E.4.7 Cultural and Paleontological Resources

Although Section E.4.7 refers to both Cultural and Paleontological Resources, Sections E.4.7.1 and E.4.7.5 refer only to Cultural Resources and Sections E.4.7.6 and E.4.7.10 refer only to Paleontological Resources.

The Modified Route D Alternative route is described in Section E.4.1. It includes three main segments: a southwesterly segment that crosses BLM, CNF and private lands before reaching the Cameron Substation, a westerly segment that follows the southern boundary of the CNF, and a northerly segment that is primarily on CNF land and includes the Modified Route D Substation.

Cultural Resources

E.4.7.1 Environmental Setting

The Modified Route D Alternative is generally located south of Interstate 8 within San Diego County and avoids much of the Cleveland National Forest, but does enter the southwest portion of it. Evidence of the prehistoric use of this region includes bedrock milling features that indicate the processing of acorns and other food resources, lithic and ceramic artifact scatters that indicate tool making and use, and seasonal and permanent habitation sites, typically near year-round water sources. Historic period occupation in the mountainous terrain is associated with mining and ranching. Historic period resources in this area typically include mines, ranch fences and other structures, and water conveyance and storage systems such as wells, ditches, and dams. A full prehistoric and historic setting is provided in Appendix 9A.

The Modified Route D Alternative is 35.94 miles long and a cultural resources records search was conducted for its entire length using a 0.5-mile search radius around the alternative. SWCA and AE archaeologists completed intensive cultural resources survey for 30.26 percent (10.88 miles) of the Modified Route D Alternative. A total of 13 cultural resources has been identified within the 300-foot-wide study corridor for the Modified Route D Alternative (see Table Ap.9B-101 in Appendix 9B).

- Prehistoric sites identified within the Modified Route D Alternative include five bedrock milling sites, one ceramic artifact scatter, and one lithic artifact scatter, as well as a ceramic / lithic artifact scatter. Five isolated artifacts were also identified within the Modified Route D Alternative. As noted above, bedrock milling is indicative of grinding activities and the lithic artifact scatter includes evidence of past activities such as tool making and sharpening.
- One historical roadbed segment was identified within the Modified Route D Alternative. This resource is more of an archaeological than a built environment resource in nature due to the heavily deteriorated condition of the resource through erosion and vegetation growth.
- Two historic linear resources, the Dulzura Conduit and Old Highway 80, are located within the 300-foot-wide study corridor. The Dulzura Conduit is a wooden flume water conduit that has been largely replaced by concrete and much of the historic portion was destroyed by fire. It is presumed not eligible for the NRHP or CRHR due its poor integrity. Old Highway 80 is recommended eligible for the NRHP and CRHR.

One bedrock milling site, a lithic artifact scatter, and the ceramic/lithic scatter were identified during surveys conducted by SWCA and AE for this alternative. The remaining resources were identified during previous cultural studies.

E.4.7.2 Environmental Impacts and Mitigation Measures

Table E.4.7-1 summarizes the impacts of the Modified Route D Alternative for cultural resources.

Table E.4.7-1. Impacts Identified – Modified Route D Alternative – Cultural

Impact No.	Description	Impact Significance
Modified Route D Alternative		
C-1	Construction of the project would cause an adverse change to known historic properties	Class II
C-3	Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains	Class I or II
C-4	Construction of the project would cause an adverse change to Traditional Cultural Properties	Class I or II
C-5	Operation and long-term presence of the project would cause an adverse change to known historic properties	Class II
C-6	Long-term presence of the project would cause an adverse change to known historic architectural (built environment) resources	Class II
Modified Route D Alternative Substation and Star Valley Option		
C-1	Construction of the project would cause an adverse change to known historic properties	Class II
C-3	Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains	Class I or II
C-4	Construction of the project would cause an adverse change to Traditional Cultural Properties	Class I or II

There are 13 known cultural resources located within the 300-foot-wide survey corridor for the Modified Route D Alternative. Five of the known resources are isolates, typically defined as three or fewer artifacts not associated with a defined, discrete archaeological site, and therefore not eligible for NRHP or CRHR inclusion. Impacts to these five isolates would not be significant (adverse). Similarly, the Dulzura Conduit is presumed not eligible; impacts to this resource would not be significant. Old Highway 80 is recommended eligible for the NRHP and CRHR. The NRHP/CRHR eligibilities of the remaining 10 resources have not been determined. Formal eligibility determinations would be made by the BLM prior to construction for any resources that would be affected if the Modified Route D Alternative is selected and built. There is also the potential to encounter undiscovered cultural resources during additional survey or project construction.

Construction Impacts

Impact C-1: Construction of the project would cause an adverse change to known historic properties (Class II)

Six cultural resources located within the Modified Route D Alternative are potentially eligible for listing on the NRHP and CRHR and in proposed areas of direct impact (see Table Ap.9B-102 in Appendix 9B). Old Highway 80 is recommended NRHP and CRHR-eligible. An additional 12 cultural resources that are potentially eligible for listing on the NRHP and CRHR are located outside of the 300-foot-wide study corridor, but are in areas of direct impact for the Modified Route D Alternative (see Table Ap.9B-102 in Appendix 9B). As many as 30 additional resources, including isolates, may be encountered during cultural resources survey conducted prior to construction. As discussed in Section D.7.5.9, potentially adverse construction impacts would be mitigated to a level less than significant (Class II) by implementing Mitigation Measures C-1a, C-1b, C-1c, C-1d, C-1e, and C-1f.

Mitigation Measures for Impact C-1: Construction of the project would cause an adverse change to known historic properties

C-1a Inventory and evaluate cultural resources in Final APE.

C-1b Avoid and protect potentially significant resources.

C-1c Develop and implement Historic Properties Treatment Plan.

C-1d Conduct data recovery to reduce adverse effects.

C-1e Monitor construction.

C-1f Train construction personnel.

Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains (Class I or II)

Types of subsurface features that could be encountered along the Modified Route D Alternative include prehistoric resources such as buried living surfaces, refuse deposits, hearths, and cremations. Historical resources that could be unearthed during project construction include refuse pits and privies. Buried archaeological resources may be encountered during vegetation removal at tower and pull site locations, grading of access roads, or excavation associated with tower construction. Impacts to most unknown significant prehistoric and historic archaeological sites would be mitigated to a level that is less than significant (Class II) by implementing Mitigation Measures C-1c, C-1d, C-1f, C-2a and C-3a. However, effects related to Native American human remains would be significant (Class I) even with mitigation.

Mitigation Measures for Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains

C-1c Develop and implement Historic Properties Treatment Plan.

C-1d Conduct data recovery to reduce adverse effects.

C-1f Train construction personnel.

C-2a Properly treat human remains.

C-3a Monitor construction in areas of high sensitivity for buried resources.

Impact C-4: Construction of the project would cause an adverse change to Traditional Cultural Properties (Class I or II)

To date, no TCPs have been identified within the Modified Route D Alternative. However, the Sacred Lands File search conducted for the alternatives noted that lands sacred to Native Americans are present in the vicinity of the alternatives, in undisclosed locations. The BLM, as the Federal Lead Agency under NEPA and Section 106 of the NHPA, has initiated government-to-government consultation with appropriate Native American groups and notification to other public groups regarding project effects on traditional cultural values. That consultation will determine whether there are TCPs that could be affected within this segment. Though impacts to TCPs are often significant (Class I), mitigation, as defined by NEPA (in King, 2003), can include "minimizing impacts by limiting the degree or magnitude of the action…," rectifying or reducing the impact, and/or "compensating for the impact by replacing or providing substitute resources or environments," which when properly coordinated with Native Americans or other traditional groups can potentially reduce the impact to less than significant (Class II). Implementation of Mitigation Measure C-4a (Complete Consultation with Native Americans and other Traditional Groups) would potentially reduce impacts to TCPs to a level that is less than significant (Class II), but in some cases impacts would remain significant (Class I).

Mitigation Measure for Impact C-4: Construction of the project would cause an adverse change to Traditional Cultural Properties

C-4a Complete consultation with Native American and other Traditional Groups.

Operational Impacts

Impact C-5: Operation and long-term presence of the project would cause an adverse change to known historic properties (Class II)

Direct and indirect impacts would occur to historic properties such as Old Highway 80 and archaeological resources within and in the vicinity of the project area during operation and long-term presence of the project. Direct impacts could result from maintenance or repair activities, while increased erosion and access could result in indirect project impacts. These impacts are significant, but would be mitigated to a level that is less than significant (Class II) by implementing site protection measures and monitoring procedures, as detailed in Mitigation Measure C-5a (Protect and monitor NRHP and/or CRHR-eligible properties), as well as implementation of Mitigation Measures C-3a (Consult agencies and Native Americans) and C-4a (Complete Consultation with Native Americans and other Traditional Groups). CR-APM-7 partially addresses Impact C-5; however, Mitigation Measures C-3a, C-4a, and C-5a supersede this APM.

Mitigation Measures for Impact C-5: Operation and long-term presence of the project would cause an adverse change to known historic properties

C-1b Avoid and protect potentially significant resources.

C-1c Develop and implement Historic Properties Treatment Plan.

C-2a Properly treat human remains.

C-4a Complete consultation with Native American and other Traditional Groups.

C-5a Protect and monitor NRHP and/or CRHR-eligible properties.

Impact C-6: Long-term presence of the project would cause an adverse change to known historic architectural (built environment) resources (Class II)

The presence of transmission lines and towers can result in indirect visual impacts to historic architectural resources (see Table Ap.9B-103 in Appendix 9B). Indirect visual impacts to potentially NRHP and/or CRHR-eligible built environment resources such as buildings, structures, and historic districts located near the Alternative Alignment should be avoided or minimized, where feasible. The Modified Route D Alternative crosses Old Highway 80. If transmission line or tower relocation cannot result in avoidance, then screening this or other built environment resources from the tower/line and/or painting the tower to blend into the landscape would minimize the visual impact. These impacts are potentially significant, but would be mitigated to a level that is less than significant (Class II) by implementing Mitigation Measure C-6a, C-6e, and V3-a.

Mitigation Measures for Impact C-6: Long-term presence of the project would cause an adverse change to known historic architectural (built environment) resources

C-6a Reduce adverse visual intrusions to historic built environment properties.

C-6e Reduce adverse visual intrusions to portions of Old Highway 80.

V-3a Reduce visual contrast of towers and conductors.

E.4.7.3 Modified Route D Alternative Substation

Environmental Setting

The Modified Route D Alternative Substation is located approximately 2.5 miles south of the northern terminus of the Modified Route D Alternative and Interstate 8. Evidence of the prehistoric use of this region includes bedrock milling features that indicate the processing of acorns and other food resources, lithic and ceramic artifact scatters that indicate tool making and use, and seasonal and permanent habitation sites, typically near year-round water sources. Historic period occupation in the mountainous terrain is associated with mining and ranching. Historic period resources in this area typically include mines, ranch fences and other structures, and water conveyance and storage systems such as wells, ditches, and dams.

The Modified Route D Alternative Substation is 37.2 acres in size and a cultural resources records search was conducted for the substation property using a 0.5-mile radius around it. SWCA and AE archaeologists have conducted intensive cultural resources survey for 100 percent of the Modified Route D Alternative Substation. Two cultural resources have been identified within the 37.2-acre footprint for the Modified Route D Alternative Substation (see Table Ap.9B-104 in Appendix 9B). Both of the cultural resources within the Modified Route D Alternative Substation are newly recorded by SWCA/AE; PH-10-31-A is a bedrock milling station and PH-10-31-B is a bedrock milling station with a lithic artifact scatter.

Environmental Impacts and Mitigation Measures

Two cultural resources are located within the 37.2-acre substation footprint for this alternative. In addition, there remains the potential to encounter undiscovered cultural resources during substation construction. As a result, the following impacts could occur during project construction or operation.

Construction Impacts

Impact C-1: Construction of the project would cause an adverse change to known historic properties (Class II)

Two cultural resources located within the Modified Route D Alternative Substation are potentially eligible for listing on the NRHP and CRHR. As discussed in Section D.7.5.9, potentially adverse construction impacts would be mitigated to a level less than significant (Class II) by implementing Mitigation Measures C-1a, C-1b, C-1c, C-1d, C-1e, and C-1f.

Mitigation Measures for Impact C-1: Construction of the project would cause an adverse change to known historic properties

C-1a Inventory and evaluate cultural resources in Final APE.

C-1b Avoid and protect potentially significant resources.

C-1c Develop and implement Historic Properties Treatment Plan.

C-1d Conduct data recovery to reduce adverse effects.

C-1e Monitor construction.

C-1f Train construction personnel.

Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains (Class I or II)

Types of subsurface features that could be encountered within the Modified Route D Substation Alternative include prehistoric resources such as buried living surfaces, refuse deposits, hearths, and cremations. Historical resources that could be unearthed during project construction include refuse pits and privies. Buried archaeological resources may be encountered during vegetation removal at the substation location, grading of access roads, or excavation associated with substation construction. Impacts to most unknown significant prehistoric and historic archaeological sites would be mitigated to a level that is less than significant (Class II) by implementing Mitigation Measures C-1c, C-1d, C-1f, C-2a and C-3a. However, effects related to Native American human remains would be significant (Class I) even with mitigation.

Mitigation Measures for Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains

C-1c Develop and implement Historic Properties Treatment Plan.

C-1d Conduct data recovery to reduce adverse effects.

C-1f Train construction personnel.

C-2a Properly treat human remains.

C-3a Monitor construction in areas of high sensitivity for buried resources.

Impact C-4: Construction of the project would cause an adverse change to Traditional Cultural Properties (Class I or II)

To date, no TCPs have been identified within the Modified Route D Substation Alternative. However, the Sacred Lands File search conducted for the alternatives noted that lands sacred to Native Americans are present in the vicinity of the alternatives, in undisclosed locations. The BLM, as the Federal Lead Agency under NEPA and Section 106 of the NHPA has initiated government-to-government consultation with appropriate Native American groups and notification to other public groups regarding project effects on traditional cultural values. That consultation will determine whether there are TCPs that could be affected within this segment. Though impacts to TCPs are often significant (Class I), mitigation, as defined by NEPA (in King, 2003), can include "minimizing impacts by limiting the degree or magnitude of the action…," rectifying or reducing the impact, and/or "compensating for the impact by replacing or providing substitute resources or environments," which when properly coordinated with Native Americans or other traditional groups can potentially reduce the impact to less than significant (Class II). Implementation of Mitigation Measure C-4a (Complete Consultation with Native Americans and other Traditional Groups) would potentially reduce impacts to TCPs to a level that is less than significant (Class II), but in some cases impacts would remain significant (Class I).

Mitigation Measure for Impact C-4: Construction of the project would cause an adverse change to Traditional Cultural Properties

C-4a Complete consultation with Native American and other Traditional Groups.

E.4.7.4 Star Valley Option

Environmental Setting

The Modified Route D Alternative Star Valley Option (Star Valley Option) is 3.59 miles long and a cultural resources records search was conducted for its entire length using a 0.5-mile search radius around the alternative. SWCA and AE archaeologists completed intensive cultural resources survey for 45.22 percent (1.62 miles) of the Star Valley Option. Two cultural resources have been identified within the 300-foot-wide study corridor for the Star Valley Option (see Table Ap.9B-105 in Appendix 9B). CA-SDI-16064 is a previously recorded prehistoric bedrock milling station and PH-11-08 is a newly recorded prehistoric bedrock milling station.

Environmental Impacts and Mitigation Measures

There are two known cultural resources located within the 300-foot-wide survey corridor for the Modified Route D Alternative Star Valley Option. The NRHP/CRHR eligibilities of the two resources have not been determined. Formal eligibility determinations would be made by the BLM prior to construction for any resources that would be affected if the Modified Route D Alternative Star Valley Option is selected and built. There is also the potential to encounter undiscovered cultural resources during additional survey or project construction.

Construction Impacts

Impact C-1: Construction of the project would cause an adverse change to known historic properties (Class II)

Two cultural resources located within the Modified Route D Alternative Star Valley Option are potentially eligible for listing on the NRHP and CRHR. As many as three additional resources may be encountered during cultural resources survey conducted prior to construction. As discussed in Section D.7.5.9, potentially adverse construction impacts would be mitigated to a level less than significant (Class II) by implementing Mitigation Measures C-1a, C-1b, C-1c, C-1d, C-1e, and C-1f.

Mitigation Measures for Impact C-1: Construction of the project would cause an adverse change to known historic properties

C-1a **Inventory and evaluate cultural resources in Final APE.**

C-1b **Avoid and protect potentially significant resources.**

C-1c **Develop and implement Historic Properties Treatment Plan.**

C-1d **Conduct data recovery to reduce adverse effects.**

C-1e **Monitor construction.**

C-1f **Train construction personnel.**

Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains (Class I or II)

Types of subsurface features that could be encountered along the Modified Route D Alternative Star Valley Option include prehistoric resources such as buried living surfaces, refuse deposits, hearths, and cremations. Historical resources that could be unearthed during project construction include refuse pits and

privies. Buried archaeological resources may be encountered during vegetation removal at tower and pull site locations, grading of access roads, or excavation associated with tower construction. Impacts to most unknown significant prehistoric and historic archaeological sites would be mitigated to a level that is less than significant (Class II) by implementing Mitigation Measures C-1c, C-1d, C-1f, C-2a and C-3a. However, effects related to Native American human remains would be significant (Class I) even with mitigation.

Mitigation Measures for Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains

C-1c Develop and implement Historic Properties Treatment Plan.

C-1d Conduct data recovery to reduce adverse effects.

C-1f Train construction personnel.

C-2a Properly treat human remains.

C-3a Monitor construction in areas of high sensitivity for buried resources.

Impact C-4: Construction of the project would cause an adverse change to Traditional Cultural Properties (Class I or II)

To date, no TCPs have been identified within the Modified Route D Alternative Star Valley Option. However, the Sacred Lands File search conducted for the alternatives noted that lands sacred to Native Americans are present in the vicinity of the alternatives, in undisclosed locations. The BLM, as the Federal Lead Agency under NEPA and Section 106 of the NHPA, has initiated government-to-government consultation with appropriate Native American groups and notification to other public groups regarding project effects on traditional cultural values. That consultation will determine whether there are TCPs that could be affected within this segment. Though impacts to TCPs are often significant (Class I), mitigation, as defined by NEPA (in King, 2003), can include "minimizing impacts by limiting the degree or magnitude of the action…," rectifying or reducing the impact, and/or "compensating for the impact by replacing or providing substitute resources or environments," which when properly coordinated with Native Americans or other traditional groups can potentially reduce the impact to less than significant (Class II). Implementation of Mitigation Measure C-4a (Complete Consultation with Native Americans and other Traditional Groups) would potentially reduce impacts to TCPs to a level that is less than significant (Class II), but in some cases impacts would remain significant (Class I).

Mitigation Measure for Impact C-4: Construction of the project would cause an adverse change to Traditional Cultural Properties

C-4a Complete consultation with Native American and other Traditional Groups.

E.4.7.5 Future Transmission System Expansion

For the Proposed Project and route alternatives along the Proposed Project route, Section B.2.7 identifies Future Transmission System Expansion routes for both 230 kV and 500 kV future transmission lines. These routes are identified, and impacts are analyzed in Section D of this EIR/EIS, because SDG&E has indicated that transmission system expansion is foreseeable, possibly within the next 10 years. For the SWPL alternatives, 500 kV and 230 kV expansions would also be possible. The potential expansion routes for the Route D Alternative are described in the following paragraphs.

230 and 500 kV Future Transmission System Expansion

The Modified Route D Alternative would begin at approximately Interstate 8 MP-47 and would head southwest then northward until it reached the Interstate 8 Alternative at approximately MP I8-71. A substation could be built to convert the 500 kV line to 230 kV at approximately MD-34, the Modified Route D Substation Alternative. The double-circuit 230 kV line would exit the substation overhead, then continue north into the CNF, joining the Interstate 8 Alternative at approximately MP I8-71 where it transitions to underground at the east end of Alpine Boulevard. The Modified Route D Substation would accommodate up to six 230 kV circuits and a 500 kV circuit. Only two 230 kV circuits are proposed at this time, but construction of additional 230 kV circuits and a 500 kV circuit out of the Modified Route D Substation may be required in the future. There are three routes that are most likely for these future lines; each is described below. Figure E.1.1-6 illustrates the potential routes of the future transmission 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. This route would follow the Interstate 8 Alternative route from the Interstate 8 Alternative Substation until MP I8-70.8 where it would transition underground until MP I8-79 where it would transition overhead again. The future transmission line route would continue to follow the Interstate 8 Alternative's overhead 230 kV route to the point where it meets the Proposed Project at MP 131. See Section E.1.7.1 and E.1.7.2 for the Cultural Resources setting, impacts, and mitigation measures along the I-8 route. 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.7.5 and D.7.6 for the Cultural Resources setting, and see Sections D.7.12 and D.7.13 for the Cultural Resources impacts, and mitigation measures for the Inland Valley, and Coastal Links of the Proposed Project. It could 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 shown in Figure B-12a. See Section D.7.15 for the Cultural Resources setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.
- Additional 230 and 500 kV circuits could follow the Route D Alternative corridor (see description in Section E.3.1) to the north of Descanso, after following the Interstate 8 Alternative 230 kV route from the Interstate 8 Substation to MP I8 70.3. See Section E.3.7.1 and E.3.7.2 for the Cultural Resources setting, impacts, and mitigation measures along Route D. 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 northeastward 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). See Sections D.7.4, D.7.5, and D.7.6 for the Cultural Resources setting, and see Sections D.7.11, D.7.12 and D.7.13 for the Cultural Resources impacts, and mitigation measures for the Central, Inland Valley, and Coastal Links of the Proposed Project. See Section D.7.15 for the Cultural Resources setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.
- The future 230 and 500 kV lines could follow the Modified Route D Alternative corridor (within the 368 Corridor identified by the Department of Energy's Draft West-wide Corridor Programmatic EIS) south for 8 miles to MP MD-26. See Section E.4.7.1, and E.4.7.2 for the Cultural setting, impacts, and mitigation measures along Modified Route D. At MP MD-26, new 230 or 500 kV circuits would turn west and connect with the northernmost segment of the West of Forest Alterna-

tive route as described in Section E.1.1. See Section E.1.7.5 for the Cultural Resources setting, impacts, and mitigation measures along MP MD-26 to MP I8-79 corridor. 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 (for a description of the Interstate 8 transmission corridor see Section E.1.1). 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. See Section D.7.15 for the Cultural Resources setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.

Paleontological Resources

E.4.7.6 Environmental Setting

The Modified Route D Alternative is underlain by the following geologic units.

- **Quaternary Alluvium and Colluvium.** Quaternary alluvium consists of partly dissected, mostly unconsolidated, poorly sorted sand, silt, clay, and gravel located at the margins of canyons and within valley floors. "Younger" alluvium is Holocene (10,000 years ago to Recent) in age and "Older alluvium" is Pleistocene (1.8 million years ago to 10,000 years ago) in age. Fossil localities in older alluvium deposits throughout southern California have yielded terrestrial vertebrates such as mammoths, mastodons, ground sloths, dire wolves, short-faced bears, saber-toothed cats, horses, camels, and bison (Scott, 2006). Younger alluvium and colluvium is determined to have a low potential for paleontological resources but is often underlain by older alluvium, which is determined to have a high potential for paleontological resources.
- **Metasedimentary rocks.** Metasedimentary rocks in the central part of San Diego County are referred to as Julian Schist, which is composed of quartz-mica schist and quartzite, with minor amounts of marble and amphibolite. These rocks have been intruded and deformed by plutonic rocks associated with the Peninsular Ranges Batholith. The age of these metasedimentary rocks is not definite; however, microfossils indicate that they are much older than Triassic in age. No fossils have been discovered in this unit within San Diego County; however, correlative units in Riverside and Orange County have yielded marine mollusks. Metasedimentary rocks in San Diego County are determined to have a marginal potential for paleontological resources.
- **Metavolcanic rocks.** This geologic unit includes mildly metamorphosed volcanic (andesite and dacite) and volcaniclastic rocks of Jurassic and Cretaceous ages. This unit has no potential for paleontological resources.
- **Gabbroic rocks.** Gabbroic rocks in this region of San Diego County include the San Marcos and Cuyamaca gabbros, as well as unnamed bodies. They are composed of mostly gabbros with proportions of norite and diorite. Since granitic rocks are plutonic in origin, this geologic unit is determined to have no potential for paleontological resources.

E.4.7.7 Environmental Impacts and Mitigation Measures

Table E.4.7-2 lists the impact to paleontological resources identified for the Modified Route D Alternative along with the significance of the impact. Impacts are classified as Class I (significant/adverse,

cannot be mitigated to a level that is less than significant), Class II (significant, can be mitigated to a level that is less than significant), Class III (less than significant), or Class IV (beneficial). The following sections provide a detailed discussion of the impacts identified and the locations of those impacts. Detailed maps showing resource potential (paleontological sensitivity) throughout the project area are provided in Appendix 9.

Table E.4.7-2. Impacts Identified –Modified Route D Alternative – Paleontological Resources

Impact No.	Description	Impact Significance
Modified Route D Alternative		
PAL-1	Construction of the project would destroy or disturb unique paleontological resources or sites	Class II
Modified Route D Alternative Substation		
PAL-1	Construction of the project would destroy or disturb unique paleontological resources or sites	Class II
Modified Route D Alternative Star Valley Option		
PAL-1	Construction of the project would destroy or disturb unique paleontological resources or sites	Class II

Construction Impacts

Impact PAL-1: Construction of the transmission line would destroy or disturb significant paleontological resources (Class II)

The potential to discover paleontological resources during construction within the Modified Route D Alternative ranges from zero potential to low potential. Areas determined to have paleontological sensitivity are located between MPs MD-8.3 to MD-8.4, MPs MD-11.3 to MD-11.4, MPs MD-16.7 to MD-17.2, MPs MD-24.7 to MD-24.9, MPs MD-25.1 to MD-25.2, MPs MD-26.0 to MD-26.1, MPs MD-32.6 to MD-33.4, MPs MD-33.5 to MD-33.6, and MPs MD-33.9 to MD-34.1. These areas would be impacted by construction-related ground disturbances such as the building or improvement of access roads, borehole drilling, trenching, excavating, grading, and vegetation removal. Areas along the Proposed Project route determined to be paleontologically sensitive based on mapping and museum collection records are shown in Table E.4.7-3. No fossil locations have been identified in the ROW. Implementation of the following mitigation measures would reduce project effects to less than significant levels (Class II).

Mitigation Measure for Impact PAL-1: Construction of the project would destroy or disturb significant paleontological resources

PAL-1a Inventory and evaluate paleontological resource in the Final APE.

PAL-1b Develop Paleontological Monitoring and Mitigation Plan.

PAL-1c Monitor construction for paleontology.

PAL-1d Conduct paleontological data recovery.

PAL-1e Train construction personnel.

E.4.7.8 Modified Route D Alternative Substation

Environmental Setting

The Modified Route D Alternative Substation is underlain by the following three geologic units: (1) Metasedimentary and Metavolcanic rocks, (2) Granitic rocks, and (3) Gabbroic rocks. The geologic sediments underlying the project area are determined to have a paleontological resource potential ranging from

zero to marginal. Appendix 9D presents maps illustrating paleontological sensitivity of the formations crossed by this alternative.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact PAL-1: Construction of the transmission line would destroy or disturb significant paleontological resources (Class II)

The potential to discover paleontological resources during construction within the Modified Route D Alternative Substation ranges from zero potential to low potential. Areas underlain by Metavolcanic and Metasedimentary rocks have been determined to have marginal paleontological sensitivity, and could be impacted by construction-related ground disturbances such as the building or improvement of access roads, borehole drilling, trenching, excavating, grading, and vegetation removal. No fossil locations have been identified in the project area. Implementation of the following mitigation measures would reduce project effects to a less than significant level (Class II).

Table E.4.7-3. Paleontological Sensitivity – Modified Route D Alternative

Mileposts	Rock Units	Sensitivity	Fossil Localities
MD 0–8.3	Granitic Rocks	Zero	None
MD 8.3–8.4	Alluvium	Low	None
MD 8.4–11.3	Granitic Rocks	Zero	None
MD 11.3–11.4	Alluvium	Low	None
MD 11.4–16.7	Granitic Rocks	Zero	None
MD 16.7–17.2	Alluvium	Low	None
MD 17.2–20.7	Granitic Rocks	Zero	None
MD 20.7–21	Gabbroic Rocks	Zero	None
MD 21–21.1	Granitic Rocks	Zero	None
MD 21.1–21.7	Gabbroic Rocks	Zero	None
MD 21.7–23.6	Granitic Rocks	Zero	None
MD 23.6–24.6	Gabbroic Rocks	Zero	None
MD 24.6–24.7	Granitic Rocks	Zero	None
MD 24.7–24.9	Alluvium	Low	None
MD 24.9–25.1	Granitic Rocks	Zero	None
MD 25.1–25.2	Colluvium	Low	None
MD 25.2–26	Gabbroic Rocks	Zero	None
MD 26–26.1	Alluvium	Low	None
MD 26.1–26.3	Gabbroic Rocks	Zero	None
MD 26.3–27.4	Granitic Rocks	Zero	None
MD 27.4–27.8	Gabbroic Rocks	Zero	None
MD 27.8–30.2	Granitic Rocks	Zero	None
MD 30.2–30.4	Metavolcanic Rocks	Zero	None
MD 30.4–32.6	Granitic Rocks	Zero	None
MD 32.6–33.4	Metavolcanic and Metasedimentary Rocks	Marginal	None
33.4–33.5	Granitic Rocks	Zero	None
33.5–33.6	Metavolcanic and Metasedimentary Rocks	Marginal	None
33.6–33.7	Gabbroic Rocks	Zero	None
33.7–33.9	Granitic Rocks	Zero	None
33.9–34.1	Metavolcanic and Metasedimentary Rocks	Marginal	None
MD 34.1–36.3	Granitic Rocks	Zero	None

Mitigation Measure for Impact PAL-1: Construction of the project would destroy or disturb significant paleontological resources

PAL-1a Inventory and evaluate paleontological resource in the Final APE.

PAL-1b Develop Paleontological Monitoring and Mitigation Plan.

PAL-1c Monitor construction for paleontology.

PAL-1d Conduct paleontological data recovery.

PAL-1e Train construction personnel.

E.4.7.9 Star Valley Option

Environmental Setting

The Modified Route D Alternative Star Valley Option is underlain by the following two geologic units: (1) Metasedimentary and Metavolcanic rocks, (2) Granitic rocks. The geologic sediments underlying the project area are determined to have a paleontological resource potential ranging from zero to marginal. Appendix 9D presents maps illustrating paleontological sensitivity of the formations crossed by this alternative.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact PAL-1: Construction of the transmission line would destroy or disturb significant paleontological resources (Class II)

The potential to discover paleontological resources during construction within the Modified Route D Alternative Star Valley Option ranges from zero potential to marginal potential (Table E.4.7-4). Areas determined to have paleontological sensitivity are located between MPs SVO-0 to SVO-0.1. These areas would be impacted by construction-related ground disturbances such as the building or improvement of access roads, borehole drilling, trenching, excavating, grading, and vegetation removal. Areas along the Implementation of the following mitigation measures would reduce project effects to a level of less than significant (Class II).

Table E.4.7-4. Paleontological Sensitivity – Modified Route D Alternative Star Valley Option

Mileposts	Rock Units	Sensitivity	Fossil Localities
SVO 0-0.1	Metavolcanic and Metasedimentary Rocks	Marginal	None
SVO 0.1-3.1	Granitic Rocks	Zero	None

Mitigation Measure for Impact PAL-1: Construction of the project would destroy or disturb significant paleontological resources

PAL-1a Inventory and evaluate paleontological resource in the Final APE.

PAL-1b Develop Paleontological Monitoring and Mitigation Plan.

PAL-1c Monitor construction for paleontology.

PAL-1d Conduct paleontological data recovery.

PAL-1e Train construction personnel.

E.4.7.10 Future Transmission System Expansion

For the Proposed Project and route alternatives along the Proposed Project route, Section B.2.7 identifies Future Transmission System Expansion routes for both 230 kV and 500 kV future transmission lines. These routes are identified, and impacts are analyzed in Section D of this EIR/EIS, because SDG&E has indicated that transmission system expansion is foreseeable, possibly within the next 10 years. For the SWPL alternatives, 500 kV and 230 kV expansions would also be possible. The potential expansion routes for the Route D Alternative are described in the following paragraphs.

230 and 500 kV Future Transmission System Expansion

The Modified Route D Alternative would begin at approximately Interstate 8 MP-47 and would head southwest then northward until it reached the Interstate 8 Alternative at approximately MP I8-71. A substation could be built to convert the 500 kV line to 230 kV at approximately MD-34, the Modified Route D Substation Alternative. The double-circuit 230 kV line would exit the substation overhead, then continue north into the CNF, joining the Interstate 8 Alternative at approximately MP I8-71 where it transitions to underground at the east end of Alpine Boulevard. The Modified Route D Substation would accommodate up to six 230 kV circuits and a 500 kV circuit. Only two 230 kV circuits are proposed at this time, but construction of additional 230 kV circuits and a 500 kV circuit out of the Modified Route D Substation may be required in the future. There are three routes that are most likely for these future lines; each is described below. Figure E.1.1-6 illustrates the potential routes of the future transmission 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. This route would follow the Interstate 8 Alternative route from the Interstate 8 Alternative Substation until MP I8-70.8 where it would transition underground until MP I8-79 where it would transition overhead again. The future transmission line route would continue to follow the Interstate 8 Alternative's overhead 230 kV route to the point where it meets the Proposed Project at MP 131. See Sections E.1.7.6 and E.1.7.7 for the Paleontological Resources setting, impacts, and mitigation measures along the I-8 route. 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 Section D.7.25, D.7.31, and D.7.32 for the Paleontological Resources setting, impacts, and mitigation measures for the Inland Valley, and Coastal Links of the Proposed Project. It could 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 shown in Figure B-12a. See Section D.7.15 for the Cultural Resources setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.
- Additional 230 and 500 kV circuits could follow the Route D Alternative corridor (see description in Section E.3.1) to the north of Descanso, after following the Interstate 8 Alternative 230 kV route from the Interstate 8 Substation to MP I8 70.3. See Section E.3.7.6 and E.3.7.7 for the Paleontological Resources setting, impacts, and mitigation measures along Route D. 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 northeastward 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). See Section D.7.25, D.7.30, D.7.31, and D.7.32 for the Paleontological Resources setting, impacts, and mitigation measures for the Central, Inland Valley, and Coastal Links of the Proposed Project. See Section D.7.15 for the Cultural Resources setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.
- The future 230 and 500 kV lines could follow the Modified Route D Alternative corridor (within the 368 Corridor identified by the Department of Energy's Draft West-wide Corridor Programmatic EIS) south for 8 miles to MP MD-26. See Section E.4.7.6 and E.4.7.7 for the Cultural and Paleontological setting, impacts, and mitigation measures along Modified Route D. At MP MD-26, new 230 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. See Section E.1.7.10 for the Paleontological Resources setting, impacts, and mitigation measures along MP MD-26 to MP I8-79 corridor. 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 (for a description of the Interstate 8 transmission corridor see Section E.1.1). 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. See Section D.7.15 for the Cultural Resources setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.