Chapter 4
Environmental Consequences

4.1 Introduction

This chapter examines the potential direct, indirect, and cumulative environmental effects of the Proposed Project and the alternatives retained for analysis. Each section includes the criteria used to determine CEQA significance, a list of EPMs applicable to that issue area that are considered part of the Project, a discussion of potential impacts for each segment of the Proposed Project and alternatives, and where applicable, mitigation measures that would lessen or avoid impacts.

4.1.1 Environmental Consequences Approach

Impact Classification

The Proposed Project is subject to applicable federal and State environmental review requirements. Project documentation, therefore, has been prepared in compliance with both NEPA and CEQA. One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or a lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity (see definitions below). ~~Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.~~

CEQA~~, on the other hand, does~~ requires the Authority to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. The standards for determining significant impacts under CEQA are unique to each issue area; however, the classification of the impacts was uniformly applied in accordance with the following definitions:

- Significant; cannot be mitigated to a level that is less than significant (Class I)
- Significant; can be mitigated to a level that is less than significant (Class II)
- Less than significant; no mitigation required (Class III)

Under NEPA, beneficial impacts of a proposed action are also relevant considerations in the environmental analysis.

Definition of Terms

The potential impacts of the Proposed Project and alternatives are described in terms of their type, context, duration, and intensity. These terms are defined as follows:

- **Type** describes the impact as beneficial or adverse, direct or indirect.
  - Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
  - Adverse: A change that moves the resource away from a desired condition or detracts from its appearance or condition.
  - Direct: An effect on a resource by an action at the same place and time. For example, soil compaction from construction traffic is a direct impact on soils.
  - Indirect: An effect from an action that occurs later or perhaps at a different place and often to a different resource, but is still reasonably foreseeable.
  - Cumulative: Impacts to resources that are added to impacts from other past, present, or foreseeable actions.
- **Context** describes the area (site-specific) or location (local or regional) in which the impact will occur.
- **Duration** is the length of time an effect will occur.
  - Short-term impacts generally occur during construction or for a limited time thereafter, generally less than two years, by the end of which the resources recover from their preconstruction conditions.
  - Long-term or permanent impacts last beyond the construction period, and the resources may not regain their preconstruction conditions for a longer period of time or not at all.
- **Intensity** reflects the amount of impact on each resource as a result of the Proposed Project. The levels of intensity are defined as follows:
  - Negligible: Impact at the lowest levels of detection with barely measurable consequences.
  - Minor: Impact is measurable or perceptible, with little loss of resource integrity and changes are small, localized, and of little consequence.
  - Moderate: Impact is measurable and perceptible and would alter the resource but not modify overall resource integrity, or the impact could be mitigated successfully in the short-term.
  - Major: Impacts would be substantial, highly noticeable, and long-term.

Project Area Segments

To facilitate a fair and equal comparison of impacts between the Proposed Project and alternatives, the Project area was divided into the following four segments, as shown in Figures 2-6a through 2-6e:

- North Segment: between the Tracy Substation and Patterson Pass Road
- Central Segment: between Patterson Pass Road and Butts Road
- San Luis Segment: between Butts Road and the Los Banos Substation, including the 70-kV routes to San Luis Substation
- South Segment: between Los Banos and Dos Amigos Substations, including the 230-kV routes from San Luis Substation

The Proposed Project and alternatives were compared within each segment to identify the Environmentally Preferred Corridor Alternative as described in Section 2.4.

Disturbance Assumptions

Final design and engineering details, such as exact locations and quantities of Project components (e.g., structures, access roads, staging areas) are not yet known. The impact analysis therefore used various conservative assumptions regarding the amount of disturbance, as described in Appendix E.

Operation Voltage Options

Depending on the participation in the Project by an eligible customer, Western and the Authority may decide a lower voltage for the 500-kV segment of the SLTP is warranted. The operation voltage options are: (1) to construct the proposed 500-kV segment, but operate it at 230-kV, or (2) to construct and operate the proposed 500-kV segment as 230-kV (refer to Section 2.1.1.4 for additional information).

As described below, the operation voltage options would have reduced impacts for some resource areas in comparison to the proposed 500-kV segment. These differences would be negligible to minor. Therefore, the impact analysis of the Proposed Project, which includes the 500-kV segment, in Section 4.2 through 4.16 represents the reasonable worst-case scenario with regard to impacts.

500-kV Transmission Line operated at 230-kV

This operation voltage option would have less operational corona noise and EMF exposure in comparison to the proposed 500-kV segment (refer to Sections 4.9 (Noise) and 4.11 (Public Health and Safety) for information on noise impacts and EMF exposure from the Proposed Project.

230-kV Transmission Line

This operation voltage option would require approximately 33 percent less temporary disturbance area than the 500-kV segment as the temporary disturbance area required for structure footings is smaller (0.6 acre for a 230-kV tower versus 0.9 acre for a 500-kV tower; see Appendix E); permanent disturbance area for tower footings would be the same. Towers would be slightly shorter so there would be a negligible reduction in aesthetic impacts (refer to Figures 2-2 and 2-3 to compare 230-kV and 500-kV structures). Additionally, the easement for a 230-kV transmission line would be narrower than a 500-kV transmission line (125 to 175 feet wide for a 230-kV transmission line and 200 to 250 feet wide for a 500-kV transmission line), so there would be a negligible reduction in agriculture and land use and impacts associated with encroachment. Refer to sections 4.2 (Agriculture) and 4.8 (Land Use) for information on agricultural operations with transmission line easements and conflicts with existing land uses within transmission line easements.

If a 230-kV transmission line is constructed instead of the proposed 500-kV segment, the proposed Tracy East and Los Banos West Substations would not be needed. This would eliminate any impacts associated with substation construction.

4.2 Agriculture

4.2.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on agriculture if any activity associated with their construction, operation, or maintenance would:

- Conflict with existing zoning for agricultural use, or a Williamson Act contract (Impact AG-1);
- Result in the conversion of Important Farmlands to non-agricultural use (Impact AG-2);
- Result in changes to the existing environment that, due to their location or nature, would impair the use of agricultural land (Impact AG-3); or
- Result in uncompensated loss of crop production or the foreclosure of future land uses (Impact AG-4).

4.2.2 Environmental Protection Measures

- On completion of the work, all work areas except permanent access roads would be returned to preconstruction conditions unless otherwise specified by the landowner/manager.
- During construction, movement would be limited (to the greatest extent feasible) to the access roads and within a designated area in the easement to minimize damage to agricultural land.
- Damaged fences and gates would be repaired or replaced to restore them to their preconstruction condition.
- Post proper signage in areas within the easement that will require temporary closure or limited access to accommodate certain land uses. Where feasible, construction activities would be scheduled to minimize impacts to agricultural activities. If this is not feasible and damage occurs, the landowner may be compensated.

4.2.3 Proposed Project

Impact AG-1 Conflict with existing zoning for agricultural use, or a Williamson Act contract

The purpose of the Williamson Act is to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. As described in California Government Code Section 51238, utility corridors are accepted as a compatible use under Williamson Act contracts. The East County Area Plan under the Alameda General Plan identifies a portion of the Proposed Project corridor in the North Segment for expansion as Large Parcel Agriculture (defined in Section 3.2.1.2). This designation includes utility corridors as a permitted compatible use. Therefore, the Proposed Project would not conflict with any local zoning for agricultural use or a Williamson Act contract within the Project area. Under CEQA, there would be no impact. This impact would be the same for the North, Central, San Luis, and South segments.

Impact AG-2 Result in the conversion of Important Farmlands to non-agricultural use

Tables 4.2-1 and 4.2-2 present the acreage of impacts to Important Farmland including Prime Farmland, Unique Farmland, Farmland of Local Importance, and Farmland of Statewide Importance (definitions provided in Table 3.2-3) within the Proposed Project corridors and the study area, respectively. The exact locations of project components (i.e., access roads, structures, pull sites, and material storage) are not yet known. However, it is certain that the placement of all tower structures and pull sites will be located within the Proposed Project corridor. Therefore, the disturbance acreage presented in Table 4.2-1

is calculated using a conservative approach that compares the disturbance assumptions for new structures and pull sites (presented in Appendix E) with the number of acres of Important Farmlands within each segment of the Proposed Project corridor. Other project components, including existing roads, new access roads, and material storage may be placed outside of the Proposed Project corridor. These components are analyzed similarly but within the study area, as defined in Section 3.1.

There are 72,637 acres of Important Farmland within the study area (about 22.2 percent of the total study area) and 2,087 acres within the Proposed Project corridor (about 15.5 percent of the total Proposed Project corridor). Prime Farmland is primarily located in the North and Central segments of the study area.

Construction of the Proposed Project could temporarily convert Important Farmland to non-agricultural use as shown in Tables 4.2-1 and 4.2-2. However, pursuant to EPMs, Western would implement the Proposed Project in a manner that includes the avoidance of agricultural resources whenever feasible and the restoration of construction sites to preconstruction conditions to the greatest extent feasible. During construction, movement would be limited to the designated access roads and within a designated area in the easement to minimize damage to agricultural land. Therefore, temporary impacts to farmlands would be negligible.

Construction of access roads and material storage sites could, as a worst-case scenario, permanently convert up to 93.1 acres of Important Farmland to non-agricultural use within the study area. This comprises 21.9 acres of Prime Farmland, 66.7 acres of Farmland of Local Importance, 3.8 acres of Unique Farmland, and 0.8 acre of Farmland of Statewide Importance. Transmission structures and substations could permanently convert up to 49.9 acres of Important Farmland to non-agricultural use. These 49.9 acres represent 31.7 acres of Prime Farmland, 18.0 acres of Farmland of Local Importance, and 0.2 acre of Unique Farmland. However, the Important Farmlands are distributed through the study area such that, in most cases, the transmission towers and Project components could be located outside of Important Farmlands (see Figures 3.2-1a through 3.2-1d). Furthermore, agriculture operations could continue without interruption within Western's easements. Therefore, impacts to agriculture would be less than significant.

O&M activities would generally be performed from existing access roads. Although some repairs could temporarily disturb active agricultural land, impacts would be minimal.

Impact AG-3 Result in changes to the existing environment that, due to their location or nature, would impair the use of agricultural land

Construction and maintenance activities could temporarily impede the operation of or access to agricultural production lands and facilities. In addition, construction activities along access roads and spur roads would also cause a temporary increase in vehicular traffic that may result in a short-term preclusion of farming and grazing activities. However, pursuant to EPMs, Western would implement the Proposed Project in a manner that includes the avoidance of agricultural resources whenever feasible and the restoration of construction sites to preconstruction conditions to the extent feasible. During construction and maintenance, movement would be limited to the designated access roads and within a designated area in the right-of-way (ROW) to minimize damage to agricultural land. Therefore, these activities would result in minor, short-term impacts to agricultural resources. During operation, the presence of transmission lines is generally compatible with agricultural use (e.g., agriculture operations could continue within the easement and around the towers) and would not substantially impair the use of agricultural land. Therefore, the Proposed Project would result in minor long-term impacts. Under CEQA, this would result in a less-than-significant impact. This impact would be the same for the North, Central, San Luis, and South Segments.

Impact AG-4 Result in uncompensated loss of crop production or the foreclosure of future land uses.

Construction and operation activities that could interfere with agricultural crop production would include the installation of 230-kV and 500-kV transmission structures, construction of new access and spur roads, wire stringing, and maintenance actions. Construction activities and the presence of construction equipment could temporarily interfere with agricultural operations by damaging crops or soil, impeding access to certain fields or plots of land, obstructing farm vehicles, or potentially disrupting drainage and irrigation systems. The work procedures for major repairs, such as replacement of towers or conductors, would be essentially identical to that of new construction. However, construction and operation of the Proposed Project would not result in the permanent foreclosure of future agricultural use. During operation of the Proposed Project, the presence of the transmission towers and conductors could result in minor impacts to agricultural operations. Crop dusters would need to make additional passes around transmission lines and structures to achieve the same coverage as fields without structures and transmission lines. Additionally, impacts on the ground would include additional passes for tilling, planting, and harvesting to maneuver around structures. Transmission lines and structures can also create potential safety hazards because they present additional obstacles to avoid during aerial inspections. In areas where the Project corridor parallels existing transmission lines, the addition of new transmission lines would not add to these impacts that already exist. Pursuant to EPMs, construction and maintenance activities would be scheduled to minimize impacts to agricultural activities. If avoidance is infeasible and damage occurs, the landowner would be compensated. Therefore, this impact would be minor. Under CEQA, this impact would be less than significant. This impact would be the same for the North, Central, San Luis, and South segments.

4.2.4 Corridor Alternatives

Western and the Authority have not identified the Agency-preferred route; therefore, the analysis below combines each alternative within each segment with the Proposed Project corridors from the other segments to determine whether the significance thresholds in Section 4.2.1 would be exceeded.

4.2.4.1 Central Segment

Patterson Pass Road Alternative

This alternative is the same length, has the same length of new access roads, and has the same number of support structures as the Proposed Project. The potential disturbance acres to Important Farmlands within the Proposed Project corridor and the study area presented in Tables 4.2-1 and 4.2-2 would be slightly less than the Proposed Project. Overall, impacts to agricultural resources would be similar to that of the Proposed Project. CEQA significance determinations are the same as the Proposed Project.

Table 4.2-1. Disturbance to Important Farmlands within the Project Study Area

Corridor Segment	Local Importance		Prime Farmland		Unique		Statewide Importance		Total	
	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)
North Segment (Proposed Project)	2.1	6.1	2.3	6.6	0.3	0.9	0.0	0.1	4.7	13.7
Central Segment (Proposed Project)	1.9	27.4	0.7	9.5	0.1	2.1	0.0	0.2	2.7	39.2
Patterson Pass Road Alternative	1.6	25.9	0.6	9.7	0.1	2.1	0.0	0.2	2.4	37.8
San Luis 500-kV Segment (Proposed Project)	1.4	9.5	0.3	1.8	0.0	0.1	0.0	0.0	1.7	11.3
Butts Road Alternative	1.0	7.3	0.2	1.4	0.0	0.1	0.0	0.0	1.2	8.7
West of Cemetery Alternative	0.9	14.4	0.2	2.7	0.0	0.1	0.0	0.0	1.1	17.2
San Luis 70-kV Segment (Proposed Project)	1.5	0.3	0.1	0.0	0.1	0.0	0.0	0.0	1.8	0.3
West of O'Neill Forebay Alternative	1.2	0.2	0.5	0.1	0.0	0.0	0.0	0.0	1.8	0.3
South Segment (Proposed Project)	2.6	23.7	0.4	4.0	0.1	0.7	0.1	0.5	3.1	28.9
San Luis to Dos Amigos Alternative	0.7	6.0	0.4	3.9	0.1	0.7	0.1	0.5	1.2	11.1
Billy Wright Road Alternative	1.1	15.2	0.2	2.3	0.0	0.4	0.0	0.3	1.3	18.2
Proposed Project Total (acres)									**12.2**[1]	**93.1**[1]

Refer to Section 3.1 for a definition of the study area). As these buffers overlap between segments, acreages cannot be added together to equal the sum of the whole. Impact acres are based on the disturbance assumptions presented in Appendix E.

1 - The totals for the Proposed Project study equal the sum of the Proposed Project segments with the exception of the San Luis 70-kV Segment as this segment falls within the San Luis 500-kV segment

Source: California Department of Conservation, Division of Land Resource Protection, 2014

Table 4.2-2. Disturbance to Important Farmlands within Project Corridors

Corridor Segment	Local Importance		Prime Farmland		Unique		Statewide Importance		Total	
	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)
North Segment (Proposed Project)	5.7	7.4	16.4	21.5	0.0	0.0	0.0	0.0	22.1	29.0
Central Segment (Proposed Project)	20.7	2.0	9.7	10.2	1.8	0.2	0.0	0.0	32.1	12.3
Patterson Pass Road Alternative	20.3	2.0	6.2	7.1	0.4	0.0	0.0	0.0	26.9	9.1
San Luis Segment (Proposed Project)	5.5	6.3	0.0	0.0	0.0	0.0	0.0	0.0	5.5	6.3
Butts Road Alternative	3.4	3.8	0.0	0.0	0.0	0.0	0.0	0.0	3.4	3.8
West of Cemetery Alternative	2.5	2.6	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.6
San Luis Segment – 70 kV (Proposed Project)	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0
West of O'Neill Forebay Alternative	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0
South Segment (Proposed Project)	16.9	2.3	0.6	0.0	0.0	0.0	0.0	0.0	17.5	2.3
San Luis to Dos Amigos Alternative	16.9	2.3	0.2	0.0	0.0	0.0	0.0	0.0	17.1	2.3
Billy Wright Road Alternative	6.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.9
Proposed Project Total (acres)									**77.2[1]**	**49.9[1]**

Impact acreage is within the Proposed Project or alternative corridor (refer to Section 3.1 for a definition of the Proposed Project corridor). Impact acres are based on the disturbance assumptions presented in Appendix E.
1 - The totals for the Proposed Project study equal the sum of the Proposed Project segments with the exception of the San Luis 70-kV Segment as this segment falls within the San Luis 500-kV segment
Source: California Department of Conservation, Division of Land Resource Protection, 2014

4.2.4.2 San Luis Segment

Butts Road Alternative

This alternative corridor would be 0.5 mile longer than the Proposed Project, and would have two more support structures. The impacts to agricultural resources would be similar to that of the Proposed Project in type and context; however, the duration and intensity would likely be slightly greater than for the Proposed Project due to longer length of the corridor. The potential disturbance acres to Important Farmlands with the Proposed Project corridor and study area presented in Tables 4.2-1 and 4.2-2 would be slightly less than the San Luis Segment of the Proposed Project. CEQA significance determinations are the same as the Proposed Project.

West of Cemetery Alternative

This alternative corridor would be 1.2 miles longer than the Proposed Project, and would have six more support structures. The potential disturbance acres to Important Farmlands within the Proposed Project corridor and study area presented in Tables 4.2-1 and 4.2-2 would be less than the Proposed Project. Overall, impacts to agricultural resources would be similar to that of the Proposed Project. CEQA significance determinations are the same as the Proposed Project.

West of O'Neill Forebay 70-kV Alternative

This alternative is the same length, has the same length of new access roads, and has the same number of support structures as the Proposed Project. The potential disturbance acres to Important Farmlands presented in Tables 4.2-1 and 4.2-2 would be slightly less than the Proposed Project. Overall, impacts to agricultural resources would be similar to that of the Proposed Project. CEQA significance determinations are the same as the Proposed Project.

4.2.4.3 South Segment

San Luis to Dos Amigos Alternative

This alternative has the same length of new access roads and same number of support structures as the Proposed Project, and therefore, would have similar impacts to agricultural resources as the Proposed Project. The potential disturbance acres to Important Farmlands presented in Tables 4.2-1 and 4.2-2 are very similar to the Proposed Project. Overall, impacts to agricultural resources would be slightly less than that of the Proposed Project. CEQA significance determinations are the same as the Proposed Project.

Billy Wright Road Alternative

This alternative corridor would be 1.5 miles longer and have 8 more support structures than the Proposed Project. The potential disturbance acres to Important Farmlands within the Proposed Project corridors and study area presented in Table 4.2-1 would be less than the Proposed Project. Overall, impacts to agricultural resources would be similar to that of the Proposed Project. CEQA significance determinations are the same as the Proposed Project.

4.2.5 No Action/No Project Alternative

Under the No Action/No Project Alternative, Western would not construct the SLTP. There would be no direct impacts to agriculture.

4.3 Air Quality and Climate Change

4.3.1 Thresholds of Significance

The Proposed Project and alternatives would have significant adverse effects on air quality or climate change if any activity associated with their construction and O&M would:

- Violate ambient federal and/or state air quality or emissions standards applicable to the study area, or increase the frequency of severity of any existing violation of state and/or federal ambient air quality standard (Impact AQ-1);
- Expose sensitive receptors to detrimental pollution concentrations (Impact AQ-2);
- Contribute to a collective or combined air quality effect, including existing and foreseeable other projects, that leads to violation of air quality standards, even if the individual effect of the project/ activity is relatively minor compared with other sources (Impact AQ-3);
- Produce air contaminants above the level of significant cancer risk, if any. The State of California defines the level of significant cancer risk as more than 10 confirmed cases per million individuals exposed (Impact AQ-4);
- Conflict with adopted environmental plans and goals as provided in the State Implementation Plan (SIP) or regional air quality plan (Impact AQ-5);
- Emissions exceed conformity *de minimis* thresholds (Impact AQ-6);
- Greenhouse gas emissions (GHG) are generated, either directly or indirectly, that may have a substantial impact on the environment, or if global climate change would affect Project facilities in a measurable way (Impact AQ-7); or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (Impact AQ-8).

Quantitative thresholds recommended by air quality management agencies and derived from the applicable regulations, plans and standards are listed in Table 4.3-1.

Table 4.3-1. EPA and Air District Emissions Thresholds

PM10 or PM2.5	
EPA General Conformity Rate – PM10 in SJVAPCD	100 tons/year
EPA General Conformity Rate – PM2.5 in SJVAPCD	100 tons/year
SJVAPCD Construction Threshold of Significance	15 tons/year
BAAQMD Construction Threshold of Significance (PM2.5 Exhaust Emissions Only)	54 lbs/day
BAAQMD Construction Threshold of Significance (PM10/PM2.5 Fugitive Dust)	Best management practices
NOx	
EPA General Conformity Rate – NOx in SJVAPCD	10 tons/year
SJVAPCD Construction Threshold of Significance	10 tons/year
BAAQMD Construction Threshold of Significance	54 lbs/day
Volatile Organic Compounds (VOC)	
EPA General Conformity Rate – VOC in SJVAPCD	10 tons/year
SJVAPCD Construction Threshold of Significance	10 tons/year
BAAQMD Construction Threshold of Significance	54 lbs/day

4.3.2 Environmental Protection Measures

- Project participants will comply with applicable federal, state, and local rules and regulations regarding air quality.
- Equipment and vehicles will be operated in compliance with applicable federal, state, and local rules and regulations regarding air quality.
- Vehicles and equipment used in construction and O&M of the Proposed Project or alternatives will maintain appropriate emissions control equipment and be appropriately permitted.
- Regular watering of exposed soils and unpaved access roads will be conducted during the construction period.
- Engine idling will be in accordance with an idling policy compliant with the California state regulations.
- If new sulfur hexafluoride equipment is installed as part of the Project, Western will include this information in their annual reports to California Air Resources Board and the Environmental Protection Agency. Best management practices will be followed to eliminate sulfur hexafluoride emissions during installation and commissioning.

4.3.3 Proposed Project

Potential air emissions were analyzed for all phases of the Project, including construction and O&M, and for all alternatives. While construction activities can emit substantial amounts of air pollution, the Project would have no emissions during operation, and only minor emissions during maintenance activities. Therefore, this evaluation focuses primarily on potential air emissions that could occur during construction of each alternative from fugitive dust and construction equipment exhaust, though O&M and decommissioning activities are also discussed. Air quality impacts would be essentially proportional to the number of support structures and the combined length of new access roads that would be constructed for each segment.

During construction, impacts to air quality would be caused by motor vehicle and mechanized equipment emissions, and fugitive dust created by construction activities such as auguring of transmission tower foundations and excavation for new access roads. The equipment used and the length of construction is discussed in detail in Section 2.1.3. Diesel engine emissions would be sporadic and short-term and cause direct impacts to local air quality, but would dissipate quickly.

Impact AQ-1	**Violate applicable ambient federal and/or state air quality or emissions standards to the study area, or increase the frequency of severity of any existing violation of applicable state and/or federal ambient air quality standard.**

Emissions during construction and O&M activities would come primarily from equipment and vehicle exhaust and fugitive dust created by ground disturbing activities. As shown in Table 2-4, construction activities at any one time could involve various equipment and vehicles, depending on scheduling and manpower. However, not all activities are likely to be conducted simultaneously. For example, conductor stringing is not likely to occur until all structures are completed; also, not all machinery involved in any one activity will be running at the same time. As stated in the proposed construction schedule in Table 2-2 of Section 2.1.3, construction would occur over approximately 525 days, beginning in 2018. Emissions for the entire construction period were estimated based on the current construction plan as described in Section 2.1.3 (assumptions are presented in Appendix I, Air Quality Emission Calculations). ~~For planning purposes, all~~ The geophysical location of Project construction emissions and all alternatives

~~have been presumed to~~ would occur in the San Joaquin Valley Air Basin, ~~although~~ and only a limited portion of the emissions related to construction of the new Tracy East Substation would occur in the jurisdiction of the BAAQMD, where the thresholds are generally less stringent. Construction would not be likely to exceed the BAAQMD thresholds or contribute to violations of air quality standards in the BAAQMD. Based on the preliminary estimate of total construction emissions shown in Table 4.3-2, construction emissions could exceed the SJVAPCD significance threshold values for NOx and PM10, but not PM2.5 or VOC, depending on the extent of overlapping construction activities or phases.

Table 4.3-2. Estimated Construction-Phase Emissions (tons per year)

Proposed Project Totals (by Calendar Year)	NOx	VOC	PM10	PM2.5	CO
Year 1 (2018)	26.~~2~~1	1.6	29.9	5.6	33.7
Year 2 (2019)	26.~~1~~0	1.~~6~~5	39.1~~2~~	6.8	33.6
Year 3 (2020)	6.6	3.5	9.7~~8~~	1.5	9.0
Proposed Project Totals (all years)	**58.8~~9~~**	**6.6~~7~~**	**78.8~~9~~**	**14.0~~13.9~~**	**76.2~~3~~**
General Conformity Threshold for San Joaquin Valley Air Basin	**10**	**10**	**100**	**100**	**—**
Does Proposed Project Potentially Exceed Conformity Threshold?	Yes	No	No	No	—
SJVAPCD Construction Threshold of Significance	**10**	**10**	**15**	**15**	**100**
Does Proposed Project Potentially Exceed CEQA Threshold?	Yes	No	Yes	No	No
Off-site Reductions Necessary for No Net Increase	59	—	79	—	—

Source: Appendix I.
Note: "—" means no threshold applies.

Construction of all segments of the Proposed Project simultaneously, while unlikely, could result in an exceedance of air quality or emissions standards in the region. Therefore, under CEQA, this impact would be significant. Feasible mitigation would include steps that are recommended by SJVAPCD in its Guidance for Assessing and Mitigating Air Quality Impacts (SJVAPCD, 2015); which construction equipment operators can implement in conjunction with the EPMs. These feasible practices are included in Mitigation Measure AQ-1 (Reduce or offset construction equipment emissions).

Mitigation Measures for Impact AQ-1

MM AQ-1 **Reduce or offset construction equipment emissions.** Western will specify that construction contractors should:

- Use alternative fueled or catalyst-equipped diesel construction equipment or construction equipment powered by engines meeting, at a minimum, Tier 3 or higher emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations.
- Minimize heavy equipment use, trips, and unnecessary idling ~~time~~ (e.g., 5 minute maximum).
- Maintain and tune engines per the manufacturer's specifications.
- Prohibit any tampering with engines and require adherence to manufacturer's recommendations.
- Locate construction equipment and staging zones away from sensitive land uses that include children, the elderly, and the infirm.
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in simultaneous use.

- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).
- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliatives where appropriate. These dust suppressants should remain effective on inactive and active sites during all phases of construction.
- Install wind breaks or fencing at windward sides of substation sites and staging areas.
- When hauling material and operating non-earthmoving equipment, prevent spillage.
- Limit traffic speeds on unpaved roads to 15 miles per hour and limit speed of earth-moving equipment to 10 miles per hour.
- Install wheel washers or wash off all trucks and equipment leaving substation sites.
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.
- Implement construction activity management (e.g., rescheduling activities to reduce short-term impacts). The construction activity management strategy should include cost-effective commitments to use newer on-highway vehicles, non-road vehicles and equipment meeting or exceeding Tier 4 standards, and advanced technology demonstration and deployment, for example for plug-in hybrid-electric vehicles and battery-electric vehicles. Prior to commencing construction, the construction contractors shall submit the construction activity management strategy and schedule to Western for review and approval.
- Periodically inspect activities to ensure that construction adheres to the controls required by this measure, California's anti-idling requirements, and the construction activity management schedule. During construction, the construction contractors shall submit monthly construction activity reports and inspection records to Western for review and approval.
- Upon completion of detailed engineering plans for the SLTP and prior to commencing construction, Western will ~~conduct a detailed air quality analysis of the construction phase of the project to determine the feasibility and necessity of~~ finance and verify implementation of ~~ing~~ additional off-site emission reduction programs to offset SLTP construction emissions. Western commits to entering into an agreement or other legally binding instrument with the SJVAPCD to implement 60 tons of NOx and 82 tons of PM10 criteria pollutant emission reductions, as necessary for the Agency Preferred Alternative. To achieve measurable and enforceable emission reductions, the SJVAPCD may administer the emission reduction projects on the behalf of Western, and Western may require the SJVAPCD to prepare a report demonstrating that the emission reduction projects have achieved 60 tons of successful and actual NOx reductions to ~~levels that are less than the EPA~~ demonstrate General Conformity ~~thresholds~~.

Level of Significance after Mitigation

Implementation of EPMs would reduce NOx, PM10, PM2.5, and VOC emissions to the maximum extent practical. ~~However, NOx and PM10 emissions still could exceed local thresholds of significance and NOx could exceed the EPA General Conformity threshold rate for the San Joaquin Valley Air Basin.~~ Because

of the linear nature of the Project, construction emissions would be sporadic and spread over the length of the route. Emissions would not be expected to contribute to new violations of ambient air quality standards, or increase the frequency or severity of existing violations. Emissions would not be expected to substantially contribute to nonattainment of standards. Construction emissions are included as a category in the San Joaquin Valley emissions inventory for attainment demonstration purposes. Western has adopted a proactive stance by implementing EPMs that mirror measures recommended by the air districts. Therefore, the Project would comply with air district requirements.

Emission controls identified in Mitigation Measure AQ-1 include stringent dust control practices and the best available technology standards for mobile source controls. Implementation of the mitigation would reduce total construction emissions for all construction activities, and, in conjunction with these controls, an off-site emission reduction program would offset all estimated construction-phase NOx and PM10 emissions.

Implementation of off-site emission reduction programs identified in Mitigation Measure AQ-1 would achieve a targeted ~~require detailed engineering of the Project, development of a construction schedule, and quantification of construction activity emissions. Determining the final~~ quantity of offsets, although ~~and therefore the cost of any potential emission reduction programs, requires quantification of~~ the actual construction emissions~~, which~~ depend~~s~~ on other portions of the mitigation and on final engineering that is not available at this time. Mitigation Measure AQ-1 requires Western to reduce construction emissions and ~~determine whether~~ to finance and verify implementation of~~ing~~ additional off-site emission reductions. The emission reduction program would ~~be feasible and~~ achieve sufficient levels of NOx reductions~~necessary~~ to demonstrate that no net increase occurs for this pollutant in a manner consistent with ~~that the overall emission levels are below the EPA~~ General Conformity, as shown ~~thresholds listed~~ in Table 4.3-2~~1~~. The mitigation will achieve off-site emission reductions of 60 tons of NOx as needed for implementation of the Agency Preferred Alternative. However, implementation of Mitigation Measure AQ-1 should also result in lower levels of Project on-site emissions by requiring a partial construction fleet of Tier 4 equipment; the estimated emissions in Table 4.3-2 are conservatively high because some equipment like loaders/backhoes, excavators, dozers, off-highway trucks, generator sets, and forklifts would be capable of meeting the Tier 4 standards.

The EPA requires that projects with construction emissions over the General Conformity thresholds provide mitigation during the period that is contemporaneous with the schedule for construction (Vol. 75 *Federal Register,* page 17268, April 5, 2010). To complete the mitigation, Western proposes to establish an agreement that enables SJVAPCD to implement an off-site emissions reduction program that provides reductions during the schedule for construction. Western and the SJVAPCD may execute a Voluntary Emission Reduction Agreement to achieve the necessary level of off-site reductions contemporaneous with the final schedule of construction. Appendix M of the Final EIS/EIR includes an Air Quality General Conformity Evaluation and Draft Conformity Determination. Under CEQA, PM10 is included along with NOx as part of the implementation of Mitigation Measure AQ-1 to finance and verify implementation of additional off-site emission reductions. The off-site reductions of both NOx and PM10 ensure that no net increases occur for these pollutants, and this ~~the extent feasible~~ would reduce this impact to a less than significant level. This impact would be the same in the North, Central, San Luis, and South segments.

Impact AQ-2 Expose sensitive receptors to detrimental pollution concentrations.

Sensitive receptors near the Project area may be affected by a temporary increase in fugitive dust. Residences and other sensitive areas located within 1 mile of the Proposed Project corridor and the distances to the edge of the Project area are listed in Table 4.3-3.

Table 4.3-3. Sensitive Receptors in the Project Area

North Segment	
The community of Mountain House	0.5 mile
Mountain house elementary school	0.5 mile
A group of residences near the intersection of W. Grantline Road and S. Central Parkway south of Mountain House	0.2 mile
The San Joaquin Delta College South Campus at Mountain House	0.2 mile
A group of residences near the intersection of W. Patterson Pass Road and Midway Road	0.25 mile
Central Segment	
A group of residences off the southern end of S. Tracy Boulevard	0.2 mile
A group of residences off Vernalis Road near the San Francisco Water Public Utilities Commission's Tesla Water Treatment Facility	0.3 mile
A single residence approximately 1 mile west of South Bird Road	0.2 mile
A single residence at the end of Gaffery Road	0.3 mile
A single residence on Khalsa Road	0.2 mile
Two residences at the end of Ingram Creek Road	0.1 mile
A single residence adjacent to southbound I-5 near Sperry Avenue	0.9 mile
One to two residences on Oak Flat Road, one of which may have been converted to another use	0.7 to 1 mile
A single residence off the end of Fink Road	0.3 mile
Two residences at Sullivan Road	0.1 mile
San Luis Segment	
Two residences at Butts Road	0.1 and 0.9 mile
A group of residences and the San Joaquin Valley National Cemetery at McCabe Road	0.1 mile
Recreation areas located at San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir, including campgrounds and picnic areas	0.2 mile
A group of residences and a commercial campground east of the Los Banos Substation	0.1 mile
South Segment	
A group of homes near Billy Wright Road	0.06 mile
A single residence near Canyon Road	0.1 mile
A group of homes off Arburua Road	0.1 mile

Total construction time at each transmission structure location would be approximately 1-2 weeks spread over a period of approximately 18 months. Construction of all segments of the Proposed Project could result in an exceedance of air quality or emissions standards and could cause sensitive receptors to be exposed temporarily to construction emissions. Therefore, Project-generated emissions of criteria air pollutants and ozone precursors could expose sensitive receptors to substantial pollutant concentrations. This impact would be significant under CEQA.

Mitigation Measures for Impact AQ-2

MM AQ-1 Reduce or offset construction equipment emissions.

Level of Significance after Mitigation

Implementation of Mitigation Measure AQ-1 would require development of a construction schedule and ~~quantification of~~ a construction activity management strategy that reduces emissions. Mitigation Measure AQ-1 also requires Western to finance and verify implementation of off-site emission reduction programs that ~~reduce or~~ offset construction emissions to demonstrate that the overall emission levels are below the emission thresholds listed in Table 4.3-1. Therefore, the Proposed Project would not expose sensitive receptors identified in Table 4.3-3 to detrimental pollution concentrations. Under CEQA, this impact would be reduced to a less than significant level. This impact would be the same in the North, Central, San Luis, and South segments.

Impact AQ-3	**Contribute to a collective or combined air quality effect, including existing and foreseeable other projects that leads to violation of air quality standards, even if the individual effect of the project/activity is relatively minor compared with other sources.**

As shown in Table 3.3-2, the San Joaquin Valley Air Basin is already in nonattainment with several state and federal air quality standards. To assess the project contribution to the collective or combined effect of total emissions in the air basin, the local air districts recommend comparing emissions from construction of the Proposed Project against applicable significance thresholds shown in Table 4.3-1. The Proposed Project has the potential to exceed applicable emissions thresholds, which would constitute a significant impact.

Mitigation Measures for Impact AQ-3

MM AQ-1 Reduce or offset construction equipment emissions.

Level of Significance after Mitigation

Mitigation Measure AQ-1 requires Western to reduce or offset construction emissions to demonstrate that the overall emission levels are below the emission thresholds listed in Table 4.3-1. Reducing Project emissions to levels below these thresholds ensures that the Project would not contribute to a collective or combined air quality effect that causes a violation of any air quality standard. Under CEQA, this impact would be reduced to a less than significant level. This impact would be the same in the North, Central, San Luis, and South segments.

Impact AQ-4	**Produce air contaminants above the level of significant cancer risk, if any. The State of California defines the level of significant cancer risk as more than 10 confirmed cases per million individuals exposed.**

The principal Hazardous Air Pollutant (HAP) of concern for the Proposed Project is diesel particulate matter associated with use of diesel-fueled construction equipment. The dose to which sensitive receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to HAP emission levels that exceed applicable standards). Construction of the Proposed Project would cause emissions over a limited duration of less than 2 years, and the diesel particulate matter emissions would cease at the completion of construction. No single location near the corridor of about 95 miles of new transmission lines would be exposed to construction-related contaminants for an excessive duration. The total construction time at each transmission structure location would be limited to approximately 1–2 weeks. Diesel particulate matter is highly dispersive, and studies have shown measured concentrations of vehicle-related pollutants, including ultra-fine particles, decrease dramatically within approximately 300 feet of the source (Zhu et al., 2002). Because of the

brief duration of work at each transmission structure along the corridor, the emissions from diesel equipment used along the 95-mile corridor would be unlikely to pose a notable health risk at any single location. Longer durations of activity and emissions would occur at each of the two new 500-kV substations, where emission calculations in Appendix I show that the average rate of diesel particulate matter emissions would be less than 4 lb/day at each of the two substation sites. These substations would cover up to 50 acres each, and sensitive receptors are separated from the substation sites by approximately 600 feet or more. The potential cancer risk over a 70-year lifetime for sensitive receptors near either substation would not be above the level of significant cancer risk because there would be sufficient distance separating the receptors and the sources, the rate of emissions would be relatively low, and the duration of these emissions would span only two years over a typical 70-year lifetime. The resulting diesel particulate matter concentrations would not require a detailed Health Risk Assessment (HRA), and ~~Therefore,~~ the direct or indirect exposure of sensitive receptors to construction-related HAP emissions and pollutant concentrations would be negligible. Under CEQA, this impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

Impact AQ-5 Conflict with adopted environmental plans and goals as provided in the State Implementation Plan (SIP) or regional air quality plan.

Project participants would comply with applicable federal, state, and local rules and regulations regarding air quality. Because all machinery and vehicles used during construction of the Proposed Project would be in compliance with the emissions control requirements of the local air district and California Air Resources Board, construction of the Proposed Project would not conflict with the SIP or the SJVAPCD's air quality plans. Under CEQA, this impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

Impact AQ-6 Emissions exceed conformity *de minimis* thresholds.

Table 4.3-1 shows the EPA *de minimis* thresholds for General Conformity and the local air pollution control district emissions thresholds for construction projects.

Emissions of NOx and PM10, but not PM2.5 or VOC, during construction could exceed SJVAPCD significance thresholds, and emissions of NOx could exceed EPA's General Conformity applicability rate ~~for NOx~~, as shown in Table 4.3-2. Western has adopted a proactive stance by implementing Project EPMs that mirror measures recommended by the air district. While the implementation of Project EPMs and construction standards would reduce NOx, PM10, PM2.5, and VOC emissions, emissions of NOx and PM10 could still exceed SJVAPCD significance threshold values depending on overlapping construction activities or phases, and NOx could exceed the EPA *de minimis* threshold of applicability for General Conformity.

Western anticipates that overlapping construction activities or phases could be managed to ensure that the NOx, PM10, PM2.5, and VOC emissions would be less than the BAAQMD and SJVAPCD significance thresholds and EPA's General Conformity applicability rates. However, based on the preliminary estimate of total construction emissions shown in Table 4.3-2~~quantification of actual construction emissions will depend on final engineering that is not available at this time. Therefore, until quantification is available~~, this impact is considered significant under CEQA.

Mitigation Measures for Impact AQ-6

MM AQ-1 Reduce or offset construction equipment emissions.

Level of Significance after Mitigation

Implementation of Mitigation Measure AQ-1 above would require ~~detailed engineering of the Project,~~ development of a construction schedule~~,~~ and a ~~quantification of~~ construction activity management strategy that reduces emissions. Mitigation Measure AQ-1 also requires Western to finance and verify implementation of off-site emission reduction programs that ~~reduce or~~ offset construction emissions. Under Mitigation Measure AQ-1, Western and the SJVAPCD may execute a Voluntary Emission Reduction Agreement to achieve the necessary level of off-site reductions contemporaneous with the final schedule of construction, as necessary to demonstrate General Conformity. Appendix M of the Final EIS/EIR includes an Air Quality General Conformity Evaluation and Draft Conformity Determination. ~~to demonstrate that the overall emission levels are below the emission thresholds listed in Table 4.3-1.~~ With the mitigation, the impact under CEQA would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

Impact AQ-7	**Would the Project generate greenhouse gas emissions (GHG), either directly or indirectly, that may have a substantial impact on the environment, or would global climate change affect Project facilities in a measurable way?**

Impact AQ-8	**Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?**

With regard to Impact AQ-7 and Impact AQ-8, the Proposed Project would improve Western's electric transmission network and improve the efficiency of electrical transmission. The potential vulnerabilities of the U.S. energy sector have been identified by the U.S. Department of Energy's Office of Policy and International Affairs (DOE-PI) and the National Renewable Energy Laboratory (NREL) in a report, released in 2013 and titled: "*U.S. Energy Sector Vulnerabilities to Climate Change and Extreme Weather.*" Regarding major electric transmission facilities, the key finding is:

- Electricity transmission and distribution systems carry less current and operate less efficiently when ambient air temperatures are higher, and they may face increasing risks of physical damage from more intense and frequent storm events or wildfires.

Project activities would have no measurable effect on global climate change nor would Project facilities be affected in a measurable way by global climate change. Climate change could result in extreme environmental conditions that impact Western's electric transmission network. The Proposed Project would be expected to improve the transmission corridor to increase reliability of service and to maintain integrity of the transmission system. As such, the Project would be likely to improve the resilience of basic infrastructure during extreme weather. This would improve the ability of the infrastructure to provide electric transmission service while withstanding climate-related impacts. Reducing the potential for transmission system service interruptions should improve public health and safety by avoiding catastrophic service failures or power outages as a result of extreme weather. During the operation and maintenance phase of the Proposed Project electrical switchgear included with the Project would be gas-insulated and subject to applicable GHG regulations for reducing SF_6 emissions. O&M activities would ensure that the potential for SF_6 leaks is minimized according to a leak reduction standard that is consistent with the AB 32 Scoping Plan, including California ARB SF_6 regulations (17 CCR 95350 to 95359). The Proposed Project would not conflict with any plan, policy or regulation related to reduction of GHG emissions. Under CEQA, this impact would be less than significant.

Similarly, though GHG emissions from project construction would be additive to GHG emissions from other activities in the project area, they would be limited in duration and magnitude. Construction

emissions would be limited to the temporary duration of the construction, and annual operational emissions would not be expected to exceed 1,000 MTCO2e (assumptions and additional details are presented in Appendix I, Air Quality Emission Calculations). Table 4.3-4 shows the estimated GHG emissions during construction based on the construction approach and schedule presented in Section 2.3.1.

Table 4.3-4. Estimated Construction-Phase GHG Emissions (CO2e metric tons)

Calendar Year	CO2e
Year 1 (2018)	5,412.6~~5,385.1~~
Year 2 (2019)	5,381.0~~5,353.6~~
Year 3 (2020)	2,135.6~~2,130.9~~
Total for Full Duration of Construction	**12,929.2~~12,869.6~~**

Source: Appendix I.

To facilitate compliance of federal actions with the provisions of NEPA, the CEQ has developed draft guidance on when and how to consider the effects of GHG (December 2014). This analysis is a cumulative impact assessment because GHG emissions contribute, by their nature on a cumulative basis, to the adverse environmental impacts of global climate change. Construction emissions of GHG from the proposed action would be non-recurring over the service life of the transmission system. When averaged over the service life of the Project, GHG from project construction would be below a level (25,000 MTCO2e annually) that warrants quantitative disclosure. Cumulative impacts of the Proposed Project coupled with other area projects would be considered unavoidable short-term impacts. However, the Project would not generate substantial levels of GHG emissions during construction or over the long-term. These limited levels of Project GHG emissions would not be cumulatively considerable under CEQA.

These impacts would be the same in the North, Central, San Luis, and South segments.

4.3.4 Corridor Alternatives

4.3.4.1 Central Segment

Patterson Pass Road Alternative

This alternative has nine more miles of new access roads and the same number of support structures as the Proposed Project. Impacts to air quality from this alternative would be similar to that of the Proposed Project in type and context but greater in the duration and intensity due to greater number of support structures and length of new access roads. CEQA impact significance determinations are the same as those described for the Proposed Project. Table 4.3-5 summarizes the construction emissions that would be caused by the Patterson Pass Road Alternative in addition to those of the Proposed Project.

Table 4.3-5. Patterson Pass Road Alternative Construction-Phase Emissions (tons)

Patterson Pass Road Alternative	NOx	VOC	PM10	PM2.5	CO
Additional to Proposed Project (tons)	2.9	0.5	6.9	1.0	3.8

Source: Appendix I.

4.3.4.2 San Luis Segment

Butts Road Alternative

This alternative corridor would be 0.5 miles longer than the Proposed Project, would have two more support structures, and would increase needed new access roads by 2 miles. Impacts to air quality from this alternative would be similar to that of the Proposed Project in type and context but greater in the duration and intensity due to greater number of support structures and length of new access roads. CEQA impact significance determinations are the same as those described for the Proposed Project. Table 4.3-6 summarizes the construction emissions that would be caused by the Butts Road Alternative in addition to those of the Proposed Project.

Table 4.3-6. Butts Road Alternative Construction-Phase Emissions (tons)

Butts Road Alternative	NOx	VOC	PM10	PM2.5	CO
Additional to Proposed Project (tons)	0.6	0.1	1.5	0.2	0.8

Source: Appendix I.

West of Cemetery Alternative

This alternative corridor would be 1.2 miles longer than the Proposed Project, would have six more support structures, and would increase needed new access roads by 9 miles. Impacts to air quality from this alternative would be similar to that of the Proposed Project in type and context, but greater in duration and intensity due to the greater number of support structures and length of new access roads. CEQA impact significance determinations are the same as those described for the Proposed Project. Table 4.3-7 summarizes the construction emissions that would be caused by the West of Cemetery Alternative in addition to those of the Proposed Project.

Table 4.3-7. West of Cemetery Alternative Construction-Phase Emissions (tons)

West of Cemetery Alternative	NOx	VOC	PM10	PM2.5	CO
Additional to Proposed Project (tons)	2.9	0.5	6.9	1.0	3.8

Source: Appendix I.

West of O'Neill Forebay 70-kV Alternative

This alternative is the same length, has the same length of new access roads, and has the same number of support structures as the Proposed Project, and therefore would have essentially the same impacts to air quality during construction and O&M as the Proposed Project. CEQA impact significance determinations are the same as those described for the Proposed Project.

4.3.4.3 South Segment

San Luis to Dos Amigos Alternative

This alternative has the same length of new access roads and same number of support structures as the Proposed Project, and therefore, would have essentially the same impact to air quality during construction and O&M activities. CEQA impact significance determinations are the same as those described for the Proposed Project.

Billy Wright Road Alternative

This alternative corridor would be 1.5 miles longer than the Proposed Project, would have eight more support structures, and would need 3.0 miles of additional new access roads. Impacts to air quality from this alternative would be similar to that of the Proposed Project in type and context, but greater in duration and intensity due to greater number of support structures and length of new access roads. CEQA impact significance determinations are the same as those described for the Proposed Project. Table 4.3-8 summarizes the construction emissions that would be caused by the Billy Wright Road Alternative in addition to those of the Proposed Project.

Table 4.3-8. Billy Wright Road Alternative Construction-Phase Emissions (tons)

Billy Wright Road Alternative	NOx	VOC	PM10	PM2.5	CO
Additional to Proposed Project (tons)	1.0	0.2	2.3	0.3	1.3

Source: Appendix I.

4.3.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built and no new emissions would occur; therefore, there would be no impacts to air quality.

4.4 Biological Resources

4.4.1 Thresholds of Significance

The Proposed Project and alternatives would have significant effects on biological resources if any activity associated with their construction, operation, or maintenance would:

- Adversely affect a listed endangered, threatened, or proposed species or designated critical habitat, or a non-listed special-status plant or animal species either directly or through habitat loss or modification (Impact BIO-1);
- Adversely and substantially affect native plant communities, including riparian areas or other sensitive communities (Impact BIO-2);
- Substantially interfere with the movement or migration of any native resident or migratory fish or wildlife species, or impede the use of native wildlife nursery sites for more than one reproductive season (Impact BIO-3);
- Have substantial adverse effects on wetlands and Waters of the U.S. and State (Impact BIO-4);
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Impact BIO-5); or
- Conflict with the provisions of an adopted local, regional, State, or federal habitat conservation plan (Impact BIO-6).

4.4.2 Environmental Protection Measures

- All Western and contract crews will complete biological awareness training to ensure they are familiar with sensitive biological resources and the associated EPMs and mitigation measures. All supervisors and field personnel will have a signed agreement on file that they have completed the training, and understood and agreed to the terms. EPMs and applicable mitigation measures will be written into the contract for construction and O&M work, and contractors will be held responsible for compliance.
- Vehicle traffic will be restricted to designated access routes and the immediate vicinity of construction and O&M sites. Vehicle speeds will not exceed 15 mph on nonpublic access and maintenance roads and 10 mph on unimproved access routes. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas, to the extent feasible.
- No pets or firearms will be permitted at Project sites.
- At the end of each workday, construction and O&M workers will leave work areas and adjacent habitats to minimize disturbance to actively foraging animals, and remove food-related trash from the work site in closed containers for disposal. Workers will not deliberately or inadvertently feed wildlife.
- Nighttime construction and O&M activities will be minimized to emergency situations. If nighttime construction and O&M work is required, lights will be directed to the minimum area needed to illuminate Project work areas. If nighttime work is required, a speed limit of 10 mph will be enforced on all nonpublic access roads.
- Mortalities or injuries to any wildlife that occur as a result of Project- or maintenance-related actions will be reported immediately to the Western Natural Resources Department or other designated point of contact, who will instruct construction and O&M personnel on the appropriate action, and who will contact the appropriate agency if the species is listed. The phone number for the Western Natural

Resources Department or designated point of contact will be provided to the construction contractors, maintenance supervisors, and to the appropriate agencies.

- Caves, mine tunnels, and rock outcrops will never be entered, climbed upon, or otherwise disturbed.
- If a pesticide label stipulates a buffer zone width for protection of natural resources that differs from that specified in a project mitigation measure or EPM, the buffer zone width that offers the greatest protection will be applied.
- At completion of work and at the request of the land owner/manager, all work areas except access roads will be scarified or left in a condition that will facilitate natural or appropriate vegetation, provide for proper drainage, and prevent erosion.
- Prior to any application of herbicide, Western will query the California Department of Pesticide Regulation PRESCRIBE database, entering location information by county, township, range, and section, entering both the commercial name and the formulation of the desired pesticide, and will follow all use limitations provided to ensure compliance with applicable pesticide standards. This database is currently located at http://www.cdpr.ca.gov/docs/endspec/prescint.htm. The measures generated by the PRESCRIBE database will supersede those in the Project EPMs where they are different.
- Seed mixtures applied for erosion control and restoration will be certified as free of noxious weed seed, and will be composed of native species or sterile nonnative species.
- Equipment will be washed prior to entering sensitive areas within the Project area to control noxious weeds. The rinse water will be disposed of through the sanitary sewage system or other appropriate disposal method that minimizes the spread of noxious weeds.
- Measures described in the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee 2006 or more current version) and Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (Avian Power Line Interaction Committee 2012 or more current version) will be implemented during O&M activities to minimize bird mortality and injury. At such time when Western finalizes an Avian Protection Plan, Western will adhere to the guidance in that document.
- Construction and O&M excavations greater than 3 feet deep will be fenced, covered, or filled at the end of each working day, or have escape ramps provided to prevent the entrapment of wildlife. Trenches and holes will be inspected for entrapped wildlife before being filled. Any entrapped animals will be allowed to escape voluntarily before construction and O&M activities resume, or they may be removed by qualified personnel, with an appropriate handling permit if necessary.
- A hazardous-spill plan will be developed prior to construction and will remain in effect for all O&M activities. The plan will describe what actions will be taken in the event of a spill of toxic or hazardous materials. The plan will incorporate preventive measures to be implemented for vehicle and equipment staging, cleaning, maintenance, and refueling, and for containment management and storage of hazardous materials, including fuel. In the event of a contaminant spill, work at the site will immediately cease until the contractor has contained and mitigated the spill. The contractor will immediately prevent further contamination, notify appropriate authorities, notify Western's regional environmental manager, and will mitigate damage as appropriate. Adequate spill containment materials, such as oil diaper mats and hydrocarbon cleanup kits, will be available on site at all times, as will containers for storage, transportation, and disposal of contaminated absorbent materials.
- Erosion control measures will be implemented to prevent loss of soil. Construction will be in conformance with Western's Integrated Vegetation Management Environmental Guidance Manual.

- On completion of the work, all work areas except permanent access roads will be returned to preconstruction conditions unless otherwise specified by the land owner/manager.
- Construction and operations will be conducted in a manner that prevents unnecessary destruction, scarring, or defacing of the natural surroundings and to preserve the natural landscape to the extent practicable.
- No permanent discoloring agents will be applied to rocks or vegetation to indicate limits of survey.
- All vehicles and equipment will be equipped with required exhaust noise abatement suppression devices.
- Runoff from the construction and O&M sites will be controlled and meet RWQCB stormwater requirements and the conditions of a construction stormwater discharge permit. A stormwater pollution prevention plan will be prepared and implemented.
- All contaminated discharge water created by construction and O&M activities (e.g., concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) will be contained and disposed of in accordance with applicable federal, State, and local regulations.
- All fill or riprap placed within a stream or river channel will be limited to the minimum area required for access or protection of existing Western facilities.
- All equipment will be stored, fueled, and maintained in vehicle staging areas 300 feet or the maximum feasible distance from any aquatic habitat (vernal pool, vernal pool grassland, seasonal wetland, seep, spring, pond, lake, river, stream, or marsh) and no closer than 200 feet unless a bermed (no ground disturbance) and lined refueling area is constructed and hazardous-material absorbent pads are available in the event of a spill. Vehicles and construction equipment will be inspected daily for fluid leaks before leaving staging areas during construction and O&M activities. Fluid leaks will be repaired before equipment is moved from staging areas.
- All instream work, such as culvert replacement or installation, bank recontouring, or placement of bank protection below the high-water line, will be conducted during no-flow or low-flow conditions and in a manner to avoid impacts to water flow, and will be restricted to the minimum area necessary for completion of the work.
- All equipment used below the ordinary high-water mark will be free of exterior contamination.
- Excavated material or other construction materials will not be stockpiled or deposited near or on stream banks, lake shorelines, or other watercourse perimeters.
- Non-biodegradable debris will be collected and removed from the easement daily and taken to a disposal facility. Slash and other biodegradable debris will be left in place or disposed of.
- All soil excavated for structure foundations will be backfilled and tamped around the foundations, and used to provide positive drainage around the structure foundations. Excess soil will be removed from the site and disposed of appropriately. Areas around structure footings will be reseeded with native plants.
- Wherever feasible, new structures and access roads will be sited out of floodplains. Bridges will be used at new stream crossings wherever feasible. If avoidance is infeasible, Western will consult with USACE and obtain permits as required.
- If wet areas cannot be avoided, Western will use vehicles, ground mats, and equipment that minimize ground impacts.

- Construction vehicle movement outside of the easement will be restricted (to the extent feasible) to approved access or public roads.
- Where feasible, all construction activities will be rerouted around wet areas while ensuring that the route does not cross sensitive resource areas.

4.4.3 Proposed Project

Potential impacts to biological resources were analyzed for all phases of the Proposed Project, including construction, O&M, and for all alternatives. Some portions of the Project area could not be surveyed due to right-of-entry restrictions; in these areas, vegetation and habitats were interpreted based on aerial imagery or long-distance views through binoculars (see Appendix C).

Mitigation measures identified in this EIS/EIR would effectively reduce or avoid impacts in accordance with NEPA and CEQA. However, Western would also have discussions with the appropriate resource agencies regarding impacts to biological resources under each agency's purview, in order to obtain all required permits. Measures resulting from these discussions would be in addition to, and may supersede mitigation identified herein.

Impact BIO-1	**Adversely affect a listed endangered, threatened, or proposed species or designated critical habitat, or a non-listed special-status plant or animal species either directly or through habitat loss or modification.**

The following summarizes the special-status plant and animal species documented in each Project segment in the CNDDB and during Project surveys; however, additional populations may exist that have not been identified. Species in *italics* were detected during Project surveys in spring 2014 and 2015. Designated critical habitat is also identified. Additional listed and other special-status species have the potential to occur, as described in Tables 3.4-1 and 3.4-2 in Section 3.4 (Affected Environment – Biological Resources). Refer to the Biological Resources Technical Report (Appendix C) for a detailed discussion of special-status species.

North Segment

- Round-leaved filaree (CRPR 1B)
- Diamond-petaled California poppy (CRPR 1B)
- Caper-fruited tropidocarpum (CRPR 1B)
- Delta smelt critical habitat (350.6 acres in corridor; 5914.4 acres in Study Area)
- Alameda whipsnake (FT, ST)
- Pacific pond turtle (SSC)
- California red-legged frog (FT, SSC)
- California red-legged frog designated critical habitat (12.2 acres in corridor; 1038.7 acres in Study Area)
- *Tricolored blackbird* (SSC)
- *Burrowing owl* (SSC)
- *Loggerhead shrike* (SSC)
- San Joaquin kit fox (FE, ST)

Central Segment

- Big tarplant (CRPR 1B)
- *Round-leaved filaree* (CRPR 1B)
- *Hogwallow starfish* (CRPR 4)
- Lemmon's jewelflower (CRPR 1B)
- Diamond-petaled California poppy (CRPR 1B)
- *Elderberry plants* (host plant for Valley elderberry longhorn beetle [FT])
- California red-legged frog (FT, SSC)
- California red-legged frog designated critical habitat (209.7 acres in corridor; 5086.9 acres in Study Area)
- Alameda whipsnake (FT, ST)
- Coast horned lizard (SSC)
- *Pacific pond turtle* (SSC)
- Swainson's hawk (ST)
- Burrowing owl (SSC)
- Least bell's vireo (FE, SE)
- *San Joaquin kit fox* (FE, ST)
- American badger (SSC)

San Luis Segment

- Blunt-nosed leopard lizard (FE, SE, CFP)
- *Swainson's hawk* (ST)
- Northern harrier (SSC)
- Tricolored blackbird (SSC)
- *San Joaquin kit fox* (FE, ST)

South Segment

- Blunt-nosed leopard lizard (FE, SE, CFP)
- Alameda whipsnake (FT, ST)
- Golden eagle (BGEPA, CFP)
- Burrowing owl (SSC)
- *San Joaquin kit fox* (FE, ST)

Plants

Direct effects to special-status plants during construction would be adverse and could include removal of individual plants or populations and removal of habitat including the seed bank. While loss of special-status plants would be site-specific, the context of this impact would be regional due to the limited distribution and populations of special-status species. Direct impacts would be short-term and minor with implementation of compensatory mitigation. Indirect adverse effects could occur from dust, erosion, and degradation of habitat and competition from spread of invasive weeds. The context of this impact is regional, and while some indirect effects are short-term and minor in intensity, the spread of invasive weeds would be a long-term impact of moderate intensity.

O&M impacts to special-status plants would primarily occur from vehicle use of access roads to inspect lines, routine grading and maintenance of roads within the existing roadbed, and from localized construction activities associated with repair or replacement of structures or conductors (see Appendix D, Operation and Maintenance Plan, for a full description of O&M activities). Most O&M impacts would be indirect (dust, weeds) although localized construction activities could directly impact special-status plant populations. O&M impacts to special-status plants would be much reduced in context, duration, and intensity compared to the construction phase. Routine maintenance jobs are typically short in duration, and ground disturbance is typically minor to negligible.

Western's implementation of a variety of EPMs during construction and O&M as part of the Project would avoid or minimize impacts to special-status plants and minimize alteration of habitat. All construction personnel would receive training on federal and State laws protecting plants and wildlife, including prohibitions on collection and removal. Vehicles would be restricted to designated access routes and work areas, and temporary work areas would be restored following construction. Equipment would be washed prior to entering sensitive areas to avoid introducing new weed seeds. In addition,

seed mixtures applied for erosion control and restoration will be certified as free of noxious weed seed, and will be composed of native species or sterile nonnative species. Where appropriate, herbicides would be used to control weeds, but use would conform with standards in the California Department of Pesticide Regulation PRESCRIBE database to avoid adverse effects to non-target species and habitats. Nonetheless, under CEQA the direct and indirect impacts to special-status plants and habitats would be significant absent mitigation in the North, Central, San Luis, and South segments.

Wildlife

Direct effects to special-status wildlife would be adverse and could include physical damage to or removal of occupied or potential habitats (including designated critical habitat), construction-related erosion or runoff into aquatic habitats, injury or mortality of individuals, disturbance through human presence and construction noise and vibration, and collapse of burrows. Construction in and around agricultural lands, grasslands, and canals could result in the loss of individual western burrowing owls or giant garter snakes; and impacts to vernal pools and seasonal wetlands could result in take of listed fairy shrimp. Direct effects to birds could also include disturbance to nesting birds or nest destruction. The primary effects to bats would be direct effects associated with disturbance at roost sites through human presence and construction noise and vibration. Direct impacts would be short-term and moderate in intensity. The context of direct impacts would be regional due to the limited distribution and populations of special-status species.

Indirect adverse effects could include degradation of habitats through introduction of trash, introduction or spread of non-native plants or predators, spread of disease, spill of hazardous materials, and increased susceptibility to wild fire. The context of indirect impacts is regional, and would be long-term and of moderate intensity.

O&M impacts to special-status wildlife would primarily occur from vehicle use of access roads to inspect lines, routine grading and maintenance of roads within the existing roadbed, and from localized construction activities associated with repair or replacement of structures or conductors. Impacts to special-status wildlife would generally be of similar types as those described for construction, but would be much reduced in context, duration, and intensity. Routine maintenance jobs are typically short in duration, and ground disturbance is minor to negligible.

Western's implementation of a variety of EPMs during construction and O&M as part of the Project would avoid or minimize impacts to special-status wildlife and minimize alteration of habitat (including designated critical habitat). All construction personnel would receive training on federal and state laws protecting plants and wildlife, including prohibitions on collection and removal. Vehicles would be restricted to designated access routes and work areas, and trash would be removed each day to avoid attracting predators. Nighttime construction would occur only under emergency circumstances. Temporary work areas would be restored following construction. The transmission facilities would be constructed to current Avian Power Line Interaction Committee standards to minimize avian electrocutions and collisions during operation. Excavations during construction and operation would be managed to avoid wildlife entrapment. Nonetheless, under CEQA the direct and indirect impacts to special-status wildlife and habitats would be significant absent mitigation in the North, Central, San Luis, and South segments.

Mitigation Measures for Impact BIO-1

MM BIO-1 **Conduct surveys for special-status plants and sensitive habitats.** Prior to construction, an agency-approved botanist will survey Project areas during appropriate blooming periods for listed and special-status plant species and sensitive habitats. Special-status vegetation communities and species will be reported to the USFWS and/or CDFW.

MM BIO-2 **Avoidance and minimization measures for special-status plants and vegetation communities.** The following measures will be implemented during construction and O&M activities for special-status plants and vegetation communities. Special-status plants include federal and State-listed plant species (large-flowered fiddleneck, Hoover's spurge, Delta button-celery, Contra Costa goldfields, Mason's lilaeopsis, Hartweg's golden sunburst, and Greene's tuctoria), and all CRPR special-status plants.

During construction activities:

- From March 1 to August 31, vehicle access will be permitted only on well-established roads until an agency-approved botanist has surveyed the site.
- Ground-disturbing activities will require a bloom season survey by an agency-approved biologist to flag any existing plant populations. Ground disturbance will be prohibited within the flagged boundary unless further consultation with USFWS or coordination with CDFW (as appropriate) is completed. Flagging or other field markers such as temporary fence posts, or other markers that will last for the construction season, will be placed in the prohibited area to ensure that no disturbance occurs at that location. Populations of special-status plants will also be mapped and located in the field using a GPS so that they are clearly identified at all times of the year and construction workers can easily identify areas to be avoided. The area where special-status plants are being preserved will be avoided by workers doing construction activities at all times of the year. After construction is completed, the flagging and markers can be removed.
- During Project construction, a biological monitor will be present when work occurs within 100 feet of a flagged listed plant population.
- Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities to prevent impacts to special-status plants and vegetation communities.
- Where impacts to special-status plants cannot be avoided, and mitigation cannot be achieved through the purchase of credits at a mitigation or conservation bank, the top 4 inches of topsoil will be removed, salvaged, and applied to an appropriate on-site or off-site restoration area. When this topsoil is replaced, compaction will be minimized. Soil will not be stockpiled for more than one year to maintain seed viability.
- Western will comply with conditions of any affected existing conservation easement, and will avoid and minimize impacts within conservation easements to the extent feasible.

During O&M activities:

- From March 1 to August 31, vehicle access will be permitted only on well-established roads until an agency-approved biologist has surveyed the site.

- If vegetation management activities are proposed between March 1 and August 31, an agency-approved biologist will mark special-status plant populations, including a 50-foot (15-meter) buffer zone, prior to construction and O&M activities. Within 100 feet (30.5 meters) of the marked area, the following work area limits will be provided: (1) only manual clearing of vegetation will be allowed within 50 feet of the edge of the flagged area, (2) mechanical treatment of all kinds (including mowers, tractors, chippers, dozers) will be prohibited, and (3) herbicide use will be prohibited at all times with the exception of direct application to target vegetation.
- Workers will refer to maps that show the location of mapped populations of special-status plants so that these areas can be avoided.
- Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities to prevent impacts to plants.
- Where impacts to special-status plants cannot be avoided, and mitigation cannot be achieved through the purchase of credits at a mitigation or conservation bank, the top 4 inches of topsoil will be removed, salvaged, and applied to an appropriate on-site or off-site restoration area. When this topsoil is replaced, compaction will be minimized. Soil will not be stockpiled for more than one year to maintain seed viability.
- Western will comply with conditions of any affected existing conservation easement, and will avoid impacts within conservation easements to the extent feasible.

MM BIO-3 **Provide compensatory mitigation for impacts to special-status plants.** Western will purchase credits in an appropriate mitigation bank or habitat conservation bank for the plant species to be impacted as appropriate. If a mitigation bank is not available Western will contribute in-lieu fees to a mitigation bank or habitat conservation bank that can provide appropriate mitigation for the special-status plant species affected. Western will work with the appropriate resource agency (USFWS and/or CDFW) to ensure adequate compensation. Mitigation ratios will be sufficient to achieve the performance criterion of no net loss of the affected plant species.

If mitigation cannot be achieved by purchase of credits in a mitigation or conservation or by in-lieu fees, then Western will prepare a mitigation plan that describes the compensatory mitigation measures that will be implemented for special-status plants. The mitigation plan will be submitted to the USFWS for approval for federally listed plants and to CDFW for State-listed and CRPR plants. The mitigation plan will include the mitigation measures, which are adopted from the CNPS *Policy on Mitigation Guidelines Regarding Impacts to Rare, Threatened and Endangered Plants* (CNPS, 1998); or equally effective alternative measures.

MM BIO-4 **Provide compensatory mitigation for impacts to federally listed branchiopod habitat.** If effects to branchiopod habitats cannot be avoided, Western will compensate for effects through one of the following: (a) affected pools will be restored on site after construction is complete, (b) credits will be acquired from an agency-approved conservation bank, (c) funds will be deposited into an approved in-lieu fee program, or (d) a conservation easement will be purchased. Compensation amounts will be approved by USFWS.

For on-site creation or restoration, Western will develop and implement a mitigation, monitoring, and reporting plan with input from regulatory agencies that outlines performance standards and success criteria for ensuring long-term success of mitigation.

If it is necessary for cysts to be salvaged to restore affected pools and with concurrence from the USFWS, an agency-approved biologist will salvage soils from local sites that are known to support vernal pool branchiopods at least 2 weeks before the onset of construction, or during the preceding dry season if pools are anticipated to hold water when construction begins. The salvaged soil samples will be stored and used to inoculate restored pools.

MM BIO-5 **Avoidance and minimization measures for valley elderberry longhorn beetle.** The following measures will be implemented during construction and O&M activities to protect valley elderberry longhorn beetle.

During construction activities:

- If the Project may affect valley elderberry longhorn beetle, take authorization/permits will be obtained from the USFWS. Upon completion of the authorization/permit process, Western will implement the terms and conditions of the authorizations for this beetle, which could include but may not be limited to the following:
  - A 100-foot (30.5-meter), no-disturbance buffer fence will be installed and maintained around the perimeter of elderberry shrubs. No grading or any other ground-disturbing activities will be conducted within the fenced area without prior verification that the requirements of the USFWS have been satisfied including the issuance of any necessary permits or authorizations.
  - Contractors will be briefed on the status of the beetle, the need to protect its elderberry host plant, the need to stay out of this 100-foot buffer, and the possible penalties for not complying with these requirements.
  - Signs will be erected every 50 feet (15 meters) along the edge of avoidance areas with the following statements: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs will be clearly readable from a distance of 20 feet (6 meters), and will be maintained for the duration of construction.
  - Biological monitoring will be provided by an agency-approved biologist during construction in all areas within 100 feet (30.5 meters) of elderberry plants.

During O&M activities:

- Prior to initiating vegetation clearance with elderberry plants present, qualified personnel will clearly flag or fence each elderberry plant with a stem measuring 1 inch (2.54 centimeters) or greater in diameter at ground level. If an elderberry plant meeting this criterion is present:
  - A minimum buffer zone of 20 feet (6 meters) outside of the dripline of each elderberry plant will be provided during all routine O&M activities within which all O&M activities except manual clearing will be prohibited.
  - No insecticides, herbicides, fertilizers, or other chemicals will be used within 100 feet (30.5 meters) of an elderberry plant, except direct application to target vegetation.

- Trimming, rather than removal of shrubs, will be used where feasible. Directional felling of trees and manual-cutting trees prior to removal will be used to minimize impacts to elderberries.
- Replacement of existing conductor or installation of additional lines will be performed by pulling the line from tower to tower without touching the vegetation in areas where elderberry plants are present.

MM BIO-6 **Provide compensatory mitigation for impacts to elderberry plants.** If complete avoidance (100 feet) of elderberry plants is not feasible during construction, a mitigation plan will be developed in accordance with the most current USFWS mitigation guidelines (currently USFWS, 1999) that will include provision for compensatory mitigation. The mitigation plan will include, but may not be limited to, relocating elderberry shrubs, planting elderberry shrubs, establishing success criteria, monitoring relocated and planted elderberry shrubs to ensure success, and an adaptive management plan in the event that mitigation is not successful.

MM BIO-7 **Avoidance and minimization measures for Alameda whipsnake.** Western will minimize or avoid impacts to Alameda whipsnake and its habitats by implementing the following measures.

- If suitable Alameda whipsnake habitat will be impacted by the Proposed Project, Western will consult with the USFWS and coordinate with CDFW. Applicable take authorization/permits will be obtained, as necessary. Upon completion of the authorization/permit process, Western will implement the terms and conditions of the authorizations, which could include but may not be limited to the following:
  - If habitat for Alameda whipsnake will be impacted by Project activities, Western will develop and implement a protection and monitoring plan for Alameda whipsnake that will be approved by USFWS and coordinated with CDFW. Measures in this plan will include, but may not be limited to, a procedure for conducting preconstruction surveys and/or trapping surveys before the onset of initial ground-disturbing activities in areas with high-quality habitat that cannot be avoided, surveying before construction and/or restoration begins each day that these activities will occur, and direct monitoring by an agency-approved biologist of the occupied or potentially occupied grassland/scrub/mosaic habitats in the Project area that will be directly affected by Project construction.

MM BIO-8 **Avoidance and minimization measures for blunt-nosed leopard lizard.** To protect blunt-nosed leopard lizard, Western will implement the following for both construction and O&M activities.

- An agency-approved (USFWS and CDFW) biologist will conduct blunt-nosed leopard lizard surveys for each ground disturbance site in blunt-nosed leopard lizard habitat per the *2004 Approved Survey Methodology for the Blunt-nosed Leopard Lizard* (CDFG, 2004) or currently approved methodology.
- If blunt-nosed leopard lizards are not detected during surveys, a flashing barrier or other short-term or longer-term fencing plan approved by CDFW will be installed when feasible and necessary around the work area to prevent blunt-nosed leopard lizards from entering the work area. Fencing options may be shorter term (temporary for just a few hours) or longer term (days or weeks) and may include but would not be

limited to a 36-inch- (0.9-meter) tall barrier, buried 6 inches (15 centimeters) deep, and reinforced with rebar or T-posts, and may include escape ramps of silt-fencing material, wood, or soil to allow any undetected blunt-nosed leopard lizard to exit the site. Fencing plans and types may be altered based on length of time the fence is to remain in place, terrain, and Project needs. Fencing will be removed upon Project completion.

- If blunt-nosed leopard lizards are subsequently found within the fenced work area, a section of fence may be removed so that the lizard may leave the exclusion zone. The agency-approved biologist will monitor the location of the blunt-nosed leopard lizard to ensure that it has moved outside of the work area. The fencing will be immediately replaced to exclude the lizard from the construction area. When all observed blunt-nosed leopard lizards have exited the site, additional surveys will be implemented during appropriate conditions for detection for at least five survey days before construction begins to ensure that no more blunt-nosed leopard lizards inhabit the work-area exclusion zone.
- If blunt-nosed leopard lizards are detected during surveys, any active burrow within a 200-foot radius of activity sites will be flagged and marked with a burrow number prior to construction or O&M activities. Flagged, 50-foot (15-meter) exclusion zones will be established around any potentially active burrow. Construction activities, with the exception of essential vehicle operation on existing roads and foot travel, will be prohibited within this exclusion zone. A flashing barrier or appropriate fencing approved by CDFW will be established between burrow(s) and work sites. The barrier or fencing will be established at least 180 degrees around the burrow site and will flare out at the ends to direct lizards away from the activity sites. The barrier or fencing will not enclose an active burrow site.
- An agency-approved biological monitor will monitor all vehicular traffic within 200 feet (61 meters) of active burrows by escorting all vehicles through this zone on foot. The monitor will walk in front of the vehicle to ensure that no blunt-nosed leopard lizards are in the road or path of travel. All personnel vehicles or other vehicles not needed for construction activities will park at least 200 feet (61 meters) from the flagged burrow site and crews will walk into the work area.
- An agency-approved biological monitor will be on site for any activities within suitable blunt-nosed leopard lizard habitat. Prior to construction or O&M activities each day within suitable blunt-nosed leopard lizard habitat, the monitor will conduct a brief ground survey of the site during appropriate conditions for detection to verify that no blunt-nosed leopard lizards are visible within the site. The agency-approved biological monitor will have the authority to stop and/or redirect Project activities in coordination with the Project manager and Western's natural resources staff to ensure the protection of blunt-nosed leopard lizards. The agency-approved biological monitor will complete daily reports/logs summarizing activities and environmental compliance.
- Vehicle speed limit of 15 mph (24 kph) will be enforced during construction and O&M activities on all nonpublic Project access roads within blunt-nosed leopard lizard habitat and outside of blunt-nosed leopard lizard flagged areas. Vehicle speeds within 200 feet (61 meters) of flagged blunt-nosed leopard lizard areas (known presence) will be contingent upon the walking speed of biological monitor.

MM BIO-9 **Avoidance and minimization measures for special-status reptiles.** To protect California legless lizard, coast horned lizard, and San Joaquin whipsnake, Western will implement the following measures during construction and ground-disturbing O&M activities.

- A preconstruction survey for California legless lizard, coast horned lizard, and San Joaquin whipsnake will be conducted by an agency-approved biologist in all suitable habitats where tower construction, new access roads, or ground-disturbing O&M activities will affect suitable sandy grassland, scrub, sycamore, or sandy wash habitats. The survey will be conducted within 14 to 30 days of the onset of construction. If individuals of these species are not found, no further action will be required.
- If California legless lizard, coast horned lizard, or San Joaquin whipsnake are found, occupied habitat as well as other suitable habitats will be avoided to the extent feasible. An agency-approved biologist will conduct daily surveys in suitable habitats during construction and O&M activities and will attempt to capture or otherwise move animals out of harm's way when necessary.

MM BIO-10 **Avoidance and minimization measures for giant garter snake.** Western will implement the following measures to protect giant garter snake during construction and O&M activities in Los Banos Creek and adjacent uplands below the dam impounding Los Banos Creek Reservoir.

During construction activities:

- A preactivity survey will be conducted no more than 24 hours before construction activities begin, and an agency-approved biologist will be on site during all activities in potential giant garter snake aquatic and upland habitats. Preactivity surveys will be repeated whenever a lapse in construction activity of two weeks or longer occurs. The biologist will have the authority to stop construction if a giant garter snake is encountered; construction may resume when the snake has been seen to leave the area on its own or the agency-approved biologist confirms the snake will not be harmed. Only personnel with a USFWS 10(a)(1)(A) recovery permit will have the authority to capture and/or relocate giant garter snakes encountered in project area. All sightings and incidental take will be reported to the Western Natural Resources Department, who will report to the USFWS.

During Category A O&M activities (Appendix D):

- Implement EPMs.

During Category B O&M activities (Appendix D):

- With the exception of direct application, use of herbicides within 200 feet (61 meters) of potential giant garter snake habitat will be prohibited at all times.
- Giant garter snake aquatic and upland habitats will be flagged as environmentally sensitive areas by an agency-approved biologist within or adjacent to the disturbance footprint. Only manual vegetation removal will be allowed within the flagged area.
- An agency-approved monitor will be present for O&M activities within the flagged area. Ground-disturbing activities will be avoided within 200 feet (61 meters) from the banks of giant garter snake aquatic habitat. If this were not feasible, O&M activities will be conducted between May 1 and September 30, the giant garter snake active period, and all potentially affected aquatic habitats will be dewatered prior to any ground

disturbance. Dewatered areas will remain dry with no puddled water remaining for at least 15 consecutive days prior to excavation or filling of that habitat. If a site could not be completely dewatered, prey items will be netted or otherwise salvaged if present.

- If it is not feasible to conduct O&M activities between May 1 and September 30, the Sacramento Fish and Wildlife Office will be contacted, and the following actions will be performed:
  - A pre-activity survey will be conducted no more than 24 hours before construction activities begin, and an agency-approved biologist will be on site during all activities in potential giant garter snake aquatic and upland habitat. Pre-activity surveys will be repeated whenever a lapse in construction activity of two weeks or longer occurs. The biologist will have the authority to stop construction if a giant garter snake is encountered; construction may resume when the snake has been seen to leave the area on its own or the agency-approved biologist confirms the snake will not be harmed. Only personnel with a USFWS 10(a)(1)(A) recovery permit will have the authority to capture and/or relocate giant garter snakes encountered in the Project area. All sightings and incidental take will be reported to the Western Natural Resources Department, who will report to the USFWS
  - Any temporary fill and debris that might provide habitat for giant garter snakes will be immediately removed and disturbed areas will be restored to pre-Project conditions after completion of O&M activities. Restoration work could include replanting species removed from banks or replanting emergent vegetation in the active channel. Filter fences and mesh will be of a material that will not entrap reptiles and amphibians. Erosion-control blankets will be used as a last resort because of their tendency to biodegrade slowly and trap reptiles and amphibians. No monofilament plastics will be used for erosion control near aquatic features.

During Category C O&M activities (Appendix D):

- Follow all measures listed for Category A and B activities above. Prior to site mobilization, Western will provide notification to appropriate agencies.

MM BIO-11 **Avoidance and minimization measures for western pond turtle.** Western will implement the following measures to protect western pond turtle during construction and O&M activities.

During construction activities:

- A preconstruction survey for western pond turtles will be conducted by an agency-approved biologist in all construction areas identified as potential nesting or dispersal habitat located within 1000 feet (305 meters) of potential aquatic habitat. The survey will be conducted within 48 hours prior to initiation of construction activities. If a western pond turtle is found during preconstruction surveys in an area where it may be affected by construction, an agency-approved biologist will relocate it with permission from CDFW to a site that is a suitable distance from construction activities as necessary. If a nest is found within the construction area, construction will not take place within 100 feet (30.5 meters) of the nest until the turtles have hatched and have left the nest or can be safely relocated, as determined through coordination with CDFW.
- Because attempting to locate pond turtle nests will not necessarily result in detection, after completion of preconstruction surveys and any necessary relocation, exclusion

fencing will be placed around all construction sites adjacent to suitable aquatic habitats during the nesting season to eliminate the possibility of nest establishment in uplands adjacent to aquatic areas, as necessary.

- If construction activities occur near aquatic areas where turtles have been identified during preconstruction or other surveys, a biological monitor will be present during construction. If a turtle is found, it will be relocated, if necessary, to a site a suitable distance from construction activities.
- If a pond turtle is encountered on the Project site, any construction activity that could result in harm of the turtle will immediately cease and will not resume until the agency-approved biologist has moved the turtle to a safe location.

During O&M activities:

- For Category A activities (Appendix D): follow standard EPMs.
- For Category B and C activities (Appendix D): From April 15 to July 15, any ground-disturbing activity within 400 feet (122 meters) of a permanent pond, lake, creek, river, or slough that could affect the bed, bank, or water quality of any of these features will be prohibited or an agency-approved biologist will inspect the Project area. If adult or juvenile pond turtles are present, an agency-approved biologist will monitor Project activities to ensure that no turtles are harmed. If the biologist determines that nests could be adversely affected, potential nesting areas will be avoided between June 1 and October 31.

MM BIO-12 **Provide compensatory mitigation for impacts to special-status reptiles.** If habitat for listed or other special-status reptiles cannot be avoided, Western will provide compensatory mitigation as follows:

- **Alameda Whipsnake.** Western will compensate for permanent and temporary loss of upland scrub habitats that could support Alameda whipsnake by (a) purchasing credits at a conservation bank approved by CDFW and USFWS, (b) purchasing a conservation easement, (c) donating funds to an approved in-lieu fee program, or (d) restoring habitats affected by the Project. For on-site creation or restoration, Western will develop and implement a mitigation, monitoring, and reporting plan with input from and approval by regulatory agencies that outlines performance standards and success criteria for ensuring long-term success of mitigation.
- **Blunt-Nosed Leopard Lizard.** Western will provide compensation for permanent and temporary impacts to blunt-nosed leopard lizard habitat by (a) purchasing credits at a conservation bank approved by CDFW and USFWS, (b) purchasing a conservation easement, (c) donating funds to an approved in-lieu fee program, or (d) restoring habitats affected by the Project. For on-site creation or restoration, Western will develop and implement a mitigation, monitoring, and reporting plan with input from and approval by regulatory agencies that outlines performance standards and success criteria for ensuring long-term success of mitigation.
- **Other Special-Status Reptiles.** If California legless lizard, coast horned lizard, or San Joaquin whipsnake are found during preconstruction surveys and avoidance of habitats is not feasible, Western will restore habitats temporarily affected. Surveys, fencing, and compensatory mitigation for blunt-nosed leopard lizard habitat and upland habitat for California red-legged frog and California tiger salamander will benefit these species as well.

MM BIO-13 **Avoidance and minimization measures for California red-legged frog.** Western will implement the following measures to protect California red-legged frog during construction and O&M activities.

During construction activities:

- California red-legged frog presence will be assumed in all aquatic habitats for which protocol surveys have not been conducted in the year prior to construction. Uplands within 1 mile (1.6 kilometers) will be assumed to be occupied around all aquatic habitats for which protocol surveys have not been conducted.
- If the Project may affect California red-legged frog, take authorization/permits will be obtained from the USFWS. Upon completion of the authorization/permit process, Western will implement the terms and conditions of the authorizations, which could include but may not be limited to the following.
  - Transmission towers and new access roads will be sited as far from aquatic habitats as is feasible.
  - To the extent feasible, construction activities will take place during the dry season (generally June 1 through September 30) within 1.24 miles (2 kilometers) of aquatic habitats. If construction extends into the wet season (generally October 1 through May 31), temporary exclusion fencing will be installed 100 feet (30.5 meters) out from work areas to prevent California red-legged frogs from entering construction areas as necessary.
  - Escape ramps will be constructed in all trenches or excavations to allow wildlife to escape.
  - Biological monitoring will be provided by a USFWS-approved biologist during construction in all areas within 1.24 miles (2 kilometers) of aquatic habitats. The biological monitor will identify, capture, and relocate sensitive amphibians present in work areas if necessary.
  - A 300-foot (91-meter) setback, incorporating both riparian vegetation and uplands, will be provided on all sides of aquatic habitats identified as occupied or assumed occupied by red-legged frogs as feasible. A setback may be reduced or expanded through consultation with the USFWS depending on whether it would (a) affect habitat or (b) result in adverse impacts to the species or the biological values of the habitat. Setbacks will maintain existing vegetation free of disturbance and new construction, equipment storage, vehicle parking, and other activities that might compact or disturb soils or vegetation or that could introduce contaminants into aquatic habitats. Setbacks will be clearly delineated during the construction.
  - Water quality will be maintained through implementation of appropriate erosion-control measures to reduce siltation and contaminated runoff from Project sites by maintaining vegetation within buffers and/or through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.
  - Construction and other ground disturbances will be prohibited within setbacks. The use of insecticides, herbicides, rodenticides, and pesticides will occur in accordance with USEPA guidelines addressing the use of these materials in occupied California red-legged frog habitat.

- Where aquatic sites cannot be avoided by 300 feet (91 meters) on all sides, a USFWS-approved biologist will survey the work site immediately prior to construction activities. If California red-legged frogs, tadpoles, or egg masses are found, the approved biologist will contact USFWS to determine whether moving any of these life-stages is appropriate. In making this determination USFWS will consider whether an appropriate relocation site exists. If USFWS approves moving animals, the approved biologist will be allowed sufficient time to move California red-legged frogs from the work site before work activities begin. Only USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. Bare hands will be used to capture California red-legged frogs. USFWS-approved biologists will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within two hours before and during periods when they are capturing and relocating individuals. To avoid transferring disease or pathogens from handling the amphibians, USFWS-approved biologists will follow the *Declining Amphibian Populations Task Force Fieldwork Code of Practice*.

During O&M activities:

- A USFWS-approved biologist will identify potential California red-legged frog breeding habitat within the vicinity of O&M activities, and will flag a 500-foot (152-meter) buffer. The following restrictions will apply within the buffer: (1) only manual vegetation removal will be allowed; (2) only direct (e.g., injection and cut-stump) herbicide application methods will be allowed, except when otherwise restricted; (3) no ground disturbance (e.g., digging or auguring) will be allowed; and (4) erosion-control devices will be of a material that will not entrap amphibians.
- If it is not feasible to follow the above-stated measures, a pre-activity survey will be conducted no more than 24 hours before Project O&M activities begin. If ground disturbance is required, an USFWS-approved biologist will identify potential California red-legged frog upland refuge habitat within disturbance areas. Areas that may provide suitable upland refuge will be avoided to the extent feasible. Ground disturbance will not occur in California red-legged frog aquatic/breeding habitat. If an area that provides suitable upland refuge must be impacted, a USFWS-approved biologist will determine if California red-legged frogs are present using visual surveys, an endoscope, or other accepted detection method. If California red-legged frogs are detected, the area will be avoided using a buffer determined appropriate by the biologist, and a USFWS-approved monitor will remain on site to ensure that California red-legged frogs are not impacted during Project activities in the vicinity. A USFWS-approved biologist will remain on site during all activities to ensure protection of California red-legged frog or an exclusion barrier will be constructed around the work site using USFWS-approved methods and materials. Exclusion materials will be removed at the end of the work activity. Crews will inspect any trenches left open for more than 24 hours for trapped animals. Only a USFWS-approved biologist will remove trapped animals.
- To comply with the California red-legged frog injunction for herbicide applications, Western will ensure that, in the counties named in the injunction, there will be no ground application of any of the chemicals named in the injunction (http://www.epa.gov/espp/litstatus/redleg-frog/steps-info.htm). Currently, the no-use buffer is 60 feet (18 meters) from any aquatic feature, aquatic breeding habitat, non-breeding aquatic habitat, and upland habitat.

MM BIO-14 **Avoidance and minimization measures for California tiger salamander and western spadefoot.** To protect California tiger salamander and western spadefoot, Western will implement the following measures.

During construction activities:

- California tiger salamander presence will be assumed in all aquatic habitats for which protocol surveys have not been conducted in the year prior to construction. Uplands within 1 mile (1.6 kilometers) will be assumed to be occupied around all aquatic habitats for which protocol surveys have not been conducted
- If the Project may affect California tiger salamander, take authorization/permits will be obtained from the USFWS. Upon completion of the authorization/permit process, Western will implement the terms and conditions of the authorizations.
- Transmission towers and new access roads will be sited as far from aquatic habitats as is feasible.
- To the extent feasible, construction activities will take place during the dry season (generally June 1 through September 30) within 1.24 miles (2 kilometers) of aquatic habitats. If construction extends into the wet season (generally October 1 through May 31), temporary exclusion fencing will be installed 100 feet (30.5 meters) out from work areas to prevent California tiger salamanders and western spadefoots from entering construction areas as necessary.
- Escape ramps will be installed in all trenches or excavations to allow wildlife to escape.
- Biological monitoring will be provided by an agency-approved biologist during construction in all areas within 1.24 miles (2 kilometers) of aquatic habitats. The biological monitor will identify, capture, and relocate sensitive amphibians present in work areas if necessary.
- A 300-foot (91-meter) setback, incorporating both riparian vegetation and uplands, will be provided on all sides of aquatic habitats identified as occupied or assumed occupied by California tiger salamanders and western spadefoots. A setback may be reduced or expanded in consultation with the USFWS depending on whether it would (a) affect habitat or (b) result in adverse impacts to the species or the biological values of the habitat. Setbacks will maintain existing vegetation free of disturbance and new construction, equipment storage, vehicle parking, and other activities that might compact or disturb soils or vegetation or that could introduce contaminants into aquatic habitats. Setbacks will be clearly delineated during the construction.
- Water quality will be maintained through implementation of appropriate erosion-control measures to reduce siltation and contaminated runoff from Project sites by maintaining vegetation within buffers and/or through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.
- Construction and other ground disturbances will be prohibited within setbacks. The use of insecticides, herbicides, rodenticides, and pesticides will occur in accordance with USEPA guidelines addressing the use of these materials in occupied California tiger salamander and western spadefoot habitat.
- Where aquatic sites cannot be avoided by 300 feet (91 meters) on all sides, an agency-approved biologist will survey the work site immediately prior to construction activities.

If California tiger salamanders, larvae, or eggs are found, the approved biologist will contact USFWS to determine whether moving any of these life-stages is appropriate. In making this determination USFWS will consider whether an appropriate relocation site exists. If USFWS approves moving animals, the approved biologist will be allowed sufficient time to move California tiger salamanders and western spadefoots from the work site before work activities begin. Only USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of California tiger salamanders. Bare hands will be used to capture salamanders and toads. USFWS-approved biologists will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within two hours before and during periods when they are capturing and relocating individuals. To avoid transferring disease or pathogens from handling the amphibians, agency-approved biologists will follow the *Declining Amphibian Populations Task Force Fieldwork Code of Practice*.

During O&M activities:

- A USFWS-approved biologist will identify potential California tiger salamander breeding habitat in the vicinity of O&M activities, and will flag a 500-foot buffer. The following restrictions will apply within the buffer: (1) only manual vegetation removal will be allowed; (2) only direct (e.g., injection and cut-stump) herbicide application methods will be allowed, except when otherwise restricted; (3) no ground disturbance (e.g., digging or augering) will be allowed; and (4) erosion-control devices will be of a material that will not entrap amphibians.
- If it is not feasible to follow the above-stated measures, a pre-activity survey will be conducted no more than 24 hours before O&M activities begin. If ground disturbance is required, a USFWS-approved biologist will identify potential CTS aestivation habitat (burrows, rock piles) within disturbance areas. CTS aestivation habitat will be avoided to the extent feasible. Ground disturbance will not occur in CTS breeding/aquatic habitat. If a burrow or other potential aestivation habitat must be impacted, a USFWS-approved biologist will determine if CTS are present within the burrow using an endoscope or other accepted detection method. If CTS are detected, the burrow will be avoided using a buffer determined appropriate by the biologist and a USFWS-approved monitor will remain on site to ensure that CTS are not impacted during Project activities in the vicinity. A USFWS-approved biologist will remain on site during all activities to ensure protection of CTS or an exclusion barrier will be constructed around the work site using USFWS-approved methods and materials. Exclusion materials will be removed at the end of the work activity. Crews will inspect any trenches left open for more than 24 hours for trapped animals. Only a USFWS-approved biologist will remove trapped animals.

MM BIO-15 **Provide compensatory mitigation for impacts to listed amphibians.** Western will provide compensation for permanent and temporary construction impacts to California tiger salamander and California red-legged frog aquatic and upland habitat through one or more of the following: (a) purchasing credits at a conservation bank approved by CDFW and USFWS, (b) purchasing a conservation easement, (c) donating funds to an approved in-lieu fee program, or (d) restoring habitats affected by the Project. For on-site creation or restoration, Western will develop and implement a mitigation, monitoring, and reporting plan with input from and approval by regulatory agencies that outlines performance standards and success criteria for ensuring long-term success of mitigation.

If Western intends to eliminate aquatic habitat including wetlands, ponds, springs, and other standing water sources, and to create new, on-site habitat, then the newly created habitat will be created and filled with water prior to dewatering and destroying the existing habitat. Dewatering and relocation of aquatic habitats should occur outside of the breeding season for red-legged frogs (approximately January through June).

If Western intends to eliminate aquatic habitat including wetlands, ponds, springs, and other standing water sources, and will not create new, on-site habitat, then dewatering of existing habitat should occur prior to commencement of construction and other site-disturbing activities. Dewatering and relocation of aquatic habitats should occur outside of the breeding season for red-legged frogs (approximately January through June). Preserve lands acquired to offset impacts to the red-legged frog must have occupied habitat of at least equal habitat value as determined by the USFWS.

MM BIO-16 **Avoidance and minimization measures for burrowing owl.** Western will protect burrowing owls by implementing the following methods derived from the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFG, 2012).

During construction activities:

- In coordination with CDFW, a burrowing owl protection and monitoring plan will be developed following guidelines in the updated CDFW staff report (CDFG, 2012). It will include but may not be limited to (a) conducting a protocol survey of the Project area the year before construction begins to identify sites of wintering and breeding activity, (b) identifying measures to avoid and minimize impacts, (c) identifying restrictions on construction activities and buffer distances related to time of year, (d) determining whether burrow exclusion or closure will be necessary, and developing a plan for implementation, (e) developing mitigation measures and a compensation plan for unavoidable impacts, (f) conducting a preconstruction survey, and (g) developing a mitigation and monitoring plan to ensure success of mitigation. Compensatory mitigation could include habitat restoration or contribution to a conservation bank.

During O&M activities:

- From February 1 to August 31, Project construction, herbicide application (with the exception of direct application), and other O&M activities will be prohibited within 250 feet (76 meters) of potential burrowing owl nesting dens (ground squirrel burrows, culverts, concrete slabs, debris piles that could support nesting burrowing owls). From September 1 through January 31, disturbance will be prohibited within 160 feet (49 meters) of potential burrowing owl dens.
- If this is not feasible, a qualified biologist will conduct nesting and wintering surveys using methods described in California Burrowing Owl Consortium 1993, CDFG 2012, or currently accepted method. If nesting or wintering activity is detected, a CDFW-approved biologist will mark and monitor an appropriate no-disturbance buffer in the vicinity of burrows that have been active within the last 3 years.
- Within the buffer zone, all Project construction and O&M activities and herbicide applications will be prohibited from February 1 to August 31.

MM BIO-17 **Provide compensatory mitigation for impacts to occupied burrowing owl habitat.** For unavoidable impacts to burrowing owl habitat known to be occupied within the last 5 years, compensatory mitigation will be required. Compensation may take the form of (a) acquiring and dedicating lands into conservation easements; (b) purchasing mitigation credits at compensation ratios that have been approved by the CDFW; or (c) preserving area contiguous or near the acreage lost. To prevent hazards attributable to interactions between wildlife and aviation, the location of any conservation easement or habitat restoration for burrowing owl shall be located outside of any established Airport Influence Area.

MM BIO-18 **Avoidance and minimization measures for California fully protected birds.** To protect the California fully protected golden eagle and white-tailed kite, Western will implement the following measures. The nesting period for these species is March 1 through August 15.

- For ground-breaking activities that begin outside the nesting season, a preconstruction nesting survey will not be necessary. For all ground-breaking activities that begin during the nesting season, a CDFW-approved biologist will conduct a preconstruction survey in suitable habitats for each species no more than 10 days prior to construction. The survey will encompass 0.5 miles (0.8 kilometers) in all directions from construction areas. If no nesting is detected, no further action will be required.
- During construction, if a golden eagle or white-tailed kite nest is detected, or if it is determined that courtship and nest initiation are underway within the survey distance, Western will establish a 0.5-mile (0.8-kilometer), no-disturbance buffer around the nest or center of activity. The buffer will be maintained until a CDFW-approved biologist has determined that the young have fledged or the nest is no longer active. If this buffer cannot feasibly be implemented, Western will contact and coordinate with CDFW well in advance of ground-disturbing activities (CDFW in litt. 2014c).
- During O&M, if a golden eagle or white-tailed kite nest is detected, or if it is determined that courtship and nest initiation are underway within 0.25 mile (0.4 kilometer), Western will establish a 0.25-mile (0.4-kilometer), no-disturbance buffer around the nest or center of activity; a smaller buffer may be established if a qualified biologist determines that the O&M activity will not adversely affect adults or young.
- When construction or O&M activities begin in a new area during the nesting season, another preconstruction survey will be completed as described above.

MM BIO-19 **Avoidance and minimization measures for least Bell's vireo.** To protect least Bell's vireo, Western will implement the following measures.

- Where any construction-related activity will take place within 1000 feet (305 meters) of potential least Bell's vireo habitat during the nesting season (mid-March through September), a protocol survey will be conducted by an agency-approved biologist, in coordination with the USFWS. If nesting least Bell's vireos are not detected, no further action is required for this species. If nesting is detected, Western will establish a clearly marked no-disturbance buffer of 1000 feet (305 meters) around the nest, or center of activity if the nest cannot be detected. The buffer will be maintained until the agency-approved biologist has determined that the nest is no longer active or that the young have fledged.

- Biological monitoring will be provided by an agency-approved biologist during construction in all areas within 1000 feet (305 meters) of occupied habitat. The biological monitor will ensure that construction activities do not disturb nesting vireos.

MM BIO-20 **Avoidance and minimization measures for Swainson's hawk.** To protect nesting Swainson's hawks, Western will implement the following measures pursuant to guidelines from CDFW (CDFG, 1994) and the Swainson's Hawk Technical Advisory Committee (SWTAC, 2000); and pursuant to informal consultation for the Project initiated January 2014 (CDFW in litt. 2014c). The nesting season for Swainson's hawks, which encompasses the courtship and nest initiation phase, is considered by CDFW to be February 1 through September 15.

During construction activities:

- An agency-approved biologist will conduct preconstruction surveys according to guidelines presented in SWTAC 2000, which establishes five survey periods. During the first period (January 1 to March 20) potential nest locations are identified. During the second period (March 20 to April 5) Swainson's hawks are returning to traditional nesting territories during a time when most nest trees are leafless and birds and their activities are easier to detect. During the third period (April 5 to April 20), pair bonding, courtship, and nest construction are taking place and while nests may be more difficult to see, they can be inferred from increased activity. During the fourth period (April 20 to June 10) nests are difficult to detect and activity is low because adults are incubating. Surveys should not be initiated during the fourth period. During the fifth period (June 10 to July 30), young birds may be active and visible, and both adults are making many visits to the nest with prey. Three surveys will be completed in at least two of the survey periods immediately prior to Project construction. Surveys will encompass the area within 0.5 mile (0.8 kilometer) of construction activities.
- In addition, if ground-disturbing activities are to take place during the breeding season (February 1 through September 15), the CDFW recommends that additional preconstruction surveys for active nests be conducted by a CDFW-approved biologist no more than 10 days prior to the start of construction.
- If an active Swainson's hawk nest is found, a 0.5-mile (0.8-kilometer), no-disturbance buffer will be established around the nest. If such a buffer cannot feasibly be implemented, coordination with CDFW will occur well in advance of ground-disturbing activities and the acquisition of a State incidental take permit pursuant to Fish and Game Code section 2081(b) may be warranted.

During O&M activities:

- From February 1 to September 15, a 0.25-mile buffer zone will be established and maintained around potential Swainson's hawk nest trees, within which there will be no intensive disturbance (e.g., use of heavy equipment, power saws, chippers, cranes, or draglines). This buffer may be adjusted, as assessed by a qualified biologist, based on changes in sensitivity exhibited by birds over the course of the nesting season and the type of O&M activity performed (e.g., high noise or human activity such as mechanical vegetation maintenance versus low noise or human activity such as semi-annual patrols), or a qualified biologist will conduct nest surveys using methods described in SHTAC 2000 (or more current protocol) to determine absence.

- Within 0.25 mile of an active nest, routine O&M activities will be deferred until after the young have fledged or until it is determined by a CDFW-approved biologist that the activities will not adversely affect adults or young.

MM BIO-21 **Provide compensatory mitigation for impacts to Swainson's hawk foraging habitat.** Compensatory mitigation will be required for loss of Swainson's hawk foraging habitat using compensation ratios provided in CDFG 1994 (or a more current document) or a ratio determined through coordination with CDFW. As provided in CDFW 2014c, compensatory mitigation for Swainson's hawk will also be required for loss of nest trees. To prevent hazards attributable to interactions between wildlife and aviation, the location of any compensatory mitigation for Swainson's hawk shall be located outside of any established Airport Influence Area.

MM BIO-22 **Avoidance and minimization measures for tricolored blackbird.** Tricolored blackbird nests colonially in a variety of densely vegetated habitats. The nesting season for tricolored blackbird is March 1 through August 15.

During construction activities:

- For ground-breaking activities that begin or take place outside the nesting season, a preconstruction nesting survey will not be necessary. For all ground-breaking activities that begin during the nesting season, a biologist experienced with tricolored blackbirds and their range of habitats will conduct a preconstruction survey no more than 10 days prior to construction. The survey will encompass 500 feet (152 meters) in all directions from construction areas. If no nesting is detected, no further action will be required.
- If nesting is detected, or if it is determined that courtship and nest initiation are underway within 500 feet (152 meters) of a construction or laydown area, Western will establish a clearly marked 500-foot (152-meter), no-disturbance buffer around the outer edges of the habitat. The buffer will be maintained until a CDFW-approved biologist has determined that the colony is no longer active.
- If tricolored blackbirds begin nesting near construction or laydown areas after construction has started, a clearly marked no-disturbance buffer will be established around the colony that is the maximum feasible size for the circumstances. The buffer will be maintained until the colony is no longer active.
- Biological monitoring will be provided by a CDFW-approved biologist during construction in all areas within 500 feet (152 meters) of occupied habitat. The biological monitor will ensure that construction activities do not disturb the colony.
- When construction begins in a new area during the nesting season, another preconstruction survey will be completed as described above.

During O&M activities:

- From March 1 to August 15, herbicide application (with the exception of direct application) and vegetation clearing/disturbance will be prohibited in marshes, willows, and blackberry thickets, or a qualified biologist will conduct a nesting survey prior to O&M activities. If nesting activity is detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nesting colony within which all O&M activities and herbicide applications will be prohibited from March 1 to August 15.

MM BIO-23 **Avoidance and minimization measures for other special-status and native birds.** To protect loggerhead shrike, long-eared owl, Modesto song sparrow, northern harrier, short-eared owl, yellow-headed blackbird, and other non-listed birds protected by the MBTA and California Fish and Game Code, Western will implement the following measures. The nesting season for these species is March 1 through August 31.

- For ground-breaking activities that begin or take place outside the nesting season, a preconstruction nesting survey will not be necessary. For all ground-breaking activities that begin during the nesting season, a CDFW-approved biologist will conduct a preconstruction survey in suitable habitats for each of these species no more than 10 days prior to construction. The survey will encompass 250 feet (76 meters) in all directions from construction areas for loggerhead shrike, Modesto song sparrow, and yellow-headed blackbird, and 500 feet (152 meters) for long-eared owl, northern harrier, and short-eared owl. For species covered by the MBTA and California Fish and Game Code, but with no other special status, the survey area will encompass a sufficient area around the work site to identify nests that are present and determine their status. A sufficient area means any nest within an area that could potentially be affected by the Project. If no nesting is detected, no further action will be required.
- During construction, if nests of loggerhead shrike, long-eared owl, Modesto song sparrow, northern harrier, short-eared owl, or yellow-headed blackbird are detected, or if it is determined that courtship and nest initiation are underway within this survey distance, Western will establish a clearly marked 250-foot (76-meter), no-disturbance buffer around each nest or center of activity for loggerhead shrike, Modesto song sparrow, and yellow-headed blackbird, and a 500-foot (152-meter) buffer around each nest or center of activity for long-eared owl, northern harrier, and short-eared owl. Buffers will be maintained until a CDFW-approved biologist has determined that the young have fledged or the nest is no longer active.
- During O&M, if nests of loggerhead shrike, long-eared owl, Modesto song sparrow, northern harrier, short-eared owl, and/or yellow-headed blackbird are detected, or if it is determined that courtship and nest initiation are underway within the survey distance, Western will establish a clearly marked 250-foot (76-meter), no-disturbance buffer around each nest or center of activity for loggerhead shrike, Modesto song sparrow, and yellow-headed blackbird, and a 500-foot (152-meter) buffer around each nest or center of activity for long-eared owl, northern harrier, and short-eared owl; a smaller buffer may be established if the biologist determines that the O&M activity will not adversely affect adults or young.
- Identified nests will be surveyed prior to construction or O&M activities to establish a behavioral baseline. Once work commences, all nests of MBTA- and Fish and Game Code–covered birds that are not designated as any other special status will be monitored during work activities to detect any behavioral changes as a result of the Project. If behavioral changes are observed, the work causing that change will cease and CDFW and USFWS will be contacted for additional avoidance and minimization measures. *Or,* if monitoring of identified nests by an agency-approved wildlife biologist is not feasible, CDFW and USFWS recommend a minimum no-disturbance buffer of 250 feet (76 meters) around active nests of non-listed passerine-type bird species and a 500-foot (152-meter), no-disturbance buffer around the nests of non-listed raptors until the breeding season has ended, or until an agency-approved biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care

for survival. Variance from these no-disturbance buffers may be implemented when there is compelling biological or ecological reason to do so, such as when Project activities would be concealed from a nest site by topography. Any variance from these buffers will be supported by an agency-approved biologist and it is recommended that CDFW and USFWS be notified in advance of implementation of a no-disturbance buffer variance.

- When construction or O&M begins in a new area during the nesting season, another preconstruction survey will be completed as described above.

MM BIO-24 **Avoidance and minimization measures for American badger.** To protect American badger, Western will implement the following measures.

- Concurrent with other required surveys (e.g., kit fox and burrowing owl), a CDFW-approved biologist will conduct a preconstruction survey to identify the presence of American badgers. If this species is not found, no further action will be required. If badgers are identified, they will be passively relocated using burrow exclusion (e.g., installing one-way doors on burrows) or similar CDFW-approved exclusion methods. In unique situations it might be necessary to actively relocate badgers (e.g., using live traps) to protect individuals from potentially harmful situations. Such relocation will be performed with advanced CDFW coordination and concurrence. When unoccupied dens are encountered outside of work areas but within 100 feet (30.5 meters) of proposed activities, vacated dens will be inspected to ensure they are empty and temporarily covered using plywood sheets or similar materials.
- If badger occupancy is determined at a given site within a construction area, construction will be halted. Depending on the den type, reasonable and prudent measures to avoid harming badgers will be implemented and may include seasonal limitations on Project construction near the site (i.e., restricting the construction period to avoid spring-summer pupping season), establishing a construction exclusion zone around the identified site, or resurveying the den a week later to determine species presence or absence.

MM BIO-25 **Avoidance and minimization measures for special-status bats.** To protect Townsend's big-eared bat and other special-status bats, Western will minimize impacts by performing preconstruction surveys and creating no-disturbance buffers around active bat-roosting sites, especially maternity roosts and especially during the bat pupping season (April 1 through August 15) for Project construction and O&M activities using the following measures.

- Before construction or O&M activities within 250 feet (76 meters) of trees, cliffs, or caves, a CDFW-approved bat biologist will survey for special-status bats. If no evidence of bats (i.e., direct observation, guano, staining, or strong odors) is observed, no further mitigation will be required. If evidence of bats is observed, Western will implement the following measures to avoid potential impacts on breeding populations:
  - A no-disturbance buffer of 250 feet (76 meters) will be created around active bat roosts or occupied roosting habitat during the pupping season (April 1 through August 15). Bat roosts initiated during construction will be presumed to be unaffected by the indirect effects of noise and construction disturbances. However, the direct take of individuals will be prohibited without further coordination with CDFW.

- Removal of trees showing evidence of active bat use will occur during the periods least likely to affect bats in winter hibernacula or maternity roosts, as determined by a CDFW-approved bat biologist (generally between August 15 and October 15, and between February 15 and April 1). If the exclusion of bats from potential roost sites is necessary to prevent indirect impacts due to construction noise and adjacent human activity, bat exclusion activities (e.g., installation of netting to block roost entrances) will be conducted by a CDFW-approved biologist.

MM BIO-26 **Avoidance and minimization measures for special-status kangaroo rats.** Western will either assume presence of giant and short-nosed kangaroo rats and implement measures to avoid or minimize impacts, or conduct research to assess habitat potential. Research could take the form of (a) evaluating the Project area using a model based on satellite imagery currently being applied to giant kangaroo rat habitats throughout their range (T. Bean pers. comm.) or other habitat models, or (b) conducting protocol trapping in potentially suitable areas immediately prior to construction. If research indicates that kangaroo rats are not likely to be present, no further action will be required. If Western either assumes presence or research indicates that either kangaroo rat species could be present, Western will implement the following measures.

- Prior to construction or O&M activities, any active burrows in the vicinity of work sites will be flagged and marked with a burrow number. Exclusion zones with a 30-foot (9-meter) radius will be established around any active burrow. Construction activities, with the exception of essential vehicle operation on existing roads and foot travel, will be prohibited within this exclusion zone.
- A biological monitor will be on site for all activities within suitable kangaroo rat habitat. Prior to construction or O&M activities each day within suitable habitat, the monitor will conduct a brief ground survey of the site to verify that no kangaroo rats are present within the site. The biological monitor will have the authority to stop and/or redirect Project activities in coordination with the Project manager and Western's natural resources staff to ensure the protection of giant kangaroo rats. The biological monitor will complete daily reports/logs summarizing activities and environmental compliance.
- Installation of barrier fencing around the work site may be used to further limit the risk of direct impacts to kangaroo rats where necessary. Barrier fencing will at no time inhibit the kangaroo rat's ability to move between its den and other habitats that allow breeding, feeding, and sheltering. All barriers will be removed at the end of Project activities.
- If giant kangaroo rats are detected within a disturbance site, through coordination with USFWS and if necessary, they may be relocated to a suitable site away from Project activities but as close to the disturbance site as feasible. Relocation methods will follow the recommendations in Tennant et al. (2013) or other USFWS-approved methods.

MM BIO-27 **Avoidance and minimization measures for San Joaquin kit fox.** To protect San Joaquin kit fox, Western will implement the following measures.

- To the extent feasible, Western will avoid Project construction and O&M activities that require ground disturbance or off-road travel between December 1 and May 31, the kit fox breeding/pupping season.
- Prior to Project construction or O&M activities that involve ground disturbance, off-road travel, or vegetation management in suitable kit fox habitat, an agency-approved biologist will conduct habitat/den surveys in accordance with the "Small Projects" recommendations in the 2011 USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS, 2011). Any suitable den (i.e., burrow with an entrance greater than 4 inches in diameter) will be monitored for evidence of kit fox use by placing either a tracking medium or wildlife monitoring cameras at the entrance for at least three consecutive nights. Active dens will be marked with a 100-foot (30.5-meter) buffer and natal or pupping dens (December 1 through May 31) will be marked with a 1,000-foot (305-meter) buffer. Construction activities, with the exception of essential vehicle operation on existing roads and foot travel, will be prohibited within this buffer area.
- If activities must occur within 100 feet (30.5 meters) of an active den, San Joaquin kit foxes will be excluded from the den. Methods will follow those outlined in USFWS 2011. The den will be monitored for at least five consecutive nights from initial observation to allow the animal to move to another den during its normal activity. Use of this den may be discouraged by partially plugging the den in such a manner that any resident animal can easily escape but may be discouraged from re-entering. Once the kit fox has abandoned the den or is still present after five or more consecutive days of partial plugging and monitoring, the den will be plugged or excavated (by hand as feasible) when the qualified biologist determines that the animal is absent due to normal activities. Natal dens will not be destroyed or disturbed during breeding/pupping season (December 1 through May 31).
- A biological monitor will be on site for any work activities within suitable kit fox habitat. Prior to construction activities each day, the monitor will conduct a brief ground survey of the site to verify that no kit foxes are present. The biological monitor will have the authority to stop and/or redirect Project activities in coordination with the Project manager and Western's natural resources staff to ensure the protection of kit foxes. The biological monitor will complete daily reports/logs summarizing activities and environmental compliance.
- Installation of barrier fencing around the work site may be used to further limit the risk of direct impacts on kit fox. If necessary, barrier fencing will be used to prevent kit foxes from entering the work site and getting injured or killed by equipment but will at no time inhibit the kit fox's ability to move between its den and other habitats that allow breeding, feeding, and sheltering. All barriers will be removed at the end of construction or O&M work.
- Any excavated, steep-walled holes or trenches more than 2 feet (0.6 meter) deep will be covered at the close of each working day with plywood or similar materials or escape ramps will be installed in the hole or trench. Before any hole or trench is filled, it will be inspected for trapped animals.

- All construction pipes, culverts, or similar structures with a diameter of 4 inches (10 centimeters) or more that are stored at a construction site overnight will be thoroughly inspected for kit foxes before the pipe is buried, capped, or moved. If a kit fox is discovered inside a pipe, that section of pipe will not be moved until the kit fox has left the pipe.
- Use of rodenticides and herbicides in the Project area will be limited to the extent feasible. Use of any such compounds will observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and federal legislation. If rodent control must be conducted, zinc phosphide will be used as feasible because it presents a lower risk to kit foxes.

MM BIO-28 **Provide compensatory mitigation for impacts to San Joaquin kit fox.** Compensatory mitigation will be required for temporary and permanent impacts to San Joaquin kit fox habitat. Compensation may take the form of (a) acquiring and dedicating lands into conservation easements or (b) purchasing mitigation credits at compensation ratios that have been approved by State and federal agencies. Impacts within conservation easements may require compensatory mitigation at higher ratios than impacts outside of easements, and mitigation will be consistent with the requirements of the easement.

Level of Significance after Mitigation

Mitigation Measures BIO-1 through BIO-28 provide a variety of avoidance and minimization measures for listed and other special-status species and their habitats. Preconstruction surveys would be conducted for special-status species including plants (MM BIO-1), Alameda whipsnake (MM BIO-7), blunt-nosed leopard lizard (MM BIO-8), California Species of Special Concern reptiles and amphibians (MMs BIO-9 and BIO-14), giant garter snake (MM BIO-10), western pond turtle (MM BIO-11), California red-legged frog (MM BIO-13), California tiger salamander (MM BIO-14), burrowing owl (MM BIO-16), least Bell's vireo (MM BIO-19), Swainson's hawk (MM BIO-20), tricolored blackbird (MM BIO-22), other special-status and native birds (MMs BIO-18 and BIO-23), American badger (MM BIO-24), special-status bats (MM BIO-25), special-status kangaroo rats (MM BIO-26), and San Joaquin kit fox (MM BIO-27). These mitigation measures include a suite of species-specific avoidance and minimization measures for special-status species, if present, to be implemented during construction and O&M activities. These avoidance and minimization measures include biological monitoring; seasonal restrictions; buffers around occupied habitats, burrows, and nests; relocation of individuals from work areas to nearby suitable habitat out of harm's way; exclusion fencing in occupied habitats; restrictions on herbicide and rodenticide use; and management of potential wildlife pitfalls to avoid entrapment.

Where avoidance of impacts to occupied habitats is not feasible, Western would provide compensatory mitigation and habitat replacement as described in Mitigation Measures BIO-3 (plants), BIO-4 (federally listed branchiopods), BIO-6 (valley elderberry longhorn beetle), BIO-12 (special-status reptiles), BIO-15 (listed amphibians), BIO-17 (burrowing owl), BIO-21 (Swainson's hawk), and BIO-28 (San Joaquin kit fox). Compensatory mitigation would vary by species and impact area, consistent with agency-accepted guidelines and permit conditions (as applicable). Compensatory mitigation for most species can be achieved through (a) purchasing credits at a conservation bank approved by CDFW and USFWS, (b) purchasing a conservation easement, (c) donating funds to an approved in-lieu fee program, or (d) restoring habitats affected by the Project.

Together, implementation of Mitigation Measures BIO-1 through BIO-28 would effectively avoid, minimize, and compensate for impacts to special-status plants and wildlife and their habitats, and this impact would be less than significant in each Project segment.

Impact BIO-2 Adversely and substantially affect native plant communities, including riparian areas or other sensitive communities.

Construction activities would result in direct adverse effects to native vegetation, including sensitive communities, primarily from vegetation removal and grading for access roads, tower pads, and other temporary and permanent ground disturbance. Loss of sensitive native vegetation is adverse in a regional context, due to limited distribution. Direct impacts to native vegetation would be moderate in intensity, as vegetation removal would be dispersed throughout the entire Project area. Table 4.4-1 presents estimated temporary and permanent disturbance by vegetation and landform type within the Project corridor. Because the exact locations of Project features is not yet known, the estimates were developed by calculating the proportion of the total acres in each segment corridor that would be subject to temporary and permanent disturbance, and applying that proportion to the amount of each habitat type in the corridor. Only those impacts that would occur entirely within the corridors (i.e., new structures, pulling sites, the new Tracy East Substation [North Segment], and the new Los Banos West Substation [San Luis 500-kV Segment]) can be estimated because vegetation was mapped only within the corridors (see Figure 3 of Appendix C). Roads and material storage yards may occur outside the corridors and would result in additional temporary and permanent direct impacts to vegetation during construction. See Appendix E for Project disturbance assumptions.

Indirect effects to vegetation during construction could occur from dust, erosion, and degradation of habitat and competition from spread of invasive weeds; these effects would range from short-term (dust and erosion) to long-term (habitat degradation and spread of weeds). Indirect effects would be of the same type but of a lower magnitude during O&M activities.

Impacts to great valley riparian forest and scrub habitats and freshwater emergent wetlands would occur if large woody vegetation was removed from the water's edge in riparian habitats. This could result in additional solar heating of the water. Removing vegetation in riparian zones could also result in erosion with the subsequent increase in sedimentation of the watercourse. This could reduce the value of the habitat to aquatic and semi-aquatic wildlife. However, sedimentation control measures would be implemented to prevent sediment from reaching riverine habitat.

Where previously cleared areas are not available, it may be necessary to clear vegetation for pulling sites and staging areas. These areas may include locations where pulling sites occur at turning structures. Removing vegetation in these areas would be a short-term impact because temporarily disturbed areas would be restored following construction. However, this ground disturbance may contribute to the introduction or spread of noxious weeds.

The introduction and spread of invasive weeds can adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. Vegetation removal and other land-disturbing activities and access road use can contribute to the introduction or spread of invasive weeds. Equipment would be washed prior to entering sensitive areas within the Project area to avoid introducing new weed seeds. In addition, seed mixtures applied for erosion control and restoration will be certified as free of noxious weed seed, and will be composed of native species or sterile nonnative species. Where appropriate, herbicides would be used to control weeds, but use would conform with standards in the California Department of Pesticide Regulation PRESCRIBE database to avoid adverse effects to non-target species and habitats. Weed control measures would be implemented during construction and O&M activities.

Under CEQA, direct and indirect impacts to native vegetation, including sensitive plant communities, would be significant absent mitigation. This impact would be the same for the North, Central, San Luis, and South segments.

Table 4.4-1. Disturbance to Vegetation and Landforms in the Proposed Project Corridor

Type	North Segment		Central Segment		San Luis Segment 500-kV		San Luis Segment 70-kV		South Segment	
	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)
Aqueducts and other waters*	0.76	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01
Ephemeral creek*	0.10	0.01	3.66	0.35	0.04	0.00	0.01	0.00	0.17	0.02
Freshwater marsh*	0.16	0.02	0.09	0.01	0.20	0.02	0.21	0.00	0.01	0.00
Grassland, native perennial*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Intermittent creek*	0.01	0.00	1.08	0.10	0.04	0.00	0.00	0.00	0.15	0.01
Irrigation ditches*	0.26	0.02	0.00	0.00	0.28	0.03	0.28	0.00	0.45	0.04
Lake*	0.00	0.00	0.00	0.00	0.20	0.02	0.20	0.00	0.00	0.00
Pond*	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Riparian great valley forest*	0.00	0.00	0.75	0.07	0.30	0.03	0.31	0.00	0.00	0.00
Riparian great valley scrub*	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vernal pool*	0.00	0.00	0.03	0.00	0.11	3.40	0.01	0.00	0.03	0.00
Waters, drainage*	0.25	0.02	0.00	0.00	0.00	0.00	0.36	0.00	1.46	0.14
Waters, impoundment*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waters, river*	0.04	0.00	0.94	0.09	0.17	0.02	0.00	0.00	0.03	0.00
Wetlands, other*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Wetlands, seasonal*	0.27	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Wildflower fields*	0.00	0.00	2.16	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Barren	1.01	0.10	1.56	0.15	1.07	0.10	1.05	0.00	2.83	0.27
Commercial	1.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coyote brush scrub	0.00	0.00	0.00	0.00	0.45	2.51	0.56	0.00	1.76	0.17
Grain fields planted with hay or alfalfa	17.45	14.78	6.10	0.59	0.00	0.00	0.00	0.00	1.76	0.17
Grassland, non-native annual	17.89	1.70	220.35	21.34	43.65	55.20	13.06	0.01	78.51	7.59
Irrigated pastures	0.85	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Orchards	0.99	0.09	5.93	0.57	0.00	0.00	0.00	0.00	0.00	0.00
Other	0.00	0.00	0.08	0.01	0.94	0.09	0.07	0.00	0.00	0.00
Agriculture, unspecified	0.00	0.00	3.73	0.36	0.00	0.00	0.00	0.00	5.75	0.56
Vineyards	0.00	0.00	1.45	0.14	0.00	0.00	0.00	0.00	0.00	0.00
Total	**41.07**	**17.02**	**247.93**	**24.01**	**47.44**	**61.42**	**16.11**	**0.01**	**93.02**	**9.00**

*Vegetation and landforms marked with an asterisk (*) are considered sensitive.

Mitigation Measures for Impact BIO-2

MM BIO-1 Conduct surveys for special-status plants and sensitive habitats

MM BIO-2 Avoidance and minimization measures for special-status plants and vegetation communities

MM BIO-29 Avoidance and minimization measures for vernal pool and seasonal wetland habitats. During construction and O&M activities in the vicinity of vernal pools, vernal pool grasslands, and seasonal wetlands, Western will implement the following measures.

During O&M Category A Activities (see Appendix D):

- Vehicle access will be permitted only on well-established roads unless soils are dry. Soils will be considered sufficiently dry for vehicle access when they resist compaction, and after annual plants have set seed (generally June 1 to September 30, or as determined by qualified personnel based on personal observation of the soils). For patrolling the ROW off of established roads in a pickup truck, or for inspecting hardware on structures with a bucket truck, vernal pools, vernal pool grasslands, and seasonal wetlands will be avoided by 50 feet (15 meters) during the wet season (generally October 1 to May 31). No avoidance will be necessary if soils are completely dry.

During construction and O&M Category B and C activities (Appendix D) in the vicinity of vernal pools, vernal pool grasslands, and seasonal wetlands:

- Vehicle access will be permitted only on well-established roads unless soils are dry. Soils will be considered sufficiently dry for vehicle access when they resist compaction, and after annual plants have set seed (generally June 1 to September 30, or as determined by an agency-approved biologist based on personal observation of the soils). If vegetation management activities were proposed within 250 feet (76 meters) of a vernal pool, vernal pool grassland, or seasonal wetland, an agency-approved biologist will be present at all times to ensure the protection of the work-area limits below, or qualified personnel will clearly flag or fence the limits of the work area, according to limits presented in the following, prior to the maintenance activity. (The herbicide restriction measures generated by the PRESCRIBE database supersede those below where they are different.)
- Mixing or application of pesticides, herbicides, or other potentially toxic chemicals will be prohibited.
- Herbicide application to target vegetation with hand-held applicator (cut-stump treatment) will be prohibited within 25 feet (7.6 meters) in the wet season (generally October 1 to May 31) and allowed up to the edge of the pool or seasonal wetland in the dry season (generally June 1 to September 30).
- Herbicide application with power sprayers for spot treatment and selective elimination of target species will be prohibited within 100 feet (30.5 meters) in any season.
- Broadcast herbicide application by vehicle with boom for treating large or dense areas of the ROW will be prohibited within 150 feet (45.7 meters) in any season.
- Manual clearing of vegetation (chainsaw, axe, clippers) will be allowed up to the edge of the pool or seasonal wetland in the wet season (generally October 1 to May 31); a buffer will not be necessary in the dry season (generally June 1 to September 30).

- Mechanical clearing of vegetation (heavy-duty mowers, crawler tractors, or chippers) will be prohibited within 100 feet (30.5 meters) in the wet season (generally October 1 to May 31); a buffer will not necessary in the dry season (generally June 1 to September 30).
- For ground-disturbing activities, a 50-foot (15-meter) wet season or 25-foot (7.6-meter) dry season buffer zone from the edge of the vernal pool or wetland will be maintained and the vernal pool or wetland will be protected from siltation and contaminant runoff by use of erosion control. Erosion-control materials will be of a tightly woven natural fiber netting or similar material that will not entrap reptiles and amphibians (e.g., coconut coir matting). No monofilament plastics will be used for erosion control near vernal pools and seasonal wetlands. Erosion-control measures will be placed between the outer edge of the buffer and the activity area. All fiber rolls and hay bales used for erosion control will be certified as free of noxious weed seed. If work must occur within the buffer, the disturbance will not alter the hydrologic integrity of the wetland.
- For activities such as installation or repair of underground components (water, power, communication, or ground electrical line) or soil borings, a 250-foot (76-meter) buffer zone will be maintained. A smaller buffer could be approved after a site assessment by an agency-approved biologist, but must include silt fencing or other sediment control, to be established no less than 50 feet (15 meters) from the wetland boundary. If work must occur within the buffer, the disturbance will not alter the hydrologic integrity of the wetland.

MM BIO-30 **Avoidance and minimization measures for sensitive wetland habitats.** During construction and O&M activities in the vicinity of seeps, springs, ponds, lakes, rivers, streams, and marshes, and their associated habitats, Western will implement the following measures.

During O&M Category A activities (see Appendix D):

- The following activities will be prohibited at all times within 100 feet (30.5 meters) of a seep, spring, pond, lake, river, stream, or marsh, and their associated habitats:
  - vehicle access, except on existing access and maintenance roads
  - dumping, stockpiling, or burying of any material
  - mixing of pesticides, herbicides, or other potentially toxic chemicals
  - open petroleum products

During construction and O&M Category B and C activities (see Appendix D):

- The following activities will be prohibited at all times within 100 feet (30.5 meters) of a seep, spring, pond, lake, river, stream, or marsh, and their associated habitats:
  - vehicle access, except on existing access and maintenance roads
  - dumping, stockpiling, or burying of any material, except as required for specific O&M activities such as rip-rap
  - mixing of pesticides, herbicides, or other potentially toxic chemicals
  - open petroleum products
- For vegetation management or maintenance within 100 feet (30.5 meters) of any seep, spring, pond, lake, river, stream, or marsh, or any of their associated habitats, the following work-area limits will be provided (the herbicide restriction measures generated by the PRESCRIBE database supersede those below where they are different):

  - Only manual clearing of vegetation will be permitted
  - Foliar application of herbicides will be prohibited. Only cut-stump treatments of target vegetation will be allowed using herbicide approved for aquatic use by the EPA and in coordination with the appropriate land manager.

- For ground-disturbing activities, a 100-foot (30.5-meter) buffer zone will be maintained from the edge of the seep, spring, pond, lake, river, stream, marsh, or their associated habitats for protection from siltation and runoff of contaminants by use of erosion-control measures. If work must occur within the buffer, the disturbance will not alter the hydrologic integrity of the wetland. Erosion-control materials will be of a tightly woven natural fiber netting or similar material that will not entrap reptiles and amphibians (e.g., coconut coir matting). No monofilament plastics will be used for erosion control near seeps, springs, ponds, lakes, rivers, streams, or marshes. Erosion-control measures will be placed between the outer edge of the buffer and the activity area. All fiber rolls and hay bales used for erosion control will be certified as free of noxious weed seed.
- Western will obtain applicable section 404 discharge and 401 water-quality permits prior to any maintenance activities that must take place within jurisdictional wetlands or other waters of the U.S. These will be coordinated with USACE and RWQCB as needed.
- Dewatering work for maintenance operations adjacent to or encroaching on seeps, springs, ponds, lakes, rivers, streams, or marshes will be conducted to prevent muddy water and eroded materials from entering the water or marsh.
- All stream crossings will be constructed such that they reduce the potential for stream flows to result in increased scour, washout, or disruption of water flow. To the extent feasible, stream crossings will be located in stream segments without riparian vegetation, and structure footings will be installed outside of stream banks. Should Western need to modify existing access roads or install new access roads, they will be built at right angles to streams and washes to the extent feasible. Trees providing shade to water bodies will be trimmed only to the extent necessary and will not be removed unless they presented a specific safety concern.
- Trees that must be removed will be felled to avoid damaging riparian habitat. They will be felled out of and away from the stream maintenance zone and riparian habitat, including springs, seeps, bogs, and any other wet or saturated areas. Trees will not be felled into streams in a way that will obstruct or impair the flow of water, unless instructed otherwise. Tree removal that could cause streambank erosion or result in increased water temperatures will not be conducted in and around streams. Tree removal in riparian or wetland areas will be done only by manual methods.

MM BIO-31 **Provide compensatory mitigation for impacts to sensitive plant communities.** Western will purchase credits in an appropriate mitigation bank or habitat conservation bank for the vegetation community to be impacted. If a mitigation bank is not available, Western will contribute in-lieu fees to a mitigation bank or habitat conservation bank that can provide appropriate mitigation for the vegetation type. Western will work with the appropriate resource agency (USFWS or CDFW) to ensure adequate compensation.

If no mitigation bank, conservation bank, or in-lieu-fee compensation is available, then Western will prepare a mitigation, monitoring, and reporting plan that describes the compensatory mitigation measures that will be implemented for these vegetation communities. The mitigation plan will be submitted to the CDFW for approval and will outline performance standards and success criteria for ensuring long-term success of mitigation.

Impacts within conservation easements may require compensatory mitigation at higher ratios than impacts outside of easements, and mitigation will be consistent with the requirements of the easement.

Level of Significance after Mitigation

Mitigation Measures BIO-1, BIO-2, BIO-29, and BIO-30 provide a variety of avoidance and minimization measures for native plant communities, including riparian areas or other sensitive communities. Mitigation Measure BIO-1 requires surveys for sensitive habitats prior to construction. Mitigation Measures BIO-2, BIO-29, and BIO-30 require a variety of avoidance and minimization measures for sensitive communities to be implemented during construction and O&M. These avoidance and minimization measures include restrictions on off-road travel; erosion- and sediment-control measures; topsoil salvage for use in restoration; restrictions on herbicide use; avoidance of vernal pool and seasonal wetland habitats during the wet season; prohibitions on vehicle access, dumping/stockpiling, mixing of chemicals, and open petroleum products near wetland habitats; management of construction and O&M activities to prevent runoff into wetlands; measures to ensure minimize stream crossing impacts; and restrictions on activities that would damage riparian habitat. Where avoidance of impacts to sensitive communities is not feasible, Western would provide compensatory mitigation and habitat replacement as described in Mitigation Measures BIO-31. Together, implementation of Mitigation Measures BIO-1, BIO-2, BIO-29, BIO-30, and BIO-31 would effectively avoid, minimize, and compensate for impacts to native plant communities, including riparian areas or other sensitive communities. This impact would be less than significant in the North, Central, South, and San Luis segments.

Impact BIO-3	**Substantially interfere with the movement or migration of any native resident or migratory fish or wildlife species, or impede the use of native wildlife nursery sites for more than one reproductive season.**

The Proposed Project would not impact fish movement or migration, as no facilities would be built within waterways that support native fish. Due to the intermittent locations of construction activity and its temporary nature, terrestrial wildlife would not be physically prevented from moving around Project equipment in the transmission corridor, and the widely spaced towers would not physically obstruct wildlife movement during O&M. Access roads would be used infrequently except for temporary localized use during construction and O&M, and would not permanently obstruct movement. The Proposed Project's impacts to terrestrial wildlife movement and migration would be minor and short-term. There are no known wildlife nursery sites in the Project area, and no impacts would occur.

During Proposed Project operation, transmission lines may interfere with bird movement and migration by providing a collision and electrocution hazard. Pursuant to EPMs, Western would implement current best industry practices to minimize collision and electrocution risks from Project facilities during operation.

This impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

Impact BIO-4 Have substantial adverse effects on wetlands and Waters of the U.S. and State.

The following summarizes acres of potentially jurisdictional wetlands and waters of the U.S. and waters of the State in each segment corridor. See Figure 3 of Appendix C for the locations of potentially jurisdictional features. Western will avoid impacts within wetlands and Waters of the U.S. and State to the extent feasible.

- North Segment – 34.4 acres
- Central Segment – 77.0 acres
- San Luis Segment (500-kV) – 42.3 acres
- San Luis Segment (70-kV) – 42.4 acres
- South Segment – 18.4 acres

Access roads and new structures would be sited outside of wetlands and waters of the U.S. and State to the extent feasible. If avoidance is not feasible, direct adverse impacts could include removal of riparian vegetation from jurisdictional features; construction of access roads, culverts, or other Project components within jurisdictional waters; discharge of fill; degradation of water quality; and increased erosion and sediment transport. While loss of wetlands and waters of the U.S. and State would be site-specific, the context of this impact would be regional due to the limited distribution and high biological value of these resources. However, direct impacts would be short-term and minor due to the limited areas of potential impact.

Indirect adverse impacts could include alterations to the existing topographical and hydrological conditions and the introduction of non-native, invasive plant species. The context of this impact is regional, and while some indirect effects are short-term and minor in intensity, the spread of invasive weeds would be a long-term impact of moderate intensity. Indirect effects would be of the same type but of a lower magnitude during O&M activities.

Western's implementation of a variety of EPMs as part of the Project would avoid or minimize impacts to wetlands and water of the U.S. and State during construction and O&M. Vehicles would be restricted to designated access routes and work areas, and temporary work areas would be restored following construction. Equipment would be washed prior to entering sensitive areas to avoid introducing new weed seeds. In addition, seed mixtures applied for erosion control and restoration will be certified as free of noxious weed seed, and will be composed of native species or sterile nonnative species. Where appropriate, herbicides would be used to control weeds, but use would conform with standards in the California Department of Pesticide Regulation PRESCRIBE database to avoid adverse effects to non-target species and habitats. The EPMs also require stormwater runoff control from work areas and erosion control during construction and O&M; this would prevent materials from entering jurisdictional waters and would prevent loss of soil in wetland areas. A hazardous-spill plan will be developed prior to construction and will remain in effect for all O&M activities. Fill, riprap, and other instream work would be limited to the minimum area required for access or protection of Western facilities and would be conducted during low- or no-flow conditions and would not restrict stream flows. All construction activities and vehicle access would be routed around wet areas, and if wet areas cannot be avoided, Western would use wide-track or balloon tire vehicles and equipment and/or timber mats. Nonetheless, under CEQA any direct and indirect impacts to jurisdictional wetlands and waters would be significant absent mitigation in the North, Central, San Luis, and South segments.

Mitigation Measures for Impact BIO-4

MM BIO-29 Avoidance and Minimization Measures for Vernal Pool and Seasonal Wetland Habitats.

MM BIO-30 Avoidance and Minimization Measures for Sensitive Wetland Habitats

MM BIO-32 Provide compensatory mitigation for impacts to wetlands and waters. Compensation for loss of wetlands and waters will depend on habitat value and integrity, and may take the form of creation, restoration, enhancement, or preservation. Federal and State agencies have a no-net-loss of wetlands policy, which requires that any permanent loss of wetlands be mitigated. Mitigation can be accomplished through purchase of credits in an approved wetland mitigation bank or contribution of in-lieu fees to a conservation bank or other conservation organization that will create the wetlands as mitigation/ compensation for impacts from the Project. If these options are not available then mitigation will be accomplished by the creation of new wetlands on site or in an appropriate off-site location. For creation of new wetlands, Western will develop and implement a wetland mitigation, monitoring, and reporting plan in compliance with USACE and RWQCB guidelines. The plan will outline performance standards and success criteria for ensuring long-term success of mitigation. All newly created wetlands must be monitored and maintained for a minimum of 5 years to ensure achievement of performance standards and success criteria. Annual reporting to the USACE and RWQCB are required as part of monitoring.

Level of Significance after Mitigation

Mitigation Measures BIO-29 and BIO-30 require a variety of avoidance and minimization measures for wetlands and waters of the U.S. and State to be implemented during construction and O&M. These avoidance and minimization measures include restrictions on off-road travel; erosion- and sediment-control measures; topsoil salvage for use in restoration; restrictions on herbicide use; avoidance of seasonal wetland habitats during the wet season; prohibitions on vehicle access, dumping/stockpiling, mixing of chemicals, and open petroleum products near wetland habitats; management of construction and O&M activities to prevent runoff into wetlands; measures to ensure minimize stream crossing impacts; and restrictions on activities that would damage riparian habitat. Where avoidance of impacts to wetlands and waters of the U.S. and State is not feasible, Western would provide compensatory mitigation as described in Mitigation Measures BIO-32. Together, implementation of Mitigation Measures BIO-29, BIO-30, and BIO-32 would effectively avoid, minimize, and compensate for impacts to wetlands and waters of the U.S. and State. This impact would be less than significant in the North, Central, South, and San Luis segments.

Impact BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The following local and regional policy documents were reviewed for consistency with the Proposed Project:

- East Alameda County Conservation Strategy
- Alameda County General Plan and Tree Ordinance
- San Joaquin County General Plan
- Stanislaus County General Plan
- Merced County General Plan

Generally, these policies and ordinances support the preservation, enhancement, and restoration of natural habitats and protection of special-status species. Because of the extensive planning involved in Project design, including implementation of Western's EPMs, as well as Mitigation Measures BIO-1 through BIO-32, the Proposed Project would be consistent with local and regional policies and ordinances protecting biological resources. No impact would occur.

Impact BIO-6 Conflict with the provisions of an adopted local, regional, State, or federal habitat conservation plan.

Habitat conservation plans (HCPs) in the Project area include the following:

- North Segment – Bay Delta Conservation Plan, San Joaquin County Multi-Species Conservation and Open Space Plan (SJMSCP)
- Central Segment – SJMSCP, Altamont Pass Wind Resource Area Habitat Conservation Plan (HCP)
- San Luis Segment – None
- South Segment – None

The Altamont Pass Wind Resource Area HCP covers activities associated with repowering and continued maintenance and operation of wind turbines in Alameda County, and is not applicable to the Proposed Project. The Bay Delta Conservation Plan is not yet adopted, and will focus on restoring the Sacramento–San Joaquin Delta ecosystem while securing California's water supplies. It is not applicable to the Proposed Project.

The SJMSCP covers 912,640 acres in San Joaquin County, and includes 97 covered species. The goals of the SJMSCP are to "provide a strategy for balancing the need to conserve open space and the need to convert open space to non-open space uses while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the federal ESA or CESA; providing and maintaining multiple-use open spaces which contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to project proponents and society at large." (SJCOG, 2000). Portions of the Proposed Project are within areas covered by the SJMSCP. Species covered in the SJMSCP that occur within the Project area include diamond-petaled California poppy, caper-fruited tropidocarpum, California red-legged frog, Pacific pond turtle, tricolored blackbird, loggerhead shrike, Swainson's hawk, burrowing owl, and San Joaquin kit fox. Western would coordinate with the San Joaquin Council of Governments for impacts to special-status species covered under the SJMSCP. The Proposed Project would not conflict with any adopted HCP, so no impact would occur.

A number of conservation easements established to protect biological resources occur in the Project area, including the Simon Newman Ranch (Central Segment), the CCWD Corral Hollow property (pending; Central Segment), the Tracy 580 Business Park Preserve (Central Segment), the USFWS South Preserve (Central Segment), the Cubiburu Preserve (Central Segment), the Romero Ranch (San Luis Segment), and a permanent conservation easement for the protection of San Joaquin kit fox just north of O'Neill Forebay (San Luis Segment). ~~The Proposed Project would avoid impacts within conservation easements to the extent feasible (Mitigation Measure BIO-2), and Western would comply with all applicable requirements within conservation easements (Mitigation Measures BIO-28 and BIO-31). The Proposed Project would not conflict with the provisions of any existing conservation easements, and no additional mitigation is required. This impact would be less than significant.~~ Some conservation easement agreements may prohibit ground disturbance or other project activities within the easement boundaries,

creating the potential for the Proposed Project to conflict with the provisions of these agreements. -Such conflict, if it were to occur, would be potentially significant absent mitigation in the North, Central, San Luis, and South segments.

Mitigation Measures for Impact BIO-6

MM BIO-2 Avoidance and minimization measures for special-status plants and vegetation communities

MM BIO-28 Provide compensatory mitigation for impacts to San Joaquin kit fox

MM BIO-31 Provide compensatory mitigation for impacts to sensitive plant communities

MM BIO-33 Minimization measures for conservation easements. Western will consult with easement holders and implement measures to minimize impacts to any existing or pending conservation easements along the Project alignment, to ensure that the Project does not conflict with the provisions of any conservation easements or otherwise impair or interfere with the conservation values of the easement property. For both construction and O&M activities, Western will minimize ground disturbance and will provide compensation at the required ratios for each easement, as applicable. Minimization measures can include, but not be limited to, siting staging and storage areas outside of easement boundaries, limiting ground disturbance to the minimum feasible area, limiting Project personnel within the easement property to only those actively required at any given time during both construction and O&M, and minimizing the duration of work within the easement during construction and O&M. Where a conservation easement prohibits new ground disturbance, Western will minimize impacts by attempting to span covered areas, routing around easement boundaries, or other methods developed through consultation with the easement holder, including amending the easement agreement to allow and compensate for construction, operation, and maintenance of the Proposed Project.

Level of Significance after Mitigation

Mitigation Measures BIO-2, BIO-28, BIO-31, and BIO-33 require a variety of avoidance and minimization measures for activities within conservation easements to be implemented during construction and O&M. These avoidance and minimization measures include compliance with all applicable requirements within conservation easements, limiting ground disturbance, providing compensatory mitigation per the requirements of each affected easement (as applicable), and limiting the size of crews and duration within easement properties. Mitigation Measure BIO-33 also requires coordination and consultation with affected easement holders to identify any additional measures appropriate to each easement. Together, implementation of Mitigation Measures BIO-2, BIO-28, BIO-31, and BIO-33 would effectively avoid, minimize, and compensate for impacts within existing and pending conservation easements. This potential impact would be less than significant with mitigation in the North, Central, San Luis and South segments.

4.4.4 Corridor Alternatives

The following describes the impacts of each alternative to biological resources, relative to the impacts from the Proposed Project. No new impacts to biological resources would be introduced by any of the alternatives, but direct and indirect impacts may differ in magnitude from those described for the Proposed Project. Table 4 of Appendix C provides a comparison of habitat types in the proposed and

alternative corridors, and Chapter 5 of Appendix C presents a detailed analysis of alternatives with respect to biological resources.

4.4.4.1 Central Segment

Patterson Pass Road Alternative

This alternative corridor would be the same length as the Proposed Project in the Central Segment and would have the same number of support structures. However, it would result in approximately 23 acres of additional permanent disturbance associated with access roads due to the more rugged terrain.

This alternative has more wildflower fields, Great Valley riparian forest, intermittent creeks, and seasonal wetlands than the Proposed Project corridor in the Central Segment, and less ephemeral creeks, freshwater marsh, and vernal pool habitat. More special-status plants were found in this alternative alignment compared with the Proposed Project. This alternative corridor also contains approximately 73.3 more acres of designated critical habitat for the California red-legged frog compared to the Proposed Project. Impacts to biological resources from this alternative would be similar to that of the Proposed Project in type, duration, and context; however, the intensity of impacts would be somewhat greater than the Proposed Project due to the greater amount of sensitive biological resources in this alignment. The alternative corridor also has a eucalyptus grove within the floodplain of Lone Tree Creek that supports a variety of nesting birds. Impacts of this alternative would be less than significant under CEQA, with implementation of Mitigation Measures BIO-1 through BIO-32.

4.4.4.2 San Luis Segment

Butts Road Alternative

This alternative corridor would be 0.5 miles longer than the Proposed Project in the San Luis Segment, would have two more support structures, and would result in approximately 1.2 acres of additional permanent disturbance and 1.8 acres of additional temporary disturbance. This alternative has more ephemeral creek, native grasslands, seasonal wetlands, and coyote brush scrub than the Proposed Project. The alternative has less Great Valley riparian forest, freshwater marsh, intermittent creek, and other potentially jurisdictional waters than the Proposed Project corridor, and the Butts Road Alternative would likely impact less sensitive plant communities than the Proposed Project. However, this alternative has more potential blunt-nosed leopard lizard habitat than the Proposed Project, and is more likely to adversely impact this listed species. This alternative would not cross the permanent San Joaquin kit fox conservation easement north of O'Neill Forebay. Impacts to biological resources from this alternative would be similar to that of the Proposed Project in type, duration, and context; however, the intensity of impacts to blunt-nosed leopard lizard would be somewhat greater than the Proposed Project while the intensity of impacts to sensitive plant communities and jurisdictional resources would be less. Impacts of this alternative would be less than significant under CEQA, with implementation of Mitigation Measures BIO-1 through BIO-32.

West of Cemetery Alternative

This alternative corridor would be 1.2 miles longer than the Proposed Project, would have six more support structures, and would require approximately 9 miles of additional new access roads in the San Luis Segment. The West of Cemetery Alternative would result in an estimated additional 43.6 acres of permanent and 5.4 acres of temporary disturbance compared with the Proposed Project. This alternative has more native grasslands, seasonal wetlands, and coyote brush scrub than the Proposed Project. The alternative has less ephemeral creek, Great Valley riparian forest, freshwater marsh, intermittent creek,

and other potentially jurisdictional waters than the Proposed Project and would impact less sensitive plant communities than the Proposed Project. However, this alternative has more potential blunt-nosed leopard lizard habitat than the Proposed Project, and would result in greater adverse impacts to this listed species. This alternative would not cross the permanent San Joaquin kit fox conservation easement north of O'Neill Forebay. Impacts to biological resources from this alternative would be similar to that of the Proposed Project in type, duration, and context; however, the intensity of impacts to blunt-nosed leopard lizard would be somewhat greater than the Proposed Project while the intensity of impacts to sensitive plant communities and jurisdictional resources would be less. Impacts of this alternative would be less than significant under CEQA, with implementation of Mitigation Measures BIO-1 through BIO-32.

West of O'Neill Forebay 70-kV Alternative

This alternative corridor would be the same length as the 70-kV Proposed Project in the San Luis Segment, would have the same number of support structures, and would require the same length of new access roads. The West of O'Neill Forebay alternative has more non-native grassland, seasonal wetland, and northern claypan vernal pool habitat than in the 70-kV San Luis Segment, but less Great Valley cottonwood riparian forest and coastal and valley freshwater marsh habitat. This alternative supports more potential habitat for special-status species including San Joaquin kit fox, burrowing owl, California tiger salamander, and blunt-nosed leopard lizard. This alternative would cross the permanent San Joaquin kit fox conservation easement north of O'Neill Forebay as well as the Romero Ranch conservation easement; these easements would be avoided by the Proposed Project San Luis (70-kV) corridor. Impacts to biological resources from this alternative would be similar to that of the Proposed Project in type, duration, and context; however, the intensity of impacts to special-status species would be somewhat greater than the Proposed Project. Impacts of this alternative would be less than significant under CEQA, with implementation of Mitigation Measures BIO-1 through BIO-32.

4.4.4.3 South Segment

San Luis to Dos Amigos Alternative

This alternative has the same length of new access roads and same number of support structures as the Proposed Project in the South Segment, and its study area largely overlaps that of the Proposed Project. The only notable difference in biological resources is that this alternative corridor has less non-native grassland than the Proposed Project, but overall impacts to biological resources would be largely similar. Impacts of this alternative would be less than significant under CEQA, with implementation of Mitigation Measures BIO-1 through BIO-32.

Billy Wright Road Alternative

This alternative corridor would be approximately 1.5 miles longer than the Proposed Project, and would have eight more support structures. It would require approximately 3 miles additional permanent access roads, although it would not require temporary access roads (the Proposed Project would require about 2 miles of temporary roads), and it would require upgrades to 8 fewer miles of existing roads. The Billy Wright Road Alternative would permanently impact approximately 10.2 fewer acres than the Proposed Project, but would temporarily impact approximately 5.2 more acres. This alternative includes more non-native grassland but less agricultural lands than the Proposed Project in the South Segment. It has more potential habitat for the blunt-nosed leopard lizard. There are approximately 4.8 more acres of potentially jurisdictional resources in the Billy Wright Road Alternative corridor compared with the Proposed Project in the South Segment, although as with the Proposed Project, most of these areas can likely be avoided. Impacts to biological resources from this alternative would be similar to that of the Proposed Project in type, duration, and context; however, the intensity of impacts to special-status

species would be somewhat greater than the Proposed Project. Impacts of this alternative would be less than significant under CEQA, with implementation of Mitigation Measures BIO-1 through BIO-32.

4.4.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built; therefore, there would be no new impacts to biological resources.

4.5 Cultural Resources

4.5.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on cultural resources if any activity associated with their construction or operation would result in:

- Damage or degradation to, or loss of a unique archaeological resource as defined by CEQA or a resource of archaeological, tribal, or historical value that is listed, or eligible for listing, on the National Register of Historic Places (National Register) or California Register of Historical Resources (California Register). (Impact CUL-1);
- Adverse effects to National Register– or California Register–eligible properties that cannot be satisfactorily mitigated as determined through consultation with the State Historic Preservation Officer and other interested parties (Impact CUL-2);
- Alterations to setting, feeling, or association for a National Register– or California Register–eligible properties (Impact CUL-3);
- Alterations of the setting or feeling to resources of concern to tribal or other interest groups (Impact CUL-4);
- Loss or degradation of a TCP or sacred site, or if the property or site is made inaccessible for future use (Impact CUL-5);
- Unmitigated adverse effect to a TCP determined to be National Register–eligible or identified as important to tribes (Impact CUL-6); or
- Disturbance of any human remains, including those interred outside of formal cemeteries (Impact CUL-7).

4.5.2 Environmental Protection Measures

- Before construction, all construction personnel will be instructed by Western on the protection of cultural and paleontological resources and that cultural and paleontological resources might be present in the study area. To assist in this effort, the construction contract will address applicable federal and State laws regarding cultural and paleontological resources, including historic and prehistoric resources, and fossils. Construction personnel will be informed of the penalties for collection and removal of such resources, as well as the importance of these resources and the purpose and necessity of protecting them. Contractors will be trained to stop work near any discovery and notify Western's regional environmental manager immediately, who will ensure that the resource is evaluated and avoided. Known cultural and paleontological resources will be flagged for avoidance and a minimum distance maintained for work disturbances.
- Western will have qualified archaeological monitors on site during ground disturbing construction activities. Archaeological monitors will look for any inadvertent cultural resource discoveries or other sensitive resources that may be important to tribes. Archaeologists will stop work in the immediate area should any such resources be uncovered until an assessment of the find can be made by Western.
- Cultural resources would be considered during post-EIS/EIR phases of Project implementation. Surveys would be completed prior to any ground disturbing activities or Project construction activities in order to inventory and evaluate cultural resources of the Project, or of any components that might be added to the Project, or any existing components that would be modified. These surveys and any

resulting historic property evaluation and analysis of effects would be conducted in accordance with Section 106 of the NHPA and in consultation with the SHPO. If adverse effects to historic properties cannot be avoided, Western would develop a PA or MOA in consultation with the SHPO to determine appropriate mitigation to avoid lessen any adverse effects to cultural resources.

4.5.3 Proposed Project

Potential impacts to cultural resources were analyzed for all phases of the Project, including construction, O&M, and for all alternatives. While a number of cultural resources were identified as being present within both the Proposed Project and alternative corridors, additional, unidentified resources likely exist in areas that were inaccessible to survey and below the ground surface. In total, 62 percent of the Proposed Project corridor has been surveyed for cultural resources. The potential exists for additional cultural resources to be identified within the Project area.

See Table 4.5-1 for cultural resources present and the survey coverage of the Proposed Project area, separated by segment.

Table 4.5-1. Resources and Survey Coverage by Project Segment

Segment	Resources[1] Present	Percent Surveyed	Acres Surveyed	Percent Remaining to be Surveyed
North Segment	2	45	338.5	55
Central Segment	1	71	2092.5	29
San Luis Segment	2	32	455.8	68
San Luis Segment 70-kV	1	58	295.2	42
South Segment	0	53	392.8	47

1 – Refers to cultural resources recommended as eligible to the National or California Registers as well as unevaluated resources.
Source: Ballard et al., 2015; Holm et al., 2014b

The majority of resources that were encountered within the Proposed Project area were evaluated for their National/California Register eligibility. A total of four resources that have been previously recommended eligible for listing on the National Register or California Register were identified within the Proposed Project area: the California Aqueduct (P-24-001931), the McCabe Road Bridge (P-24-001934), the buried San Joaquin Pipelines No. 1-3 (P-39-004860), and the Delta-Mendota Canal (P-39-000089). All of these are related to water conveyance and any impacts to them would be similar.

Potential impacts were identified based on the predicted interaction between construction, operation, and maintenance activities with the affected environment and the impact significance criteria described above. Project EPMs, were considered as Project features in the impact analysis.

Construction and Operations and Maintenance

During construction, impacts to cultural resources would be primarily caused by ground-disturbing activities, including operation of heavy equipment, trenching for utilities, grading and vegetation clearing for access roads, site leveling, auguring of transmission tower foundations, and other infrastructure excavations. These activities would have the potential to cause direct adverse effects to significant cultural resources. Indirect impacts could include visual and noise impacts to the setting and feeling of cultural resources and damage caused by vibrations and dust from construction to historic period built-environment resources and prehistoric rock art. Impacts to cultural resources could also occur during O&M activities such as grading access roads and vegetation removal. The work procedures for major repairs, such as replacement of towers or conductors, would be essentially identical to that of new construction.

Impact CUL-1	**Cause damage, degradation to, or loss of a unique archaeological resource as defined by CEQA or a resource of archaeological, tribal, or historical value that is listed, or eligible for listing, on the National Register or California Register.**

Construction and O&M activities, particularly any involving ground disturbance, can cause direct adverse impacts to cultural resources. Additionally, these activities can produce dust, sound, vibration, and other issues that may cause indirect damage or degradation to cultural resources. Any adverse impacts from ground-disturbing activities, such as access roads, would be permanent, while adverse impacts to setting would likely be temporary from construction activities, and long-term from the presence of transmission line structures. As per the Project EPMs, Western would identify and evaluate any cultural resources in unsurveyed portions of the Project area prior to construction and would avoid any known cultural resources. Pursuant to EPMs, if National Register– or California Register–eligible resources are identified within currently unsurveyed areas of the Project, construction and O&M activities would avoid them. If adverse effects to National Register– or California Register–eligible resources cannot be avoided, Western would develop a PA or MOA in consultation with the SHPO to determine appropriate mitigation to avoid or reduce any adverse effects to cultural resources. Archaeological monitors would be on site during ground-disturbing activities in order to minimize impacts to inadvertently discovered cultural resources. Therefore, the construction of the Proposed Project would not result in damage or degradation to, or loss of a resource that is listed, or eligible for listing, on the National Register or California Register. Under CEQA, this impact would be less than significant. However, if unanticipated discoveries of unique archaeological resources as defined by CEQA are encountered, this impact would be significant without mitigation as there are no analogous EPMs to avoid impacts to these resources.

Mitigation Measures for Impact CUL-1

MM CUL-1 **Prepare and implement Archaeological Resource Management and Treatment Plan for unique archeological resources.** In the case of the inadvertent discovery of a unique archaeological resource, Western will have a Secretary of Interior–qualified archaeologist prepare and implement an Archaeological Resource Management and Treatment Plan that specifies the treatment of the resources. Prior to implementation, this document shall be submitted for review to the Authority as CEQA Lead Agency. This plan shall be tailored to the specific needs of the Project area and the particular resources present there. The proposed Archaeological Resources Management and Treatment Plan must minimally address the following:

- A general research design shall be developed that:
  - Charts a timeline of all research activities.
  - Recapitulates any existing paleoenvironmental, prehistoric, ethnohistoric, ethnographic, and historic contexts to create a comprehensive historic context for the Project vicinity.
  - Poses research questions and testable hypotheses specifically applicable to the resource types encountered.
  - Clearly articulates why it is in the public's interest to address the research questions that it poses.
- Artifact collection, retention/disposal, and curation policies shall be discussed, as related to the research questions formulated in the research design. These policies shall apply to archaeological materials and documentation resulting from evaluation and data recovery of unique archaeological resources.

- Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between Project construction management and the mitigation and monitoring team shall be identified.
- The manner in which Native American observers or monitors shall be included, the procedures to be used to select them, and their roles and responsibilities shall be described.
- All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from Project-related impacts.
- The commitment to curate of all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery), in accordance with CEQA Lead Agency requirements and the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections (HRC, 1993)*, into a retrievable storage collection in a public repository or museum shall be stated.

Level of Significance After Mitigation

Implementation of Mitigation Measure CUL-1 would reduce the impact of construction to unanticipated discoveries of unique archaeological resources, as defined by CEQA, by requiring the development and implementation of an Archaeological Resource Management and Treatment Plan. This would reduce the impact by avoiding the resource(s) to the extent feasible and documenting the information contained in the archaeological deposits through data recovery excavation or other appropriate method of data recovery. With mitigation, the impact would be reduced to a less-than-significant level.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact CUL-2 Cause adverse effects to National Register– or California Register–eligible properties that cannot be satisfactorily mitigated.

Construction and O&M activities, particularly any involving ground disturbance could cause direct adverse effects to eligible properties. Additionally, these activities can produce dust, sound, vibration, and other issues that may cause indirect adverse effects to eligible properties. Any adverse impacts from ground-disturbing activities, such as access roads, would be permanent, while adverse impacts to setting would likely be temporary from construction activities and long-term from the presence of transmission line structures. Prior to construction, Western would identify any cultural resources in unsurveyed portions of the Project area and avoid any National Register– or California Register–eligible resources or enter into a PA or MOU with the SHPO, as per Project EPMs above. As of April 2015, the only eligible resources currently identified in the Proposed Project area are the California Aqueduct (P-24-001931), the Delta-Mendota Canal (P-39-000089), McCabe Road Bridge (P-24-001934), and the San Joaquin Pipelines No. 1-3 (P-39-004860). As currently designed, with Project EPMs, no impacts to these resources are expected. If additional National Register– or California Register–eligible resources are identified during preconstruction survey or during construction, resource-specific mitigation measures from the PA/MOU would be implemented to minimize impacts. Therefore, construction of the Proposed Project would not cause significant effects to National Register– or California Register–eligible properties that cannot be satisfactorily mitigated and this impact would be negligible. This impact would be less than significant.

This impact is the same in the North, Central, San Luis, and South segments.

Impact CUL-3 Cause alterations to setting, feeling, or association for a National Register– or California Register-eligible properties.

Temporary impacts to the setting, feeling, or association of eligible resources may result from construction and O&M vehicles and increased noise and dust generated during ground disturbances. Long-term, but temporary, impacts to the setting, feeling, or association of historical resources could occur from the presence of structures over the life of the Project. Prior to construction, Western would identify any cultural resources in unsurveyed portions of the Project area and avoid any National Register– or California Register–eligible resources or enter into a PA or MOU with the SHPO regarding the treatment of these resources, as per Project EPMs above. As of April 2015, the only eligible resources currently identified in the Proposed Project area are the California Aqueduct (P-24-001931), the Delta-Mendota Canal (P-39-000089), McCabe Road Bridge (P-24-001934), and the San Joaquin Pipelines No. 1-3 (P-39-004860). As transmission lines are already a part of the setting of these resources, an additional line would not likely cause alterations to their integrity of setting, feeling, or association. If additional National Register– or California Register–eligible resources are identified during preconstruction survey or during construction, resource-specific mitigation measures from the PA/MOU would be implemented to minimize impacts. Therefore, construction and O&M of the Proposed Project would not cause substantial alterations to setting, feeling, or association to National Register– or California Register–eligible properties and this impact would be less than significant.

This impact is the same in the North, Central, San Luis, and South segments.

Impact CUL-4 Cause alterations to the setting or feeling of resources of concern to tribal or other interest groups.

The presence of transmission structures and access roads, as well as removal of vegetation, grading, and other construction-related activities could cause alterations to the setting or feeling of resources of concern to tribal or other interest groups. These impacts could be temporary or permanent in nature. At publication, no resources of concern to tribal or other interest groups have been identified within or in the vicinity of the Proposed Project corridor through Western's consultation efforts or a search of the NAHC Sacred Lands File (see Section 106 Consultation, Chapter 5). Therefore, there would be no adverse effects on such resources. Construction and O&M of the Proposed Project would not cause alterations of the setting or feeling to resources of concern to tribal or other interest groups. Therefore, under CEQA, there would be no direct or indirect impact.

This impact is the same in the North, Central, San Luis, and South segments.

Impact CUL-5 Cause loss or degradation of a TCP or sacred site, or cause the property or site to be made inaccessible for future use.

The presence of transmission structures and access roads, as well as removal of vegetation, grading, and other construction-related activities could cause loss or degradation of a TCP or sacred site, or cause the property or site to be made inaccessible for future use. These impacts could be temporary or permanent in nature. At publication, no TCPs or sacred sites have been identified within or in the vicinity of the Proposed Project through Western's consultation efforts or a search of the NAHC Sacred Lands File (see Section 106 Consultation, Chapter 5), therefore there would be no adverse effects on such resources. Construction and O&M of the Proposed Project would not cause loss or degradation of a TCP or sacred site, or cause the property or site to be made inaccessible for future use. Therefore, under CEQA, there would be no direct or indirect impact.

This impact is the same in the North, Central, San Luis, and South segments.

Impact CUL-6 Cause any unmitigated adverse effects to a TCP determined to be National Register–eligible or identified as important to tribes.

The presence of transmission structures and access roads, as well as removal of vegetation, grading, and other construction-related activities could cause unmitigated adverse effects to a TCP determined to be National Register–eligible or identified as important to tribes. These impacts could be temporary or permanent in nature. As of September 2014, no TCPs have been identified within or in the vicinity of the Proposed Project through Western's consultation efforts or a search of the NAHC Sacred Lands File (see Section 106 Consultation, Chapter 5), therefore there would be no unmitigable adverse effects on such resources. Construction and O&M of the Proposed Project would not cause loss or degradation of a TCP or sacred site, or cause the property or site to be made inaccessible for future use. Therefore, under CEQA, there would be no impact.

This impact is the same in the North, Central, San Luis, and South segments.

Impact CUL-7 Disturb any human remains, including those interred outside of formal cemeteries.

As of April 2015, no human remains or burials have been identified within the Proposed Project corridor, therefore there would be no disturbance to these remains. However, investigation or earth-disturbing activities performed prior to construction could reveal the presence of human remains. Any disturbance of human remains would likely be permanent in duration. With currently available data, construction of the Proposed Project would not disturb any human remains, including those interred outside of formal cemeteries. However, if human remains are encountered, any disturbance would be significant without mitigation.

Mitigation Measures for Impact CUL-7

MM CUL-2 **Treatment of inadvertent discovery of human remains.** If human remains are encountered, Western's Regional Preservation Official (RPO) and the relevant county coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie potential remains shall occur until the relevant county coroner has determined the appropriate treatment and disposition of the human remains. If the coroner determines that the remains are or are believed to be Native American, they will contact the NAHC, who will notify a designated most likely descendant (MLD). The MLD will inspect the site and will determine, in consultation with the property owner and Western's RPO, the disposition of the remains.

Level of Significance After Mitigation

If human remains are encountered, the enactment of Mitigation Measure CUL-2 may render this impact less than significant by following the procedures set up in California law. These procedures would ensure that the remains are minimally damaged, evaluated for their cultural affiliation, documented, and that consultation regarding disposition occurs. In some cases, data contained in the burials will be recovered, if authorized by the descendant community. These actions reduce this impact to a less-than-significant level. However, if the belief system of the descendant community places particular importance on leaving burials undisturbed, this impact may remain significant. It is likely, however, that mitigation would reduce the impact to a less-than-significant level, as described above. This impact would be the same in the North, Central, San Luis, and South segments.

4.5.4 Corridor Alternatives

The majority of resources that were encountered within the alternative corridors were evaluated for their National/California Register–eligibility. The same National Register– or California Register–eligible resources that were identified in the Proposed Project are present in the alternatives. As expressed above in Western's Project EPMs, cultural resources would be avoided during the siting of new transmission line structures and access roads. Additionally, two resources were identified in the alternative corridors that have not been evaluated for their National Register or California Register eligibility.

See Table 4.5-2 for cultural resources present and the survey coverage of the alternative corridors, separated by segment.

Table 4.5-2. Resources and Survey Coverage by Alternative

Alternative	Resources[1] Present	Percent Surveyed	Acres Surveyed	Percent Remaining to be Surveyed
Patterson Pass	2	72	2046.3	28
Butts Road	1	47	477.9	53
West of Cemetery	0	36	424.8	64
West of O'Neill Forebay 70-kV	2	51	536.1	49
San Luis to Dos Amigos	0	55	394.1	45
Billy Wright Road	0	40	159.0	60

1 – Refers to cultural resources recommended as eligible to the National or California Registers as well as unevaluated resources.
Source: Ballard et al., 2015; Holm et al., 2014b

4.5.4.1 Central Segment

Patterson Pass Road Alternative

As per the Project EPMs, Western would identify and evaluate any cultural resources in unsurveyed portions of the Project area prior to construction and would avoid any known cultural resources. If National Register– or California Register–eligible resources are identified within currently unsurveyed areas of the Project, construction and O&M activities would avoid them. If adverse effects to National Register– or California Register–eligible resources cannot be avoided, Western would develop a PA or MOA in consultation with the SHPO to determine appropriate mitigation to avoid lessen any adverse effects to cultural resources.

As of April 2015, two resources were identified in this alternative corridor that have not been evaluated for eligibility to the National Register and California Register: a multicomponent site consisting of both prehistoric and historic period elements and a prehistoric site. As part of the Project, prior to construction, Western would evaluate these resources, identify and evaluate any cultural resources in unsurveyed portions of the Project area, and avoid any known cultural resources. If cultural resources cannot be avoided, Western will enter into a PA or MOU with the SHPO, as per Project EPMs above. Therefore, during the construction and O&M phases of the Project, Impacts CUL-2 and CUL-3 would be less than significant and there would be no impact under CUL-4 through CUL-6. With implementation of Mitigation Measures CUL-1 and CUL-2, Impacts CUL-1 and CUL-7 would be less than significant during the construction and O&M activities. Impacts to cultural resources from the Patterson Pass Alternative would be similar to those of the Proposed Project.

4.5.4.2 San Luis Segment

Butts Road Alternative

Western would enact its Project EPMs for construction and O&M work, including identification and evaluation of cultural resources in unsurveyed areas. Therefore, during the construction and O&M phases of the Project, Impacts CUL-2 and CUL-3 would be less than significant and there would be no impact under CUL-4 through CUL-6. With implementation of Mitigation Measures CUL-1 and CUL-2, Impacts CUL-1 and CUL-7 would be less than significant during the construction and O&M. Impacts to cultural resources from the Butts Road Alternative would be similar to those of the Proposed Project.

West of Cemetery Alternative

Western would enact its Project EPMs for construction and O&M work, including identification and evaluation of cultural resources in unsurveyed areas. Therefore, during the construction and O&M phases of the Project, Impacts CUL-2 and CUL-3 would be less than significant and there would be no impact under CUL-4 through CUL-6. With implementation of Mitigation Measures CUL-1 and CUL-2, Impacts CUL-1 and CUL-7 would be less than significant during the construction and O&M phases. Impacts to cultural resources from the West of Cemetery Alternative would be similar to those of the Proposed Project.

West of O'Neill Forebay 70-kV Alternative

Western would enact its EPMs for construction and O&M work, including identification and evaluation of cultural resources in unsurveyed areas. Therefore, during the construction and O&M phases of the Project, Impacts CUL-2 and CUL-3 would be less than significant and there would be no impact under CUL-4 through CUL-6. With implementation of Mitigation Measures CUL-1 and CUL-2, Impacts CUL-1 and CUL-7 would be less than significant during the construction and O&M phases. Impacts to cultural resources from the West of O'Neill Forebay Alternative would be similar to those of the Proposed Project.

4.5.4.3 South Segment

San Luis to Dos Amigos Alternative

Western would enact its Project EPMs for construction and O&M work, including identification and evaluation of cultural resources in unsurveyed areas. Therefore, during the construction and O&M phases of the Project, Impacts CUL-2 and CUL-3 would be less than significant and there would be no impact under CUL-4 through CUL-6. With implementation of Mitigation Measures CUL-1 and CUL-2, Impacts CUL-1 and CUL-7 would be less than significant during the construction and O&M tasks. Impacts to cultural resources from the San Luis to Dos Amigos Alternative would be similar to those of the Proposed Project.

Billy Wright Road Alternative

Western would enact its Project EPMs for Project construction and O&M work, including identification and evaluation of cultural resources in unsurveyed areas. Therefore, during the construction and O&M phases of the Project, Impacts CUL-2 and CUL-3 would be less than significant and there would be no impact under CUL-4 through CUL-6. With implementation of Mitigation Measures CUL-1 and CUL-2, Impacts CUL-1 and CUL-7 would be less than significant during the construction and O&M tasks. Impacts to cultural resources from the Billy Wright Road Alternative would be similar to those of the Proposed Project.

4.5.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built and no ground disturbance would occur. Therefore, there would be no new impacts to cultural resources.

4.6 Environmental Justice

4.6.1 Thresholds of Significance

Environmental justice is not a topic considered under CEQA; therefore, there are no CEQA significance criteria for Environmental Justice. The following significance threshold is defined by Executive Order 12898. The Proposed Project and alternatives would have significant, adverse environmental justice effects if any activity associated with their construction or operation would:

- Result in a disproportionate distribution of impacts on minority or low-income populations (Impact EJ-1).

4.6.2 Environmental Protection Measures

There are no EPMs applicable to Environmental Justice.

4.6.3 Proposed Project

Construction

Construction of the Proposed Project could result in a disproportionate distribution of impacts to environmental justice communities associated with each of the issue areas in this EIS/EIR. The following is a discussion of the distribution of minority and low-income population within the Project Area and their relation to the potential environmental impacts that could result from the Proposed Project construction.

Impact EJ-1	**Result in a disproportionate negative effect on minority or low-income populations in the Project Area, as defined by Executive Order 12898.**

The study area covers 11 census blocks in portions of Alameda, San Joaquin, Stanislaus, and Merced Counties with a combined minority population of 9,012 (31.7 percent). The North Segment of the Proposed Project crosses one census block group containing a 60 percent minority population (see Table 3.6-1). The Central, San Luis, and South segments of the Proposed Project corridor do not traverse areas that contain high minority populations. On average, the study area has a similar minority population distribution as the region. Therefore, environmental impacts associated with construction of the Proposed Project would not disproportionately affect minority populations in the study area.

The study area contains 2,477 low-income individuals in the workforce or 10.1 percent of the study area population. The Project corridor would not cross census block groups that contain low-income populations greater than 50 percent. Because the potentially affected low-income population accounts for such a small percentage, environmental impacts associated with construction of the Proposed Project would not result in disproportionate adverse impacts to low-income populations in the study area.

Impacts to environmental justice communities could occur during operation and maintenance activities through a disproportional distribution of Project-related social and physical impacts. The work procedures for major repairs, such as replacement of towers or conductors, would be essentially identical to that of new construction. Because adverse impacts from such work would be similar to or less severe in nature and duration than that of new construction as described above, Impact EJ-1 would be short-term and negligible during the operation and maintenance phase of the Proposed Project.

4.6.4 Corridor Alternatives

As illustrated in Figures 3.6-1 and 3.6-2, the corridor alternatives would not result in adverse impacts to environmental justice communities as they do not cross any census blocks with minority or low-income populations greater than 50 percent and do not contain a low-income or minority population percentage meaningfully greater than the low-income population percentage in the region.

4.6.5 No Action/No Project Alternative

Under the No Action/No Project Alternative, construction and operation of the San Luis Transmission Project would not occur. Therefore, environmental justice impacts would not occur. Greater rate increases are expected to occur under the No Action/No Project Alternative than under the Proposed Project. Rate increases can have a disproportionate impact on low-income and minority residents.

4.7 Geology, Soils, and Mineral Resources

4.7.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on geology, soils, and mineral resources if any activity associated with their construction or operation would result in:

- Exposure of people or structures to potential substantial adverse effects due to slope instability, effects of earthquake (fault rupture, ground shaking, liquefaction, landslide), slumps, rockfalls, or adverse soil conditions such as compressible, expansive, or corrosive soils (Impact GEO-1);
- Substantial soil erosion or the loss of topsoil, including soil loss or accelerated erosion due to disturbance that results in the formation of rills and/or gullies, or that results in sediment deposition in downgradient lands or water bodies to the extent that existing uses cannot be maintained (Impact GEO-2);
- Compaction or mixing of soils that would cause long-term loss of productivity or significantly alter current use or restoration of vegetation (Impact GEO-3);
- Loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan (Impact GEO-4); or
- Placement of a structure on unstable soils that would result in exposure to landslide, lateral spreading, subsidence, liquefaction, or collapse (Impact GEO-5).

4.7.2 Environmental Protection Measures

- Excavated material or other construction materials will not be stockpiled or deposited near or on stream banks, lake shorelines, or other watercourse perimeters.
- Non-biodegradable debris will be collected and removed from the ROW daily and taken to a disposal facility. Slash and other biodegradable debris will be left in place or disposed of appropriately.
- All soil excavated for structure foundations would be backfilled and tamped around the foundations, and used to provide positive drainage around the structure foundations. Excess soil would be removed from the site and disposed of appropriately. Areas around structure footings would be reseeded with native plants.
- Erosion control measures would be implemented to prevent loss of soil. Construction would be in conformance with Western's Integrated Vegetation Management Environmental Guidance Manual.
- At completion of work and at the request of the landowner/manager, all work areas except access roads will be scarified or left in a condition that will facilitate natural or appropriate vegetation, provide for proper drainage, and prevent erosion.
- On completion of the work, all work areas except permanent access roads will be returned to preconstruction conditions unless otherwise specified by the landowner/manager.
- Construction vehicle movement outside of the easement will be restricted (to the extent feasible) to approved access or public roads.
- Where feasible, all construction activities will be rerouted around wet areas while ensuring that the route does not cross sensitive resource areas.
- If wet areas cannot be avoided, Western will use vehicles, ground mats, and equipment that minimize ground impacts.

4.7.3 Proposed Project

The Proposed Project could affect geology, soils, and mineral resources through ground disturbance associated with construction and O&M activities, including operation of heavy equipment, grading and vegetation clearing for access roads, site leveling, auguring of transmission tower foundations, and other infrastructure excavations. These activities would have the potential to cause both direct and indirect adverse effects to geology, soils, and mineral resources.

Mitigation Measures for Impact GEO-1

Impact GEO-1	**Expose people or structures to potential substantial adverse effects due to slope instability, effects of earthquake (fault rupture, ground shaking, liquefaction, landslide), slumps, rockfalls, or adverse soil conditions such as compressible, expansive, or corrosive soils.**

The Proposed Project does not cross any active earthquake fault zones, landslide zones or liquefaction zones. However, construction and O&M of the Proposed Project could result in adverse direct and indirect effects due to geologic and seismic hazards. If not properly designed and sited, structures and access roads could be constructed on unstable slopes or expansive soils. These geologic and seismic hazards could result in damage or collapse, especially for transmission structures. Unstable slopes and expansive soils could result in movement or failure of structure foundations that could result in hazards to workers or the public, or failure of the transmission line. A preconstruction geotechnical investigation would be required to verify the adequacy of the underlying soils and geologic formations to support structure foundations and to provide a stable road bed. Under CEQA, this impact would be significant without mitigation.

Mitigation Measures for Impact GEO-1

MM GEO-1 **Conduct geotechnical investigations and implement project design recommendations.** A California-registered Professional Geotechnical Engineer shall evaluate the potential for geotechnical hazards and unstable slopes on the centerline route and areas of new road construction or widening of roads with slopes with more than a 15 percent gradient. Geological hazards shall be evaluated during final design specification for each structure location and road construction area. Project design recommendations will include measures to stabilize and protect Project structures from geologic hazards. Geologically unstable sites will be avoided or stabilized prior to construction. Additionally, expansive soils (such as vertisols) will be avoided or stabilized prior to tower installation.

Level of Significance After Mitigation

In conformance with Mitigation Measure GEO-1, a California-registered Professional Geotechnical Engineer would evaluate the potential for geotechnical hazards and unstable slopes on the centerline route and areas of new road construction or widening of roads with slopes with more than a 15 percent gradient. Geological hazards would be evaluated during final design specification for each structure location and road construction area. Geologically unstable sites would be avoided or stabilized prior to construction. Additionally, expansive soils (such as vertisols) would be avoided or stabilized prior to tower installation. With implementation of MM GEO-1, this impact would be reduced to a less than significant level.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact GEO-2 Cause substantial soil erosion or the loss of topsoil, including soil loss or accelerated erosion due to disturbance that results in the formation of rills and/or gullies, or that results in sediment deposition in downgradient lands or water bodies to the extent that existing uses cannot be maintained.

Construction of the Proposed Project would include soil-disturbing activities, such as leveling and excavation of the transmission tower sites as well as grading and improvement of existing access roads. This soil disturbance could lead to increased erosion and sedimentation. In conformance with Western's EPMs and Construction Standard 13, erosion control methods would be implemented to prevent loss of soil, all work areas except access roads will be scarified or left in a condition that will facilitate natural or appropriate vegetation, provide for proper drainage, and prevent erosion. Excavated material or other construction materials will not be stockpiled or deposited near or on stream banks, lake shorelines, or other watercourse perimeters. Therefore, sediment-related impacts to downgradient lands or water bodies would be negligible from construction and O&M of the Proposed Project. Under CEQA, this impact would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact GEO-3 Compact or mix soils in a way that would cause long-term loss of productivity or significantly alter current use or restoration of vegetation.

Soils would be compacted and mixed during the creation of tower foundations and access road construction and improvement. In conformance with Western's EPMs and Construction Standard 13, compacted soils from construction activities in hay meadows, alfalfa fields, pastures, and cultivated productive lands will be returned to preconstruction conditions upon completion of the work unless otherwise specified by the land owner/manager. The land and facilities would be restored as nearly as practicable to their original conditions. Areas around structure footings would be reseeded with native plants. Permanently compacted soils would be limited to tower footings and new or improved access and spur roads. After construction, temporary access and spur roads would be restored and revegetated, and the compacted portion of those roads would be limited to the minimum width necessary for operation and maintenance of the Proposed Project. Therefore, impacts to soil productivity or vegetative cover would be negligible due to construction and O&M of the Proposed Project. Under CEQA, this impact would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact GEO-4 Cause a loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Sand and gravel that could be used by the construction industry is found throughout the study area, and three small areas of regionally significant deposits of concrete aggregate would be traversed by the Proposed Project. However, all three of these areas are very narrow at the point where they are traversed by the Proposed Project and it is anticipated that transmission towers and associated infrastructure would be placed outside of these mineral resource recovery sites. Western will coordinate with the affected counties and landowners to ensure that there would be no loss of availability of a locally important mineral resource. The Proposed Project corridor mostly parallels an existing transmission corridor, and does not cross any active mining sites. Therefore, impacts to locally important mineral resource recovery sites would be negligible due to construction of the Proposed Project. Under CEQA, this impact would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact GEO-5 Place a structure on unstable soils, which would result in exposure to landslide, lateral spreading, subsidence, liquefaction, or collapse.

The Proposed Project is not located within any mapped landslide or liquefaction zones. However, without proper design and siting, the Proposed Project could place structures on unstable soils. Improperly designed or sited structures or access roads could trigger landslides. Also, unstable soils could result in movement or failure of structure foundations that could result in hazards to workers or the public, or failure of the transmission line. A preconstruction geotechnical investigation would be required to verify the adequacy of the underlying soils to support structure foundations and to provide a stable road bed. Under CEQA, this impact would be significant without mitigation.

Mitigation Measures for Impact GEO-5

MM GEO-1 Conduct geotechnical investigations and implement project design recommendations.

Level of Significance After Mitigation

In conformance with Mitigation Measure GEO-1, a California-registered Professional Geotechnical Engineer would evaluate the potential for geotechnical hazards and unstable slopes on the centerline route. Areas of new road construction or widening of roads with slopes with more than a 15 percent gradient would be evaluated prior to construction. Geological hazards would be evaluated during final design specification for each structure location. Geologically unstable sites would be avoided or stabilized prior to construction. Additionally, expansive soils (such as vertisols) would be avoided or stabilized prior to tower installation. With implementation of MM GEO-1, this impact would be reduced to a less-than-significant level.

This impact would be the same in the North, Central, San Luis, and South segments.

4.7.4 Corridor Alternatives

4.7.4.1 Central Segment

Patterson Pass Road Alternative

This alternative has 9 more miles of new access roads and the same number of support structures as the Proposed Project. Due to the increased ground disturbance, this alternative would have greater impacts to geology, soils, and mineral resources as the Proposed Project during construction, operation, and maintenance. Direct and indirect impacts for GEO-1 through GEO-5 would be minor. Under CEQA, direct and indirect impacts for GEO-1 and GEO-5 would be less than significant with implementation of mitigation. Direct and indirect impacts for GEO-2 through GEO-4 would be less than significant and no mitigation is required.

4.7.4.2 San Luis Segment

Butts Road Alternative

This alternative corridor would be 0.5 mile longer than the Proposed Project, would have two more support structures, and would increase the need for new access roads by 2 miles. Therefore, soil disturbance would be increased compared to the Proposed Project, and potential impacts to geology,

soils, and mineral resources also would be slightly increased. Direct and indirect impacts for GEO-1 through GEO-5 would be minor. Under CEQA, direct and indirect impacts for GEO-1 and GEO-5 would be less than significant with implementation of mitigation. Direct and indirect impacts for GEO-2 through GEO-4 would be less than significant and no mitigation is required.

West of Cemetery Alternative

This alternative corridor would be 1.2 miles longer than the Proposed Project, would have six more support structures, and would increase the need for new access roads by 9 miles. The terrain would be slightly steeper than the Proposed Project corridor for this segment, which would slightly increase the potential for erosion and landslide. Direct and indirect impacts for GEO-1 through GEO-5 would be minor. Under CEQA, direct and indirect impacts for GEO-1 and GEO-5 would be less than significant with implementation of mitigation. Direct and indirect impacts for GEO-2 through GEO-4 would be less than significant and no mitigation is required.

West of O'Neill Forebay 70-kV Alternative

This alternative is the same length, has the same length of new access roads, and has the same number of support structures as the Proposed Project, and therefore, would have essentially the same impact to geology, soils, and mineral resources during construction, operation, and maintenance as the Proposed Project. Direct and indirect impacts for GEO-1 through GEO-5 would be minor. Under CEQA, direct and indirect impacts for GEO-1 and GEO-5 would be less than significant with implementation of mitigation. Direct and indirect impacts for GEO-2 through GEO-4 would be less than significant and no mitigation is required.

4.7.4.3 South Segment

San Luis to Dos Amigos Alternative

This alternative has the same length of new access roads and same number of support structures as the Proposed Project, and therefore would have essentially the same impact to geology, soils, and mineral resources during construction, operation, and maintenance. Direct and indirect impacts for GEO-1 through GEO-5 would be minor. Under CEQA, direct and indirect impacts for GEO-1 and GEO-5 would be less than significant with implementation of mitigation. Direct and indirect impacts for GEO-2 through GEO-4 would be less than significant and no mitigation is required.

Billy Wright Road Alternative

This alternative corridor would be 1.5 miles longer than the Proposed Project, would have eight more support structures, and would need 3 miles of additional new access roads. Additionally, the topography of this alternative corridor is slightly steeper than the Proposed Project corridor for this segment, and therefore, the potential for erosion and landslides would be increased slightly. Direct and indirect impacts for GEO-1 through GEO-5 would be minor. Under CEQA, direct and indirect impacts for GEO-1 and GEO-5 would be less than significant with implementation of mitigation. Direct and indirect impacts for GEO-2 through GEO-4 would be less than significant and no mitigation is required.

4.7.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built, and therefore no impacts to geology, soils, and mineral resources would occur.

4.8 Land Use

4.8.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on land use if any activity associated with their construction or operation would:

- Conflict with applicable land use plans, policies, goals, or regulations (Impact LU-1);
- Conflict with existing utility rights-of-way (Impact LU-2);
- Substantially disrupt or divide the physical arrangements of an established community; or have a substantial adverse effect on the existing character of the vicinity (Impact LU-3);
- Conflict with State or federally established, designated, or reasonably foreseeable planned special use areas (e.g., recreation, wildlife management area, game management areas, waterfowl production areas, scientific and natural areas, wilderness areas, areas of critical environmental concern, etc.) (Impact LU-4);
- Result in nuisance impacts attributable to incompatible land uses (Impact LU-5); or
- Result in the permanent conversion of existing land uses (Impact LU-6).

4.8.2 Environmental Protection Measures

- Post proper signage in areas within the easements that will require temporary closure or limited access to accommodate certain land uses. Where feasible, construction activities would be scheduled to minimize impacts to agricultural activities. If this is not feasible and damage occurs, the landowner may be compensated.
- On completion of the work, all work areas except permanent access roads would be returned to preconstruction conditions unless otherwise specified by the landowner/manager.
- During construction, movement would be limited (to the greatest extent feasible) to the access roads and within a designated area in the easements to minimize damage to agricultural land.
- Construction and operations would be conducted in a manner that prevents unnecessary destruction, scarring, or defacing of the natural surroundings to preserve the natural landscape to the extent practicable.
- No permanent discoloring agents would be applied to rocks or vegetation to indicate limits of survey.
- Damaged fences and gates would be repaired or replaced to restore them to their preconstruction condition.

4.8.3 Proposed Project

Impact LU-1 Conflict with applicable land use plans, policies, goals, or regulations.

Transmission Lines

Land use planning for the Proposed Project is described in Sections 3.8.1.1 and 3.8.1.2. The Proposed Project would be constructed adjacent to existing transmission lines in zones that are compatible with utility infrastructure development. The Proposed Project would cross through lands designated as open space or urban reserve in the Villages of San Luis Community Planning area, but these areas are currently

zoned as large-scale agricultural, which allows utility infrastructure development, such as the existing transmission lines in the area; and according to the Villages Community Plan, no zoning changes are currently proposed or planned. The Proposed Project would also cross lands administered by the California Department of Parks and Recreation on either end of Los Banos Creek Reservoir, and an area to the north of the reservoir administered by DWR. The Proposed Project would be located adjacent to existing transmission facilities, which are an allowed use on the State-administered lands.

The Proposed Project would widen the total width of existing utility corridors along the entire route. An additional utility corridor would be compatible with existing agricultural land uses, allowing continued use as farming and ranching lands. The addition of the Proposed Project would effectively reduce the amount of land available for some other types of land uses, especially residential development. Under current planning guidelines, residential development would be an incompatible use within the lands zoned for agricultural use in the four counties affected by the Project. In the near term, therefore, increased residential or commercial development within the area is not anticipated. The Proposed Project would be compatible with adjacent land uses, and would not conflict with land use planning in the Project area. Under CEQA, this would be a less-than-significant impact.

Substations

Construction and operation of the new Los Banos West Substation would require up to 50 acres within the existing 150-acre Jasper Sears OHV Use Area, which is on land owned by Reclamation and leased to CDPR within the San Luis Reservoir State Recreation Area. The proposed substation would not be compatible with the parcels' current designated recreational use under the SLRRLSRA RGMP/GP. Mitigation for impacts to the Jasper Sears OHV Use Area from construction of the proposed Los Banos West Substation could include modification of existing facilities within the OHV Area (Mitigation Measure REC-2 [Modify existing facilities within and relocate, if necessary, the entrance to the Jasper Sears OHV Use Area]). However, implementation of such mitigation would be outside of the jurisdiction of Western and the Authority. The agencies therefore cannot conclusively determine whether such mitigation is feasible (i.e., capable of being accomplished in a successful manner within a reasonable period, taking into account economic, environmental, legal, and other factors). This impact remains significant and unavoidable. Additionally, refer to Section 4.12 (Recreation) for a discussion of impacts to the Jasper Sears OHV Use Area.

Impact LU-2 Conflict with existing utility rights-of-way.

The Project would add new easements adjacent to existing transmission lines. As standard practice, Western will coordinate with adjacent utility easement holders throughout the final design of the Project to ensure the new lines will not conflict with the existing easements. The Project would therefore have a negligible effect on existing utility rights-of-way. Under CEQA, this impact would be less than significant.

Impact LU-3 Cause substantial disruption or divide of the physical arrangements of an established community; or substantial adverse impact on the existing character of the vicinity

The Proposed Project would mostly travel through sparsely populated rural areas adjacent to existing high-voltage transmission lines. Construction and operation of the Proposed Project would not change allowable land uses within the Project area, such as farming and ranching, which is allowed within the existing transmission line easements. It would not disrupt or divide any community, or have an adverse impact on the existing character of the area. Under CEQA, this impact would be less than significant.

Impact LU-4	**Conflict with State or federally established, designated or reasonably foreseeable planned special use areas (e.g., recreation, wildlife management area, game management areas, waterfowl production areas, scientific and natural areas, wilderness areas, areas of critical environmental concern, etc.).**

Substations

As described under Impact LU-1, construction and operation of the new Los Banos West Substation would not be compatible with the parcels' current designated recreational use under the SLRRLSRA RGMP/GP. Mitigation for impacts to the Jasper Sears OHV Use Area from construction of the proposed Los Banos West Substation could include modification of existing facilities within the OHV Area (Mitigation Measure REC-2 [Modify existing facilities within and relocate, if necessary, the entrance to the Jasper Sears OHV Use Area]). However, implementation of such mitigation would be outside of the jurisdiction of Western and the Authority. The agencies therefore cannot conclusively determine whether such mitigation is feasible. This impact remains significant and unavoidable. Additionally, refer to Section 4.12 (Recreation) for a discussion of impacts to the Jasper Sears OHV Use Area.

Transmission Lines

The Proposed Project crosses over recreation lands and wildlife management areas near the San Luis Reservoir and O'Neill Forebay complex, and the Los Banos Creek Reservoir. Impacts to recreation are discussed in Section 4.12. The Proposed Project would also cross two ranches just north of the San Luis Reservoir that are under conservation easement, partially as mitigation that arose from a consultation with the U.S. Bureau of Reclamation and the California State Water Resources Control Board related to operation of the Central Valley Project.

The Proposed Project would also cross parcels near Corral Hollow Road that were purchased by the Contra Costa Water District (CCWD) as mitigation to compensate for loss of wildlife habitat caused by construction of the Los Vaqueros Reservoir Expansion Project; as of October 2015, these parcels are the subject of a draft conservation easement that would transfer management of the lands to the California Department of Fish and Wildlife, and calls for livestock grazing as the primary method of maintaining the conservation values of the property.

The Proposed Project would be located adjacent to existing transmission lines, which are an existing and allowed use in all unprotected areas of the Project. The Project would not block movement of people and animals through these lands, and would in general not conflict with the land management objectives of the administrating agency. ~~Therefore, construction or operation of the Proposed Project would not conflict with any state or federal special land use area. Under CEQA, this impact would be less than significant.~~However, construction or operation of the Proposed Project may include activities that are not compatible with the proposed or active conservation easement agreements of the existing mitigation properties near Corral Hollow and San Luis Reservoir. The draft conservation easement agreement covering the CCWD Corral Hollow properties, for example, currently prohibits many activities associated with proposed transmission line construction. Therefore, construction and operation of the Proposed Project could conflict with special use areas, which would constitute a significant impact if such conflict results in a significant adverse change in the conservation values of the protected property.

Mitigation Measure for Impact LU-4

MM LU-1 **Minimize impacts within conservation easements and/or amend conservation easements.** Prior to commencing construction on any parcel protected by a conservation easement, Western will consult with the governmental agencies or non-governmental organizations involved in managing the parcel to determine whether construction, maintenance, or operation of the Proposed Project is a compatible use within the conservation easement. The consultation shall include the agency that is managing the easement (easement grantee, such as the CDFW), the agency or organization charged with management of the properties (easement grantor, such as CCWD or the Nature Conservancy), and any other agency involved in assuring that the conservation values of the properties are not significantly impacted (participating agencies, such as the USFWS). If such activities are deemed incompatible with the provisions of the conservation easement agreement, Western will attempt to minimize any prohibited activities on the property, or work with the grantor, grantee and participating agencies to amend the agreement to allow and compensate for any significant impact to conservation values resulting from construction, operation and maintenance of the Proposed Project.

Level of Significance after Mitigation

Implementation of MM LU-1 would require minimization of physical impacts within conservation easements where project activities are prohibited or amend the allowed uses to accommodate project activities, thereby ensuring that construction and operation of the Proposed Project would not conflict with any special use area in any manner that results in a significant adverse change in the conservation values of the protected property. Under CEQA, this impact would be less than significant.

Impact LU-5 Result in nuisance impacts attributable to incompatible land uses.

The Project is mostly compatible with land uses within and adjacent to the proposed corridors. The Project would not emit substantial light or glare (see Section 4.15). Noise impacts are discussed in Section 4.9.

Impact LU-6 Result in the permanent conversion of existing land uses.

Under Western's EPMs, work areas would be returned to preconstruction conditions unless otherwise specified by the landowner/manager. Damaged fences, gates, or other structures would be repaired or replaced. Therefore, permanent conversion of existing land uses would not occur. Under CEQA, this impact is less than significant.

4.8.4 Corridor Alternatives

4.8.4.1 Central Segment

Patterson Pass Alternative

This alternative route is adjacent to the Proposed Project Route in the Central Segment. Land use impacts and CEQA significance determinations would be the same as the Proposed Project.

4.8.4.2 San Luis Segment

Butts Road Alternative

This alternative route is on the west side of O'Neill Forebay and runs through the same two land use planning zones (Agriculture and Foothill Pasture) as the Proposed Project. Land use impacts and CEQA significance determinations would be the same as the Proposed Project.

West of Cemetery Alternative

This alternative would be in lands zoned as Foothill Pasture. Transmission line development is compatible with this zone, as pasture use could continue post-construction. It would avoid encroachment on the residential and wildlife preserve land uses on the east side of O'Neill Forebay, but it would encroach on recreational uses on the west side of the Forebay, and on the San Joaquin Valley National Cemetery. Overall, impacts to land use would be similar to that of the Proposed Project in type and context; however, the duration and intensity would likely be greater than the Proposed Project because this alternative would encroach on recreation and national cemetery lands. The CEQA significance determinations would be the same as the Proposed Project.

West of O'Neill Forebay 70-kV Alternative

This alternative would be closer to important recreation uses on the west side of the O'Neill Forebay and to the San Joaquin Valley National Cemetery, but would be farther away from the Village of Santa Nella and a wildlife refuge on the east side of the Forebay. Overall, impacts to land use would be similar to that of the Proposed Project in type and context; however, the duration and intensity would likely be greater than the Proposed Project because this alternative would encroach on recreation and national cemetery lands. The CEQA significance determinations would be the same as the Proposed Project.

4.8.4.3 South Segment

San Luis to Dos Amigos Alternative

This alternative is adjacent to the Proposed Project route in the South Segment. Land use impacts and CEQA significance determinations would be the same as the Proposed Project

Billy Wright Road Alternative

This alternative would travel through lands zoned as Exclusive Agriculture and Urban Reserve within the Villages of Laguna San Luis, and then into lands zoned as Foothill Pasture for the remainder of the route. It would encroach on recreation lands to the west of Los Banos Creek Reservoir. Overall, impacts to land use would be similar to that of the Proposed Project in type and context. Overall, impacts to Land Use would be similar to that of the Proposed Project. The CEQA significance determinations would be the same as the Proposed Project.

4.8.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. There would be no impacts to land use.

4.9 Noise and Vibration

4.9.1 Thresholds of Significance

The Proposed Project and alternatives would have significant noise impacts if any activity associated with their construction, operation, or maintenance would result in:

- A substantial temporary or periodic increase in ambient noise levels (above 5 dBA Leq) at sensitive receptor locations above levels existing without the Project (Impact NOISE-1);
- A substantial permanent increase in ambient noise levels (above 5 dBA Leq) at sensitive receptor locations above levels existing without the Project (Impact NOISE-2);
- Noise levels that exceed applicable local or federal noise regulations or guidelines (Impact NOISE-3);
- Excessive groundborne vibration or groundborne noise levels at sensitive receptor locations (Impact NOISE-4).

A 3-dBA change is the minimum change in environmental noise that is perceptible to the human ear. An increase in noise levels of more than 5 dBA Leq is considered to be a substantial increase and a significant impact.

4.9.2 Environmental Protection Measures

- All vehicles and equipment would be equipped with required exhaust noise abatement suppression devices.

4.9.3 Proposed Project

Overview of Construction Noise

Analyzing construction noise impacts involves three factors: the amplitude of noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the relative location of noise-sensitive areas. Noise impacts are considered more severe if they occur in early morning, evening, or nighttime hours; if the construction occurs adjacent to noise-sensitive land uses (receptors); or if construction continues over extended periods of time. Construction of the Proposed Project would be completed within about 18 months, and construction noise in any one area would generally be limited to about 1 to 2 weeks duration.

Construction of the Proposed Project would involve the short-term use of heavy equipment such as cranes, drill rigs, dozers, excavators, compressors, generators, and trucks. Helicopters would also be needed to transport construction materials and to string the conductors for the transmission line. Construction of foundations for new towers would require use of a drill rig or large auger for the cast-in-place piles at each tower location. Spur roads and access roads would require use of graders, dozers, and trucks.

Noise levels associated with individual pieces of equipment would generally range between 70 and 90 dBA (U.S. DOT, 1995). Noise levels for typical pieces of construction equipment (at 50 feet from the noise source) are listed in Table 4.9-1.

Construction noise is usually made up of intermittent peaks and continuous lower levels of noise from active equipment. At any one location, a combination of multiple pieces of equipment may be present, and aggregated peak noise levels of up to about 100 dBA Lmax could occur within 50 feet from the construction activity. At 100 feet, the distance would attenuate these peak levels to about 94 dBA Lmax, and at 200 feet, the noise would attenuate to approximately 88 dBA Lmax. These short peaks would attenuate further to about 76 dBA Lmax for locations at 800 feet with an unobstructed line of sight. Over a typical day, average noise levels from construction would be lower than the intermittent peaks because most equipment would not be operated steadily or continuously at peak levels. At 50 feet, continuously steady construction noise levels would average approximately 77 dBA Leq. At 100 feet, these average levels would attenuate to 71 dBA Leq, and to 65 dBA Leq at 200 feet. These noise levels would diminish over additional distance and would be reduced further by any intervening structures.

Table 4.9-1. Typical Noise Levels for Construction Equipment

Equipment	Typical Noise Levels (dBA, at 50 feet)
Front loaders	85
Backhoes, excavators	80-85
Tractors, dozers	83-89
Graders, scrapers	85-89
Trucks	88
Concrete pumps, mixers	82-85
Cranes (movable)	83
Cranes (derrick)	88
Forklifts	76-82
Pumps	76
Generators	81
Compressors	83
Pneumatic tools	85
Jack hammers, rock drills	98
Pavers	89
Compacters	82
Drill rigs	70-85

Source: Adapted from U.S. DOT, 1995

Impact NOISE-1 Result in a substantial temporary or periodic increase in ambient noise levels (above 5 dBA Leq) at sensitive receptor locations above levels existing without the Project.

Two types of short-term noise impacts would occur during construction of the Proposed Project. The first type would be due to noise along area roadways from construction crew commutes and the transport of construction equipment and materials to the Proposed Project site. These trips would incrementally raise noise levels on roads leading to the various staging areas and work sites. The pieces of heavy equipment for grading and construction activities would be moved on site and remain for the duration of construction, and would therefore add to temporary rather than permanent daily traffic volumes in the Proposed Project vicinity. A high, single-event noise exposure potential at a maximum temporary level of 88 dBA Lmax from trucks passing at 50 feet may occur. However, the projected construction traffic noise would be sporadic and would be of the same nature as existing traffic noise that occurs along area roadways, including I-5, I-205, I-580, and several State highways and local roads. For areas near existing highways or other main roads, daytime intermittent construction traffic would produce an increase of less than 1 dBA Leq when compared with the existing long-term traffic noise level. Therefore, short-term, construction-related worker commutes and equipment transport noise impacts would be minor and would not cause a substantial temporary or periodic increase in ambient noise levels in the region. This impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

The second type of short-term noise impact is related to noise generated during construction of the Proposed Project. Table 4.9-1, Typical Noise Levels for Construction Equipment, lists typical construction equipment noise levels (Lmax), at 50 feet from the equipment.

Substation Construction

Construction of new substations and grading and surface improvements of the existing substations would generate the highest noise levels (compared to other construction activities) because, typically, earthmoving equipment is the noisiest construction equipment. Construction noise for the SLTP was not modeled to predict exact noise levels. However, comparison to other projects shows that maximum noise levels from similar substation work would typically be approximately 100 dBA (Lmax) at the substation property line (50 feet from the noise source). As described above, continuously steady construction noise levels would average approximately 77 dBA Leq (50 feet). At 100 feet, these average levels would attenuate to 71 dBA Leq, and to 65 dBA Leq at 200 feet.

The nearest sensitive receptor to the new Tracy East and Los Banos West Substations, and the existing Tracy, Los Banos, and Dos Amigos Substations is approximately 600 feet away from the substations. There are no sensitive receptors within one mile of the San Luis Substation, though day-use recreation users are nearby at the O'Neill Forebay and San Luis Reservoir. Noise from earthmoving equipment within the substations would attenuate to approximately 55 to 57 dBA Leq (or ambient levels) at the nearest sensitive receptor. The resulting noise levels would be comparable to and not greater than 5 dBA Leq over existing background daytime levels, which are likely to be between 55 and 60 dBA Leq for the receptors nearest to the substation sites and the area roadways accessing the sites. Construction noise impacts associated with proposed substation construction and improvements would be minor and temporary. This impact would be less than significant. This impact would be the same for all substations affected by the Proposed Project.

Transmission Line Construction

New transmission system construction, access road construction, and pulling operations all generate noise. Helicopter use would generate the highest noise levels. Earth-moving activities associated with access road work and site preparation tasks would generate the next highest noise levels (compared to other construction activities).

Helicopters may be used for delivery of equipment and materials from staging yards to structure sites, structure placement, hardware installation, and conductor or ground wire stringing operations. Noise information is available for the Bell 500 (MD 500) and Kaman Kmax; these are comparable to the Hughes 500, which would be used in construction of the Proposed Project. The reference noise level for the Bell 500 for hovering is 95.9 dBA Lmax at 100 feet. The reference noise level for the Kaman Kmax for hovering is 84.0 dBA Lmax at 250 feet. The total time within any given hour of the day that the helicopter will be used at one location is approximately 15 minutes, though a helicopter may travel back and forth multiple times within that hour at a given tower site location. Helicopter operations would be limited to the Proposed Project area, including staging areas, ground locations in close proximity to conductor or ground wire pulling, tensioning, and splice sites. Helicopter use and other noise-generating activities would not likely take place concurrently at the same location. Generally, helicopters would be used only in inaccessible areas of the Project, which have no sensitive receptors nearby.

Typical equipment used for earth-moving activities include a grader, a dozer, and a compactor. As described above, a combination of multiple pieces of equipment may be present, and aggregated peak noise levels of up to about 100 dBA Lmax could occur within 50 feet from the construction activity. However, continuously steady construction noise levels would average approximately 77 dBA Leq at 50 feet. At 100 feet, these average levels would attenuate to 71 dBA Leq, and to 65 dBA Leq at 200 feet. The nearest sensitive receptor is approximately 370 feet (0.07 mile) from the Proposed Project corridor; there are several more within 500 feet (e.g., residences near Sullivan Road, Butts Road, McCabe Road,

Billy Wright Road, Arburua Road). Even with noise abatement suppression devices, construction would likely result in more than a 5 dBA increase above ambient noise levels at sensitive receptors near the proposed corridor. However, construction noise in any one area would generally be limited to about 1 to 2 weeks duration. This short-term impact would be significant.

Routine maintenance activities could include driving or flying along the transmission line corridor to inspect the facilities, repaint towers, and manage vegetation. Increases in ambient noise from occasional vehicle traffic or helicopter overflights would be negligible and of short duration. Occasionally major maintenance activities, such as tower replacement or reconductoring, may be needed in the future. These activities can create noise that is similar in nature and intensity to that of new construction, albeit at a smaller scale than construction of the Proposed Project.

Mitigation Measures for Impact NOISE-1

MM NOISE-1 **Provide construction notification.** Notice shall be mailed no less than 15 days prior to construction to all residents, property owners, businesses, and public agencies that have facilities within 500 feet of the project area. The notice shall state the type of construction activities that will be conducted, and the location and duration of construction.

MM NOISE-2 **Implement Best Management Practices for construction noise.** Western shall implement the following noise-suppression techniques during construction and major maintenance activities to avoid violations of local noise ordinances and minimize exposure of noise-sensitive receptors.

- Confine construction noise to daytime, weekday hours (7:00 a.m. to 7:00 p.m.) or an alternative schedule established by the local jurisdiction or land manager in areas within 1,000 feet of a sensitive receptor.
- All vehicles and equipment would be equipped with noise suppression devices that are no less effective than those originally installed by the manufacturer.
- Place construction equipment and route construction traffic away from sensitive receptors where feasible.
- Minimize unnecessary construction vehicle use and idling time.

Level of Significance after Mitigation

Implementation of Mitigation Measure NOISE-1 would reduce construction noise to the extent feasible by physically suppressing the noise or confining it to times/days and locations with the least potential for impact. Mitigation Measure NOISE-2 would alert sensitive receptors to upcoming construction noise with adequate time to make arrangements to limit their exposure to the noise (e.g., by leaving or avoiding the area during times of construction). Together, these measures would reduce this impact, but temporary or periodic noise increases may still occur at levels greater than 5 dBA Leq over existing background daytime levels at the sensitive receptors within about 500 feet of the proposed corridor. This short-term impact would be significant and unavoidable. This impact would be the same in the North, Central, San Luis, and South segments.

Impact NOISE-2 Result in a substantial permanent increase in ambient noise levels (above 5 dBA Leq) at sensitive receptor locations above levels existing without the Project.

Corona noise would be generated during operation. For transmission lines, corona is the electrical breakdown of air into charged particles caused by the electrical field on the surface of conductors. It is generally characterized as a crackling/hissing noise. The noise level from corona is proportional to the strength of the line electric field during operation. In general, corona-related noise is audible only during wet weather from lines operated at 345-kV or higher. A study by the Electric Power Research Institute (EPRI, 1982) showed that fair weather audible noise from modern transmission lines of less than 500-kV is indistinguishable from background noise at the edge of a 100-foot transmission line easement; the proposed 500-kV transmission line easement would be 200 to 250 feet wide. Therefore, the Project would have negligible corona noise effects during operations. This impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

Impact NOISE-3 Result in noise levels that exceed applicable local or federal noise regulations or guidelines.

Noise attenuates quickly with distance from the source. A combination of multiple pieces of equipment may be present, and aggregated peak noise levels of up to about 100 dBA Lmax could occur within 50 feet from the construction activity. However, continuously steady construction noise levels would average approximately 77 dBA Leq (50 feet). At 100 feet, these average levels would attenuate to 71 dBA Leq, and to 65 dBA Leq at 200 feet. Temporary construction activities would be limited to 1 to 2 weeks at any one location along the transmission line. Substation construction would be much longer and would fluctuate in duration and noise intensity. The resulting noise level would not exceed the EPA or State of California noise guidelines shown in Section 3.9.1.2; however, depending on the site-specific proximity of residences, it could exceed the noise standards established by each county for compatibility with residential land use (i.e., Merced, San Joaquin, and Stanislaus) identified in Table 3.9-3 for the closest sensitive receptors identified in Section 3.9.1.1. Noise standards established in each county could also be exceeded in the unlikely case that helicopter use is necessarily close to residences. Therefore, this short-term impact would be significant.

Mitigation Measures for Impact NOISE-3

MM NOISE-1 Provide construction notification.

MM NOISE-2 Implement Best Management Practices for construction noise.

Level of Significance after Mitigation

As with Impact NOISE-1, implementation of Mitigation Measures NOISE-1 and NOISE-2 would reduce construction noise and alert sensitive receptors to upcoming construction noise. Together, these measures would reduce this impact, but construction noise may still exceed local regulations or guidelines at the closest sensitive receptors. Although the construction noise would be temporary and periodic at each location, this impact would be significant and unavoidable during construction. This impact would be the same in the North, Central, San Luis, and South segments.

Impact NOISE-4 Result in excessive ground-borne vibration or ground-borne noise levels at sensitive receptor locations.

No vibration-sensitive land uses occur in the Project vicinity. Therefore, ground vibration impacts in the context of this Project area are those that may result in nuisance, annoyance, or structural damage. A

large dozer, which is the piece of equipment that would cause the greatest ground-borne vibration and ground-borne noise levels, has levels of 0.089 in/sec peak particle velocity (PPV) and 87 VdB at 25 feet (FTA, 2006). This would not exceed Caltrans's thresholds of 0.1 in/sec PPV for prevention of structural damage for fragile buildings (Jones and Stokes, 2004) or FTA's maximum acceptable level of 80 VdB for human response at residences (i.e., annoyance) (FTA, 2006). Therefore, construction and operation of the Proposed Project would not expose sensitive receptors to excessive groundborne vibration or groundborne noise levels. Under CEQA, this impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

4.9.4 Corridor Alternatives

4.9.4.1 Central Segment

Patterson Pass Road Alternative

This alternative has 9 more miles of new access roads and same number of support structures as the Proposed Project, and therefore would cause essentially the same noise during construction, operation, and maintenance as the Proposed Project. It would be located on the west side of the existing transmission line corridor rather than on the east side, and therefore would be farther from most of the residences along the Proposed Project corridor. For example, the houses off the end of South Tracy Boulevard, on Sullivan Road and on Butts Road under this alternative would be approximately 500 feet farther from construction activities as compared to the Proposed Project. However, it would be closer to the residences south of Patterson Pass Road. Impacts NOISE-1 through NOISE-4 would be the same as described for the Proposed Project in context, type, and duration; however, the intensity would be slightly less because it would be farther from the residences. CEQA impact significance determinations and mitigation measures for this alternative would be the same as those described for the Proposed Project.

4.9.4.2 San Luis Segment

Butts Road Alternative

This alternative corridor would be 0.5 mile longer than the Proposed Project, would have two more support structures, and would increase new access roads by 2 miles. The noise created by construction, operation, and maintenance of this alternative would be similar to that of the Proposed Project. This alternative corridor is closer to a group of houses off McCabe Road, and closer to important recreation facilities on the O'Neil Forebay, which are as close as about 1,700 feet from this alternative corridor. This alternative would also be closer to the San Joaquin Valley National Cemetery. Impacts NOISE-1 through NOISE-4 would be the same as described for the Proposed Project in type and context; however, the duration and intensity would likely be slightly greater than the Proposed Project due to longer length of the corridor and new access roads. This alternative would have noise effects on a greater number of receptors than the Proposed Project. CEQA impact significance determinations and mitigation measures are the same as those described for the Proposed Project.

West of Cemetery Alternative

This alternative corridor would be 1.2 miles longer than the Proposed Project, would have six more support structures, and would increase new access roads by 9 miles. It would be located closer to the San Joaquin Valley National Cemetery and the residence nearby. Impacts NOISE-1 through NOISE-4 would be the same as described for the Proposed Project in type and context; however, the duration

and intensity would likely be slightly more than the Proposed Project due to increased number of support structures and length of corridor and new access roads. CEQA impact significance determinations and mitigation measures are the same as those described for the Proposed Project.

West of O'Neill Forebay 70-kV Alternative

This alternative is the same length, has the same length of new access roads, and has the same number of support structures as the Proposed Project, and therefore would generate similar noise during construction, operation, and maintenance as the Proposed Project. No residences are in the area of this alternative corridor, though it is closer to important recreation facilities on the O'Neil Forebay, which are as close as approximately 1,700 feet from this alternative corridor. This alternative would also be closer to the San Joaquin Valley National Cemetery than the Proposed Project. Although different sensitive receptors would be affected, impacts NOISE-1 through NOISE-4 would be the same as described for the Proposed Project. CEQA impact significance determinations and mitigation measures are the same as those described for the Proposed Project.

4.9.4.3 South Segment

San Luis to Dos Amigos Alternative

This alternative is the same length, has the same length of new access roads and same number of support structures as the Proposed Project, and therefore would cause essentially the same noise during construction, operation, and maintenance as the Proposed Project. Four houses are located near this alternative corridor near Billy Wright Road. One is 200 feet to the east of the Proposed Project corridor, and another is 200 feet to the west of this alternative corridor. Another, which may not be occupied, is 300 feet away, and the fourth is 2,500 feet to the east side of the Proposed Project corridor. This alternative would reduce noise effects for two or three residences and increase effects for one residence. Impacts NOISE-1 through NOISE-4 would be the same as described for the Proposed Project. CEQA impact significance determinations and mitigation measures are the same as those described for the Proposed Project.

Billy Wright Road Alternative

This alternative corridor would be 1.5 miles longer than the Proposed Project, would have eight more support structures, and would increase new access roads by 3 miles. The noise generated during construction, operation and maintenance from this alternative would be similar to that of the Proposed Project in type and context; however, the duration and intensity would likely be slightly more than the Proposed Project due to greater number of support structures and length of corridor and new access roads. Much of this alternative traverses less developed terrain and therefore is adjacent to fewer residences. Similar to that of the Proposed Project, this alternative traverses the Los Banos Creek Reservoir. However, the portion of the recreation area traversed by the alternative as opposed to the portion traversed by the Proposed Project contains fewer established recreation sites and would therefore result in slightly fewer impacts to sensitive receptors. CEQA impact significance determinations and mitigation measures are the same as those described for the Proposed Project.

4.9.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built and no emissions would occur; therefore, there would be no impacts to noise.

4.10 Paleontological Resources

4.10.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on paleontological resources if any activity associated with their construction or operation would:

- Result in the loss of or inaccessibility to scientifically important paleontological resources (Impact PALEO-1).

4.10.2 Environmental Protection Measures

- Before construction, all construction personnel will be instructed by Western on the protection of cultural and paleontological resources and that cultural and paleontological resources might be present in the study area. To assist in this effort, the construction contract will address applicable federal and State laws regarding cultural and paleontological resources, including historic and prehistoric resources, and fossils. Construction personnel will be informed of the penalties for collection and removal of such resources, as well as the importance of these resources and the purpose and necessity of protecting them. Contractors will be trained to stop work near any discovery and notify Western's regional environmental manager immediately, who will ensure that the resource is evaluated and avoided. Known cultural and paleontological resources will be flagged for avoidance and a minimum distance maintained for work disturbances.

4.10.3 Proposed Project

This section is based on the information provided in the Paleontological Resources Report, which is included as Appendix G.

Based on the results of a literature review and museum records search conducted through the University of California Museum of Paleontology (UCMP), the geologic units underlying the Proposed Project study area have a paleontological resource potential ranging from low to high in accordance with the Society of Vertebrate Professionals (SVP) (2010) and BLM's Potential Fossil Yield Classification (PFYC) system (2008). The Panoche, Moreno, Oro Loma, Briones, Neroly, and Tulare Formations, as well as the Quaternary older alluvium, are considered to have a high paleontological resource potential, equivalent to PFYC Class 4, because they have proven to yield vertebrate fossils near the Project study area and throughout California. Although the UCMP contains no vertebrate localities for the Kreyenhagen, Domengine, and Cierbo Formations within Alameda, San Joaquin, Stanislaus, or Merced Counties, these units have yielded intermittent vertebrate localities elsewhere in California; as such, they are assigned to PFYC Class 3 (moderate paleontological resource potential). The Tesla Formation and Laguna Seca Formations are assigned a low paleontological resource potential (PFYC Class 2); although they contain a number of invertebrate localities, they have not yielded significant vertebrate fossils. The portions of the Project near the flatlands on the edge of the Central Valley are on Holocene age alluvial deposits. Holocene deposits have a low paleontological resource potential recommendation (PFYC Class 2) because they are generally too young to preserve fossilized remains. However, these alluvial deposits may shallowly overlie older intact fine-grained Pleistocene-age sediments. Therefore, their paleontological resource potential is low to high, increasing with depth.

Impact PALEO-1 Result in the loss of or inaccessibility to scientifically important paleontological resources.

In general, the potential for a given project to result in negative impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the project. Since this Project entails construction of a new transmission line, new ground disturbances are anticipated. Consequently, the likelihood of adversely affecting scientifically significant fossils during Project development is high in sensitive areas. The following mitigation measures were developed in accordance with the standardized guidelines developed by SVP and BLM for treatment of paleontological resources and are consistent with the requirements of NEPA and CEQA.

Mitigation Measures for Impact PALEO-1

MM PALEO-1 **Conduct pre-construction survey.** A qualified paleontologist will be retained to conduct a field reconnaissance survey of the Project area prior to any ground-disturbing activities. Any required permits will be obtained prior to the survey. Survey areas will include the entire corridor right-of-way, plus any additional easements, such as for substations, work or storage areas, or access roads. The purpose of the field survey will be to visually inspect the ground surface for exposed fossils or traces thereof and to evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. Only Project areas (as defined above) classified as having a PFYC Class 3 or higher will be subject to a pedestrian survey. Particular attention will be paid to rock outcrops, both inside and in the vicinity of the Project area, where accessible, and any areas where geologic sediments are well exposed. Areas determined to have a PFYC Class 1 or 2, or areas that are heavily disturbed or otherwise obscured by heavy vegetation will not require a field survey. Where possible, activities and structures should be located in areas of lower sensitivity for encountering paleontological resources.

MM PALEO-2 **Document all finds.** All fossil occurrences observed during the course of fieldwork, significant or not, will be documented and recorded at the time of discovery. The data collected for each fossil occurrence should include, at a minimum, the following information: Universal Transverse Mercator (UTM) coordinates, approximate elevation, description of taxa, lithologic description, and stratigraphic context (if known). In addition, each locality will be photographically documented with a digital camera. If feasible, with prior consent of the landowner(s), all significant or potentially significant fossils will be collected at the time they are observed in the field. If left exposed to the elements, fossil materials are subject to erosion and weathering. If the fossil discovery is too large to collect during the survey (e.g., a dinosaur skeleton or bone bed) and requires a large-scale salvage effort, then it will be documented and a mitigation strategy will be devised pursuant to SVP (2010) guidelines.

MM PALEO-3 **Conduct Worker Environmental Awareness Training.** Prior to the start of Project activities, all field personnel will receive worker's environmental awareness training on paleontological resources. The training will provide a description of the fossil resources that may be encountered in the Project area, outline steps to follow in the event that a fossil discovery is made, and contact information for the Project Paleontologist and on-site monitor(s). The training will be developed by the Project Paleontologist and may be conducted concurrently with other environmental training (e.g., cultural and natural resources awareness training, safety training, etc.).

MM PALEO-4 **Conduct paleontological mitigation monitoring.** Prior to the commencement of ground-disturbing activities, a qualified and professional paleontologist will be retained to prepare and implement a Paleontological Resource Mitigation Plan for the Project. Initially, full-time monitoring will be required during ground-disturbing activities in the areas of the Project with a recommended paleontological resource potential of Class 4 or higher (i.e., Panoche Formation, Moreno Formation, Oro Loma Formation, Briones Formation, Neroly Formation, Tulare Formation, and Quaternary older alluvium). Part-time monitoring or spot checking will occur in areas of the Project underlain by geologic units with a recommended paleontological resource potential of Class 3. In addition, spot checking will also occur in Project areas underlain by Quaternary alluvial deposits in order to determine if underlying sensitive geologic units are being impacted by construction, and at what depth.

Monitoring will entail the visual inspection of excavated or graded areas and trench sidewalls. In the event that a paleontological resource is discovered, the monitor will have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and collected. Monitoring will include matrix screening for the presence of microfossils, the frequency of which will be determined by the Project Paleontologist.

Monitoring is largely a visual inspection of sediments; therefore, the most likely fossils to be observed will be macrofossils of vertebrates (bones, teeth, tusk) or invertebrates (shells). At the discretion of the Project Paleontologist, the monitor will periodically screen sediments to check for the presence of microfossils that can be seen with the aid of a hand lens (i.e., microvertebrates). Should microvertebrate fossils be encountered during the screening process, then bulk matrix samples will be taken for processing off site. For each fossiliferous horizon or paleosol, a standard sample (4.0 cubic yards or 6,000 pounds) will be collected for subsequent wet-screening per SVP (2010) guidelines.

MM PALEO-5 **Procedures for fossil preparation, curation, and reporting.** Upon completion of fieldwork, all significant fossils collected will be prepared for curation. Preparation will be done in a properly equipped paleontology laboratory and will include the removal of excess matrix from fossil materials, and stabilizing and repairing specimens, as necessary. Following laboratory work, all fossil specimens will be identified to the lowest taxonomic level, cataloged, analyzed, and curated. The fossil specimens must be delivered to the accredited museum repository identified on the permit and receipt(s) of collections will be submitted to Western. This delivery will be made as soon as practical but no later than 60 days after all fieldwork is completed. The cost of curation is assessed by the repository and will be the responsibility of Western.

At the conclusion of laboratory work and museum curation, a Paleontological Mitigation Report will be prepared describing the results of the paleontological mitigation monitoring efforts associated with the Project. The report will include a summary of the field and laboratory methods, an overview of the Project area geology and paleontology, a specimen inventory of all taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, the signed receipt of confirmation of museum deposition, and recommendations. The report will be submitted to the designated repository, Western, and any other interested State or federal agencies involved within 45 days following completion of monitoring and laboratory work.

Level of Significance after Mitigation

Mitigation Measures PALEO-1, PALEO-2, PALEO-3, and PALEO-4 requires that all paleontological resources be identified prior to ground disturbing activities, thoroughly documented and that workers be informed regarding their presence and protection. Implementation of these measures would avoid and minimize impacts to any inadvertent discoveries of paleontological resources. Mitigation Measure PALEO-5 would require preparation, curation, and reporting for any discovered resources. In combination, these mitigation measures would reduce impacts to paleontological resources to a less-than-significant level.

4.10.4 Corridor Alternatives

Alternative corridors travel through similar geological units and formations, and would have similar potential to create impacts to Paleontological Resources as the Proposed Project. Intensity of impacts would essentially be proportional to the number of support structures for each route.

4.10.4.1 Central Segment

The Patterson Pass Road Alternative would have the same number of structures as the Proposed Project, and be within the same geological units, and therefore would have the same impacts on paleontological resources as the Proposed Project. With the implementation of Western's standard EPMs, construction standards, and Mitigation Measures PALEO-1 through PALEO-5, impacts to Paleontological Resources would be minor. CEQA determinations would be the same as for the Proposed Project.

4.10.4.2 San Luis Segment

The Butts Road Alternative would have two more structures than the Proposed Project, and the West of Cemetery Alternative would have six more. Impacts to Paleontological Resources from either of these alternatives would be similar to that of the Proposed Project in type and context but greater in the duration and intensity due to greater number of support structures and length of new access roads. With the implementation of Western's standard EPMs, construction standards, and Mitigation Measures PALEO-1 through PALEO-5, impacts to Paleontological Resources would be minor. CEQA determinations would be the same as for the Proposed Project.

4.10.4.3 South Segment

The San Luis to Dos Amigos Alternative would have the same number of structures as the Proposed Project, and be within the same geological units, and therefore would have equal effect on Paleontological Resources. The Billy Wright Road alternative would have eight more structures and 3 more miles of access road than the Proposed Project. Impacts to Paleontological Resources from the Jasper Sears Road alternative would be similar to that of the Proposed Project in type and context but greater in the duration and intensity due to greater number of support structures and length of new access roads. With the implementation of Western's EPMs, construction standards, and Mitigation Measures PALEO-1 through PALEO-5, impacts to Paleontological Resources would be minor. CEQA determinations would be the same as for the Proposed Project.

4.10.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built, and therefore there would be no direct or indirect impacts to paleontological resources.

4.11 Public Health and Safety

4.11.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on public health and safety if any activity associated with their construction or operation would:

- Interfere with emergency response capabilities or resources (Impact H&S-1);
- Create worker health hazard(s) beyond limits set by health and safety regulatory agencies or that endangers human life and/or property (Impact H&S-2);
- Inflict serious injuries to workers, visitors to the area or area land users (Impact H&S-3);
- Create electric and magnetic fields near an existing or proposed sensitive land use, such as schools or hospitals, which would pose a plausible risk to human health (Impact H&S-4);
- Create substantial interference and disruption of emergency communications and electronic health/ safety devices that results in substandard performance (Impact H&S-5); or
- Change traffic patterns that result in hazardous situations for motorists or pedestrians (Impact H&S-6).

4.11.2 Environmental Protection Measures

- Conform with safety requirements for maintaining the flow of public traffic and conduct construction and operations to offer the least possible obstruction and inconvenience to public transportation.
- Post proper signage in areas within the easement that will require temporary closure or limited access to accommodate certain land uses. Where feasible, construction activities would be scheduled to minimize impacts to agricultural activities. If this is not feasible and damage occurs, the landowner may be compensated.
- Mark structures and/or shield wire with highly visible devices for identified locations, as required by applicable laws and regulations (for example, Federal Aviation Administration regulations).

4.11.3 Proposed Project

Each health and safety issue described below is highly regulated by one or more of the following agencies: U.S. Department of Transportation (DOT), EPA, OSHA, and DOE, as well as State, county, and local governments. Additionally, Western and its contractors are required to comply with safety and environmental protection policies and guidance developed by Western, including Western's Occupational Safety Program (WAPA Order 3790.1B), the Power System Maintenance Manual (PSMM), the Power System Safety Manual (PSSM), and Power Systems Operations Manual (PSOM).

The DOE Office of NEPA Policy and Compliance has mandated that accidents and intentional acts of destruction (terrorism) be addressed in NEPA documents (DOE, 2002; and DOE, 2006). For this Project, this would include spills, falls and other types of accidents, catastrophic wildfire, and intentional acts of destruction. Some of these risks can be reduced through appropriate maintenance and management, but all of these events are dependent on many complex variables and are unpredictable. The degree of uncertainty in this analysis is therefore high. However, this impacts analysis discloses the primary risks to life, property, and environmental values.

Impact H&S-1 Interfere with emergency response capabilities or resources.

The Proposed Project would be constructed, operated, and maintained in a safe manner at all times, following Western's requirements. The Proposed Project is not expected to generate a significant increase in demand for emergency services. Wildfire hazards will be minimized by controlling weeds and grasses within the Project area, such as maintaining height of grasses and brush at no more than 10 inches. Fire danger would also be reduced by avoiding certain activities during very dry and hot conditions, such as those that prompt a Red Flag Warning or Fire Weather Watch advisory by the National Weather Service. During such conditions, any activity that could emit a spark or high heat would be avoided after 10:00 a.m. each day. All machinery used for the Project would be equipped with spark arrestors.

The Proposed Project would not interfere with movement of emergency vehicles during construction, operation, and maintenance activities. Impacts to traffic are addressed in Section 4.14, Traffic and Transportation.

Impacts to emergency response capabilities and resources would be short-term and negligible. Under CEQA, this impact would be less than significant.

Proposed Project construction would be short-term and maintenance activities that could interfere with emergency response capabilities or resources would be infrequent. During operation, all hazardous materials for permanent storage in the Project's finished facilities would be reported to the applicable Certified Unified Program Agencies according to applicable federal, State, and local requirements. This will ensure emergency service providers are informed of the hazardous materials stored at the facilities, and can make plans to respond accordingly.

Impact H&S-2 Create worker health hazard(s) beyond limits set by health and safety regulatory agencies or that endangers human life and/or property.

Hazardous Materials and Hazardous Waste

Hazardous materials handling and use during project construction and maintenance are expected to be limited to petroleum-based products for vehicle fueling and lubrication. Hazardous waste could be generated during the handling of hazardous materials, such as used motor oil. Construction and maintenance activities would be conducted by personnel trained in the proper handling and storage of hazardous materials and waste, such as during fueling of construction vehicles and equipment. Personnel would also receive training regarding notification requirements, and containment and cleanup actions to take in the event of a spill of hazardous materials or waste. Spill kits for containment and cleanup would be maintained anywhere hazardous materials or waste are handled. Hazardous materials will not be stored outside the substations or staging areas. Waste would be managed in accordance with applicable regulations, and removed for final disposal within allowable time limits.

Valley Fever

Contracting Valley Fever, as an indirect impact from fugitive dust generated by Project activities, could pose a health risk to workers and nearby residents. However, with suppression of fugitive dust through Western's Construction Standard 13.13 and following the Project EPMs, the risk of contracting Valley Fever from dust produced by Project activities would be minimal.

Impacts to worker health and safety would be negligible. Under CEQA, this impact would be less than significant.

Impact H&S-3 Inflict serious injuries to workers, visitors to the area or area land users.

Wildfires

Grassfires often do not damage the galvanized steel transmission towers or the conductors because they move very quickly (15 mph on average, with pulses up to 35 mph). Because of their speed, however, wildfires present a serious danger to any person in the area of the fire. Fires outside of Western's easements could start for various reasons and later move into the easement, endangering workers during construction and system operation, as well as recreation users that pass through the project area, such as those accessing the San Luis Reservoir State Recreation Area, Cottonwood Creek Wildlife Area, and O'Neal Forebay Wildlife Area, and people who have access to the project area on private lands, such as ranch owners and employees.

Following Western's standard construction practice, vehicles will be restricted to designated access routes and work areas. Where appropriate, herbicides would be used to control weeds, in conformance with standards in the California Department of Pesticide Regulation PRESCRIBE database. Nonetheless, under CEQA, direct and indirect impacts would be potentially significant absent mitigation given the potential to inflict serious injuries from wildfire hazards.

Mitigation Measures for Impact H&S-3

MM H&S-1 **Prepare a fire plan.** Prior to construction in any given segment, Western shall prepare a Fire Plan for that area, in cooperation with applicable firefighting and land management areas with jurisdiction within that segment. The plan will establish standards and practices that will minimize the risk of fire danger, and in case of fire, provide for immediate suppression and notification. At a minimum, the plan will include the following elements:

- **Fire call directory.** During construction and when completing maintenance activities within the Project easements throughout the year, should Western (or a representative of Western) identify a fire during construction or maintenance activities, Western (or a representative of Western) shall immediately call 911. In addition, Western (or Western's representative) shall contact applicable land management agencies within 15 minutes of identifying a fire. Applicable land management agency phone numbers will be included in all Western contracts pertinent to SLTP construction and O&M and distributed within Western. Western will also provide contact information for its 24-Hour Folsom Dispatch Office and applicable supervisors during construction and maintenance to all land management agencies with jurisdiction over any portion of the Project so the agency can inform Western of any fire identified on or near Western's easements. The fire call directory will be updated by Western each year (preferably before April 1). Updates will include dispatch centers, key contacts, titles, and daytime and after-hours phone numbers. The updated directory will be produced by Western and distributed to Western, land management agencies, and contractors as appropriate.
- **Obtain background information on fire potential.** Prior to commencing construction or maintenance activities within Project easements, Western will contact the applicable firefighting agency for that area to obtain information on the potential for wildfire and to provide a schedule of on-site crew work.

- **Communication.** Western and/or its contractors will have reliable communication (cell phone, satellite phone, or radio) present on the job site. If cellular coverage is not available, the location of the nearest available phone will be identified to all crewmembers.
- **Worker Awareness.** Project workers will be briefed on precautions necessary for adherence to the Fire Plan. The plan will identify safety measures, tools to carry, and instruction in the event of a fire. Communication of the daily Project Activity Levels for the area will be discussed.
- **Construction restrictions based on fire conditions.** Western (or a representative of Western) will be responsible for checking daily fire levels during project construction and modifying construction operations based on the level of wildfire hazard for that day. Working with the applicable land management or firefighting agency, the Fire Plan will include a description of requirements for responding to a given level of threat. This may include, for instance, providing a fire patrol, or restricting activities during peak heat hours.
- **Water supply for firefighting.** The Fire Plan shall identify the location of available water supplies, including the 300-gallon tank (minimum) filled with water that shall be stored at each individual worksite(s) during the fire season. Western will consult with applicable land management and firefighting agencies to determine appropriate tank storage locations for inaccessible worksite(s).
- **Fire management/vegetation management.** The Fire Plan shall also include details for reducing wildfire hazard throughout the life of the project, such as through vegetation management and creation of fire breaks. Fire breaks will be determined by coordinating with applicable land management and firefighting agency personnel. In addition, maintaining adequate easement clearance (i.e., trimming vegetation or trees close to transmission lines) will also reduce wildfire risk.

Level of Significance after Mitigation

Implementation of Mitigation Measure H&S-1 would reduce the potential for injury by requiring prevention of and rapid reaction to wildfire. The coordinated effort between Western, its contractors, and land management agencies in the Project area to minimize wildlife risk as prescribed in Mitigation Measure H&S-1 would reduce this impact to a less-than-significant level.

Physical Hazards

Physical hazards may include injury from falling, improper use of tools or machinery, construction site dangers, and electrocution. Workers typically perform elevated work from bucket trucks or by climbing structures. In both instances, Western requires workers to use fall-protection devices. During construction, work would be performed according to standard health and safety practices, and OSHA policies and procedures. Excavated trenches and holes will be covered when not being worked on. In addition, the installation of polymer insulators, which remain intact if vandalized by a rifle shot or other means, would reduce maintenance and electrical problems, and related exposure to physical hazards by workers. Western's construction workers and linemen are trained and experienced with transmission line O&M. Western's comprehensive safety program includes an annual update of its Power System Safety Manual that provides direction and guidance for prevention of accidents that may result in personal injury, illness, property damage, or work interruption. The potential for serious injury resulting from physical hazards is low; impacts would be less than significant.

Vandalism and Acts of Intentional Destruction

Vandalism and intentional acts of sabotage of facility structures or conductors are unpredictable events. The chances of such acts occurring would be reduced by the limited access to the Project area. Western would inspect the Project on a regular basis for any signs of sabotage or vandalism, and take action immediately if a potential hazard is found. The potential for serious injury resulting from vandalism and intentional acts of destruction is low; impacts would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact H&S-4 Create electric and magnetic fields near an existing or proposed sensitive land use, such as schools or hospitals, which would pose a plausible risk to human health.

The existing transmission lines have no documented adverse public health and safety effects from EMF exposure. Circuits placed parallel to each other tend to cancel electric and magnetic fields, thus reducing the measured fields under the lines and at the edge of the easement. Also, no existing schools, hospitals or other sensitive land uses are closer than 1,000 feet from the Proposed Project corridors. Several schools are planned as part of the Villages of San Luis Community Plan in the urban reserve area to the east of the project corridor. Future development of sensitive land uses within the plan area would be required to conform to setback requirements of the plan, which specify at least a 1,000-foot buffer between public facilities and utility facilities.

The Project would be compliant with NESC guidance and Western would incorporate its engineering, design, and operating standards on 500-kV and 230-kV lines. This would include proper grounding standards and practices for the transmission line. The electric and magnetic fields at the edge of the easement are anticipated to be well below the recommended guidelines of the International Commission on Non-Ionizing Radiation and the American Conference of Governmental Industrial Hygienist. The Project would therefore result in a negligible impact because it would not expose the public or workers to unusual or higher than usual levels of EMF. Under CEQA, this impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

Impact H&S-5 Create substantial interference and disruption of emergency communications and electronic health/safety devices that results in substandard performance.

Potential interference with electronic devices would come from corona, which is described in Section 3.9. Corona generated radio interference is most likely to affect the amplitude modulation (AM) broadcast band (535 to 1,705 kilohertz); frequency modulation (FM) radio is rarely affected. Only AM receivers located very near the transmission lines have the potential to be affected by radio interference. Television interference from corona effects occurs during bad weather, and is generally of concern for transmission lines with a voltage of 345-kV or more and only for receivers within about 600 feet of the transmission line. The potential for the Proposed Project to interfere and disrupt emergency communications or electronic devices is negligible. Under CEQA, this impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

Impact H&S-6 Change traffic patterns that result in hazardous situations for motorists or pedestrians.

The proposed transmission lines would span roads in the Project area. Following the Project EPMs and construction standards (listed in Appendix F) would ensure public safety. There would be no change in traffic patterns attributable to the Proposed Project. Therefore, there would be no impact under CEQA. This impact would be the same in the North, Central, San Luis, and South segments.

4.11.4 Corridor Alternatives

The Proposed Project and all corridor alternatives would have identical effects on Public Health and Safety. CEQA determinations for all impacts to Public Health and Safety from all alternatives would be the same as for the Proposed Project.

4.11.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built, and therefore there would be no impacts to public health and safety.

4.12 Recreation

4.12.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on recreation if any activity associated with their construction, operation, and maintenance would:

- Conflict with established, designated, or planned recreation areas or activities (Impact REC-1);
- Result in changes that alter or otherwise physically affect established, designated, or planned recreation areas or activities (Impact REC-2);
- Decrease accessibility to areas established, designated, or planned for recreation (Impact REC-3);
- Increase demand for recreation activities due to the influx of people during construction and operation of the Proposed Project that would exceed capacity for that activity in a given area, such as a campground, wilderness, hunting area, and/or trails (Impact REC-4).

4.12.2 Environmental Protection Measures

- On completion of the work, all work areas except permanent access roads would be returned to pre-construction conditions unless otherwise specified by the landowner/manager.
- Construction and operations would be conducted to prevent unnecessary destruction, scarring, or defacing of the natural surroundings to preserve the natural landscape to the extent practicable.
- Proper signage would be posted in areas within the easement that would require temporary closure or limited access to accommodate certain land uses. Where feasible, construction activities would be scheduled to minimize impacts to agricultural activities. If this is not feasible and damage occurs, the landowner may be compensated.

4.12.3 Proposed Project

Impact REC-1 Conflict with established, designated, or planned recreation areas or activities.

While dispersed recreation may occur, there are no local, State, or federally established, designated, or planned recreation areas or activities within the North or Central segments of the Proposed Project. Therefore, no impacts would occur in this portion of the Proposed Project.

Transmission Lines

The San Luis and South segments of the Proposed Project cross portions of the SLRSRA and the Lower Cottonwood Wildlife Area (see Figure 3.12-1). Existing recreational resources and activities available in these areas, such as designated trails and overlooks, campgrounds and facilities, and water and shore activities could be temporarily disrupted by Project construction. Temporary direct and indirect adverse impacts to air quality, noise, and visual resources or a loss of sensitive resources, such as wildlife or pristine viewsheds could degrade the experience of recreationists in these areas.

The presence of transmission line structures, depending on their exact location within the corridors, may conflict with planned upgrades to established recreation areas. The SLRSRA RMP/GP, described in Section 3.12.1, provides for additional facilities within the Medeiros Use Area including a new restroom, parking lot, windsurfing launch area, water-based play area, 150 tent and RV sites, 100 primitive campsites, and alternative overnight lodging. The Proposed Project could affect the placement of these facilities or prevent them from being completed resulting in a substantial, long-term impact. Under CEQA, this would result in a significant impact.

Substations

Modifications to existing substations or the construction and operation of the new Tracy East Substation would not result in direct or indirect impacts as these areas do not overlap with established, designated, or planned recreation areas or activities.

Construction and operation of the new Los Banos West Substation would require up to 50 acres within the existing 150-acre Jasper Sears OHV Use Area. As described in Section 3.2.1, this OHV Use Area is regionally unique because it mainly serves beginner riders with its flat and open terrain. The proposed substation would not be compatible with the parcels' current designated recreational use under the SLRSRA RMP/GP. Although the exact location of the proposed substation is not yet determined, Western believes that the OHV use area could continue to operate within the remaining 100 acres. Nonetheless, permanent conflicts with the current use of this established recreation area would occur, which would constitute a significant impact to recreational resources.

Mitigation Measures for Impact REC-1

MM NOISE-1 **Provide construction notification.**

MM NOISE-2 **Implement Best Management Practices for construction noise.**

MM AQ-1 **Reduce or offset construction equipment emissions.**

MM REC-1 **Coordinate with local agencies to identify tower locations.** Western shall coordinate with the CDPR regarding transmission line structure locations within the SLRSRA boundary to minimize conflicts with planned recreation areas and facility management.

MM REC-2 **Modify existing facilities within and relocate, if necessary, the entrance to the Jasper Sears OHV Use Area.** Western shall coordinate with Reclamation and CDPR to identify modifications to existing facilities within the Jasper Sears OHV Use Area necessary to facilitate continued operation of the Jasper Sears OHV Use Area. In the case that the new Los Banos West Substation renders the existing entrance to the OHV use area unusable, Western shall coordinate with Reclamation and CDPR to relocate the entrance to provide continued access to the OHV use area. Modifications to the Jasper Sears OHV Use Area, including a new entrance as necessary, shall be operational before construction begins within the OHV use area.

Level of Significance after Mitigation

Implementation of Mitigation Measure NOISE-1 would provide proper notification of planned construction activities. This would alert recreationists to upcoming construction noise with adequate time to make arrangements to limit their exposure to the noise (e.g., by leaving or avoiding the area during times of construction), thereby reducing the disruption of existing recreational resources and activities available in established, designated, and planned recreation areas within the study area. Implementation of Mitigation Measures AQ-1 and NOISE-2 would reduce the severity of indirect adverse impacts to air quality and noise that could degrade the experience of recreationists in established, designated, or planned recreation areas or activities. Implementation of Mitigation Measure REC-1 would reduce temporary conflicts with recreation areas or activities by ensuring cooperation with affected resource management agencies to determine tower structure locations that would minimize conflict with planned recreation areas or facility management. In combination, implementation of these mitigation measures would reduce impacts of the Proposed Project facilities (other than the new Los Banos West Substation, discussed below) to less than significant.

Mitigation Measure REC-2 requires modification of existing facilities to maintain the current function of the Jasper Sears OHV Use Area and reduce conflicts with this recreation area to the maximum extent feasible. However, implementation of Mitigation Measure REC-2 would be outside of the jurisdiction of Western and the Authority. Therefore, the agencies cannot conclusively determine whether such mitigation is feasible (i.e., capable of being accomplished in a successful manner within a reasonable period, taking into account economic, environmental, legal, and other factors). This impact remains significant and unavoidable.

Impact REC-2 Result in changes that alter or otherwise physically affect established, designated, or planned recreation areas or activities.

Impact REC-2 would not occur in the North or Central segments as they do not contain any established, designated, or planned recreation areas or activities.

Transmission Lines

Alterations of the landscape within the established and designated recreation areas in the study area (identified and described in Section 3.12) would be primarily caused by construction and operation activities including the installation of towers, foundation excavation, conductor stringing, and maintenance actions. Pursuant to EPMs, Western would construct and operate the Proposed Project in a manner that would prevent unnecessary destruction, scarring or defacing of the natural surroundings. On completion of construction, all work areas except permanent access roads would be returned to pre-construction conditions. Temporary impacts would include visual, air quality, and noise impacts that could affect the setting and landscape of existing recreation areas.

During operation of the Proposed Project, transmission line structures within the San Luis and South Segments would be visible from some of the recreation sites and activities around the SLRSRA and the Cottonwood Creek Wildlife Area. This could potentially reduce the quality of outdoor recreation experiences due to the visibility of permanent, man-made features. However, this impact would be minor because there are existing high-voltage transmission lines and substations currently visible from parts of these recreation areas.

Under CEQA, this impact would be less than significant.

Substation Construction

Construction and operation of the new Los Banos West Substation would require up to 50 acres within the 150-acre Jasper Sears OHV Use Area. The site grading, property and substation fencing, and installation of electrical facilities associated with the substation construction would result in permanent physical alteration of this recreation area. Although the exact location of the proposed substation is not yet determined, Western believes that the OHV use area could continue to operate within the remaining 100 acres. Nonetheless, substantial physical alteration of up to one-third of the recreation area would occur, which would constitute a significant impact to recreational resources.

Mitigation Measures for Impact REC-2

MM REC-2 Modify existing facilities within and relocate, if necessary, the entrance to the Jasper Sears OHV Use Area.

Level of Significance after Mitigation

Mitigation Measure REC-2 requires modification of existing facilities to maintain the current function of the Jasper Sears OHV Use Area and minimize alterations of this recreation area to the maximum extent feasible. However, implementation of Mitigation Measure REC-2 would be outside of the jurisdiction of Western and the Authority. Therefore, the agencies cannot conclusively determine whether such mitigation is feasible (i.e., capable of being accomplished in a successful manner within a reasonable period, taking into account economic, environmental, legal, and other factors). This impact remains significant and unavoidable.

Impact REC-3 Decrease accessibility to areas established, designated, or planned for recreation.

The North Segment of the Proposed Project does not overlap with areas established, designated, or planned for recreation and therefore, no direct or indirect impacts would occur.

Transmission Line Construction

Project construction activities may result in a temporary decrease in accessibility to recreation resources when construction, operation, or maintenance activities are located adjacent to primary access points of existing recreational areas.

The Central Segment corridor is adjacent to portions of the I-5 corridor. Construction of the Proposed Project may result in a temporary decrease in or loss of accessibility to recreation areas accessed from the I-5 corridor (e.g., Frank Raines Off-Highway Vehicle Park, Carnegie State Vehicular Recreation Area, and Corral Hollow Ecological Preserve). Therefore, construction of the Proposed Project may result in access restrictions to these recreation areas.

Additionally, the San Luis Segment overlaps with several main access points to the SLRSRA, and one main access route to the Lower Cottonwood Creek Wildlife Area, as described in Section 3.12.1.1. If Project construction is conducted adjacent to these access points, temporary closure or limited access may occur. However, construction of the transmission line will be temporary and conducted in phases. Therefore, it is unlikely that all access points to any of these established recreation areas will be closed or limited during the same period or for an extended period. In addition, pursuant to EPMs, proper signage would be posted in areas within the project area that would require temporary closure or limited access to inform recreationists of alternative routes and access points. This would result in minor, temporary adverse impacts to accessibility.

The South Segment corridor overlaps with the Los Banos Creek Reservoir subarea of the SLRSRA. Project construction may occur adjacent to main access routes and established access points and may cause a temporary decrease or loss of access to recreation resources within this area. However, as described above, it would be unlikely that access to the recreation area would be completely lost or a decrease in accessibility would occur for an extended period of time. This impact would be short-term, temporary, and minor.

Under CEQA, this impact would be less than significant for transmission line construction.

Substation Construction

As described under Impact REC-1, permanent preclusion of up to one-third (50 acres) of the Jasper Sears OHV Use Area would occur. If construction and operation of the substation occurs within the existing entrance to the OHV use area, a decrease or a complete loss of access to the recreation area could occur. This decreased accessibility would constitute a significant impact.

Mitigation Measures for Impact REC-3

MM REC-2 Modify existing facilities within and relocate, if necessary, the entrance to the Jasper Sears OHV Use Area.

Level of Significance after Mitigation

Mitigation Measure REC-2 requires relocation of the entrance to the Jasper Sears OHV Use Area in the case that the new Los Banos West Substation renders the existing entrance to the OHV use area unusable. Implementation of this measure would preserve access to the Jasper Sears OHV Use Area. However, implementation of Mitigation Measure REC-2 would be outside of the jurisdiction of Western and the Authority. Therefore, the agencies cannot conclusively determine whether such mitigation is feasible (i.e., capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, and other factors). This impact remains significant and unavoidable.

Impact REC-4 Increase demand for recreation activities due to the influx of people during construction and operation of the Proposed Project that would exceed capacity for that activity in a given area, such as a campground, wilderness, hunting area and/or trails.

Construction of the Proposed Project is anticipated to require a relatively small workforce (an estimated maximum employment of 87 construction workers) over an anticipated period of 525 days. Construction of the Proposed Project would be temporary and not result in a substantial influx of people, beyond the workers and possibly their families. The existing capacity of recreational resources, such as campgrounds, wilderness and hunting areas, and trails within the Project area (described in Section 3.12) would not be exceeded by this minor increase in demand. The rural setting and availability of open space in the Project area would supply additional dispersed recreational opportunities to accommodate additional demand for recreation. Impacts during operation and maintenance will be similar to or less severe in nature and duration than that of new construction as the influx of people would be much less. Under CEQA, this would be a less-than-significant impact.

4.12.4 Corridor Alternatives

Impacts to recreational resources vary by alternative depending on the presence of existing established or designated recreational areas or activities.

4.12.4.1 Central Segment

Patterson Pass Alternative

As with the Proposed Project, Impacts REC-1 through REC-3 would not occur as there are no local, State, or federally established, designated, or planned recreation areas or activities within this alternative. REC-4 would also be similar to the Proposed Project as this alternative would result in similar demands on the same recreation areas. CEQA significance determinations would be the same as the Proposed Project.

4.12.4.2 San Luis Segment

Butts Road Alternative

This alternative would overlap a greater portion of the Lower Cottonwood Creek Wildlife Area and the SLRSRA in comparison to the Proposed Project. Although still minor, Impacts REC-2 and REC-3 would be

slightly greater under this alternative. However, REC-1 and REC-4 would be the same as described under the Proposed Project as the exact location of the transmission line within the recreation areas does not affect the intensity of these impacts. The CEQA significance determination would be the same as the Proposed Project.

West of Cemetery Alternative

This alternative would overlap a greater portion of the Lower Cottonwood Creek Wildlife Area and the SLRSRA in comparison to the Proposed Project. Although still minor, Impacts REC-2 and REC-3 would be slightly greater under this alternative. However, REC-1 and REC-4 would be the same as described under the Proposed Project as the exact location of the transmission line within the recreation areas does not affect the intensity of these impacts. The CEQA significance determination would be the same as the Proposed Project.

West of O'Neill Forebay 70-kV Alternative

This alternative would overlap a greater portion of the Lower Cottonwood Creek Wildlife Area and the SLRSRA in comparison to the Proposed Project. Although still minor, adverse Impacts REC-2 and REC-3 would be slightly greater under this alternative. However, REC-1 and REC-4 would be the same as described under the Proposed Project as the exact location of the transmission line within the recreation areas does not affect the intensity of these impacts. The CEQA significance determination would be the same as the Proposed Project.

4.12.4.3 South Segment

San Luis to Dos Amigos Alternative

This alternative would require the same construction and project components as the Proposed Project and overlap a similar portion of existing recreation areas. Therefore, Impacts REC-1 through REC-4 would be similar to those under the Proposed Project. The CEQA significance determination would be the same as the Proposed Project.

Billy Wright Road Alternative

This alternative would overlap a larger portion of the Los Banos Creek Reservoir in comparison to the Proposed Project and would cross the designated Path of the Padres trail (described in Section 3.12). Due to the local importance of this event, recreationists may be more sensitive to changes in the setting within this area, resulting in a short-term moderate impact. Therefore, Impacts REC-1, REC-2, and REC-3 would be greater under this alternative. However, REC-4 would be the same as described under the Proposed Project as it is analyzed on a regional basis and the exact location of the transmission line within the recreation areas does not affect the intensity of this impact. The CEQA significance determination would be the same as the Proposed Project.

4.12.5 No Action/No Project

Under this alternative, construction and operation of the San Luis Transmission Line Project would not occur. Therefore, there would be no impacts to recreational resources.

4.13 Socioeconomics

4.13.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on socioeconomics if any activity associated with their construction or operation would result in:

- Permanent displacement of existing residences or businesses (Impact SE-1);
- Permanent and irreversible loss of work for any major sector of a community (Impact SE-2);
- A substantial decrease in property values (Impact SE-3);
- An increase in population that would create shortages of housing and place an excessive burden on local government and community facilities and services (Impact SE-4);
- A need for new infrastructure systems, including power or gas utilities, communications systems, water and sewer services, or solid waste disposal systems (Impact SE-5); or
- A long-term economic gain or loss ~~benefit (a positive impact that could be considered significant)~~ (Impact SE-6).

4.13.2 Environmental Protection Measures

There are no EPMs applicable to Socioeconomics.

4.13.3 Proposed Project

Impact SE-1 Permanent and irreversible loss of work for any major sector of a community.

Proposed Project construction would be conducted in stages; therefore, personnel would not be working on all tasks simultaneously at a given location. Construction activities would require the employment of about 87 construction workers over an estimated 525 days. As shown in Table 3.13-3, a large civilian labor force is available within the study area. It is expected that this existing labor pool would be sufficient to meet the job opportunities generated by the Proposed Project.

The creation of new jobs may help to lower the unemployment rate for the duration of the Proposed Project, thereby resulting in a temporary, minor, beneficial socioeconomic impact within the study area. This temporary, minor, beneficial impact on worker employment and income would indirectly benefit local businesses when workers buy gas and food or as some workers stay in local motels.

Under CEQA, to the extent employment considerations affect the Proposed Project's potential physical effects, this impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

Impact SE-2 An increase in population that would create shortages of housing and place an excessive burden on local government and community facilities and services.

The Project area is within commuting distance from residential communities in the area. Construction and maintenance workers not hired locally would be accommodated by the vacant housing or hotels in the study area (see Table 3.13-2). Construction and operation of the Proposed Project would not create a shortage of housing. Under CEQA, this impact would be less than significant. This impact would be the same in the North, Central, San Luis, and South segments.

Impact SE-3 A need for new infrastructure systems, including power or gas utilities, communications systems, water and sewer services, or solid waste disposal systems.

Due to the adequate supply of vacant housing and hotels in commuting distance from the Proposed Project and the corresponding lack of demand for additional housing, the Proposed Project would not create a need for new infrastructure systems, including power or gas utilities, communications systems, water and sewer services, or solid waste disposal systems. No direct or indirect impacts would occur. This impact would be the same in the North, Central, San Luis, and South segments.

Impact SE-4 Permanent displacement of existing residences or businesses.

The Proposed Project would be constructed primarily within rural areas in Alameda, San Joaquin, Stanislaus, and Merced Counties with the exception of moderate density development in the North Segment of the Proposed Project near the Tracy Substation and a small area northeast of the O'Neill Substation. Typically, Project components (e.g., towers) can be sited to avoid any displacement of existing homes and businesses and existing land uses within easements are able to continue. Although very unlikely, if permanent displacement of adjacent residences and businesses occurred, this impact would be significant.

Mitigation Measures for Impact SE-4

MM SE-1 **Acquire land rights.** Where new easements are needed, Western would acquire land rights (easements) in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646), as amended. Generally, easements would be purchased through negotiations with landowners at fair market value. The landowner would normally retain title to the land and could continue to use the property in ways that would be compatible with the transmission line.

Level of Significance after Mitigation

In the event that businesses or residential structures would be displaced, Mitigation Measure SE-1 would require Western to acquire land rights in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646), as amended. With implementation of mitigation, this impact would be reduced to less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact SE-5 Substantial decrease in property values.

Studies of the impact of power lines on property values have produced mixed findings. A recent publication, *Towers Turbines and Transmission Lines Impact on Property Value* (2013, Bond, Sims, & Dent) provides a comprehensive review of decades of studies of high-voltage transmission lines, cell towers, and wind farms in various countries. In particular, Chapter 6 of the book reviews studies of high-voltage transmission lines in North America.

According to this publication, a number of factors are perceived to have the potential to diminish property values. These include concerns over whether there is a potential health and safety risk posed by the lines (see the discussion of EMF in Section 4.11), the visibility of the line from the subject property, and the potential for increased traffic, noise, and dust to occur during construction and operation activities. However, there are no definitive answers about the degree to which the presence of a transmission line may affect property value.

Although it may be argued that the value of some individual properties is affected, there would be no perceptible change in property values overall. In addition, the Proposed Project would occur primarily adjacent to existing high-voltage transmission lines, resulting in negligible impacts to property values. Under CEQA, to the extent socioeconomic considerations affect the Proposed Project's potential physical effects, this impact would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact SE-6 Long-term economic gain or loss~~benefit~~.

Transmission line construction would create new temporary jobs for construction workers and temporarily cause a positive increase in income and related economic activity in the affected counties. In addition, some material would be purchased to construct the transmission line in the local study area, which would increase revenue for some businesses and create a minor increase in the tax revenue received by local and State government. Electricity rates are anticipated to be lower for Reclamation and its customers served by the Proposed Project than by service under the CAISO Tariff.

Therefore, this would result in a long-term economic benefit. This impact would be the same in the North, Central, San Luis, and South segments.

Substations

Construction and operation of the new Los Banos West Substation could result in the permanent preclusion of up to one-third (50 acres) of the Jasper Sears OHV Use Area. If construction and operation of the substation occurs within the existing entrance to the OHV Use Area, a decrease or a permanent loss of access to the recreation area could occur (see Section 3.12 for a detailed description of the Jasper Sears OHV Area and Section 4.12 for a full discussion of impacts to recreation area access). This decrease in access could have the potential to substantially decrease the number of visitors to the OHV Use Area within the San Luis State Recreation Area, currently operated and maintained by California State Parks. Therefore, revenue to State Parks could decrease resulting in economic losses.

Mitigation Measure for Impact SE-6

MM REC-2 Modify existing facilities within and relocate, if necessary, the entrance to the Jasper Sears OHV Use Area.

Mitigation Measure REC-2 requires relocation of the entrance to the Jasper Sears OHV Use Area in the case that the new Los Banos West Substation renders the existing entrance to the OHV Use Area unusable. Implementation of this measure would preserve access to the Jasper Sears OHV Use Area. However, implementation of Mitigation Measure REC-2 would be outside of the jurisdiction of Western and the Authority. Therefore, the agencies cannot conclusively determine whether such mitigation is feasible (i.e., capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, and other factors). Nonetheless, Mitigation Measure REC-2 is proposed to avoid or minimize economic loss to State Parks.

The economic impacts of a project are not subject to CEQA; therefore, a CEQA significance determination is not provided for this impact.

4.13.4 Corridor Alternatives

Impacts to socioeconomics would be the same for each alternative. Impacts SE-1 through SE-6 are based on a regional socioeconomic analysis within the study area, and therefore would be similar to that of the Proposed Project. CEQA significance determinations for each impact would be the same as the Proposed Project.

4.13.5 No Action/No Project

Without the construction of the SLTP, Impacts SE-1 through SE-5 would not occur. It is also anticipated that rates would be higher for Reclamation and its customers under the No Action Alternative in comparison to the Proposed Project. Therefore, Impact SE-6 (Long-term economic benefit) would not occur.

4.14 Traffic and Transportation

4.14.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on traffic and transportation if any activity associated with their construction or operation would result in:

- Increased traffic that exceeds levels of service established by the California Department of Transportation, a county transportation agency, or city/town transportation department (Impact TRAFFIC-1);
- Traffic delays on a primary transportation corridor (Impact TRAFFIC-2);
- Inadequate emergency access (Impact TRAFFIC-3);
- Road dust, severe road damage, or both at levels that create hazardous situations for motorists and pedestrians (Impact TRAFFIC-4);
- Disruption to railways or bikeways during construction (Impact TRAFFIC-5);
- Change in air traffic patterns, including alterations of flight paths and operations (Impact TRAFFIC-6); or
- Conflicts with ~~current or future~~ federal, regional, State, and local airport plans (Impact TRAFFIC-7).

4.14.2 Environmental Protection Measures

- Western will restrict all necessary lane closures or obstructions on major roadways associated with construction activities to off-peak periods to avoid substantial traffic congestion and delays.
- Western will ensure that roads or sidewalks damaged by construction activities would be properly restored to their pre-construction condition.
- Conform with safety requirements for maintaining the flow of public traffic and conduct construction and operations to minimize obstruction and inconvenience to public transportation.
- Mark structures and/or shield wire with highly visible devices for identified locations, as required by applicable laws and regulations (for example, Federal Aviation Administration regulations).

4.14.3 Proposed Project

Project effects on traffic and transportation would come from two sources: truck traffic for moving equipment, materials, and supplies as needed over the local road network, and workers commuting to the worksite daily. Changes in transportation are not expected to occur outside the immediate Project area; therefore, regional transportation beyond the four-county area of the project is not discussed. Unless otherwise specified, the impact discussion that follows applies to all segments of the Project.

Impact TRAFFIC-1	**Cause increased traffic that exceeds levels of service established by the California Department of Transportation, a county transportation agency, or city/town transportation department**

The Project would cause only minor, temporary increases in traffic and would have no effect on LOS ratings. Under CEQA, this impact would be less than significant.

Impact TRAFFIC-2 Cause delays on a primary transportation corridor

The road network in the area is described in Section 3.14.1.1 and shown in Figures 3.14-1a through 1d. Equipment, materials, and supplies for the Proposed Project would be moved to staging areas along the route using trucks of various sizes. Truck traffic would be sporadic, moving equipment and materials as needed, but would be scheduled to avoid peak hours, as well as avoid congested routes in general.

Road restrictions may be needed to accommodate truck traffic, tower construction, or stringing of wires. Pursuant to EPMs, Western would restrict all necessary lane restrictions or obstructions on major roadways associated with construction activities to off-peak periods to minimize traffic congestion and delays. Nonetheless, it is expected that stringing of wires over highways, particularly I-5 and Highway 152, would cause delays on these primary transportation corridors. Therefore, this impact would be significant.

Mitigation Measures for Impact TRAFFIC-2

MM TRAFFIC-1 Prepare and submit Traffic Control Plans. Prior to the start of construction, Western would submit traffic control plans to all agencies with jurisdiction of public roads that would be affected by construction activities. The plans will include details on work schedule, associated truck traffic, and commuter traffic for all portions of the project. Plan requirements include:

- Coordinating with the affected jurisdictions on construction hours of operation.
- Following guidelines of the local jurisdiction for road closures caused by construction activities.
- Installing traffic control devices as specified in the California Department of Transportation's (Caltrans') Manual of Traffic Controls for Construction and Maintenance Works Zones (California Department of Transportation, 1996).
- Notifying the public of road closures in the immediate vicinity of the construction zone and/or of temporary closures of bike lanes, and recreation trails.
- Providing access to driveways and private roads outside the immediate construction zone.
- Monitoring road and bike lane damage and repairing roads and bike lanes damaged during construction, or providing compensation for damage to roadways and bikeways.
- Coordinating with Caltrans and the California Highway Patrol for stringing transmission line conductors and fiber over interstate or State highways, an activity that would require close coordination with these agencies to minimize hazards to workers and the public.

Level of Significance after Mitigation

Pursuant to Mitigation Measure TRAFFIC-1, Western would submit traffic control plans prior to construction to all agencies with jurisdiction of public roads that would be affected by construction activities. These plans would include provisions for minimizing delays if traffic restrictions are needed while conducting work along or over roadways. With implementation of this mitigation measure, delays along primary transportation corridors would be less than significant.

Impact TRAFFIC-3 Cause inadequate emergency access

There are no emergency facilities along the Project routes, such as fire or police stations or hospitals. Project construction-related traffic is expected to be minor and temporary, and no extended closures of major transportation routes are anticipated. In coordination with affected jurisdictions, Western will develop and implement a traffic control plan, which will include an emergency access plan. The goal of the plan will be to reduce construction-related effects on the local roadway system and avoid hazardous traffic and circulation patterns during the construction period. All construction activities will follow the standard construction specifications and procedures of the appropriate jurisdictions. The emergency access plan would include provisions to allow for access into and adjacent to the construction zone for emergency vehicles. The emergency access plan requires coordination with emergency service providers before construction. It would provide effective traffic and navigation direction, substantially reducing the potential for disruptions to response routes. Therefore, the Project would have a negligible effect on emergency access. Under CEQA, this impact would be less than significant.

Impact TRAFFIC-4 Cause road dust, severe road damage, or both at levels that create hazardous situations for motorists and pedestrians

By following the Project EPMs and construction standards, the Project is not expected to cause dust that would create hazardous conditions for motorists, bicyclists, or pedestrians in the area. As shown in Table 3.14-1, most of the paved public roads that would be used for construction access in the Project region are in Good to Excellent condition and likely will not be damaged by construction-related traffic. The one exception is Oak Flat Road, which is in Fair condition in the area of the Project and potentially could be damaged by construction-related truck traffic. In the unlikely event that roadways are damaged to the point that they represent a hazard to motorists or other users, EPMs require Western to ensure that roads or sidewalks damaged by construction activities would be properly restored to their preconstruction condition.

This traffic and transportation impact would be negligible. Under CEQA, this impact would be less than significant.

Impact TRAFFIC-5 Disruption to railways or bikeways during construction

Western would consult with UPRR for the proposed SLTP crossing near Patterson Pass Road. An encroachment permit would be needed, which would outline necessary setbacks and clearances to ensure that there are no disruptions to rail service, effects on the stability of the line, or changes in access for UPRR. Rail disruptions would be minor.

Construction equipment may also need to traverse designated bikeways. This could result in minor temporary disruptions to the bikeways. This disruption would affect primarily the bikeway on Patterson Pass Road, and potentially to the California Aqueduct Bikeway. Construction would occur mostly during the work week, when bikeway use is minimal. Under CEQA, this impact would be less than significant.

Impact TRAFFIC-6 Changes in air traffic patterns, including alterations of flight paths and operations

Proposed Project structures would be as close as 2.1 miles to the Tracy Airport, and 3 miles to both the crop duster field near Westley and the closed airport near the community of Crows Landing. This distance is sufficient to minimize conflicts with the airports. Project structures would be located adjacent to existing transmission lines, and therefore would not present a new hazard that would cause changes in air traffic patterns. Effects would be negligible. Under CEQA, this impact would be less than significant.

Impact TRAFFIC-7 Cause conflicts with ~~current or future~~ federal, regional, State, and local airport plans

Because the Project would be located a minimum of 2.1 miles from any active or planned airport, and because its structures would be located adjacent to existing transmission lines, it would not present a new hazard to air traffic in the region. Although hazards are not anticipated, EPMs require Western to notify the FAA and affected airports of any potential obstruction or hazard to aircraft operations near any airport, and implement actions required by the FAA, such as marking the towers. It would therefore not cause a conflict with current or future airport plans. Under CEQA, this impact would be less than significant~~No impact would occur~~.

4.14.4 Corridor Alternatives

The Proposed Project and all corridor alternatives would have identical effects on traffic and transportation. CEQA determinations for all impacts to traffic and transportation from all alternatives would be the same as for the Proposed Project.

4.14.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built, traffic in the region would not increase, and there would be no impacts to traffic and transportation.

4.15 Visual Resources

4.15.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on visual resources if any activity associated with their construction or operation would result in:

- Degradation of the foreground character or scenic quality of a visually important landscape (Impact VIS-1);
- Dominant visual changes in the landscape that are seen by highly sensitive viewer locations such as community enhancement areas or locations with special scenic, historic, recreational, cultural, and/or natural qualities that have been recognized as such through legislation or some other official declaration (Impact VIS-2);
- Visual interruption that would dominate a unique viewshed or scenic view (Impact VIS-3);
- A new source of substantial light or glare which would adversely affect day or nighttime views in the area (Impact VIS-4); or
- Conflict with visual standards identified by a federal land management agency (Impact VIS-5).

4.15.2 Environmental Protection Measures

There are no EPMs applicable to Visual Resources.

4.15.3 Proposed Project

Two main issues were assessed in determining impact significance: (1) the type and extent of actual physical contrast that would be caused by the Project, and (2) the visibility of a given corridor segment or transmission structures. The intensity of adverse effects to visual quality depends upon the amount of visual contrast between the proposed facilities and the existing landscape. Because the Proposed Project and alternative corridors are adjacent to existing transmission line corridors, the assessment of visual resource impacts has focused on incremental impacts of the planned new facilities combined with the existing facilities. The visual effects of new access road construction are not discussed, as these roads would not be visible from any viewpoint, and therefore have no impact on visual resources. Operation and maintenance activities for the Proposed Project and all alternatives also would have no effect on visual resources, and therefore are not discussed in this section.

Neither the Proposed Project nor any alternative would introduce a source of light or glare into the region (VIS-4). The public lands in the Project Area are managed by State agencies under agreement with the U.S. Department of the Interior, and therefore are not subject to any visual standard established by a federal land management agency (VIS-5). Even if applicable, the Project would not result in visual effects that would conflict with any visual standard identified by a federal land management agency. Thus, there would be no impacts under these two criteria for any route, and therefore these impacts are not discussed further.

4.15.3.1 North Segment

New construction along the North Segment would result in minor incremental visual impacts. In general, this segment would be adjacent to existing transmission lines that dominate the landscape, and the area in general is highly disturbed by agricultural practices and the presence of two interstate highways, a

large industrial area, several wind farms, the California Aqueduct, and the Delta-Mendota Canal. Except for small areas in rolling hills, the visual quality is moderate. This would result in a minor incremental change to visual character in this segment.

Impact VIS-1	**Cause degradation of the foreground character or scenic quality of a visually important landscape.**

While some areas surrounding the Proposed Project in this segment are of moderate visual quality, there are no visually important landscapes in this area. Views of the Proposed Project area from the residences within the planned community of Mountain House are screened by fences and rows of trees along Green Valley Parkway.

The only structures in the same viewshed as the Proposed Project for this segment are the existing transmission lines and wind turbines. These structures have changed the visual quality of the area substantially. Therefore, there would be no degradation of a visually important landscape. Under CEQA, this impact would be less than significant.

Impact VIS-2	**Introduce dominant visual changes in the landscape that are seen by highly sensitive viewer locations such as community enhancement areas or locations with special scenic, historic, recreational, cultural, and/or natural qualities that have been recognized as such through legislation or some other official declaration.**

No known highly sensitive viewer locations exist along this segment of the Proposed Project. There are no public parks, scenic overviews, or scenic highways in the area, nor any identified place with special scenic, historic, recreational, cultural, and/or natural qualities. Therefore, there would be no degradation of a visually important landscape. Under CEQA, this impact would be less than significant.

Impact VIS-3	**Cause visual interruption that would dominate a unique viewshed or scenic view.**

No unique viewshed or scenic view exists in the area surrounding this segment. Therefore, there would be no visual interruption that would dominate any valued viewshed or scenic view. Under CEQA, there would be no impact.

4.15.3.2 Central Segment

Impact VIS-1	**Cause degradation of the foreground character or scenic quality of a visually important landscape.**

The viewshed along this segment is of high to very high visual quality. Most of the segment is of low sensitivity due to lack of access. However, the portions visible from I-5, which is designated as a Scenic Highway within this segment, have high visual sensitivity. The Project would also cross the Del Puerto Creek area, which is identified in the Stanislaus County General Plan as an important natural area with high scenic value due to the unusual rock outcrops that dominate the upper portions of the natural area, as well as rare sycamore groves and other natural features. The area is accessible by Del Puerto Canyon Road, which the County has listed as a potential scenic route. However, the portion of the Del Puerto Canyon that would be affected by the Project is in the lower portions of the canyon, near its entrance into the Central Valley. The views along the Proposed Project near the creek and road are mostly of vineyards and other agricultural operations, which are of moderate visual quality.

The Proposed Project would introduce new structures into the region. However, they would be located adjacent to several existing transmission corridors, and therefore would not introduce high contrast to the viewshed. The incremental effect of adding a new line adjacent to existing lines would be minor in all areas except the portions visible from I-5 and Del Puerto Canyon Road, where the Proposed Project would have a moderate incremental effect. In all cases, there would be no degradation of a visually important landscape. Under CEQA, this impact would be less than significant.

Impact VIS-2 Introduce dominant visual changes in the landscape that are seen by highly sensitive viewer locations such as community enhancement areas or locations with special scenic, historic, recreational, cultural, and/or natural qualities that have been recognized as such through legislation or some other official declaration.

Other than the portions of the Proposed Project visible from I-5 and the Del Puerto Canyon area, no known highly sensitive viewer locations exist in this segment. There are no public parks or scenic overviews in the area, nor any other identified place with special scenic, historic, recreational, cultural, and/or natural qualities. Portions of the Proposed Project would be seen by travelers along I-5 between Khalsa Road and Zacharias Road in Stanislaus County; this 6-mile segment of I-5 is designated as a scenic highway due to views of the rolling hills of the Diablo Range to the west, and views of farmlands to the east. The Project would also cross Del Puerto Canyon Road, which is listed as a potential scenic route by the County and is used to access a valued natural area with high scenic value, though views in the area crossed by the Project are primarily of previously disturbed farm and ranchlands in the lower part of the canyon.

The Proposed Project would introduce new structures into the region adjacent to existing transmission towers, and therefore would not introduce high contrast to the viewshed. The incremental effect of adding a new line adjacent to these existing lines would be minor to moderate. Also, viewers driving on I-5 and on Del Puerto Road would view the Project for only a short time. Therefore, the Proposed Project would not introduce dominant visual changes in the landscape. Under CEQA, this impact would be less than significant.

Impact VIS-3 Cause visual interruption that would dominate a unique viewshed or scenic view.

Views of the Diablo Range are high to very high in visual quality but are not unique. Very similar views can be found all along the Coast Ranges and the foothills of the Sierra Nevada in California. The Proposed Project would not be seen from any scenic view overlook[1] or public park in the area surrounding this segment. It would be seen from a 6-mile segment of I-5 that is designated as a scenic highway, and from a portion of Del Puerto Canyon Road, which is designated as a potential scenic route by the County. The Proposed Project would introduce new structures into the region adjacent to existing transmission towers, and therefore would not introduce high contrast to the viewshed. The incremental effect of adding a new line adjacent to existing lines would be minor to moderate. Also, viewers driving on I-5 and on Del Puerto Canyon Road would view the Project for only a short time. Therefore, there would be no visual interruption that would dominate any valued viewshed or scenic view. Under CEQA, this impact would be less than significant.

[1] There are two scenic overlooks, a golf course and a rest stop along I-5 near this segment, but the Proposed Project would not be visible from these viewpoints.

4.15.3.3 San Luis Segment

Impact VIS-1	Cause degradation of the foreground character or scenic quality of a visually important landscape

The viewshed along this segment is of high to very high visual quality. Much of the viewshed along this segment is of high sensitivity due to its visibility from important recreation areas, San Joaquin Valley National Cemetery, and a scenic highway (SR 152). The Proposed Project route travels on the lesser-used east side of O'Neill Forebay, where the Project would be visible from a scenic overlook at the San Joaquin Valley National Cemetery (3,300 feet from the Project), public golf course (1,800 feet from the Project), residences within Santa Nella Village (1,200 feet from the Project), a wildlife area, and travelers on Santa Nella Road and SR 152.

The 322-acre National Cemetery is a highly sensitive land use. It includes a memorial to the soldiers, sailors, airmen, and marines who died in combat in Korea, another memorial dedicated to the 11th Airborne Division, a third memorial dedicated to submariners of World War II, 15,000 gravesites, and 8,000 in-ground cremation sites. Funerals for deceased active duty and veteran service members are nearly a daily occurrence, and the facility is highly praised for its gardens and surrounding scenery, especially from an overlook above the facility, where a flag is flown at half-mast every day. The Proposed Project would not be visible from most of the National Cemetery, including the memorials, gardens, and gravesites. It would be visible from the scenic overlook, but would be more than 3,300 feet (0.6 mile) away, and therefore would not be prominent in the viewscape.

Many structures are within the same viewshed as the Proposed Project for this segment, including the existing transmission lines, infrastructure associated with the San Luis Reservoir and O'Neill Forebay, nearby housing and retail developments, highways, and canals. These structures have changed the visual quality of the area substantially. The Proposed Project would introduce new structures into the region adjacent to two to four sets of existing transmission towers in most areas, and therefore would not introduce high contrast to the viewshed. The incremental effect of adding a new line adjacent to existing lines would therefore be minor to moderate.

There may be areas where the placement of new facilities constructed for the Project may not be located adjacent to existing transmission lines, such as within the wildlife areas on the east side of O'Neill Forebay. For example, in an effort to balance wildlife conservation values with aesthetics, Western chose to route the Proposed Project parallel to other infrastructure within the O'Neill Forebay Wildlife Area (i.e., an aqueduct and Highway 33). Proposed Project corridors were designed to reduce effects to visual resources to the greatest extent feasible, often shielding the new structures from view behind natural landscape features, and placing new structures next to existing infrastructure to minimize visual contrast. As final design and engineering commence, Western will continue to refine tower locations to minimize impacts to visual resources while balancing impacts to other resources, consistent with the analysis in this EIS/EIR. As required by Mitigation Measure REC-1, this process will include coordination with affected land management agencies, including State Parks.

Because project structures would be shielded using existing topography, and located adjacent to existing infrastructure to the greatest extent feasible, implementation of the Proposed Project would not degrade ~~Therefore, there would be no degradation of~~ a visually important landscape. Under CEQA, this impact would be less than significant.

Impact VIS-2	**Introduce dominant visual changes in the landscape that are seen by highly sensitive viewer locations such as community enhancement areas or locations with special scenic, historic, recreational, cultural, and/or natural qualities that have been recognized as such through legislation or some other official declaration**

Many highly sensitive viewer locations are located in the area surrounding this segment, including from the San Joaquin Valley National Cemetery and the recreation areas around O'Neill Forebay, Santa Nella Village, and SR 152. However, the Proposed Project structures would be in the middle to background view of these viewpoints, except where the Proposed Project would cross SR 152, and often would be shielded from view by natural landscape features. The Proposed Project would introduce new structures adjacent to existing ~~transmission towers~~infrastructure, and therefore would not introduce high contrast to the viewshed. Final location of Project structures will be refined in coordination with affected land management agencies, such as USBOR and State Parks. The incremental effect of adding a new line adjacent to existing lines would be moderate. Also, viewers driving on SR 152 would view the Project for only a short time. Therefore, the Proposed Project would not introduce dominant visual changes in the landscape. Under CEQA, this impact would be less than significant.

Impact VIS-3	**Cause visual interruption that would dominate a unique viewshed or scenic view**

Views of the Diablo Range, O'Neill Forebay, San Luis Reservoir, and surrounding areas within this segment are high to very high in visual quality but are not unique. Very similar views can be found all along the Coast Ranges and the foothills of the Sierra Nevada in California. Visual sensitivity is also high to very high, due to the presence of a National Cemetery, recreation and residential land uses, and a scenic highway in the area. The Proposed Project would introduce new structures adjacent to existing ~~transmission towers~~infrastructure, and therefore would not introduce high contrast to the viewshed. The incremental effect of adding a new line adjacent to existing ~~lines~~ infrastructure would be moderate. The Project would not be visible from most parts of the National Cemetery or the San Luis State Recreation Area, and would not cause a visual interruption of any viewshed that is designated as an important or unique scenic view. However, because Reclamation and State Parks have not yet completed the inventory of scenic views within the Recreation Area as called for in the 2013 Resource Management Plan/General Plan, Western will coordinate with affected land management agencies such as Reclamation and State Parks to refine final locations of Project structures. From the scenic overlook at the National Cemetery, the Project would be more than 3,300 feet (0.6 mile) away. Also, viewers driving on SR 152 would view the Project for only a short time. Therefore, there would be no visual interruption that would dominate any valued viewshed or scenic view. Under CEQA, this impact would be less than significant.

4.15.3.4 South Segment

Impact VIS-1	**Cause degradation of the foreground character or scenic quality of a visually important landscape**

The viewshed along this segment is of high to very high visual quality. Most of the segment is of low sensitivity due to lack of access. Portions are visible from I-5, which is not designated as a Scenic Highway within this segment area. Portions are also visible from several residences on Arburua Road, two residences near Los Banos Creek Reservoir, and a single residence near the Dos Amigos Substation and pumping plant. However, the view of the Proposed Project would be in the middle- to background from the interstate, and all the residence except one residence on Arburua Road. That residence, which is located approximately halfway between the Project and I-5, is surrounded by vegetation that blocks all

views of the surrounding area. The Dos Amigos Substation and a single transmission tower adjacent to the substation dominate the views from the nearby residence, but views of the Proposed Project to the west across I-5 are screened by vegetation. Similarly, views toward the Proposed Project from one of the residences near Los Banos Substation are also screened by vegetation. The other residence in that area is below the Los Banos Creek Reservoir within the State recreation area, where the existing transmission lines span across the canyon for approximately 2,700 feet; the Proposed Project would be visible from this residence, but it would not dominate the view.

The Proposed Project would introduce new structures adjacent to existing transmission towers that dominate views from I-5 because they are silhouetted against the sky. The new Project structures would not introduce high contrast to the viewshed. The incremental effect of adding a new transmission line adjacent to existing lines would be moderate. Therefore, there would be no degradation of the foreground character or scenic quality of the visually important landscape. Under CEQA, this impact would be less than significant.

Impact VIS-2	**Introduce dominant visual changes in the landscape that are seen by highly sensitive viewer locations such as community enhancement areas or locations with special scenic, historic, recreational, cultural, and/or natural qualities that have been recognized as such through legislation or some other official declaration**

Highly sensitive viewer locations in this area that could be affected by the Proposed Project include a 4.6-mile stretch of I-5, the residences in the area described above, and the recreation area near the Los Banos Creek Reservoir dam. There are no officially declared scenic overviews in the area, nor any identified place with special scenic, historic, recreational, cultural, and/or natural qualities. I-5 is not designated as a scenic highway in this region. The Proposed Project would introduce new structures adjacent to existing transmission towers, and therefore would not introduce high contrast to the viewshed. The incremental effect of adding a new transmission line adjacent to existing lines would be moderate. Also, viewers driving at interstate highway speeds would view the Project for only a short time. Therefore, the Proposed Project would not introduce dominant visual changes in the landscape. Under CEQA, this impact would be less than significant.

Impact VIS-3	**Cause visual interruption that would dominate a unique viewshed or scenic view**

Views of the Diablo Range are high to very high in visual quality but are not unique. Very similar views can be found all along the Coast Ranges and the foothills of the Sierra Nevada in California. The Proposed Project would not dominate the view from any formally designated scenic view overlook or public park in the area surrounding this segment. The Proposed Project would introduce new structures adjacent to existing transmission towers, and therefore would not introduce high contrast to the viewshed. The incremental effect of adding a new transmission line adjacent to two existing lines would be moderate. Therefore, there would be no visual interruption that would dominate any unique viewshed or scenic view. Under CEQA, this impact would be less than significant.

4.15.4 Corridor Alternatives

4.15.4.1 Central Segment

Patterson Pass Road Alternative

This alternative has the same number of support structures as the Proposed Project. It would be located approximately 1,000 feet farther from the few residences south of Patterson Pass Road that would have views of the Project, as well as from travelers along I-5, which is designated as a scenic highway for this segment. Therefore, this alternative would have somewhat reduced impacts to visual resources compared to the Proposed Project, though CEQA impact significance determinations are the same.

4.15.4.2 San Luis Segment

Butts Road Alternative

This alternative corridor would have the same number of support structures as the Proposed Project. Impacts to visual resources from this alternative would be similar to that of the Proposed Project in type and context, though it would be closer to the San Joaquin Valley National Cemetery, recreation areas on the west side of the O'Neill Forebay, and at least one permanent residence near McCabe Road. Viewer sensitivity is higher than for the Proposed Project due the proximity of the National Cemetery and important recreation areas. The structures under this alternative would largely be shielded from view from the recreation areas along the shoreline of O'Neill Forebay by the hills to the west. The new structures would be visible from the San Luis Creek Campground, at a distance of 1,200 to 1,800 feet away, but the normal view pattern at this campground is towards the water rather than towards the existing transmission lines. Because Reclamation and State Parks have not completed their inventory of scenic overlooks within the San Luis Recreation Area, Western will coordinate with affected land management agencies such as Reclamation and State Parks to refine final locations of Project structures.

Because of the importance of the National Cemetery as a highly sensitive land use, the scenic overlook above the National Cemetery was chosen as a KOP and a visual simulation of this alternative was prepared to assess potential impacts to visual resources. As shown in Figure 4.15-1, several sets of towers from two existing 500-kV transmission lines are visible from the KOP. The two towers on the left side of the Existing Conditions picture are 2,800 feet (0.53 mile) from the KOP. The next set is 3,600 feet away, and the third set (barely visible behind the hill beyond the row of Italian cypress trees in the middle of the picture) is 4,300 feet away. The final set visible from this KOP is 4,880 feet away.

This alternative would introduce a fourth set of towers at each of these locations, as shown in the simulation photo of Figure 4.15-1. The structures would match the existing structures, and would not be a dominant feature in the landscape due to the distance from and similarity to the existing towers. The structures would not be visible from most of the National Cemetery grounds, including the memorials, gardens, and gravesites, or from most areas of the San Luis State Recreation Area. Impacts to visual resources from this alternative would be somewhat higher for this alternative compared to the Proposed Project, because of the highly sensitive nature of the National Cemetery and the Recreation Area, but the incremental effect of adding the new towers next to the existing towers would be moderate. CEQA impact significance determinations are the same as for the Proposed Project.

Existing Conditions

Simulation

Figure 4.15-1
KOP 1 - Butts Road Alternative
Existing Conditions and Simulation

West of Cemetery Alternative

This alternative corridor would have six more support structures compared to the Proposed Project for this segment. Visual sensitivity is higher than for the Proposed Project, due to the presence of the National Cemetery. Existing and simulated views of this alternative from the same KOP used for the simulation of the Butts Road Alternative are shown in Figure 4.15-2.

Structures for this alternative corridor would be approximately 2,000 feet away from the KOP, and approximately 700 feet away from the nearest gravesite. The background view in the area was significantly altered by cattle grazing of the hills, but the views towards this alternative corridor consist entirely of grasslands with no human made structures visible. The new structures would not be located next to existing transmission lines, and therefore would introduce new features that would have a high contrast with the landscape, and that would dominate the view from gardens, overlook, and especially the gravesites of the National Cemetery. This intrusion into a comparatively undisturbed landscape visible from a highly sensitive land use would constitute significant and unavoidable impacts under Impacts VIS-1, VIS-2, and VIS-3.

West of O'Neill Forebay 70-kV Alternative

This alternative has the same number of support structures as the Proposed Project, but it is closer to the San Joaquin Valley National Cemetery and important recreation facilities on the west side of O'Neill Forebay than the Proposed Project. It would be adjacent to two existing transmission lines in the same corridor as the Butts Road alternative described above. Structures for this alternative would be much smaller than the existing structures, and would be more than 3,300 feet away from the scenic overlook above the National Cemetery. They would not be visible from most of the National Cemetery grounds, including the gardens, memorials, and gravesites. The new structures would be visible from the San Luis Creek Campground with in the San Luis State Recreation Area, at a distance of 1,200 to 1,800 feet away, but the normal view pattern at this campground is towards the water rather than towards the existing transmission lines. This alternative therefore would result in a minor incremental impact. However, because of the proximity of the National Cemetery and existing recreation facilities, this alternative would have a somewhat greater adverse effect on visual resources compared to the Proposed Project. CEQA impact significance determinations are the same as the Proposed Project.

4.15.4.3 South Segment

San Luis to Dos Amigos Alternative

This alternative has the same number of support structures as the Proposed Project, though it would be located approximately 1,000 feet farther to the west. No residences in the area would have views of the structures within this alternative corridor, and it would not be visible to travelers along I-5. Therefore, this alternative would have the same impacts to visual resources as the Proposed Project, and CEQA impact significance determinations are the same.

Figure 4.15-2
KOP 2 - West of Cemetery Alternative Existing Conditions and Simulation

Billy Wright Road Alternative

This alternative corridor would have eight more support structures than the Proposed Project, and would permanently disturb 4 more acres of land. Impacts to visual resources from this alternative would be similar to that of the Proposed Project in type and context; however, the intensity would likely be slightly greater than the Proposed Project due to a greater number of support structures. The structures for this alternative would be located adjacent to two existing transmission lines, and therefore the incremental impact of this alternative would be minor. This alternative route would cross over portions of the State recreation area near the western end of Los Banos Creek Reservoir. This area is remote and is difficult to access, but is near areas of very high historical qualities and viewer sensitivity.

This alternative would introduce new structures adjacent to existing transmission lines and towers, and therefore would not introduce high contrast to the viewshed. The incremental effect of adding a new transmission line adjacent to existing lines would be moderate. The area is also difficult to access, requiring a 5-mile plus hike or a boat ride the length of Los Banos Reservoir, but the immediate vicinity near the alternative corridor is highly altered due to the reservoir, and is of low interest to the few hikers who traverse the area to reach the Path of the Padres trail. Therefore impacts to visual resources under this alternative would be less than significant under CEQA. CEQA impact significance determinations for all other visual impacts on all portions of this alternative route are the same as those described for the Proposed Project.

4.15.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built; therefore, there would be no direct or indirect impacts to visual resources.

4.16 Water Resources and Floodplains

4.16.1 Thresholds of Significance

The Proposed Project and alternatives would have significant, adverse effects on water resources and floodplains if any activity associated with their construction or operation would result in:

- Violation of any water quality standards or waste discharge requirements (Impact WR-1);
- Groundwater quality degradation that causes groundwater quality to exceed federal or State standards (Impact WR-2);
- Groundwater depletion or interference with groundwater recharge that adversely affects existing or proposed uses of the groundwater aquifer (Impact WR-3);
- Alteration of the existing drainage pattern of the site or area that would result in substantial on- or off-site erosion or siltation, or that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site (Impact WR-4); or
- Modification of a floodplain, which would impede or redirect flood flows that would result in property damage on or off site (Impact WR-5).

4.16.2 Environmental Protection Measures

- At completion of work and at the request of the landowner/manager, all work areas except access roads will be scarified or left in a condition that will facilitate natural or appropriate vegetation, provide for proper drainage, and prevent erosion.
- Erosion control measures will be implemented to prevent loss of soil. Construction will be in conformance with Western's Integrated Vegetation Management Environmental Guidance Manual.
- Excavated material or other construction materials will not be stockpiled or deposited near or on stream banks, lake shorelines, or other watercourse perimeters.
- Non-biodegradable debris will be collected and removed from the easement daily and taken to a disposal facility. Slash and other biodegradable debris will be left in place or disposed of.
- All soil excavated for structure foundations will be backfilled and tamped around the foundations, and used to provide positive drainage around the structure foundations. Excess soil will be removed from the site and disposed of appropriately. Areas around structure footings will be reseeded with native plants.
- Wherever possible, new structures and access roads will be sited out of floodplains. Bridges will be used at new stream crossings wherever possible. If avoidance is not possible, Western will consult with USACE and obtain permits as required.
- Construction vehicle movement outside of the easements will be restricted (to the extent feasible) to approved access or public roads.
- Where feasible, all construction activities will be rerouted around wet areas while ensuring that the route does not cross sensitive resource areas.
- If wet areas cannot be avoided, Western will use vehicles, ground mats, and equipment that minimize ground impacts.

- All instream work, such as culvert replacement or installation, bank recontouring, or placement of bank protection below the high-water line, will be conducted during no-flow or low-flow conditions and in a manner to avoid impacts to water flow, and will be restricted to the minimum area necessary for completion of the work.
- Runoff from the construction and O&M sites will be controlled and meet RWQCB stormwater requirements and the conditions of a construction stormwater discharge permit. A stormwater pollution prevention plan will be prepared and implemented.
- All equipment used below the ordinary high-water mark will be free of exterior contamination.
- All contaminated discharge water created by construction and O&M activities (e.g., concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) will be contained and disposed of in accordance with applicable federal, State, and local regulations.
- All fill or rip-rap placed within a stream or river channel will be limited to the minimum area required for access or protection of existing Western facilities.
- All equipment will be stored, fueled, and maintained in vehicle staging areas 300 feet or the maximum distance possible from any aquatic habitat (vernal pool, vernal pool grassland, seasonal wetland, seep, spring, pond, lake, river, stream, or marsh) and no closer than 200 feet unless a bermed (no ground disturbance) and lined refueling area is constructed and hazardous-material absorbent pads are available in the event of a spill. Vehicles and construction equipment will be inspected daily for fluid leaks before leaving staging areas during construction and O&M activities. Fluid leaks will be repaired before equipment is moved from staging areas.
- If a pesticide label stipulates a buffer zone width for protection of natural resources that differs from that specified in a project mitigation measure or EPM, the buffer zone width that offers the greatest protection will be applied.
- A hazardous-spill plan will be developed prior to construction and will remain in effect for all O&M activities. The plan will describe what actions will be taken in the event of a spill of toxic or hazardous materials. The plan will incorporate preventive measures to be implemented for vehicle and equipment staging, cleaning, maintenance, and refueling, and for containment management and storage of hazardous materials, including fuel. In the event of a contaminant spill, work at the site will immediately cease until the contractor has contained and mitigated the spill. The contractor will immediately prevent further contamination, notify appropriate authorities, notify Western's regional environmental manager, and will mitigate damage as appropriate. Adequate spill containment materials, such as oil diaper mats and hydrocarbon cleanup kits, will be available on site at all times, as will containers for storage, transportation, and disposal of contaminated absorbent materials.

4.16.3 Proposed Project

This impact analysis is based on an assessment of baseline conditions relevant to the Project area, including ambient water quality, beneficial uses identified in the Central Valley Regional Board's Basin Plan, and existing impairments to waterbodies as listed on the CWA 303d list of impaired and threatened waters that have been identified and reported to the USEPA, which are presented in Section 3.16.1.

Table 4.16-1 presents the number of National Hydrography Dataset named and unnamed streams that lie within the study area for each segment of the Proposed Project. These study areas are defined in Section 3.1 and include the Proposed Project corridor as well as a sufficiently large buffer to capture the potential impacts of new and improved access road construction as well as potential downstream impacts.

Table 4.16-1. National Hydrography Dataset Streams Crossed By Segment

Segment	Named Streams and Canals Crossed	Unnamed Streams Crossed
North Segment	4	15
Central Segment	16	78
San Luis Segment 500-kV	4	17
San Luis Segment 70-kV	3	15
South Segment	5	56

The Proposed Project could affect water resources and floodplains through ground disturbance associated with construction and O&M activities, including operation of heavy equipment, grading and vegetation clearing for access roads, site leveling, auguring of transmission tower foundations, and other infrastructure excavations. These activities would have the potential to cause both direct and indirect adverse effects to water resources. The equipment used and the length of construction is discussed in detail in Section 2.1.3. Indirect impacts could include soil disturbance that leads to subsequent erosion and sedimentation following a storm event.

Impact WR-1 Violate any water quality standards or waste discharge requirements.

Construction of the Proposed Project would include soil-disturbing activities, such as leveling and excavation of the transmission tower sites as well as grading and improvement of existing access roads. This soil disturbance could lead to increased erosion and sedimentation. Additionally, potentially hazardous materials such as fuel, engine oil, and lubricants could be leaked or accidentally spilled onto the ground or into waterways during construction of the Proposed Project. Adverse effects to water resources could occur during O&M of the Proposed Project due to soil-disturbing activities such as re-grading of access roads and vegetation removal. Major repair work, such as replacement of towers or conductors, would be nearly identical to that of new construction, as described in Section 2.1.3. Because adverse effects from such work would be similar to or less severe in nature and duration than that of new construction as described above, adverse effects to water resources would be negligible during the operation and maintenance phase of the Proposed Project. In conformance with Western's EPMs and Construction Standard 13, all work areas except access roads will be scarified or left in a condition that will facilitate natural or appropriate vegetation, provide for proper drainage, and prevent erosion. Stockpiles of excavation material will be protected from erosion and protective measures will be taken to prevent and/or quickly respond to leaks or accidental spills of hazardous materials. All required permits will be obtained prior to commencement of construction activities in order to ensure protection of water quality within the Project area. Therefore, any potential impacts to water quality associated with construction of the Proposed Project would be negligible. Under CEQA, this impact would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact WR-2 Degrade groundwater quality such that State or federal standards are exceeded.

A portion of the study area is underlain by areas of shallow groundwater. Dewatering may be required during tower footing excavation and tower installation. No dewatering is expected during routine O&M activities. In conformance with Western's EPMs and Construction Standard 13, all required dewatering and discharge permits would be obtained prior to commencement of construction activities. Any water that is produced during dewatering activities will be tested and, if necessary, treated prior to discharge. In addition, any leaks or accidental spills of hazardous materials will be quickly contained and removed per

Western's Spill Prevention Notification and Cleanup Plan, and no hazardous materials would enter the groundwater. Therefore, any potential adverse effects to groundwater quality, associated with construction of the Proposed Project, would be negligible. Under CEQA, this impact would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact WR-3 Cause groundwater depletion or interference with groundwater recharge that adversely affects existing or proposed uses of the groundwater aquifer.

Any water use for construction or O&M activities (such as for dust suppression or concrete mixing) will be purchased through an appropriate water provider or authority. Groundwater resources will not be depleted by construction or O&M of the Proposed Project. In addition, the creation of new impervious surfaces would be limited to tower footings, and would not interfere with groundwater recharge. Therefore, impacts to groundwater levels associated with construction and O&M of the Proposed Project would be negligible. Under CEQA, this impact would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact WR-4 Cause alteration of the existing drainage pattern of the site or area that would result in substantial on- or off-site erosion or siltation, or that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site.

Structures would be placed outside of stream channels and floodplains where possible. Transmission towers would be located and engineered so as not to block or substantially alter the natural drainage pattern. In accordance with Western's EPMs and Construction Standard 13, culverts or bridges would be installed where needed to avoid surface water impacts during construction of transmission line structures. All construction activities would be conducted in a manner to avoid impacts to water flow. Excavated material or other construction materials would not be stockpiled or deposited near or on stream banks, lake shorelines, or other watercourse perimeters. All soil excavated for structure foundations would be backfilled and tamped around the foundations, and used to provide positive drainage around the structure foundations. Crossing of any stream or other waterway will occur in compliance with applicable laws, and with approval of applicable landowners and permitting agencies, thereby protecting waterways from being inappropriately altered or diverted. Therefore, impacts to the existing drainage patterns associated with construction and O&M of the Proposed Project would be negligible. Under CEQA, this impact would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

Impact WR-5 Result in modification of a floodplain, which would impede or redirect flood flows that would result in property damage on- or off-site.

The Proposed Project would place new structures outside of floodplains where possible. In areas where floodplains cannot be avoided, Western would engineer transmission towers to withstand a 100-year flood. Additionally, new structures would be located and designed so as not to impede flood flows. All construction within a designated 100-year floodplain will be undertaken in consultation with the USACE. No floodwater will be blocked, nor will floodwater be diverted outside of an existing floodplain. Therefore, construction and O&M of the Proposed Project will have a negligible impact on floodways and floodplains. Under CEQA, this impact would be less than significant.

This impact would be the same in the North, Central, San Luis, and South segments.

4.16.4 Corridor Alternatives

Table 4.16-2 presents the number of National Hydrography Dataset named and unnamed streams crossed by the study area for each Alternative. These study areas, as defined in Section 3.1, include the alternative corridor as well as a sufficiently large buffer to capture the potential impacts of new and improved access road construction as well as potential downstream impacts.

Table 4.16-2. National Hydrography Dataset Streams Crossed by Alternative

Alternative	Named Streams and Canals Crossed	Unnamed Streams Crossed
Patterson Pass Road	16	86
Butts Road	4	25
West of Cemetery	5	32
West of O'Neill Forebay 70-kV	3	11
San Luis to Dos Amigos	5	56
Billy Wright Road	5	82

4.16.4.1 Central Segment

Patterson Pass Road Alternative

This alternative has nine more miles of new access roads and the same number of support structures as the Proposed Project, but the alternative study area crosses eight more unnamed streams compared to the Proposed Project. Due to the increased amount of ground disturbance, this alternative would have slightly greater adverse effects to water resources and floodplains as the Proposed Project during construction and O&M. Direct and indirect impacts for WR-1 through WR-5 would be minor. Under CEQA, direct and indirect impacts for WR-1 through WR-5 would be less than significant.

4.16.4.2 San Luis Segment

Butts Road Alternative

This alternative corridor would be 0.5 mile longer than the Proposed Project, would have two more support structures, and would increase new access roads by 2.0 miles. The alternative study area crosses eight more unnamed streams compared to the Proposed Project. Soil disturbance would be increased compared to the Proposed Project. In addition, the number of receiving waters within the alternative study area would be more in comparison to the Proposed Project. Therefore, potential impacts to water resources and floodplains also would be more severe compared to the Proposed Project. Direct and indirect impacts for WR-1 through WR-5 would be minor. Under CEQA, direct and indirect impacts for WR-1 through WR-5 would be less than significant.

West of Cemetery Alternative

This alternative corridor would be 1.2 miles longer than the Proposed Project, would have six more support structures, and would increase new access roads by 9.0 miles. The alternative study area crosses one additional named stream and 15 more unnamed streams compared to the Proposed Project. Soil disturbance would be increased compared to the Proposed Project, and the terrain would be slightly steeper than the Proposed Project study area for this segment, which would slightly increase the potential for erosion. This increased potential for erosion is coupled with the increased number of receiving waters within the alternative study area compared to the Proposed Project. Potential impacts

to water resources and floodplains would be more severe compared to the Proposed Project. Direct and indirect impacts for WR-1 through WR-5 would be minor. Under CEQA, direct and indirect impacts for WR-1 through WR-5 would be less than significant.

West of O'Neill Forebay 70-kV Alternative

This alternative is the same length, has the same length of new access roads, and has the same number of support structures as the Proposed Project. The alternative study area crosses four fewer unnamed streams compared to the Proposed Project. Due to the reduction in the number of receiving waters, this alternative would have slightly reduced impacts to water resources and floodplains during construction and O&M as the Proposed Project. Direct and indirect impacts for WR-1 through WR-5 would be minor. Under CEQA, direct and indirect impacts for WR-1 through WR-5 would be less than significant.

4.16.4.3 South Segment

San Luis to Dos Amigos Alternative

This alternative has the same length of new access roads, the same number of support structures, and crosses the same number of named and unnamed streams as the Proposed Project, and therefore would have essentially the same impact to water resources and floodplains during construction and O&M. Direct and indirect impacts for WR-1 through WR-5 would be minor. Under CEQA, direct and indirect impacts for WR-1 through WR-5 would be less than significant.

Billy Wright Road Alternative

This alternative corridor would be 1.5 miles longer than the Proposed Project, would have 8 more support structures, would need 3.0 miles of additional new access roads, and the alternative study area would cross 26 more unnamed streams compared to the Proposed Project. Additionally, the topography of this alternative corridor is slightly steeper than the Proposed Project corridor for this segment, and therefore, the potential for erosion would be increased slightly. Potential impacts to water resources and floodplains would be substantially more severe compared to the Proposed Project. However, direct and indirect impacts for WR-1 through WR-5 would remain minor. Under CEQA, direct and indirect impacts for WR-1 through WR-5 would be less than significant.

4.16.5 No Action/No Project

Under the No Action/No Project Alternative, Western would not construct the SLTP. No new facilities would be built, and therefore no impacts to water resources and floodplains would occur.

4.17 Cumulative Effects Analysis

Cumulative impacts are defined by the CEQ (40 CFR §1508.7) as "… the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions." (See also CEQA Guidelines, § 15130.)

Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time." 40 CFR §1508.7; see also CEQA Guidelines, § 15130. Under NEPA, both context and intensity are considered. Among other considerations when considering intensity is "[w]hether the action is related to other actions with individually minor but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts." 40 CFR §1508.27(b)(7)

To determine the cumulative effects in the Project study area, a review was completed of past, present, and reasonably foreseeable future projects in the vicinity of the Project area and an analysis made of their short- and long-term incremental effects on the local environment.

Geographic Scope

The project list includes those projects found within a geographic area sufficiently large to provide a reasonable basis for evaluating cumulative impacts. The area over which the cumulative scenario is evaluated may vary by resource, because the nature and range of potential effects vary by resource (e.g., air quality impacts tend to disperse over a large area or region while biological resources impacts are typically more location specific). This spatial area is identified as the geographic scope for the analysis of cumulative impacts related to a particular resource.

The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of the analysis is based on the nature of the geography surrounding the Project and the characteristics and properties of each resource and the region to which they apply. In addition, each project in a region will have its own implementation schedule, which may or may not coincide or overlap with the proposed SLTP schedule. This is a consideration for short-term impacts from the Proposed Project. However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the Proposed Project.

Timeframe

The timeframe of past, present, and probable future projects was determined as follows:

- **Past projects.** Projects completed within the last 10 years.
- **Present projects.** Projects that are active, producing, or in operation as of November 1, 2013.
- **Reasonably foreseeable future projects.** Projects anticipated to have impacts within 5 years.

List of Projects for Cumulative Analysis

Table 4.17-1 lists the past, present, and reasonably foreseeable future projects that may have impacts that could be combined with the impacts of the Proposed Project and alternatives to result in cumulative effects.

Table 4.17-1. Past, Present and Reasonably Foreseeable Future Actions that Occur in the Project Area

Project Name/Applicant	Project Description	Status/ Schedule	Project Location
California High Speed Rail, California High Speed Rail Authority and Federal Rail Administration	Proposed project to develop a 800-mile system of high-speed trains from southern to northern California; including two identified spurs at Altamont Pass or Pacheco Pass.	Statewide Program EIR/EIS published August 2005. San Jose to Merced Section under project level environmental review; NOP published August 2009.	The Altamont Pass spur would cross the SLTP in the San Luis Segment north of O'Neill Forebay. The Pacheco Pass spur would cross the SLTP in the North Segment near Tracy.
Bay Delta Conservation Plan	A 50-year conservation strategy to restore and protect the Sacramento–San Joaquin Delta's ecosystem health, water supply, and water quality.	Environmental Review Process: Draft EIR/EIS published in December 2013 with an anticipated re-circulated draft in 2015.	Consists generally of the statutory Delta, the Yolo Bypass north of the statutory Delta, and Suisun Marsh as well as the State Water Project and Central Valley Project export areas. The proposed underground tunnels terminate near the City of Tracy.
Tracy Biomass Power Plant Project, GWF Energy LLC	Construction, operation, and maintenance of a 169 MW simple-cycle power plant on a 40-acre site.	Licensed; in compliance phase. Operational: June 1, 2003.	Near the North Segment of SLTP in an unincorporated portion of San Joaquin County, east of the City of Tracy.
Crow's Landing Airport and Industrial Business Park, Stanislaus County	Reuse of the former Crows Landing Naval Air Facility as a public-use, general aviation (GA) airport and mixed-used development.	Land Use Compatibility Plan published June 2013.	Near the Central Segment of the SLTP in Stanislaus County, about 28 miles southeast of Tracy, and 42 miles west of San Jose.
Quinto Solar Project, SunPower Corporation	Proposed 110 megawatt (MW) solar photovoltaic (PV) energy generation facility on a 1,012-acre site. Includes the proposed construction, operation, and maintenance of a 4-acre, 230-kV switching station for interconnection.	The project would be constructed over 16 months, starting in summer 2013, with full operation anticipated by late 2014.	Near the San Luis Segment of the SLTP in southwestern Merced County, west of I-5, north of SR 152, and 1 mile northwest of the unincorporated community of Santa Nella.
San Luis Reservoir Low Point Improvement Project, U.S. Bureau of Reclamation	Proposed reservoir and system improvement project aimed to optimize the water supply benefits of San Luis Reservoir while reducing additional risks to water users as part of the Central Valley Project.	NOI/NOP published in September 2008. Plan Formulation Report published in January 2011 as an interim feasibility study.	Near the San Luis Segment of the SLTP at the San Luis Reservoir.
B.F. Sisk (San Luis) Dam Corrective Action Project, U.S. Bureau of Reclamation and the California Department of Water Resources	Proposed project to modify B.F. Sisk Dam to mitigate potential safety concerns identified in the ongoing Corrective Action Study (CAS).	Environmental Review Process: Scoping Meetings held October 2009.	Near the San Luis Segment of the SLTP on the east side of the San Luis Reservoir.
Grassland Bypass Project, U.S. Bureau of Reclamation and the San Luis and Delta Mendota Water Authority	Separation of unusable agricultural drainwater discharged from the Grassland Drainage Area from wetland water supply conveyance channels.	Implementation and monitoring phase. Final EIS published September 2001.	Near the Central Segment of the SLTP in southwestern Merced County, northwest of the City of Merced, the area surrounding the convergence of the San Joaquin River and the Merced River.

Table 4.17-1. Past, Present and Reasonably Foreseeable Future Actions that Occur in the Project Area

Project Name/Applicant	Project Description	Status/ Schedule	Project Location
Wright Solar Park, Frontier Renewables	Proposed 200-MW solar PV power plant located on 1,400 acres of leased and purchased agricultural lands in unincorporated Merced County.	Draft Environmental Impact Report published July 2014.	Near the South Segment of the SLTP in western Merced County about 4.5 miles southeast of Santa Nella, southwest of the intersection of I-5 and SRs 33/152, on the south side of Billy Wright Road.
San Luis Renewables, LLC Solar Generation Project	Solar generation facility. There may also be a 70-kV transmission line constructed north of Hwy 152, from the San Luis Gianelli Pumping Plant to the O'Neill Substation switchyard to accommodate the solar project.	NOP not yet published.	In the San Luis Segment, adjacent to the O'Neill Forebay.
500-kV transmission lines. Owners: Black Hills Energy, Pacific Gas and Electric Co., Western Area Power Administration	Existing transmission lines and associated substations.	Existing	North Segment, Central Segment, San Luis Segment, South Segment.
230-kV transmission lines. Owners: Modesto Irrigation District, Pacific Gas and Electric Co., Sacramento Municipal Utility District, Western Area Power Administration	Existing transmission lines and associated substations.	Existing	North Segment, Central Segment, San Luis Segment, South Segment.
115-kV transmission lines. Owners: Pacific Gas and Electric Co., City & County of San Francisco	Existing transmission lines and associated substations.	Existing	North Segment, Central Segment, San Luis Segment.
69-kV transmission lines. Owners: Pacific Gas and Electric Co., Western Area Power Administration	Existing transmission lines and associated substations.	Existing	North Segment, Central Segment, San Luis Segment, South Segment.

4.17.1 Planning Influences in the Project Area

Table 4.17-2 lists the plans and programs that will influence development in the Project area.

Table 4.17-2. Planning Influences in the Project Area

Plan or Program	Description	Plan Area
College Park at Mountain House Specific Plan III, San Joaquin County	Plan for future development of about 816 acres within the 4,784-acre Mountain House Master Plan community.	Located in San Joaquin County, west of Mountain House Parkway, North of I-205, south of Grant Line Road, and east of the Alameda County line.

Table 4.17-2. Planning Influences in the Project Area

Plan or Program	Description	Plan Area
San Luis Reservoir State Recreation Area Resource Management Plan/General Plan and EIS/EIR, California Department of Parks and Recreation and the U.S. Bureau of Reclamation.	Proposed joint management plan for the development and management of the recreation resources and areas on land owned by the Bureau of Reclamation surrounding the San Luis Reservoir and Los Banos Reservoir. Final Draft was published in June 2014.	Located in southwestern Merced County, west of I-5, north of SR 152. The plan area includes the San Luis Reservoir, O'Neill Forebay, Los Banos Reservoir and surrounding areas.
The Villages of San Luis Community Plan, Merced County.	Plan to guide growth and development of a 6,200-acre Specific Urban Development Plan. The plan includes a potential development of over 14,000 housing units and includes an urban reserve area held for the potential development of another 2,000 housing units. Plan approved in 2007.	Located west of I-5 along SR-152 and SR-33 in western Merced County.
Fox Hills Community Specific Plan Update, Merced County.	Pan to expand the county's range of housing stock, provide local serving commercial uses for new residential development, and expand on the recreation-oriented theme of the original Specific Plan. Includes land use designations of low and medium density residential (total capacity of 3,460 dwelling units), commercial mixed-use, general commercial, parks and trails, recreation, and open space for wildlife conservation and passive recreation. Plan approved in 1993.	Located in western Merced County, east of I-5, west of the San Luis Canal, and just south of Pioneer Road.
Tracy Hills Specific Plan, City of Tracy	Plan including 6,175-acre site to enable comprehensive planning through the integration of multiple land uses, physical design features, and vehicle and pedestrian movement focused around an urban center.	Southwest of the City of Tracy, along I-580.

4.17.2 Agriculture

The Proposed Project is in compliance with Williamson Act and other local zoning authorities and would therefore not contribute to a cumulative impact in this regard. Cumulative impacts could result from the permanent conversion of Important Farmlands or the preclusion of agricultural activities. Agriculture operations would continue within the proposed SLTP easements and transmission infrastructure would be sited to avoid Important Farmlands. Furthermore, the Project's construction and maintenance activities are short-term and spread out over a large geographic area. Therefore, the Proposed Project's contribution to cumulative effects would be less than cumulatively considerable.

4.17.3 Air Quality and Climate Change

Emissions from the Proposed Project would combine with the emissions of projects listed in Table 4.17-1 if construction work and emissions occur at the same time. In the cumulative setting, all emissions from existing sources in the region plus foreseeable changes to emissions associated with growth in the region would continue to contribute to nonattainment conditions for ozone, PM10, and PM2.5.

Construction and operation of the Proposed Project, along with the projects listed in Table 4.17-1 could cause significant cumulative impacts to air quality. Project construction and operation activities would not individually result in exceedance of air quality or emissions standards in the region (Impact AQ-1), and the collective or combined air quality effect would be less than significant (Impact AQ-3). Similarly, the Project would be consistent with regional air quality plans that are in place to ensure progress

towards attainment (Impact AQ-5), and the regional impact would be subject to mitigation to manage construction activities to achieve emission rates that are below the applicable thresholds (Impact AQ-6).

In localized areas of impact, the incremental contribution of construction emissions would be limited to the Project construction duration of approximately 18 months and would not occur near any particular receptor for more than a few weeks (Impact AQ-2). The localized potential exposure of sensitive receptors to construction-related HAP emissions and pollutant concentrations would be negligible (Impact AQ-4). Project emissions would be sufficiently reduced through the implementation of the Project EPMs and mitigation such that any contribution would be minor and would not be cumulatively considerable. No additional mitigation for cumulative air quality impacts is necessary.

Greenhouse gas emissions contribute, by their nature, to cumulative impacts. The analysis presented for Impact AQ-7 and Impact AQ-8 in Section 4.3 (Air Quality and Climate Change) is a cumulative impact assessment because GHG emissions contribute, by their nature on a cumulative basis, to the adverse environmental impacts of global climate change.

Although the Project could combine with the effects of the GHG emissions from the cumulative projects listed in Table 4.17-1 to cause significant cumulative GHG impacts, the incremental contribution of the Project would not generate substantial levels of GHG emissions during construction or over the long-term. Due to the limited levels of Project GHG emissions, the Project would not contribute in a cumulatively considerable manner to GHG emissions or global climate change. No additional mitigation for cumulative climate change impacts is necessary. Additionally, refer to the discussion under impacts AQ-7 and AQ-8 in Section 4.3 (Air Quality and Climate Change) regarding cumulative GHG emissions.

4.17.4 Biological Resources

Past and present actions have resulted in extensive cumulative changes to native vegetation communities and the occurrence and distribution of plants and wildlife within the Project area and the region. Native vegetative communities in the general vicinity have been substantially altered by agricultural conversion, ranching, residential, and commercial uses, water impoundments and conveyance systems, road construction, and construction of the various utility infrastructure. Past and present actions such as water infrastructure, agriculture, ranching, transportation, and utility infrastructure are expected to continue in the region. In addition, energy development projects (including renewable energy projects), recreation area management, and future urban and residential development are reasonably foreseeable actions in the Project region that would adversely affect biological resources.

Under Impact BIO-1, the Project's effects to special-status plants and wildlife could include loss of individuals, loss or degradation of habitats (including designated critical habitat for the California red-legged frog and the delta smelt), and disturbance to wildlife from human activities. The Project's impacts to native vegetation communities, including sensitive communities (Impact BIO-2) and jurisdictional wetlands (Impact BIO-4) could include direct loss and indirect effects such the spread of nonnative and invasive weeds, degradation of water quality, and erosion and sedimentation. Other projects in the region would have similar effects. Mitigation Measures BIO-1 though BIO-32 would minimize the Proposed Project's impacts through a series of avoidance and minimization measures and compensatory mitigation for impacts that cannot be avoided. Therefore, the Proposed Project's incremental contribution to adverse cumulative effects to special-status species and their habitats, native plant communities, and jurisdictional resources would not be cumulatively considerable.

The CDFW commented during scoping that the area from the Los Banos Creek Reservoir to a point just north of San Luis Reservoir (in the San Luis and South segments) is a critical migration corridor for San

Joaquin kit fox, and that creation of the San Luis Reservoir and O'Neill Forebay created a substantial barrier to movement (Impact BIO-3). Busy highways such as State Routes 152 and 33 and Interstate 5, as well as existing urban development, are additional major barriers to movement for this species. Other species in the region, such as Tule elk, are also impeded by these existing features. However, the Proposed Project's impacts to habitat are primarily localized and short-term, the widely spaced Project towers would not create barriers to wildlife movement, and Project facilities would be engineered to current industry standards to minimize collision and electrocution risks to birds. Therefore, the Proposed Project would not contribute substantially to regional cumulative impacts resulting from interference with wildlife movement. The Proposed Project's incremental contribution to adverse cumulative wildlife movement impacts would not be considerable.

The Proposed Project would not conflict with any local policies or ordinances protecting biological resources (Impact BIO-5) or with the provisions of an adopted habitat conservation plan (Impact BIO-6), and therefore would not contribute to cumulative impacts for these issues. Although the Project would cross several conservation easements, impacts within easements would be avoided to the extent feasible (Mitigation Measure BIO-2), and Western would comply with all applicable requirements within conservation easements (Mitigation Measures BIO-28 and BIO-31). In addition, Mitigation Measure BIO-33 requires measures to minimize impacts within existing conservation easements and coordinate with easement holders to ensure Project activities adhere to individual conservation easement deeds and approved management plans. Therefore, the Proposed Project's incremental contribution to adverse cumulative impacts to conservation easements would not be considerable.

Affected biological resources are similar between corridor alternatives, and no corridor alternative would introduce a new impact not already considered for the Proposed Project. The differences between alternatives are in the magnitude of impacts. Cumulative impacts to biological resources would be similar across all alternatives.

4.17.5 Cultural Resources

Loss of cultural resources is a concern in San Joaquin Valley and the Diablo Range foothills. Very few archaeological resources have been investigated in this area and loss of any intact cultural deposits without data recovery is significant. Future agricultural, infrastructural, and urban development projects may result in similar direct and indirect impacts to cultural resources, including damage, degradation to, or loss of resources. These may be unique archaeological resources as defined by CEQA or resources of archaeological, tribal, or historical value that is listed, or eligible for listing, on the National Register or California Register. Individually minor but collectively significant actions (usually in the form of ground disturbance) may have a cumulatively considerable impact on cultural resources. Types of resources that are generally not considered eligible to the National or California Registers may become eligible as impacts from this and future projects make them rarer. When considered together with the SLTP, these projects may result in a significant cumulative impact. Due to the Project EPMs and MM CUL-1, the contribution from the SLTP to cumulative impacts to National Register– or California Register–eligible resources or unique archaeological resources would be minor. Under CEQA, the project's contribution to impacts on cultural resources would not be cumulatively considerable.

To date, no human remains or burials have been identified within the Proposed Project corridor; therefore, there would be no disturbance to these remains. However, investigation or earth-disturbing activities performed prior to construction could reveal the presence of human remains. Impacts to human remains would be mitigated through MM CUL-2. Therefore, there would be no adverse effects on such resources and the project's contribution to this impact would not be cumulatively considerable.

However, if human remains are discovered and the disturbance was an issue with the descendant community, it may be cumulatively significant.

4.17.6 Environmental Justice

The Proposed Project would not contribute to cumulative impacts to environmental justice communities in the Project area. Currently, the study area contains one census block group with a minority population greater than 50 percent and no low-income population that exceeds the minimum threshold. The high minority population is located in the North Segment of the Project area. The past, present, and foreseeable future developments in the Project area, presented in Table 4.17-1, do not overlap with this portion of the Project corridor. Although other projects in the cumulative analysis study area could result in adverse effects to socioeconomics, the Proposed Project was not found to result in any adverse effects to socioeconomics and therefore would not combine with the adverse effects of other projects to result in disproportionate cumulatively considerable effects to minority or low-income populations.

4.17.7 Geology, Soils, and Mineral Resources

Past, present, and reasonably foreseeable future agricultural, urban development, infrastructure, and energy development projects may result in exposure of people or structures to geologic hazards, soil loss and accelerated sedimentation, direct and indirect impacts to soil productivity and vegetative cover, direct and indirect impacts to locally important mineral resource recovery sites, and direct and indirect impacts to structural stability due to unstable soils. However, because the EPMs and mitigation measures listed herein would reduce the geology, soils, and mineral resources impacts of the Proposed Project to less than significant, the incremental contribution of the Proposed Project to any cumulative impact would be minor. The cumulative impact of the Proposed Project combined with past, present, and reasonably foreseeable future projects would remain minor. Under CEQA, the project's contribution to this impact would not be cumulatively considerable. No additional mitigation for cumulative impacts is necessary.

4.17.8 Land Use

Land use in the project vicinity has incrementally changed due to cumulative past and present development, and this would be expected to continue with the cumulative future development identified in Table 4.17-1. Past and present actions have cumulatively established the current land use patterns in Alameda, San Joaquin, Stanislaus, and Merced Counties. These actions have introduced predominantly agricultural (mainly crops and livestock grazing) and rural residential uses throughout the area, with commercial and residential uses near the San Luis Reservoir and the community of Mountain House.

Land use in the area also has been cumulatively affected by development of transportation and utility infrastructure throughout the area, including numerous roads, railroads, pipelines, and transmission lines. More recently, wind energy development has occurred in the Altamont Pass area, a biomass power plant was built near Tracy, and several solar power projects are planned or under construction near the San Luis Reservoir. Continued renewable energy development, including new solar panels, wind turbines, transmission lines, substations, and roads that would be built for these facilities, could result in the permanent conversion of thousands of acres of mainly agricultural land to an energy production use. While agricultural uses could largely continue in areas around these facilities, renewable energy development is a significant cumulative change in land use in the project vicinity.

The Proposed Project would have less-than-significant impacts under impacts LU-2, LU-3, and LU-6. With regard to Impact LU-1, the Proposed Project would widen the total width of existing utility corridors along the entire route. An additional utility corridor would be compatible with existing land

uses, allowing continued use as farming and ranching lands. Construction of a transmission project may not be compatible with the terms of some conservation easements, but Western will coordinate with the parties involved in the easement to ensure that impacts are adequately minimized or compensated for, as required by Mitigation Measures LU-1 and BIO-33. The addition of the Proposed Project would effectively reduce the amount of land available for some other types of land uses, especially residential development; but residential development would be an incompatible use within the lands zoned for agricultural use in the four counties affected by the Project, and therefore increased residential or commercial development within the area is not anticipated in the near term. However, conditions and land use planning could change, and future residential development could occur in the Project Area.

Given the amount of land available in the Project region for conversion to other land uses, the relatively small amounts of land that would be restricted from conversion for residential development would have only a minor effect on the counties' ability to change land uses to allow other types of development, if they conclude that doing so is appropriate. Therefore, the Project would not contribute to cumulatively considerable impacts under current planning guidelines.

The Proposed Project would result in significant and unavoidable impacts to the Jasper Sears OHV Use Area under Impacts LU-1 and LU-4 from construction and operation of the new Los Banos West Substation. The addition of the new substation within the established Jasper Sears OHV Use Area would result in an incompatibility with the provisions of the existing SLRSRA RMP/GP. Therefore, the Proposed Project would contribute to cumulative impacts to similar land uses and designations. Mitigation to modify existing facilities at the OHV Use Area to maintain existing operations would minimize conflicts. However, this mitigation would be implemented by agencies other than Western or the Authority; therefore, its feasibility is uncertain and the impact~~s~~ remains cumulatively considerable.

Regarding the other potential impacts to land use, the Proposed Project would be located adjacent to existing transmission lines, which are an existing and allowed use in all areas of the Project. The Project would not block movement of people and animals through these lands, conflict with the land management objectives of the administrating agency, or result in nuisance impacts, and all disturbances will be restored to pre-project conditions, at the discretion of the landowner. Therefore, the Project's contribution to cumulative effects would be less than cumulatively considerable. No additional mitigation for cumulative impacts is necessary.

4.17.9 Noise

Cumulative noise impacts in the Project vicinity typically occur when noise receptors are exposed to noise from sources at about the same time. There could be cumulative noise impacts if these actions are undertaken simultaneously and close to each other. Construction noise from the Proposed Project would temporarily add to noise from other activities in the immediate vicinity of portions of the Proposed Project, such as traffic on nearby roads. In addition, if similar projects are constructed at the same time in the immediate vicinity of the Proposed Project, the construction noise for these projects could be cumulatively additive with construction noise from the Proposed Project. The Project thus could contribute incrementally to adverse cumulative impacts to noise on a temporary basis during construction. Implementation of Mitigation Measures NOISE-1 and NOISE-2 would reduce the project's contribution, but it would still be considerable if local noise standards are violated. Once the line is built, corona generated noise from the transmission line also could contribute incrementally, though in a relatively minor way, to cumulative noise impacts in areas near the line. The Project's contribution to cumulative noise levels during operation would not be cumulatively considerable.

4.17.10 Paleontological Resources

Although the effects of the Proposed Project could combine with those of the cumulative projects listed in Table 4.17-1 to constitute significant cumulative impacts to paleontological resources under Impact PALEO-1, the incremental contribution of the Proposed Project would generally be limited to small amounts of new disturbances near existing utility corridors. Potential impacts to paleontological resources would be sufficiently reduced through the implementation of the mitigation measures described in this document such that any contribution would be minor and would not be cumulatively considerable. No additional mitigation for cumulative impacts is necessary.

4.17.11 Public Health and Safety

Most of the cumulative projects identified in Table 4.17-1 would result in use and disposal of hazardous materials. However, the incremental quantities of materials used as a result of the Proposed Project would be very small in comparison with other cumulative projects, and the applicable regulation of hazardous material handling would govern appropriate use of such materials for all projects.

Construction and operation of the Proposed Project, along with the cumulative projects listed in Table 4.17-1, could cause significant cumulative impacts to public health and safety, including interference with emergency response capabilities or resources (Impact H&S-1) or creation of hazards to workers or others in the area (Impact H&S-2). The incremental contribution of the Proposed Project, however, would be generally limited to temporary construction activities completed by workers trained in safety and hazardous materials handling and cleanup. These activities are unlikely to interfere with emergency response capabilities or resources, or create hazards to workers or others in the area; impacts to public and worker safety and health would be sufficiently reduced through the implementation of the mitigation measures described in this document such that any contribution would be minor and would not be cumulatively considerable. No additional mitigation for cumulative impacts is necessary.

4.17.12 Recreation

Past, present, and future development in the study area may cause similar direct or indirect impacts that conflict with established, designated, or planned recreation areas and activities. In particular, there are several projects listed in Table 4.17-1 within the SLRSRA that contribute to regional cumulative effects. Construction and maintenance activities associated with the Proposed Project could temporarily impact the setting within recreation areas and conflict with established areas or activities by causing indirect impacts to air quality, noise, and visual resources. Mitigation measures in this document would reduce the severity of these impacts to minimize the potential for conflict to recreational resources. Construction and maintenance activities would also conflict with planned facility management identified in the SLRSRA RMP/GP. Construction of the new Los Banos West Substation would result a substantial loss of recreation resources identified by the SLRSRA RMP/GP. The feasibility of mitigation is uncertain as it would be implemented by agencies other than Western and the Authority. Therefore, the Project's contribution to conflicts with established or planned recreation areas would be cumulatively considerable (Impact REC-1).

Past, present, and future development in the study area may cause similar direct or indirect impacts that result in changes that alter the physical landscape of the recreation areas listed above. Temporary alterations caused by Proposed Project construction and maintenance activities would be restored and therefore, would not contribute to cumulative impacts. However, the presence of permanent transmission lines within the viewshed of the recreation areas would contribute to cumulative impacts. In addition,

the permanent installation of facilities associated with the new Los Banos West Substation would substantially alter the physical setting of the Jasper Sears OHV Use Area. As described above, the feasibility of mitigation is uncertain; therefore, the Project's contribution to physical alteration of established and planned recreation areas would be cumulatively considerable (Impact REC-2).

Past, present, and future development in the study area may cause similar direct or indirect impacts to accessibility of recreation areas. Accessibility impacts caused by Proposed Project construction and maintenance activities would be temporary and minimized through proper signage and coordination with the public and would not contribute to cumulatively considerable impacts. However, the installation of permanent facilities associated with the construction of the new Los Banos West Substation may result in decreased accessibility to the Jasper Sears OHV Use Area. As described above, the feasibility of mitigation is uncertain; therefore, the Project's contribution to decreased accessibility of established and planned recreation areas would be cumulatively considerable (Impact REC-3).

Future development in the study area may cause similar direct or indirect impacts that would contribute to a demand for recreational resources. However, due to the temporary nature of this impact and the abundance of recreational opportunities in the study area, the contribution would be negligible. Under CEQA, this contribution would not be cumulatively considerable (Impact REC-4).

4.17.13 Socioeconomics

Past, present, and future development in the study area may cause similar direct or indirect impacts that result in the permanent or irreversible loss of work for a major sector of a community. A large workforce is available within the four county region that encompasses the Proposed Project. Impacts associated with a temporary increase in construction jobs would not contribute to cumulatively considerable impacts as the total number of local workers is not anticipated to be substantial compared the total workforce.

Cumulative projects may cause similar direct or indirect impacts resulting in an increase in population that would create shortages of housing. Existing availability of housing in the region would accommodate the temporary increase in population associated with the Proposed Project. Therefore, the Proposed Project's contribution to housing shortages or a need for new infrastructure systems, including power or gas utilities, communications systems, water and sewer services, or solid waste disposal systems would be minor. Beneficial impacts associated with a temporary increase in construction jobs would not contribute to cumulatively considerable impacts as the total number of workers is not substantial compared to the total population.

Although other projects in the cumulative analysis study area could result in adverse effects to socioeconomics, the Proposed Project was not found to result in any socioeconomic adverse effects and therefore would not combine with the adverse effects of other projects to result in a cumulative considerable effects to socioeconomics.

4.17.14 Traffic and Transportation

While the Proposed Project could combine with the cumulative projects listed in Table 4.17-1 to cause significant cumulative impacts to traffic and transportation under Impact TRANS-1 through TRANS-7, the incremental contribution of the Proposed Project to local traffic conditions would be limited at peak construction times to no more than approximately 100 temporary or contract workers who would commute to and from various project locations during construction, and the average workforce would generally be less than half that amount. Road closures are not expected during construction of the Project

or alternatives, and therefore the project would not cause delays on local roadways (Impact TRANS-2) or block emergency vehicle travel (Impact TRANS-3); and even in combination with the cumulative projects listed in Table 4.17-1, associated traffic would not cause exceedance of established level of service guidelines (Impact TRANS-1). Construction activities will not create hazards to drivers (Impact TRANS-4), or disrupt use of railways of bikeways (Impact TRANS-5). Construction and operation of the Project or alternatives also will not cause changes in flight paths (Impact TRANS-6) or conflict with a current or future airport plan. The effects of Project traffic and construction would therefore be sufficiently reduced through the implementation of Western's Environmental Protection Measures and the mitigation measures described in this document such that any contribution would be minor and would not be cumulatively considerable. No additional mitigation for cumulative impacts is necessary.

4.17.15 Visual Resources

Cumulative impacts to visual resources would occur where new electric transmission facilities occupy the same field of view as other landscapes developed by cumulative projects. Cumulative projects would occur in the vicinity of the activities and components associated with construction and operation of the Proposed Project, such as near the solar projects planned in the San Luis area, and the effects upon visual resources brought about by cumulative projects would be significant in this area.

To the extent that construction under the Proposed Project would affect views near one or more of the cumulative projects listed in Table 4.17-1, the visual character would temporarily change due to the visible presence of construction equipment, vehicles, materials, and personnel from the cumulative projects. However, these visual impacts of Proposed Project construction would be temporary and would not be cumulatively considerable.

Much of the Proposed Project and alternative routes are in remote areas with limited access, and therefore construction activities and the permanent structures associated with the Project in these areas would not disrupt visually important landscapes (Impact VIS-1), or be visible from highly sensitive viewer locations (Impact VIS-2). The Project Study Area is not in a unique scenic viewshed, and Project structures would not dominate established scenic views (Impact VIS-3), with one important exception, at the San Joaquin Valley National Cemetery.

Of the cumulative projects listed in Table 4.17-1, only the Quinto Solar Project has potential to create cumulatively considerable impacts to visual resources in combination with the Proposed Project or alternatives, as it would be located near one of the few important designated scenic views that are affected by the Project or alternatives. This solar project is ~~reportedly~~ under construction and is located on a 1,012-acre site bifurcated by McCabe Road and adjacent to the east side of the Butts Road alternative corridor. It reportedly will use landscaping to screen views of the solar panels from the cemetery, but when completed it would be visible from the scenic overlook above the cemetery, as would be the structures of the Proposed Project or the Butts Road alternative route. Though the structures of the Proposed Project when considered as a stand-alone project would not create a significant impact to visual resources from this viewpoint, depending upon the ultimate location and design of the solar project, the combination of the solar facility and the Proposed Project could present a cumulatively considerable and unavoidable impact to visual resources from this scenic viewpoint. Also, construction of the West of Cemetery alternative would cause significant and unavoidable impacts under VIS-1, VIS-2 and VIS-3 at this viewpoint, which would also be cumulatively considerable under CEQA.

Other than at the National Cemetery, there are no established viewpoints or important scenic views that would be affected by a combination of the Proposed Project or alternatives with the cumulative projects

listed in Table 4.17-1. As a result, impacts on visual resources from the proposed transmission lines and substations would not be cumulatively considerable other than at San Joaquin Valley National Cemetery.

4.17.16 Water Resources and Floodplains

Past, present, and reasonably foreseeable future agricultural, urban development, infrastructure, and energy development projects may result in similar direct and indirect impacts to water resources and floodplains, including soil disturbance, increased erosion and sedimentation, and accidental discharge of hazardous materials, direct and indirect impacts to groundwater quality and levels, direct and indirect impacts to the existing drainage pattern, and direct and indirect impacts to the water conveyance capacity of the local floodplains. Individually minor, but collectively significant actions, may have a cumulatively considerable impact on water resources and floodplains. However, compliance with applicable water quality regulations would ensure that the cumulative impact of past, present, and reasonably foreseeable future projects (including the Proposed Project) would remain minor. Under CEQA, the cumulative impact of the Proposed Project in combination with other past, present, and reasonably foreseeable projects in the area would be less than cumulatively considerable. No additional mitigation for cumulative impacts is necessary.

4.18 Unavoidable Adverse Impacts

NEPA regulations (40 CFR 1502.16) require that an EIS identify the adverse environmental impacts that cannot be avoided if the Proposed Project and mitigation measures are implemented. The Proposed Project would result in significant and unavoidable impacts (and contribute to cumulatively considerable impacts) to the following resource areas:

- **Noise.** Construction would result in more than a 5 dBA Leq increase at sensitive receptors near the Project, which in turn would exceed local noise standards near residences (Impacts NOISE-1 and NOISE-3). Refer to Section 4.9.3 for complete descriptions of these impacts.
- **Recreation.** Construction of the proposed new Los Banos West Substation would result in conflicts with, physical alterations of, and decreased accessibility to the Jasper Sears OHV Use Area (Impacts REC-1, REC-2, REC-3). Refer to Section 4.12.3 for complete descriptions of these impacts.
- **Land Use.** Construction of the proposed new Los Banos West Substation would result in conflicts with the designated recreational use under the SLRSRA RMP/GP for the Jasper Sears OHV Use Area (Impacts LU-1 and LU-4). Refer to Section 4.8.3 for complete descriptions of these impacts.

4.19 Short-term Uses Versus Long-term Productivity

Pursuant to NEPA regulations (40 CFR 1502.16), this section identifies the relationship between short-term uses of the environment attributable to the Proposed Project and the maintenance and enhancement of its long-term productivity.

The construction phase of the proposed SLTP would result in a total of 471 acres of temporary (short-term) disturbance (refer to Appendix E). After construction, Western would restore any temporarily disturbed areas. Permanent impacts are considered those that would be present over the 50- to 60-year life of the SLTP transmission line. Permanent impacts include 41.5 acres for transmission structures and 417.4 acres for access roads (new and improvements to existing). After Project decommissioning, all Project facilities would be removed and the permanent disturbance areas would be restored, thereby re-establishing the long-term productivity of these areas.

Short-term adverse impacts to biological resources, visual resources, land use, agriculture, cultural resources, noise, transportation and traffic, public health and safety, air quality, water resources, geology, mineral resources and soils, and socioeconomics would result from construction activities as described in Sections 4.2 through 4.16.

Adverse effects to air quality would be short-term and localized. During construction, emissions would exceed the NOx, VOC, and PM10 regulatory thresholds. However, construction activities may be phased to reduce emission levels, as recommended in mitigation.

Adverse effects to biological resources, including special-status species and sensitive habitats, would primarily be long-term and caused by habitat removal or alteration. Temporary habitat disturbance would be restored to pre-Project conditions. Restoration and recovery would vary by habitat type and special-status plant species.

Any adverse effects to cultural or paleontological resources during construction would last beyond the life of the Project, as these resources are non-renewable. Implementation of Project EPMs would avoid impacts to known resources.

Effects to agriculture would be long-term at the locations of transmission support structures and access roads. Agricultural practices could continue within the right-of-way. Any reduction in productivity within the Proposed Project area would be negligible over the life of the Project.

Long-term additive effects to visual resources would result from the presence of new transmission lines.

4.20 Irreversible/Irretrievable Commitment of Resources

Pursuant to CEQA Guidelines Section 15126.2(C), this section addresses significant irreversible environmental changes and irretrievable commitments of resources that would be caused by a proposed project. These changes include uses of nonrenewable resources during construction and operation, long-term or permanent access to previously inaccessible areas, and irreversible damages that may result from project-related accidents.

Construction vehicles, equipment, and helicopters would consume fuel. Construction would also require the manufacture of new materials, some of which would not be recyclable upon Project decommissioning. The energy required for manufacturing construction materials would result in an irretrievable commitment of natural resources. The equipment, vehicles, and materials required for construction of the Proposed Project are presented in Chapter 2.

Implementation of the Proposed Project would result in permanent loss of a maximum of 558.9 acres of vegetation. If any of these areas support special-status species or are considered sensitive habitat, impacts would be offset with compensatory habitat, as required by biological resources mitigation measures.

Existing access roads would be used wherever feasible. Up to 35 miles of new access roads would be constructed, primarily adjacent to existing transmission corridors with access roads. Access roads no longer needed after construction would be removed and restored to preconstruction condition to the extent possible. New public access to previously accessible areas would be negligible.

Hazardous materials used or encountered during construction and operation of the Proposed Project would be used, stored, and handled in accordance with Project EPMs and applicable federal and State regulations to avoid any Project-related accidents.

Some of the electricity transported by the proposed transmission lines would be generated by natural gas (a non-renewable resource).

4.21 Growth Inducement

NEPA regulations (40 CFR 1508.8(b)) require that an EIS discuss the growth-inducing impacts of a project. Additionally, CEQA Guidelines (15126.2(d)) require that an EIR discuss the ways in which a proposed project may foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The discussion must address how a proposed project may remove obstacles to growth or encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a population concentration above what is assumed in local or regional land use plans, or in projections made by regional planning authorities. Significant growth impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

The Proposed Project would provide electricity to Reclamation so that it can continue to efficiently pump, store, release, convey and deliver federal water resources to its contractors for municipal, industrial, and irrigation purposes at reasonable cost. The Proposed Project could cause indirect impacts by removing a potential obstacle to growth through the additional increased capacity of electric power that it would make available. However, the SLTP would not affect the allocation or delivery of water and is not intended to supply power related to growth for any particular development, either directly or indirectly. In addition, local city and county jurisdictions will often approve developments regardless of the presence or absence of electrical infrastructure and the Proposed Project would not modify land use or zoning designations to permit new residential or commercial development. Therefore, the Proposed Project would not foster growth, remove direct growth constraints, or add a direct stimulus to growth.

It is expected that the labor force for construction, operation, and decommissioning of the Proposed Project would be Western employees, local contractors, or commuting contractors; the required labor force would not be relocating. Therefore, construction of additional housing to support the Proposed Project would not occur.

Under the No Action Alternative, the Proposed Project would not be constructed. Growth-inducing impacts would not occur.

4.22 Energy Conservation

In order to assure that energy implications are considered in public agency decisions, CEQA requires that an EIR include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). According to Appendix F of the State CEQA Guidelines, the goal of conserving energy implies the wise and efficient use of energy including: (1) decreasing overall per capita energy consumption; (2) decreasing reliance on natural gas and oil; and (3) increasing reliance on renewable energy sources. Some aspects of the energy use analysis are limited by the CEQA Guidelines (Section 15145), which recognizes that the lead agency may find that certain impacts may be too speculative for evaluation.

The Proposed Project would provide electricity for Reclamation so that it can continue to efficiently pump, store, release, convey and deliver federal water resources to its contractors for municipal, industrial, and irrigation purposes at reasonable cost. The SLTP is not intended to supply power related to growth for any particular development and would not contribute directly to a significant change in overall per capita energy consumption. The No Action/No Project Alternative would increase electricity rates for Reclamation and its customers who would be served from the Proposed Project.

Implementation of the Proposed Project would result in the consumption of energy in the form of fuel needed for vehicles and equipment used during construction. Additional energy would be required for the manufacture of new materials for the Project, some of which would not be recyclable at the end of the Proposed Project's lifetime. The anticipated equipment, vehicles, and materials required for construction of the Proposed Project are detailed in Section 2.1.3 (Construction of the Proposed Project). Addressing some aspects of air quality impacts and traffic congestion also reduces energy consumption. Western would follow EPMs for Air Quality and requirements under Mitigation Measure AQ-1, as described in Section 4.3.2, that would reduce engine idling and require construction and maintenance vehicles and equipment to maintain appropriate emissions control equipment. In addition, Western would be required to submit a Traffic Control Plan (Mitigation Measure TRAFFIC-1), which will include methods of reducing construction-related traffic. No significant increases in inefficiencies or unnecessary energy consumption are expected to occur as a direct or indirect consequence of the Proposed Project.

Energy conservation measures are included in the EIS/EIR as components of the Project. Western would implement these aforementioned measures to reduce wasteful, inefficient, and unnecessary consumption of energy. No increases in inefficiencies or unnecessary energy consumption are expected to occur as a direct or indirect consequence of the Project. Therefore, no mitigation measures above those previously identified in this EIS/EIR would be necessary.

Under the No Action Alternative, electricity rates are anticipated to be higher for Reclamation and its customers. Therefore, energy consumption may be lower under the No Action Alternative in comparison to the Proposed Project.