impacts to nesting birds if vegetation is cleared during the breeding season; impacts to eagles if maintenance activities occur within 4,000 feet of an active eagle nest; and/or mortality of special status species from grading, vegetation clearing, or use of access roads.

Even with implementation of the APMs, disturbance to wildlife and potential wildlife mortality would be significant according to Significance Criteria 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species), 1.e. (impacts to breeding eagles), 1.f. (impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species), 1.g. (violation of the Migratory Bird Treaty Act), 1.h. (violation of the Bald Eagle Protection Act), and 2.b. (substantial adverse effect on riparian or other sensitive vegetation communities if weed species are introduced). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence. Impacts to eagles and other special-status wildlife species from maintenance activities are significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measures B-7h and B-12a.

Maintenance activities would impact nesting birds (violation of Migratory Bird Treaty Act) if vegetation is cleared during the general avian breeding season (February 15 through September 15) or the raptor breeding season (January 1 through September 15). This impact would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a.

Maintenance activities would impact the least Bell's vireo and southwestern willow flycatcher if the noise threshold (i.e., 60 dB[A] Leq hourly) is met or exceeded at the edge of their nesting territories during their breeding seasons. Maintenance activities would also impact the golden eagle if activities would occur within 4,000 feet of an active golden eagle nest. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-7h and B-12a.

Maintenance activities would cause disturbance to, and possible mortality of arroyo toad and QCB. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-12b and B-12c.

Mitigation Measures for Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality

- B-3a** Prepare and implement a Weed Control Plan.
- B-7h** Implement appropriate avoidance/minimization strategies for eagle nests.
- B-12a** Conduct maintenance activities outside the general avian breeding season.
- B-12b** Conduct maintenance when arroyo toads are least active.
- B-12c** Maintain access roads and clear vegetation in quino checkerspot butterfly habitat.

South Buckman Springs Option

Environmental Setting

The South Buckman Springs Option is in the South Coast bioregion and would be used in combination with the Modified Route D Alternative, Interstate 8 Alternative: West Buckman Springs Option, and Interstate 8 Alternative (Appendix 8J, Figure 8J-21).

Vegetation Communities. The predominant vegetation community along this option is chaparral. Other vegetation communities in this option include sage scrub, grasslands, meadow, oak woodland, emergent wetland, riparian scrubs, and riparian forest. Vegetation communities are described in Section D.2.1.2.2. Detailed vegetation mapping for the South Buckman Springs Option can be found in Appendix 8J. A generalized vegetation map for all of the SWPL Alternatives is presented in Figure E.1.2-1.

Overview of Special Habitat Management Areas. This option would cross the Cleveland National Forest.

Designated Critical Habitat. This option would not cross designated critical habitat.

Special Status Plant Species. No additional listed or special status plant species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the South Buckman Springs Option.

Special Status Wildlife Species. No additional listed or special status wildlife species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the South Buckman Springs Option.

Environmental Impacts and Mitigation Measures

This section presents a discussion of impacts and mitigation measures for the South Buckman Springs Option as a result of construction, operation, and maintenance of the project.

Several general impacts to biological resources would occur with this option, and impact significance would be the same as for the Proposed Project. For these impacts, the mitigation measures presented for the Proposed Project would also be required for this option. Discussion of each of these impacts is presented in the Proposed Project impact analysis in Sections D.2.5 to D.2.16.

- Impact B-3 (Construction activities would result in the introduction of invasive, non-native, or noxious plant species; Class II), Mitigation Measure B-1a (Provide restoration/compensation for

affected sensitive vegetation communities), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas), and Mitigation Measure B-3a (Prepare and implement a Weed Control Plan)

- Impact B-4 (Construction activities would create dust that would result in degradation of vegetation; Class III)
- Impact B-6 (Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality; Class III)
- Impact B-8 (Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act; Class II), Mitigation Measure B-8a (Conduct pre-construction surveys and monitoring for breeding birds)

Several other general impacts to biological resources would occur with this option, and impact significance would be the same as for the Interstate 8 Alternative. For these impacts, the mitigation measures presented for the Interstate 8 Alternative would also be required for this option. Discussion of each of these impacts is presented in the Interstate 8 Alternative impact analysis in Section E.1.2.2.

- Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II), Mitigation Measure B-1c (Conduct biological monitoring), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas)
- Impact B-9: Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II for bat colonies; No Impact for linkages, wildlife movement corridors, or fish movement), Mitigation Measure B-9a (Survey for bat nursery colonies)

Impacts and the required mitigation measures that differ from the Proposed Project and the Interstate 8 Alternative are addressed below.

Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation (Class I for sensitive vegetation, vegetation management, and type conversion; Class III for non-sensitive vegetation)

Construction of the South Buckman Springs Option would cause both temporary (during construction from vegetation clearing) and permanent (displacement of vegetation with project features such as towers and permanent access roads) impacts to vegetation communities (see Table E.1.2-8). These impacts and the corresponding mitigation requirements listed in Table E.1.2-8 are based on preliminary project design and would likely be revised during final project design. Construction activities would also result in the alteration of soil conditions, including the loss of native seed banks and changes in topography and drainage, such that the ability of a site to support native vegetation after construction is impaired.

Table E.1.2-8. Impacts to Vegetation Communities and Required Mitigation – South Buckman Springs Option

Vegetation Communities	Permanent Impacts			Temporary Impacts				Total Offsite Mitigation
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration	Offsite Mitigation	

Table E.1.2-8. Impacts to Vegetation Communities and Required Mitigation – South Buckman Springs Option

Vegetation Communities	Permanent Impacts			Temporary Impacts				Total Offsite Mitigation
	Impact	Ratio	Offsite Mitigation	Impact	Ratio	Onsite Restoration	Offsite Mitigation	
Non-Native Vegetation, Developed Areas, and Disturbed Habitat								
Developed	0.04	0	0.00	0.03	0	0.00	0.00	0.00
Disturbed habitat	2.14	0	0.00	0.00	0	0.00	0.00	0.00
Subtotal	2.18	—	0.00	0.03	—	0.00	0.00	0.00
Coastal and Montane Scrub Habitats								
Big sagebrush scrub	0.19	1.5:1	0.29	0.64	1:1	0.64	0.00	0.29
Big sagebrush scrub - disturbed	0.99	1.5:1	1.49	0.30	1:1	0.30	0.00	1.49
Diegan coastal sage scrub – inland form	0.29	1.5:1	0.44	0.00	1:1	0.00	0.00	0.44
Diegan coastal sage scrub – inland form – disturbed	0.44	1.5:1	0.66	0.00	1:1	0.00	0.00	0.66
Subtotal	1.91	—	2.88	0.94	—	0.94	0.00	2.88
Grasslands and Meadows								
Dry montane meadow	0.00	2:1	0.00	0.00	1:1	0.00	0.00	0.00
Non-native grassland	1.45	1:1	1.45	2.04	1:1	2.04	0.00	1.45
Subtotal	1.45	—	1.45	2.04	—	2.04	0.00	1.45
Chaparrals								
Chamise chaparral	2.78	1:1	2.78	0.89	1:1	0.89	0.00	2.78
Chamise chaparral – disturbed	0.00	1:1	0.00	0.00	1:1	0.00	0.00	0.00
Northern mixed chaparral	3.60	1:1	3.60	0.94	1:1	0.94	0.00	3.60
Red shank chaparral	0.06	1:1	0.06	0.87	1:1	0.87	0.00	0.06
Subtotal	6.44	—	6.44	2.70	—	2.70	0.00	6.44
Woodlands and Forests								
Coast live oak woodland	1.03	3:1	3.09	0.30	3:1	0.30	0.60	3.69
Subtotal	1.03	—	3.09	0.30	—	0.30	0.60	3.69
Herbaceous Wetlands, Freshwater, and Streams								
Emergent wetland	0.11	2:1	0.22	0.02	2:1	0.02	0.02	0.24
Subtotal	0.11	—	0.22	0.02	—	0.02	0.02	0.24
Riparian Scrubs								
Southern willow scrub	0.02	3:1	0.06	0.00	2:1	0.00	0.00	0.06
Subtotal	0.02	—	0.06	0.00	—	0.00	0.00	0.06
Riparian Forests and Woodlands								
Southern cottonwood-willow riparian forest	0.76	3:1	2.28	0.40	2:1	0.40	0.40	2.68
Subtotal	0.76	—	2.28	0.40	—	0.40	0.40	2.68
GRAND TOTAL	13.90	—	16.42	6.43	—	6.40	1.02	17.44

The following APMs, as set forth in Table D.2-5, would be implemented to avoid or minimize impacts to vegetation communities: BIO-APM-1 and 2, BIO-APM-4 through BIO-APM-6, **BIO-APM-16**, BIO-APM-17, BIO-APM-20, BIO-APM-23, and BIO-APM-25. Even with implementation of the APMs, however, the impacts to sensitive vegetation communities would be significant according to Significance

Criterion 2.a (substantial adverse effect on a riparian habitat or other sensitive natural community by temporarily or permanently removing it during construction, grading, clearing, or other activities). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Impacts to sensitive vegetation communities are not mitigable to less than significant levels (Class I) because adequate mitigation land may not be available to compensate for the impacts. Impacts to developed areas and disturbed habitat would be adverse but less than significant (Class III), and no mitigation is required. Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to sensitive vegetation communities.

Riparian Conservation Areas (RCAs). ~~Impacts to RCAs are not allowed on NFS lands, in accordance with the Forest Plan (USDA, 2005). The five-step screening process, as described in Section E.1.2.1, was used to identify RCAs along the South Buckman Springs Option. The RCA analysis, including the five-step screening process, is provided in Appendix 8Q.~~ The South Buckman Springs Option would impact RCAs (4.9 acres of permanent impacts and 3.0 acres of temporary impacts) through the construction of towers, access roads, and pull sites. BIO-APM-2, BIO-APM-4 through 6, BIO-APM-16 through 18, BIO-APM-20, and BIO-APM-23 would be applied to minimize or avoid significant impacts to RCAs. Even with implementation of the APMs, however, if the final project could not be designed to avoid RCAs, then the impacts would be considered significant and not mitigable (Class I) according to Significance Criteria 2 (substantial adverse effect on a riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the Wildlife Agencies) and 3.b. (Failure to provide a wetland buffer adequate to protect the function and values of existing wetlands). Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to RCAs.

Vegetation Management (Loss of Trees). SDG&E made no estimates as to how many trees or shrubs would be removed or trimmed as part of vegetation management for this option. However, there are several native woodland communities present along the route (see Table E.1.2-8) that support trees that would likely require either removal or trimming. The impact significance (Class I for native species and Class II for non-native species) and required mitigation associated with vegetation management (Mitigation Measure B-1a) for this option is the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Type Conversion. As discussed in Section E.1.2.2 for the Interstate 8 Alternative, the construction and operation of new transmission lines in areas with high fire risk could cause wildfires, and could reduce the effectiveness of fire fighting efforts. The impacts and mitigation associated with type conversion for the South Buckman Springs Option are the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measures for Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation

B-1a Provide restoration/compensation for affected sensitive vegetation communities. Mitigation ratios and mitigation acreages for the South Buckman Springs Option are provided in Table E.1-8.

B-1c Conduct biological monitoring.

B-1k Re-seed disturbed areas after a transmission line caused fire.

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I)

Listed or sensitive (special status) plant species impacts would result from direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during construction. Focused plant species surveys were not conducted for this option in 2007 because the option was not finalized during the rare plant survey period. This option also has the potential to impact special status plant species with moderate to high potential to occur (listed at the beginning of E.1.2.2 [Special Status Plant Species]) should they be present.

The following APMs, as set forth in Table D.2-5, would be implemented for this option to address potential significant impacts to listed or sensitive plant species or their habitats: BIO-APM-1 through 6, BIO-APM-8, BIO-APM-13, BIO-APM-18, and BIO-APM-22. Even with implementation of the APMs, the impacts would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened) and Significance Criterion 1.b. (impact that would affect the number or range or regional long-term survival of a sensitive or special status plant species).

With the exceptionally dry weather conditions in 2007, the assumption is made that special status plant species are present and impacted by this alternative. Since it is not possible to adequately assess the amount of impact to the special status plant species, the impacts are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-5a is required to, at least in part, compensate for impacts to special status plant species.

Mitigation Measures for Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-8.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-5a** Conduct rare plant surveys and implement appropriate avoidance/minimization/mitigation strategies.

Impact B-7: Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I - construction impacts to sensitive species; Other impact classes depend on species; see individual discussions)

The South Buckman Springs Option would impact the following listed or highly sensitive wildlife species: least Bell's vireo (Impact B-7D), southwestern willow flycatcher (Impact B-7E), quino checkerspot butterfly (Impact B-7J), and arroyo toad (Impact B-7K). This option also has the potential to impact bald eagle (Impact B-7I). The South Buckman Springs Option would not impact the following listed or highly sensitive wildlife species: FTHL, PBS, burrowing owl, desert pupfish, desert tortoise, golden eagle, Stephens' kangaroo rat, coastal California gnatcatcher, San Diego and/or Riverside fairy shrimp, and barefoot banded gecko. Therefore, Impacts B-7A, B-7B, B-7C, B-7F, B-7G, B-7H, B-7L, B-7M, B-7N, and B-7O are not discussed.

The South Buckman Springs Option would impact the following non-listed, sensitive wildlife species and their habitats: San Diego black-tailed jackrabbit, Cooper's hawk, coastal rosy boa, yellow-breasted chat, and yellow warbler (Appendix 8J, Figure 8J-21). This option also has the potential to impact other non-listed, sensitive wildlife species with moderate to high potential to occur (listed at the beginning of E.1.2.2 [Special Status Wildlife Species]) should they be present.

San Diego black-tailed jackrabbit. San Diego black-tailed jackrabbits were observed in two locations along the South Buckman Springs Option: 1 jackrabbit at MP SBS-1.1 and an additional jackrabbit was observed outside of the 200-ft ROW, east of MP SBS-1.5 (Appendix 8J, Figure Ap.8J-21). This species would be impacted indirectly through removal of vegetation and habitat modification.

Cooper's hawk. Cooper's hawks were observed in two locations along this option: at MPs SBS-1.3 and SBS 1.7 (Appendix 8J, Figure Ap.8J-21). This species could possibly breed along this alternative (Unitt, 2004) and would be indirectly impacted by noise if construction were to occur in or adjacent to its breeding habitat during the general avian breeding season. The Cooper's hawk would also be affected by the removal of riparian breeding vegetation and habitat modification along this option.

Coastal rosy boa. One coastal rosy boa was observed along the South Buckman Springs Option at MP SBS-1.2 (Appendix 8J, Figure Ap.8J-21). This species would be impacted by the removal of vegetation and habitat modification. In addition, individuals of the species could be killed if they are within the construction zone and are crushed by equipment.

Yellow-breasted chat. One yellow-breasted chat was observed south of MP SBS-1.3 (Appendix 8J, Figure Ap.8J-21). Construction would cause noise that would indirectly impact yellow-breasted chat breeding if construction were to occur in or adjacent to the chat's habitat (riparian woodlands/forests) during the general avian breeding season. In addition, this species would be impacted indirectly through removal of riparian vegetation and habitat modification.

Yellow warbler. Yellow warblers were observed in two locations along South Buckman Springs Option: south of MP SBS 1.2 and west of SBS 2.2 and (Appendix 8J, Figure Ap.8J-21). Construction would cause noise that would indirectly impact yellow warbler breeding if construction were to occur in or adjacent to the warbler's habitat (riparian and oak woodlands/forests) during the general avian breeding season. In addition, this species would be impacted indirectly through removal of riparian vegetation and habitat modification.

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife: BIO-APM-2 through 4, BIO-APM-7, BIO-APM-14, BIO-APM-16, BIO-APM-24, BIO-APM-26, BIO-APM-27, and BIO-APM-29. Even with implementation of the APMs, the Campo North Option would have a substantial adverse effect on listed and sensitive wildlife species and their habitats according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the Wildlife Agencies). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Most of the non-listed special status species' habitats are sensitive vegetation communities (Table E.1-8); the mitigation for the loss of the sensitive vegetation communities (Mitigation Measure B-1a) would normally compensate for the potential loss of these sensitive species and their habitats. However,

since it adequate land required by Mitigation Measure B-1a may not be available, the impacts to non-listed sensitive wildlife species are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7a is required to compensate, at least in part, for impacts to non-listed, sensitive wildlife species and their habitats.

Mitigation Measures for Impact B-7: Direct or Indirect Loss of Listed or Sensitive Wildlife or a Direct Loss of Habitat for Listed or Sensitive Wildlife

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities. See Table E.1.2-8.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7a** Ensure that all steep-walled trenches or excavations used during construction shall be covered to prevent the entrapment of wildlife (e.g., reptiles and small mammals).

Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat (Class II)

A non-protocol least Bell's vireo survey (consisting of two site visits at the end of the vireo breeding season) was conducted for the species between MP SBS-1.2 and SBS-2.6 (La Posta Creek). One least Bell's vireo was detected on the second survey approximately 400 feet west of MP SBS-2.3. A full protocol survey for this species could not be completed because the option was added too late in the survey season to complete 8 surveys. It is assumed that all riparian vegetation is occupied by the vireo.

Impacts to the least Bell's vireo or its occupied breeding habitat from habitat removal or disturbance from construction of the South Buckman Springs Option where the vireo is known to occur and is assumed to occur include 0.7 acres of permanent disturbance and 0.4 acres of temporary disturbance to riparian breeding habitat. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to least Bell's vireo or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e. The pre-construction survey required in Mitigation Measure B-7e would conclusively define if there would be impacts to the least Bell's vireo in the areas of assumed vireo presence from construction. The requirements in Mitigation Measure B-7e may be reduced based on the results of this survey. It is expected that adequate mitigation land would be available to satisfy the mitigation requirement because of the small number of acres needed and because this type of mitigation for the least Bell's vireo is typically available and regularly provided in San Diego County.

Additionally, least Bell's vireo breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on vireo breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.

- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7e** Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies. For the South Buckman Springs Option, the required mitigation for habitat assumed to be occupied by least Bell's vireo includes 0.4 acres of onsite restoration and 2.9 acres of offsite acquisition and preservation of occupied vireo habitat. All other least Bell's vireo mitigation described in Mitigation Measure B-7e for the Proposed Project (Section D.2.11) is also required for the South Buckman Springs Option.

Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat (Class II)

A non-protocol southwestern willow flycatcher survey (consisting of one site visit at the end of the flycatcher survey period) was conducted for the species between MP SBS-1.2 and SBS-2.6 (La Posta Creek). A full protocol survey for this species could not be completed because the option was added too late in the survey season to complete the necessary 5 site visits. The species was not detected during the survey. However, a single site visit at the end of the survey period is not conclusive evidence that the species is absent from the site. It is assumed that all riparian vegetation is occupied by the flycatcher.

Impacts to the southwestern willow flycatcher or its occupied breeding habitat from habitat removal or disturbance from construction of the South Buckman Springs Option where the flycatcher is known to occur and is assumed to occur include 0.7 acres of permanent disturbance and 0.4 acres of temporary disturbance to riparian breeding habitat. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to southwestern willow flycatcher or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e. The pre-construction survey required in Mitigation Measure B-7e would conclusively define if there would be impacts to the southwestern willow flycatcher in the areas of assumed flycatcher presence from construction. The requirements in Mitigation Measure B-7e may be reduced based on the results of this survey. It is expected that adequate mitigation land would be available to satisfy the mitigation requirement because of the small number of acres needed and because this type of mitigation for the southwestern willow flycatcher is typically available and regularly provided in San Diego County.

Additionally, southwestern willow flycatcher breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on southwestern willow flycatcher breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.

- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7e** Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies. For the South Buckman Springs Option, the required mitigation for habitat assumed to be occupied by southwestern willow flycatcher includes 0.4 acres of onsite restoration and 2.9 acres of offsite acquisition and preservation of occupied flycatcher habitat. All other southwestern willow flycatcher mitigation described in Mitigation Measure B-7e for the Proposed Project (Section D.2.11) is also required for the South Buckman Springs Option.

Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat (Class I)

Although the South Buckman Springs Option was not finalized prior to the 2007 QCB survey season, protocol surveys for the QCB would not have been conducted in 2007 because the butterfly flight season was not preceded by adequate rainfall. As a result, no presence/absence data for this species is available for this option; therefore a precise impact determination cannot be adequately made.

Recent QCB observations (2004) were made approximately 2 miles to the southeast of MP SBS-0.0 (USFWS, 2006). The South Buckman Springs Option would not cross QCB critical habitat; the nearest critical habitat is approximately 12 miles to the southwest.

The entire South Buckman Springs Option is within USFWS protocol Survey Area 2, an area in which protocol surveys are required in suitable QCB habitat. While it is unlikely that this option would impact very much (if any) QCB-occupied habitat within Survey Area 2 given the very limited number of recent sightings, with the lack of definitive survey data, the South Buckman Springs Option would have a significant impact on this species according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed as endangered or threatened). Since adequate land required by Mitigation Measure B-7i may not be available, the impacts are considered significant and not mitigable to less than significant levels (Class I). However, Mitigation Measures B-1a, B-1c, B-2a, and B-7i are required to, at least in part, minimize impacts to the QCB.

Mitigation Measures for Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7i** Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat (Class II)

Focused arroyo toad surveys were not conducted for the South Buckman Springs Option in 2007 because the option was added subsequent to the conclusion of the arroyo toad survey period. The habitat along the South Buckman Springs Option was suitable for arroyo toad and the species is known to occur in the vicinity of this option. An arroyo toad was found approximately 2,000 feet to the east of MP SBS-4.0 in Cottonwood Creek (see Impact B-7K for the West Buckman Springs Option [Section E.1.2.2]). The species has also been documented by the USDA Forest Service (2007) in numerous locations between MP SBS-1.7 and SBS-4.0 (along La Posta Creek and Cottonwood Creek). All potential breeding and upland habitat within 1 km of known arroyo toad locations is considered occupied by the arroyo toad (USFWS, 1999).

Impacts to the arroyo toad or its occupied breeding or burrowing habitat from habitat removal or disturbance from construction (e.g., crushing of toads with construction equipment) of the South Buckman Springs Option include permanent impacts to 0.7 acres of riparian breeding habitat and temporary impacts to 0.4 acres of riparian breeding habitat, as well as permanent impacts to 9.4 acres of upland burrowing habitat and temporary impacts to 2.7 acres of upland burrowing habitat. These impacts would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened). These impacts would be significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7j. It is expected that adequate mitigation land would be available to satisfy the mitigation requirement because of the small number of acres needed and because this type of mitigation for the arroyo toad is typically available and regularly provided in San Diego County.

Mitigation Measures for Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7j** Conduct arroyo toad surveys, and implement appropriate avoidance/minimization/compensation strategies. For the South Buckman Springs Option, the required mitigation for arroyo toad occupied habitat includes 3.1 acres of onsite restoration and 24.5 acres of offsite acquisition and preservation of occupied toad habitat consisting of 3.0 acres of breeding habitat and 21.5 acres of upland burrowing habitat. All other arroyo toad mitigation described in Mitigation Measure B-7j for the Proposed Project (Section D.2.11) is also required for the South Buckman Springs Option.

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No Impact for electrocution; Class I for collision for listed species; Class II for collision for non-listed sensitive species or daytime migration)

The types of potential impacts related to collision are the same as those described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2). It is anticipated that the South Buckman Springs Option would not present an electrocution risk to birds. There is no known concentrated movement of migrating birds in San Diego County in the vicinity of this option (Unitt, 2007), and there is a lack of any topography to funnel migrating birds through the vicinity of this option. The impact significance (Class I for listed species and Class II for non-sensitive species) and required mitigation associated with vegetation management (Mitigation Measure B-10a) for this option is the same as that described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measure for Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species collide with transmission lines

- B-10a** Utilize collision-reducing techniques in installation of transmission lines. There is no highly utilized avian flight path along this option; therefore, no marking of the overhead lines is required. All other mitigation that is required in Mitigation Measure B-10a for the Proposed Project (Section D.2.14), not related to the installation of markers, shall be implemented.

Impact B-11: Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (Class III)

Common ravens have been documented to prey on the desert tortoise and the FTHL (Liebezeit et al., 2002; Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003), which do not occur along this option. The common raven has not been documented to prey on any other listed or sensitive wildlife in the vicinity of this option (Liebezeit et al., 2002), although the predation may still occur but would be adverse but less than significant (Class III). No mitigation is required.

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class II for special-status wildlife and nesting birds; Class III for non-sensitive wildlife)

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent disturbance to wildlife and wildlife mortality during project maintenance: BIO-APM-3, BIO-APM-4, BIO-APM-6, BIO-APM-7, BIO-APM-9, BIO-APM-10 through BIO-APM-13, and BIO-APM-16. With implementation of the APMs, impacts to non-sensitive wildlife would be adverse but less than significant (Class III). No mitigation is required.

These types of impacts would occur from maintenance: impacts to nesting birds if vegetation is cleared during the breeding season; and/or mortality of special status species from grading, vegetation clearing, or use of access roads.

Even with implementation of the APMs, disturbance to wildlife and potential wildlife mortality would be significant impacts according to Significance Criteria 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species), 1.f. (impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species), 1.g. (violation of the Migratory Bird Treaty Act), and 2.b. (substantial adverse effect on riparian or other sensitive vegetation communities if weed species are introduced). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence. Impacts to special-status wildlife species from maintenance activities are significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measure B-12a.

Maintenance activities would impact nesting birds (violation of Migratory Bird Treaty Act) if vegetation is cleared during the general avian breeding season (February 15 through September 15) or the raptor breeding season (January 1 through September 15). This impact would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a.

Maintenance activities would impact the least Bell's vireo and southwestern willow flycatcher if the noise threshold (i.e., 60 dB[A] Leq hourly) is met or exceeded at the edge of their nesting territories during their breeding seasons. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a.

Maintenance activities would cause disturbance to, and possible mortality of arroyo toad and QCB. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-12b and B-12c.

Mitigation Measures for Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality

- B-3a Prepare and implement a Weed Control Plan.**
- B-12a Conduct maintenance activities outside the general avian breeding season.**
- B-12b Conduct maintenance when arroyo toads are least active.**
- B-12c Maintain access roads and clear vegetation in quino checkerspot butterfly habitat.**

Chocolate Canyon Option

Environmental Setting

The Chocolate Canyon Option is in the South Coast bioregion and would only be used in combination with the I-8 Alternative, diverging to the northwest at MP I8-79.4. The option is 3.7 miles long and would replace 2.8 miles of the I-8 Alternative.

Vegetation Communities. A generalized vegetation map for all of the SWPL Alternatives is presented in Figure E.1.2-1. Detailed vegetation mapping was not completed for this option. Based on the generalized vegetation in Figure E.1.2-1, the predominant vegetation community along this option is expected to be Diegan coastal sage scrub. Other vegetation communities expected to occur in this option include chaparral, coastal sage-chaparral scrub, coast live oak woodland, and southern riparian forest. Vegetation communities that are found along this option are described in detail in Section D.2.1.2.2.

Overview of Special Habitat Management Areas. This option would not cross Special Habitat Management Areas. The option would occur adjacent to the El Capitan Reservoir.

Designated Critical Habitat. This option would not cross designated critical habitat.

Special Status Plant Species. No additional listed or special status plant species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the Chocolate Canyon Option.

Special Status Wildlife Species. No additional listed or special status wildlife species beyond those listed in Section E.1.2.2 for the I-8 Alternative are expected to occur in the Chocolate Canyon Option.

Environmental Impacts and Mitigation Measures

This section presents a discussion of impacts and mitigation measures for the Chocolate Canyon Option as a result of construction, operation, and maintenance of the project.

Several general impacts to biological resources would occur with this option, and impact significance would be the same as for the Proposed Project. For these impacts, the mitigation measures presented for the Proposed Project would also be required for this option. Discussion of each of these impacts is presented in the Proposed Project impact analysis in Sections D.2.5 to D.2.16.

- Impact B-3 (Construction activities would result in the introduction of invasive, non-native, or noxious plant species; Class II), Mitigation Measure B-1a (Provide restoration/compensation for affected sensitive vegetation communities), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas), and Mitigation Measure B-3a (Prepare and implement a Weed Control Plan)

- Impact B-4 (Construction activities would create dust that would result in degradation of vegetation; Class III)
- Impact B-6 (Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality; Class III)
- Impact B-8 (Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act; Class II), Mitigation Measure B-8a (Conduct pre-construction surveys and monitoring for breeding birds))

Several other general impacts to biological resources would occur with this option, and impact significance would be the same as for the Interstate 8 Alternative. For these impacts, the mitigation measures presented for the Interstate 8 Alternative would also be required for this option. Discussion of each of these impacts is presented in the Interstate 8 Alternative impact analysis in Section E.1.2.2.

- Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II), Mitigation Measure B-1c (Conduct biological monitoring), Mitigation Measure B-2a (Provide restoration/compensation for impacted jurisdictional areas)
- Impact B-9: Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II for bat colonies; No Impact for linkages, wildlife movement corridors, or fish movement), Mitigation Measure B-9a (Survey for bat nursery colonies)

Impacts and the required mitigation measures that differ from the Proposed Project and the Interstate 8 Alternative are addressed below.

Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation (Class I for sensitive vegetation, RCAs, vegetation management, and type conversion; Class III for non-sensitive vegetation)

Construction of the Chocolate Canyon Option would cause both temporary (during construction from vegetation clearing) and permanent (displacement of vegetation with project features such as towers and permanent access roads) impacts to vegetation communities. Based on generalized vegetation mapping for this portion of the route (Figure E.1.2-1), the following vegetation communities are present and would be impacted including Diegan coastal sage scrub, southern mixed chaparral, coastal sage-chaparral scrub, coast live oak woodland, and southern riparian forest. Construction activities would also result in the alteration of soil conditions, including the loss of native seed banks and changes in topography and drainage, such that the ability of a site to support native vegetation after construction is impaired.

The following APMs, as set forth in Table D.2-5, would be implemented to avoid or minimize impacts to vegetation communities: BIO-APM-1 and 2, BIO-APM-4 through BIO-APM-6, BIO-APM-16, BIO-APM-17, BIO-APM-20, BIO-APM-23, and BIO-APM-25. Even with implementation of the APMs, however, the impacts to sensitive vegetation communities would be significant according to Significance Criterion 2.a (substantial adverse effect on a riparian habitat or other sensitive natural community by temporarily or permanently removing it during construction, grading, clearing, or other activities). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except

where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Impacts to sensitive vegetation communities are not mitigable to less than significant levels (Class I) because adequate mitigation land may not be available to compensate for the impacts. Impacts to developed areas and disturbed habitat would be adverse but less than significant (Class III), and no mitigation is required. Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to sensitive vegetation communities.

Riparian Conservation Areas (RCAs). The five-step screening process, as described in Section E.1.2.1, was used to identify RCAs along the Chocolate Canyon Option. The RCA analysis, including the five-step screening process, is provided in Appendix 8Q. The Chocolate Canyon Option would impact RCAs through the construction of access roads, pull sites, staging areas. BIO-APM-2, BIO-APM-4 through 6, BIO-APM-16 through 18, BIO-APM-20, and BIO-APM-23 would be applied to minimize or avoid significant impacts to RCAs. Even with implementation of the APMs, however, the impacts would be considered significant and not mitigable (Class I) according to Significance Criteria 2 (substantial adverse effect on a riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the Wildlife Agencies) and 3.b. (failure to provide a wetland buffer adequate to protect the function and values of existing wetlands) if the final project could not be designed to avoid RCAs. Implementation of Mitigation Measures B-1a and B-1c are required to, at least in part, compensate for impacts to RCAs.

Vegetation Management (Loss of Trees). SDG&E made no estimates as to how many trees or shrubs would be removed or trimmed as part of vegetation management for this option. However, coast live oak woodland and southern riparian forest are native woodland communities that are expected to support trees that would likely require either removal or trimming. The impact significance (Class I for native species and Class II for non-native species) and required mitigation associated with vegetation management (Mitigation Measure B-1a) for this option is the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Type Conversion. As discussed in Section E.1.2.2 for the Interstate 8 Alternative, the construction and operation of new transmission lines in areas with high fire risk could cause wildfires, and could reduce the effectiveness of fire fighting efforts. The impacts and mitigation associated with type conversion for the Chocolate Canyon Option are the same as that described in Impact B-1 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measures for Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation

B-1a Provide restoration/compensation for affected sensitive vegetation communities.

B-1c Conduct biological monitoring.

B-1k Re-seed disturbed areas after a transmission line caused fire.

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I)

Listed or sensitive (special status) plant species impacts would result from direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during construction. Focused plant species surveys were not conducted for this option in 2007 because the option was not finalized during the rare plant survey period.

No additional listed or special status plant species beyond those listed in Section E.1.2.2 for the Interstate 8 Alternative are expected to occur in the Chocolate Canyon Option. Table E.1.2-1 contains specific information about the special status plant species and their listing or sensitivity statuses.

The following APMs, as set forth in Table D.2-5, would be implemented for this option to address potential significant impacts to listed or sensitive plant species or their habitats: BIO-APM-1 through 6, BIO-APM-8, BIO-APM-13, BIO-APM-18, and BIO-APM-22. Even with implementation of the APMs, the impacts would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened) and Significance Criterion 1.b. (impact that would affect the number or range or regional long-term survival of a sensitive or special status plant species).

With the exceptionally dry weather conditions in 2007, the assumption is made that special status plant species are present and impacted by this alternative. Since it is not possible to adequately assess the amount of impact to the special status plant species, the impacts are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-5a is required to, at least in part, compensate for impacts to special status plant species.

Mitigation Measures for Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-5a** Conduct rare plant surveys and implement appropriate avoidance/minimization/mitigation strategies.

Impact B-7: Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I - construction impacts to sensitive species; Other impact classes depend on species; see individual discussions)

The Chocolate Canyon Option would impact the following listed or highly sensitive wildlife species: golden eagle (Impact B-7H) and quino checkerspot butterfly (Impact B-7J). This option could also impact least Bell's vireo (Impact B-7D), southwestern willow flycatcher (Impact B-7E), bald eagle (Impact B-7I), arroyo toad (Impact B-7L), and coastal California gnatcatcher (Impact B-7M). Impacts to these species are discussed in detail below.

The Chocolate Canyon Option would not impact the following listed or highly sensitive wildlife species: FTHL, PBS, burrowing owl, desert pupfish, desert tortoise, Stephens' kangaroo rat, San Diego and/or Riverside fairy shrimp, and barefoot banded gecko. Therefore, Impacts B-7A, B-7B, B-7C, B-7F, B-7G, B-7K, B-7N, and B-7O are not discussed.

The Chocolate Canyon Option also has the potential to impact the 41 non-listed, sensitive wildlife species with moderate to high potential to occur should they be present: Hermes copper butterfly, Coast (San Diego) horned lizard, coast patch-nosed snake, coastal rosy boa, Coronado skink, red-diamond rattlesnake, Belding's orange-throated whiptail lizard, San Diego mountain kingsnake, San Diego ringneck snake, silvery legless lizard, Bell's sage sparrow, California horned lark, Cooper's hawk, ferruginous hawk, grasshopper sparrow, loggerhead shrike, long-eared owl, northern harrier, prairie falcon, rufous-crowned sparrow, sharp-shinned hawk, white-tailed kite, American badger, Dulzura pocket mouse, fringed myotis, long-eared myotis, long-legged myotis, Jacumba little pocket mouse,

northwestern San Diego pocket mouse, pallid bat, pallid San Diego pocket mouse, pocketed free-tailed bat, ringtail, San Diego black-tailed jackrabbit, San Diego desert woodrat, small-footed myotis, southern grasshopper mouse, Townsend's big-eared bat, western mastiff bat, western red bat, and Yuma myotis.

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife: BIO-APM-2 through 4, BIO-APM-7, BIO-APM-14, BIO-APM-16, BIO-APM-24, BIO-APM-26, BIO-APM-27, and BIO-APM-29. Even with implementation of the APMs, the Chocolate Canyon Option would have a substantial adverse effect on listed and sensitive wildlife species and their habitats according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the Wildlife Agencies). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence.

Most of the non-listed special status species' habitats are sensitive vegetation communities; the mitigation for the loss of the sensitive vegetation communities (Mitigation Measure B-1a) would normally compensate for the potential loss of these sensitive species and their habitats. However, since adequate land required by Mitigation Measure B-1a may not be available, the impacts to non-listed sensitive wildlife species are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7a is required to compensate, at least in part, for impacts to non-listed, sensitive wildlife species and their habitats.

Mitigation Measures for Impact B-7: Direct or Indirect Loss of Listed or Sensitive Wildlife or a Direct Loss of Habitat for Listed or Sensitive Wildlife

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7a** Ensure that all steep-walled trenches or excavations used during construction shall be covered to prevent the entrapment of wildlife (e.g., reptiles and small mammals).

Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat (Class II)

Suitable habitat for the least Bell's vireo is expected to occur at MP CC-3.4 based on a review of aerial photographs and based on the habitat surveyed at MP I8-82.2 for the Interstate 8 Alternative (approximately 1,500 feet to the west of MP CC-3.4). No focused surveys for this species were conducted along this option because it was designed after the end vireo survey period.

Construction of the Chocolate Canyon Option would result in impacts to riparian vegetation with the potential to support least Bell's vireo should the species breed near CC-3.4. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to least Bell's vireo or its occupied habitat

would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e.

Additionally, least Bell's vireo breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on vireo breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7e** Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat (Class II)

Suitable habitat for the southwestern willow flycatcher is expected to occur at MP CC-3.4 based on a review of aerial photographs and based on the habitat surveyed at MP I8-82.2 for the Interstate 8 Alternative (approximately 1,500 feet to the west of MP CC-3.4). No focused surveys for this species were conducted along this option because it was designed after the end flycatcher survey period.

Construction of the Chocolate Canyon Option would result in impacts to riparian vegetation with the potential to support southwestern willow flycatcher should the species breed near CC-3.4. These impacts would be significant according to Significance Criterion 1.a (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to southwestern willow flycatcher or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7e.

Additionally, southwestern willow flycatcher breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on southwestern willow flycatcher breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.

B-2a Provide restoration/compensation for affected jurisdictional areas.

B-7e Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7H: Direct or indirect loss of golden eagle or direct loss of habitat (Class I)

One golden eagle nest area would be affected by the Chocolate Canyon Option. The specific location of this nest area is not disclosed in this EIR/EIS (nor are the MPs within 4,000 feet of the nest area) in order to protect the golden eagle. SDG&E will be made aware of the MPs subject to mitigation in an unpublished document. Nest locations, for purposes of this document, were provided by the Wildlife Research Institute (Bittner, 2007).

The nest area occurs approximately 4,000 feet from the Chocolate Canyon Option and there is direct line-of-sight between this nest area and the Chocolate Canyon Option. Impacts to this eagle pair would be significant and not mitigable to less than significant levels (Class I) because of the distance between the nest area and the project (less than 4,000 feet) and the direct line-of-sight that would occur. Implementation of Mitigation Measure B-7h is still required to minimize the impact.

Impacts/mitigation relating to golden eagles and electrocution/collision with transmission towers/lines is discussed in Impact B-10 below.

Mitigation Measure for Impact B-7H: Direct or indirect loss of golden eagle or direct loss of habitat

B-7h Implement appropriate avoidance/minimization strategies for eagle nests.

Impact B-7I: Direct or indirect loss of bald eagle or direct loss of habitat (No Impact)

The majority of the Chocolate Canyon Option would cross USDA Forest Service modeled habitat for bald eagle (USDA, 2007), between approximately MP CC-1.0 and CC-3.7 (associated with El Capitan Reservoir).

Bald eagles are not known to winter or nest at or near El Capitan Reservoir (Bittner, 2007). At its closest point (at MP CC-2.7), the Buckman Springs Underground Option is approximately 15 miles away from reported bald eagle sightings (USDA, 2007). There is a low potential that bald eagles would use the habitat along El Capitan Reservoir for foraging during the winter. No impacts to bald eagle as a result of the Buckman Springs Underground Option are expected (No Impact).

Impacts/mitigation relating to bald eagles and electrocution/collision with transmission towers/lines is discussed in Impact B-10 below.

Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat (Class I)

Although the Chocolate Canyon Option was finalized after the 2007 QCB survey season, protocol surveys for the QCB would not have been conducted in 2007 because the butterfly flight season was not preceded by adequate rainfall. As a result, no presence/absence data for this species is available for this option; therefore a precise impact determination cannot be adequately made.

Recent QCB observations (2003 and 2004) were made approximately 3 miles to the southeast of MP CC-0.0 for the Chocolate Canyon Option (USFWS, 2006). The Campo North Option would not cross QCB critical habitat; the nearest critical habitat is approximately 11 miles to the southwest.

The entire Chocolate Canyon Option is within USFWS protocol Survey Area 2, an area in which protocol surveys are required in suitable QCB habitat. While it is unlikely that the Chocolate Canyon Option would impact very much (if any) QCB-occupied habitat within Survey Area 2 given the very limited number of recent sightings, with the lack of definitive survey data, the Chocolate Canyon Option would have a significant impact on this species according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed as endangered or threatened). Since adequate land required by Mitigation Measure B-7i may not be available, the impacts are considered significant and not mitigable to less than significant levels (Class I). However, Mitigation Measures B-1a, B-1c, B-2a, and B-7i are required to, at least in part, minimize impacts to the QCB.

Mitigation Measures for Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.
- B-7i** Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat (Class II)

Suitable habitat for the arroyo toad is expected to occur at MP CC-3.4 based on USDA Forest Service modeled habitat (USDA, 2007), a review of aerial photographs, and the habitat surveyed at MP I8-82.2 for the Interstate 8 Alternative (approximately 1,500 feet to the west of MP CC-3.4). No focused surveys for this species were conducted along this option because it was designed after the end arroyo toad survey period.

Construction of the Chocolate Canyon Option would result in impacts to breeding or burrowing habitat with the potential to support arroyo toad should the species breed near CC-3.4. Impacts to arroyo toad or its occupied breeding or burrowing habitat from habitat removal or disturbance from construction (e.g., crushing of toads with construction equipment) would be significant according to Significance Criterion 1.a. (impact to one or more individuals of a species that is federal or State listed as endangered or threatened). These impacts would be significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7j. The pre-construction survey required in Mitigation Measure B-7j would conclusively define if there would be impacts to the arroyo toad in the areas of assumed toad presence from construction (i.e., if appropriate climatic conditions are present to encounter arroyo toads).

Mitigation Measures for Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat

- B-1a** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1c** Conduct biological monitoring.
- B-2a** Provide restoration/compensation for affected jurisdictional areas.

B-7j Conduct arroyo toad surveys, and implement appropriate avoidance/ minimization/ compensation strategies.

Impact B-7M: Direct or indirect loss of coastal California gnatcatcher or direct loss of habitat (Class II)

Although the species has not been documented in the vicinity of this option, suitable habitat for the coastal California gnatcatcher is expected to occur between MP CC-0.2 and CC-2.3. According to the generalized vegetation in Figure E.1.2-1, several patches of Diegan coastal sage scrub occur between CC-0.2 and CC-2.3. The Chocolate Canyon Option (CC-0.0) is approximately 1.2 miles north of the closest known coastal California gnatcatcher location. No focused surveys for this species were conducted along this option because it was designed after the end gnatcatcher survey period.

Construction of the Chocolate Canyon Option would result in impacts to vegetation with the potential to support coastal California gnatcatcher should the species breed in the locations listed above. Impacts to the gnatcatcher and its occupied habitat from habitat removal and construction activity would be significant according to the following Significance Criterion 1.a. (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g. (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a, B-1c, B-2a, and B-7l. The pre-construction survey required in Mitigation Measure B-7l would conclusively define all the impacts to the coastal California gnatcatcher from construction of this option.

Additionally, gnatcatcher breeding can be affected by excessive construction noise (considered to be 60 dB(A) Leq at the edge of occupied habitat by the USFWS [American Institute of Physics, 2005]). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on gnatcatcher breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7M: Direct or indirect loss of coastal California gnatcatcher or direct loss of habitat

- B-1a Provide restoration/compensation for affected sensitive vegetation communities.**
- B-1c Conduct biological monitoring.**
- B-2a Provide restoration/compensation for affected jurisdictional areas.**
- B-7l Conduct coastal California gnatcatcher surveys and implement appropriate avoidance/ minimization/compensation strategies.**

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No Impact for electrocution; Class I for collision for listed species; Class II for collision for non-listed sensitive species or daytime migration)

The types of potential impacts related to collision are the same as those described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2). It is anticipated that the Chocolate Canyon Option would not present an electrocution risk to birds. There is no known concentrated movement of migrating birds in San Diego County in the vicinity of this option (Unitt, 2007), and there is a lack of any topography to funnel migrating birds through the vicinity of this option. The impact significance (Class I for listed species and Class II for non-sensitive species) and required mitigation associated with vegetation man-

agement (Mitigation Measure B-10a) for this option is the same as that described in Impact B-10 for the Interstate 8 Alternative (Section E.1.2.2).

Mitigation Measure for Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species collide with transmission lines

B-10a Utilize collision-reducing techniques in installation of transmission lines. There is no highly utilized avian flight path along this option; therefore, no marking of the overhead lines is required. All other mitigation that is required in Mitigation Measure B-10a for the Proposed Project (Section D.2.14), not related to the installation of markers, shall be implemented.

Impact B-11: Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (Class III)

Common ravens have been documented to prey on the desert tortoise and the FTHL (Liebezeit et al., 2002; Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003), which do not occur along this option. The common raven has not been documented to prey on any other listed or sensitive wildlife in the vicinity of this option (Liebezeit et al., 2002), although the predation may still occur but would be adverse but less than significant (Class III). No mitigation is required.

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class II for special-status wildlife and nesting birds; Class III for non-sensitive wildlife)

The following APMs, as set forth in Table D.2-5, would be implemented to minimize or prevent disturbance to wildlife and wildlife mortality during project maintenance: BIO-APM-3, BIO-APM-4, BIO-APM-6, BIO-APM-7, BIO-APM-9, BIO-APM-10 through BIO-APM-13, and BIO-APM-16. With implementation of the APMs, impacts to non-sensitive wildlife would be adverse but less than significant (Class III). No mitigation is required.

These types of impacts would occur from maintenance: impacts to nesting birds if vegetation is cleared during the breeding season; impacts to eagles if maintenance activities occur within 4,000 feet of an active eagle nest; and/or mortality of special status species from grading, vegetation clearing, or use of access roads.

Even with implementation of the APMs, disturbance to wildlife and potential wildlife mortality would be significant according to Significance Criteria 1.a. (impacts to one or more listed species), 1.e. (impacts to breeding eagles), 1.f. (impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species), 1.g. (violation of the Migratory Bird Treaty Act), 1.h. (violation of the Bald Eagle Protection Act), and 2.b. (substantial adverse effect on riparian or other sensitive vegetation communities if weed species are introduced). The impacts would be significant because the APMs are not specific enough or do not provide enough mitigation to adequately compensate for the impacts. The measures in the APMs shall still apply except where the mitigation measures are more specific or more restrictive than the APM requirements. In those instances, the mitigation measures take precedence. Impacts to eagles and other special-status wildlife species from maintenance activities are significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measures B-7b, B-7h, and B-12a.

Maintenance activities would impact nesting birds (violation of Migratory Bird Treaty Act) if vegetation is cleared during the general avian breeding season (February 15 through September 15) or the raptor

breeding season (January 1 through September 15). This impact would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a.

Maintenance activities would impact the coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher if the noise threshold (i.e., 60 dB[A] Leq hourly) is met or exceeded at the edge of their nesting territories during their breeding seasons. Maintenance activities would also impact the golden eagle if activities would occur within 4,000 feet of an active golden eagle nest. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-7h and B-12a.

Maintenance activities would cause disturbance to, and possible mortality of arroyo toad and QCB. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-7b, B-12b, and B-12c.

Mitigation Measures for Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality

- B-3a** Prepare and implement a Weed Control Plan.
- B-7h** Implement appropriate avoidance/minimization strategies for eagle nests.
- B-12a** Conduct maintenance activities outside the general avian breeding season.
- B-12b** Conduct maintenance when arroyo toads are least active.
- B-12c** Maintain access roads and clear vegetation in quino checkerspot butterfly habitat.

E.1.2.6 Future Transmission System Expansion for Interstate 8 Alternative

As described in Section E.1.1, the Interstate 8 Alternative Substation that would be built as a part of the Interstate 8 Alternative would accommodate up to six 230 kV circuits and a 500 kV circuit. Only two 230 kV circuits are proposed by this alternative at this time, but construction of additional 230 kV circuits and a 500 kV circuit out of the Interstate 8 Alternative Substation may be required in the future. This section considers the impacts of construction and operation of these potential future transmission lines. There are three routes that are most likely for these future lines; each is addressed below. Figure Ap.1-29 illustrates the potential routes of the transmission lines.

Environmental Setting: 230 and 500 kV Future Transmission System Expansion

The future 230 and the 500 kV lines from the Interstate 8 Alternative Substation would most likely follow one or more of the following routes:

Interstate 8 route including underground within Alpine Boulevard (applicable for future 230 kV lines)

Two additional 230 kV circuits could be installed underground within Alpine Boulevard, with appropriate compact duct banks and engineering to avoid, or possibly relocate, existing utilities. See Section E.1.2.2 and E.1.2.3 for the environmental setting, impacts, and mitigation measures for Biology for the Interstate 8 Alternative. The future transmission line route would follow the Interstate 8 Alternative's 230 kV route to the point where it meets the Proposed Project at MP 131. The future transmission route would then join the proposed route corridor to the west, continuing past the Sycamore Canyon Substation to the Chicarita Substation. See Sections D.2.2 and D.2.5 through D.2.15 for the environmental setting, impacts, and mitigation measures for Biology of the Inland Valley Link and the Coastal Link of

the Proposed Project. The Interstate 8 230 kV future transmission route could then follow the Proposed Project's 230 kV Future Transmission Expansion route from Chicarita to the Escondido Substation shown in Figure B-12a. See Section D.2.18 for the environmental setting, impacts and mitigation measures for the Proposed Project's Future Transmission Expansion System.

Route D Alternative Corridor

Additional 230 and/or 500 kV circuits could follow the Route D Alternative corridor to the north of Descanso, after following the Interstate 8 Alternative 230 kV route from the Interstate 8 Substation to MP I8-70.3. The environmental setting, impacts, and mitigation measures for Biology of the Route D Alternative can be found in Section E.3.2.2 and in Section E.3.2.3. It should be noted however, that the Route D Alternative Biology impacts and mitigation measures are for a 500 kV transmission line, and the Interstate 8 future transmission line as detailed above could be either a 500 kV line or a 230 kV line.

The Route D corridor would connect with the Proposed Project corridor at Milepost 114.5, and could then follow either: (1) the Proposed Project southwest to the Chicarita Substation and then follow the Proposed Project's 230 kV Future Transmission Expansion route (see description in Section B.2.7) from Chicarita to the Escondido Substation; or (2) the Proposed Project northeast to the Proposed Central East Substation and then follow the Proposed Project's 500 kV Future Transmission Expansion route shown in Figure B-12b (see description in Section B.2.7) to connect with SCE's existing Serrano-Valley 500 kV line in Riverside County. See Section D.2.2 for more information on the Biology setting of the Central, Inland Valley, and Coastal Links of the Proposed Project.

For the Biology setting, impacts, and mitigation measures of the Proposed Project's 230 kV Future Transmission Expansion route and the Proposed Project's 500 kV Future Transmission Expansion route see Section D.2.18.

Interstate 8 Alternative with Modified Route D Alignment and West of Forest Alignment

The future 230 or 500 kV lines could follow the proposed Interstate 8 Alternative route from the Interstate 8 Alternative Substation until reaching the Modified Route D Alternative corridor (within the 368 Corridor identified by the Department of Energy's Draft West-wide Corridor Programmatic EIS) and then follow the Modified Route D Alternative corridor south for 11 miles to MP MD-26. For the Biology setting and impacts along the Modified Route D corridor see Section E.4.2. At MP MD-26, new 230 and/or 500 kV circuits would turn west and connect with the northernmost segment of the West of Forest Alternative route as described in Section E.1.1. This route would meet up with the Interstate 8 Alternative at approximately MP I8-79 and would follow the Interstate 8 Alternative's overhead 230 kV route to the point where it meets the Proposed Project at MP 131. The future transmission route would then join the proposed route corridor to the west, continuing past the Sycamore Canyon Substation to the Chicarita Substation. It could then follow the Proposed Project's 230 kV Future Transmission Expansion System (see description in Section B.2.7) from Chicarita to the Escondido Substation.

Environmental Setting

The portion Interstate 8 future transmission routes between MP MD-26 and MP I8-79 is in the South Coast bioregion.

Vegetation Communities. Based on vegetation mapping completed in 2007 for the West of Forest Alternative (which has been rejected as a possible alternative), the predominant vegetation community along this portion of the future transmission route is chaparral. Other vegetation communities in this portion of the future transmission route include Diegan coastal sage scrub, coastal sage-chaparral scrub, non-native grassland, coast live oak woodland, southern riparian forest, and open water.

Overview of Special Habitat Management Areas. This option would cross the Cleveland National Forest, Sycuan Peak-Sweetwater River Ecological Preserve, and State of California lands along Sloan Canyon.

Designated Critical Habitat. This option would not cross designated critical habitat.

Special Status Plant Species. No additional listed or special status plant species beyond those listed in Section E.1.2.2 for the Interstate 8 Alternative are expected to occur in this portion of the future transmission route.

Special Status Wildlife Species. No additional listed or special status wildlife species beyond those listed in Section E.1.2.2 for the Interstate 8 Alternative are expected to occur in this portion of the future transmission route.

Environmental Impacts: 230 or 500 kV Future Transmission System Expansion

Impacts Common to All Alternatives. Several general impacts to biological resources would occur with the future transmission routes along the Interstate 8 Alternative, and impact significance would be the same as for the Interstate 8 Alternative due to their similar ecology and the wide-ranging nature of the impacts. For Impact B-3, Impact B-4, Impact B-6, and Impact B-8 the mitigation measures presented for the Proposed Project would also be required for the future transmission route. Brief descriptions of the impacts have been included in Section E.1.2.1 and detailed discussion of each of these impacts is presented in the analysis of Biological Resources for the Proposed Project in Sections D.2.5 through D.2.16. Impact B-1, Impact B-2, Impact B-5, Impact B-9, and Impact B-10 of the future transmission routes would be the same as for the Interstate 8 Alternative. The Impact descriptions and mitigation measures is presented in detail in Section E.1.2.2.

- Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation (Class I for sensitive vegetation, RCAs, vegetation management, and type conversion; Class III for non-sensitive vegetation)
- Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II)
- Impact B-3: Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species (Class II)
- Impact B-4: Construction activities would create dust that may result in degradation of vegetation (Class III)
- Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I)
- Impact B-6: Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality (Class III)

- Impact B-8: Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act; Class II)
- Impact B-9: Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II for bat colonies; No Impact for linkages, wildlife movement corridors, or fish movement)
- Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species

Impact B-7: Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I – construction impacts to sensitive species; Other impact classes depend on species; see individual discussions)

The future transmission line of the Interstate 8 Alternative would impact the following listed or highly sensitive wildlife species: QCB (Impact B-7J) and arroyo toad (Impact B-7K). This alternative could also impact least Bell's vireo (Impact B-7D), southwestern willow flycatcher (Impact B-7E), golden eagle (Impact B-7H), bald eagle (Impact B-7I), and coastal California gnatcatcher (Impact B-7M). Impacts to these species are discussed in detail below. Impacts to the listed Swainson's hawk are discussed in Impact B-10.

The I-8 Alternative future transmission route has the potential to impact the following non-listed, sensitive wildlife species and their habitats should they be present: large-blotched salamander, western spadefoot toad, coast range newt, silvery legless lizard, Belding's orange-throated whiptail lizard, coastal rosy boa, southwestern pond turtle, red diamond rattlesnake, San Diego ringneck snake, Coronado skink, San Diego mountain kingsnake, Coast (San Diego) horned lizard, coast patch-nosed snake, two-striped garter snake, sharp-shinned hawk (wintering), Cooper's hawk, tri-colored blackbird, loggerhead shrike, northern harrier, rufous-crowned sparrow, grasshopper sparrow, Bell's sage sparrow, long-eared owl, coastal cactus wren, California horned lark, prairie falcon, white-tailed kite, least bittern, white-faced ibis, purple martin, yellow-breasted chat, yellow warbler, pallid bat, ringtail, *Dulzura* pocket mouse, northwestern San Diego pocket mouse, Townsend's big-eared bat, western mastiff bat, western red bat, small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, Yuma myotis, San Diego desert woodrat, pocketed free-tailed bat, southern grasshopper mouse, and San Diego black-tailed jackrabbit.

Impacts to sensitive wildlife species are significant according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the Wildlife Agencies).

Most of the non-listed, sensitive species' habitats (see Table E.1-2) are sensitive vegetation communities, including those present in the Interstate 8 Alternative future transmission route. The mitigation for the loss of the sensitive vegetation communities (Mitigation Measure B-1a(FT)) would normally compensate for the potential loss of these sensitive species and their habitats. However, since adequate land required by Mitigation Measure B-1a(FT) may not be available, the impacts to non-listed, sensitive wildlife species are considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a(FT), B-1c(FT), B-1e, B-1f, B-1i, B-2b, B-6a, B-6b, B-6c, B-6d, and B-7a(FT) is required to compensate, at least in part, for impacts to non-listed, sensitive wildlife species and their habitats. These measures include providing mitigation for impacts to sensitive vegetation communities and jurisdictional areas, conducting biological monitoring, covering steep-walled

trenches or excavations to prevent wildlife entrapment, personnel training, removing raptor nests when inactive, reducing construction night lighting, and minimizing construction traffic volume and speed.

Mitigation Measures for Impact B-7: Construction activities would result in direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife

- B-1a(FT) Provide restoration/compensation for affected sensitive vegetation communities.**
- B-1c(FT) Conduct biological monitoring.**
- B-1e Train project personnel.**
- B-1f Construction and survey activities shall be restricted based on final design engineering drawings.**
- B-1i Restrict the construction of access and spur roads.**
- B-2b Identify environmentally sensitive times and locations for tree trimming.**
- B-6a Littering is not allowed.**
- B-6b Survey areas for brush clearing.**
- B-6c Protect mammals and reptiles in excavated areas.**
- B-6d Reduce construction night lighting on sensitive habitats.**
- B-7a(FT) Ensure all steep-walled trenches or excavations used during construction to prevent the entrapment of wildlife (e.g., reptiles and small mammals). Mitigation Measure B-7a(FT) is identical to Mitigation Measure B-7a for the Proposed Project with the exception that CPUC and BLM shall be replaced with “Lead Agencies”, and State Parks, USDA Forest Service, and/or Wildlife Agencies shall be replaced with “other agencies with jurisdiction over the project”.**

Impact B-7D: Direct or indirect loss of least Bell’s vireo or direct loss of habitat (Class II)

Based on a literature review of CNDDDB records, USFWS records, and USDA Forest Service records, the least Bell’s vireo is known to occur within 1 mile of the Interstate 8 future transmission route, along the Sweetwater River upstream of Loveland Reservoir. Based on a review of aerial photographs, suitable habitat for the vireo is expected to occur along the portion of the Sweetwater River that would be crossed by the future transmission line.

Construction of the Interstate 8 future transmission route has the potential to directly impact least Bell’s vireo through removal of occupied habitat. These impacts would be significant according to Significance Criterion 1.a. (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g. (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to the vireo or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a(FT), B-1c(FT), B-2a(FT), and B-7e(FT). Mitigation Measure B-7e(FT) requires a pre-construction survey for the species be conducted if construction activities would occur during the least Bell’s vireo breeding season. The pre-construction survey required in Mitigation Measure B-7e(FT) would conclusively define all the impacts to the least Bell’s vireo from construction of the Interstate 8 future transmission route.

Additionally, least Bell’s vireo breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on vireo breeding but is mitigable to less than significant levels (Class II) with implementation of Mitiga-

tion Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7D: Direct or indirect loss of least Bell's vireo or direct loss of habitat

B-1a(FT) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(FT) Conduct biological monitoring.

B-2a(FT) Provide restoration/compensation for affected jurisdictional areas.

B-7e(FT) Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies. Mitigation Measure B-7e(FT) is identical to Mitigation Measure B-7e for the Proposed Project with the exception that CPUC and BLM shall be replaced with "Lead Agencies", and State Parks, USDA Forest Service, and/or Wildlife Agencies shall be replaced with "other agencies with jurisdiction over the project".

Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat (Class II)

Based on a literature review of CNDDDB records, USFWS records, and USDA Forest Service records, the southwestern willow flycatcher is not known to occur along the Interstate 8 future transmission route. Based on a review of aerial photographs, suitable habitat for the flycatcher is expected to occur along the portion of the Sweetwater River (near the Loveland Reservoir) that would be crossed by the future transmission line.

Construction of the Interstate 8 future transmission route has the potential to directly impact southwestern willow flycatcher through removal of occupied habitat. These impacts would be significant according to Significance Criterion 1.a. (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g. (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to the flycatcher or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a(FT), B-1c(FT), B-2a(FT), and B-7e(FT). Mitigation Measure B-7e(FT) requires a pre-construction survey for the species be conducted if construction activities would occur during the southwestern willow flycatcher breeding season. The pre-construction survey required in Mitigation Measure B-7e(FT) would conclusively define all the impacts to the southwestern willow flycatcher from construction of the Interstate 8 future transmission route. Additionally, southwestern willow flycatcher breeding can be affected by excessive construction noise (considered by the USFWS [USFWS, 2007c; American Institute of Physics, 2005] to be 60 dB(A) Leq at the edge of occupied habitat). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on southwestern willow flycatcher breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7E: Direct or indirect loss of southwestern willow flycatcher or direct loss of habitat

B-1a(FT) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(FT) Conduct biological monitoring.

B-2a(FT) Provide restoration/compensation for affected jurisdictional areas.

B-7e(FT) Conduct least Bell's vireo and southwestern willow flycatcher surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7H: Direct or indirect loss of golden eagle or direct loss of habitat (Class I)

As noted in Section D.2.11, the golden eagle is very sensitive to human activity, especially in the vicinity of its nest site, and even distant construction activity (or maintenance activity; see Impact B-12) could cause abandonment of a nest, subsequent reproductive failure, and continuing decline of the species. These impacts would be significant according to Significance Criteria 1.e (substantial adverse effect on the breeding success of the golden eagle), 1.f (directly or indirectly cause the mortality of a special status species), 1.g (result in the abandonment of migratory bird nests and/or eggs), and 1.h (result in take of bald or golden eagles, eagle eggs or any part of an eagle). Human activity within 4,000 feet of a nest site is considered significant and not mitigable to less than significant levels (Class I), especially if there is direct line-of-sight between the nest site and the human activity, or if the human activity occurs above the nest site in elevation. An exception to this is if the activity within 4,000 feet of the nest site (without direct line-of-sight and activity is below the nest site) occurs where there is already an existing disturbance such as a road or utility corridor.

The golden eagle has potential to nest within 4,000 feet of the Interstate 8 future transmission route. Impacts to nesting eagles would be significant and not mitigable to less than significant levels (Class I) if the distance between the nest area and the project were less than 4,000 feet. Implementation of Mitigation Measure B-7h, which states that no construction or maintenance activities shall occur during the eagle breeding season, is required to minimize the impacts to golden eagle, but would not reduce the impact to less than significant.

Impacts/mitigation relating to golden eagles and electrocution/collision with transmission towers/lines is discussed in Impact B-10 below.

Mitigation Measure for Impact B-7H: Direct or indirect loss of golden eagle or direct loss of habitat

B-7h Implement appropriate avoidance/minimization strategies for eagle nests.

Impact B-7I: Direct or indirect loss of bald eagle or direct loss of habitat (No Impact)

The Interstate 8 future transmission route has the potential to impact bald eagle because the species has potential to winter and forage around Loveland Reservoir. USDA Forest Service modeled habitat (USDA, 2007) for bald eagle exists around Loveland Reservoir and Sweetwater River although the species has not been documented there.

The bald eagle is not known to and is not expected to nest within or adjacent to the I-8 Alternative future transmission line. No impacts to bald eagle as a result of the future transmission line are expected (No Impact).

Impacts/mitigation relating to bald eagles and electrocution/collision with transmission towers/lines is discussed in Impact B-10 below.

Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat (Class I)

Based on a literature review of CNDDDB records, USFWS records, and USDA Forest Service records, the QCB is known to occur within 1 mile of the Interstate 8 future transmission route. The QCB has

been documented north of Loveland Reservoir in 2003 and 2004 (USFWS, 2006). The entire future transmission alignment occurs within USFWS protocol Survey Area 2, an area where protocol surveys are required in suitable QCB habitat (USFWS, 2002a).

The Interstate 8 future transmission route has the potential to impact QCB through the direct loss of habitat and the loss of individual butterflies. Impacts to QCB would be significant according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed as endangered or threatened). Since the magnitude of impacts to QCB are unknown, and adequate land required by Mitigation Measure B-7i may not be available, the impacts are considered significant and not mitigable (Class I). However, Mitigation Measures B-1a(FT), B-1c(FT), B-2a(FT), and B-7i(FT) are required to, at least in part, minimize impacts to the QCB. Mitigation Measure B-7i(FT) requires a pre-construction survey for the species to be conducted within any designated USFWS QCB survey area.

Mitigation Measures for Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat

B-1a(FT) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(FT) Conduct biological monitoring.

B-2a(FT) Provide restoration/compensation for affected jurisdictional areas.

B-7i(FT) Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies. Mitigation Measure B-7i(FT) is identical to Mitigation Measure B-7i for the Proposed Project with the exception that CPUC and BLM shall be replaced with “Lead Agencies”, and State Parks, USDA Forest Service, and/or Wildlife Agencies shall be replaced with “other agencies with jurisdiction over the project”.

Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat (Class II)

Based on a literature review of CNDDDB records, USFWS records, and USDA Forest Service records, the arroyo toad is known to occur along the I-8 future transmission route alignment. Arroyo toads are known to occur along the Sweetwater River downstream of Loveland Reservoir.

The I-8 future transmission route has the potential to impact arroyo toad or its occupied breeding or burrowing habitat from habitat removal or disturbance from construction (e.g., crushing of toads with construction equipment). Impacts to arroyo toad would be significant according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed as endangered or threatened). These impacts would be significant but mitigable to less than significant levels (Class II) through implementation of Mitigation Measures B-1a(FT), B-1c(FT), B-2a(FT), and B-7j(FT). The pre-construction survey required in Mitigation Measure B-7j would conclusively define all the impacts to the arroyo toad from construction of the I-8 Alternative future transmission route (i.e., if appropriate climatic conditions are present to encounter arroyo toads). It is expected that adequate mitigation land would be available to satisfy the mitigation requirement because of the small number of acres needed and because this type of mitigation for the arroyo toad is typically available and regularly provided in San Diego County.

Mitigation Measures for Impact B-7K: Direct or indirect loss of arroyo toad or direct loss of habitat

B-1a(FT) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(FT) Conduct biological monitoring.

B-2a(FT) Provide restoration/compensation for affected jurisdictional areas.

B-7j(FT) Conduct arroyo toad surveys, and implement appropriate avoidance/minimization/compensation strategies. Mitigation Measure B-7j(FT) is identical to Mitigation Measure B-7j for the Proposed Project with the exception that CPUC and BLM shall be replaced with “Lead Agencies”, and State Parks, USDA Forest Service, and/or Wildlife Agencies shall be replaced with “other agencies with jurisdiction over the project”.

Impact B-7M: Direct or indirect loss of coastal California gnatcatcher or direct loss of habitat (Class II)

Based on a literature review of CNDDDB records, USFWS records, and USDA Forest Service records, the coastal California gnatcatcher is known to occur in the vicinity of the I-8 Alternative future transmission route. The species has been documented within 1 mile of the future transmission route near the communities of Dehesa and Harbison Canyon. Based on a review of aerial photos, suitable habitat for the gnatcatcher is expected to occur along the future transmission route.

Construction of the I-8 Alternative future transmission route has the potential to directly impact coastal California gnatcatcher through removal of occupied habitat. These impacts would be significant according to Significance Criterion 1.a. (substantial adverse effect through any impact to one or more individuals of a federal or State listed species) and Significance Criterion 1.g. (substantial adverse effect through activities that result in the killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Any direct impact to the gnatcatcher or its occupied habitat would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a(FT), B-1c(FT), B-2a(FT), and B-7l(FT). The pre-construction survey required in Mitigation Measure B-7l(FT) would conclusively define all the impacts to the coastal California gnatcatcher from construction of the I-8 Alternative future transmission route.

Additionally, gnatcatcher breeding can be affected by excessive construction noise (considered to be 60 dB(A) Leq at the edge of occupied habitat by the USFWS [American Institute of Physics, 2005]). This impact would be significant according to Significance Criterion 4.d. (adversely affect wildlife through an increase in noise). Such excessive noise would be a significant impact on gnatcatcher breeding but is mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-7e, which requires monitoring for disturbance of nesting activities and taking action to stop the disturbance.

Mitigation Measures for Impact B-7M: Direct or indirect loss of coastal California gnatcatcher or direct loss of habitat

B-1a(FT) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(FT) Conduct biological monitoring.

B-2a(FT) Provide restoration/compensation for affected jurisdictional areas.

B-7l(FT) Conduct coastal California gnatcatcher surveys and implement appropriate avoidance/minimization/compensation strategies. Mitigation Measure B-7e(FT) is identical to Mitigation Measure B-7e for the Proposed Project with the exception that CPUC and BLM shall be replaced with “Lead Agencies”, and State Parks, USDA Forest Service, and/or Wildlife Agencies shall be replaced with “other agencies with jurisdiction over the project”.

Impact B-11: Presence of transmission lines would result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (Class III)

Common ravens have been documented to prey on the desert tortoise and the FTHL (Liebezeit et al., 2002; Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003), which do not occur

along the I-8 Alternative future transmission route. The common raven may prey on any other listed or sensitive wildlife in the vicinity of this option. Although the predation may still occur, it would be adverse but less than significant (Class III). No mitigation is required.

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class II)

Maintenance of the I-8 Alternative future transmission route, including such activities as the use of existing access roads or regular brush clearing around project features, would result in disturbance to wildlife. These disturbances would include temporarily displacing animals and disrupting their breeding and/or foraging activities. Maintenance activities could also result in direct wildlife mortality (e.g., lizard crushed by truck tire). Disturbance to wildlife and potential wildlife mortality would be significant impacts according to Significance Criteria 1.a., 1.e. through 1.h., and 4.d. that include any impacts to one or more listed species (1.a.); impacts to breeding eagles (1.e.); impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species (1.f.); violation of the Migratory Bird Treaty Act (1.g.); violation of the Bald Eagle Protection Act (1.h.), and impacts that increase noise or night-time lighting in wildlife habitat or a wildlife corridor or linkage (4.d.).

Maintenance activities have the potential to impact nesting birds (violation of Migratory Bird Treaty Act) if vegetation is cleared during the general avian breeding season (February 15 through September 15) or the raptor breeding season (January 1 through September 15). This impact would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a(FT).

Maintenance activities have the potential to impact the coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher if the noise threshold (i.e., 60 dB[A] Leq hourly) is met or exceeded at the edge of their nesting territories during their breeding seasons. Furthermore, maintenance activities would impact the golden eagle if they would occur within 4,000 feet of an active golden eagle nest. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-7h and B-12a(FT).

Maintenance activities have the potential to cause disturbance to, and possible mortality of, arroyo toad and QCB. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1f, B-1h, B-1i, B-2b, B-5c, B-6a, B-6b, B-12b, B-12c, and B-12d.

Impacts to non-sensitive wildlife from maintenance activities would be significant but mitigated to less than significant (Class II) with the implementation of Mitigation Measures B-1f, B-1h, B-1i, B-2b, B-5c, B-6a, B-6b, and B-12d.

Mitigation Measures for Impact B-12: Maintenance activities would result in disturbance to wildlife and wildlife mortality

- B-1f** Construction and survey activities shall be restricted based on final design engineering drawings.
- B-1h** Comply with all applicable environmental laws and regulations.
- B-1i** Restrict the construction of access and spur roads.
- B-2b** Identify environmentally sensitive times and locations for tree trimming.
- B-5c** No collection of plants or wildlife.

- B-6a Littering is not allowed.**
B-6b Survey areas for brush clearing.
B-7h Implement appropriate avoidance/minimization strategies for eagle nests.
B-12a(FT) Conduct maintenance activities outside the general avian breeding season. Mitigation Measure B-12a(FT) is identical to Mitigation Measure B-12a for the Proposed Project with the exception that CPUC and BLM shall be replaced with “Lead Agencies”, and State Parks, USDA Forest Service, and/or Wildlife Agencies shall be replaced with “other agencies with jurisdiction over the project”.
B-12b Conduct maintenance when arroyo toads are least active.
B-12c Maintain access roads and clear vegetation in quino checkerspot butterfly habitat.
B-12d Protect wildlife.

Table E.1.2-1. Special Status Plant Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements ²	Potential for Occurrences ³
Chaparral sand verbena <i>Abronia villosa</i> var. <i>aurita</i>	FSS L1B	Sandy areas within coastal sage scrub and chaparral from 80 to 1600 meters. Occurs in the central and southern south coast, and western Sonoran Desert.	Low – BCD, D, I8, MD
San Diego thorn-mint <i>Acanthomintha ilicifolia</i>	FT, SE	Grassy openings in the chaparral or sage scrub. Occurs with spring annuals, bulbous perennials, and a few herbaceous elements. Distribution in San Diego County includes the south coast and southwest Peninsular Ranges. Three SWPL Alternatives (D, I8, and MD) would cross USDA Forest Service modeled habitat for this species, and these areas are assumed to be occupied due to low rainfall.	Present – D Assumed present – I8 and MD Low – BCD
Munz's onion <i>Allium munzii</i>	FE, ST	Clay soils in chaparral, cismontane woodland, coastal sage scrub, pine-juniper woodland, and valley and foothill grasslands.	Not expected – BCD, D, I8, MD
Otay manzanita <i>Arctostaphylos otayensis</i>	L1B	Chaparral on metavolcanic peaks. Distribution in San Diego County includes southwest Peninsular Ranges.	Low – I8 and MD
Peninsular manzanita <i>Arctostaphylos peninsularis</i> ssp. <i>peninsularis</i>	L2	High elevation chaparral, near 1,350 meters (CNPS, 2007).	High – BCD, I8, and MD Low – D
Rainbow manzanita <i>Arctostaphylos rainbowensis</i>	FSS L1B	Chaparral between 225 to 640 meters (CNPS, 2007).	Not expected – BCD, D, I8, MD
Braunton's milk-vetch <i>Astragalus brauntonii</i>	FE	Chaparral, coastal scrub valley and foothill grasslands, recent burns or disturbed areas, usually sandstone with carbonate layers, from 4 to 640 meters (CNPS, 2007).	Not expected – BCD, D, I8, MD
Dean's milk-vetch <i>Astragalus deanei</i>	BLMS FSS L1B	Diegan coastal sage scrub, chaparral, and sandy washes. Uses partial shade of low growing shrubs. Distribution is within central San Diego County	Moderate – MD Low – BCD, D, I8
Jacumba milk-vetch <i>Astragalus douglasii</i> var. <i>perstrictus</i>	BLMS FSS L1B	Chaparral, cismontane woodland, and valley and foothill grassland on rocky substrates (CNPS, 2007).	Moderate – BCD, I8 and MD Low – D
Harwood's milk-vetch <i>Astragalus insularis</i> var. <i>harwoodii</i>	L2	Sonoran desert scrub with gravelly, sandy washes or dunes.	Low – I8

Table E.1.2-1. Special Status Plant Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements ²	Potential for Occurrences ³
San Diego milk-vetch <i>Astragalus oocarpus</i>	BLMS FSS L1B	Cismontane chaparral edges at the periphery of meadows with coarse sandy loam soils. Mild soil disturbance may be a factor in facilitating the spread of populations. Distribution is within central San Diego County (Peninsular Ranges).	High – D Moderate – BCD, I8, and MD
Jaeger's milkvetch <i>Astragalus pachypus</i> var. <i>jaegeri</i>	FSS L1B	Sandy or rocky areas in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland (CNPS, 2007).	Low – BCD, D, I8, MD
Ayenia <i>Ayenia compacta</i>	L2	Rocky canyons and desert arroyos in the Sonoran Desert and desert mountains.	Moderate – BCD and I8 Low – MD
Encinitas baccharis <i>Baccharis vanessae</i>	FT, SE	Mature but relatively low-growing chaparral dominated by chamise, Del Mar manzanita, mission manzanita and Mojave yucca with large granite boulders. Occurs in coastal San Diego and northwest peninsular ranges. SWPL Alternatives do not cross USDA Forest Service modeled habitat for this species (USDA, 2007).	Low – BCD, D, I8, MD
Nevin's barberry <i>Berberis nevinii</i>	FE, SE	Chaparral communities with strong desert affinities. Shrub cover is relatively low growing and Nevin's barberry may tower above the surrounding subshrubs. Occurs in southwestern California.	Low – BCD, I8, and MD Not expected – D
Thread-leaved brodiaea <i>Brodiaea filifolia</i>	FT, SE	Clay soils in vernal moist grasslands and vernal pool periphery as well as openings in chaparral, cismontane woodland, coastal scrub, playas, and valley and foothill grasslands, from 25 to 860 meters (CNPS, 2007).	Not expected – BCD, D, I8, MD
Orcutt's brodiaea <i>Brodiaea orcuttii</i>	SR BLMS FSS L1B	Vernal moist grasslands, mima mound topography, and the periphery of vernal pools, and will occasionally occupy streamside embankments. Occurs in the Peninsular Ranges.	Present – I8 High – D and MD Moderate – BCD
Elephant tree <i>Bursera microphylla</i>	L2	Sonoran desert scrub. Distribution is within east San Diego County within the Anza Borrego Desert.	Low – I8
Fairyduster <i>Calliandra eriophylla</i>	L2	Rocky or sandy substrates in sonoran desert scrub.	Low – BCD and I8
Dunn's mariposa lily <i>Calochortus dunnii</i>	SR FSS L1B	Rocky openings in chaparral or grassland/chaparral ecotone. Distribution in San Diego County includes southwest Peninsular Ranges.	High – BCD, D, I8, MD
Plummer's mariposa lily <i>Calochortus plummerae</i>	FSS L1B	Rocky openings in chaparral, grassland, or coastal scrub.	Not expected – BCD, D, I8, MD
Intermediate mariposa lily <i>Calochortus weedii</i> var. <i>intermedius</i>	FSS L1B	Rocky openings in chaparral, grassland, or coastal scrub.	Not expected – BCD, D, I8, MD
Crucifixion thorn <i>Castela emoryi</i>	L2	Mojavean desert scrub, playas, and gravelly Sonoran desert scrub.	Low – I8 Not expected – BCD, D, MD
San Bernardino Mountains owls' clover <i>Castilleja lasiorhyncha</i>	FSS L1B	High elevation chaparral and meadows and upper montane coniferous forest (CNPS, 2007).	Not expected – BCD, D, I8, MD
Payson's jewel-flower <i>Caulanthus simulans</i>	FSS	Upper desert elevations associated with woody species like California juniper (<i>Juniperus californica</i>) and desert apricot (<i>Prunus fremontii</i>). Occurs in the eastern Peninsular Ranges and western edge of the Sonoran Desert.	High – BCD, I8, and MD Moderate – D

Table E.1.2-1. Special Status Plant Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements ²	Potential for Occurrences ³
Lakeside ceanothus <i>Ceanothus cyaneus</i>	BLMS FSS L1B	Inland mixed chaparral and dense, almost impenetrable chaparral with a mix of chamise and other shrubs such as species of manzanita.	High – I8 Low – BCD, D, and MD
Vail Lake ceanothus <i>Ceanothus ophiochilus</i>	FT, SE	Gabbroic or pyroxenite-rich outcrops in chaparral, from 580 to 1065 meters (CNPS, 2007).	Not expected – BCD, D, I8, MD
Parish's chaenactis <i>Chaenactis parishii</i>	L1B	Rocky chaparral, from 1300 to 2500 meters (CNPS, 2007).	Moderate – BCD Low – D, I8, and MD
Parry's spineflower <i>Chorizanthe parryi</i> var. <i>parryi</i>	FSS	Sandy soil on flats and foothills in mixed grassland, coastal sage scrub, and chaparral communities.	Not expected – BCD, D, I8, MD
Long-spined spineflower <i>Chorizanthe polygonoides</i> var. <i>longispina</i>	FSS L1B	Chaparral, on clay lenses which are largely devoid of shrubs, and occasionally, the periphery of vernal pools and montane meadows near vernal seeps. Occurs in the Peninsular Ranges below 1,400 feet.	Moderate – BCD, D, I8, and MD
Delicate clarkia <i>Clarkia delicata</i>	FSS L1B	Periphery of oak woodlands and cismontane chaparral, partially shaded by tree canopy or large shrubs, and typically where vernal mesic situations with substantial peripheral annual and herbaceous spring growth occurs.	Present – I8 High – D and MD Low – BCD
Summer-holly <i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	L1B	Mesic, north-facing slopes in southern mixed chaparral. Rugged steep drainages seem to be a preferred location for isolated shrubs.	Low – BCD, D, I8, and MD
Tecate cypress <i>Cupressus forbesii</i>	BLMS FSS L1B	Closed cone coniferous forest and southern mixed chaparral. Prefers well drained, north facing slope aspects.	High – I8
Cuyamaca cypress <i>Cupressus stephensonii</i>	FSS L1B	Closed cone coniferous forest and montane chaparral.	Low – D and I8
Tecate tarplant <i>Deinandra floribunda</i>	BLMS FSS L1B	Sandy washes located in the high desert.	High – BCD, I8, MD
Mojave tarplant <i>Deinandra mohavensis</i> <i>floribunda</i>	SE	Chaparral, coastal scrub, and mesic riparian scrub (CNPS, 2007).	Not expected – BCD, D, I8, MD
Cuyamaca larkspur <i>Delphinium hesperium</i>	SR FSS L1B	Relatively densely vegetated montane meadow.	Low – D
Slender-leaved spineflower <i>Dodecahema leptoceras</i>	FE, SE	Alluvial fans, floodplains, stream terraces, washes, and associated benches. Grows in riverbed alluvium high in silt/low in nutrients and organic matter in silt-filled, shallow depressions on relatively flat surfaces surrounded by scattered, river-rounded, cobble-sized rocks.	Not expected – BCD, D, I8, MD
Oval-leaved dudleya <i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	FT	Volcanic, rocky places in chaparral and coastal scrub, known from fewer than ten occurrences (CNPS, 2007).	Not expected – BCD, D, I8, MD
Many-stemmed dudleya <i>Dudleya multicaulis</i>	FSS L1B	Dry, stony places associated with coastal sage scrub and valley grasslands.	Not expected – BCD, D, I8, MD
Variiegated dudleya <i>Dudleya variegata</i>	BLMS L1B	Openings in sage scrub and chaparral; isolated, rocky substrates in open grasslands; and in proximity to vernal pools and mima mound topography. Occurs in southern San Diego County.	Low – D, I8, MD Not expected – BCD
Sticky dudleya <i>Dudleya viscida</i>	FSS L1B	Coastal bluff scrub, chaparral, coastal scrub (CNPS, 2007).	Not expected – BCD, D, I8, MD

Table E.1.2-1. Special Status Plant Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements ²	Potential for Occurrences ³
Palmer's goldenbush <i>Ericameria palmeri</i> ssp. <i>palmeri</i>	L2	Coastal drainages, in mesic chaparral sites, and rarely in Diegan coastal sage scrub. Occasionally a hillside element (usually at higher elevations inland on north-facing slopes). Seasonally moist locales are strongly preferred.	Moderate – D, I8, and MD Low – BCD
Vanishing wild buckwheat <i>Eriogonum evanidum</i>	L1B	Lower montane coniferous forest along with pinyon juniper woodland.	Moderate – BCD, D, I8, and MD
Rock nettle <i>Eucnide rupestris</i>	L2	Sonoran desert scrub in rock or talus.	Moderate – I8 Not expected – BCD, D, MD
Sticky geraea <i>Geraea viscida</i>	L2	Openings in high desert chaparral.	Present – BCD, I8:BSU, and I8:WBS High – I8 and MD Moderate – D
Mission Canyon bluecup <i>Githopsis diffusa</i> ssp. <i>filicaulis</i>	FSS	Isolated, sandy openings in chaparral.	High – BCD, D, I8, and MD
San Diego gumplant <i>Grindelia hirsutula</i> var. <i>hallii</i>	L1B	Montane meadows and lower montane coniferous forest, typically with sunny openings, and locales which are quite wet in the early spring, although such places usually dry quickly. Occurs in the Peninsular Ranges and western Sonoran Desert.	High – BCD, I8, and MD Moderate – D
Curly herissantia <i>Herissantia crispa</i>	L2	Sonoran desert scrub.	Low – BCD and I8
Mesa horkelia <i>Horkelia cuneata</i> ssp. <i>puberula</i>	FSS L1B	Chaparral, cismontane woodland, and gravelly or sandy areas in coastal scrub (CNPS, 2007).	Not expected – BCD, D, I8, MD
Ramona horkelia <i>Horkelia truncata</i>	FSS, L1B	Open chamise chaparral; dry red clay soils. Occurs in the Peninsular Ranges.	Present – D High – BCD, I8, and MD
San Diego sunflower <i>Hulsea californica</i>	L1B	Montane coniferous forest and lightly disturbed chaparral and recently burned areas. Occasionally it is found beneath pine (<i>Pinus</i> ssp.) canopy.	Present – I8 High – BCD Moderate – D and MD
Mexican hulsea <i>Hulsea mexicana</i>	L2	Open, high desert chaparral on volcanic soils.	Moderate – BCD and I8 Low – D and MD
Slender-leaved ipomopsis <i>Ipomopsis tenuifolia</i>	L2	Pinyon juniper woodland and higher elevations with Sonoran desert scrub.	High – BCD and I8 Low – D and MD
San Diego marsh-elder <i>Iva hayesiana</i>	L2	Creeks or intermittent streambeds or seeps near creeks. Typically, the riparian canopy is open. Sandy alluvial embankments with cobbles.	Low – BCD, D, I8, and MD
Heart-leaved pitcher sage <i>Lepechinia cardiophylla</i>	FSS L1B	Chaparral, closed-cone coniferous forests, and cismontane woodland. Known in California from fewer than ten occurrences in Orange, Riverside, and San Diego Counties (CNPS, 2007).	Low – D and I8 Not expected – BCD and MD
Robinson's pepper-grass <i>Lepidium virginicum</i> var. <i>robinsonii</i>	L1B	Openings in chaparral and sage scrub at the coastal and foothill elevations in southwestern California. Relatively dry, exposed locales rather than beneath a shrub canopy or along creeks. May be associated with volcanic substrates.	Moderate – D, I8, and MD Low – BCD
Warner Springs lessingia <i>Lessingia glandulifera</i> var. <i>tomentosa</i>	FSS L1B	High desert chaparral or grassland and sandy openings in very xeric chamise chaparral, or possibly the periphery of alluvial drainages. In the Peninsular Ranges.	Not expected – BCD, D, I8, MD

Table E.1.2-1. Special Status Plant Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements ²	Potential for Occurrences ³
Lemon lily <i>Lilium parryi</i>	FSS L1B	Lower and upper montane coniferous forest, meadows and seeps, riparian forests (CNPS, 2007).	Moderate – D and I8 Low – BCD and MD
Parish's meadowfoam <i>Limnanthes gracilis</i> ssp. <i>parishii</i>	FSS L1B	Lower montane meadows largely devoid of shrubs and with concentrations of annuals and herbaceous perennials (not grasses) and vernal pools.	Moderate – BCD, D, I8 Low – MD
Desert beauty <i>Linanthus bellus</i>	L2	High desert chaparral, usually in broad sandy openings.	Present – BCD High – I8 Low – D and MD
Orcutt's linanthus <i>Linanthus orcuttii</i>	FSS L1B	Chaparral, lower montane coniferous forest, and openings in pinyon-juniper woodland (CNPS, 2007).	High – BCD, D, and I8 Low – MD
Pygmy lotus <i>Lotus haydonii</i>	L1B	Open Sonoran desert scrub on dry, rocky slopes.	Moderate – I8 Low – BCD, D, and MD
Mountain Springs bush lupine <i>Lupinus excubitus</i> var. <i>medius</i>	BLMS L1B	Pinyon juniper woodland and sonoran desert scrub at higher elevations. Microhabitat conditions may include alluvial, sandy washes on the periphery of stream channels.	Moderate – BCD and I8 Low – D and MD
Parish's desert-thorn <i>Lycium parishii</i>	L2	Sonoran desert scrub with sandy plains and desert washes.	Low – I8
Mount Laguna aster <i>Machaeranthera asteroides</i> var. <i>lagunensis</i>	SR FSS	Lower montane coniferous forest. Within this vegetation community species may prefer relatively open areas.	Low – BCD and I8
Brown turbans <i>Malperia tenuis</i>	L2	In Sonoran desert scrub on arid slopes with shallow soils, rocky surface rubble with few large boulders, and little competition from shrubs.	Low – I8
Hairy stickleaf <i>Mentzelia hirsutissima</i>	L2	Sonoran desert scrub growing on rocky hillsides and desert mesas.	Low – I8
Creamy blazing star <i>Mentzelia tridentata</i>	L1B	Rocky, gravelly, or sandy substrates in Mojavean desert scrub (CNPS, 2007).	Moderate – I8 Low – BCD, D, and MD
Felt-leaved monardella <i>Monardella hypoleuca</i> ssp. <i>lanata</i>	FSS L1B	Chaparral understory, beneath mature stands of chamise in xeric situations.	Present – D Moderate – BCD, I8, and MD
Hall's monardella <i>Monardella macrantha</i> ssp. <i>hallii</i>	FSS L1B	Lower montane coniferous forest and montane chaparral, usually near rocky rubble and boulders where shrub cover was limited. Canopy may either provide occasional shade or be lacking.	Moderate – BCD, D, and I8 Low – MD
San Felipe monardella <i>Monardella nana</i> ssp. <i>leptosiphon</i>	FSS L1B	Chaparral and lower montane coniferous forests, 1200 to 1855 meters (CNPS, 2007).	Not expected – BCD, D, I8, and MD
San Diego goldenstar <i>Muilla (Bloomeria) clevelandii</i>	BLMS L1B	Valley grasslands, particularly near mima mound topography or vernal pools. Does not typically grow in the shade of woody perennials, but rather in somewhat open locales.	Low – BCD, D, I8, and MD
Spreading navarretia <i>Navarretia fossalis</i>	FT	Vernal pools and swales. Rarely found in shallow pools.	Low – BCD, D, I8, and MD
Baja navarretia <i>Navarretia peninsularis</i>	FSS	Chaparral openings and lower montane coniferous forest, 1500 to 2300 meters (CNPS, 2007).	High – BCD, D, I8, and MD
Chaparral nolina <i>Nolina cismontana</i>	FSS L1B	Xeric Diegan coastal sage scrub and open chaparral.	Moderate – BCD, D, I8, and MD
Dehesa nolina <i>Nolina interrata</i>	SE	Open southern mixed chaparral and chamise chaparral.	Moderate – BCD, D, I8, and MD

Table E.1.2-1. Special Status Plant Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements ²	Potential for Occurrences ³
California beardtongue <i>Penstemon californicus</i>	FSS L1B	Chaparral, lower montane coniferous forest, pinyon and juniper woodland, 1170 to 2300 meters (CNPS, 2007).	Not expected – BCD, D, I8, and MD
Santiago Peak phacelia <i>Phacelia suaveolens</i>	FSS	Closed-cone coniferous forests and chaparral from 610 to 1600 meters (CNPS, 2007).	Not expected – BCD, D, I8, and MD
Sandfood <i>Pholisma sonorae</i>	L1B	Dunes in creosote bush scrub (Calflora, 2006). Occurs in the Sonoran Desert.	Low – I8 Not expected – BCD, D, and MD
San Bernardino bluegrass <i>Poa atropurpurea</i>	FE FSS	Montane meadows surrounded by coniferous forest, 1360 to 2455 meters. Two SWPL Alternatives (BCD and I-8) would cross USDA Forest Service modeled habitat for this species, and the species is assumed to be present due to low rainfall.	Assumed present – BCD and I8 Moderate – MD and D
Nuttall's scrub oak <i>Quercus dumosa</i>	FSS L1B	Coastal chaparral with a relatively open canopy cover in flat terrain; on north-facing slopes it may grow in dense, monotypic stands.	Low – I8 Not expected – BCD, D, and MD
Moreno currant <i>Ribes canthariforme</i>	FSS L1B	Chaparral in areas of acid igneous rock lands with large, exposed boulders.	Moderate – BCD, I8, and MD Low – D
San Miguel savory <i>Satureja chandleri</i>	FSS L1B	Open chaparral dominated by chamise and oak woodland. May be restricted to gabbroic or metavolcanic derived soils.	Moderate – D and MD Low – BCD and I8
Southern skullcap <i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>	FSS L1B	Moist embankments of montane creeks.	Moderate – BCD, D, I8, MD
Desert spikemoss <i>Selaginella eremophila</i>	L2	Rocky terrain amid Sonoran desert scrub.	Moderate – I8 Low – BCD, D, and MD
Rayless ragwort <i>Senecio aphanactis</i>	L2	Open coastal sage scrub, cismontane woodland and alkaline flats.	Low – BCD and I8
Gander's ragwort <i>Packera (Senecio) ganderi</i>	SR FSS	Chaparral understory, often beneath chamise.	Moderate – BCD, D, I8, and MD
Hammitt's clay-cress <i>Sibaropsis hammittii</i>	FSS L1B	Mesic grassy openings in chaparral on volcanic soils.	Moderate – BCD, D, I8, and MD
Purple stemodia <i>Stemodia durantifolia</i>	L2	Wet sand along minor creeks and seasonal drainages.	Low – BCD, D, I8, and MD
Laguna Mountains jewel-flower <i>Streptanthus bernardinus</i>	FSS	Montane peak tops in lower montane coniferous forest. While typically in mesic situations, it can occupy drier embankments in granitic gravels and sand.	High – BCD, D, I8, and MD
Southern jewel-flower <i>Streptanthus campestris</i>	FSS L1B	Juniper woodland, high desert transitional chaparral.	Moderate – BCD, D, I8, and MD
San Bernardino aster <i>Symphotrichum defoliatum</i>	FSS L1B	Wetter areas in a variety of habitats including chaparral, cismontane woodlands, and grasslands (CNPS, 2006).	Moderate – BCD, D, I8, and MD
Parry's tetracoccus <i>Tetracoccus dioicus</i>	BLMS FSS L1B	Low-growing chamise chaparral, with moderately dense canopy cover. Usually quite xeric with only limited annual growth. Occurs in southern San Diego County and the western Peninsular Ranges.	Moderate – D, I8, and MD Low – BCD
Velvety false lupine <i>Thermopsis californica</i> var. <i>semota</i>	FSS L1B	Lower montane coniferous forest and montane meadows.	Moderate – BCD, D, and I8 Low – MD

Table E.1.2-1. Special Status Plant Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements ²	Potential for Occurrences ³
Coastal triquetrella <i>Triquetrella californica</i>	L1B	Coastal sage scrub and coastal bluff scrub; known to occur near San Vicente Reservoir (CNPS, 2007).	Moderate – I8 Low – BCD, D, and MD

1 Status: FT=federally threatened; FE=federally endangered; ST=state threatened; SE=state endangered; SR=state rare; BLMS=BLM sensitive; FSS=USDA Forest Service Sensitive; L1B (2, 3, and 4)=CNPS List 1B (2, 3, or 4).

2 From Reiser (2001) unless otherwise indicated.

3 Alternative Abbreviations: BCD=BCD Alternative; D=Route D; I8=Interstate 8 Alternative (includes I-8 Options, unless otherwise noted); I8:BSU=I-8: Buckman Springs Underground option; I8:WBS=I-8: West Buckman Springs Option; MD=Modified Route D Alternative

Table E.1.2-2. Special Status Wildlife Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements	Potential for Occurrences ²
Invertebrates			
Quino checkerspot butterfly <i>Euphydryas editha quino</i>	FE	Found in association with but not restricted to vernal pools, sage scrub, chaparral, native and non-native grassland, and open oak and juniper woodland communities. The key component seems to be open-canopied habitats with larval host plants (<i>Plantago erecta</i> and possibly <i>Antirrhinum coulterianum</i> , <i>Collinsia concolor</i> , and <i>Castilleja exserta</i>) and adult nectar resources.	High – I8 Moderate – BCD and MD Low – D
Hermes copper <i>Lycaena hermes</i>	SDCS	May occur in areas where the host plant spiny redberry is present.	Low to moderate – I8 and MD.
Laguna Mountains skipper <i>Pyrgus ruralis lagunae</i>	FE	Montane meadow habitats with Cleveland's horkelia.	Low – BCD, D, I8, and MD
Fish			
Arroyo chub <i>Gila orcutti</i>	FSS, SSC	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths greater than 40 centimeters; substrates of sand or mud.	Low – D, I8, MD Not expected – BCD
Southern steelhead trout <i>Onchorhynchus mykiss</i>	FE, SSC	Fresh water higher-elevation headwaters for spawning with access to the ocean (CDFG, 2007).	Not expected – BCD, D, I8, and MD
Santa Ana speckled dace <i>Rhinichthys osculus</i> ssp. 8	FSS, SSC	Permanent flowing streams with summer water temperatures of 17-20 C (CDFG, 2007).	Not expected – BCD, D, I8, and MD
Amphibians			
Arroyo toad <i>Bufo californicus</i>	FE, SSC	Stream channels for breeding and adjacent stream terraces and uplands for foraging and wintering. Known to occur in the analysis area in San Diego County along San Diego River, Sweetwater River, Cottonwood Creek, Kitchen Creek, and Potrero Creek.	Present – D and I8:WBS Assumed present – BCD, I8, I8:BSU, and MD (suitable habitat present, recent confirmed sightings upstream and downstream, but not surveyed in 2007)
Large-blotched salamander <i>Ensatina eschscholtzii klauberi</i>	SSC FSS	Oak woodland, chaparral, coastal sage scrub, coastal dunes, conifer forest.	High – D and MD Moderate – I8 and BCD
California red-legged frog <i>Rana aurora draytonii</i>	FT, SSC FSS	Dense, shrubby riparian vegetation associated with deep (0.7 m), still or slow-moving water (CDFG, 2007).	Not expected – BCD, D, I8, and MD
Mountain yellow-legged frog <i>Rana mucosa</i>	FE, SSC FSS	Mid- to upper-elevation permanent waterways, often with open riparian vegetation.	Not expected – BCD, D, I8, and MD

Table E.1.2-2. Special Status Wildlife Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements	Potential for Occurrences ²
Western spadefoot toad <i>Spea hammondi</i>	BLMS	Coastal sage scrub, chaparral, and grasslands habitats, but is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas.	High – I8, MD, and D. Moderate – BCD
Coast range newt <i>Taricha torosa torosa</i>	SSC	Grassland, woodland, forest, but requires ponds, reservoirs or slow-moving streams for reproduction. Known to occur along Boulder Creek and Cottonwood Creek.	High – D and MD Moderate – BCD
Reptiles			
Silvery legless lizard <i>Anniella pulchra pulchra</i>	FSS, SSC	Loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodlands, and riparian habitats.	High – I8, MD, and D. Moderate – BCD
Belding's orange-throated whiptail <i>Aspidoscelis hyperythra beldingi</i>	SSC	Semi-arid brushy areas typically with loose soil and rocks below 2,000 feet.	High – BCD, I8, D, and MD.
Coastal rosy boa <i>Charina trivirgata roseofusca</i>	BLMS FSS	Arid scrublands, semi-arid shrublands, rocky shrublands, rocky deserts, canyons, and other rocky areas. Appears to be common in riparian areas but does not require permanent water.	High – BCD, I8, MD, and D.
Southwestern pond turtle <i>Clemmys marmorata pallida</i>	SSC BLMS FSS	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter. Suitable habitat along San Diego River.	High – D Moderate – MD Low – BCD and I8
Barefoot banded gecko <i>Coleonyx switaki</i>	ST	Inhabits rocky, boulder-strewn desert foothills, where it spends most of its life deep in rock crevices and subterranean chambers.	Moderate – I8 and BCD
San Diego banded gecko <i>Coleonyx variegatus abbotti</i>	RSS	Coastal scrub, chaparral, and desert scrub habitats, preferring granite or rocky outcrops.	High – BCD, I8, MD, and D.
Red-diamond rattlesnake <i>Crotalus exsul</i>	SSC	Arid scrub, coastal chaparral, oak and pine woodlands, rocky grassland, cultivated areas. On desert slopes of mountains, it ranges into rocky desert flats.	High – BCD, I8, MD, and D.
San Diego ringneck snake <i>Diadophis punctatus similis</i>	FSS, SSC	Moist habitats: woodland, forest, grassland, chaparral; typically found under debris. In San Diego County, it ranges from the coast to the Peninsular Range.	High – BCD, I8, MD, and D.
Coronado skink <i>Eumeces skiltonianus interparietalis</i>	SSC BLMS	Coastal sage, chaparral, oak woodlands, pinon-juniper, and riparian woodlands to pine forests along the coastal plain and in the Peninsular Range west of the desert.	High – BCD, I8, MD, and D.

Table E.1.2-2. Special Status Wildlife Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements	Potential for Occurrences ²
San Diego mountain kingsnake <i>Lampropeltis zonata pulchra</i>	SSC FSS	Coniferous forest, oak-pine woodlands, riparian woodland, chaparral, manzanita, and coastal sage scrub. Wooded areas near streams with rock outcrops, talus or rotting logs that are exposed to the sun. Found up to 6,500 feet on Laguna, Palomar, Volcan, and Hot Springs and Cuyamaca Mountains in San Diego County.	Moderate – BCD, I8, MD, and D.
Coast (San Diego) horned lizard <i>Phrynosoma coronatum blainvillei</i>	SSC FSS	Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest.	Present – D, I8, and MD High – BCD
Flat-tailed horned lizard <i>Phrynosoma mcallii</i>	SSC BLMS	Windblown desert sand deposits within several vegetative associations.	High – Desert areas of I8.
Coast patch-nosed snake <i>Salvadora hexalepis virgultea</i>	SSC	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	High – BCD, I8, MD, and D.
Two-striped garter snake <i>Thamnophis hammondi</i>	SSC BLMS FSS	Generally found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland, and coniferous forest from sea level to approximately 6,980 feet.	High – BCD, I8, MD, and D.
Colorado Desert fringe-toed lizard <i>Uma notata notata</i>	SSC BLMS	Restricted to habitats of windblown sand. In California, estimated range extends from northeast San Diego County (north of Borrego Springs) through the southern two-thirds of Imperial County to the Colorado River.	Moderate – I8
Birds			
Sharp-shinned hawk <i>Accipiter striatus</i>	SSC	Winters in lowland woodlands and other habitats including desert oases. Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine. Fall migrant and uncommon winter visitor.	Moderate – BCD, I8, MD, and D (wintering)
Cooper's hawk <i>Accipiter cooperii</i>	SSC	Riparian and oak woodlands, urban areas with trees. Occurs year-round throughout San Diego County's coastal slope where stands of trees are present. Also winters in desert oases.	Present – D and I8 High – BCD, I8, MD, and D
Tri-colored blackbird <i>Agelaius tricolor</i>	SSC BLMS	Nests near fresh water, emergent wetland with cattails or tules; forages in grasslands, woodland, agriculture. Breeding colony exists in Jacumba.	Moderate – I8 Low – BCD, MD, and D
Southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	SSC	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops.	Present – D High – BCD, I8, and MD

Table E.1.2-2. Special Status Wildlife Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements	Potential for Occurrences ²
Grasshopper sparrow <i>Ammodramus savannarum</i>	SSC	Grasslands with open ground and grass clumps.	Present – D High – BCD, I8, and MD
Bell's sage sparrow <i>Amphispiza belli belli</i>	SSC	Coastal sage scrub and dry chaparral along coastal lowlands and inland valleys.	High – BCD, I8, MD, and D
Golden eagle <i>Aquila chrysaetos canadensis</i>	SSC* BLMS	Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest. Scattered throughout undeveloped southern California year-round in small numbers.	Present – BCD, D, I8, and MD
Long-eared owl <i>Asio otus wilsonianus</i>	SSC	Riparian, live oak thickets, other dense stands of trees, edges of coniferous forest. Known to occur throughout southern California in small numbers.	Moderate – BCD, I8, MD, and D
Burrowing owl <i>Athene cucularia</i>	SSC BLMS	Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas.	Moderate – I8 Low – BCD, MD, and D
Ferruginous hawk <i>Buteo regalis</i>	SSC	Open, dry country, grasslands, open fields, agriculture. Uncommon winter visitor to Southern California, usually in fall and winter.	Moderate – BCD, I8, and MD (wintering) Low -D (wintering)
Swainson's hawk <i>Buteo swainsoni</i>	ST	Open desert; sparse shrublands; grassland; or cropland containing scattered, large trees or small groves. The Swainson's hawk is currently a rare migrant in San Diego County, but the Borrego Valley is an important staging site in spring. During migration, this species passes through southern California, specifically through the Anza-Borrego Desert (Unitt, 2004).	High – I8 (migration) Moderate – BCD, MD, and D (migration)
Coastal cactus wren <i>Campylorhynchus brunneicapillus sandiegensis</i>	SSC FSS	Maritime succulent scrub and cactus thickets in coastal sage scrub.	Moderate – I8, MD, and D Low – BCD
Vaux's swift <i>Chaetura vauxi vauxi</i>	SSC	Nests in Douglas fir and redwood habitats in northern California, migrant across southern California. Migrates through southern California mainly in the coastal lowland and Anza-Borrego Desert (Unitt, 2004).	Low – BCD, I8, MD, and D.
Mountain plover <i>Charadrius montanus</i>	SSC BLMS	Winters in shortgrass plains, plowed fields, bare dirt. May occur as a winter migrant. Surveys for this species were not conducted for the SWPL Alternatives because the routes were not finalized in time to survey for the species during its peak migration period (October through February).	Low – I8 (winter migrant)

Table E.1.2-2. Special Status Wildlife Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements	Potential for Occurrences ²
Northern harrier <i>Circus cyaneus hudsonius</i>	SSC	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub. Distribution primarily scattered throughout lowlands but can also be observed in foothills, mountains, and desert.	High – BCD, I8, MD, and D
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	SE FSS	Large blocks of riparian woodlands including cottonwood, willow, or tamarisk galleries that are well developed. It is extremely rare in the interior West. Very rare and sporadic visitor to southern California during the breeding season. Not known to have nested in the county of San Diego for decades (Unitt, 2004).	Very low – BCD, I8, MD, and D
Black swift <i>Cypseloides niger borealis</i>	SSC	Prefers rocky cliffs for foraging and moist cliffs along sea coasts or near waterfalls for nesting. A rare migrant primarily along the coast and Palomar Mountain (Unitt, 2004).	Low – D Very low – BCD, I8, and MD
Yellow warbler <i>Dendroica petechia brewsteri</i>	SSC	Nests in lowland and foothill riparian woodlands. A fairly common breeding summer resident and migrant.	Present – I8, MD, and D Moderate – BCD
White-tailed kite <i>Elanus leucurus</i>	*	Prefers riparian woodlands and oak or sycamore groves adjacent to grassland.	Present – D and I8 High – BCD and MD.
Willow flycatcher <i>Empidonax traillii</i>	SE (nesting) FSS (migrant)	Dense riparian vegetation near surface water or saturated soil. Also known to nest in thickets dominated by tamarisk. Migrating willow flycatchers are known to use a variety of riparian habitats.	Present – I8 (migrant) High – MD (migrants) Moderate – D (migrants) Low – BCD (migrants)
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	FE, SE	Dense riparian vegetation near surface water or saturated soil. Also known to nest in thickets dominated by tamarisk.	Moderate – D, I8, and MD Low – BCD
California horned lark <i>Eremophila alpestris actia</i>	SSC	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow, grain fields.	High – BCD, I8, MD, and D.
Merlin <i>Falco columbarius</i>	SSC	Most often in grassland but anywhere where small birds flock. Rare winter visitor.	Low – BCD, I8, MD, and D.
Prairie falcon <i>Falco mexicanus</i>	SSC	Open desert and grassland. Nests on cliffs or bluffs. Some nests surrounded by chaparral, sage scrub, or oak woodland.	Present – D High – MD and I8 Moderate – BCD
Peregrine falcon <i>Falco peregrinus</i>	SE* FSS	Cliffs or canyons near water for cover and nesting. Can be far from water in winter. Mainly a winter visitor, especially at inland locations.	Low – BCD, I8, MD, and D

Table E.1.2-2. Special Status Wildlife Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements	Potential for Occurrences ²
Greater sandhill crane <i>Grus canadensis</i>	ST*	Winter habitat typically consists of river channels or wetlands for roosting and pastures, marshes, and meadows for foraging. Migrates over southern California; winters in Imperial Valley.	Low – I8
California condor <i>Gymnogyps californianus</i>	FE,SE*	Mountainous country where cliffs with caves or holes are available for nesting sites. Recently observed in the San Diego County Mountains.	Very low – BCD, I8, MD, and D
Bald eagle <i>Haliaeetus leucocephalus</i>	SE*	Seacoasts, lakes, and rivers. Not known to nest near the SWPL Alternatives. Is known to occur in the winter near Barrett Lake and Lake Morena.	Moderate – MD (wintering only) Low – BCD, I8, and D
Yellow-breasted chat <i>Icteria virens</i>	SSC	Riparian woodlands and thickets of willows, vine tangles, and dense brush.	Present – I8 High – MD Moderate – D Low – BCD
Least bittern <i>Ixobrychus exilis hesperis</i>	SSC	Dense emergent wetland vegetation, sometimes interspersed with woody vegetation and open water.	Moderate – I8, MD, and D Low – BCD
Loggerhead shrike <i>Lanius ludovicianus</i>	SSC	Open ground including grassland, coastal sage scrub, broken chaparral, agriculture, riparian, open woodland.	Present – I8 High – BCD, MD, and D
California gull <i>Larus californicus californicus</i>	SSC	Nests in alkali and lacustrine freshwater habitats; during winter frequents interior lowlands. Winters along the coast, around the Salton Sea, and near Lake Henshaw.	Low – BCD, I8, MD, and D
Brown-crested flycatcher <i>Myiarchus tyrannulus</i>	SSC	Riparian woodland. A summer visitor to the southwestern U.S. First breeding observed in San Diego County in 2000. The species is expanding its range (Unitt, 2004).	Very low – BCD, I8, MD, and D
Harris' hawk <i>Parabuteo unicinctus</i>	SSC	Nests and forages in desert scrub, desert wash, and desert riparian habitats. Successfully nested in McCain Valley in 2000, 2001, and 2002 (Unitt, 2004).	Low – BCD and I8
American white pelican <i>Pelecanus erythrorhynchos</i>	SSC	Open water, coastal bays, large inland lakes.	Low – BCD, I8, MD, and D
Summer tanager <i>Piranga rubra</i>	SSC	Nests in riparian woodland; winter habitats include parks and residential areas.	Low – BCD, I8, MD, and D
White-faced ibis <i>Plegadis chihi</i>	SSC	Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields and estuaries.	Moderate – BCD, I8, MD, and D

Table E.1.2-2. Special Status Wildlife Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements	Potential for Occurrences ²
Coastal California gnat-catcher <i>Polioptila californica californica</i>	FT,SSC	Coastal sage scrub, coastal sage scrub-chaparral, coastal sage scrub-grassland ecotone, riparian in late summer.	Moderate – I8 Low – MD and D Not expected – BCD
Purple martin <i>Progne subis subis</i>	SSC	Nests in tall sycamores, pines, oak woodlands, coniferous forest; forages over riparian, forest and woodland.	Present – D (observed foraging) Moderate – BCD, I8, and MD
California spotted owl <i>Strix occidentalis occidentalis</i>	SSC BLMS FSS	Occurs in heavily forested oak and oak-conifer areas. In San Diego County, usually observed in the mountains at elevations between 4,000 and 6,000 feet (Unitt, 2004). Several records adjacent to the BCD Alternative (USDA, 2007).	Moderate – BCD Low – I8, MD, and D
Crissal thrasher <i>Toxostoma crissale coloradense</i>	SSC	Permanent resident of desert successional scrub.	Not expected – BCD, I8, MD, and D
Le Conte's thrasher <i>Toxostoma lecontei lecontei</i>	SSC BLMS	Prefers open desert scrub, washes, alkali desert scrub, and desert succulent shrub habitats.	High – I8 Not expected – BCD, MD, and D
Least Bell's vireo <i>Vireo bellii pusillus</i>	FE,SE	Riparian habitat of low, dense, shrubby vegetation in valleys, foothills, and deserts.	High – I8 and MD Moderate – D Low – BCD
Gray vireo <i>Vireo vicinior</i>	SSC BLMS	Chaparral habitat primarily between 3,000 and 5,000 feet. Rarest breeding bird of San Diego County's chaparral (Unitt, 2004).	Present – BCD Moderate – I8 and MD Low – D
Mammals			
Pallid bat <i>Antrozous pallidus</i>	SSC BLMS FSS	Occupies wide variety of habitats in all but highest elevations. Most common in open, dry habitats with rocky areas for roosting.	High – BCD, I8, MD, D
Ringtail <i>Bassariscus astutus octavus</i>	*	Variety of habitats but prefers chaparral, rocky hillsides, and riparian areas. Nocturnal and rarely seen.	High – BCD, D, I8, and MD
Dulzura pocket mouse <i>Chaetodipus californicus femoralis</i>	SSC	Primarily associated with mature chaparral. Has been trapped in mule fat scrub and is known to occur in coastal sage scrub. Reported from the mouth of the Santa Margarita River south into northern Baja California, Mexico. In San Diego County, ranges east to the desert transition zone.	High – BCD, I8, MD, D.
Northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	SSC	Coastal sage scrub, grassland, sage scrub grassland ecotones, sparse chaparral, rocky substrates, loams and sandy loams.	High – BCD, I8, MD, and D
Pallid San Diego pocket mouse <i>Chaetodipus fallax pallidus</i>	SSC	Desert wash, desert scrub, annual grasslands with sandy or gravelly soils.	High – BCD, I8, MD, and D

Table E.1.2-2. Special Status Wildlife Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements	Potential for Occurrences ²
Mexican long-tongued bat <i>Choeronycteris mexicana</i>	SSC	Known only from San Diego County in California. Most records in urban habitat (CDFG, 1990). Rare visitor that likes desert canyons, arid mountain ranges. Roosts by day in caves, mines or buildings (Bats of San Diego County, 2006).	Moderate – I8 Low – BCD, MD, and D
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC BLMS FSS	Found in desert scrub and coniferous forests. Roosts in caves or abandoned mines, occasionally in buildings.	High – BCD, I8, MD, and D
Stephens' kangaroo rat <i>Dipodomys stephensi</i>	FE, ST	Annual grassland and sparse coastal sage scrub with loose, well-drained soils.	Not expected – BCD, D, I8, MD
Western mastiff bat <i>Eumops perotis californicus</i>	SSC BLMS	Open, semi-arid to arid habitats, including coniferous and deciduous woodlands, coastal scrub, grasslands, palm oases, chaparral, desert scrub, and urban areas.	High – BCD, I8, MD, and D
Western red bat <i>Lasiurus blossevillii</i>	FSS	Found in forests and wooded areas. Roosts in dense foliage. Can hibernate in tree holes.	Moderate – I8 and MD Low – BCD and D
Yellow bat <i>Lasiurus xanthinus</i>	SSC	Found in wooded areas and desert scrub. Roosts in foliage, particularly in palm trees. A rare visitor to San Diego County (Bats of San Diego County, 2006).	Low – BCD, I8, MD, and D
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	SSC	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands.	High – BCD, I8, MD, and D
California leaf-nosed bat <i>Macrotus californicus</i>	SSC BLMS FSS	Desert scrub areas; roosts by day in caves, abandoned mines, and tunnels. Occurs in small numbers — rarely seen. Doesn't hibernate so is restricted to warmer climates (Bats of San Diego County, 2006).	Low – BCD, I8, MD, and D
Small-footed myotis <i>Myotis ciliolabrum</i>	BLMS	Wide variety of habitats, primarily arid wooded and brushy uplands near water (CDFG, 1990).	Moderate – BCD, I8, MD, and D
Long-eared myotis <i>Myotis evotis evotis</i>	BLMS	Brush, woodland, and forest habitats. Prefers coniferous woodland and forest. Avoids deserts.	Moderate – BCD, I8, MD, and D
Fringed myotis <i>Myotis thysanodes thysanodes</i>	BLMS	Oak and juniper [woodlands], desert scrub. Roosts in caves, abandoned mines, or buildings (Bats of San Diego County, 2006).	Moderate – BCD, I8, MD, and D
Long-legged myotis <i>Myotis volans interior</i>	SSC BLMS	Most common in woodland and forest habitats above 4,000 feet. Also forages chaparral, coastal scrub, Great Basin shrub habitats, and early successional woodlands/forests.	High – BCD, I8, MD, and D

Table E.1.2-2. Special Status Wildlife Species Potentially Occurring or Observed – Southwest Powerlink Alternatives

Species	Status ¹	Habitat Requirements	Potential for Occurrences ²
Yuma myotis <i>Myotis yumanensis saturatus</i>	BLMS	Optimal habitat is open forests and woodlands with open water.	High – BCD, I8, MD, and D
Colorado Valley woodrat <i>Neotoma albigula venusta</i>	SSC	Occurs in desert habitat with mesquite, cholla, and prickly pear, and piñon-juniper stands.	Moderate – I8
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	SSC	Coastal sage scrub, chaparral, piñon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth.	High – BCD, I8, MD, and D
Pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	SSC	Occupies semiarid desert lands; prefers high cliffs and rock outcrops.	Moderate – BCD, I8, MD, and D
Big free-tailed bat <i>Nyctinomops macrotis</i>	SSC	Urban areas of southwestern San Diego County; probably does not breed in California.	Low – BCD, I8, MD, and D
Southern grasshopper mouse <i>Onychomys torridus ramona</i>	SSC	Grassland, sparse coastal sage scrub, low arid scrub, and semi-scrub vegetation.	High – BCD, I8, MD, and D
Peninsular bighorn sheep <i>Ovis canadensis eremnobatesnelsoni</i>	FE,ST*	Dry, rocky, low-elevation (400 to 4,000 feet) slopes, canyons, and washes from the San Jacinto and Santa Rosa Mountains near Palm Springs, south into Baja California, Mexico.	High – BCD and I8
Palm Springs little pocket mouse <i>Perognathus longimembris bangsi</i>	SSC BLMS	Occurs in loose or sandy soils with sparse to moderate vegetative cover.	Low – BCD, I8, MD, and D
Los Angeles pocket mouse <i>Perognathus longimembris brevinasus</i>	FSS SSC	Gravelly soils in desert areas, often in rolling terrain or in areas with ravines or rock outcroppings. Associated with sage scrub plants and yucca.	Not expected – BCD, I8, MD, and D
Jacumba little pocket mouse <i>Perognathus longimembris internationalis</i>	SSC	Arid areas with fine, sandy soils.	High – BCD, I8, MD, and D
American badger <i>Taxidea taxus</i>	SSC	Dry, open treeless areas, grasslands, coastal sage scrub.	Moderate – BCD, I8, MD, and D

1 Status: FT=federally threatened, FE=federally endangered, FC=federal candidate, ST=state threatened, SE=state endangered, SSC=California State Species of Special Concern, * =CDFG Fully Protected Species, BLMS=BLM sensitive, FSS=USDA Forest Service Sensitive for the Cleveland National Forest, SDCS=San Diego County sensitive

2 Alternative abbreviations: BCD=BCD Alternative, D=Route D Alternative, I8=Interstate 8 Alternative (includes I-8 Options, unless otherwise noted), I8:BSU=I-8: Buckman Springs Underground option, I8:WBS=I-8: West Buckman Springs Option, MD=Modified Route D Alternative