Western
AREA POWER
ADMINISTRATION

DOE/EIS-0323

SIERRA NEVADA REGION

Sacramento Area Voltage Support

FINAL ENVIRONMENTAL IMPACT STATEMENT

September 2003

COVER SHEET

Type of Statement: Sacramento Area Voltage Support
Final Environmental Impact Statement (EIS)

Lead Agency: Western Area Power Administration

Location: Alameda, Contra Costa, Placer, Sacramento, San Joaquin, and Sutter counties, State of California

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ABSTRACT

The Western Area Power Administration's (Western) Central Valley Project transmission system is an integral part of the transmission grid in northern California. Western operates and maintains its system according to Western Electricity Coordinating Council (WECC) reliability standards. Growth in the greater Sacramento area and power imported from generation outside the region have increased demand on the interconnected electric transmission system, leading to transmission system overloads and a reduction in power system reliability and security. Western prepared the Sacramento Area Voltage Support (SVS) Environmental Impact Statement (EIS) to comply with Federal laws, regulations, and guidelines, principally the *National Environmental Policy Act* (NEPA).

Western's SVS EIS consists of the Draft EIS (Western 2002) and this Final EIS. The two documents are intended to be reviewed together. In whole, the EIS contains a description of the existing environment for the project study area, analysis, and findings of environmental impacts for the Proposed Action and alternatives. A Record of Decision (ROD) will be published no sooner than 30 days from the publication date of this Final EIS.

Western has selected Proposed Action Option B as the Preferred Alternative for the SVS EIS. Proposed Action Option B would:

- Provide the highest degree of security and reliability for voltage support
- Avoid displacement of residences
- Produce relatively low environmental impacts

EXECUTIVE SUMMARY

Western Area Power Administration's (Western) Central Valley Project (CVP) transmission system forms an integral part of the interconnected Sacramento, California, area transmission grid. Regional growth has led to increased demand for electric power in the Sacramento area. Power system studies conducted by Sacramento power agencies, organizations, and utilities indicated that system reliability could be at risk due to voltage instability.

This Sacramento Area Voltage Support (SVS) Environmental Impact Statement (EIS), prepared under the *National Environmental Policy Act* of 1969 (NEPA), presents Western's analysis of the environmental effects from the voltage support system additions and improvements for the Proposed Action and alternatives. Western's SVS EIS consists of this Final EIS, which incorporates the entire Draft EIS (published November 2002) by reference. The Draft EIS underwent public review by government agencies, organizations, and individuals during a comment period that included public hearings in Lodi, Folsom, and Marysville, California. After considering comments received, Western prepared this Final EIS. Under the Council on Environmental Quality regulations (40 CFR 1503.9), Western decided to have the Final EIS present responses to comments (RTC) from the public review process and include substantive changes to the Draft EIS, rather than to rewrite and reprint the EIS. Therefore, the Draft and Final EIS constitute the complete EIS; and the Final EIS should be reviewed with the Draft EIS.

ES.1 WESTERN'S BACKGROUND

The Sacramento area is within the Sierra Nevada Region (SNR), which maintains and operates numerous substations and more than 1,200 miles of transmission lines. These transmission lines are interconnected to other Sacramento area utility transmission lines, including those owned and operated by the Sacramento Municipal Utility District (SMUD). By law, Western first markets power that is available after meeting Federal project use requirements to preference customers, such as Federal and state agencies, Native American tribes, electric cooperatives, municipal utilities, public utility districts, irrigation districts, and water districts.

Western sells wholesale electricity to more than 70 customers in central and northern California and Nevada generated from the CVP and the Washoe Project powerplants. Much of that power is allocated and delivered to five major customers: SMUD, Silicon Valley Power, and the cities of Redding, Roseville, and Palo Alto.

ES.2 PURPOSE AND NEED FOR A SOLUTION

Population growth and development in the Sacramento area have steadily increased demand, the need for generation interconnection, and operational flexibility for use of existing electrical transmission facilities. These factors have contributed to reduced security and reliability of the interconnected transmission system. Transmission lines have reached their maximum transfer limits for serving existing needs. Transmission upgrades are needed to maintain reliable operation of the interconnected system and maintain load serving capability.

Power system studies conducted by the Sacramento Area Transmission Planning Group and the River City Transmission Group concluded that transmission additions in the Sacramento area are needed to alleviate voltage sag and ensure power system reliability. This EIS analyzes environmental impacts of alternatives identified to improve electric system reliability and provide voltage support for the Sacramento area.

Findings from this EIS provide a basis for decisions on whether to proceed and, if so, how to proceed with the Proposed Action. Western would implement the decision under the *Central Valley Project Act* authority.

Need for the Proposed Action

Western's transmission system studies have identified a need for short-term transmission line enhancements to maintain CVP transmission security and reliability. Enhancements include a transmission system addition between O'Banion Substation and Elverta Substation and an upgrade of existing 230-kilovolt (kV) transmission lines in the Sacramento area. These transmission enhancements and additions should be implemented within the next five years.

Purposes for the Proposed Action

To continue to meet Western's mission, purposes for the Proposed Action include:

1. Maintaining CVP transmission system security and reliability.
2. Meeting Western's legislative and contractual requirements.
3. Meeting North American Electric Reliability Council (NERC) and Western Electricity Coordinating Council (WECC) operating criteria.

ES.3 PREFERRED ALTERNATIVE

Western has selected Proposed Action Option B as the Preferred Alternative for the SVS EIS. Proposed Action Option B provides the highest degree of security and reliability for voltage support, while having relatively low environmental impacts. Figure ES-1 and Table ES-1 show the alternatives and describe the activities for each alternative.

ES.4 PUBLIC INVOLVEMENT

Public involvement is a vital part of the decision-making process for this EIS. Western developed a public involvement program to provide multiple opportunities for comment during public scoping, alternative formulation, alternative evaluation, and decision-making. Appendix B of the Draft EIS describes the public involvement process.

Following EPA's publication of the Notice of Availability for the Draft EIS on November 15, 2002, the public was given 45 days to submit comments on the Draft EIS. Western continued to accept comments into March 2003. Three public hearings were held during the 45-day public comment period: December 9, 2002, in Lodi, California; December 11, 2002, in Folsom, California; and December 12, 2002, in Marysville, California. Public hearings were held to aid in selecting a Preferred Alternative from the Proposed Action and alternatives presented in the Draft EIS.

Public and government agency comments on the Draft EIS were made at the public hearings. Comments also were sent directly to Western and were received by comment card, mail, telephone, and e-mail. Western received 117 comments from 28 individuals, companies, and government agencies. Responses to individual comments are presented in Chapter 3.0 of the Final EIS.

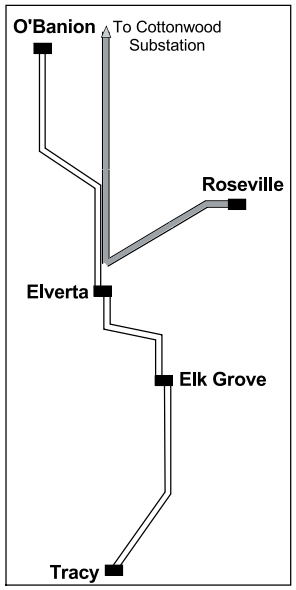
ES.5 ALTERNATIVES

The results of public scoping meetings, workshops, meetings with agencies, and earlier studies by Western and interested area utility groups helped to develop a range of alternatives that were analyzed in the Draft EIS. Each alternative is identified by route segments (Segments A through J) that represent specific activities. Three types of project activities would be conducted for the Proposed Action and alternatives:

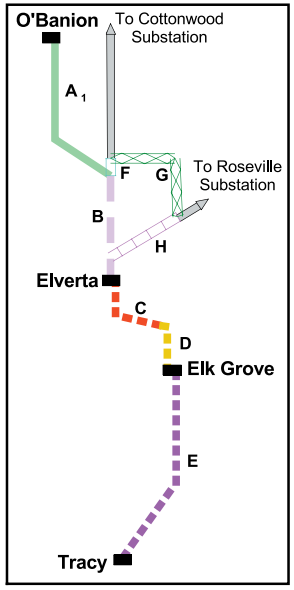
- ***Reconductoring*** would consist of replacing the existing transmission line conductors (wires) with higher capacity conductors. In general, the existing rights-of-way (ROW) would be used, and fewer new structures would be needed.
- ***New construction*** of transmission lines would include designing and building new structures and installing new conductors. New construction would occur on existing ROW, where possible, or require acquisition of new ROW in parallel with existing ROW.
- ***Realignment*** would include route deviations from Western's existing transmission lines at two locations. The first realignment would avoid encroachment of the Pleasant Grove Cemetery, and the second realignment would avoid residential areas.

Based on comments on the Draft EIS, Western added an option that includes realignment modification for the Proposed Action and Alternative 2. The Draft EIS Proposed Action and Alternative 2 have been relabeled as "Proposed Action Option A" and "Alternative 2 Option A." The modified alternatives are labeled "Proposed Action Option B" and "Alternative 2 Option B." The differences between Options A and B are described below and depicted on the insets shown in Figure ES-2. Figures ES-1 and ES-2 illustrate the seven alternatives analyzed and their locations within the study area. For clarification, Segments A and E refer to reconductoring. Segments A_1 and E_1 refer to new construction. Project activities associated with each of the seven alternatives are summarized in Table ES-1 and are described below:

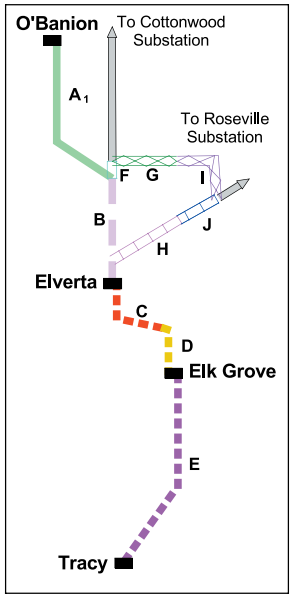
- ***Proposed Action Option A*** is the original alignment of the Proposed Action. It would consist of: (1) reconductoring a double-circuit, 230-kV transmission line from Elverta Substation to Tracy Substation; (2) constructing a new double-circuit, 230-kV transmission line from O'Banion Substation to Elverta Substation; and (3) realigning the transmission line near Pleasant Grove Cemetery, between the O'Banion Substation and Elverta Substation and **Option A** of the Cottonwood–Roseville single-circuit, 230-kV transmission line.
- ***Proposed Action Option B*** modifies the alignment of the Proposed Action. It would consist of (1) reconductoring a double-circuit, 230-kV transmission line from Elverta Substation to Tracy Substation; (2) constructing a new double-circuit, 230-kV transmission line from O'Banion Substation to Elverta Substation; and (3) realigning the transmission line near Pleasant Grove Cemetery, between the O'Banion Substation and Elverta Substation and **Option B** of the Cottonwood–Roseville single-circuit, 230-kV transmission line. This modified realignment of the Cottonwood–Roseville line would extend about 2 miles east of the original alignment then, traverse south.



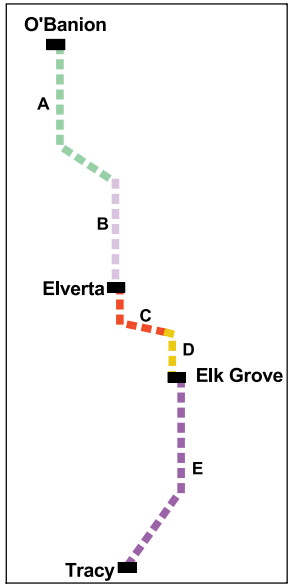
Existing 230-kV Transmission Line System No Action



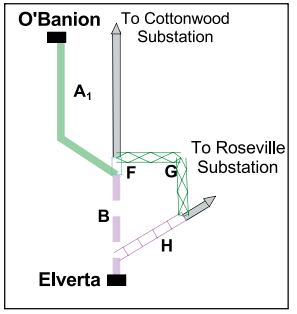
Proposed Action with Option A



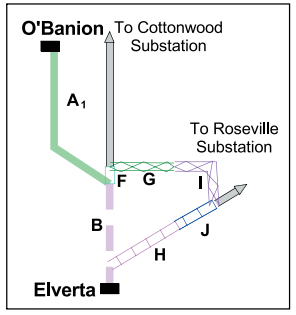
Proposed Action with Option B



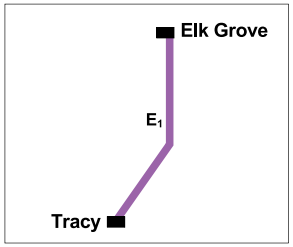
Alternative 1



Alternative 2 with Option A



Alternative 2 with Option B



Alternative 3

Existing 230-kV Transmissiom Line

Additional Transmission Routes

New Construction Within New ROW

New Construction Within Existing ROW

Realignment

Abandonment

Reconductoring

Substation

Segments within Proposed Action and Alternatives

Proposed Action with Option A	: A_1, B, C, D, E, F, G, H
Proposed Action with Option B	: A_1, B, C, D, E, F, G (mileposts 0.0 TO 1.7), H, I, J
Alternative 1	: A, B, C, D, E
Alternative 2 with Option A	: A_1, B, F, G, H
Alternative 2 with Option B	: A_1, B, F, G (mileposts 0.0 TO 1.7), H, I, J
Alternative 3	: E_1

Notes:
- Colored segments correspond to route segments on Figure ES-2
- Table ES-1 describes activities for each alternative
- Segments A and E are reconductoring
- Segments A_1 and E_1 are new construction

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Figures not to Scale

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FIGURE ES-1
General Layout of Proposed Action and Alternatives

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Table ES-1. Activities for the Proposed Action and Alternatives

Alternative	Specific Operations	
Proposed Action Option A: New Transmission O'Banion Substation to Elverta Substation; Realignment; Reconductoring Elverta Substation to Tracy Substation		
Construct and maintain 26.6 miles of new 230-kV double-circuit transmission line from O'Banion Substation to Elverta Substation (Segments A_1 and B). Realign and maintain 230-kV, single-circuit transmission line. (Construct transmission line around the Pleasant Grove Cemetery, construct 5 miles of Segment G, and abandon 3.6 miles of Segments F and H). Reconductor and maintain 73.2 miles of 230-kV, double-circuit transmission line from Tracy Substation to Elverta Substation (Segments C, D, and E).	107.8 167 163 17 28 581 66	Miles ROW length New structures Existing structures replaced Structures abandoned Miles of new access roads Acres short-term disturbed Acres long-term disturbed
Proposed Action Option B: New Transmission O'Banion Substation to Elverta Substation; Realignment; Reconductoring Elverta Substation to Tracy Substation		
Construct and maintain 26.6 miles of new 230-kV, double-circuit transmission line from O'Banion Substation to Elverta Substation (Segments A_1 and B). Realign and maintain 230-kV, single-circuit transmission line. (Construct transmission line around the Pleasant Grove Cemetery, construct 1.8 miles of Segment G and 4.3 miles of Segment I, and abandon 5.8 miles of Segments F, H, and J). Reconductor and maintain 73.2 miles of 230-kV, double-circuit transmission line from Tracy Substation to Elverta Substation (Segments C, D, and E).	111 175 163 28 29 603 69	Miles ROW length New structures Existing structures replaced Structures abandoned Miles of new access roads Acres short-term disturbed Acres long-term disturbed
Alternative 1: Reconductoring O'Banion Substation to Tracy Substation		
Reconductor and maintain 99.8 miles of 230-kV, double-circuit transmission line from O'Banion Substation to Tracy Substation (Segments A, B, C, D, and E).	99.2 199 84.6	Miles ROW length Existing structures replaced Acres short-term disturbed
Alternative 2 Option A: New Transmission O'Banion Substation to Elverta Substation and Realignment		
Construct and maintain 26.6 miles of new 230-kV, double-circuit transmission line from O'Banion Substation to Elverta Substation (Segments A_1 and B). Realign and maintain 230-kV, double-circuit transmission line (Construct transmission line around the Pleasant Grove Cemetery, construct 5 miles of Segment G, and abandon 3.6 miles of Segments F and H).	35.2 167 17 28 485.7 66	Miles ROW length New structures Structures abandoned Miles of new access roads Acres short-term disturbed Acres long-term disturbed
Alternative 2 Option B: New Transmission O'Banion Substation to Elverta Substation and Realignment		
Construct and maintain 26.6 miles of new 230-kV, double-circuit transmission line from O'Banion Substation to Elverta Substation (Segments A_1 and B). Realign and maintain 230-kV, single-circuit transmission line. (Construct transmission line around the Pleasant Grove Cemetery, construct 1.8 miles of Segment G and 4.3 miles of Segment I, and abandon 5.8 miles of Segments F, H, and J).	38.5 175 28 29 537 69	Miles ROW length New structures Structures abandoned Miles of new access roads Acres short-term disturbed Acres long-term disturbed
Alternative 3: New Transmission Elk Grove Substation to Tracy Substation		
Construct and maintain 46.2 miles of new 230-kV, double-circuit transmission line from Elk Grove Substation to Tracy Substation (Segment E_1).	46.2 225 47 855.2 108	Miles ROW length New structures Miles new access roads Acres short-term disturbed Acres long-term disturbed
No Action Alternative: Existing Transmission Line from O'Banion Substation to Tracy Substation		
Maintain 99.1 miles of 230-kV, single- and double-circuit transmission line from O'Banion Substation to Tracy Substation (Segments A, B, C, D, and E).	99.1	Miles ROW length

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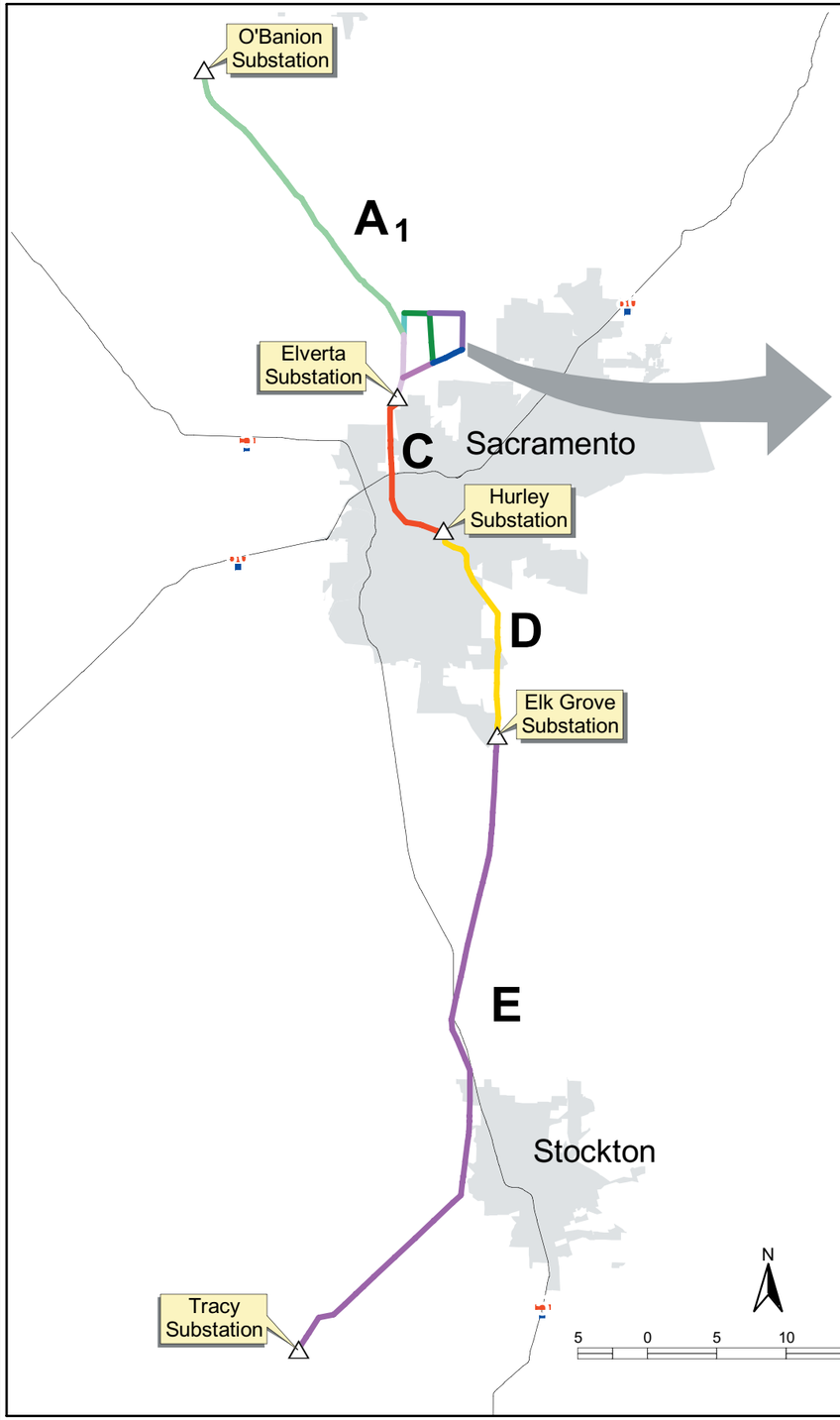
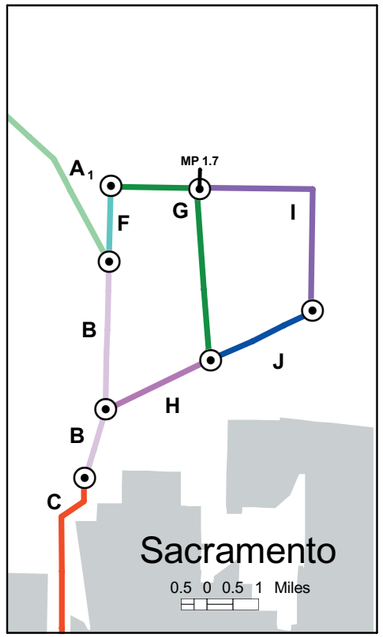
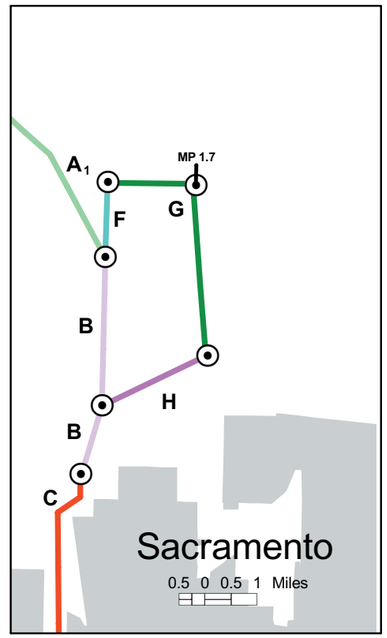
Acronyms:
kV: kilovolt
ROW: right-of-way





Route Segments for Options A and B



Route Segments for Option A

△ Substation

⊙ Segment Intersections

Segment A_1

Segment B

Segment C

Segment D

Segment E

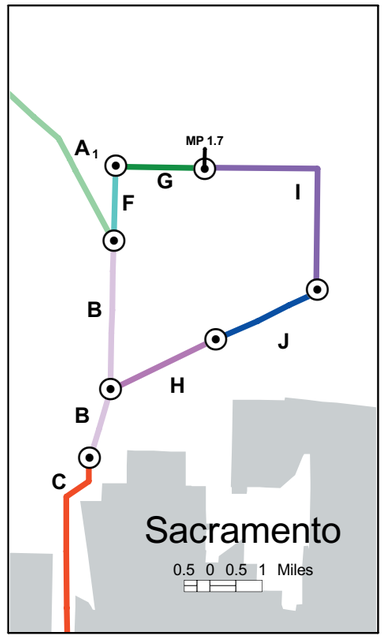
Segment F

Segment G

Segment H

Segment I

Segment J



Route Segments for Option B

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FIGURE ES-2
Route Segments for the Proposed Action Options A and B

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- ***Alternative 1—Reconductoring O'Banion Substation to Tracy Substation*** would consist of reconductoring a double-circuit, 230-kV transmission line from O'Banion Substation to Tracy Substation.
- ***Alternative 2 Option A—New Transmission - O'Banion Substation to Elverta Substation*** is the original alignment of Alternative 2. It would consist of constructing a new double-circuit, 230-kV transmission line from O'Banion Substation to Elverta Substation and realigning the transmission line near Pleasant Grove Cemetery and **Option A** of the Cottonwood–Roseville single-circuit, 230-kV transmission line.
- ***Alternative 2 Option B—New Transmission - O'Banion Substation to Elverta Substation*** includes the modified alignment of Alternative 2. It would consist of constructing a new double-circuit, 230-kV transmission line from O'Banion Substation to Elverta Substation and realigning the transmission line near Pleasant Grove Cemetery and **Option B** of the Cottonwood–Roseville single-circuit, 230-kV transmision line. This modified realignment of the Cottonwood–Roseville line would extend about 2 miles east of the original alignment then traverses south.
- ***Alternative 3—New Transmission - Elk Grove Substation to Tracy Substation*** would consist of constructing a new double-circuit, 230-kV transmission line from Elk Grove Substation to Tracy Substation.
- ***No Action Alternative—***Under the No Action Alternative, existing transmission line system operation would continue unchanged. Western would not develop or build additional transmission lines or substation facilities in the study area relative to voltage support.

ES.6 IMPACTS

Environmental impacts would be similar for all the action alternatives. Generally, new construction would result in more impacts than reconductoring because of the requirement for new structures and access roads. The Proposed Action, Options A and B affect more overall miles than the other action alternatives; however, only a portion is new construction. Alternative 3, which is all new construction, may have a greater potential for impact.

Air quality is the only resource area that may have a significant impact for the action alternatives. However, more detailed air quality analysis would be necessary after a project is selected to move forward. Significant impacts would be mitigated to the point that they would be less than significant. The No Action Alternative appears to have the fewest day-to-day impacts for the operation and maintenance of the existing transmission line; however, it does not meet the need for power system security and reliability. A comparison of the impacts associated with each alternative is presented in Table ES-2.

ES.7 CUMULATIVE IMPACTS

Cumulative impacts result from the incremental effect of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions. Western examined actions that have environmental impacts on the same resources affected by this proposal and similar projects. Western also reviewed other proposed projects, including major linear projects that would potentially create impacts on the same resources. For past actions, Western included existing transmission lines in the study area. Impacts from these past projects were considered for each resource area.

ES.7.1 Reasonably Foreseeable Projects

Western reviewed 65 projects that could have a reasonable likelihood of being implemented by 2005. The proposed projects included: bridge repair, development, pipeline, road expansion, remediation system, transportation, and water and wastewater projects. These projects are listed in Table 4-2.

ES.7.2 Cumulative Effects

Cumulative effects for environmental justice (EJ), floodplains, geology, soils, health and safety, land use, noise, and wetlands are expected to be negligible. A description of cumulative effects is provided below for air quality, biological resources, cultural resources, electric and magnetic fields, paleontological resources, socioeconomics, visual resources, and water resources.

Air Quality

Within the Sacramento area, particulate emissions, volatile organic compounds (VOC), and nitrogen oxides (NO_x) from construction activities, rice field and agricultural burning, industrial operations (aggregate mining), and vehicle equipment may all impact air quality. Constructing new transmission lines or reconductoring existing lines add to these emissions, but only for the short term. Western would use environmental protection measures (EPM) to reduce particulate emissions, VOCs, and NO_x. Therefore, cumulative impacts from the Proposed Action and alternatives, coupled with other area projects, would be considered unavoidable

short-term impacts. Long-term operation under the Proposed Action or any alternative, along with other projects in the general area, would not generate significant amounts of air pollution emissions.

Biological Resources

For the short term, the Proposed Action Options A and B, Alternative 2, and Alternative 3 would affect nonurban areas or areas not developing rapidly containing sensitive biological habitat. Much of the study area is rural and is expected to remain rural for the near term. Although the frequency of bird strikes with transmission lines would continue, the use of transmission line marking devices and locating new lines next to existing lines would result in lower additive cumulative impacts. Cumulative impacts resulting from the Proposed Action Options A and B, Alternative 2, or Alternative 3, and other area projects would be considered insignificant.

The impacts to vegetation as a result of Alternative 1, reconductoring, would be temporary, because these areas would be replanted following the completion of work. As a result, cumulative impacts to biological resources would be minimal.

Cultural Resources

Impacts from the alternatives would be limited to incremental physical impacts to cultural resources located within the existing ROW. Most new transmission lines would be located in areas with other transmission lines where the visual effects would also be incremental. Western should be able to satisfactorily avoid or mitigate impacts on prehistoric and historic archaeological sites. The potential to avoid or mitigate impacts on traditional cultural properties is less clear, although tribal groups would be involved in assessing impacts and identifying and implementing avoidance or mitigating measures.

With adherence to the EPMs, it is likely that the Proposed Action Options A and B, Alternative 2, and Alternative 3, all of which include building new transmission lines, would only add slightly to the cumulative impacts on the cultural resources of the region. Alternative 1, which only includes reconductoring, would not add to the cumulative impacts on the cultural resources of the region.

Electric and Magnetic Fields

In discussions with planning agencies, Western determined that no new permanent, occupied buildings are planned within 100 feet of Western's ROW. Additionally, because EMFs diminish rapidly with distance from the transmission line, and there is no planned encroachment on the ROW, there would be minimal electric and magnetic field (EMF) cumulative impacts to human health or the environment.

Paleontological Resources

Impacts to paleontological resources could result if fossil materials are destroyed during excavation of 10 feet deep or more. Continued development, extending farther into the Central Valley, could disturb more fossil-bearing sedimentary deposits and threaten paleontological resources. Cumulative impacts result from increased disturbance or removal of fossil-bearing rocks. Proper site monitoring would minimize the potential for loss of paleontological resources during construction and cumulative impacts would be negligible.

Socioeconomics

Under No Action, the current strain on electric power supply and distribution would continue, which could result in power supply shortfalls and disruptions as power demand increases to support future development. These supply and distribution difficulties could decrease the efficiency of business operations in the study area and have an adverse effect on the overall economy. Spending in local markets would temporarily benefit the economy.

Visual Resources

Past, existing, and future development have and would continue to visually alter the landscape. Negative effects to the visual quality of the area from development include existing utility lines and associated cleared ROW, commercial development, major roads, abandoned buildings, industrial land uses, aggregate mining, and sand and gravel pits. Where the alternative would be located near one of these existing negative visual features, the impacts would result in an additive adverse effect to the existing visual impacts. However, locating the proposed transmission line next to an existing utility corridor would typically be preferable to locating the line in a previously undisturbed landscape. The additive cumulative impacts for any of the alternatives would not be significant.

Water Resources

Growth and development in the Sacramento area would increase water demand. Construction activities projected for the Proposed Action and alternatives would cause slight increases in surface-water sediment load and water use. These effects would be transitory. Incremental increases in surface-water sediment load from maintenance would not result in significant cumulative impacts.

Table ES-2. Comparison of Alternative Impacts

Resource Issue	Proposed Action with Option A			Proposed Action with Option B			Alternative 1			Alternative 2 with Option A			Alternative 2 with Option B			Alternative 3			No Action		
	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation
Air Quality Air emission standards	Short-term construction emissions exceed PM_{10}, NO_x, and VOC Air District thresholds	Yes	No[1]	Short-term construction emissions exceed PM_{10}, NO_x, and VOC Air District thresholds	Yes	No[1]	Short-term construction emissions exceed PM_{10}, NO_x, and VOC Air District thresholds	Yes	No[1]	Short-term construction emissions exceed PM_{10}, NO_x, and VOC Air District thresholds	Yes	No[1]	Short-term construction emissions exceed PM_{10}, NO_x, and VOC Air District thresholds	Yes	No[1]	Short-term construction emissions exceed PM_{10}, NO_x, and VOC Air District thresholds	Yes	No[1]	No additional air emission impacts	No	No
Biological Resources[2] Designated critical habitat, special status wildlife and plants, sensitive habitat types (vernal pools and riparian)	Short-term effects on critical habitat for the VELB and winter- and spring-run Chinook salmon from ground disturbance during construction activities Removal of elderberry and subsequent effect to VELB Short-term erosion or vegetation removal may impact sensitive habitats	No[3] No[3] No[3]	No[4] No[4] No[5]	Short-term effects on critical habitat for the VELB and winter- and spring-run Chinook salmon from ground disturbance during construction activities Removal of elderberry and subsequent effect to VELB Short-term erosion or vegetation removal may impact sensitive habitats	No[3] No[3] No[3]	No[4] No[4] No[5]	Short-term effects on critical habitat for the VELB and winter- and spring-run Chinook salmon from ground disturbance during construction activities Removal of elderberry and subsequent effect to VELB Short-term erosion or vegetation removal may impact sensitive habitats	No[3] No[3] No[3]	No[4] No[4] No[5]	Short-term effects on critical habitat for the VELB from ground disturbance during construction activities Removal of elderberry and subsequent effect to VELB Short-term erosion or vegetation removal may impact sensitive habitats	No[3] No[3] No[3]	No[4] No[4] No[5]	Short-term effects on critical habitat for the VELB from ground disturbance during construction activities Removal of elderberry and subsequent effect to VELB Short-term erosion or vegetation removal may impact sensitive habitats	No[3] No[3] No[3]	No[4] No[4] No[5]	Short-term effects on critical habitat for the winter- and spring-run Chinook salmon during construction activities Removal of elderberry and subsequent effect to VELB Short-term erosion or vegetation removal may impact sensitive habitats	No[3] No[3] No[3]	No[4] No[4] No[5]	Short-term effects on critical habitat from ground disturbance during maintenance activities Removal of elderberry and subsequent effect to VELB Short-term erosion or vegetation removal may impact sensitive habitats	No No No	No No No
Cultural Resources[6] Prehistoric cultural resources, historic cultural resources, and TCPs	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No	No
Electric and Magnetic Fields Corona, field, and health effects	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs.	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No	No
Environmental Justice Disproportionate adverse health effects or reduced land values to minority or low-income communities	No disproportionate adverse impacts	No	No	No disproportionate adverse impacts	No	No	No disproportionate adverse impacts	No	No	No disproportionate adverse impacts	No	No	No disproportionate adverse impacts	No	No	No disproportionate adverse impacts	No	No	No disproportionate adverse impacts	No	No

Table ES-2. Comparison of Alternative Impacts

Resource Issue	Proposed Action with Option A			Proposed Action with Option B			Alternative 1			Alternative 2 with Option A			Alternative 2 with Option B			Alternative 3			No Action		
	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation
Floodplains[7] Obstruction of flood flows, decreased capacity to convey peak flows, and destabilization of soils	100-year floodplain disturbance Short-term effects on floodplain attributable to temporary construction and work sites Long-term impacts attributable to concrete footings	No[3]	No	100-year floodplain disturbance Short-term effects on floodplain attributable to temporary construction and work sites Long-term impacts attributable to concrete footings	No[3]	No	100-year floodplain disturbance Short-term effects on floodplain attributable to temporary construction and work sites Long-term impacts attributable to concrete footings	No[3]	No	100-year floodplain disturbance Short-term effects on floodplain attributable to temporary construction and work sites Long-term impacts attributable to concrete footings	No[3]	No	100-year floodplain disturbance Short-term effects on floodplain attributable to temporary construction and work sites Long-term impacts attributable to concrete footings	No[3]	No	100-year floodplain disturbance. Short-term effects on floodplain attributable to temporary construction and work sites Long-term impacts attributable to concrete footers	No[3]	No	Insignificant short-term impacts	No	No
Geology Subsidence, landslides, and seismic hazards	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No	No
Health and Safety Hazardous materials/ waste, electrical hazards, and fall hazards	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No	No
Land Use Proximity of new ROW of transmission lines to residences, loss of prime farmland, effects on recreation and open space, and impacts to traffic patterns during construction	<u>Short-term effects</u>: An agricultural outbuilding would require removal for one property owner Reconductoring activities near recreation/open space facilities, tennis club, and the Country Day School Traffic patterns may be suspended during construction <u>Long-term effects</u>: Majority of construction within existing ROW Five residences located within 0.5 mile of new ROW (Segment G) Realigning transmission line to avoid cemetery Loss of 6.7 acres of prime farmland for the entire project would not result in significant impacts	Short-term impact for one property owner	No[8]	<u>Short-term effects</u>: Reconductoring activities near recreation/ open space facilities, tennis club, and the Country Day School Traffic patterns may be suspended during construction <u>Long-term effects</u>: Majority of construction within existing ROW Realigning transmission line to avoid cemetery Loss of 7.6 acres of prime farmland for the entire project would not result in significant impacts Five residences located within 0.5 mile of new ROW (Segments G [MPs 0.0 to 1.7] and I)	No[3]	No	<u>Short-term effects</u>: Reconductoring activities near recreation/ open space facilities, tennis club, and the Country Day School No loss of prime farmland Traffic patterns may be suspended during construction	No[3]	No	<u>Short-term effects</u>: An agricultural outbuilding would require removal for one property owner Reconductoring activities near recreation/ open space facilities, tennis club, and the Country Day School Traffic patterns may be suspended during construction <u>Long-term effects</u>: Five residences located within 0.5 mile of new ROW (Segment G) Realigning transmission line to avoid cemetery Loss of 6.7 acres of prime farmland for the entire project would not result in significant impacts	Short-term impact for one property owner	No[8]	<u>Short-term effects:</u> Reconductoring activities near recreation/ open space facilities, tennis club, and the Country Day School Traffic patterns may be suspended during construction <u>Long-term effects</u>: Five residences located within 0.5 mile of new ROW (Segments G [MPs 0.0 to 1.7] and I) Realigning transmission line to avoid cemetery Loss of 7.6 acres of prime farmland for the entire project would not result in significant impacts	No[3]	No	<u>Short-term effects:</u> New construction activities near recreational park and tennis courts Traffic patterns may be suspended during construction <u>Long-term effects:</u> Construction adjacent to existing ROW. Loss of 15.2 acres of prime farmland	No[3]	No	Short-term impacts when maintenance vehicles cross farmland	No	No

Table ES-2. Comparison of Alternative Impacts

Resource Issue	Proposed Action with Option A			Proposed Action with Option B			Alternative 1			Alternative 2 with Option A			Alternative 2 with Option B			Alternative 3			No Action		
	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation
Noise Noise average day-night noise levels (L_{dn})	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No	No
Paleontological Resources Destruction of significant fossils	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No	No
Socio-economics Population growth and related inability to meet demand for schools and housing, adverse effect on income, displacement of residents and disruption of businesses, adverse effect on property values, and disproportionate impacts on minority, low-income or tribal populations	Short-term effects: An agricultural outbuilding used for business would require removal for one property owner Increased employment in the study area Long-term effects: Loss of farmland	Short-term impact for one property owner	No[8]	Short-term effects: Increased employment in the study area Long-term effects: Loss of farmland	No[3]	No	Short-term effects: Increased employment in the study area Long-term effects: Loss of farmland	No[3]	No	Short-term effects: One agricultural outbuilding used for business would require removal Increased employment in the study area Long-term effects: Loss of farmland	Short-term impact for one property owner	No[8]	Short-term effects: Increased employment in the study area Long-term effects: Loss of farmland	No[3]	No	Short-term effects: Increased employment in the study area Long-term effects: Loss of farmland	No[3]	No	No impacts are expected	No	No
Soils Erosion, improper drainage, high water erodibility, steep slopes, and compaction	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No[3]	No	No impacts with implementation of design standards and adherence to EPMs	No	No
Visual Resources Altering existing landscapes, effects to areas of high visual quality or scenic landscapes, and consistency with local and county general plans	Long-term effects: Five residences are located within 0.5 mile of new ROW in Segment G. These residences view two other transmission lines in the general area	No[3]	No	Long-term effects: Five residences located within 0.5 mile of new ROW (Segments G [MPs 0.0 to 1.7] and I) These residences view two other transmission lines in the general area	No[3]	No	Short-term impacts during restringing of transmission lines	No[3]	No	Long-term effects: Five residences are located within 0.5 mile of new ROW in Segment G. These residences view two other transmission lines in the general area	No[3]	No	Long-term effects: Five residences located within 0.5 mile of new ROW (Segments G [MPs 0.0 to 1.7] and I) These residences view two other transmission lines in the general area	No	No	Long-term effects: ROW located at the Cosumnes River Preserve. Other transmission lines are located in the adjacent ROW	No[3]	No	No impacts are expected	No	No

Table ES-2. Comparison of Alternative Impacts

Resource Issue	Proposed Action with Option A			Proposed Action with Option B			Alternative 1			Alternative 2 with Option A			Alternative 2 with Option B			Alternative 3			No Action		
	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation	Impacts	Significant Impact	Mitigation
Water Resources Erosion, compaction, and sedimentation or blockage of drainage; introduction of debris, fill, or contamination into surface water or groundwater; damage to irrigation improvements; and depletion of water resources	Surface water would be spanned, and revegetation would minimize erosion and sedimentation No impacts with implementation of design standards and adherence to EPMs	No[3]	No[6]	Surface water would be spanned, and revegetation would minimize erosion and sedimentation No impacts with implementation of design standards and adherence to EPMs	No[3]	No[6]	No impacts expected are expected	No	No	Surface water would be spanned, and revegetation would minimize erosion and sedimentation No impacts with implementation of design standards and adherence to EPMs	No[3]	No[6]	Surface water would be spanned, and revegetation would minimize erosion and sedimentation No impacts with implementation of design standards and adherence to EPMs	No[3]	No[6]	Surface water would be spanned, and revegetation would minimize erosion and sedimentation No impacts with implementation of design standards and adherence to EPMs	No[3]	No[6]	No impacts are expected	No	No
Wetlands Degradation of biological values and wetland functions from excavation, fill, disturbance, or sedimentation; and increased access by humans or invasive species	Wetlands would be avoided No impacts with implementation of design standards and adherence to EPMs	No[3]	No[6]	Wetlands would be avoided Segment I would cross several miles of native vegetation with wetlands expected to be avoided through design and implementation of EPMs	No[3]	No[6]	Wetlands would be avoided No impacts with implementation of design standards and adherence to EPMs	No[3]	No[6]	Wetlands would be avoided No impacts, with implementation of design standards and adherence to EPMs	No[3]	No[6]	Wetlands would be avoided Segment I would cross several miles of native vegetation with wetlands expected to be avoided through design and implementation of EPMs	No[3]	No[6]	Wetlands would be avoided No impacts with implementation of design standards and adherence to EPMs	No[3]	No[6]	No impacts are expected	No	No

June 2003
[1]Western would coordinate with the air districts after a project is selected.
[2]Biological surveys would be conducted for only the action determined in the ROD.
[3]Western would adhere to EPMs to minimize impacts.
[4]Western would coordinate with USFWS and CDFG as part of their Section 7 consultation in case elderberry bushes (the habitat of the VELB) are removed.
[5]Surface water and riparian habitat would be spanned and wetlands avoided; however, if they could not be spanned or avoided, Western would confer with USACE, RWQCB, and USFWS.
[6]Class III inventories would be conducted for only the action determined in the ROD.
[7]Construction in floodplains would require Western to confer with USACE, RWQCB, and the California Reclamation Board.
[8]Western would purchase the property at fair market value in conformance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*
Acronyms:
EPM: Environmental Protection Measure
MP: milepost
NO_x: nitrogen oxides
PM_{10}: Particulate matter less than or equal to 10 microns in diameter
ROD: Record of Decision
ROW: right-of-way
RWQCB: Regional Water Quality Control Board
TCP: traditional cultural property
USACE: U.S. Army Corps of Engineers
USFWS: U.S. Fish and Wildlife Service
VELB: Valley elderberry longhorn beetle
VOC: volatile organic compounds
Western: Western Area Power Administration

ES.8 ENVIRONMENTAL IMPACT STATEMENT REVIEW

The Draft EIS was filed with the U.S. Environmental Protection Agency (EPA) and released to the public in November 2002. About 200 copies were distributed to agencies, organizations, and individuals for review and comment during the review period, which ended on December 31, 2002. Detailed comments and responses are presented in Chapter 3. Comments received were classified into 17 categories:

- Air Quality
- Alternatives
- Biological Resources/Wetlands
- Construction
- Environmental Impact Statement Process
- Electric and Magnetic Fields
- Figures
- Funding
- Geology
- Health and Safety
- Land Use
- Permitting
- Power Transmission
- Remarks
- Socioeconomics
- Soils
- Visual Resources

ES.9 DECISION DOCUMENT

Following publication of this Final EIS, Western's Administrator will issue a Record of Decision (ROD), which will (1) state what the decision is, (2) identify all alternatives considered in reaching the decision, including which alternative is considered to be environmentally preferred, and (3) state whether all practical means to avoid or minimize impacts from the alternative selected have been adopted, and if not, why. The Administrator will ensure that the decision is executed as stipulated.

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ACRONYMS

APE .....area of potential effects
APLIC .....Avian Power Line Interaction Committee
APN .....Assessor Parcel Number
BA .....Biological Assessment
BAAQMD .....Bay Area Air Quality Management District
Caltrans .....California Department of Transportation
CDFG .....California Department of Fish and Game
CEC .....California Energy Commission
CEQ .....Council on Environmental Quality
CESA .....*California Endangered Species Act*
CFR .....*Code of Federal Regulations*
CPUC .....California Public Utilities Commission
CSCH .....California State Clearing House
CSLC .....California State Lands Commission
CVP .....Central Valley Project
CWA .....*Clean Water Act*
DHS .....California Department of Health Services
DOE .....U.S. Department of Energy
DSM .....demand-side management
EIS .....Environmental Impact Statement
EMF .....electric and magnetic field
EO .....*Executive Order*
EPA .....U.S. Environmental Protection Agency
EPM .....environmental protection measure
ESA .....*Endangered Species Act*
FR .....*Federal Register*
FRAQMD .....Feather River Air Quality Management District
FWCA .....*Fish and Wildlife Coordination Act*
IOU .....Investor-owned Utilities
ISO .....California Independent System Operator Corporation

ACRONYMS

MBTA.....*Migratory Bird Treaty Act*

MOU.....Memorandum of Understanding

MP .....milepost

NA .....not available/not applicable

NEPA.....*National Environmental Policy Act*

NERC .....North American Electric Reliability Council

NESC .....National Electric Safety Code

NHPA.....*National Historic Preservation Act*

NOAA .....National Oceanic and Atmospheric Administration

NOAA Fisheries .....National Marine Fisheries Service

NO_x.....nitrogen oxides

NRHP.....National Register of Historic Places

O_3 .....Ozone

OSHA.....Occupational Safety and Health Administration

PA .....Programmatic Agreement

PCAPCD .....Placer County Air Pollution Control District

PG&E.....Pacific Gas & Electric Company

$PM_{2.5}$ .....particulate matter equal to or less than 2.5 microns in diameter

PM_{10}.....particulate matter equal to or less than 10 microns in diameter

ROD.....record of decision

ROW.....right-of-way

RTC.....response to comments

RWQCB .....Regional Water Quality Control Board

SATPG.....Sacramento Area Transmission Planning Group

SCCSD .....Sutter County Community Services Department

SEC .....Sutter Energy Center

SEWD .....Sutter Extension Water District

SHPO .....State Historic Preservation Officer

ACRONYMS

SJVAPCD	San Joaquin Valley Unified Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SNR	Sierra Nevada Region/Sierra Nevada Regional Office
SVS	Sacramento Area Voltage Support
TCP	traditional cultural property
UBC	Uniform Building Code
U.S.	United States
U.S.C.	*United States Code*
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VELB	valley elderberry longhorn beetle
VOC	volatile organic compound
WECC	Western Electricity Coordinating Council
Western	Western Area Power Administration

UNITS OF MEASURE

kV	kilovolt
mG	milligauss
MW	megawatt

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Chapter 1—Introduction

Supplying Energy
Preserving Reliability

CHAPTER 1.0–INTRODUCTION

Western Area Power Administration (Western) delivers reliable, cost-based hydroelectric power and related services within the central and western United States (U.S.). Western is one of four power marketing administrations within the U.S. Department of Energy (DOE), whose role is to market and transmit electricity from multi-use water projects. Western's Sierra Nevada Region (SNR) manages the Central Valley Project (CVP) transmission system that forms an integral part of the interconnected Sacramento area transmission grid.

The Sacramento Area Voltage Support (SVS) Environmental Impact Statement (EIS) was prepared under the *National Environmental Policy Act* (NEPA), the Council on Environmental Quality (CEQ), *Regulations for Implementing the Procedural Provisions of NEPA* (40 Code of Federal Regulations [CFR] Parts 1500-1508), the DOE NEPA Implementing Procedures (10 CFR Part 1021), and other applicable regulations. Western's SVS EIS evaluates a Proposed Action and alternatives to upgrade transmission lines in the Sacramento, California area and consists of this Final EIS, which incorporates the entire Draft EIS (published November 2002) by reference. The Draft EIS underwent public review by government agencies, organizations, and individuals during a comment period that included public hearings in Lodi, Folsom, and Marysville, California. The Draft and Final EIS constitute the complete EIS. The Final EIS is intended to be reviewed with the Draft EIS. The Draft EIS is included in electronic format with this Final EIS.

1.1 ORGANIZATION OF THE ENVIRONMENTAL IMPACT STATEMENT

1.1.1 Draft Environmental Impact Statement

The Draft EIS contains eight chapters and five appendices. Chapter 1 presents the background, voltage support, and public involvement. Chapter 2 presents the purpose and need for the Proposed Action and alternatives. Chapter 3 provides a description of the Proposed Action and alternatives, environmental protection measures (EPM), and a comparison of alternative impacts. Chapter 4 presents affected environment and environmental consequences from the Proposed Action and alternatives on each identified resource area. Chapter 5 presents consultation and coordination with Federal, tribal, state, city, county, and other organizations. Chapter 6 presents the list of agencies and organizations that received the Draft EIS. Chapter 7 provides the list of preparers. Chapter 8 presents references. Appendix A provides an overview of the alternatives development process. Appendix B summarizes the public involvement process. Appendix C presents biological information including pedestrian surveys and species lists. Appendix D provides information on tribal consultation. Appendix E provides land use figures for each segment of the Proposed Action and alternatives overlain on aerial photographs.

1.1.2 Final Environmental Impact Statement

This Final EIS includes five chapters. Chapter 1 presents how the EIS is organized; outlines the purpose and need for the Proposed Action; describes the Proposed Action and alternatives; and presents the Preferred Alternative, describes scoping, Draft EIS review, and agency commitments. Chapter 2 presents affected environment and environmental consequences of Option B of the Proposed Action and Alternative 2. Option A is the original route presented in the Draft EIS and Option B was added after the Draft EIS was published. Chapter 3 presents the comments received on the Draft EIS and Western's response to comments (RTC). Chapter 4 presents modifications, addenda, and corrections to the Draft EIS. Chapter 5 presents references and a list of Draft EIS recipients.

1.2 PURPOSE AND NEED FOR AGENCY ACTION

1.2.1 Need for the Proposed Action

Western's transmission system studies have identified a need for short-term transmission line enhancements to maintain CVP transmission security and reliability. Enhancements include a transmission system addition between O'Banion Substation and Elverta Substation and an upgrade of existing 230-kilovolt (kV) transmission lines in the Sacramento area. These transmission enhancements and additions should be implemented within the next five years.

1.2.2 Purposes for the Proposed Action

To continue to meet Western's mission, purposes for the Proposed Action include:

1. Maintaining CVP transmission system security and reliability.
2. Meeting Western's legislative and contractual requirements.
3. Meeting North American Electric Reliability Council (NERC) and Western Electricity Coordinating Council (WECC) operating criteria.

1.3 PROPOSED ACTION AND ALTERNATIVES

1.3.1 Description of Proposed Action Options A and B and Alternative 2 Options A and B

The results of public scoping meetings, workshops, meetings with agencies, and earlier studies by Western and area utilities helped to develop five alternatives for analysis in the Draft EIS. Based on public comments on the Draft EIS, Western added an option for a realignment modification for the Proposed Action and Alternative 2. The original realignment for the Proposed Action and Alternative 2, described in the Draft EIS, is labeled as "Option A" in this Final EIS. The modified realignment for the Proposed Action and Alternative 2, to avoid residences, is labeled as "Option B" in this Final EIS. In effect, two alternatives were added for the Final EIS. The differences between Options A and B are described below and depicted on the insets shown in Figure 1-2. Figure 1-1 presents an illustration of the seven alternatives analyzed and their locations within the study area. For clarification, Segments A and E refer to reconductoring. Segments A_1 and E_1 refer to new construction. Each segment is divided into 1-mile sections marked by numeric mileposts (MP), each segment beginning with MP 0.0.

Route Segments for Options A and B are shown on Figure 1-2. Option A, for both the Proposed Action and Alternative 2 would include Segment G (new construction) and Segment H (abandonment). Option B, the modified realignment of the Cottonwood–Roseville line, would include the 1.7-mile, east-west-trending portion of Segment G (new construction), Segment I (new construction), Segment H (abandonment), and Segment J (abandonment). Under Option B, the north-south-trending portion of Segment G would no longer be constructed, thereby avoiding residences. Segment I begins at Segment G (MP 1.7) and would extend 2.2 miles west before turning south for about 2.1 miles to tie into the existing Cottonwood–Roseville transmission line. Option B would require an additional 2.2 miles of Cottonwood–Roseville transmission line abandonment along Segment J.

1.3.2 Project Activities of the Proposed Action and Alternatives

Three types of project activities would be conducted for the Proposed Action and alternatives:

- ***Reconductoring*** would consist of replacing the existing transmission line conductors (wires) with higher capacity conductors. In general, the existing right-of-ways (ROW) would be used, and fewer new structures would be needed.
- ***New construction*** of transmission lines would include designing and building new structures and installing new conductors. New construction would occur on existing ROWs, where possible, or require acquisition of new ROWs in parallel with existing ROWs.
- ***Realignment*** would include route deviations from Western's existing transmission lines at two locations. The first realignment would avoid encroachment of the Pleasant Grove Cemetery, and the second realignment would avoid residential areas.

Project activities associated with each of the seven alternatives are summarized in Table 1-1 and are described below.

- ***Proposed Action Option A*** is the original alignment of the Proposed Action. It would consist of: (1) reconductoring a double-circuit, 230-kV transmission line from Elverta Substation to Tracy Substation; (2) constructing a new double-circuit, 230-kV transmission line from O'Banion Substation to Elverta Substation; and (3) realigning the transmission line near Pleasant Grove Cemetery, between the O'Banion Substation and Elverta Substation and **Option A** of the Cottonwood–Roseville single-circuit, 230-kV transmission line.
- ***Proposed Action Option B*** modifies the alignment of the Proposed Action. It would consist of (1) reconductoring a double-circuit, 230-kV transmission line from Elverta Substation to Tracy Substation; (2) constructing a new double-circuit, 230-kV transmission line from O'Banion Substation to Elverta Substation; and (3) realigning the transmission line near Pleasant Grove Cemetery, between the O'Banion Substation and Elverta Substation and **Option B** of the Cottonwood–Roseville single-circuit, 230-kV transmission line. This modified realignment of the Cottonwood–Roseville line would extend about 2 miles east of the original alignment then, traverse south.
- ***Alternative 1—Reconductoring O'Banion Substation to Tracy Substation*** would consist of reconductoring a double-circuit, 230-kV transmission line from O'Banion Substation to Tracy Substation.
- ***Alternative 2 Option A—New Transmission - O'Banion Substation to Elverta Substation*** is the original alignment of Alternative 2. It would consist of constructing a new double-circuit, 230-kV transmission line from O'Banion Substation to Elverta Substation and realigning the transmission line near Pleasant Grove Cemetery

and **Option A** of the Cottonwood–Roseville single-circuit, 230-kV transmission line.

- ***Alternative 2 Option B—New Transmission - O'Banion Substation to Elverta Substation*** includes the modified alignment of Alternative 2. It would consist of constructing a new double-circuit, 230-kV transmission line from O'Banion Substation to Elverta Substation and realigning the transmission line near Pleasant Grove Cemetery and **Option B** of the Cottonwood–Roseville single-circuit, 230-kV transmision line. This modified realignment of the Cottonwood–Roseville line would extend about 2 miles east of the original alignment then traverses south.
- ***Alternative 3—New Transmission - Elk Grove Substation to Tracy Substation*** would consist of constructing a new double-circuit, 230-kV transmission line from Elk Grove Substation to Tracy Substation.
- ***No Action Alternative—***Under the No Action Alternative, existing transmission line system operation would continue unchanged. Western would not develop or build additional transmission lines or substation facilities in the study area relative to voltage support.

A summary of disturbance for the Proposed Action and alternatives is presented in Table 1-2. Environmental impacts of Option B were evaluated and are presented in Chapter 2.0. Impacts to each resource area expected from the Proposed Action and alternatives are summarized in Table 1-3. Western's EPMs, cited in the Draft EIS to reduce environmental consequences associated with construction activities, are included again in this document as Table 1-4.

1.4 PREFERRED ALTERNATIVE

Western has selected Proposed Action Option B as the Preferred Alternative for the SVS EIS. Proposed Action Option B provides the highest level of security and reliability for voltage support, while presenting relatively low environmental impacts. Figure 1-2 presents a schematic of the general layout of Proposed Action Option B. Figures 1-3 through 1-8 present more detailed route segments of Proposed Action Option B.

1.5 PUBLIC INVOLVEMENT

Public involvement is a vital part of the decision-making process for the SVS EIS. Western designed a public participation process to heighten public awareness and to encourage open communication throughout the SVS EIS development.

1.5.1 Scoping

Scoping, a process open to the public and conducted early in project development, identified the range of issues to be addressed during the environmental studies and in the EIS. Activities associated with scoping included (1) agency contacts and coordination with cooperating agencies, (2) public meetings and workshops, and (3) letter and newsletter mailings and media releases.

Scoping meetings were held September/October 2000 at Lodi, Marysville, and Folsom, California. Western held workshops in March and September 2001 in Folsom, California, and has distributed five issues of the *EIS News*.

1.5.2 Draft Environmental Impact Statement Review Summary

The Draft EIS was filed with the U.S. Environmental Protection Agency (EPA) and released to the public in November 2002. A *Federal Register* (FR) notice of the filing was published on November 15, 2002, which initiated the public review period. Western distributed about 200 copies to agencies, organizations, and individuals for review and comment during the review period, which ended on December 31, 2002.

During the review period, Western conducted public hearings in Lodi, Folsom, and Marysville, California. Twenty-four people signed the hearing attendance sheets. Eleven people made verbal comments. During the review period, Western received 117 comments from 28 individuals from various agencies and the public. Comments received were classified into 17 categories. Specific comments and Western's responses are presented in Section 3.3.

1.6 DECISION DOCUMENT

Following publication of this Final EIS, Western's Administrator will issue a Record of Decision (ROD), which will (1) state what the decision is, (2) identify all alternatives considered in reaching the decision, including which alternative is considered to be environmentally preferred, and (3) state whether all practical means to avoid or minimize impacts from the alternative selected have been adopted, and if not, why. The Administrator will ensure that the decision is executed as stipulated.

1.7 WESTERN'S COMMITMENTS FOR PERMITS, COMPLIANCE, CONSULTATION, AND COORDINTION

To date, no funding has been identified for this project. After funding is identified, Western would initiate consultation and coordination with the

appropriate agencies. Western plans to use a phased approach that would minimize impacts to air, biological and water resources, and cultural resources for construction of any action alternative. Table 1-5 presents a summary of the coordination, consultation, permitting, certifications, and leasing that may apply. The following subsections summarize surveying, consultation, permitting/certifications, and agency approvals required before construction of the Proposed Action or alternatives or any ground-disturbing activities.

1.7.1 Air Resource Compliance and Coordination

Based on air district thresholds of significance used in this analysis, emission calculations conducted for the Draft EIS indicated that air emissions of two regulated pollutants (particulate matter less than or equal to 10 microns in diameter [PM_{10}], and nitrogen oxides [NO_x]) from the Proposed Action and action alternatives would be considered significant for the majority of the affected air districts when compared to air district significance thresholds. These conclusions were based on "worst-case" scenarios and would likely be lower in practice. Alternatives analyzed in this EIS are located in five air districts: the Feather River Air Quality Management District (FRAQMD), Placer County Air Pollution Control District, Sacramento Metropolitan Air Quality Management District (SMAQMD), San Joaquin Valley Air Pollution Control District, and Bay Area Air Quality Management District.

Impacts to air quality from any action alternative would primarily be short term during construction. Maximum daily emissions for NO_x and PM_{10}, as calculated, would exceed significance thresholds in all five air districts. Project emissions of volatile organic compounds (VOC) would exceed FRAQMD significance thresholds. Implementation of Western's EPMs would reduce NO_x, PM_{10}, and VOC emissions to the maximum extent practical; however, emissions could still exceed threshold values.

After completing project engineering and design plans, Western would initiate coordination with all applicable air districts. Western would complete construction in phases and discuss the schedule and potential emissions with each district. After 2004, Western may need to conform to district significance thresholds and mitigation measures for particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), based on EPA directives.

1.7.2 Biological and Water Resource Surveys, Permitting, and Agency Consultation

The following subsections summarize surveying, permitting/certifications, and agency consultations required for biological and water resources for the action alternatives. Several biological and water resource field surveys would be conducted for areas affected by any action alternative before construction. These surveys may include a jurisdictional delineation of all Waters of the United States, a California Department of Fish and Game (CDFG) 1601 Streambed Alteration Agreement (if the project would result in an impact to a river, stream, lake, or associated riparian habitat), special-status plant surveys, and special-status species surveys including valley elderberry longhorn beetle (VELB) surveys, as appropriate.

1.7.2.1 Biological and Water Resources Permitting and Certification

Permits and certifications to be acquired as part of the biological and water resource surveys may include a U.S. Army Corps of Engineers (USACE) Nationwide 12 Utility Activities Permit; a USACE Section 404 Permit (if dredged or fill materials enter Waters of the United States); and a Regional Water Quality Control Board (RWQCB) Section 401 Certification.

1.7.2.2 Biological Agency Consultation

Agency consultation would be performed under the Federal *Endangered Species Act* (ESA) (16 United States Code (U.S.C.) §1531 *et seq*.). Western would coordinate with CDFG regarding special-status species if it is determined that the funded project would impact any species protected under *California Endangered Species Act* (CESA) and ESA.

Western would consult with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NOAA Fisheries) would be consulted regarding potential effects to species that are federally listed, proposed, or candidate species. The consultation would include discussion of the project's anticipated approach and would provide the opportunity for agency feedback regarding preliminary conclusions. A Biological Assessment (BA) would be prepared under USFWS guidelines. The BA would include a summary of consultation to date, project description, an account of each species addressed, an assessment of project effects, an analysis of alternative actions, and an effect determination for each species. Based on the BA, Western would initiate formal Section 7 consultation, if necessary.

1.7.3 California Department of Transportation–State Highway Encroachment Permit

Construction activities may encroach upon a state highway ROW. An encroachment permit would be needed where proposed power lines cross interstate or state highways.

1.7.4 California State Lands Commission–State-Owned Land Leases

The Old River, Middle River, San Joaquin River, Fourteen Mile Slough, Pixley Slough, Mokelumne River, American River, and Feather River are located on state-owned lands. Construction activities would not be expected within any of these lands; however, if any structures are sited in state-owned lands, leases would be obtained before conducting any ground-disturbing activities from the California State Lands Commission (CSLC).

1.7.5 Cultural Resource Surveys, Permitting, and Agency Consultation

For areas not previously inventoried to current standards, Western would conduct a Cultural Resources Inventory for the project before conducting any ground-disturbing activities. This inventory would include compiling and reviewing existing information, completing an archaeological field inventory, assessing cultural resource issues, and preparing a technical report. The review of existing information would assess the nature and location of known cultural resources and verify the presence or absence of previously completed archaeological inventories within the area of potential effects (APE). Following the existing information review, Western would complete an archaeological field inventory on portions of the APE that were not previously surveyed to current standards. The survey report, which would support compliance with Section 106 of the *National Historic Preservation Act* (NHPA), would identify and discuss National Register eligibility and effect for prehistoric and historic sites, features, and objects, if present. The report would be shared with interested tribes.

The draft Programmatic Agreement (PA) for compliance with Section 106 of the NHPA, as described in the Draft EIS, will not be executed. If prehistoric or historic sites that are eligible for the National Register of Historic Places (NRHP) would be impacted by the project, Western would develop a treatment plan with the California State Historic Preservation Officer (SHPO). A treatment plan may require the execution of a Memorandum of Agreement among Western, SHPO, and the Advisory Council on Historic Preservation.

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Chapter 2—Affected Environment and Environmental Consequences

Supplying Energy
Preserving Reliability

CHAPTER 2.0–AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The affected environment and environmental consequences for the Proposed Action Option A, Alternative 1, Alternative 2 Option A, Alternative 3, and the No Action Alternative are presented in the Draft EIS. This chapter focuses on the differences of Option B both of the Proposed Action and Alternative 2 as compared with Option A of the Proposed Action and Alternative 2.

Option B would involve constructing about 6.1 miles of the Cottonwood–Roseville transmission line (Segment G [MPs 0.0 to 1.7] and Segment I) and abandoning about 2.2 additional miles of existing Cottonwood–Roseville line (Segment J). Figures 1-1, 1-2, and 1-4 illustrate Option B for this area.

The following resource areas have nearly identical impacts per segment for the Proposed Action Options A and B and Alternative 2 Options A and B: air quality, electric and magnetic fields (EMF), floodplains, environmental justice, geology, health and safety, noise, paleontological resources, socioeconomics, soils, and water resources. Additionally, cumulative impacts, unavoidable adverse impacts, short-term uses versus long-term productivity, irreversible/irretrievable commitment of resources, and growth-inducing impacts (as analyzed in Sections 4.17 through 4.21 of the Draft EIS) would be nearly identical for the Proposed Action Options A and B and Alternative 2 Options A and B. Since these analyses are found in the Draft EIS, they are not repeated here. Resource areas for which a change in environmental consequences between Options A and B of the Proposed Action and Alternative 2 could occur include:

- Biological Resources
- Cultural Resources
- Land Use
- Visual Resources
- Wetlands

This Final EIS characterizes only Segments G, H, I, and J, which are identical for the Proposed Action Option B and Alternative 2 Option B. Discussions include a summary of the affected environment, characterization of Option B segments, and impacts from Option B. Figures 1-2 and 1-4 map the line segments and MPs of Segments G, H, I, and J associated with Option B. A full comparison of alternative impacts for all resource areas is found in Table 1-3.

2.1 BIOLOGICAL RESOURCES

2.1.1 Affected Environment

The biological resources section focuses on habitats within the proposed study area. Western completed screening studies to help determine if plants, animals, and habitats that Federal and state resource management agencies believe require special consideration in resource planning and development activities occur in the study area.

Western evaluated biological resources by reviewing existing literature, discussing species-specific information with agencies, and making observations during site visits to the study area. Western would conduct additional surveys when there is a funded project. This information would be used to prepare the BA.

2.1.2 Characterization

The east-west-trending portion of Segment G does not traverse any water crossings. Segment I crosses two unnamed tributaries totaling about 0.1 mile (1.5 acres) of riverine and riparian habitat. Segment J intersects Curry Creek and one unnamed drainage for a total of about 0.1 mile (1.5 acres) of riverine and riparian habitat.

Vernal pools may be present within or adjacent to the ROWs of Segments G, I, and J (Figure 2-2). Based on the map provided in 68 FR 46782, published August 6, 2003, Segments G, I, and J may pass through proposed critical habitat for the vernal pool fairy shrimp.

2.1.3 Standards of Significance

The Proposed Action and alternatives would have significant and adverse effects on biological resources if they:

- Adversely affect a listed endangered, threatened, or proposed plant or animal species or designated critical habitat,
- Substantially interfere with the movement of any native resident or migratory fish or wildlife species for more than one reproductive season,
- Reduce the value of habitat for fish, wildlife, or plants to an unusable level,
- Cause a native fish or wildlife population to drop below self-sustaining levels,

- Introduce or increase the spread of noxious weeds, or
- Adversely and substantially affect important riparian areas, wetlands, or other wildlife habitats.

2.1.4 Impacts

The following section discusses those impacts anticipated to occur to critical habitat, special status species, and sensitive habitat types as a result of implementing Proposed Action Option B.

Construction activities may result in adverse impacts to biological resources. These impacts may include the discovery of an endangered, threatened, or critical habitat during construction or impacts to wetlands if Western is unable to span the area. To avoid significant impacts, Western's construction and operation activities would comply with the EPMs listed in Table 1-4. Additionally, after a project is funded, Western would prepare a BA and survey the area as part of Section 7 consultation with USFWS and NOAA Fisheries. Consultation would include evaluating the potential impacts to Federally listed species. The CDFG would be consulted for state species of concern, as appropriate.

Designated Critical Habitat and Special Wildlife and Plant Species

Endangered or threatened wildlife and plant species may be adversely impacted by the movement of vehicles through vernal pools. Segments G, I, and J are located in areas proposed as critical habitat for the Vernal Pool Fairy Shrimp (67FR 2002). Vernal pools would be avoided to minimize impacts to threatened fairy shrimp. If sensitive species were found during surveys along Segment G, I, and J and could not be avoided by system design, mitigation measures would be implemented under provisions of the Biological Opinion.

Sensitive Habitat Types

Segments I and J each contain two water crossings and 8.3 acres and 1.5 acres of wetlands, respectively. New construction would result in about 113 acres of temporarily-disturbed habitat and about 14 acres of long-term habitat disturbance. Using the EPMs and assuming that structures could be constructed outside wetland areas, no significant impacts are expected from the Proposed Action or Alternative 2 using Option B.

Option B would involve slightly more acres of disturbance than Option A, with the potential for more disturbances to wetlands and vernal pools. The number of stream crossings would be similar between the two options.

2.2 CULTURAL RESOURCES

2.2.1 Affected Environment

Cultural resources include a broad range of items and locations that include prehistoric and historic sites, buildings, structures, objects, districts, traditional cultural properties (TCP) and other places, including natural features considered important to a culture, subculture, or community. Cultural resources also include traditional lifeways and practices, community values, and institutions.

2.2.2 Characterization

Segment G has not had an archaeological survey. The records search indicated a cemetery in the study area. No other cultural resources or TCPs were identified.

A records search of Segment I revealed that a portion of this segment (northern portion of the north-south alignment) was included in a historical evaluation of Fiddyment Ranch Road for private development (PAR 2001). The survey identified and recorded several types of resources associated with early 1900 homesteading in the area. These resources included foundations, structure pads, privy pits/trash scatters, a well/cistern, farm and ranch machinery, windmills, and associated glass and ceramic artifacts. These resources are within a quarter mile east of Segment I. A second survey was conducted within a quarter mile north of the east-west alignment of Segment I (URS 2002). No portion of Segment I was included in this survey.

No prehistoric of historic cultural resources or TCPs were recorded for Segment J during the Far Western (2002) inventory. The Cottonwood–Roseville transmission line was constructed in 1947 as part of the CVP for the Bureau of Reclamation.

2.2.3 Standards of Significance

The laws, ordinances, and regulations discussed in Section 4.3.1.2 of the Draft EIS deal with impacts to cultural resources. In nearly every case, cultural resources must meet some set of criteria for significance before agencies direct efforts to preserve the values these resources represent. Under the NHPA and the regulations at 36 CFR Part 800, only historical or prehistoric sites, objects, or features, or architectural resources determined "significant" by a Federal agency need to be considered for potential impacts. Significance of any cultural resources is determined following the criteria for eligibility for nomination to the NRHP, as defined in 36 CFR Part 60.4. The NRHP criteria state:

"The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, building(s), structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

(a) That are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) That are associated with the lives of persons significant in our past; or

(c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) That have yielded, or may be likely to yield, information important to history or prehistory."

If resources are determined to be eligible for listing on the NRHP, and the SHPO agrees with the agency's determination, these resources are then considered to be significant, and the agency must avoid or lessen the impacts to them by the Proposed Action or alternatives. Indian tribes, state and local agencies, the public, and the Advisory Council on Historic Preservation are given opportunities to influence how those resources are treated. Sites within California eligible for the NRHP are eligible for the California Register of Historical Resources. Project-related impacts to an eligible cultural resource site that would adversely affect the values of the resource, making it eligible for inclusion in the NRHP, would be considered significant.

2.2.4 Impacts

All historic resources under Option B of the Proposed Action and Alternative 2 would be avoided. EPMs presented in Table 1-4, and implementing related consultation commitments are expected to provide appropriate measures to avoid or minimize the magnitude of cultural resource impacts. Therefore, significant impacts are not expected.

2.3 LAND USE

2.3.1 Affected Environment

The land use study identified and described all major land uses that could be affected by constructing and operating the Proposed Action and alternatives. Western compiled land use information from maps and existing literature from public agencies and private organizations. Data sources for the baseline inventory included interpretations from U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle sheets and natural color aerial photographs. Baseline data were supplemented by meetings with Federal, state, county planning, and land management agencies. Several agencies also supplied pertinent documents and maps.

2.3.2 Characterization

Figure 2-1 is an aerial photograph for Options A and B with land uses for the transmission segments overlaid. Segments G, I, and J pass through rural areas, zoned for farming, with typical parcel sizes exceeding 80 acres. The north-south-trending portion of Segment G passes through several smaller parcel sizes of 19.7 acres. The east-west-trending portion of Segment G (MPs 0.0 to 1.7) and all of Segment I would be located in an area where no transmission lines exist. The north-south-trending portion of Segment G would parallel existing lines. Segment J would be abandoned.

Land uses along Segments G, I, and J include agriculture and grazing lands with areas of native vegetation. A few residences are located within 0.25 mile of Segment G (MPs 0.1 to 0.3). The ROW of Segment I would not pass within 0.25 mile of any residence.

2.3.3 Standard of significance

The following types of potential land use impacts are considered significant if the Proposed Action and alternatives would:

- Be inconsistent with adopted land use plans and goals of the community or area in which they are located, including open space designations or other types of areas designated for preservation,
- Cause major conflicts in established recreational areas,
- Convert prime, unique or other farmland of statewide importance to nonagricultural uses,
- Permanently preclude planned land uses over a large area,
- Conflict with existing utility ROW,
- Cause major traffic delays for a substantial number of motorists, or
- Cause physical damage to roads that is not repaired to a level equal to or better than what existed prior to construction.

2.3.4 Impacts

Option B would include Segment G (MPs 0.0 to 1.7), I, and J. The east-west-trending portion of Segment G would be within 0.25 mile of several rural residences.

Although land use along Segment I is zoned agricultural, the eastern ROW of the north-south-trending portion has not been used for agricultural purposes and native vegetation is present. A maximum 1.8 acres would be removed from future agricultural production along Segments G (MPs 0.0 to 1.7) and I, where new structures would be placed in the ROW.

Option B would remove more acres of prime farmland from agricultural production than Option A. Removing prime farmland permanently from agricultural use would be a long-term impact. However, farming practices could continue in the new ROW, and the socioeconomics section concluded that removing this land from production would not be significant. Land use impacts from the Proposed Action and Alternative 2 with Option B would not be significant.

2.4 VISUAL RESOURCES

2.4.1 Affected Environment

The visual resource analysis identified and described visual resources, including visual quality and sensitivity that could be affected by constructing, operating, and maintaining the Proposed Action and alternatives. Visual quality is the degree of contrast and variety within a landscape. Pleasant landscapes generally have high visual quality. Landscapes of high visual quality may contain distinctive landforms, vegetation patterns, or water forms. Visual sensitivity is the concern by viewers toward change to visual quality. Visual sensitivity is higher in natural or unmodified landscapes. The analysis identified potential obstructions or modifications of present views in the landscape.

2.4.2 Characterization

The visual setting for Segments G, I, and J is agricultural, with some rural residences. Most of the visual sensitivity along these segments is moderate from landscape modifications. The visual quality of the area ranges from moderate to low because of the flat landscape, common vegetation patterns, and landscape modifications. No distinctive landscape features are present. Several other transmission lines reduce the visual quality, particularly near Elverta Substation, where the visual quality is low.

2.4.3 Standards of Significance

The Proposed Action and alternatives would cause significant and adverse impacts if they substantially change:

- The quality of any scenic resource,
- Any scenic resource in the study area known to have rare or unique value,
- The view from, or the visual setting of, any designated or planned park, recreation, wilderness, natural area, or other visually sensitive land use,
- The view from, or the visual setting of, any designated scenic travel route,
- The view from, or the visual recreation, education, preservation, or scientific facility, use area, activity, and view point or vista, or
- A view by introducing a negative visual element (such as creating light or reflecting glare).

Western addressed two issues in determining impact significance: 1) the type and extent of actual physical contrast, and 2) the visibility of a given corridor segment or transmission structures. The adverse effects to visual quality depend upon the amount of visual contrast between the proposed facilities and the existing landscape. The assessment of visual resource impacts focused on incremental impacts where the Proposed Action and alternatives are adjacent to existing transmission line corridors.

2.4.4 Impacts

Option B would result in moderate visual impacts for Segment G (MPs 0.0 to 1.7), because residences that now have distant views of transmission lines would view the proposed line from a closer distance. Segment J would be abandoned in place, resulting in no visual change, unless structures were removed. The Proposed Action and Alternative 2 Option B would have greater visual impacts than any other alternative, because new construction would be introduced in an area where no transmission lines would be located in parallel. However, the overall visual impact from the Proposed Action and Alternative 2 Option B would be considered low, because residences already have transmission lines in their viewsheds.

2.5 WETLANDS

2.5.1 Affected Environment

This section describes existing wetland conditions within the study area and how Options A and B would affect wetlands. Wetlands provide natural flood protection and erosion control, recharge surface water and groundwater, and maintain and improve local water quality. They are among the most productive and biologically diverse ecosystems in the world, providing dynamic, specialized habitat for a wide variety of common and rare plant and animal species. Environmental regulations have been developed to preserve and protect the unique habitat types and species they support. Activities affecting wetlands are regulated under Section

404 of the *Clean Water Act* (CWA) (33 United States Code [U.S.C.] §1344 and subsequent sections) and Executive Order (EO) 11990, Protection of Wetlands (42 FR 26961). Areas that meet wetland criteria, established by the U.S. Army Corps of Engineers (USACE), are subject to the regulatory jurisdiction of USACE, under Section 404 of the CWA. DOE policy and procedures in 10 CFR Part 1022 ensure that DOE activities in wetlands comply with EO requirements. This section contains information on avoiding activities impacting wetlands to comply with 10 CFR Part 1022.

2.5.2 Characterization

Wetland resources within the study area were determined from a review of the USFWS National Wetlands Inventory (USFWS 1990), the U.S. Department of Agricultural Soil Conservation Service Local Identification Maps, USGS Topographic Maps of the study area, and various State of California wetland inventories. Figure 2-2 presents wetlands crossed by Segments G, I, and J. Western has not conducted field surveys or delineations for these segments; however, Western would conduct surveys before conducting any ground-disturbing activities.

Segment G contains about 0.1 mile of vernal pool habitat near MP 1.0. Segment I crosses two unnamed tributaries to Curry Creek, at MPs 2.6 and 3.3 and wetland areas associated with these tributaries. About 0.3 mile of wetland is present between MPs 0.1 and 0.4 of Segment I. About 0.8 mile of wetland is scattered along the north-south-trending portion of Segment I between MPs 2.2 and 3.5. Segment J intersects streams at MPs 0.3 and 2.0, for a total of about 0.2 mile (1.5 acres) of wetlands.

2.5.3 Standards of Significance

Significance can vary with the duration and source of specific impacts. Impacts may be temporary or long term and direct or indirect:

- Temporary impacts would last only through the construction period,
- Long-term impacts would last as long as the life of the facility,
- Direct impacts occur as a result of construction or operation of the Proposed Action or alternatives, or
- Indirect impacts occur as a result of the presence of the Proposed Action or alternatives usually associated with increased human accessibility to a previously inaccessible area.

The effects of the Proposed Action and alternatives would be considered significant if activities would result in:

- Unmitigated temporary or long-term loss of wetland habitat (direct impact),
- Substantially increased access to wetland sites by humans (indirect impact),
- Increased erosion and sedimentation of soils or changes in topography that would significantly impact wetland habitat (direct impact), or
- Introduction of nonnative wetland plant species (indirect impact).

2.5.4 Impacts

Option B would traverse about 0.1 mile of vernal pool habitat at Segment G (MP 1.0), and intersect about 1.1 miles (8.3 acres) of wetland habitat along Segment I. The north-south-trending portion of Segment I would pass through an area of native vegetation that contains significant wetland habitat. Segment J calls for abandonment and would have no long-term effect on wetland resources.

If access to new structures requires crossing wetland habitat, the result could be as much as 4.5 acres of long-term direct impact. Limited, indirect impacts could occur over time due to increased access to previously inaccessible areas. The potential for additional access is small and controlled by EPMs. The resulting impacts would be insignificant.

Temporary work sites (pulling and material storage) would be located in convenient, stable areas outside of sensitive habitats to decrease costs and increase ease of construction and operation. No long-term or indirect impacts are anticipated.

Transmission lines and temporary work sites normally span water bodies. Structures are typically sited on high ground to increase span lengths and improve ground clearance to conductors. Typical span lengths, without special structures, are on the order of several hundred feet. Adjusting span width allows avoidance of most water bodies, including wetlands. EPMs would be enforced during construction and maintenance.

If preconstruction wetland surveys identify unavoidable impacts to wetlands, Western would complete a comprehensive survey and delineate the wetland areas. Western would consult with USACE to determine the jurisdictional status of impacted habitats. In addition, a RWQCB Section 401 certification, presented in Table 1-5, would be required before construction. The Proposed Action and Alternative 2 Option B would not be expected to have significant impacts.

Chapter 3—Public and Government Agency Review of the Draft Environmental Impact Statement

Supplying Energy
Preserving Reliability

CHAPTER 3.0–PUBLIC AND GOVERNMENT AGENCY REVIEW OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

3.1 BACKGROUND

Public involvement is a vital part of the decision-making process for this EIS. Western developed a public involvement program to provide multiple opportunities for comment during the SVS EIS development process of public scoping, alternative formulation, alternative evaluation, and decision-making. The program is intended to guide Western through a collaborative, systematic, decision-making process with four primary purposes:

1. Share information with the interested public.
2. Gather information from the public.
3. Identify public concerns and issues.
4. Develop and maintain credibility.

Western designed the public participation process to heighten public awareness and encourage open communication throughout SVS EIS development. The process was designed to be flexible and respond to the issues and needs of the public, Western's customers, and public agencies. Appendix B of the Draft EIS provides more detail regarding the public involvement process for this EIS.

3.1.1 Public Comment Period

After EPA published the Notice of Availability for the Draft EIS on November 15, 2002, the public had 45 days to submit comments on the Draft EIS. Western continued to accept comments into March 2003. Section 1.7 includes an overview of the comments received, and Section 3.3 presents specific comments and Western's responses.

3.1.2 Public Hearings

Three public hearings were held during the 45-day public comment period: December 9, 2002, in Lodi, California; December 11, 2002, in Folsom, California; and December 12, 2002, in Marysville, California. The purpose of the public hearings was to share information and gather public comments to aid in selecting a Preferred Alternative from the Proposed Action and alternatives presented in the Draft EIS.

3.2 LIST OF COMMENTERS

Public and government agency comments on the Draft EIS were made at the public hearings. Comments also were sent directly to Western and were received by mail, telephone, and e-mail. Western received 117 comments from 28 individuals, companies, and government agencies listed here:

Individuals/Companies

- Ahart, Louise
- Calpine (Amirali, Ali)
- Compton, Lewis
- Costa, Bill
- Danna, Steve
- Davit, Elizabeth
- DeRosier, David
- Enerland, LLC (Robert Mussetter)
- Fennel (Corbett), Deanna
- Gander, Cindy
- Gianella, Thomas
- Kerekes, Jess
- Khazaeepoul, Michelle
- Lienert, Jeff
- Lienert, Julie
- Marysville Appeal Democrat (Kroeger, Harold)
- Scheiber, Ronald and Vreni
- Skar, Harlan
- Spivack, Judi

Governmental Agencies

- California Department of Fish and Game (Eng, Larry)
- California Department of Transportation (Costa, William)
- California State Lands Commission (Jenkins, Stephan)
- Sacramento Municipal Utility District (Cameron, Craig, and Olmstead, Paul)
- Sutter County Community Services (Follas, Dale)
- Tahoe Regional Planning Agency (Barnett, Lyn)
- U. S. Army Corps of Engineers (Finan, Michael)
- U. S. Department of the Interior (Port, Patricia Sanderson)
- U. S. Environmental Protection Agency (Hanf, Lisa)

3.3 SPECIFIC COMMENTS AND RESPONSES ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

3.3.1 Air Quality

3.3.1.1 Air Quality Comment and Response – 1

Comment

EPA recommends, "Western consider phasing construction work to avoid and minimize the exceedance of emission thresholds. The Final EIS should also consider the cumulative impact of multiple construction projects taking place at the same time within the same local airshed. If feasible, we recommend coordination with these other construction projects and creative scheduling of emission generating activities to help minimize the exceedance of maximum daily emission thresholds."

Response

Western would identify the relevant construction projects scheduled for the same timeframe that also may impact air quality when Western determines the construction schedule of the Preferred Alternative. If feasible, Western also would coordinate with other construction projects and produce creative emission generating activity schedules to avoid exceeding maximum daily emission thresholds. However, because of outage and reliability constraints, Western may not have a great deal of flexibility. For this same reason, certain project phases would likely be completed intermittently, which could alleviate cumulative emission impacts.

3.3.1.2 Air Quality Comment and Response – 2

Comment

EPA concurs with "Western's commitment to conduct a complete air quality analysis once the Preferred Alternative is selected. The Final EIS should also include a more detailed description of proposed mitigation measures. For example, describe the watering requirements for reseeding efforts to control PM_{10}, whether native vegetation will be used, and follow-up success monitoring."

Response

As stated in the Draft EIS, Western would conduct a comprehensive air quality analysis after completing engineering and design plans for an approved (funded) project. At that point, Western and its subcontractors would meet with applicable air districts to develop a detailed mitigation plan. The plan would meet or exceed district requirements.

3.3.1.3 Air Quality Comment and Response – 3

Comment

EPA recommends that the Final EIS include "a discussion of the implications of the new eight-hour ozone and $PM_{2.5}$ standards with respect to the execution of this project. The EPA recognizes the serious health effects that fine particulates can cause, and therefore urges project proponents to reduce particulate emissions to the greatest extent possible. This is particularly important where management actions could affect sensitive receptors such as children and the elderly."

Response

EPA has not yet begun regulating $PM_{2.5}$, and the California Air Districts have not yet been tasked to develop rules regulating $PM_{2.5}$. In a meeting with SMAQMD in February 2003, district staff stated they had not yet developed guidance for calculating $PM_{2.5}$.

The current EPA $PM_{2.5}$ implementation timetable is projected to be:

- 2003—EPA to propose implementation rule
- 2003 to 2004—States to recommend designation areas
- 2004—EPA to finalize implementation rule
- 2004 to 2005—EPA to designate areas

Western is committed to environmental protection and complying with all applicable regulations. Implications for this project would vary according to construction schedules and methods. If construction proceeds after implementation of the $PM_{2.5}$ standard, Western and its contractors would employ available technology and knowledge to monitor and minimize $PM_{2.5}$ accordingly.

3.3.2 Alternatives

3.3.2.1 Alternatives Comment and Response – 1

Comment

One comment asked for an explanation of who makes the final decision for selecting the alternative.

Response

Western would make the final decision under the CEQ NEPA Implementing Procedures (40 CFR Part 1505), DOE NEPA Implementing Procedures (10 CFR Part 1021), and a DOE memorandum from

the Assistant Secretary of Environment, Safety, and Health delegating EIS approval authority for "main transmission system additions," as defined in Appendix D to Subpart D of 10 CFR Part 1021 (Western 1996).

3.3.2.2 Alternatives Comment and Response – 2

Comment

Two comments asked for an explanation of how the Proposed Action was developed.

Response

Alternatives were selected based on the following: power system studies conducted by the Sacramento Area Transmission Planning Group (SATPG) and the River City Transmission Group, preliminary planning performed by Western, and public comments received during the scoping period. This selection process is described in more detail in Appendix A of the Draft EIS. Alternatives were selected based on their effectiveness in solving the problem in the short term, minimizing the environmental impact, and cost.

3.3.2.3 Alternatives Comment and Response – 3

Comment

One comment stated that Alternative 1 would be the most efficient.

Response

The comment is noted.

3.3.2.4 Alternatives Comment and Response – 4

Comment

One comment asked whether new conductors or a new line were planned near specific property north of Elk Grove. The comment also stated support of the project because it would keep developers away.

Response

Three alternatives call for construction activities near the cited property. The Proposed Action and Alternative 1 call for reconductoring. Alternative 3 calls for new construction.

3.3.2.5 Alternatives Comment and Response – 5

Comment

One comment asked whether Western was planning to build on the eastern or western side of the existing transmission lines under the Proposed Action from O'Banion Substation to Elverta Substation.

Response

New construction would occur primarily on the eastern side of existing lines between O'Banion Substation and Elverta Substation, except for the realignment portion of Segment A_1. This realignment for the Proposed Action would call for construction of a new transmission line (2.8 miles) parallel to the existing O'Banion–Elverta transmission line, approximately 17 miles southeast of the O'Banion Substation (Segment A_1, MPs 17.4 to 20.2). The realignment would avoid encroachment to the Pleasant Grove Cemetery. Conductors for the existing O'Banion–Elverta transmission line would be transferred to the west on 14 proposed new structures. The proposed new conductors would be strung along existing structures to the east. This would avoid transmission line conductors crossing one another. Figure 1-8 illustrates this realignment.

3.3.2.6 Alternatives Comment and Response – 6

Comment

Sutter County Community Services Department (SCCSD) inquired why the Draft EIS fails to offer an adequate explanation of why the project description favors new construction through Sutter County over the reconstruction alternative proposed in most other project areas.

Another comment strongly opposed constructing a new line from O'Banion Substation to Elverta Substation. They support the use of the existing lines and request additional information explaining why the existing transmission line cannot be used for this project and why adding additional towers is a better alternative.

One comment asked why constructing a new transmission line and new towers is a better alternative than using existing transmission lines, as proposed in Alternative 1. The commenter urges Western to reconductor lines between O'Banion Substation and Elverta Substation.

Response

Western notes the reconductoring comment. However, a new transmission line is needed in the northern portion of the study area to increase transmission system security and reliability. Additional transmission lines are proposed for the northern portion of the study area, so that if one of the lines should experience an outage, Western would have a backup to continue providing uninterrupted power. This ability to continue to transmit power, even during a transmission line outage, would add reliability. Western would construct 32.8 miles of new transmission lines for the Proposed Action, of which 22.4 miles would be in Sutter County.

3.3.3 Biological Resources/Wetlands

3.3.3.1 Biological Resources/Wetlands Comment and Response – 1

Comment

EPA strongly recommends the Final EIS "provide more detail regarding potential impacts to wetlands. For instance, describe the potential effects of culverts, access roads, and new ROWs. Western should also make a commitment in the Final EIS to conduct detailed wetland surveys and wetland delineations when selecting the Preferred Alternative. If feasible, provide an estimate of jurisdictional waters or wetlands that could be adversely affected by direct, indirect, and cumulative impacts of the project."

Response

Construction activities for transmission lines would include grading for structure foundations within the ROW and access roads. If grading were required in wetland areas, then direct impacts would result. Western does not anticipate direct impacts to wetlands, as discussed in Section 4.2.1, because structures can span more than 1,000 feet and access roads would not be constructed through wetlands. Indirect impacts would, however, result from disturbing hydrologic patterns and increasing sedimentation from disturbed area runoff, as well as increasing access and exploitation by humans and invasive plant species. A wetland survey and delineation would be completed on the project before construction or conducting any ground-disturbing activities. The survey and delineation would provide an estimate of jurisdictional waters or wetlands that could be adversely affected by direct, indirect, and cumulative impacts.

3.3.3.2 Biological Resources/Wetlands Comment and Response – 2

Comment

EPA recommends, "providing an appendix in the Final EIS which summarizes standard 'reasonable and prudent measures' recommended by USFWS for avoiding and minimizing adverse impacts to threatened and endangered species. For example, there are standard measures to protect VELB, vernal pools, and raptors from construction impacts. This appendix could also include information on measures that would be used to avoid and minimize bird electrocutions and other potential effects to biological resources."

Response

Reasonable and prudent measures would be developed as part of the biological consultation with the regulatory agencies (USFWS and NOAA Fisheries) after a project is funded. Western would adopt these measures to avoid and minimize adverse impacts to threatened and endangered species.

3.3.3.3 Biological Resources/Wetlands Comment and Response – 3

Comment

EPA strongly recommends that Western "adopt limited periods and fencing of sensitive resources (for example, vernal pools) as EPMs. Adequate protection of vernal pools is a concern due to their sensitivity to disturbance and biological uniqueness."

Response

Western would complete the BA and adopt the necessary mitigation measures required by the agencies (USFWS and NOAA Fisheries) after consultation.

3.3.3.4 Biological Resources/Wetlands Comment and Response – 4

Comment

CDFG recommends that the Draft EIS be "revised to include information about the distribution of vernal pools along the project ROW, and, a means of ensuring that impacts to vernal pools are avoided. Mitigation should provide 'no-net-loss' of wetland habitat and acreage."

Response

Before conducting any ground-disturbing activities, Section 7 consultation with USFWS would be completed. Vernal pools would be identified during the wetland surveys, and delineation and this information, along with any mitigation, would be included in the BA.

3.3.3.5 Biological Resources/Wetlands Comment and Response – 5

Comment

EPA recommends, "the Final EIS should provide a short description of the *Migratory Bird Treaty Act* (MBTA) and EO 13186—Responsibilities of Federal Agencies to Protect Migratory Birds (January 10, 2001). Where appropriate, we encourage Western to incorporate measures in the Proposed Action and alternatives to help implement the goals of these regulations."

Response

A summary of the MBTA is presented in Section 4.2.3. DOE has developed a Memorandum of Understanding (MOU) with USFWS under EO 13186 that Western would use for this project. Western is developing an Avian Protection Program, as required by EO 13186.

3.3.3.6 Biological Resources/Wetlands Comment and Response – 6

Comment

EPA recommends, "in the interest of full disclosure, the Final EIS include a short description of the CWA Section 401 and 404 permit requirements and permitting process."

Response

A summary of CWA Sections 401 and 404 permit requirements and the permitting process is presented in Section 4.2.4. Western would complete the permit applications, as applicable. Permits are summarized in Section 1.7 and Table 1-5.

3.3.3.7 Biological Resources/Wetlands Comment and Response – 7

Comment

EPA "urges Western to work closely with the American River Parkway and Cosumnes River Preserve managers and surrounding communities to avoid and minimize adverse impacts to wetlands and water resources of these unique areas. Given the ecological sensitivity of the Cosumnes River Preserve, we strongly recommend use of the existing ROW, access roads, and support structures for any work in this area. Construction disturbances should be minimized wherever feasible."

Response

Western has coordinated with the CDFG and the Cosumnes River Preserve manager, regarding the Cosumnes River Preserve. Western will add American River Parkway managers to the EIS mailing list. Western will work closely with the American River Parkway and Cosumnes River Preserve managers throughout the NEPA and permitting processes before any ground-disturbing activities occur. Western would avoid or minimize adverse impacts to wetlands and water resources through project design and implementation of EPMs. Western would use existing ROW and access roads for any work in these areas. Western would minimize construction disturbances, wherever feasible.

3.3.3.8 Biological Resources/Wetlands Comment and Response – 8

Comment

EPA "urges Western to initiate informal consultation with the appropriate USFWS office now. Early consultation often helps resolve unanticipated ESA compliance issues and avoids undue project delays." EPA recommends, "if construction or potential impacts are anticipated within watersheds used by anadromous fish (such as American River and San Joaquin River), we recommend initiating consultation with NOAA Fisheries which has ESA jurisdiction regarding anadromous fish species."

Response

Western initiated informal consultation with USFWS and NOAA Fisheries on January 24, 2001. Western plans to continue consulting with these agencies, as appropriate, before conducting any ground-disturbing activities.

3.3.3.9 Biological Resources/Wetlands Comment and Response – 9

Comment

EPA stated "the Draft EIS describes habitat types, sensitive species, and river crossings found along each segment of the Proposed Action and alternatives in the text. We recommend the Final EIS include a table that summarizes this descriptive information by project segment. Such a table would provide a quick reference and comparison of the sensitive biological resources along each project segment."

Response

A summary of descriptive information (such as sensitive biological resources and habitat) by project segment is presented in Table 4-1.

3.3.3.10 Biological Resources/Wetlands Comment and Response – 10

Comment

CDFG made the following comment: "The Draft EIS's issues of environmental concern only include the potential for impacts to critical habitat, special-status wildlife and plant species, and sensitive habitat types. This approach leads to several deficiencies, specifically:

a) There may be significant habitats for federally listed species that fall outside of the USFWS designated critical habitat and therefore, these habitats are undervalued during the Environmental Consequences analysis.

b) State-listed species are not considered during the designation of Critical Habitat; however, these species must be addressed by the Draft EIS under the *Fish and Wildlife Coordination Act* (FWCA).

c) Important wildlife resources may be impacted by the proposed project, which are listed by neither the California nor Federal ESAs. Examples include a variety of waterfowl, songbirds, and shorebirds.

d) Agricultural lands, while not classed as a sensitive habitat type, never the less have significant habitat value for many species of wildlife (such as raptors, waterfowl, and sandhill cranes) and are not properly analyzed by the Draft EIS.

CDFG recommends that the scope of the Draft EIS's analysis be expanded to include wildlife resources that may be significantly impacted by the proposed project. This should include state listed species, special status and sensitive species, such as breeding raptors and migratory passerines. Important habitat areas within the project alignment should also be identified and evaluated."

Response

a) Western's policy is to coordinate with state resource agencies. Therefore, at the time of a project, Western would coordinate with state agencies before conducting any ground-disturbing activities.

b) The FWCA is applicable to projects that "affect, control, or modify waters of any stream or bodies or water." The alternatives discussed in the Draft EIS are not expected to affect streams or water bodies. However, if streams or water bodies are affected, Western would proceed in accordance with FWCA requirements.

c) By adhering to EPMs and measures developed during agency coordination, Western would expect to protect nonlisted species, as well as listed species.

d) Western would conduct natural resource surveys for the entire project. These would describe habitats along the project route and their importance to both sensitive and economically important wildlife and plants. Based on that information and in coordination with Federal and state resource agencies, Western would describe the effects of the project on biological resources.

3.3.3.11 Biological Resources/Wetlands Comment and Response – 11

Comment

CDFG stated "the project is located in an area of the Central Valley that is important for migrant birds. Collision with electric transmission lines is a significant source of mortality for migrant birds. Ducks, geese, sandhill cranes, shorebirds, and raptors move through, or winter in, agricultural lands traversed by the proposed project. During the winter months, fog obscures visibility in the Central Valley, thereby increasing the likelihood of bird collisions with electric transmission lines.

We recommend that the Draft EIS be revised to include information on the location of important winter habitat, concentration areas, roosts, etc., for waterfowl and other migratory species that occur near the proposed transmission alignment and to assess the hazard risk resulting from the construction of new transmission lines."

Response

The Draft EIS discusses "Special-status Wildlife and Plant Species" in Sections 4.2.2.3, 4.2.2.4, 4.2.2.5, and 4.2.2.6 and measures Western would take to reduce or prevent bird collisions. Additional documentation from surveys and analysis would be provided on biological resources before conducting ground-disturbing activities. This documentation would describe habitats along the project route and their importance to both sensitive and economically important wildlife and plants. Further information about the winter habitat, concentration areas, and roosts of migrating birds protected under the ESA and associated mitigation measures would be discussed in the BA, which would be completed before ground-disturbing activities are conducted. If warranted, Western may install marking devices that have been proven effective to prevent bird collisions.

3.3.3.12 Biological Resources/Wetlands Comment and Response – 12

Comment

CDFG recommends the Draft EIS be "revised to include a discussion of habitat loss resulting from construction of new transmission lines. The EIS should provide mitigation that reduces these impacts to a level that is less than significant. Transmission lines should be constructed using state-of-the-art design protocol to reduce bird electrocution to migratory birds."

Response

Habitat loss in acres and the types of habitat affected by construction of the proposed alternatives are summarized in the "Sensitive Habitat Types" sections on pages 4-15, 4-16, and 4-17 of the Draft EIS. Table 1-2 of this Final EIS summarizes the acres of new disturbance.

Additional documentation and analysis would be provided on biological resources from surveys before conducting ground-disturbing activities. Further information about the impact of the project on habitat loss for species covered by the ESA and mitigation measures would be discussed in the BA. This would be completed before any ground-disturbing activities are conducted.

Western's customary design for a 230-kV transmission line exceeds the suggested practices for minimizing large bird electrocutions found in Avian Power Line Interaction Committee (APLIC) "Suggested Practices for Raptor Protection on Power Lines" (APLIC 1996).

3.3.3.13 Biological Resources/Wetlands Comment and Response – 13

Comment

CDFG stated, "depending on the time of year when construction is undertaken, modification of habitat along the ROW has the potential to impact nesting birds. Construction of new facilities or installation of new conductors may result in the destruction of active bird nests, or cause their abandonment. We are particularly concerned with the project's potential for adverse impacts to nesting Swainson's hawks (*Buteo swainsonii*). The Draft EIS fails to mention the potential for impacts to nesting birds, provide avoidance measures, or discuss work windows that would minimize potential impacts.

We recommend that the Draft EIS be revised to include a discussion of the project's potential for adverse impacts to nesting birds. In particular, the Draft EIS should provide the means of avoiding impacts to nesting Swainson's hawks."

Response

Information addressing nesting birds is stated in EPM No. 22 of Table 1-4. Western is bound by the requirements of the DOE MOU with USFWS regarding the MBTA and EO 13186.

3.3.3.14 Biological Resources/Wetlands Comment and Response – 14

Comment

CDFG stated the Draft EIS fails to mention the burrowing owl (*Athene cunicularia*) as a species of special concern. The CDFG is concerned with the status. The burrowing owl is a declining species and the CDFG has issued guidelines for migrating impacts to this species. Burrowing owls occur throughout the project area and are protected by Section 3503.5 of the *Fish and Game Code*. Mitigation should prevent the take of raptors, their eggs, and nests.

"We recommend that the Draft EIS be revised to include a discussion of the project's direct, indirect, and cumulative impacts to the burrowing owl. If impacts are anticipated, we recommend that the Draft EIS contain measures that either avoid those impacts or reduce them to a level that is less than significant. In the event that burrowing owl nests are observed within the project ROW, CDFG staff should be contacted immediately to develop appropriate measures to avoid take of this protected species."

Response

As appropriate, Western may submit a "Biological Evaluation" on non-Federally listed species of concern to CDFG. This document would discuss the presence or absence of state or resource management agencies-listed species and the effects the project may have on them. The evaluation would be completed before any ground-disturbing activities occur.

3.3.3.15 Biological Resources/Wetlands Comment and Response – 15

Comment

USACE stated, "to ascertain the extent of waters subject to USACE regulations, a wetland delineation should be completed and submitted to this office for verification."

Response

Western would complete a wetland delineation on the project and submit it to the Sacramento USACE office before conducting any ground-disturbing activities.

3.3.3.16 Biological Resources/Wetlands Comment and Response – 16

Comment

USACE stated, "the range of alternatives considered for the project should include alternatives that avoid impacts to wetlands or other Waters of the United States. Every effort should be made to avoid project features, which require the discharge of dredged or fill material into Waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling or adversely affecting Waters of the United States, mitigation plans should be developed to offset any adverse effects, including temporary ones, resulting from project implementation."

Response

Alternatives, as proposed in the EIS, would minimize impacts to wetlands or other Waters of the United States. A wetland and floodplain statement of findings is presented in Section 4.2.1 that addresses these issues. If Western discovers that there are no practical alternatives to filling or adversely affecting Waters of the United States, it would develop mitigation plans to offset any adverse effects, including temporary ones, resulting from project implementation.

3.3.4 Construction

3.3.4.1 Construction Comment and Response – 1

Comment

A comment from the *Marysville Appeal Democrat* inquired when work would begin on the project.

Response

Western is waiting to secure funding before any construction can start.

3.3.4.2 Construction Comment and Response – 2

Comment

EPA "advocates the use of recycled-content construction products. To make it easier to buy recycled material, EPA provides Comprehensive Procurement Guidelines and Recovered Materials Advisory Notices. The latest information on these references can be found at: http://www.epa.gov/cpg/index.htm and http://www.epa.gov/epaoswer/non-hw/procure.htm."

Response

Western's *Construction Standards - Standard 13 Environmental Quality Protection* November 1998 promotes the use of recycled-content construction products and reduction of waste through recycling, reusing, and reprocessing. Contractors must submit a Recycled Material Quantity Report and a Products Containing Recovered Material Report to the Contracting Officer's Representative.

3.3.5 Environmental Impact Statement Process

3.3.5.1 Environmental Impact Statement Process Comment and Response – 1

Comment

A comment asked whether public comments would be responded to.

Response

Western responds to comments as required by 40 CFR Part 1503.4. Western's approach is outlined at the beginning of this chapter. Each commenter will receive a copy of this document.

3.3.5.2 Environmental Impact Statement Process Comment and Response – 2

Comment

Several comments expressed concern about notice for the meetings and the notices for affected landowners.

Response

Western regularly updates a comprehensive mailing list of interested parties and residents living near transmission line corridors associated with the Proposed Action and alternatives. Newsletters and meeting notices were distributed to residents, and specific public involvement opportunities are presented in Table 3-1. Western also posts project information on its Website: www.wapa.gov. Detailed information on public involvement opportunities is presented in Appendix B of the Draft EIS. Western published notices of meetings or hearings in local newspapers, the *EIS News*, and on Western's website. Western has and will continue to contact landowners if project activities would be conducted on their land.

Table 3-1. Public Involvement Opportunities for the Western Sacramento Area Voltage Support Environmental Impact Statement

Opportunities	Tentative Time Frame
1. Scoping Meetings and Comment Period	September through October 2000
2. Workshop on Alternatives Selection	March 2001
3. Workshop on Draft EIS	September 2001
4. Availability of Draft EIS and Comment Period	November 15 to December 30, 2002
5. Public Hearings	December 2002

2003
Acronyms:
EIS: Environmental Impact Statement

3.3.5.3 Environmental Impact Statement Process Comment and Response – 3

Comment

A comment expressed interest in attending public meetings, but was out of town.

Response

Western provides synopses of meetings on its website and the the *EIS News*. Section 1.5 describes the public involvement opportunities for this project.

3.3.5.4 Environmental Impact Statement Process Comment and Response – 4

Comment

A comment inquired about the proposed timeline for the planning/construction process.

Response

After funding is secured, Western expects construction to last about 3.5 years.

3.3.5.5 Environmental Impact Statement Process Comment and Response – 5

Comment

A comment requested specific details about the next step in the planning process.

Response

At least 30 days after publication of this Final EIS, Western would publish the ROD. The ROD would contain information about the Preferred Alternative, the environmentally preferred alternative, and applicable mitigation measures. After funding is secured, Western would begin further environmental analysis and detailed design, permitting, and coordination, as described in Section 1.7, before conducting any ground-disturbing activities.

3.3.5.6 Environmental Impact Statement Process Comment and Response – 6

Comment

A comment requested that a community meeting be held in the Elverta area before a final decision is made.

Response

At this time, no additional public meetings or hearings are planned. Public meetings conducted to date were located in major regional centers distributed within the Region of Influence identified for the SVS EIS. Section 1.5 describes the public involvement opportunities for this project.

3.3.5.7 Environmental Impact Statement Process Comment and Response – 7

Comment

SCCSD asked why no agency located in Sutter County was contacted during EIS preparation. Specifically, the agency stated that the EIS should have included the Sutter Extension Water District (SEWD) in its listing of water agencies.

Response

While no agencies located in Sutter County were listed on the consultation and coordination list in the Draft EIS, Sutter County agencies to which materials were sent since scoping began, include the Public Works Department, the Community Services Department, the Administrative Office, the Office of the County Counsel, the Board of Supervisors, the Sheriff's Department, and SEWD. The Draft EIS inadvertently omitted SEWD in its listing of water districts that received information. SEWD should have been included in Section 4.15.1.3 of the Draft EIS. A Draft EIS was mailed to SEWD, and the Final EIS also will be mailed to the agency. Western will consult and coordinate with Sutter County officials, as appropriate, after a project is funded.

3.3.5.8 Environmental Impact Statement Process Comment and Response – 8

Comment

The EPA urges Western to "include commitments in the Final EIS to provide follow-up environmental analysis, under NEPA, if substantive project modifications occur or if there is significant new information."

Response

After a project is funded, Western would complete additional environmental analysis and detailed design, including structure and access road locations. Western would undertake all necessary agency coordination, consultation, and permitting, as presented in Section 1.7. If design constraints or agency permitting, coordination, and consultation result in substantial project modifications or if significant new information emerges relevant to environmental concerns, then Western will provide follow-up documents and public involvement.

3.3.5.9 Environmental Impact Statement Process Comment and Response – 9

Comment

CDFG requested written notification of proposed actions and pending decisions regarding this project, under Public Resources Code Sections 21092 and 21092.2.

Response

Western will notify CDFG of the decisions for this project. Western would send information to the Sacramento Valley–Central Sierra Region 2 office in Rancho Cordova, California.

3.3.6 Electric and Magnetic Fields

3.3.6.1 Electric and Magnetic Fields Comment and Response – 1

Comment

A comment stated, "pages 4-27 and 4-75 discuss human safety hazards from cumulative impacts from electric and magnetic fields (EMFs) potential problems. I'd like to see livestock listed also since they are animals living near EMFs (also see 4-19 Historical Cultural Resources: Ranch livestock impacts from high voltage EMFs)."

Response

Information on EMF research conducted on animals is presented in Section 4.2.6.

3.3.6.2 Electric and Magnetic Fields Comment and Response – 2

Comment

A comment stated that power lines were interfering with television signals.

Response

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 (power lines mentioned in this report transmit only 230 kV) and only for receivers within about 600 feet of the line. If power lines are creating television interference, residents should contact the company that owns the line.

3.3.6.3 Electric and Magnetic Fields Comment and Response – 3

Comment

Six comments stated that the transmission lines would create adverse health effects.

Response

Research continues to be inconclusive regarding a link between adverse health effects and transmission lines. However, during selection of alternatives for the EIS, Western made an effort to propose alternatives that would not place power lines near residences, schools, and other buildings. Western constructs and maintains its transmission system under National Electricity Safety Code (NESC) standards and California Public Utilities Commission (CPUC) General Order 95.

Conclusions regarding EMF health effects from several reports are cited on Page 4-27 of the Draft EIS.

From O'Banion Substation to Elverta Substation, along Segments A_1 and B, eight buildings are located within 80 feet of the existing double-circuit 230-kV transmission line. Additional ROW of about 125 feet would be required for new parallel transmission lines. If the additional ROW were to be located on the western side of an existing transmission line, then buildings located on the eastern side of the existing line would not receive incremental EMF impacts as outlined here.

Most EMF health concerns and studies are associated with magnetic fields generated from transmission lines. The magnitude of magnetic fields emitted from two transmission lines in parallel would not increase from the magnitude emitted from a single power line. Generally, when new double-circuit 230-kV transmission lines are constructed in parallel with existing double circuit 230-kV transmission lines, the magnetic field emitted from the existing lines decreases slightly compared to the magnetic field emitted before construction of the second line.

According to studies conducted by Western's design engineers, the magnetic field at the centerline of a typical double-circuit 230-kV transmission line is 160 milliGauss (mG), which is the maximum at any location near the line. At 80 feet from the centerline, the magnetic field would drop to about 19 mG. At two hundred feet from the centerline, the magnetic field would drop to about 2 mG. If a new double-circuit 230-kV transmission line were constructed in parallel with an existing double-circuit 230-kV transmission line the following would occur: The magnetic field at the centerline of the old double-circuit 230-kV transmission line would be reduced to about 90 mG. At 80 feet from the centerline, the magnetic field would be about 18 mG—which is lower than the standard of significance level for schools, presented in Section 4.4.2.1 of the Draft EIS. At 200 feet from the centerline of the old transmission line, the magnetic field would drop to about 2 mG.

The magnetic field emitted from an existing double-circuit 230-kV transmission line would decrease slightly with the addition of a parallel double-circuit 230-kV transmission line.

3.3.6.4 Electric and Magnetic Fields Comment and Response – 4

Comment

One comment stated that "The state of California determined EMF power lines cause leukemia in childhood and adult cancer, like Lou Gehrig's disease. Furthermore, other evidence that EMF, other health problems as well. In the EIS, there is not one word mentioned about the 2002 California study done by State of California, nor does the Executive Summary contain childhood leukemia, adult brain cancer, miscarriages, or Lou Gehrig's disease. All the Executive Summary states in regard to EMF is that there is no impact on human health or environment."

Response

A California Department of Health Services (DHS) report was referenced in the Draft EIS on page 4-27 (DHS 2002). Table ES-3 of the Draft EIS Executive Summary indicated that no significant EMF impacts would be expected from the Proposed Action and alternatives. This summary was based on the discussion presented in Section 4.4.2.3 of the Draft EIS. EMF studies are ongoing and many times inconclusive. Legislation currently only exists for new school proximity to power lines. The Draft EIS concluded there would be no significant impacts from the Proposed Action and alternatives. Additional discussion of EMF health effects is presented in Section 4.2.7 of this Final EIS.

3.3.7 Figures

3.3.7.1 Figures Comment and Response – 1

Comment

A comment requested that an aerial photograph of her residence (north of Marysville) be included in Appendix E of the Draft EIS. She brought attention to Section 4.9.1.3—Characteristics of the Draft EIS, which states "Appendix E presents aerial photographs of the study area."

Response

The study area ends about 10 miles south of Marysville. An aerial photograph of the area north of Marysville was not included in the Draft EIS or this Final EIS.

3.3.7.2 Figures Comment and Response – 2

Comment

Two comments requested more detailed maps showing reconductoring and the new segments.

Response

If individuals desire more detailed maps for a specific area, Western will provide these maps and information, if available, sufficient to understand project location.

3.3.7.3 Figures Comment and Response – 3

Comment

The California Department of Transportation (Caltrans) requested "accurate, legible mapping that clearly identifies the location of state highways, and where this project encroaches on Caltrans ROWs, showing the point of encroachment and the state highway involved."

Response

Western will provide Caltrans with more detailed maps before conducting any ground-disturbing activities as part of the permitting process.

3.3.8 Funding

3.3.8.1 Funding Comment and Response – 1

Comment

Enerland, LLC, expressed concerns about where project funding would come from. EPA recommends that the Final EIS include "a description and evaluation of the funding process and how funding and project costs will be integrated with the environmental analysis and selection of the Preferred Alternative. If feasible, the Final EIS should include cost estimates for each of the proposed alternatives and the cost of mitigation measures."

Response

Western can fund projects through appropriations or with non-Federal funds. Under 43 U.S.C. §§395, 397a, Western may use funds contributed by a non-Federal entity as if the money had been specifically appropriated. Preliminary cost estimates to construct the Proposed Action and alternatives are as follows:

Proposed Action
Option A.....$97 million
Option B.....$100 million
Alternative 1.....$110 million
Alternative 2
Option A..... $51 million
Option B..... $54 million
Alternative 3..... $71 million

Western will not determine costs for acquisition or mitigation measures until agency coordination and consultation have been completed.

3.3.9 Geology

3.3.9.1 Geology Comment and Response – 1

Comment

A comment stated there was "no mention of the Palermo epicenter, which showed a magnitude of 7+ on the Richter scale, presented on Page 4-39 or on the map on 4-38. This area is a fault zone."

Response

The Cleveland Hill Fault that caused the earthquake at the Palermo epicenter is discussed in Section 4.2.8. The entire ROW for the Proposed Action and alternatives is located in Uniform Building Code (UBC) Seismic Zone 3. Structures would be built to appropriate standards. UBC seismic zones take into account surrounding fault lines and historic earthquakes. The Palermo epicenter earthquake, which occurred in 1975, would be included in current UBC seismic zone determination.

3.3.10 Health and Safety

3.3.10.1 Health and Safety Comment and Response – 1

Comment

A comment stated, "field effects should discuss hazards of wires falling. This has happened twice on my property on the two Pacific Gas and Electric Company (PG&E) lines that they own."

Response

The danger of electrical hazards causing "vegetation or equipment fires, electrical burns, or electrocutions to humans or animals" is discussed in Section 4.8.1.3 under the heading "Electrical Hazards" in the Draft EIS.

3.3.10.2 Health and Safety Comment and Response – 2

Comment

A comment stated that "besides health concerns for me and my cattle and increased sagging and fire hazard due to increased voltage, I hereby appeal Western Power Grid from putting an increased electrical voltage load on existing lines or building new parallel lines to make up for higher demand usage of electrical power."

Response

This comment is noted. Based on analysis in the EIS, EMF Health and Safety effects would not be significant for the Proposed Action or alternatives.

3.3.10.3 Health and Safety Comment and Response – 3

Comment

A comment stated that Page 2-1 of the Draft EIS "says that system studies with other transmission system owners and power providers has been cooperatively developed. However, last summer, PG&E had to cut eight additional trees due to the extra voltage they were putting on the line due to an 8- to 10-foot sag in the lines, which created a 'sway' problem to eliminate the potential of a fire hazard. This was not addressed in this book. (These eight trees were on my property.)"

Response

While Western cannot speculate on conditions and activities for PG&E's transmission lines, Western does maintain clearance standards. Western's minimum clearance distance to trees, for 230-kV transmission lines is 18 feet. This is based on the Occupational Safety and Health Administration's (OSHA) minimum approach distance for non-electrical workers, of 13 feet (29 CFR 1910.333[c]3iii) and an additional 5 feet added to account for tree growth. Landowners can find additional information on these distances, as well as vegetation encroachment and equipment operation, in their ROW and easement contracts.

3.3.10.4 Health and Safety Comment and Response – 4

Comment

Public comments stated that existing power lines are currently a problem because they present a danger to farmers and employees hitting towers with equipment and airplanes.

Response

Western recognizes challenges that may be faced in farming around transmission systems. These impacts are discussed in more detail in Section 4.2.9. Although these impacts cannot be totally mitigated, efforts would be made to locate towers where these impacts would be minimized.

3.3.10.5 Health and Safety Comment and Response – 5

Comment

A comment expressed concern about adverse impacts from new construction on residents of Sutter County.

Response

This comment is noted. During selection of alternatives for the Draft EIS, every effort was taken to propose alternatives that would place power lines away from residences and schools.

3.3.10.6 Health and Safety Comment and Response – 6

Comment

EPA commented that in the interest of full disclosure, the Final EIS should provide a short description or summary of the NESC and CPUC Commission General Order 95 Safety Regulations.

Response

A summary of the NESC and California Public Utilities Commission General Order 95 Safety Regulations is presented in Section 4.2.10.

3.3.11 Land Use

3.3.11.1 Land Use Comment and Response – 1

Comment

A comment stated that "Butte and Yuba Counties were not listed on the location cover sheet, but the increased cumulative impacts of locating another proposed transmission line next to an existing utility corridor would result in significant impact, and would not be preferable to locating the line in a previously undisturbed landscape."

Response

The northernmost portion of any alternative ends in Sutter County. Only the socioeconomic study area includes Butte and Yuba counties. Relative impacts from locating the transmission line within an existing ROW versus an undisturbed area varies according to the resource analyzed. A comparison of these impacts can be found in Tables 1-2 and 1-3.

3.3.11.2 Land Use Comment and Response – 2

Comment

A comment stated that "DOE/EIS-0323 on pages ES-2 and A-4 discuss the Cottonwood–Roseville single-circuit, 230-kV transmission line and a Cottonwood–Roseville double-circuit, 500-kV upgrade would result in a number of potential impacts. This is in the south Oroville area and access would result in soil erosion, according to this document. There are no maps covering the south Oroville area."

Response

The Cottonwood–Roseville double-circuit, 500-kV upgrade (formerly Alternative D) was discussed in Appendix A of the Draft EIS as one of seven preliminary transmission line alternatives evaluated by Western. Based on screening criteria, Alternative D was dropped from further consideration and was not incorporated into the detailed analysis.

3.3.11.3 Land Use Comment and Response – 3

Comment

A comment stated that the appropriate area to build new towers would be the Brewer Road area in Elverta, instead of the rear of her property on Country Acres Lane. The commenter further stated that construction on Brewer Road would cost less and that stronger, larger lines could be added.

Response

Property Assessor Parcel Number (APN) 017-130-040-000 is located near Segment G (MP 3.8) that would be constructed under Option A of the Proposed Action or Alternative 2. Option B, developed for the EIS to avoid residences, including this commenter's, would move the north-south alignment of Segment G, about 1.7 miles east of Country Acres Lane, by adding Segment I, as described in Section 1.3.1 of this Final EIS. Brewer Road, located about one mile west of the north-south alignment of Segment G, was not considered a better area to move the north-south alignment because of several nearby residences.

3.3.11.4 Land Use Comment and Response – 4

Comment

A comment stated "page 3-13 should indicate impacts to existing and planned use to avoid or minimize disturbances to landowners by consulting landowners about access roads. Severe impacts and soil damage from vehicles getting stuck when ground is too wet to traverse have left trenches in winter months when maintenance crews should have waited until summer to do unnecessary work on the lines."

Response

Landowners would be contacted before construction of any access roads that cross their property. EPMs 32, 38, 44, 46, 47, 52, 53, 54, 55, and 57, listed in Table 1-4, address measures to minimize soil damage. Western's practice is to restore any disturbed ground to original conditions.

3.3.11.5 Land Use Comment and Response – 5

Comment

One comment stated that existing power lines lead to crop loss. Another comment stated that the summary says there are really no impacts to land use. To the landowner, it has a tremendous impact on the land.

Response

Crop loss would be limited and localized to areas close to transmission lines, particularly the structures. Loss of prime farmland would be spread over the length of the transmission line, and minor impacts would correspondingly be spread over numerous landowners. Western calculated loss of prime farmland on a worst-case scenario of 0.1 acre (66 by 66 feet) required for each self-supporting lattice steel structure. For example, for the Proposed Action Option A, Western estimated it would place 67 structures in prime farmland areas. Western would use existing access roads to minimize additional loss of farmland. The total acreage of prime farmland that would be lost from the Proposed Action and alternatives is as follows:

- Proposed Action Option A—6.7 acres
- Proposed Action Option B—7.6 acres
- Alternative 1—0.0 acre (no farmland lost)
- Alternative 2 Option A—6.7 acres
- Alternative 2 Option B—7.6 acres
- Alternative 3—15.2 acres

3.3.11.6 Land Use Comment and Response – 6

Comment

A comment stated that building a second set of power lines paralleling existing lines in Sutter County wastes Sutter County land.

Response

The comment is noted.

3.3.11.7 Land Use Comment and Response – 7

Comment

SCCSD stated that the Draft EIS failed to discuss what changes to cropping patterns or agricultural practices would be required. These changes would result from the additional ROW required for the favored new construction option. The new power lines would interfere with airplanes used for agricultural practices and would exacerbate the already grievous impact on how and what crops are farmed under and along the project.

Response

Changes to cropping patterns as a result of the new transmission line would be limited to crops that require aerial applications. Farming of crops that require aerial applications, which lie directly under the proposed transmission lines, would not be possible. As a result, these crops would either be lost or require replacement by crops that do not require aerial applications. Western presents additional information on impacts to agricultural operations in Section 4.2.9. Although these impacts cannot be totally mitigated, Western would make efforts to locate the towers where these impacts would be minimized.

3.3.11.8 Land Use Comment and Response – 8

Comment

SCCSD stated that the effect on agricultural land use in Sutter County would be far more than the loss of 6.7 acres of prime farmland, yet that impact is not identified in the EIS and Western makes no attempt to ascertain its extent.

Response

As discussed in the second paragraph of Section 4.9.2.3 of the Draft EIS, "for Segment A_1, 6.7 acres of prime farmland would be removed from agricultural production where new structures would be placed in the ROW." Western's calculation was based on a worst-case scenario of 0.1 acre (66 by 66 feet) required for each self-supporting, lattice steel structure. For Segment A_1, Western estimated it would place 67 of the 126 required structures in prime farmland areas. Western would use existing access roads to minimize additional loss of farmland. Long- and short-term ground disturbances from the Proposed Action and alternatives are summarized in Table 1-2.

3.3.11.9 Land Use Comment and Response – 9

Comment

Caltrans stated, "Potential impacts to state ROW and the mitigation necessary to eliminate or lessen these impacts to a level of insignificance need to be identified and discussed in this document."

Response

Before constructing a funded project, Western would identify potential impacts to state ROW. Western would propose mitigation measures to eliminate or lessen these impacts so that they are insignificant.

3.3.12 Permitting

3.3.12.1 Permitting Comment and Response – 1

Comment

Caltrans stated that an "acknowledgement of the requirement for Caltrans encroachment permits needs to be stated in this document." In particular, it was noted that an encroachment permit would be needed where the proposed power lines are to cross Interstate 5; Interstate 80; Business 80; and Highways 12, 4, and 99; and possibly several others that cannot be identified with the present mapping and figures included in the Draft EIS.

Response

Caltrans encroachment permits would be obtained for all necessary areas before conducting any ground-disturbing activities. Detailed maps with structure locations would be submitted to Caltrans as part of the permitting process. Required permits are presented in Table 1-5.

3.3.12.2 Permitting Comment and Response – 2

Comment

Caltrans stated that for construction activities requiring detours, lane closures, parking restrictions, and so on, which may disrupt the safe and efficient operation of state facilities, Western would need a construction Traffic Management Plan. In addition, Western should coordinate well in advance with the Traffic Management Planning Branch.

Response

Western would develop a Traffic Management Plan, if required, before performing any construction. Western also would coordinate well before construction with the Traffic Management Planning Branch.

3.3.12.3 Permitting Comment and Response – 3

Comment

CSLC stated that "the Proposed project involves Old River, Middle River, the San Joaquin River, Fourteen Mile Slough, Pixley Slough, the Mokelumne River, the American River and the Feather River, all of which are under the jurisdiction of CSLC. Any activities within the state-owned fee lands of these waterways will require a lease."

Response

The Proposed Action and alternatives are not expected to include any activities within the state-owned fee lands of any waterways, because structures are expected to span all water crossings. However, if the structures are sited in state-owned lands, leases would be obtained before conducting any ground-disturbing activities.

3.3.13 Power Transmission

3.3.13.1 Power Transmission Comment and Response – 1

Comment

EPA advocates "demand-side management (DSM) (for example, energy conservation and load shedding) and use of innovative and alternative energy sources where feasible. The EPA urges Western to work with the Bureau of Reclamation, the USACE, and local and regional communities to maximize DSM and the use of alternative energy sources in order to improve power management flexibility and the efficient use of increasingly scarce power."

Response

The comment is noted. Sacramento area utilities have and continue to implement DSM for retail and nonretail customers. These programs have been credited with helping the Sacramento area avoid rotating blackouts during the summer of 2001. However, Western does not consider DSM to be a solution for resolving voltage and reliability issues in the long term.

3.3.13.2 Power Transmission Comment and Response – 2

Comment

A Calpine representative said that impact studies for Calpine's East Altamont Energy Center indicate that no transmission upgrades are required on SMUD area systems due to this project.

Response

The comment is noted.

3.3.13.3 Power Transmission Comment and Response – 3

Comment

Sacramento Municipal Utility District (SMUD) suggests that the Final EIS "contain revised language to state that transmission upgrades are needed to maintain reliable operation of all system components: generation, transmission, and load serving capability."

Response

The comment is noted.

3.3.13.4 Power Transmission Comment and Response – 4

Comment

SMUD has built "additions to its generation, transmission, and distribution systems to ensure that SMUD's system is supporting and not leaning on the interconnection grid. Please include this comment in the Final EIS."

Response

The comment is noted.

3.3.13.5 Power Transmission Comment and Response – 5

Comment

SMUD commented that they were not aware of any Sacramento-area transmission line overloads that contributed to rolling blackouts and that they and other load serving entities participated in the rolling blackouts of 2001 because of California Independent System Operator Corporation's (ISO) and Investor-owned Utilities' (IOU) inability to procure energy to meet their load responsibility.

Response

This comment is noted. Table 4-3 notes corrections to the Draft EIS.

3.3.13.6 Power Transmission Comment and Response – 6

Comment

SMUD commented, "In 2001 the completion of the Sutter Energy Center (SEC) changed the generation scenario in the Sacramento region. SMUD has

major concerns regarding the possibility for potentially severe overloads to the transmission system. Please update/revise the discussion in the Final EIS to include any changes in transmission and generation in the Sacramento region and identify any new problems that may not have been foreseen since the initiation of scoping of this document. Please address whether the addition of the SEC will increase the need for system upgrades in the region."

Response

Following the open study process, Western implemented a Remedial Action Scheme as a condition of interconnection for the SEC to prevent overloads by reducing generation at SEC.

3.3.13.7 Power Transmission Comment and Response – 7

Comment

SMUD commented that the table of proposed new generation plants states, "these projects include power generation that would require construction of new transmission line and interconnection to the Sacramento area power grid." SMUD stated that this is not true and Cosumnes has a preliminary staff assessment out; therefore, there would be no need for additional transmission for that project. They requested that this text be modified.

Response

This comment is noted. Table 4-3 notes corrections to the Draft EIS.

3.3.13.8 Power Transmission Comment and Response – 8

Comment

SMUD stated that inaccuracies were presented in the Draft EIS regarding the need for transmission upgrades and commented that "there can be many needs for transmission enhancements, not only load growth. There is generation interconnection. There is operational flexibility. There are other needs where we can build transmission. It is not just increased demand that drives this."

Response

This comment is noted. Table 4-3 notes corrections to the Draft EIS.

3.3.14 Remarks

3.3.14.1 Remarks Comment and Response – 1

Comment

Two comments expressed support for Alternative 1.

Response

The comment is noted.

3.3.14.2 Remarks Comment and Response – 2

Comment

A comment stated that he does not want power lines anywhere on or near his property.

Response

This comment is noted.

3.3.14.3 Remarks Comment and Response – 3

Comment

Enerland, LLC, made a reference to property west of Delevan in Colusa County that has been put aside for constructing a new power plant.

Response

The comment is noted.

3.3.14.4 Remarks Comment and Response – 4

Comment

Western should take into account the Enerland, LLC, site when making its final decision.

Response

Western has only listed power plants (greater than 300 Megawatts [MW]) in the EIS that have filed an application for construction with the California Energy Commission (CEC). The CEC's website, on May 29, 2003, listed the following power plants:

- East Altamont Energy Center, estimated to be on-line in June 2005
- SMUD Cosumnes Power Plant, Phase 1, estimated to be completed by August 2005
- Tesla Power Plant, estimated to be on-line in September 2005

3.3.14.5 Remarks Comment and Response – 5

Comment

SCCSD stated, "the project has placed a disproportional share of the burden of the project's most severe impacts on Sutter County. Sutter County respectfully requests the same consideration that the project has offered to the other areas along the project alignment by the selection of the least damaging of the project alternatives, Alternative A, through Sutter County."

Response

The comment is noted.

3.3.14.6 Remarks Comment and Response – 6

Comment

SMUD urges Western "to immediately proceed with either the Proposed Action or Alternative 2. SMUD supports any alternative that will mitigate the need to disconnect the SEC during a single transmission contingency event."

Response

The comment is noted.

3.3.14.7 Remarks Comment and Response – 7

Comment

SMUD stated it does not "support Alternative 1, Alternative 3, or the No Action Alternative. Alternative 1 is better than the No Action Alternative but it does not mitigate the N-1 reliability issue. Alternative 3 does not correct the N-1 problem and could be cost prohibitive due to the acquisition of new ROW. SMUD suggests Alternative 3 may become more attractive if the design is modified to replace one or both of the existing Western Tracy–Hurley single-circuit structures with double-circuit poles within the same ROW."

Response

The comment is noted.

3.3.14.8 Remarks Comment and Response – 8

Comment

SMUD stated it supports "the need for this project and will support Western's future actions that will relieve potential voltage problems in the Sacramento region."

Response

The comment is noted.

3.3.14.9 Remarks Comment and Response – 9

Comment

The Tahoe Regional Planning Agency acknowledged that the project would not impact the Lake Tahoe Region.

Response

The comment is noted.

3.3.14.10 Remarks Comment and Response – 10

Comment

USACE requested that Dave Tedrick's name be replaced on Western's mailing list with Michael Finan.

Response

This correction has been made to the mailing list.

3.3.14.11 Remarks Comment and Response – 11

Comment

EPA "recommends the scope of the cumulative impact analysis be expanded to include nonlinear projects which could have similar environmental impacts on the same resources as those affected by the Proposed Action and alternatives."

Response

Western queried the California State Clearing House (CSCH) CEQAnet Database for EISs, Environmental Impact Reports, Final Documents, Notices of Determination, and Notices of Preparation filed with agencies between January 2002 and June 2003 (CSCH 2003). A list of projects that could have a reasonable likelihood of being implemented by 2005 is presented in Table 4-2. Because of the uncertainty in funding, it is unrealistic to accurately predict project schedules and cumulative effects of other known and unknown projects. If necessary, additional analysis would be conduced to ensure NEPA compliance.

3.3.14.12 Remarks Comment and Response – 12

Comment

The U.S. Department of the Interior responded that it had no comments to offer.

Response

This comment is noted.

3.3.15 Socioeconomics

3.3.15.1 Socioeconomics Comment and Response – 1

Comment

A comment stated that a specific property, north of Marysville, is near Alternative D on Page A-4 in the EIS.

Response

Alternative D was not incorporated into the Proposed Action and alternatives evaluated in the Draft EIS. Page A-4 of the Draft EIS states that: "Based on the findings of the analysis during the third phase, Western dropped preliminary alternatives D, E, F, and G."

3.3.15.2 Socioeconomics Comment and Response – 2

Comment

Comments expressed concern about the Proposed Action and alternatives having a negative effect on property values.

Response

Property values may be affected by power line location. However, Western has made every effort to use existing or nearby ROWs. Potential effects are presented in Section 4.2.12.

3.3.15.3 Socioeconomics Comment and Response – 3

Comment

A comment asked if a specific property, located north of Baseline Road and east of Brewer Road on Country Acres Lane in southern Placer County, would be directly impacted by the project.

Response

Property APN 017-130-013-000 is located about 0.3 mile from the north-south-trending portion of Segment G that would be constructed under Option A. This property would be located almost 2 miles from Segment I of Option B. Therefore, this property would not be directly impacted by any alternative.

3.3.15.4 Socioeconomics Comment and Response – 4

Comment

A comment stated that a specific property, located on Country Acres Lane in Elverta, would be impacted the most by the project. The owner is concerned that by adding an additional power line close to her home, her property would be split, and as a result, make the property worthless. The owner believes that there must be an alternative route for this line.

Response

This property (APN 017-130-038-000) has a structure that is located close to Segment G (MP 3.8), which would be constructed under Option A of the Proposed Action and Alternative 2. An alternate route was developed with realignment Option B of the Proposed Action and Alternative 2, to avoid this residence and others along the north-south alignment of Segment G. Option B would move the north-south-trending portion of the realignment about 1.7 miles east of Country Acres Lane by adding Segment I, as described in Section 1.3.1.

3.3.15.5 Socioeconomics Comment and Response – 5

Comment

A comment expressed support for Alternative 1 and believes that the Proposed Action "needlessly wastes resources."

Response

The comment is noted.

3.3.15.6 Socioeconomics Comment and Response – 6

Comment

Enerland, LLC, supports Alternative 1. This organization believes that the EIS should emphasize the overriding importance of choosing power line upgrade alternatives that maximize the economic benefits of locating new power plants near large-capacity, interstate gas lines.

Response

The comment is noted.

3.3.15.7 Socioeconomics Comment and Response – 7

Comment

SCCSD commented that "the EIS states that the project will have a possible negative effect on local agency budgets; however, it fails to either quantify or qualify that impact. Sutter County continues to have one of the highest unemployment rates in the state as well as one of the lowest per capita incomes in the state. Any negative effect on the County's budget, especially now when the state is facing severe budget shortfall and will probably pass a great portion of that shortfall on to local agencies, is unacceptable."

Response

The short-term impact to local agency budgets likely would be positive through increased employment and associated revenues during transmission line construction. Revenues would diminish slightly from the loss of up to 7.6 acres of prime farmland; however, the overall long-term economic impact would be expected to be insignificant.

3.3.15.8 Socioeconomics Comment and Response – 8

Comment

The EPA commented that in the interest of full disclosure, the *Uniform Relocation Assistance and Real Property Acquisition Policies Act* should be summarized in the Final EIS.

Response

A summary of the *Uniform Relocation Assistance and Real Property Acquisition Policies Act* is presented in Section 4.2.13.

3.3.16 Soils

3.3.16.1 Soils Comment and Response – 1

Comment

SCCSD asked why the discussion about Sutter County soils was so brief in the Draft EIS. In particular, it believes that the discussion failed to address either the adequacy of the soils for structural support or the loss of these soils for farming operations and their economic impact.

Response

The adequacy of soils for structural support would be determined during design of a funded project and before any ground-disturbing activities occur. Western would not present soil information pertaining to structural support to the public in any formal report. This information would be used to determine the depth and size of each tower foundation. Foundation types would be either pile or augured. The type of foundations selected would be based on soil conditions at each tower location. A discussion of the loss of soils for farming practices and the economic impacts of this action is presented in Section 4.9.2.3 of the Draft EIS.

3.3.16.2 Soils Comment and Response – 2

Comment

The EPA stated that in the interest of full disclosure, Western's *Erosion Control and Revegetation Plan* should be summarized in the Final EIS.

Response

The Draft EIS should have referenced Western's *Integrated Vegetation Management Environmental Guidance Manual* (1999) instead of Western's *Erosion Control and Revegetation Plan*. This correction is listed in Table 4-2. Western's *Integrated Vegetation Management Environmental Guidance Manual* (1999) is summarized in Section 4.2.11.

3.3.17 Visual Resources

3.3.17.1 Visual Resources Comment and Response – 1

Comment

Two comments inquired why future high-voltage transmission lines cannot be buried underground.

Response

Western does not use underground high-voltage wires because of:

- Significantly increased environmental impacts from soil disturbance
- High installation and maintenance costs
- Susceptibility to corrosion of wires caused by breaks in the insulator
- Significantly increased time periods to repair wire breaks; therefore, loss of reliability
- Less heat dispersion in an underground environment

3.3.17.2 Visual Resources Comment and Response – 2

Comment

SCCSD stated that Alternative A would impact the aesthetics of Sutter County, but not to the extent of the Proposed Action.

Response

The comment is noted.

Chapter 4—Modifications, Addenda, and Corrections

Supplying Energy
Preserving Reliability

CHAPTER 4.0–MODIFICATIONS, ADDENDA, AND CORRECTIONS

Information in this chapter addresses modifications, addenda, and corrections to the EIS.

4.1 MODIFICATIONS

A modified realignment was added to the Proposed Action and Alternative 2 based on comments received on the Draft EIS. The modification is described in Section 1.3.1 and would result in Options A and B for both the Proposed Action and Alternative 2. Western has chosen Proposed Action Option B as the Preferred Alternative for the SVS EIS. Resource areas that would potentially be impacted by Option B were discussed in Chapter 2.0 of this Final EIS.

4.2 ADDENDA

In this section, information is added to the EIS that was not included in the Draft EIS.

4.2.1 Wetlands and Floodplains Statement of Findings

DOE regulation "Compliance with Floodplains-Wetlands Environmental Review Requirements" (10 CFR Part 1022) and EOs 11988 and 11990, require Western to assess the impacts of its projects on floodplains and wetlands. Specifically, the regulation requires Western to determine whether this regulation applies to the action proposed and to assess the effects and alternatives to avoid those effects. This statement of findings, along with the EIS, includes a project description, an explanation of why the Preferred Alternative would involve floodplains and wetlands, the alternatives considered, a statement of how the project conforms to state and local standards, and a description of the steps Western will take to minimize potential harm to or within floodplains and wetlands.

The EIS provides extensive information on the presence of floodplains and wetlands and the potential for impacts in Sections 4.6 and 4.16 of the Draft EIS. In support of the EIS analysis, Western gathered and verified technical documentation on water resources. The documentation describes likely impacts from the Proposed Action and alternatives and EPMs developed to minimize these impacts.

The Proposed Action and action alternatives would have minimal impacts on floodplains and varying degrees of impacts on wetlands. A linear project of this type in the California Central Valley cannot avoid crossing major streams and rivers. However, siting and design would, in most cases, allow Western to avoid water features. Impacts on water resources could result from construction or upgrading of access roads, structure site preparation and installation, and stringing operations. These activities would be expected to have minor effects on erosion and deposition within the floodplain.

At this point in project development, Western does not know specific information on transmission line structure location. However, as evidenced by information in the Draft EIS and the response to comments in this Final EIS, Western plans to conform to Federal, state, and local standards for floodplain and wetland protection. After Western determines the route and engineering has been completed to set actual structure placement, Western would apply for permits required from appropriate agencies. When permitting processes are under way, Western would need to estimate impacts and address avoidance, protection, and mitigation measures to obtain applicable permits and approval.

EPMs, presented in Table 1-4, are those measures normally used in any SNR project. Those EPMs specific to impacts on water resources include 25, 30, 32, 33, 34, 35, 36, 37, 38, 54, 55, 56, 57, and 59. Western would span water resources where possible. If spanning is not possible, as stated in EPM 59 "Construction within jurisdictional waters or wetlands may require 401 and 404 permits. These activities would be coordinated with USACE and RWQCB, as needed." Other measures may be required by Federal or state agencies as the permitting processes move forward. As stated previously, Western is committed to avoiding and reducing impacts on these resources.

4.2.2 Standard Reasonable and Prudent Measures

EPA's comment in Section 3.3.3.2 requested Western to compile a list of reasonable and prudent measures to avoid adverse impacts to threatened and endangered species and habitats. Western will develop "reasonable and prudent measures" as part of the biological consultation after a project is selected.

4.2.3 *Migratory Bird Treaty Act* Summary

This information was added in response to EPA's comment in Section 3.3.3.5. The MBTA implements various treaties and conventions between the United States and Canada, Japan, Mexico, and Russia to protect migratory birds. Under the MBTA, taking, killing, or possessing migratory birds without a permit is unlawful.

EO 13186—*Responsibilities of Federal Agencies to Protect Migratory Birds* (January 10, 2001) was established to continue the conservation purposes of the migratory bird conventions, the MBTA, the *Bald and Golden Eagle Protection Acts*, the FWCA, the ESA, and other pertinent

statutes. EO 13186 directs Federal agencies (to include an executive department or agency, but not independent establishments) taking actions that have, or are likely to have, a measurable negative effect of migratory bird populations to develop, and implement an MOU with USFWS that shall promote the conservation of migratory bird populations. Each MOU shall establish protocols to implement the MOU and report accomplishments. DOE has developed an MOU with USFWS under EO 13186. Western would tier from the DOE MOU for this project.

4.2.4 *Clean Water Act* Sections 401 and 404 Summary

This information was added in response to EPA's comment in Section 3.3.3.6. Section 401 of the CWA, the State Water Quality Certification Program, requires that states certify compliance of Federal permits or licenses with state water quality requirements and other applicable state laws. Under Section 401, states have authority to review any Federal permit or license that may result in a discharge to wetlands and other waters under state jurisdiction, to ensure that the actions would be consistent with the state's water quality requirements. Federal permits that do not meet these requirements would not receive a State Water Quality Certification and therefore cannot be issued. Section 401 certification authority is most often used with USACE permits under Section 404 of the CWA.

Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into Waters of the United States, including wetlands. Activities in Waters of the United States that are regulated under this program include fills for development, water resource projects, infrastructure development, and conversion of wetlands to uplands for farming and forestry.

4.2.5 Biological and Water Resources Summary

EPA recommended in Section 3.3.3.9 that a table be added to the EIS that summarizes sensitive biological resources and habitat information by project segment. This information is presented in Table 4-1.

4.2.6 Electric and Magnetic Field Studies Conducted on Animals

EMF information on animals was added in response to the comment presented in Section 3.3.6.1. Research has been conducted for many years using animals generally laboratory rats to determine possible EMF health effects. Results have generally been inconclusive. The Electric Power Research Institute (EPRI 1998) conducted a study that exposed sheep to EMF from a 500-kV transmission line. The research was conducted to determine whether long-term EMF exposures impacted melatonin levels, immune function, and animal health. Early phase studies of exposed groups of animals showed no impact on melatonin levels. In later studies, immune cells were monitored to determine whether EMF exposure resulted in decreased immune cells in the exposed animals that would impact their health. Final results concluded that immune cells were not consistently or significantly reduced in the exposed sheep.

4.2.7 Additional Electric and Magnetic Field Studies

Additional EMF information was added in response to the comment presented in Section 3.3.6.4. A paper by J.D. Brain and others titled *Childhood Leukemia: Electric and Magnetic Fields as Possible Risk Factors* (2002), summarizes the view of experts who attended a workshop of the same name, held November 8, 2001 in Lexington, Massachusetts, under the sponsorship of EPRI and the Harvard School of Public Health. The paper notes that EMF has been designated as a possible carcinogen, although epidemiologic associations reported between EMF and childhood leukemia remain unexplained. A description of how acute leukemia gradually develops provides the background to assess animal carcinogenicity studies that use EMF exposure.

These studies overwhelmingly fail to support EMF exposure, per se, as a significant risk factor for leukemia development. A possible reason for this failure is due to how EMF interacts with matter. Typical power lines do not provide a "dose" that is detectable above the many sources of "noise" in biological systems. To understand the possible carcinogenic effects of EMF exposure, scientists must further define and quantify dose at the cellular level.

Another study, the *Electromagnetic Fields and Breast Cancer on Long Island: A Case-Control Study* (Schoenfeld 2003), the scientists found no association between residential exposure to EMFs and breast cancer. Levels of in-home ground-current measurements, and wire codes did not differ between women who were diagnosed with breast cancer (cases) and women who did not have the disease (controls).

Further, differences in risk were not observed between the two groups when the data were analyzed controlling for age, family history of breast cancer, personal history of benign (noncancerous) breast disease, number of children (parity), and education. The investigation is the first breast cancer study in the eastern United States that measured power-frequency

Table 4-1. Summary of Biological and Water Resources Descriptive Information

Segment	Habitat					Sensitive Habitat		Sensitive Species				
	No. Water Crossings	Wetland (acres) All types	Area Within 100-Year Floodplain (acres)	Area Within 500-Year Floodplain (acres)	Area Outside 500-Year Floodplain (acres)	Vernal Pools	Elderberry Shrub	Giant Garter Snake	California Red-Legged Frog	Valley Elderberry Longhorn Beetle	Vernal Pool Species of Concern	Chinook Salmon
A and A_1	9	13.4	258	53	3.0	P	P	P	P	P	P	U
B	6	1.5	4.5	0	59.1	C_2	P	P	P	P	P	U
C	2	62.7	56	0	113.6	P	C_1	P	P	P	P	P,M
D	5	36.3	91	0	139.4	P	C_1	P	P	P	P	P,M
E and E_1	23	47.3	300	379	21.2	P	C_1	P	P	P	P	P,M
F	1	0.5	3.8	0	16.7	P	P	P	P	P	P	U
G (MPs 0.0 to 1.7)	0	0.8	0	0	25.5	C_2	P	P	P	P	P	U
G (MPs 1.7 to 5.0)	4	3.0	6.1	0	44.2	C_2	P	P	P	P	P	U
H	2	0.8	0	0	33.3	C_2	P	P	P	P	P	U
I	2	8.3	2	0	62.4	C_2	P	P	P	P	P	U
J	2	1.5	0	0	16.5	C_2	P	P	P	P	P	U

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Acronyms:
C_1: Confirmed within project area
C_2: Identified as located in proposed critical habitat for Vernal Pool Fairy Shrimp based on figures from *Federal Register* Volume 67, Number 185, Proposed Rules, September 24, 2002
P: Potentially present
U: Unlikely present
M: Migrant
MP: Milepost

EMF in the homes using the best available methods to measure EMF and assessing exposure in multiple ways.

4.2.8 Cleveland Hill Fault

Western added information on the Cleveland Hill Fault to address the comment presented in Section 3.3.9.1. An earthquake occurred along the Cleveland Hill Fault on August 1, 1975. This fault comprises a small segment on the Foothills Fault System. The earthquake's epicenter was centered about 4.5 miles south of Oroville, near the Town of Palermo, about 48 miles north of the O'Banion Substation. Residents felt the earthquake over a large area of Northern California and Western Nevada. This earthquake had a magnitude of 5.7 on the Richter scale and was the largest earthquake ever recorded in the Sierra Nevada foothills.

4.2.9 Impacts on Agricultural Operations

Comments requested a discussion of impacts to farming operations from electric lines in Sections 3.3.10.4 and 3.3.11.7. The following aerial and ground impacts would be expected on agricultural operations:

Aerial Impacts

- Crop dusters may need to make additional passes around transmission lines and structures to achieve the same coverage as fields without structures and power lines.
- Transmission lines and structures can create potential safety hazards, because they present additional obstacles to avoid. Transmission lines and structures also require additional pilot attention and can create pilot stress.

Ground Impacts

- Additional passes for tilling, planting, and harvesting may be necessary to maneuver around structures.
- Effects on grazing, pasture, set-aside, and other nontilled uses would be minimal.

4.2.10 Summary of National Electrical Safety Code and California Public Utilities Commission General Order 95

This information was added in response to EPA's comment in Section 3.3.10.6. Both NESC and CPUC General Order 95 safeguard persons and property from hazards associated with electrical and communications facilities and their construction, maintenance, and operation.

4.2.11 Cumulative Impacts Analysis

In response to EPA's comment presented in Section 3.3.14.11, Western compiled a list of projects in Table 4-2 that could have a reasonable likelihood of being implemented by 2005.

4.2.12 Transmission Line Effects on Property Values

Western added this analysis in response to public commenters who expressed concern for their property values in Section 3.3.15.2. Edison conducted a study about the effects that transmission lines may have on property values (Edison 1992). Results are presented below.

- Overhead transmission lines can reduce the sales price of residential and agricultural property.
- The effect—particularly for single-family homes—is generally small (from zero to 10 percent), but could be more than 15 percent in rural areas.
- Other factors (such as neighborhood factors, square footage, size of lot, and irrigation potential) are much more likely than overhead transmission lines to determine the sale price of property.
- Effects are most likely to occur to property crossed by, or immediately next to, the line, but some impacts have been measured at longer distances.
- Positive impacts also may occur where the ROW is attractively landscaped or developed for recreational use.
- Impacts may be greater for smaller properties.

Impacts may be greatest immediately following new line construction (or a major increase in size in an older ROW), diminishing over time.

4.2.13 *Uniform Relocation Assistance and Real Property Acquisition Policies Act* Summary

This information was added in response to EPA's comment in Section 3.3.15.8. Under the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*, persons whose real property is acquired or who are displaced as a result of a Federal or federally-assisted project must be treated fairly. Governmentwide regulations provide procedural and other requirements (appraisals, payment of fair market value, notice to owners, and so on) when acquiring real property and provide relocation payments and advisory assistance in relocating persons and businesses.

4.2.14 Western's Integrated Vegetation Management Environmental Guidance Manual Summary

This information was added in response to EPA's comment in Section 3.3.16.2. Western's Integrated Vegetation Management Program addresses how to control unwanted vegetation and noxious weeds. It also includes information about reestablishing vegetation in disturbed areas (reclamation). Western's Integrated Vegetation Management Program follows integrated vegetation management principles, which promote several methods to control unwanted vegetation. Western's program includes many options for vegetation control, including cultural/natural, physical/mechanical, biological, and chemical control.

4.3 CORRECTIONS

Table 4-3 contains a list of corrections and changes to the Draft EIS.

Table 4-2. Other Projects Contributing to Cumulative Impacts in the Project Area

State Clearinghouse Number	Lead Organization	Project Title	Project Size	Notice of Determination
1991042057	City of Sacramento	Approval of Remedial Action Plan for Soil at the Former SPTCo Sacramento Rail Yard, Lagoon Study Area	Not specified	No significant effect
1992052124	City of Stockton	North Stockton Project Annexation	2 underground pipelines	No significant effect
1993112027	City of Lathrop	River Islands at Lathrop	4,905 acres	Significant effect
1993122077	City of Rocklin	Clover Valley Lakes large lot	622 acres	Status unknown
1995103063	Caltrans	State Route 70 upgrade	Sutter and Yuba counties	No significant effect
1996042019	Sacramento County	Village of Zinfandel General Plan Amendment and Zoning Ordinance	620 acres	Significant effect
1997112030	Sacramento County	Bruceville Road widening	Bruceville Road between Elk Grove Blvd. and Ackley Rd.	No significant effect
1998022018	South San Joaquin Irrigation District	South County Surface Water Supply Project	36.5-mile pipeline	Significant effect
1999042052	City of Oakland	Leona Quarry Project	45 acres on an existing rock quarry	Significant effect
2000032120	City of Hayward	Hayward Executive Airport Master Plan Update EIR/EIS	Not specified	Status unknown
2000042026	City of Pittsburg	Alves Ranch Project	Not specified	Status unknown
2000051057	City of Carlsbad	Carlsbad Oaks North Business Park	650 acres	Significant effect
2000072035	City of Sacramento	Promenade at Natomas/ Sacramento Auto Loop Project	126 acres	Status unknown
2000092026	Sacramento County	Elverta Specific Plan/Countryside Equestrian Estates	1,734 acres	Status unknown
2000112013	Sacramento County	Sacramento International Airport Fuel Pipeline and Tank Farm Project	Jet fuel pipeline	Significant effect
2000112039	City of Dublin	Dublin Transit Center	Not specified	Significant effect
2001012046	City of Elk Grove	Sheldon Road/State Route 99 Interchange Improvement Project	Not specified	Status unknown
2001012063	Caltrans #4	Route 262/Warren Avenue/I-880 Interchange Reconstruction and I-880 Widening	Not specified	No significant effect

Table 4-2. Other Projects Contributing to Cumulative Impacts in the Project Area

State Clearinghouse Number	Lead Organization	Project Title	Project Size	Notice of Determination
2001012080	Sacramento County	Upper Northwest Interceptor Phase I	Sewer interceptor trench pipeline Elkhorn Blvd. from Rio Linda Blvd to Auburn Blvd and then east along Auburn Blvd. to Fair Oaks Blvd.	No significant effect
2001022016	City of Pittsburg	Bailey Road Estates	265 acres	Status unknown
2001022076	San Joaquin County	UP-01-04 Studley Company Food Products	Construction of 2 dams	No significant effect
2001032008	City of Tracy	Tracy Gateway Business Park	538 acres	Status unknown
2001032069	City of Livermore	Oaks Business Park (Re-circulated EIR)	178 acres	Status unknown
2001052059	City of Lathrop	Mossdale Landing Urban Design Concept	137 acres	Significant effect
2001052105	San Joaquin County	State Route 99/Improvement Project with Hammer Lane Interchange Reconstruction	Not specified	No significant effect
2001062088	Stockton East Water District	Stockton East Water District Raw Water Storage Project	Water conveyance pipeline	No significant effect
2001082058	City of Oakland	Oakland Army Base Redevelopment EIR	1,800 acres	Significant effect
2001092064	Transportation Commission	Sutter 99 Safety and Operational Improvement Project	Between Central Ave. and O'Banion Rd.	Status unknown
2001092079	City of Stockton	Hatch Ranch Residential Subdivision	139+ acres	No significant effect
2001102041	City of Stockton	North Stockton Pipeline Project	Not specified	Significant effect
2001102087	Public Utilities Commission	Atlantic-Del Mar Reinforcement Project	60-kV power line and modifications to the Atlantic and Del Mar substations	No significant effect
2001112008	City of Folsom	Folsom-Auburn Road Widening Project	60 meters south of Folsom Dam Road to 210 meters north of Placer County line	Status unknown
2001112048	San Francisco Bay Area Water Transit Authority	Expansion of Water Transit Service in the San Francisco Bay Area	Not specified	Status unknown
2001112111	Sacramento County	Bradshaw Road Widening Project	Bradshaw Road from Morrison Creek to Calvine Road	Status unknown
2001122073	City of Oakley	Cypress Grove	Not specified	Status unknown
2001122102	Sacramento County	Mustang Airport Use Permit	Not specified	Status unknown

Table 4-2. Other Projects Contributing to Cumulative Impacts in the Project Area

State Clearinghouse Number	Lead Organization	Project Title	Project Size	Notice of Determination
2002012013	Sacramento County	Calvine Road Widening Project (Kingsbridge to Grant Line Road)	Calvine Road from Kingsbridge Drive to Vineyard Road	No significant effect
2002012065	City of Livermore	I-580/Greenville Interchange Program EIR	Not specified	Status unknown
2002022010	California State Lands Commission	Concord to Sacramento Petroleum Products Pipeline	70 miles	Status unknown
2002022027	Caltrans #6	South Stockton 6-Lane	Widen Route 99 from 4 lanes to 6 lanes from 0.6 km north of Arch Road to 0.2 km south of Route 4 West	Status unknown
2002032009	Elk Grove Unified School District	Elk Grove Unified School District Pleasant Grove High School and Middle School Project	106 acres	Significant effect
2002032041	San Francisco Bay Area Rapid Transit District	BART Warm Springs Extension Project Supplemental EIR	5.4 miles south of the Fremont Station to a proposed Warm Springs Station	Status unknown
2002032048	Port of Stockton	Port of Stockton West Complex Redevelopment Plan	1,400 acres	Status unknown
2002032088	Sacramento Regional Transit District	South Sacramento Phase 2 Corridor	5-mile extension of the Sacramento light Rail Line from Meadowview Road to Calvine/ Auberry	Status unknown
2002032096	City of Sacramento	North Delta Shores	117.7 acres	No significant effect
2002032099	Caltrans #6	San Joaquin Rail Corridor Capacity Improvement	20 acres of new ROW along the 20.4-mile alignment	No significant effect
2002032132	Freeport Regional Water Authority	Freeport Regional Water Project	Raw water pipeline	Status unknown
2002039008	Fish and Game #2	Lewis Stein Road Widening	Not specified	No significant effect
2002039028	Fish and Game #2	Bishop Ranch Channel Realignment	Not specified	No significant effect
2002042015	Caltrans #6	Bacon Island Rehabilitation	Not specified	No significant effect
2002042036	Placer County	Auburn-Folsom Road Four-lane Widening Project	Not specified	Status unknown
2002052083	City of Lathrop	Lathrop Station	151 acres	Status unknown
2002062042	Western Placer Waste Management Authority	Western Placer Waste Management Authority Capacity Enhancement Project 2002-2003	Not specified	Significant effect

Table 4-2. Other Projects Contributing to Cumulative Impacts in the Project Area

State Clearinghouse Number	Lead Organization	Project Title	Project Size	Notice of Determination
2002072028	Alameda County	Chevron Pipeline Relocation/ Watershed Protection Project	Not specified	Status unknown
2002072061	Sacramento County	Elkhorn Blvd. Modification Project (Watt Ave. to Don Julio Blvd.)	Watt Ave. to Don Julio Blvd.	Status unknown
2002072084	City of Roseville	City of Roseville Retention Basin Project	1,500 acres	Status unknown
2002082006	California State Lands Commission	Rio Vista Natural Gas Pipeline Project	Not specified	No significant effect
2002082039	Caltrans #6	Vernalis Expressway	Increase State Route 132/33 to a 4-lane expressway	Status unknown
2002089049	City of Sacramento	Pipeline Crossing of Watercourse	Underground pipeline	No significant effect
2002102021	City of Sacramento	JMA Planned Unit Development	99.1 acres	No significant effect
2002102025	Sacramento County	Hazel Avenue Corridor Widening Project	US 50 to Madison Ave.	Status unknown
2002102044	City of Lodi	Lodi Electric Energy Facility	49 MW facility on 2 acres	No significant effect
2002112022	City of Sacramento	Regional Recycling Development Marketing Zone Redesignation and Expansion Project	Increase from 4,500 acres to 636,00 acres	No significant effect
2002112044	City of Tracy	Linne Road Reservoir	7.2-million-gallon below-ground water storage reservoir	No significant effect
2002112111	Public Utilities Commission	Looking Glass Networks	Fiber optic ring project	No significant effect
2002112122	Caltrans Statewide Facilities	I-80 High Occupancy Vehicle Lane Gap Closure Project	I-80 between State Route 4 and the Carquinez Bridge	No significant effect
2002122122	San Joaquin County	PA-0200065	688 acres	Status unknown
2003012045	Public Utilities Commission	Williams Communications Sentry Marysville Fiber Optic Project	Three lateral fiber optics connections over 6 miles along railroad ROW and existing roads	No significant effect
2003022062	City of Moraga	Rancho Laguna	180.2 acres	Status unknown
2003022070	Zone 7 Water Agency	EIR for the Proposed Altamont Pipeline Project	Connecting the future Altamont Water Treatment Plant to the existing Cross Valley Pipeline near Kitty Hawk Road and I-580 in Livermore	Status unknown

Table 4-2. Other Projects Contributing to Cumulative Impacts in the Project Area

State Clearinghouse Number	Lead Organization	Project Title	Project Size	Notice of Determination
2003022126	City of Hayward	SFPUC-City of Hayward EBMUD Intertic Project	1.5 miles of pipelines	No significant effect
2003022140	East Bay Municipal Utility District	Claremont Corridor Seismic Improvement Project	Claremont Tunnel	Status unknown
2003032011	Sacramento County	Watt Avenue/ U.S. 50 Interchange Project	2,100 feet west of Watt Avenue to immediately west of Manlove pedestrian overcrossing, appx. 2,200 feet east of Watt Avenue	Status unknown
2003032034	RWQCB, Region 5	Soil Vapor Extraction and Treatment with Discharge to Air	Not specified	No significant effect
2003032066	City of Lincoln	Aitken Ranch	156 acres	Status unknown
2003032070	East Bay Municipal Utility District	DERWA Tanks R-200 Project	2,700-foot pipeline	No significant effect
2003042022	City of Stockton	Cannery Park Mixed Use Development Project	490+ acres	Status unknown
2003042105	Caltrans #6	I-580/I-205 Truck Bypass	Not specified	No significant effect
2003052070	Alameda Contra Costa Transit District	East Bay Bus Rapid Transit Project	18-mile transportation corridor through Berkeley, Oakland, and San Leandro	Status unknown
2003052092	City of Stockton	March Lane Extension	Not specified	Status unknown
2003062023	Sacramento Municipal Utility District	Folsom: Golf Links Substations and Interconnection 69-kV Power Line Loop	Not specified	Status unknown

Source: California State Clearing House CEQAnet Database Query January 2002-June 2003, June 2003.
Acronyms:
Ave.: Avenue
BART: Bay Area Rapid Transit
Blvd.: Boulevard
Caltrans: California Department of Transportation
DERWA: Dublin San Ramon Services District-East Bay Municipal Utility District Recycled Water Authority
EBMUD: East Bay Municipal Utilities District
EIR: Environmental Impact Report
EIS: Environmental Impact Statement
NOD: Notice of Determination
ROW: right-of-way
RWQCB: Regional Water Quality Control Board
SFPUC: San Francisco Public Utilities Commission
SPTCo: Southern Pacific Transportation Company
U.S.: United States

Table 4-3. Corrections to the Sacramento Area Voltage Support Draft Environmental Impact Statement

Draft Page	Section/Table	Line	Correction
1-3	Section 1.2, Paragraph 2	"Although a lack of generation was the major cause, increased demand on the interconnected electrical transmission system played a part in blackouts."	This sentence should be removed from the EIS. See Comment 3.3.13.6 of this Final EIS. Western agrees that California Independent System Operator coordination's and Investor-owned Utility's inability to procure power led to rolling blackouts.
3-21	Table 3-4	Environmental Protection Measure 28	Western is no longer developing a PA for cultural resources. See Section 1.7.5 of this Final EIS.
4-7 and 4-8	Tables 4.1-3, 4.1-4, 4.1-5, and 4.1-6	SMAQMD VOC Significant Threshold	Replace "0" with "None[b]." Footnote b should read: "VOC emissions are not considered to be a significant impact from construction." VOC emissions would not exceed significant thresholds for SMAQMD, as presented in Sections 4.1.2.3, 4.1.2.4, 4.1.2.5, and 4.1.2.6.
4-9	Section 4.2.1.2	Critical Habitat for Segments B, G, H, I, and J	Based on map provided in 68 FR 46782, published August 6, 2003, Segments B, G, H, I, and J may pass through proposed critical habitat for the vernal pool fairy shrimp.
4-21	4.3.2.2, Programmatic Agreement	Discussion of PA being developed	Western is no longer developing a programmatic agreement. See Section 1.7.5 of this Final EIS.
4-22	4.3.2.5	"The realignment of the Cottonwood–Roseville transmission line (Segment H) has not been surveyed."	Change to: "The realignment of the Cottonwood–Roseville transmission line (Segment G) has not been surveyed."
4-61	4.15.1.3	These irrigation districts are listed below:	Add "Sutter Extension Water District" to the list.
4-74 and 4-75	Table 4.17-1	Projected projects with related transmission lines	Remove SMUD Cosumnes Power plant from Table 4.17-1. In accordance with SMUD's comment in Section 3.3.13., additional transmission would not be required for this project.
4-56	Table 3-4 EPM No. 52	All construction must conform with Western's Erosion Control and Revegetation Plan.	Replace "Western's Erosion Control and Revegetation Plan" with "Western's Integrated Vegetation Management Environmental Guidance Manual."

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Acronyms:
EIS: Environmental Impact Statement
EPM: environmental protection measure
FR: *Federal Register*
PA: Programmatic Agreement
SMAQMD: Sacramento Metropolitan Air Quality Management District
SMUD: Sacramento Municipal Utility District
VELB: valley elderberry longhorn beetle
VOC: volatile organic compound

Chapter 5—References

Supplying Energy
Preserving Reliability

CHAPTER 5.0–REFERENCES

5.1 REFERENCES

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43 U.S.C. §397a ..... Advances for Operation and Maintenance Projects; *United States Code*, Washington, D.C., January 12, 1927.

State Administraive Codes and Orders

CDFG §3503.5 ..... California Fish and Game Code, Section 3503.5 (no title), It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.

Public Resource Code §21092 .... California Public Resource Code, Section 21092 (no title), Any lead agency which is preparing an environmental impact report or a negative declaration or making a determination pursuant to Section 21157 shall provide public notice of that fact within a reasonable period of time prior to certification of the environmental impact report or adoption of the negative declaration.

Public Resource Code §21092.2. California Public Resource Code, Section 21092.2 (no title), The notices required pursuant to Sections 21080.4, 21083.9, 21092, 21108, and 21152 shall be mailed to any person who has filed a written request for notices with either the clerk of the governing body or, if there is no governing body, the director of the agency. The request may also be filed with any other person designated by the governing body or director to receive these requests. The agency may require requests for notices to be annually renewed. The public agency may charge a fee, except to other public agencies, that is reasonably related to the costs of providing this service. This section may not be construed in any manner that results in the invalidation of an action because of the failure of a person to receive a requested notice, provided that there has been substantial compliance with the requirements of this section.

PUC General Order 95..... California Public Utilities Commission General Order 95, Rules for Overhead Electric Line Construction Adopted December 23, 1941 Effective July 1, 1942, Decision No. 34884, Case No. 4324, as amended, October 22, 1997

Chapter 6—Environmental Impact Statement Recipients

Supplying Energy
Preserving Reliability

CHAPTER 6.0–ENVIRONMENTAL IMPACT STATEMENT RECIPIENTS

6.1 LIST OF DRAFT ENVIRONMENTAL IMPACT STATEMENT RECIPIENTS

Individuals who received the Draft EIS are listed below.

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Glossary

Supplying Energy
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GLOSSARY

area of potential effect

For cultural resources, the extent of land that could be altered by the proposed action or an alternative.

California *Endangered Species Act*

The California *Endangered Species Act* (CESA) Fish and Game Code §§2050 *et seq*. generally parallels the main provisions of the Federal *Endangered Species Act* and is administered by the California Department of Fish and Game. CESA prohibits the "taking" of listed species except as otherwise provided in State law. Unlike its Federal counterpart, CESA applies the take prohibitions to species petitioned for listing (state candidates).

capacity

The maximum load that a generator, piece of equipment, substation, transmission line, or system can carry under existing service conditions. Sometimes used interchangeably with capability, although not a synonym.

Central Valley Project (CVP)

A long-term general scheme for the utilization of the water of the Sacramento River basin in the north for the benefit of the farmlands of the San Joaquin Valley in the south, undertaken by the Bureau in 1935.

circuit

A system of conductors through which an electric current is intended to flow; sometimes normally open paths that do not ordinarily conduct in a network can also be considered part of a circuit.

double-circuit

To place two separate electrical circuits (for alter-nating current, each circuit consists of three separate conductors or bundles of conductors) on the same transmission structures.

single-circuit

To place one electrical circuit that consists of three separate conductors or bundles of conductors on one tower.

***Clean Air Act* (CAA)**

1) A 1963 Federal law, amended several times since, giving the Federal government powers to limit air pollution. 2) A term loosely applied to the *Air Quality Act* of 1967, which gave the Federal government a stronger regulatory role. An especially important effect was the development of standards based on concentrations of pollutants in air.

***Clean Water Act* (CWA)**

A Federal law intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters and secure water quality that provides for the protection and propagation of fish, shellfish, and wildlife, as well as for recreation in and on the water.

conductor

1) Any metallic material, usually in the form of wire, cable, or bar, suitable for carrying an electric current. 2) The wire cable strung between transmission towers.

conservation

Synonymous with energy conservation, the reduction of electric energy consumption because of increases in the efficiency of production, distribution, and end use.

corona

A luminous electrical discharge due to the ionization of the air surrounding a conductor caused by a voltage gradient exceeding a certain critical value. Can be seen as bluish tufts or streamers surrounding the conductor or conductor hardware, and generally a hissing sound can be heard. Transmission-line corona varies with atmospheric conditions and is more intense during wet weather.

corridor

A strip of land, 0.8 km (one-half mile) or more wide forming a passageway for transportation or utility facilities. Also see right-of-way.

cultural resource

Any nonrenewable evidence of human occupation or activity as seen in any district, site, building, structure, artifact, ruin, object, work of art, architecture, or natural feature that was important in human history.

current

1) In common usage, the flow of electric energy when an appliance or machine is turned on. 2) In technical sense, a term usually modified by an adjective, such as direct current, referring to the rate of electrical charge flowing through a conductor or circuit as compared to voltage (volts), which is the force or pressure that causes the current to flow; current and ampere are often used interchangeably.

demand

1) In a consumer context, the amount of electricity used. 2) In a public utility context, the rate at which electric energy is delivered to or by a system over any designated period. Expressed in kW or MW, or in kVA or MVA. 3) The amount of electric energy, in kilowatts or megawatts, needed at any given time to meet a customer's or total system load.

demand-side management (DSM)

Reducing the load in a critical area of the electrical distribution system. Traditionally, this effort has included energy conservation measures and pre-arranged means to reduce specific customer load during times of high demand. Air-conditioning cycling programs are an example of a pre-arranged demand-side management tool. See load shedding.

Department of Energy

See U.S. Department of Energy.

disposal

Final placement or destruction of hazardous materials—toxic, radioactive, or other wastes; pesticides or other chemicals; and polluted soils at Federally approved sites.

distribution

The transport of electricity to ultimate use points, such as homes and businesses, from a source of generation or from one or more substations.

disturbance

Any occurrence that adversely affects normal power flow in a system, including a fault or loss of an interconnection carrying a large block of power.

double circuit

See circuit.

double-circuit structure

See structure configurations.

easement

The right, privilege, or interest obtained by Western through negotiated contract or condemnation to construct, maintain, and operate transmission facilities within a right-of-way.

electric and magnetic fields (EMF)

Fields of force caused by electric voltage and current around the electric wire or conductor when an electric transmission line or any electrical wiring is in operation. Magnetic fields exist only when current is flowing. Electric fields are present in electrical appliances and cords whenever they are plugged in.

electricity

1) The common term used for electric power and for electric energy (power designates the total electricity delivered and energy designates what is delivered over time). 2) A flow of electrons along a conductor from an area of high electric potential to an area of low potential and/or a waveform component of the electromagnetic spectrum.

electromagnetic

Of or pertaining to the magnetic forces produced in a surrounding medium by the flow of current in a conductor, as used in this document, meaning electric and magnetic fields.

endangered species

Under the Endangered Species Act animals, birds, fish, plants, or other living organisms whose existence is determined to be in danger throughout all or a significant portion of its range because its habitat is threatened with destruction, drastic modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors.

Endangered Species Act

The *Endangered Species Act* (ESA) was passed in 1973. The U.S. Fish and Wildlife Service (USFWS) administer terrestrial, fresh water species, and migratory birds, and the National Marine Fisheries Service (NOAA Fisheries) administer marine species. The purpose of the ESA is to conserve the ecosystems upon which threatened or endangered species depend and to conserve and recover listed species.

Environmental Assessment (EA)

A document that evaluates the possible environmental effects of a Federal agency's proposed action and provides sufficient evidence to determine whether an EIS or a FONSI is warranted. An EA is one means of compliance with NEPA.

Environmental Impact Statement (EIS)

A document that examines the possible environmental effects of a Federal agency's proposed actions. A tool for decision-making, it describes the positive and negative effects of proposed actions and lists alternative actions.

environmental protection measure

Western developed environmental protection measures to reduce environmental consequences associated with construction activities.

erosion

1) The wearing away of land surface by wind or water that occurs naturally from weather or runoff

but can be intensified by land-clearing practices related to such activities as farming, residential or industrial development, road building, or timber-cutting. 2) A material wear mechanism resulting from suspended particles in a flow stream of water or other fluid.

floodplain

The lowlands adjoining inland and coastal waters. A relatively flat and flood-prone area.

gauss (G)

A unit used to measure magnetic field strength. The intensity of the earth's magnetic field, near the surface of the earth, is on the order of one-half gauss.

generation

1) The act or process of producing electricity from other forms of energy, such as hydro, coal-fired steam turbines, or photovoltaic conversion systems. 2) The amount of electrical energy produced.

generator

1) In a power plant, the machine that converts mechanical energy to electrical energy. 2) A utility that owns or acquires the output of a generating resource.

grid

See transmission grid.

habitat

The place where a population (human, animal, plant, or microorganism) lives and its surroundings, both living and nonliving.

high voltage

Descriptive of transmission lines and electrical equipment with voltage levels from 100 kV through 287 kV.

impact

Direct or indirect changes in the existing environment, whether beneficial or adverse, resulting from a specific act or series of acts.

insulator

A device, made of nonconducting material, used to give support to electrical conductors and shield them from ground or other conductors. An insulator inhibits the flow of current from the conductor to the earth or another conductor.

kilovolt (kV)

One kilovolt equals 1,000 volts.

lacustrine

Living or growing in or along the edges of lakes

lattice

Descriptive of structures and substation structures designed with skew as well as horizontal and vertical members.

load

The amount of electric energy delivered or required at any specified point or points on a system. Load originates primarily at the energy-using equipment of consumers, such as heaters, air conditioners, lights, and motors.

load shedding

Cutting off the electric current on certain lines when the demand becomes greater than the supply.

magnetic field

The invisible lines of magnetic force produced by electric current flowing in a conductor, such as a transmission line, service wires in a house, or household appliances. Measured in terms of lines of force per unit area with the measurement unit being tesla (T) or gauss (G) (one tesla equals 10,000 gauss). Also see electric and magnetic fields.

mitigate

In environmental usage, to either reduce or avoid an adverse environmental effect through various measures that seeks to make the effect less severe, less obvious, or more acceptable.

National Electric Safety Code (NESC)

Written standards, providing basic requirements for the design, construction, maintenance, and operation of electric supply and communication lines, equipment, and supply stations in order to safeguard persons from hazards associated with those activities.

***National Environmental Policy Act* (NEPA)**

A 1969 Federal law that requires evaluation of the environmental impact of Federally funded projects and programs. Generally requires an environmental assessment and/or an environmental impact statement be submitted to the Federal government before a project can begin.

National Marine Fisheries Service (NOAA Fisheries)

An agency of the U.S. Department of Commerce that oversees ocean and river fish harvest limits and determines which stocks are to be listed as endangered or threatened under the *Endangered Species Act*.

National Register of Historic Places

The National Register of Historic Places is the Nation's official list of cultural resources worthy of preservation. Authorized under the *National Historic Preservation Act* of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service, which is a part of the U.S. Department of the Interior.

network

1) A system of interconnected circuit components. 2) A system of transmission (or distribution) lines interconnected and operated so that any principal point has multiple sources of power supply.

new transmission

Actions within an alternative that would require construction of new transmission lines including acquisition of new rights of way, placement of new structures, construction of new access roads, and the related activities that accompany the operation of a power transmission line.

outage

In a power system, a period—scheduled or unexpected—during which the transmission of power stops or a particular power-producing facility ceases to provide generation.

overload

Operation of equipment in excess of its normal, full load rating or operation of a conductor in excess of ampacity, and if continued for a sufficient length of time, would cause damage or overheating.

particulates

Airborne particles including dust, smoke, fumes, mist, spray, and aerosols. Also see pollutant.

pollutant

A contaminant, such as sulfur dioxide, nitrogen oxide, hydrocarbons, radionuclides, carbon monoxide, and lead, present in a concentration high enough to cause adverse effects to health or the environment.

pollution

The accumulation of wastes or byproducts of human or natural activity that occurs when wastes or byproducts are discharged faster than they can degrade, assimilate, or disperse by natural processes.

power system

1) In general, a group of one or more generating resources and connecting transmission lines operated under common management or supervision to supply load. 2) An entire interconnected electric power transmission and distribution network together with connected generating plants and loads.

prime farmland

Prime farmland meets all the criteria in the U.S. Department of Agriculture publications: Soil Taxonomy, Agriculture Handbook 436; Soil Survey Manual, Agriculture Handbook 18; Rainfall-Erosion Losses from Cropland, Agriculture Handbook 282; Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss, Agriculture Handbook 346; and Saline and Alkali Soils, Agriculture Handbook 60.

realignment

Relocating an existing transmission line as part of an overall strategy to optimize the use of an existing right of way and allow for the possible use of the right of way for another transmission line.

reconductoring

The process of installing larger or better conductors in place of existing conductors on existing towers/structures. In some cases, reconductoring incorporates changes to the existing structures to provide the necessary structural capability to support larger conductors.

record of decision (ROD)

The document notifying the public of a decision taken by a Federal agency on a proposed action, together with the reasons for the choices entering into that decision.

Regional Water Quality Control Board

The California State Water Resources Control Board administers water quality and rights issues through nine Regional Water Quality Control Boards throughout California.

reliability

1) The measure of the ability of a power system to provide uninterrupted service, even while that system is under stress. 2) In a relay or relay system, a measure of the degree of certainty of correct performance. Denotes certainty of correct operation together with assurance against incorrect operation from all extraneous causes.

right-of-way (ROW)

An easement for a certain purpose over the land of another, such as the strip of land used for a road, electric transmission line, ditch, or pipeline. Western usually acquires easements for its transmission lines, roads, and other facilities such as guys and anchors. Road rights-of-way are usually acquired in 6- or 15-meter (20- or 50-foot) widths; for 230-kV transmission lines, the width of the ROW is usually 125 feet.

riparian

Habitat or areas, usually adjacent to rivers, streams, or lakes, where the vegetation and microclimate are heavily influenced by water.

rolling blackouts

A rolling blackout occurs when a power company turns off electricity to selected areas to save power. The areas are selected using sophisticated computer programs and models. The blackouts are typically for one hour, then the power is restored and another area is turned off. Hospitals, airport control towers, police stations, and fire departments are often exempt from these rolling blackouts. These blackouts usually occur during peak energy usage times, usually between 4:00 p.m. and 7:00 p.m. on weekdays, but they can happen at any time of day. Blackouts may affect the same area more than once a day, and may exceed an hour's duration.

scoping

For an environmental impact statement, the process of defining the range of issues requiring examination in studying the environmental effects of a proposed action, generally including public consultation with interested individuals and groups, as well as with agencies with jurisdictions over parts of the project area or resources in that area.

shield wire

Used to provide protection to a conductor from lightening strikes.

structure

A broad-base latticed steel support for line conductors (as differentiated from a wood or steel pole structure or line).

surface water

1) All water naturally open to the atmosphere, such as rivers, lakes, reservoirs, streams, impoundments, seas, and estuaries. 2) Refers to all springs, wells, or other collectors, which are directly influenced by surface water.

threatened species

As defined in the *Endangered Species Act*, those species likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

traditional cultural property (TCP)

A property that is eligible for inclusion on the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that are important in maintaining the continuing cultural identity of the Native American community.

transmission

The bulk transport of electricity from large generation centers over significant distances to interchanges with large industries and distribution networks of utilities.

transmission grid

An interconnected network of transmission lines including associated equipment for the transfer of electric energy in bulk between points of supply and points of demand.

transmission line

A high-voltage, extra-high-voltage, or ultra-high-voltage power line used to carry electric power efficiently over long distances.

U.S. Army Corps of Engineers (USACE)

The builder and now the owner-operator of many of the Federal dams in the Columbia River Basin (as well as elsewhere in the U.S.).

U.S. Bureau of Reclamation (Bureau)

A Bureau within the DOI responsible for operating and maintaining dams and numerous water resource projects in the western U.S., for such purposes as irrigation and power production.

U.S. Department of Energy (DOE)

A Department established in 1977 by the *Department of Energy Organization Act* to consolidate the major Federal energy functions into one cabinet-level department that would formulate a comprehensive, balanced national energy policy. Responsible for regulatory, research, and marketing programs related to energy production and use.

U.S. Environmental Protection Agency (EPA)

The Federal agency created in 1970 to permit coordinated and effective governmental action for protecting the environment by the systematic abatement and control of pollution by integrating

research, monitoring, standard setting, and enforcement activities.

U.S. Fish and Wildlife Service (USFWS)

An agency within the DOI responsible for guiding conservation, development, and management of U.S. fish and wildlife resources.

utility

A public or private organization created for the purpose of selling or supplying for general public use water, electric energy, telephone service, or other items or services.

vernal pool

Ephemeral pools that dry up periodically, typically holding water for only a few days to months. Vernal pools are of particular concern because human development has destroyed most of the pools, and yet there are many endemic animal and plant species found in these pools. Some of these species are even listed as threatened or endangered under the *Endangered Species Act*, and others have been identified as species of concern by state and federal officials. In addition, new species are being identified as surveys of remaining pools are completed.

volatile organic compound

An organic chemical that has a high vapor pressure and easily forms vapors at normal temperature and pressure.

volt (V)

The unit of electromotive force, or voltage, that if steadily applied to a circuit having a resistance of one ohm will produce a current of one ampere.

voltage

The driving force that causes a current to flow in an electric circuit. Voltage and volt are often used interchangeably.

voltage sag

A momentary decrease of more than 10 percent in voltage magnitude.

voltage support

Voltage support is provided by generators, transmission systems, and equipment within the system, designed to react during normal or contingency operating conditions and sudden changes in load and maintain the established power grid voltage requirements. If there are insufficient or ineffective voltage support devices in an area to support high transmission loading during normal or contingency operations, voltages in that area could cause voltage collapse resulting in rotating blackouts.

Western

See Western Area Power Administration.

watershed

The land area that drains into a stream or lake.

Western Area Power Administration (Western)

One of the DOE's five power marketing agencies. Headquartered in Golden, Colorado, its service area includes 15 central and western states.

wetlands

Areas that are inundated by surface water or groundwater often enough to support vegetation or aquatic life that requires saturated or seasonally saturated soil conditions, such as swamps, bogs, fens, marshes, and estuaries.

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