BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) for a Certificate of Public Convenience and Necessity for San Joaquin Cross Valley Loop Project	))))))	Application No. __________ (Filed May 30, 2008)

PROPONENT'S ENVIRONMENTAL ASSESSMENT SAN JOAQUIN CROSS VALLEY LOOP PROJECT

Volume 2 of 2

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Appendix A

APPENDIX A Environmental Checklist Form

1. Project Title

San Joaquin Cross Valley Loop Project

2. Lead Agency Name and Address

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102-3298

3. Contact Persons and Phone Numbers

Susan Nelson
Project Manager – Regulatory Affairs
(626) 302-8128

4. Project Location

The project is located between the City of Visalia and western foothills to the Sierra Nevada Mountains, in Tulare County, California.

5. Project Sponsor's Name and Address

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, California 91770

6. General Plan Designation

The California Public Utilities Commission (CPUC) has primary jurisdiction over the San Joaquin Cross Valley Loop Project, because it authorizes the construction, operation, and maintenance of public utility facilities. Although such projects are exempt from local land-use and zoning regulations and permitting, CPUC G.O. 131-D Section IX.B states that "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However in locating such projects, the public utilities shall consult with local agencies regarding land use matters." SCE has considered local and state land-use plans as part of the environmental review process.

The land use designations of the transmission line portion of the San Joaquin Cross Valley Loop Project are as follows:

Approximate Miles from Rector Substation	Designated Land Use
0.0 to 1.1 (Existing SCE ROW)	Residential; (Urban Reserve on the east side of Road 148)
1.1 to 1.7	Urban Reserve
1.7 to 2.4	Agricultural
2.5 to 2.7	Urban Reserve
2.7 to 3.15	Industrial
3.15 to 3.4	Commercial
3.4 to 3.8	Industrial
3.8 to 9.5	Agricultural
9.5 to 9.7	Grazing
9.7 to 15.4	Agricultural
15.4 to 15.7	Residential
15.7 to 16.1	Agricultural
16.1 to 16.7	Urban Reserve
16.7 to 18.4	Agricultural
18.4 to 18.45	Residential
18.45 to 18.5	Grazing

7. Zoning

The California Public Utilities Commission (CPUC) has primary jurisdiction over the San Joaquin Cross Valley Loop Project, because it authorizes the construction, operation, and maintenance of public utility facilities. Although such projects are exempt from local land-use and zoning regulations and permitting, CPUC G.O. 131-D Section IX.B states that "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However in locating such projects, the public utilities shall consult with local agencies regarding land use matters." SCE has considered local and state land-use plans as part of the environmental review process.

The zoning designations of the transmission line portion of the San Joaquin Cross Valley Loop Project are as follows:

Approximate Miles from Rector Substation	Zoning Designation
0 to 0.6 (Existing SCE ROW)	Existing SCE ROW - Exclusive Agricultural Zone
0.6 to 1.1 (Existing SCE ROW)	Existing SCE ROW - Residential
1.1 to 2.2	Exclusive Agricultural Zone
2.2 to 2.3	Planned Development Zone - Service Commercial Zone - Scenic Corridor Combining Zone
2.3 to 2.96	Exclusive Agricultural Zone
2.96 to 3.5	Agricultural
3.5 to 15.5	Exclusive Agricultural Zone
15.5 to 15.75	Planned Development Zone - Foothill Combining Zone - Special Mobile Home Zone
15.75 to 16.14	Exclusive Agricultural Zone
16.14 to 16.7	Agricultural Zone
16.7 to 18.0	Exclusive Agricultural Zone
18.0 to 18.1	Planned Development Zone - Foothill Combining Zone - Special Mobile home Zone
18.1 to 18.35	Exclusive Agricultural Zone
18.35 to 18.45	Planned Development Zone - Foothill Combining Zone - Special Mobile home Zone
18.45 to 18.5	Foothill Agriculture Zone

8. Description of Project

The Proposed Project consists of the following activities:

- Replacement of approximately 1.1 miles of two sets of existing single circuit 220 kV transmission line segments with a single double circuit transmission line segment to be constructed with double circuit structures on the western side of SCE's existing ROW immediately north of Rector Substation. This would clear the eastern side of the existing SCE ROW in order to provide a location for the construction of the first 1.1 miles of the new transmission line described immediately below;

- Construction of a new, approximately 18.5 mile-long, double circuit 220 kV transmission line that would loop the existing Big Creek 3-Springville 220 kV transmission line into the 220 kV Rector Substation, creating the new Big Creek 3-Rector No. 2 220 kV transmission line circuit and the new Rector-Springville 220 kV transmission line circuit. The first 1.1 miles of the new double circuit transmission line would be on the eastern side of SCE's existing ROW adjacent to the new double circuit 1.1 mile line segment described above;

- Installation of electrical equipment and substation supporting structures for the transmission lines, protective relays, and a mechanical and electrical equipment room (MEER) at Rector Substation to accommodate the transmission lines; and

- Removal of wave traps and line tuners and installation of additional protective relays at Rector Substation, Springville Substation, Vestal Substation, and Big Creek 3 Substation.

9. Surrounding Land Uses and Setting

The Proposed Project would be located in western Tulare County between the City of Visalia and the western foothills of the Sierra Nevada Mountains. Most of western Tulare County is located on the relatively flat San Joaquin Valley floor and the land is primarily used for agriculture.

ENVIRONMENTAL RESOURCES POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	☐ Mandatory Findings of Significance	

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature ______________________________ Date _____

Signature ______________________________ Date ______

EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, and then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiring, program EIR, or other CEQA process, an effect has been adequately analyzed I an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to Information sources for potential impacts (e.g., general plans, zoning

ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorpor-ation	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
II. AGRICULTURAL RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☒	☐
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorpor-ation	Less Than Significant Impact	No Impact
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
VI. GEOLOGY AND SOILS. Would the project:				

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorpor-ation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
VII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorpor-ation	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐
VIII. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorpor-ation	Less Than Significant Impact	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
IX. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
X. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XI. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorpor-ation	Less Than Significant Impact	No Impact
XII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIII. PUBLIC SERVICES.				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☒	☐
XIV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XV. TRANSPORTATION AND TRAFFIC. Would the project:				

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorpor-ation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)	☐	☐	☐	☒
XVI. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorpor-ation	Less Than Significant Impact	No Impact
XVII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Sources and Explanation of Answers

This section contains a brief explanation for all answers provided in the environmental checklist form.

Aesthetics

Construction and operation of the Proposed Project is not located in an area of a State Scenic Vista or a State Scenic Highway. There would be no impacts to these resources. As demonstrated in Section 4.1.4, Aesthetics Impact Analysis, the Proposed Project represents an incremental change in the visual character or quality of the site, and impacts associated with the Proposed Project would be less than significant. Any light associated with construction and operation of the Proposed Project would be shielded to reduce glare, and manually operated as needed. The transmission line conductor would be non-specular, and the steel portions of the transmission structures would be dull gray galvanized, and also would not be a source of glare. Impacts due to light and glare would be less than significant. (Section 4.1, Aesthetics)

Agricultural Resources

The agricultural zoning designations for the land crossed by the Proposed Project allow for the location and operation of public utility structures. There would be no impact resulting from a conflict with an agricultural zoning designation. The Proposed Project would convert 0.05 percent of Important Farmland in Tulare County to nonagricultural use during construction and less than 0.02 percent during operation. This would represent a less than significant effect to the conversion of important farmland in Tulare County to nonagricultural use. The Proposed Project would not involve other changes in the environment that would result in the conversion of farmland to nonagricultural use. Impacts would be less than significant. (Section 4.2, Agricultural Resources)

Air Quality

The San Joaquin Valley Air Pollution Control District has developed a guidance document to assess impacts to air quality resulting from projects in its air basin. The Proposed Project qualifies for the Small Project Analysis Level, and would have less than significant impacts to air quality. (Section 4.3, Air Quality)

Biological Resources

The impacts to biological resources would be more fully assessed during the preconstruction Environmental Surveys. Based on the information available, the Proposed Project avoids most sensitive biological resources, with the exception of the Valley Elderberry Longhorn Beetle. With the implementation of APM-BIO-01, Elderberry Avoidance, the Proposed Project is thought to have a less than significant effect on the Valley elderberry longhorn beetle. If additional sensitive biological resources are discovered during the preconstruction Environmental Surveys conducted for the Proposed Project, the Proposed Project would be redesigned, if feasible, to avoid the resource, or the appropriate consultations and permits would be obtained from the regulating agencies. Impacts to biological resources are expected to be less than significant. (Section 4.4, Biological Resources)

Cultural Resources

The impacts to cultural resources would be more fully assessed during the preconstruction Environmental Surveys. Based on the information available, the Proposed Project appears to avoid most sensitive cultural resources, with the exception of the removal of the historic towers and adverse change at Rector Substation, which are components of the Big Creek Hydroelectric System Historic District. With the implementation of APM-CUL-01, Documentation and Recordation of Affected Components of the Big Creek Hydroelectric System Historic District, the Proposed Project is thought to have a less than significant effect on the BCHSHD. If additional sensitive cultural resources are discovered during the preconstruction Environmental Surveys conducted for the Proposed Project, the Proposed Project would be redesigned, if feasible, to avoid the resource, or the appropriate mitigation would be implemented to minimize the effects to the resource. Impacts to cultural resources are expected to be less than significant. (Section 4.5, Cultural Resources)

Geology and Soils

The Proposed Project would not be located in an area of seismic hazards or expansive soils. The Proposed Project also would not be built with an on-site wastewater system. There would be no effect due to the abovementioned geologic conditions. During construction of the Proposed Project, a SWPPP would be implemented, which would reduce any effects due to erosion and the loss of topsoil to less than significant levels. During operation, the soil that is part of structure clearance areas and access roads would be compacted to reduce erosion and loss of topsoil. Unstable geologic units have not been identified in the area; however, the preconstruction Geotechnical Studies would identify areas of concern and SCE would use the information to design the Proposed Project to ensure its safe and reliable operation. Impacts would be less than significant. (Section 4.6, Geology and Soils)

Hazards and Hazardous Materials

Construction and operation of the Proposed Project would not involve the routine transport, use, or disposal of hazardous materials, and is not in the vicinity of an identified airport or airstrip. There would be no impact to the public or the environment due to these activities. There is a possibility of a spill or release of hazardous materials during construction and operation, but the controls put in place by the SWPPP would minimize the impacts during construction, and the notification of SCE's regional spill coordinator in the event of a spill would lessen the impacts during operation to less than significant levels. The Proposed Project is not located on a hazardous waste site. However, during the preconstruction Geotechnical Studies, soil samples would be collected and analyzed for common contaminants, including pesticides. Addressing issues associated with contaminated soil prior to construction would lessen impacts to less than significant levels. The Proposed Project also would not interfere with an emergency response plan. Approximately 0.2 miles of the 18.5 miles of the Proposed Project is in an area of high fire fuel; clearing the work areas of vegetation prior to construction would minimize the possibility of starting a fire, reducing impacts to less than significant levels. (Section 4.7, Hazards and Hazardous Materials)

Hydrology and Water Quality

The Proposed Project would not violate any water quality standards or waste discharge requirements, deplete groundwater supplies, alter an existing drainage pattern, place housing in a 100-year floodplain, install structures that would redirect floodflows, expose people or structures to significant risk of flooding, seiche, tsunami, or mudflow; there would be no impacts associated with these resources. During construction, SCE would obtain an NPDES permit for construction storm water discharge, which includes measures to protect water quality during rain events. These measures would keep impacts to water quality to less than significant levels. In addition, the Proposed Project would not install large-scale impervious surfaces that would excessively contribute to storm water runoff, but the access roads and structure sites would be compacted enough to minimize soil erosion and protect surface water quality during rain events. Impacts would be less than significant. (Section 4.8, Hydrology and Water Quality)

Land Use and Planning

The Proposed Project would not divide an established community, conflict with an environmental plan for avoiding or mitigating an environmental effect, or conflict with a habitat conservation plan or natural community conservation plan. There would be no impacts to land use and planning. (Section 4.9, Land Use and Planning)

Mineral Resources

The Proposed Project would not result in the loss of availability of a known mineral resource that is of value to the region, or one that is delineated on a general plan. There would be no impacts to mineral resources. (Section 4.10, Mineral Resources)

Noise

The Proposed Project would not be located within an airport land use plan or in the vicinity of an identified airstrip. There would be no impact due to people working in the project area due to the presence of airports. The Proposed Project is unlikely to generate noise levels in excess of standards. There is a possibility that blasting would be used as an excavation technique; if this is the case, the blasting would occur in limited areas of past and present quarries; the blasting would not expose people to excessive groundborne vibration. The construction of the Proposed Project would not result in a substantial temporary increase in noise. The corona noise modeling conducted by CH2M HILL indicates that the noise levels at the edge of ROW would be less than the local guidelines for noise impacted land use. Impacts would be less than significant. (Section 4.11, Noise)

Population and Housing

The Proposed Project would not induce population growth or displace substantial numbers of people or housing. There would be no impacts to population and housing. (Section 4.12, Population and Housing)

Public Services

The Proposed Project is unlikely to require the use of fire protection, police protection, schools, or other public facilities. There would be a less than significant impact to the performance objectives of these resources from construction and operation of the Proposed Project. (Section 4.13, Public Services)

Recreation

The Proposed Project would not increase the use of existing parks or require the construction of new recreation facilities. There would be no impact to recreation. (Section 4.14, Recreation)

Transportation and Traffic

The Proposed Project would not affect the design features or introduce incompatible use for transportation, result in inadequate parking capacity, conflict with programs supporting alternative transportation, or result in a change in air traffic patterns. Construction of the Proposed Project would involve material delivery and worker commute; however, the level of construction traffic estimated for the Proposed Project is negligible when added to the existing daily traffic on the roadways, and would not lower the LOS standard for the roads. Impacts to traffic would be less than significant. (Section 4.15, Transportation and Traffic)

Utilities and Service Systems

The Proposed Project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or result in the construction of new water, wastewater, or storm water facilities. The Proposed Project would not affect water supplies or affect wastewater treatment capacities. The waste that would require disposal by the Proposed Project would be accommodated in landfills in Tulare County that have the permitted capacity to accept the waste. SCE would handle the reuse and disposal of treated wood poles for the Proposed Project in accordance with all applicable federal, State, and local statutes related to solid waste. Impacts to utilities and service systems would be less than significant. (Section 4.16, Utilities and Service Systems)

Appendix B

APPENDIX B Key Contributors for the Preparation the San Joaquin Cross Valley Loop Proponent's Environmental Assessment

Southern California Edison Company Contributors:

Name	Education	Contribution/Responsibility
Dana Bullock, CCIM	BA, Communications, California State University, Fullerton	Project Manager
Robert Tucker	MS, Mathematics, Claremont Graduate University BS, Engineering, Harvey Mudd College	Power System Planner
Brent Gokbudok	JD, Southwestern University MS, Engineering, Loyola Marymount University BS, Civil Engineering, University of Illinois	Construction Project Manager
Peter L Hlapcich	MS, Civil Engineering, California State University at Long Beach MS, Organizational Development, Pepperdine University BS Civil Engineering, California State University at Long Beach	Project Engineering Manager
Sarmad Shammas	MSEE, Communications Systems, University of California, Los Angeles BSEE, Power Systems, California State University, Los Angeles	Manager, Transmission/ Substation Engineering
Erika Wilder	MS, Civil Engineering, Arizona State University BS, Geology, University of Wisconsin, Oshkosh	Environmental Project Coordinator
Tracy Tate	BS, Civil Engineering, University of Nevada, Reno	Transmission Engineering
Eric Bradley	BS, Civil Engineering, Loyola Marymount University	Civil Engineering
Arnel L Wilson	MSE, Environmental Engineering, University of Florida	Air Quality
Thomas T Taylor	MA, Anthropology/Archaeology, California State University, Fullerton BA, Anthropology/Archaeology, California State University, Fullerton	Manager, Natural and Cultural Resources
Paul Yamazaki	BS, Environmental Studies (Biology), University of Southern California	Biologist
Mary Deming	PhD, Sociology (Demography), University of Chicago	Planning and Strategy

Name	Education	Contribution/Responsibility
Lisa Donnell, AICP	MS, Organizational Behavior, Human Resource Management, Chapman University MA, Education, Chapman University BA, Sociology, California State University, Long Beach	Land Use Planning
Caroline Fraser	MS, Geography, California State University, Fullerton BA, Geography, California State University, Fullerton	Senior GIS Technical Specialist
Andy Anderson	Over 30 years work experience in Construction and Construction Management	Manager Transmission Construction
Steven K Alford	BS, Organizational Management, University of La Verne	Transmission Construction
Glenn A Larson, CCIM	AS, Real Estate, College of Sequoias	Corporate Real Estate
Alis Clausen	MA, Music; BA, Music; University of California Santa Barbara	Public Involvement Manager
Linda C Delgado	BA, Political Science, University of California, Los Angeles	Public Involvement

In addition, the following consultancies provided expertise to SCE personnel that was incorporated into the San Joaquin Cross Valley Loop Proponent's Environmental Assessment:

TRC Essex (PEA)

Black and Veach (Project Description)

CH2M HILL (Agriculture, Noise)

Environmental Vision (Aesthetics)

Pacific Legacy (Cultural Resources)

John Stebbins (Biological Resources)

Appendix C

Southern California Edison

San Joaquin Valley Comprehensive Study

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL℠ Company

Addendum to CAISO Controlled 2004-2013 Transmission Study Report

April 29, 2004
Jorge Chacon

SAN JOAQUIN VALLEY
COMPREHENSIVE TRANSMISSION STUDY
April 29, 2004

EXECUTIVE SUMMARY

The San Joaquin Valley load is served from three 230/66 kV substations located in Tulare County. These substations serve the communities of Delano, Hanford, Lindsay, Porterville, Tulare, Visalia and surrounding areas. Energy requirements for the San Joaquin Valley is provided from resources located within the San Joaquin Valley and/or from resources outside the valley that are imported using 220-kV transmission lines that connect to the main SCE network at SCE's Vincent and Pardee substations. The generation resources located electrically within the San Joaquin Valley includes the Big Creek hydro project, which contains seven hydraulic power plants (utility-owned) to the north in Fresno County. The hydraulic power plants include Big Creek 1, 2, 3, 4, 8, Mammoth Pool, and Eastwood. Eastwood is unique in that it is a pump storage facility with a maximum generation capacity of 207 MW and a maximum pump load of 185 MW. Generation output from these power plants is delivered to the San Joaquin Valley load centers by four 220-kV transmission lines running south, two to Rector and two to Springville. In addition to utility owned generation (Big Creek Hydro), the San Joaquin Valley contains one market generation participant, the former 56 MW Qualified Facility (QF) Pandol unit, and one major QF, the 41 MW Ultragen unit. Both of these generation resources are located in the Vestal 66 kV system.

Load growth in the San Joaquin Valley, particularly at Rector, has eroded available capacity for delivery of Big Creek hydro generation during peak load period conditions, degraded transient stability performance under single and double outage conditions, and impacted post-transient voltage performance under simultaneous or overlapping outage of both Big Creek-Rector 220-kV lines. As load continues to increase in the Valley, the identified problems will be exacerbated to the point were reliable service to load will be compromised. System upgrades will be required to restore system performance to within acceptable limits.

With the current load forecast, power flow studies identified base case, single outage, and double outage thermal overload problems in the San Joaquin Valley. The existing Big Creek run-back scheme is insufficient to mitigate the identified thermal problems and should be modified to reflect such system limitations. In addition, transient stability studies identified that continued load growth will degrade transient performance under loss of one transmission line to the point where a potential voltage collapse can occur under loss of one transmission line.

Thermal Overloads

1. Base Case Overloads

   With the continued load growth in the San Joaquin Valley, base case overloads, with all facilities in service and under certain operating conditions, were identified when loads at Rector exceed 650 MW. This load is expected to be attained by year 2008 based on current load forecast projections. Additional transmission capacity will be required to mitigate the identified base case overload. Consideration of implementing congestion management as a viable alternative for mitigating the identified base case overload which is attributed to load growth is inappropriate as such limitation will impinge SCE's ability to serve its load as mandated by the CPUC.

2. Single Contingency Overloads_

   Power flow studies have identified additional generation limitations **if** the Big Creek RAS scheme is not in service or the SEL-68 stability relay is not available. The current System Operating Bulletin indicates a limit of 690 MW under this condition. Studies have identified that the limit, which includes emergency capability, ranges from 490 MW to 840 MW under the most limiting outage, loss of the Big Creek1-Rector 220-kV line, and loads served from Rector ranging from 700 MW down to 250 MW respectively.

   With the RAS scheme in service, single contingency overloads were identified under maximum Big Creek hydro generation and maximum load at Rector even after tripping or running back the Eastwood and Mammoth Pool units. Additional unit tripping, unit run-back or transmission capacity will be required to mitigate the thermal loading in excess of the emergency limit on the Big Creek3-Rector 220-kV line under outage of the Big Creek1-Rector 220-kV line.

3. Double Contingency Overloads

   Several outages did not result in a power flow case convergence due to voltage limitations. These outages were examined closely and were identified to result in a significant thermal conductor overload problem even if the voltage problems are resolved. Simultaneous or overlapping outages of two lines located in the same corridor between Big Creek, Rector and Magunden result in insufficient capacity on the remaining lines to adequately serve the entire loads.

Transient Instability

1. Single Contingency

   Transient stability studies performed without implementation of the existing Big Creek RAS determined that the thermal limitations identified when the RAS scheme is not in service or the SEL-68 stability relay is not available are more restrictive than the limitations identified for system instability. As a result, the limitations identified for thermal overload will be imposed on the Big Creek hydro units when the Big Creek RAS is not in service or when the SEL-68 stability relay is not available.

   With the RAS scheme in service, continued load growth will result in system instability under outage of the Big Creek3-Rector 220-kV line even after tripping the existing Big Creek generation participating in the RAS. Under this outage, system instability was identified when the collective Big Creek Project output is in excess of 975 MW with Rector load levels less than or equal to 550 MW and 950 MW with Rector load levels greater than 550 MW. In addition, a number of single outages were identified to remain stable but experienced a significantly high transient voltage deviation.

2. Double Contingency

   Transient stability studies identified undamped growing oscillations under simultaneous outage of the Big Creek1-Rector 220-kV together with the Big Creek3-Rector 220-kV and operation of the Big Creek RAS when the collective Big Creek hydro generation output is in excess of 975 MW. All other N-2 outages were found to be within criteria when the collective Big Creek hydro generation output is at maximum.

A number of options were examined to improve system performance under base case, single outage, and double outage conditions. These options included modifications to the existing Big Creek RAS, additional power system stabilizers, series compensation, line reactors, additional dynamic support, additional generation tripping, permanent load transfer and additional transmission capacity into Rector.

Results of the study identified that none of these options alone were sufficient to eliminate both the thermal overload problems and transient stability problems. As a result, four project alternatives, comprised of various elements, were examined to identify the best transmission alternative available to mitigate the identified problems. These alternatives include:

1. Line reactor (7 Ω) on Big Creek3-Rector 220-kV with 300 MVAR SVC at Rector and additional Big Creek 3 generation tripping for N-1 and Rector load shedding for N-2

2. Big Creek3-Springville 220-kV line loop into Rector with 175 MVAR SVC at Rector

3. Permanent load transfer from Rector to Springville with 200 MVAR SVC at Rector

4. Big Creek3-Springville 220-kV and Big Creek4-Springville 220-kV line loop into Rector with 75 MVAR SVC at Rector

These four project alternatives were found to be sufficient to improve overall system performance to within acceptable levels. Economic evaluation performed and summarized below identified Alternative 2 to be the most cost effective project alternative.

Project Cost Comparisons
(Net Present-Worth in millions)

	Alternative One	**Alternative Two**	**Alternative Three**	**Alternative Four**
Annual Carrying Charges	$79.40	$52.78	$103.97	$71.48
Line Loss Savings	$2.75	$8.53	$6.27	$9.36
Total:	$76.65	$44.26	$97.71	$62.12
Value of Service	$2.0	$0.0	$0.0	$0.0

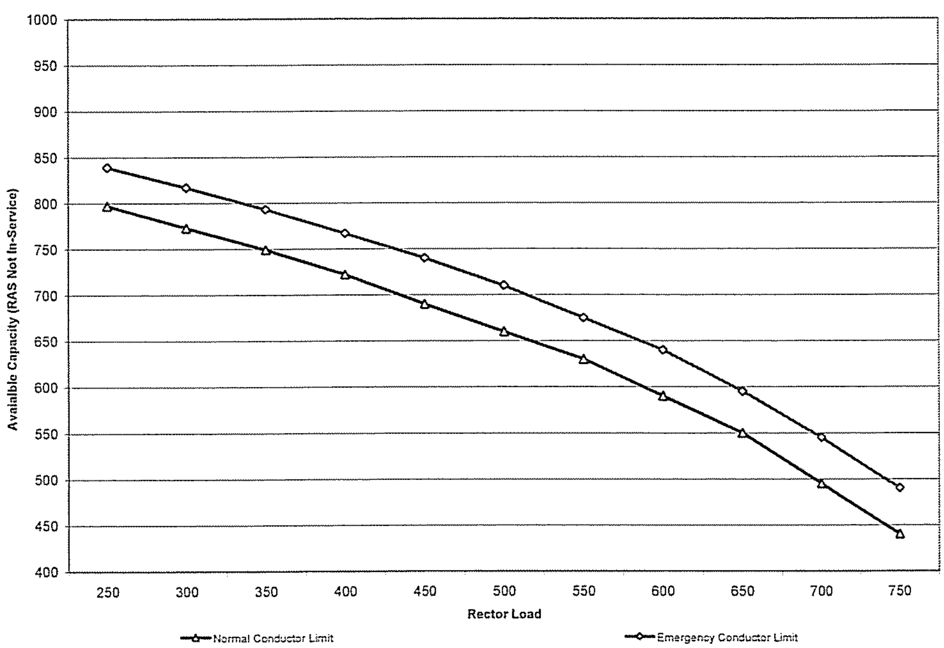
RECOMMENDATION

SCE recommends project Alternative 2 as the most economic project alternative required to improve system performance in the San Joaquin Valley to within acceptable levels. This project alternative will eliminate base case, single

contingency and double contingency thermal overload problems as well as transient stability problems identified under loss of one or two transmission facilities.
The following recommendations are also made until such time that the recommended project alternative is put in service:

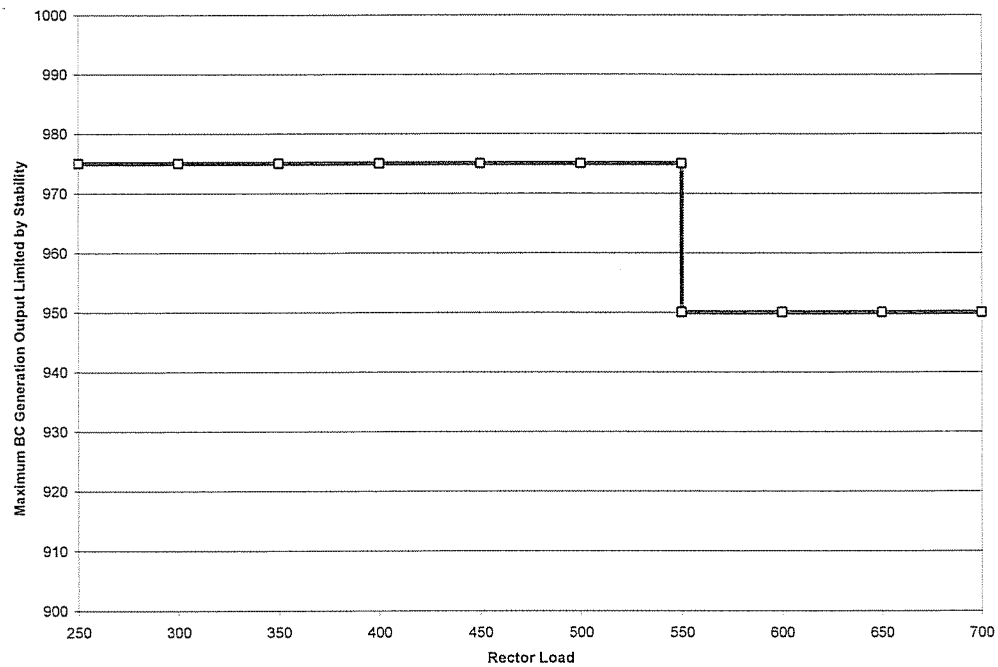
1. Revise existing System Operating Bulletin 204 to include implementation of Operating Nomogram, which limits the collective Big Creek hydro generation based on load served out of Rector when the Big Creek RAS is not in service **or** the SEL-68 stability relay located at the Magunden 220-kV substation is not available. The limitation will range from 840 MW down to 545 MW with load served out of Rector ranging from 250 MW up to
700 MW as shown below.

Operating Nomogram limiting Big Creek Hydro Generation
When the Big Creek RAS or SEL-68 Stability Relay are not Available



2. Limit the collective Big Creek hydro generation output to no more than 975 MW with Rector loads less than or equal to 550 MW and 950 MW with loads served out of Rector greater than 550 MW as shown below:

Available Capacity for Big Creek Hydro Generation
With Big Creek RAS and SEL-68 Stability Relay In-Service



3. To avoid potential voltage collapse in the area, implement an Operating Procedure for loss of any one Big Creek-Rector 220-kV line if the line cannot be restored within one-hour. The Operating Procedure will call for transferring as much load as possible from Rector to Springville. If loads at Rector are still above 430 MW, load shedding will be initiated until the Rector A-Bank load is reduced down to 430 MW.

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SAN JOAQUIN VALLEY
COMPREHENSIVE TRANSMISSION STUDY
April 29, 2004

A. INTRODUCTION

The San Joaquin Valley load is served from three 230/66 kV substations located in Tulare County. These substations serve the communities of Delano, Hanford, Lindsay, Porterville, Tulare, Visalia and surrounding areas. Localized non-coincident load forecast for these three 230/66 kV substations, including a 1-in-10 year heat wave assumption, was identified as 1,076 MW in 2004, 1,149 MW in 2008, and 1,243 MW by 2013. Adjusted coincident load, including a 1-in-10 year heat wave assumption, was identified as 993 MW in 2004, 1,072 MW in 2008, and 1,159 MW in 2013. Energy requirements for the San Joaquin Valley is provided from resources located within the San Joaquin Valley and/or from resources outside the valley that are imported using 220-kV transmission lines that connect to the main SCE network at SCE's Vincent and Pardee substations.

The generation resources located electrically within the San Joaquin Valley includes the Big Creek hydro project, which contains seven hydraulic power plants (utility-owned) to the north in Fresno County. The hydraulic power plants include Big Creek 1, 2, 3, 4, 8, Mammoth Pool, and Eastwood. Eastwood is unique in that it is a pump storage facility with a maximum generation capacity of 207 MW and a maximum pump load of 185 MW. Generation output from these power plants is delivered to the San Joaquin Valley load centers by four 220-kV transmission lines running south, two to Rector and two to Springville.

In addition to utility owned generation (Big Creek Hydro), the San Joaquin Valley contains one market generation participant, the former 56 MW Qualified Facility (QF) Pandol unit, and one major QF, the 41 MW Ultragen unit. Both of these generation resources are located in the Vestal 66 kV system. The sum total of all available generation resources in the San Joaquin Valley, excluding the Pandol 56 MW market generation, is approximately 1,056 MW, which is less than 2008 coincident load forecast. To meet growing load demands, additional power is imported from generation resources located south of Magunden.

B. ASSUMPTIONS

This study was performed with new Big Creek Hydro Generation Dynamics data and the revised load forecast to reflect localized coincident load conditions. The following are the assumptions utilized in this assessment:

Big Creek Hydro Generation Dynamics Data

Southern California Edison, as a member of the Western Electric Coordinating Council (WECC), was required to provide generation, exciter, and governor data to be used in the General Electric Positive Sequence Load Flow and Dynamic Stability program (GE PSLF) for power flow and transient stability studies. On-site testing of the individual units was required to obtain the dynamic behavior and corresponding data of each unit. The main tests performed were:

- Measurement of the open circuit magnetization curve of the generator
- Trips of the main circuit breaker with the excitation system in "manual" mode, a DC power supply, to estimate generator direct axis reactances and time constants
- Trips of the main circuit breaker with the excitation system in "auto" mode to estimate the excitation system parameters
- Frequency response test of the automatic voltage regulator / exciter / generator loop to estimate excitation system parameters
- Voltage step response tests of the automatic voltage regulator / exciter / generator loop to estimate excitation system parameters
- Trips of the main circuit breaker at moderate load to estimate the governor parameters
- Governor step responses to changes in operating setpoint to estimate the governor parameters

Dynamic simulation models were derived from the above tests performed and implemented into this year's study. Corresponding data is provided on

Table 1 through Table 4.

Generation Assumptions

In order to properly identify stability problems associated with generation, stability studies were performed under a number of load conditions and various generation patterns within the San Joaquin Valley. These generation patterns varied Big Creek generation levels from 850 MW up to 1,025 MW. A comparison of previous Big Creek Hydro generation and revised Big Creek hydro data indicates a maximum output increase of approximately 60 MW, 1,029 MW compared to approximately 972 MW. A summary of the available generation resources is provided in Table 5.

Load Assumptions

Loads in the San Joaquin Valley are served out of the Rector, Springville and Vestal subtransmission systems. The total San Joaquin Valley coincident forecast, including a 1-in-10 year heat adjustment, ranged from 993 MW in 2004 to 1,072 MW in 2008. The individual substation load forecast was found to be slightly higher since individual station peaks do not occur at the same time. The coincident load forecast for Rector, Springville, and Vestal are provided in Table 6 with individual A-station peak forecast provided in Table 7.

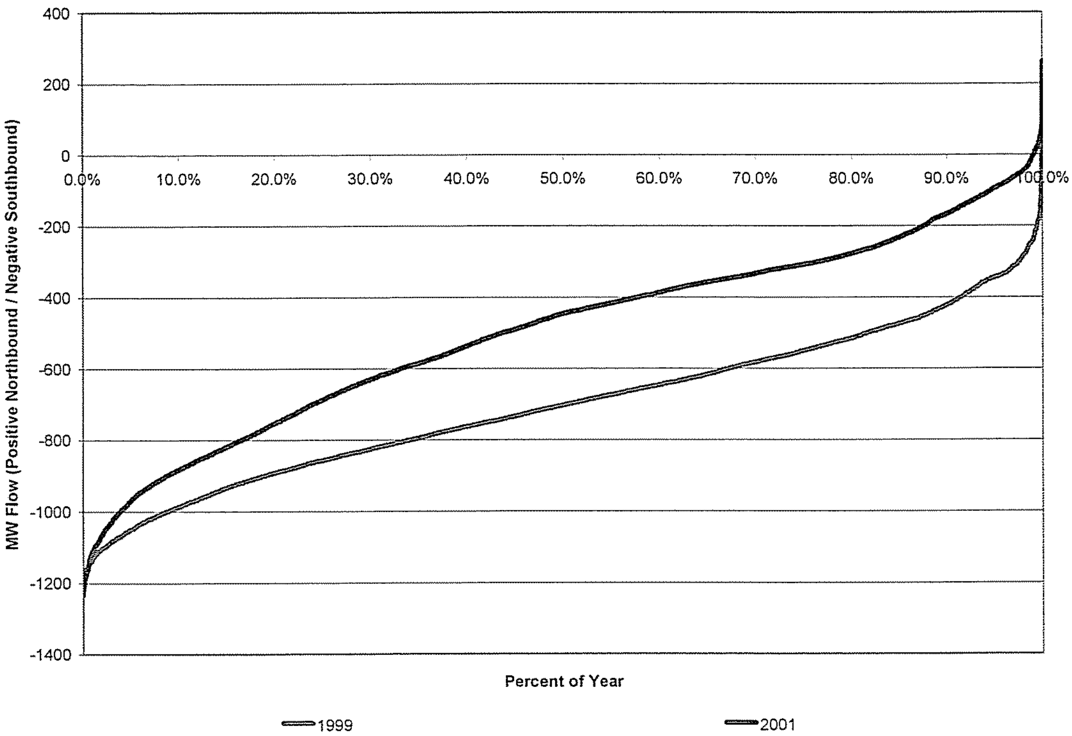
WECC Induction Load Representation

WECC mandates the implementation of an induction load model with an assumed 20% induction representation. Since the Rector load is comprised of significant agricultural pumping, the induction load model was implemented by assuming 10% of the total Rector load was small motor and A/C and the remaining 10% of the total Rector load was large three-phase motors with under-voltage protection set to trip in 6-cycles if voltages drop below 0.8 per-unit.

South of Magunden Flows

South of Magunden power flows range from 620 MW to 1,220 MW depending on generation and load assumptions implemented. These flow patterns adequately reflect historic metered data for south of Magunden as shown below in Figure 1.

Figure 1
Historic South of Magunden Flows



System Protection

Transient stability studies were performed assuming both three-phase and single-phase-to-ground bus faults. Positive sequence and zero sequence impedances utilized to model single-phase-to-ground faults were provided by System Protection and are shown in Table 8.

Normal fault clearing was modeled by opening transmission line(s) 6-cycles after fault and removing fault. Stuck breaker fault clearing was modeled by opening transmission line(s) 6-cycles after fault since one end is expected to open followed by removing fault in 15-cycles since breaker failure relays will open adjacent breakers thereby clearing fault.

C. BIG CREEK SPECIAL PROTECTION SCHEME (SOB 204)

The following provides a brief summary of the existing Special Protective Scheme for N-1 and N-2 conditions in the San Joaquin Valley:

1. An overload of the following lines will initiate an automatic runback of the generating units at Mammoth Pool and/or Eastwood. Eastwood will not runback if in pump mode.

    - Big Creek 1 – Rector 230 kV
    - Big Creek 3 – Rector 230 kV

2. Simultaneous outage of lines on the same right of way (N-2) will trip the generating units at Mammoth Pool and/or Eastwood. Eastwood will not be tripped if in pump mode. The following nine combinations are considered to be in the same right of way and are included in the SPS.

    - Big Creek 1-Rector & Big Creek 3-Rector 230 kV
    - Big Creek 1-Rector & Big Creek 3-Springville 230 kV
    - Big Creek 1-Rector & Big Creek 4-Springville 230 kV
    - Big Creek 3-Rector & Big Creek 3-Springville 230 kV
    - Big Creek 3-Rector & Big Creek 4-Springville 230 kV
    - Big Creek 3-Springville & Big Creek 4-Springville 230 kV
    - Rector-Vestal No.1 & Rector-Vestal No.2 230 kV
    - Magunden-Springville No.1 & Magunden-Springville No.2 230 kV
    - Magunden-Vestal No.1 & Magunden-Vestal No.2 230 kV

3. An SEL-68 stability relay located at Magunden will run-back the generating units at Mammoth Pool and/or Eastwood for growing oscillations and trip for unstable power swings. Eastwood will not be tripped if in pump mode.

At any time that the Big Creek and San Joaquin Valley RAS are inoperative or if the SEL-68 stability relay at Magunden is unavailable, the following limitations will apply:

- Big Creek Project (Big Creek 1, 2, 3, 4, 8, Mammoth Pool, and Eastwood) net output is limited to 690 MW.
- The power flow south of Magunden Substation is limited to 1180 MW with all five (5) 230 KV lines in service.

Operating Procedure

An operating procedure has been implemented in the San Joaquin Valley to limit post transient voltage deviations at Rector. If either the Big Creek 1-Rector 230 kV or the Big Creek 3-Rector 230 kV is out-of-service (forced out or out for maintenance) and the Rector load is at or above 450 MW, a maximum of 110 MW of Rector load will be rolled to Springville in order to prevent potential voltage problems during an overlapping N-2 of the Big Creek 1-Rector and Big Creek 3-Rector 230 kV transmission lines.

D. STUDY METHODOLOGY

This assessment considered numerous system conditions in order to fully address adequacy of service to the San Joaquin Valley, adequacy of system to export full generation output and adequacy of existing Special Protective Schemes and Operating Procedures. The assessment evaluated steady state, post-transient, and transient stability system performance under base case (N-0), single outage (N-1) and likely double outage (N-2) conditions in the San Joaquin Valley including implementation of existing Special Protective Schemes and Operating Procedures. Transmission line ratings modeled were based on the most limiting element of a transmission line. For this reason, a separate review by the Substation Equipment Replacement Program (SERP) was not necessary.

All single and likely double outage conditions were examined in the San Joaquin Valley for steady state and transient stability violations.

Power Flow Studies

Previous assessments have demonstrated deficiencies in the San Joaquin Valley as a result of load growth. For this reason, detailed studies were performed for the San Joaquin Valley which considered different load patterns in the San Joaquin Valley with maximum Big Creek hydro generation. These detailed studies evaluated the Big Creek run-back scheme that is currently in place to mitigate overloads on the two lines from the Big Creek area to Rector as well as focused on identifying need for transmission system reinforcements to serve load.

Transient Stability Studies

Transient stability studies performed for San Joaquin Valley evaluated load changes with various levels of generation output from the Big Creek generation plants. These studies were performed in order to fully evaluate the revised Big Creek dynamic representation and determine corresponding system stability limitations.

Post-Transient Voltage Studies

The power flow study voltage results were utilized as a screen to identify those contingencies that may require additional post-transient voltage studies. Contingencies identified in the power flow to have a voltage drop in excess of 5% for single and double contingencies or that did not converge were selected for post-transient simulation.

Short-Circuit Duty Studies

Short-circuit duty studies were performed only if study results indicated need for additional transmission infrastructure that could change the current system configuration or increase the existing short-circuit duty results.

E. POWER FLOW STUDY RESULTS

Base Case Power Flow Results

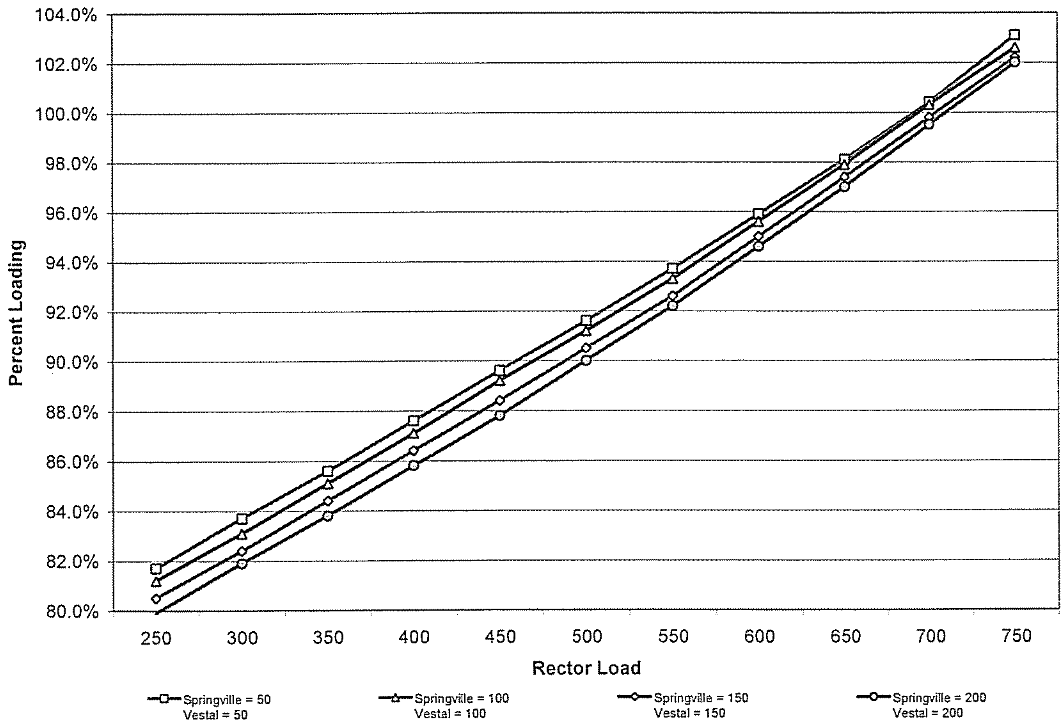
Load growth in the San Joaquin Valley has resulted in disproportionate loading of the transmission facilities that transmit power from Big Creek to the load. With continued load growth, the amount of disproportionate loading will continue to increase to the point where base case overloads may be experienced under maximum load and generation conditions.

Power flow studies were conducted to identify loading conditions that would drive a potential base case overload problem and determine if such a condition could occur during the next 10 years. These studies considered four different load levels at Springville and Vestal with both substation loads assumed to be identical since load forecast for these two sites are very close while loads served out of Rector were varied from 250 MW to 750 MW. The results of the study indicate that a base case overload problem may be experienced on the Big Creek3-Rector 220-kV line as early as 2009 or when the Rector loads exceed 700 MW as shown below in Figure 2.

Figure 2

Loading (percent) on the Big Creek3-Rector 220-kV Line Under Base Case with All Facilities In-Service

(Maximum Big Creek Generation Output)



Power Flow plots covering Springville and Vestal load levels of 50 MW, 100 MW, 150 MW and 200 MW are included in Appendix A-1, A-2, A-3 and A-4 respectively.

Overloads on the Big Creek3-Rector 220-kV line can be experienced sooner with lower Springville load levels **or** higher Vestal load levels. Studies demonstrate that lowering the Springville loads from 200 MW to 150 MW while maintaining the Vestal load at 200 MW results in loading the

Big Creek3-Rector 220-kV line up to the maximum allowable limit by 2007 or when the Rector loads are 680 MW. Conversely, studies demonstrate that maintaining Springville loads at 200 MW while increasing Vestal loads from 200 MW to 250 MW also results in loading the Big Creek3-Rector 220-kV line up to the maximum allowable limit by year 2007. Power flow plots illustrating these findings are included in

Appendix A-5.

Single Contingency Power Flow Results with RAS In-Service

The existing Big Creek RAS includes a thermal overload protective feature that runs back the Eastwood and Mammoth units to avoid overloading either the Big Creek1-Rector 220-kV or Big Creek3-Rector 220-kV lines. The maximum amount of generation currently participating in the run-back scheme is 394 MW. With operation of the run-back scheme, the remaining Big Creek units can potentially deliver a maximum output of 631 MW. The following is a discussion of each single contingency evaluated in the San Joaquin Valley:

1. *Loss of Big Creek1-Rector 220-kV*

   The disproportionate loading of the transmission facilities that transmit power from Big Creek to the load results in this outage being the most restrictive outage in the San Joaquin Valley. Under this outage and operation of the existing Big Creek run-back scheme, loading on the Big Creek3-Rector 220-kV line was found to exceed the emergency limit when generation output at Big Creek is sufficiently high. Studies evaluated the system under maximum historical metered collective output of 1,000 MW at Big Creek and found that loading on the Big Creek3-Rector 230kV transmission line was in excess of the emergency limit when the net loads served out of Rector are greater than 650 MW.

2. *Loss of Big Creek3-Rector 220-kV*

   Under this outage condition and operation of the existing Big Creek run-back scheme, loading on the Big Creek1-Rector 220-kV line was found to exceed the emergency limit when generation output at Big Creek is sufficiently high. Studies evaluated the system under maximum historical metered collective output of 1,000 MW at Big Creek and found that loading on the Big Creek1-Rector 230kV transmission line was in excess of the emergency limit when the net loads served out of Rector are greater than 675 MW.

3. *Loss of Big Creek3-Springville 220-kV*

Under this outage condition and operation of the existing Big Creek run-back scheme, the existing Big Creek run-back scheme is sufficient to mitigate any thermal overload problem. With run-back of 394 MW, the highest loading was found to be 78% of normal Big Creek3-Rector 220-kV line conductor rating.

4. *Loss of Big Creek4-Springville 220-kV*

   Under this outage condition and operation of the existing Big Creek run-back scheme, the existing Big Creek run-back scheme is sufficient to mitigate any thermal overload problem. With run-back of 394 MW, the highest loading was found to be 78% of normal Big Creek3-Rector 220-kV line conductor rating.

5. *Loss of one Springville-Magunden 220-kV*

   Under loss of either Springville-Magunden 220-kV line, no overloads in excess of the emergency ratings were identified. The highest loading was found to be 104% of normal Big Creek3-Rector 220-kV line conductor rating.

6. *Loss of one Rector-Vestal 220-kV*

   Under loss of either Rector-Vestal 220-kV line, no overloads in excess of the emergency ratings were identified. The highest loading was found to be 104% of normal Big Creek3-Rector 220-kV line conductor rating.

7. *Loss of one Vestal-Magunden 220-kV*

   Under loss of either Rector-Vestal 220-kV line, no overloads in excess of the emergency ratings were identified. The highest loading was found to be 104% of normal Big Creek3-Rector 220-kV line conductor rating.

In order to mitigate the two single contingencies overloads identified even after operation of the existing Big Creek run-back scheme, additional Big Creek hydro generation limitations or additional system reinforcement will be required. Further discussion on both of these possible mitigation alternatives is provided in the section below labeled Mitigation Studies. Power flow plots illustrating findings for the worst outage, loss of Big

Creek1-Rector 220-kV, are included in Appendix B-1. Power flow results for each outage condition are shown below in Figure 3 and Figure 4.

Figure 3
Percent Loading on Limiting Transmission Lines
Under Various South of Big Creek Outage Conditions

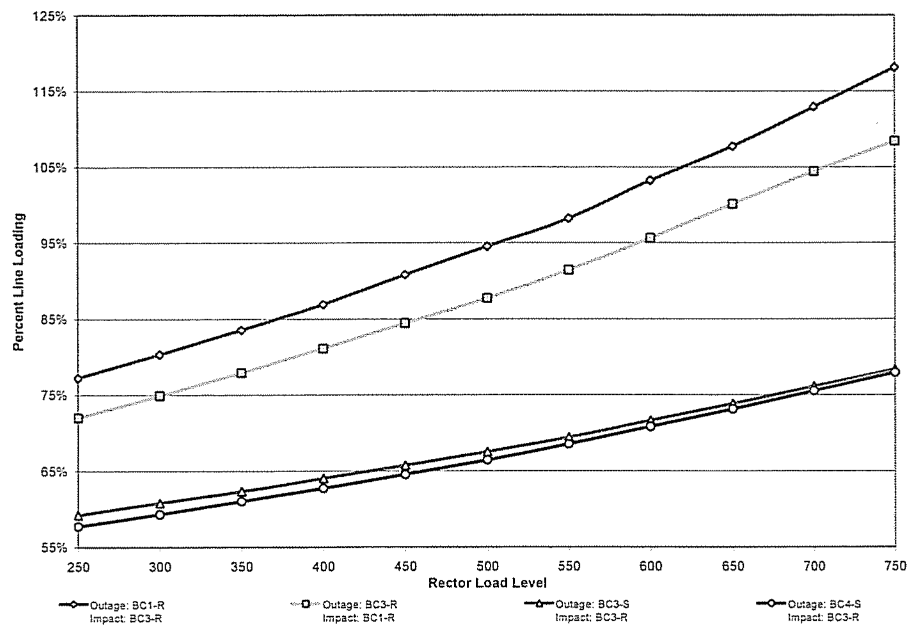
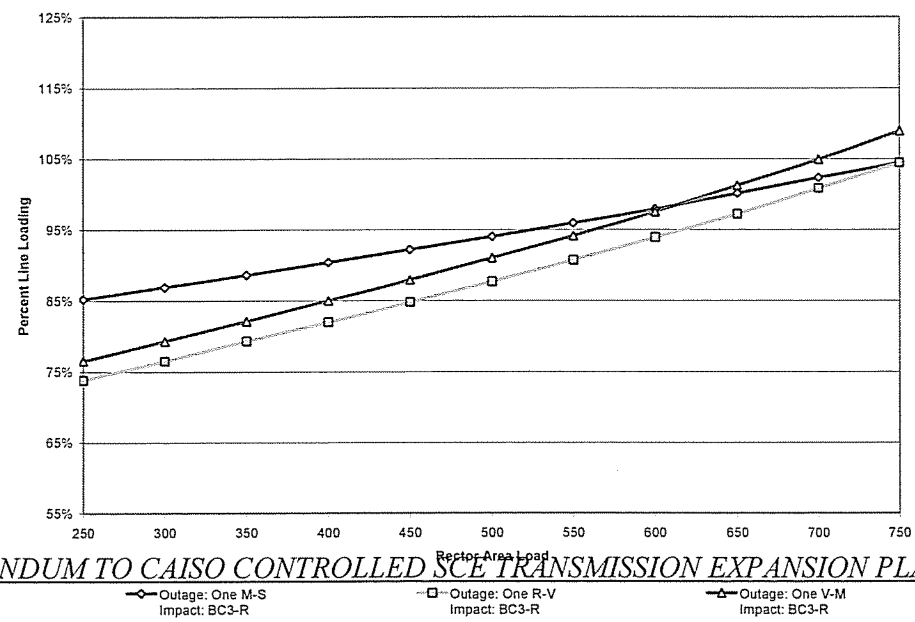


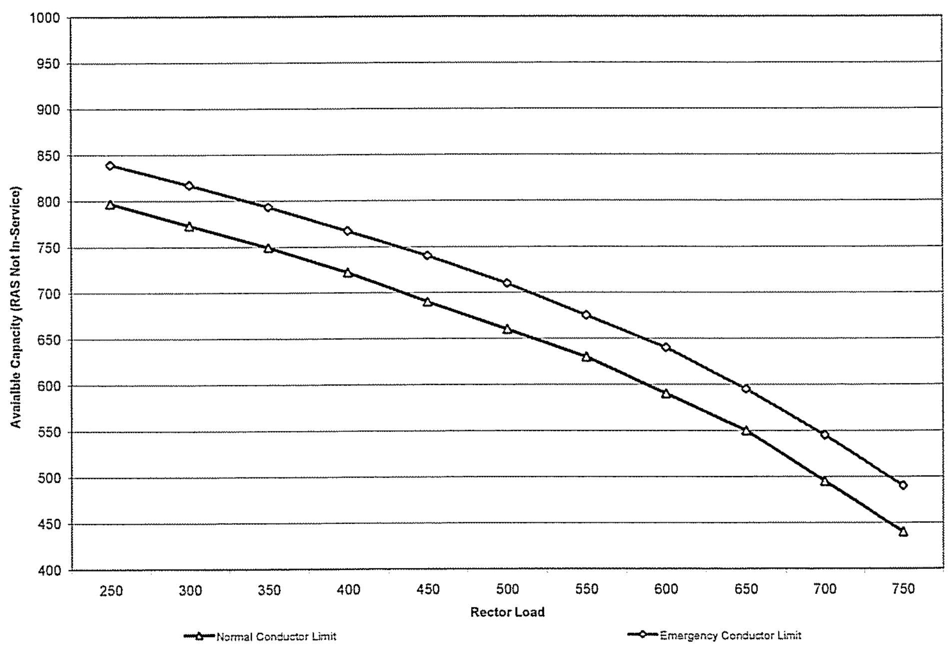
Figure 4
Percent Loading on Limiting Transmission Lines
Under Various South of Rector and Springville Outage Conditions



Single Contingency Power Flow Results with RAS Not-in-Service

If the RAS are inoperative or if the SEL-68 stability relay at Magunden is unavailable, the amount of available capacity for the Big Creek Project is limited to ensure safe and reliable operation following single outage conditions. The existing Big Creek RAS (System Operating Bulletin 204) identifies a collective Big Creek generation output limitation of 690 MW if the RAS are inoperative or if the SEL-68 stability relay at Magunden is unavailable. Power flow studies have determined that the 690 MW limit is insufficient under several outage condition. As shown below in Figure 5, the available normal capacity under the most limiting outage condition ranges from 490 MW to 840 MW, which includes the use of emergency capacity, with loads served out of Rector ranging from 750 MW down to 250 MW respectively. Power Flow plots for both normal and emergency limits are provided in Appendix B-2 and B-3 respectively.

Figure 5
Available Capacity Under Outage of Big Creek1-Rector 220-kV Line
(Existing Big Creek RAS or Unit Run-Back Not In-Service)



Double Contingency Power Flow Results with RAS In-Service

The existing Big Creek RAS results in tripping the Mammoth Pool and/or Eastwood generation units for loss of any two lines in the same corridor. With the RAS in-service, several double contingency cases resulted in thermal overload and voltage problems. The thermal overload problems are associated with the amount of load served out of Rector and the combined loads served out of Rector and Vestal. By year 2013, loads served out of Rector will exceed 700 MW on a localized coincident forecast while the combined loads served out of Rector and Vestal will exceed 930 MW on a localized coincident forecast.

QF Generation located within the Vestal subtransmission system has demonstrated a dependable output of approximately 40 MW. In addition to the QF generation, a 56 MW market generator is located within the Vestal 66-kV subtransmission system (Pandol) but was not dispatched consistent with CAISO planning practice requiring largest market generation in local area to be off-line. With inclusion of the QF generation, the net combined loads served out of Rector and Vestal will exceed 880 MW on a localized coincident forecast by year 2013.

A discussion of the results for each likely N-2 outage condition north of Magunden follows. Power flow plots for those outages that converged are provided in Appendix B-4.

1. *Big Creek1-Rector 220-kV & Big Creek3-Rector 220-kV*

   With operation of the Big Creek RAS, steady-state voltage and thermal loading problem under this outage condition were identified.

   Voltage Problem

   Power flow studies resulted in case non-convergence when the net combined loads modeled at Rector and Vestal were in excess of 560 MW. Such case non-convergence is likely associated with voltage collapse in the area since prior studies have identified a post-transient voltage criteria violation under this outage condition. Additional discussion is provided in the sections that address transient stability and post-transient voltage study results.

Thermal Problem

Under this outage condition, the combined loads served out of Rector and Vestal are fed radial from Magunden by the two Magunden-Vestal 220-kV lines. These lines are both rated at 353 MVA and 373 MVA under normal and emergency conditions respectively. The total amount of thermal capacity available under this outage condition is 740 MVA, which takes into account emergency capability and is limited due to loading imbalance as a result of the impedance mismatch on the two lines. Load rolling between Rector/Vestal and Springville is limited to approximately 50 MW. However, continued load growth in Springville may eliminate any possible load rolling capability in the future and as a result, the currently available capacity should not be counted as "available" by year 2013.

With such system constraints, the existing system does not provide sufficient thermal capacity to adequately serve the entire loads out of Rector and Vestal under loss of both Big Creek-Rector 220-kV lines. Such a conclusion can be reached even though power flow studies did not converge by taking into account line ratings and impedance and utilizing current divider equations to identify maximum thermal capacity available under loss of the two lines. Up to 140 MW of load may be subjected to interruption due to thermal problems if the voltage problems are resolved without additional capacity. Additional thermal capacity or load shedding will be required in order to mitigate this thermal overload problem.

2. *Big Creek1-Rector 220-kV & Big Creek3-Springville 220-kV*

With operation of the Big Creek RAS, power flow studies identified a thermal loading problem under this outage condition. Loads in the San Joaquin Valley are fed from Big Creek via the remaining two lines and from Magunden via four 220-kV lines under this outage. Loading on the Big Creek3-Rector 220-kV line was identified to be above the emergency limit when the loads at Rector exceed 325 MW and the remaining Big Creek hydro units, after operation of the Big Creek RAS, are at their maximum output.

Studies performed which considered year 2013 load forecast identified thermal loading of up to 136.7% on the Big Creek3-Rector 230-line. Emergency rating is limited to 105.7% due to ground clearance. In order to eliminate this overload, the Big Creek hydro generation output from the units that are not presently participating in the RAS needs to be limited to no more than 450 MW. However, manual curtailment after loss of both lines is not appropriate since the overload is extreme and could potentially result in a safety problem due to inadequate minimum ground clearances or could lead to wide spread splice failures. As a result, congestion in advance of the N-2, additional generation tripping or additional transmission capacity will be required for this outage condition.

3. *Big Creek1-Rector 220-kV & Big Creek4-Springville 220-kV*

With operation of the Big Creek RAS, power flow studies identified a thermal loading problem under this outage condition. Loads in the San Joaquin Valley are fed from Big Creek via the remaining two lines and from Magunden via four 220-kV lines under this outage. Loading on the Big Creek3-Rector 220-kV line was identified to be above the emergency limit when the loads at Rector exceed 400 MW and the remaining Big Creek hydro units are at their maximum output.

Studies performed which considered year 2013 load forecast identified thermal loading of up to 133.7% on the Big Creek3-Rector 230-line. For the same reasons discussed above, congestion in advance of the N-2, additional generation tripping or additional transmission capacity will be required for this outage condition.

4. *Big Creek3-Rector 220-kV & Big Creek3-Springville 220-kV*

With operation of the Big Creek RAS, power flow studies identified a thermal loading problem under this outage condition. Loads in the San Joaquin Valley are fed from Big Creek via the remaining two lines and from Magunden via four 220-kV lines under this outage. Loading on the Big Creek1-Rector 220-kV line was identified to be above the emergency limit when the loads at Rector exceed 485 MW and the remaining Big Creek hydro units are at their maximum output.

Studies performed which considered year 2013 load forecast identified thermal loading of up to 130.5% on the Big Creek1-Rector 230-line. For the same reasons discussed above, congestion in advance of the N-2, additional generation tripping or additional transmission capacity will be required for this outage condition.

5. *Big Creek3-Rector 220-kV & Big Creek4-Springville 220-kV*

With operation of the Big Creek RAS, power flow studies identified steady-state voltage and thermal loading problem under this outage condition.

Voltage Problem

Under this outage condition, steady-state power flow studies identified bus voltages that exceeded a 10% voltage drop at Rector and Vestal. This outage will be further evaluated in the post-transient timeframe to identify if this outage results in a transient voltage criteria violation.

Thermal Problem

Under this outage condition, loads in the San Joaquin Valley are fed from Big Creek via the remaining two lines and from Magunden via four 220-kV lines under this outage. Loading on the Big Creek1-Rector 220-kV line was identified to be above the emergency limit when the loads at Rector exceed 525 MW and the remaining Big Creek hydro units after operation of the Big Creek RAS are at their maximum output.

Studies performed which considered year 2013 load forecast identified thermal loading of up to 127.8% on the Big Creek1-Rector 230-line. For the same reasons discussed above, congestion in advance of the N-2, additional generation tripping or additional transmission capacity will be required for this outage condition.

6. *Big Creek3-Springville 220-kV & Big Creek4-Springville 220-kV*

With operation of the Big Creek RAS, power flow studies did not identify any steady-state voltage or thermal loading problems under this outage condition.

7. *Rector-Vestal No.1 & No.2 220-kV*

With operation of the Big Creek RAS, power flow studies identified steady-state voltage and thermal loading problem under this outage condition.

Voltage Problem

Power flow studies resulted in case non-convergence when the load modeled at Rector was in excess of 615 MW. Such case non-convergence is likely associated with voltage collapse at Rector. Additional discussion is provided in the sections that address transient stability and post-transient voltage study results.

Thermal Problem

Under this outage condition, the loads served out of Rector are fed radial from Big Creek by the two Big Creek-Rector 220-kV lines. These lines are both rated at 353 MVA and 373 MVA under normal and emergency conditions respectively. The total amount of thermal capacity available under this outage condition is 680 MVA, which takes into account emergency capability and is limited due to loading imbalance as a result of the impedance mismatch on the two lines.

The existing system does not provide sufficient capacity to adequately serve the entire loads out of Rector under loss of both Rector-Vestal 220-kV lines. If the two lines can be evenly distributed, the maximum available capacity under emergency conditions can be increased from 680 MVA to 746 MVA. Such an increase provides sufficient thermal capacity to accommodate the total Rector load until 2013. Continued load growth will necessitate additional thermal capacity or load shedding in order to mitigate this thermal overload problem. Further discussion on possible methods to balance loading on both Big Creek-Rector 220-kV lines is provided in the section below labeled Mitigation Studies.

8. *Magunden-Springville No.1 & No.2 220-kV*

   With operation of the Big Creek RAS, power flow studies did not identify any steady-state voltage or thermal loading problems under this outage condition.

9. *Magunden-Vestal No.1 & No.2 220-kV*

   With operation of the Big Creek RAS, power flow studies identified steady-state voltage and thermal loading problem under this outage condition.

Voltage Problem

Power flow studies resulted in case non-convergence when the net loads modeled at Rector and Vestal were in excess of 540 MW. Such case non-convergence is likely associated with voltage collapse at Rector. Additional discussion is provided in the sections that address transient stability and post-transient voltage study results.

Thermal Problem

Under this outage condition, the combined loads served out of Rector and Vestal are fed radial from Big Creek by the two Big Creek-Rector 220-kV lines. These lines are both rated at 353 MVA and 373 MVA under normal and emergency conditions respectively. The total amount of thermal capacity available under this outage condition is 680 MVA, which takes into account emergency capability and is limited due to loading imbalance as a result of the impedance mismatch on the two lines.

The existing system does not provide sufficient capacity to adequately serve the combined loads out of Rector and Vestal under loss of both Magunden-Vestal 220-kV lines. If the two lines can be evenly distributed, the maximum available capacity under emergency conditions can be increased from 680 MVA to 746 MVA. Such an increase is still insufficient to eliminate potential overload problems. Additional transmission capacity or load shedding will be required in order to mitigate identified thermal overload problems. Further discussion on both of these possible mitigation alternatives is provided in the section below labeled Mitigation Studies.

F. TRANSIENT STABILITY STUDY RESULTS

Single Contingency Transient Stability Analysis

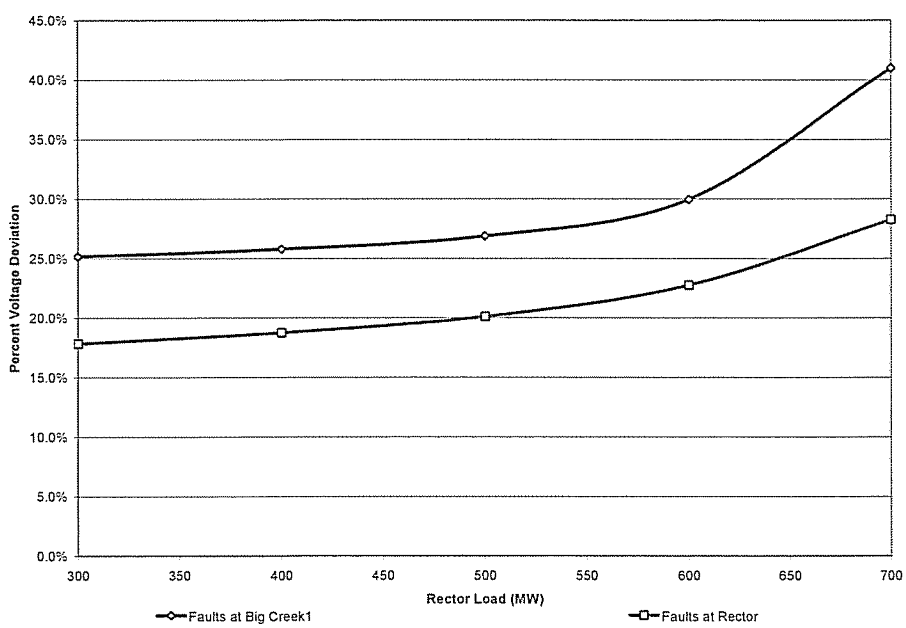
Transient stability studies for loss of one transmission line were performed initially without implementation of the existing Big Creek RAS or unit run-back to determine if the system is stable under single outage conditions when the RAS or unit run-back is not available. These studies identified that the system is not only thermally limited under single outage conditions, as discussed in the Power Flow section above, but also stability limited.

Without consideration of the existing Big Creek RAS and unit run-back scheme, transient stability studies identified that the outages which impact any of the four lines connecting Big Creek to the system are more restricted as a result of loadings in excess of line conductor emergency ratings. The following is a summary of the various single contingencies studied.

1. Loss of Big Creek1-Rector 220-kV

   Fast tripping of the Big Creek generation is required to avoid system instability under this outage when the collective Big Creek generation output is in excess of 925 MW. Use of the existing Big Creek RAS (SEL-68 stability relay at Magunden) increases the stability limit for the Big Creek Project up to the maximum historically metered Big Creek generation output of 1,000 MW. However, transient voltage deviations were found to be in excess of the WECC criteria at Rector under this outage condition as shown below in Figure 6.

Figure 6
Transient Voltage Deviation at Rector Substation
Under Outage of Big Creek1-Rector 220-kV Line
(Big Creek generation modeled at 1,000 MW)

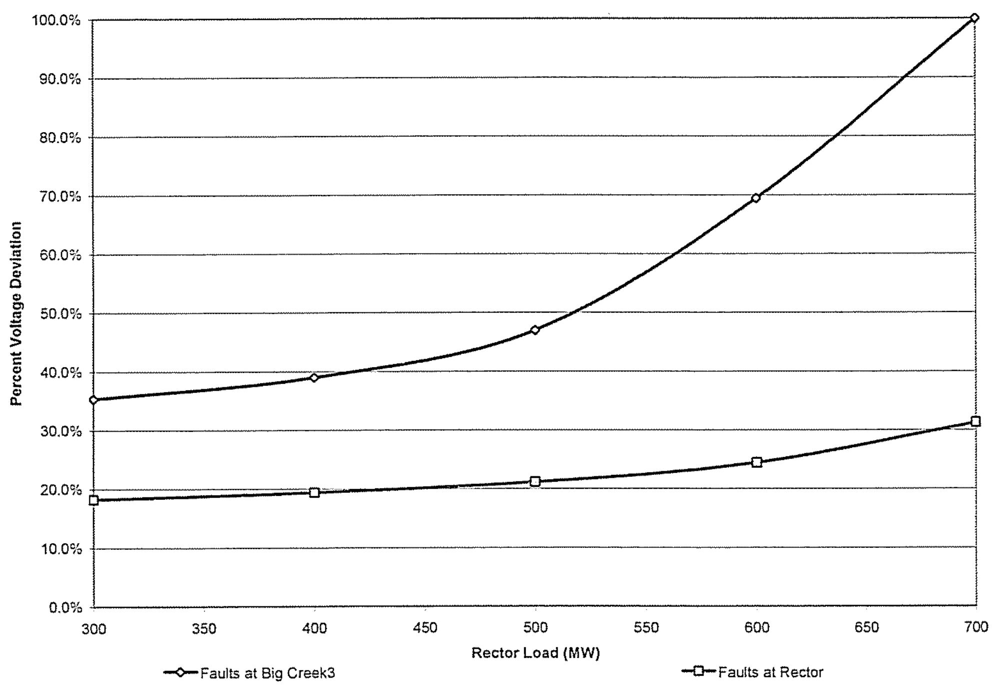


Additional system reinforcements will be required to mitigate this transient voltage deviation. Transient stability plots for this outage are included in Appendix C-1.

2. Loss of Big Creek3-Rector 220-kV

Fast tripping of the Big Creek generation is required to avoid system instability identified under this outage condition when the collective Big Creek generation output is in excess of 875 MW **and** loads served out of Rector are 550 MW or less. With loads at Rector in excess of 550 MW, the maximum amount of collective Big Creek hydro generation that can be on-line is reduced to 850 MW. Use of the existing Big Creek RAS (SEL-68 stability relay at Magunden) increases the stability limit for the Big Creek Project from 875 MW up to 975 MW with Rector load levels less than or equal to 550 MW and from 850 MW up to 950 MW with Rector load levels in excess of 550 MW. However, transient voltage deviations were found to be in excess of the WECC criteria at Rector under this outage condition as shown below in Figure 7.

Figure 7
Transient Voltage Deviation at Rector Substation
Under Outage of Big Creek3-Rector 220-kV Line
(Big Creek generation modeled at 1,000 MW)

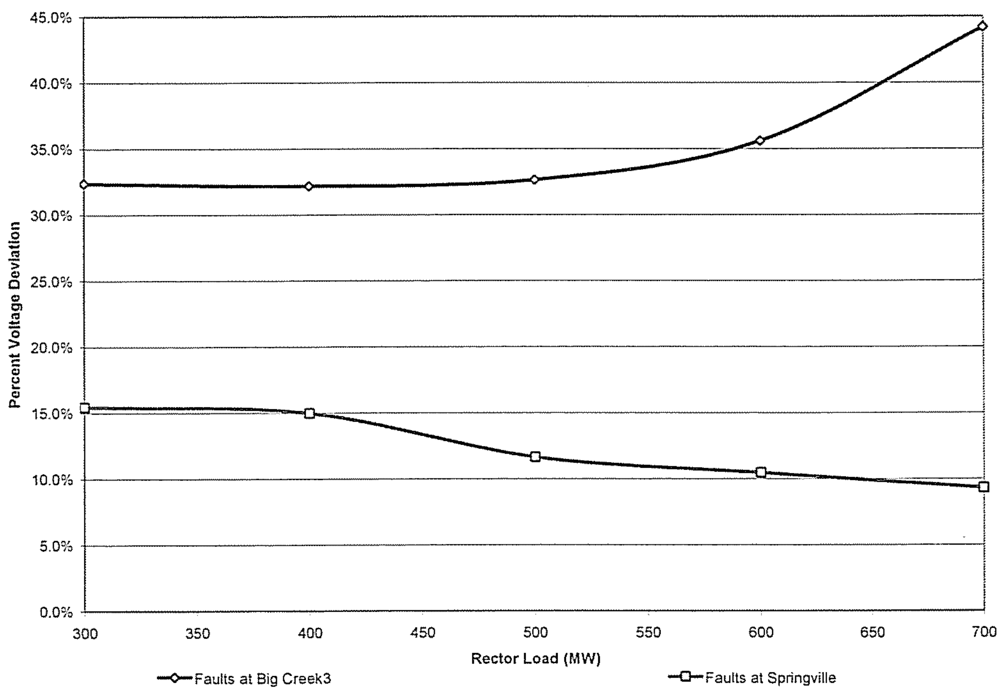


Additional system reinforcements will be required to mitigate this transient voltage deviation. Transient stability plots for this outage are included in Appendix C-2.

3. Loss of Big Creek3-Springville 220-kV

   Fast tripping of the Big Creek generation is required to avoid system instability identified under this outage condition when the collective Big Creek generation output is in excess of 925 MW. Use of the existing Big Creek RAS (SEL-68 stability relay at Magunden) increases the stability limit for the Big Creek Project up to the maximum historically metered Big Creek generation output of 1,000 MW. However, transient voltage deviations in excess of the WECC criteria were identified at Rector under this outage condition as shown below in Figure 8.

Figure 8
Transient Voltage Deviation at Rector Substation
Under Outage of Big Creek3-Springville 220-kV Line
(Big Creek generation modeled at 1,000 MW)

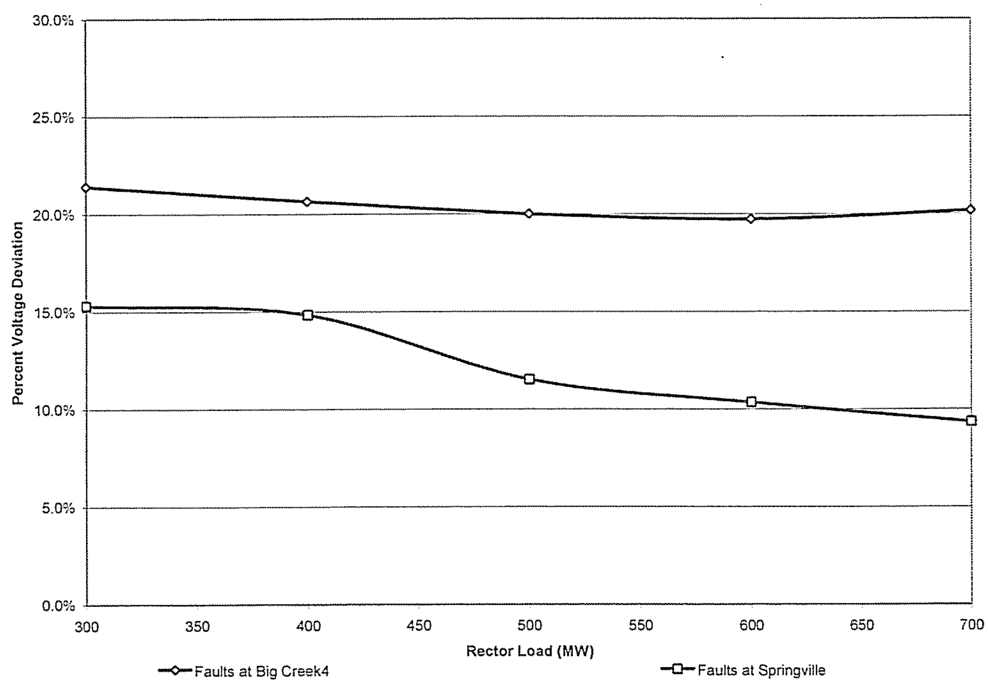


Additional system reinforcements will be required to mitigate this transient voltage deviation. Transient stability plots for this outage are included in Appendix C-3.

4. Loss of Big Creek4-Springville 220-kV

Fast tripping of the Big Creek generation is required to avoid system instability identified under this outage condition when the collective Big Creek generation output is in excess of 975 MW **and** loads served out of Rector are less than 300 MW. With loads at Rector in excess of 300 MW, the maximum amount of collective Big Creek hydro generation that can be on-line without system instability is increased from 975 MW to 1,000 MW. Use of the existing Big Creek RAS (SEL-68 stability relay at Magunden) increases the stability limit for the Big Creek Project to the maximum historical recorded peak value under all load conditions. Transient voltage deviations were found to be within WECC criteria under this outage condition as shown below in Figure 9.

Figure 9
Transient Voltage Deviation at Rector Substation
Under Outage of Big Creek4-Springville 220-kV Line
(Big Creek generation modeled at 1,000 MW)

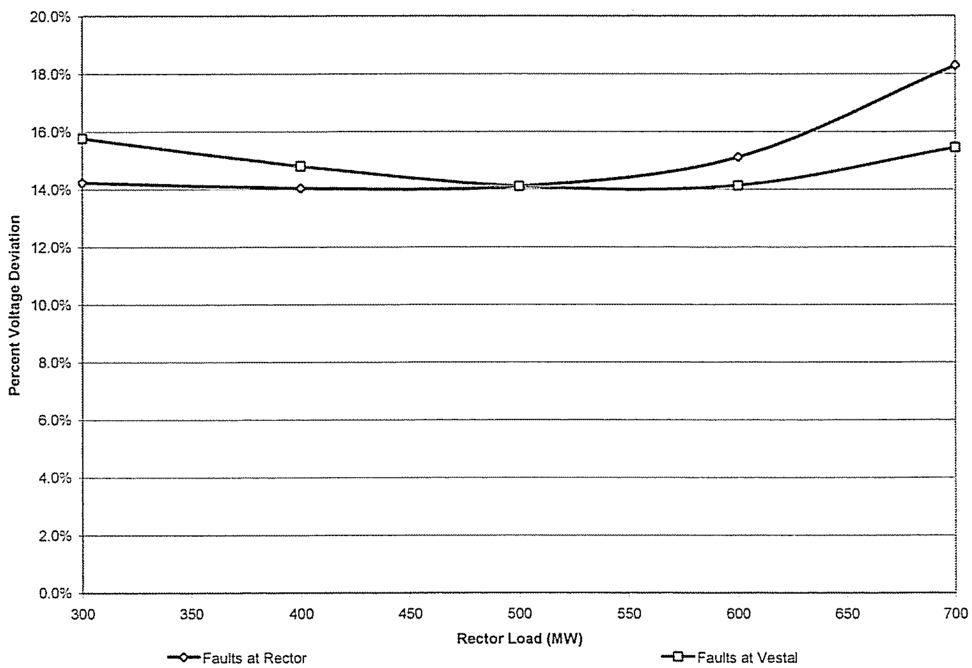


Additional system reinforcements will be required to mitigate this transient voltage deviation. Transient stability plots for this outage are included in Appendix C-4.

5. Loss of one Rector-Vestal 220-kV

   Loss of the Rector-Vestal No.1 or No.2 220-kV line does not result in system instability and therefore does not initiate operation of the existing SEL-68 stability relay located at Magunden. Transient voltage deviations were found to be within WECC criteria under this outage condition as shown below in Figure 10.

Figure 10
Transient Voltage Deviation at Rector Substation
Under Outage of Rector-Vestal No.1 220-kV Line
(Big Creek generation modeled at 1,000 MW)



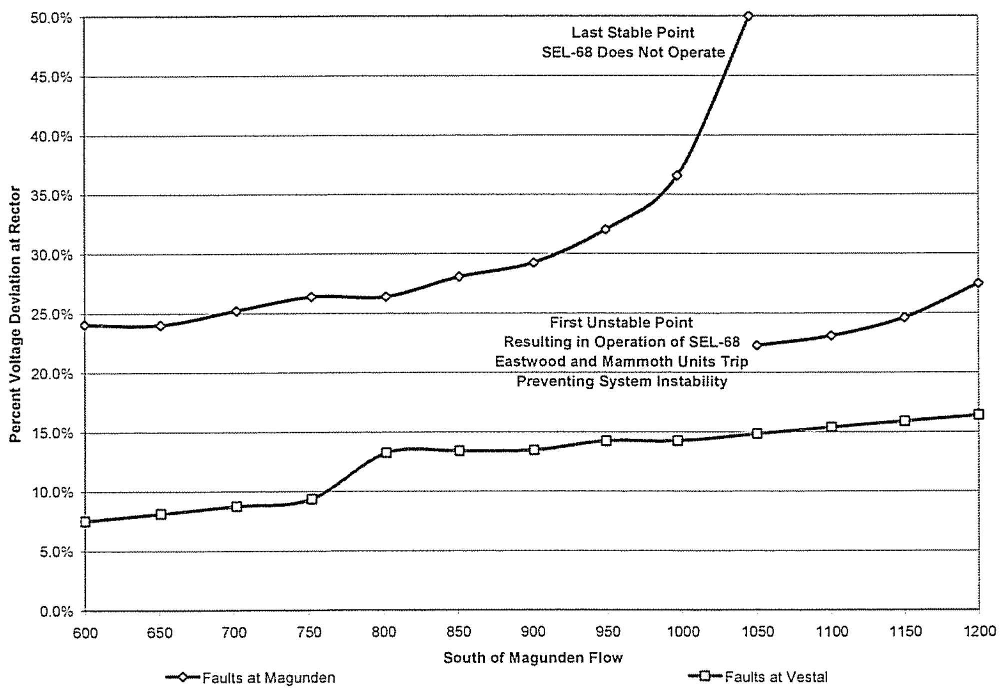
Additional system reinforcements will be required to mitigate this transient voltage deviation. Transient stability plots for this outage are included in Appendix C-5.

6. Loss of one Magunden- Springville 220-kV

   Loss of the Magunden-Springville No.1 or No.2 220-kV line results in system instability when faults are applied at the Magunden end of the line and south of Magunden flows are in excess of 1,050 MW. Such conditions usually occur when generation is high and load in the San Joaquin Valley are low. The use of the existing protection relays installed at Magunden (SEL-68 stability relay) increases the south of Magunden capability from 1,050 MW up to the maximum metered south of Magunden line flow.

South of Magunden flows less than 1,050 MW resulted in stable conditions that would not trigger operation of the SEL-68 stability relay. However, transient voltage deviations in excess of the WECC criteria were identified at Rector under this outage condition with faults modeled at Magunden as shown below in Figure 11.

Figure 11
Transient Voltage Deviation at Rector Substation
Under Outage of Magunden-Springville 220-kV Line
(Big Creek generation modeled at 1,000 MW)



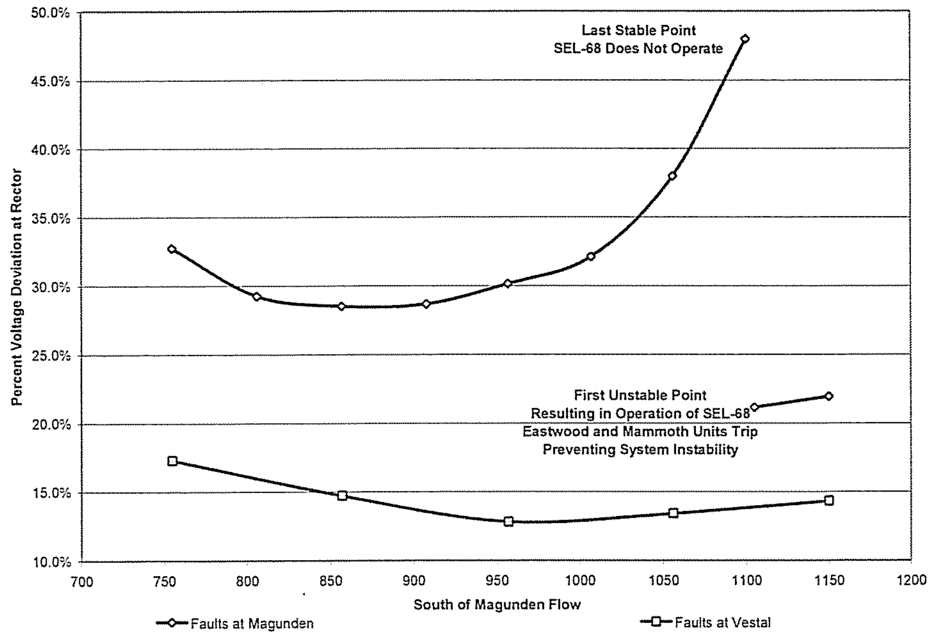
Additional system reinforcements will be required to mitigate this transient voltage deviation. Transient stability plots for this outage are included in Appendix C-6.

7. Loss of one Magunden-Vestal 220-kV

   Loss of the Magunden-Vestal No.1 or No.2 220-kV line results in system instability when faults are applied at the Magunden end of the line and south of Magunden flows are in excess of 1,100 MW. Such conditions usually occur when generation is high and load in the San Joaquin Valley are low. The use of the existing protection relays installed at Magunden (SEL-68 stability relay) increases the south of Magunden capability from 1,100 MW up to the maximum metered south of Magunden line flow.

   South of Magunden flows less than 1,100 MW resulted in stable conditions that would not trigger operation of the SEL-68 stability relay. However, transient voltage deviations in excess of the WECC criteria were identified at Rector under this outage condition with faults modeled at Magunden as shown below in Figure 12.

Figure 12
Transient Voltage Deviation at Rector Substation
Under Outage of Magunden-Vestal 220-kV Line
(Big Creek generation modeled at 1,000 MW)



Additional system reinforcements will be required to mitigate this transient voltage deviation. Transient stability plots for this outage are included in Appendix C-7.

Double Contingency Stability Analysis

The existing Big Creek RAS (System Operating Bulletin 204) does not identify a collective Big Creek generation output limitation in preparation for loss of two transmission lines if the RAS are inoperative or if the SEL-68 stability relay at Magunden is unavailable. This indicates that System Operations is relying manual readjustment of the Big Creek hydro units following loss of one line if the outage is identified as a prolonged outage. What this means is that when the RAS are inoperative, the Big Creek generation output will be reduced to ensure system reliability under loss of a single transmission line. Additional reductions will be made if an outage occurs and the line cannot be put back in service. The additional reduction is made to ensure system reliability is maintained under the next outage.

The existing Big Creek RAS will trip the generating units at Mammoth Pool and/or Eastwood for simultaneous outage of lines on the same right of way. Under such outage conditions, the worse case stability problems for "delivering" Big Creek hydro generation to the main SCE network would occur under conditions when generation output exceeds local area loads. This condition occurs when loads are minimal and generation is at maximum. Although there may be load serving issues related to loss of two lines, such as potential voltage collapse when loads served from Rector are high, these problems are load related and generation limitations will not solve these problems under loss of two lines.

Transient stability studies identified that only one double line outage (N-2) condition resulted in stability problems following operation of the existing Big Creek RAS. Undamped growing oscillations were identified under simultaneous outage of the Big Creek1-Rector 220-kV and Big Creek3-Rector 220-kV transmission lines and a collective Big Creek hydro generation output in excess of 975 MW. Transient stability plots for loss of two lines are included in Appendix C-8.

G. POST-TRANSIENT VOLTAGE STUDY RESULTS

During the steady state load flow analysis, several contingencies showed large voltage deviations or non-convergence conditions. These contingencies were selected for the post transient analysis. With implementation of existing Big Creek Special Protection Scheme, four double line contingencies continued to demonstrate post-transient voltage problems under heavy load conditions. A discussion of these cases follows:

1. *Big Creek1-Rector 220-kV & Big Creek3-Rector 220-kV*

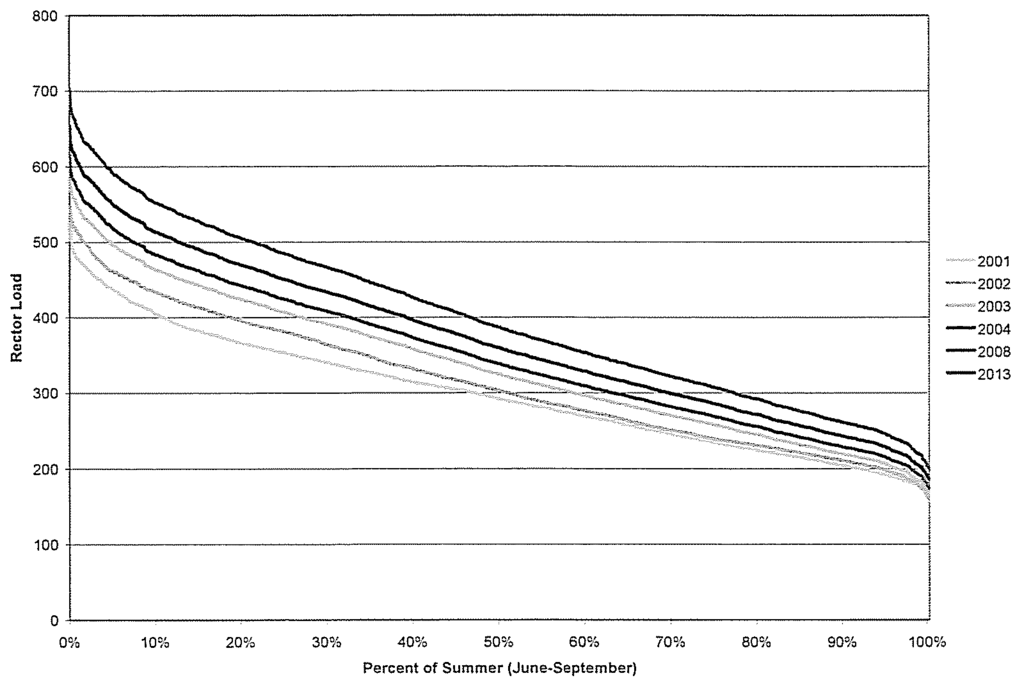
   As discussed above in the power flow section, the Magunden-Vestal 220-kV lines are both rated at 373 MVA under emergency conditions and do not provide sufficient capacity to serve the combined loads at Rector and Vestal under loss of both Big Creek-Rector 220-kV lines. Up to 140 MW of load may be subjected to interruption due to thermal limitations. In addition, this outage contingency results in a post-transient voltage problem at Rector when the loads are in excess of 450 MW increasing the load interruption exposure to 165 MW, 203 MW, and 252 MW for years 2004, 2008 and 2013 respectively.

   An operating procedure was developed and implemented in year 2000 that calls for rolling distribution load served from Rector to Springville, by utilizing underlying 66-kV subtransmission tie lines. This load rolling procedure was tested during the summer of 2003 and has been determined to no longer functions due to underlying subtransmission problems. Load growth in the Springville and Rector 66-kV systems have resulted in overloads on the subtransmission 66-kV tie lines and Springville A-bank. In addition, bus voltages at various substations were found to be below acceptable levels. Additional subtransmission system reinforcements will be necessary to allow continued use of the operating procedure.

Shown below in Figure 13 is the historical metered net Rector A-Bank load for the last three years, the 2004 forecast, 2008 forecast and the 2013 forecast. As can be seen, the percent of time that load is expected to exceed 450 MW, level for which a post-transient voltage is in excess of 10%, has been increasing and will continue to increase with load growth. Loads in excess of 450 MW are expected 18% of the summer peak period during 2004, 25% during 2008, and 34% by 2013 thereby increasing the risk exposure of such a post-transient voltage problem.

A load shedding scheme or additional system reinforcements will be required to mitigate this post-transient voltage deviation.

Figure 13
Rector Net A-Bank Load
2001-2003 Three-Year Historical Metered Data
plus 2004, 2008, and 2013 Load Forecast
June-September On-Peak Data



2. *Big Creek3-Rector 220-kV & Big Creek4-Springville 220-kV*

The loading imbalance associated with larger loads on the Rector side of the corridor results in increased reactive losses following this double line outage that in turn degrades the voltage performance at the Rector substation. Additional generation tripping or additional system reinforcements are necessary to mitigate the post-transient voltage criteria violation. If generation tripping or transmission reinforcements are not implemented, a controlled load-shedding scheme will be necessary in order to maintain post-transient voltages to within allowable criteria.

3. *Rector-Vestal No.1 & No.2 220-kV*

As discussed in the power flow section, the Big Creek1-Rector and Big Creek3-Rector 220-kV lines are both rated at 373 MVA under emergency conditions and do not provide sufficient capacity to serve the Rector load under loss of both Rector-Vestal 220-kV lines. Load may be subjected to interruption beginning in 2008 due to thermal limitations. In addition, this outage contingency results in a post-transient voltage problem at Rector when the loads are in excess of 615 MW. A controlled load shedding scheme or additional system reinforcements will be required to mitigate this transient voltage deviation.

4. *Magunden-Vestal No.1 & No.2 220-kV*

   As discussed above in the power flow section, the Big Creek1-Rector and Big Creek3-Rector 220-kV lines are both rated at 373 MVA under emergency conditions and do not provide sufficient capacity to serve the combined Rector and Vestal load under loss of both Magunden-Vestal 220-kV lines. In addition, this outage resulted in post-transient voltage deviations that exceed criteria when the combined loads at Rector and Vestal were in excess of 540 MW. A controlled load shedding scheme or additional system reinforcements will be required to mitigate this transient voltage deviation.

H. MITIGATION OPTIONS

Thermal Overload Mitigation

Power flow studies identified thermal overloads under base case, single contingency and double contingency conditions. The overloads are all attributed to the distribution of load within the San Joaquin Valley. As discussed above, most of the San Joaquin Valley load is connected to the Rector/Vestal leg south of Big Creek creating a flow imbalance on the two paths. Various options exist to mitigate the overload violations identified on the various transmission lines. The options include better utilization of existing transmission facilities, generation curtailment, load-shedding and demand-side management. The following provides a brief discussion and the results of the mitigation options evaluated.

1. Better Utilization of Existing Facilities

   The possible methods available to better utilize the existing transmission facilities consist of redirecting path and/or line flows south of Big Creek in order to maximize available capacity on the four 220-

kV lines.

a. Series Capacitor(s) at Springville

Installing series compensation on one or both of the lines from Big Creek to Springville will result in additional flow from Big Creek to Springville thereby reducing the amount of flow from Big Creek to Rector. Sensitivity studies were performed to determine impact on power flows assuming the larger Big Creek3-Springville 220-kV transmission line is compensated to 50% of the total line impedance by installing a 15-Ω 220-kV series capacitor at Springville.

The studies identified that with load served out of Rector modeled at 700 MW and the Springville and Vestal loads set equal, the addition of the series capacitor on the Big Creek3-Springville 220-kV line results in lowering the Big Creek3-Rector 220-kV line flow by only 9 MW, which translates to a flow reduction of approximately 2.4%. This reduction results in deferring the identified base case overload by approximately four years. However, the line flow reduction does not eliminate all single and double contingency overloads identified nor does it eliminate the transient and post-transient voltage problems identified.

Single Contingency Overloads

With generation output at Big Creek set to the maximum historical metered output of 1,000 MW and the net loads served out of Rector modeled at 700 MW, loss of the Big Creek1-Rector 220-kV line was still found to overload the Big Creek3-Rector 220-kV. Comparing the results obtained with the series compensation to the results obtained for the current system indicates that an additional 30 MW of load can be served prior to exceeding emergency thermal limits of the conductor. This increase allows the existing generation run-back scheme to be sufficient until year 2007. Beyond year 2007, additional transmission upgrades or modification to existing RAS so that additional unit tripping can be included will be required to eliminate the single contingency overload identified.

Double Contingency Overloads

With the exception of outages that **do not** involve the Big Creek3-Springville 220-kV line, no additional capacity is created to improve load serving capability under loss of two lines. Additional system reinforcement or a controlled load shedding scheme will be required to eliminate the overload problems identified.

b. Series Line Reactor(s) at Rector

Installing line reactors on one or both of the lines from Big Creek to Rector will result in pushing back flow towards Springville thereby reducing the amount of flow from Big Creek to Rector. Sensitivity studies were performed to determine impact on power flows assuming a relatively small 7-Ω 220-kV line reactor is installed on the Rector end of the Big Creek3-Rector 220-kV transmission line. This size line reactor will balance line flows on both Big Creek-Rector 220-kV lines thereby maximizing capability from Big Creek to Rector with only one line reactor.

The studies identified that with load served out of Rector modeled at 700 MW and the Springville and Vestal loads set equal, the addition of the line reactor on the Big Creek3-Rector 220-kV line results in lowering the Big Creek3-Rector 220-kV line flow by 27 MW, which translates into a flow reduction of approximately 7.6%. This reduction results in deferring the identified base case overload beyond the ten-year planning window and is more beneficial than the above series capacitor alternative. However, the line flow reduction does not eliminate the single and double contingency overloads identified nor does it eliminate the transient and post-transient voltage problems identified.

Single Contingency Overload

With generation output at Big Creek set to the maximum historical metered output of 1,000 MW and the net loads served out of Rector modeled at 700 MW, loss of the Big Creek1-Rector 220-kV line was found to overload the Big Creek3-Rector 220-kV by a few amps. Comparing the revised results to the results obtained for the current system arrangement indicates that an additional 50 MW of load can be served prior to exceeding emergency thermal limits of the conductor. This increase allows the existing generation run-back scheme to be sufficient until year 2013. Beyond year 2013, additional transmission upgrades or modification to the existing Big Creek RAS to allow additional unit tripping will be required to eliminate the single contingency overload identified.

Double Contingency Overloads

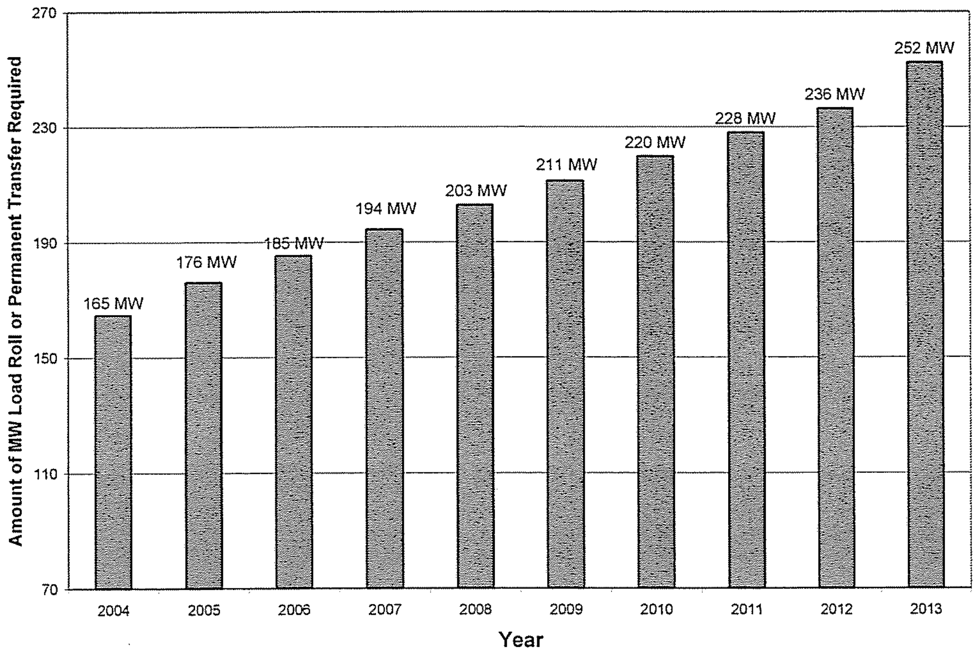
Additional capacity is created by balancing loading on both Big Creek-Rector 220-kV lines. Outages that do not involve the Big Creek3-Rector 220-kV line results in increased load serving capacity but is insufficient to eliminate the need for additional system reinforcement or a controlled load shedding scheme. In order to serve the entire load reliably under loss of two transmission lines, additional capacity will be required to eliminate the remaining overload problems identified.

c. Permanent Load Transfer from Rector to Springville

This alternative would result in increasing the Springville loads and decreasing the Rector load in order to force more power from Big Creek to Springville. Review of the underlying 66-kV transmission facilities indicates that substantial system reinforcement is necessary in order permanently transfer load served from Rector to Springville.

This alternative will require additional transformer capacity, additional 66-kV transmission line capacity, and additional reactive resources for voltage support. Ideally, permanent load roll should transfer enough load to mitigate all thermal overload, transient stability, and post-transient stability problems. Past studies have identified that the amount of load transfer necessary to reduce post-transient voltage drops to within 10% following loss of two transmission lines ranges from 165 MW in 2004 to 252 MW by 2013. The annual requirement is shown below in Figure 14.

Figure 14
Transfer Sufficient Rector System Load to Springville
(Mitigate Post-Transient Voltage Drop Criteria Violation)



Transformer Bank Capacity Requirements

The Rector substation currently has two 230/66-kV 280 MVA and two 230/66-kV 120 MVA transformer banks in service with plans to upgrade one of the 120 MVA transformer banks to 280 MVA by 2006. The Springville substation currently has two 230/66-kV 120 MVA transformer banks in service with no immediate plans to increase transformer bank capacity. Transferring up to 252 MW of load from Rector to Springville will reduce the 2013 load forecast for Rector from 702 MW to 450 MW and increase the 2013 load forecast for Springville from 229 MW to 481 MW.

This permanent load transfer eliminates the need to upgrade transformer bank capacity at Rector but results in a need to increase transformer bank capacity at Springville. Springville will require two new 280 MVA transformer banks to allow continued service under loss of one transformer bank.

Underlying 66-kV System Capacity Requirements

A significant portion of the Springville 66-kV subtransmission radial network is constructed with small conductor due to the relatively small load that is currently served from Springville. Permanently transferring up to 252 MW of load could require upgrading most of the Springville underlying network due to likely overload problems that would be experience under base case and single outage conditions. The following is a breakdown of the approximate 137 miles of impacted conductor that could potentially be overloaded if the load transfer alternative were implemented.

- 49.9 miles of 2/O Stranded Copper rated at 46.9 MVA
- 17.1 miles of 4/O Stranded Aluminum rated at 47.4 MVA
- 16.1 miles of 4/O Stranded Copper rated at 62.3 MVA
- 16.1 miles of 336 ACSR rated at 69.2 MVA
- 29.7 miles of 653 ACSR rated at 105.2 MVA
- 7.7 miles of 954 SAC rated at 125 MVA

Upgrade of facilities that are currently something less than a 653 ACSR conductor will require complete tear-down and rebuild as the current infrastructure cannot support a larger heavier conductor. In addition, new 66-kV lines and reactive support (capacitor banks) will be required throughout the system in order to maintain adequate voltages under loss of 66-kV transmission lines.

The current system consists of three system tie-lines, which are included in the above mileage, that if upgraded can be rated at 125 MVA each. Depending on which substations are ultimately selected to be permanently transferred will dictate how many new lines would be required. At a minimum, the load transfer alternative will require two additional 66-kV double-circuit lines of approximately 35 to 40 miles (four total lines). These new 66-kV lines will extend beyond the Rector substation since the load growth area is located west of the Rector substation and Springville is located to the southeast.

Power Flow Study Results

Power flow studies were performed which reviewed only the 220-

kV system and did not evaluate 66-kV subtransmission performance. The results of the studies indicate that the permanent load transfer alternative eliminates the base case overload, single contingency overload after operation of the Big Creek run-back scheme, and provides sufficient capacity to serve load under double contingency outage conditions.

d. Additional Transmission Capacity into Rector

Additional transmission capacity into Rector can be provided by either constructing new transmission facilities or reconductoring existing facilities.

Line Reconductor

Reconductor of the entire Big Creek3-Rector 220-kV line will be required in order to eliminate the identified base case overload problem. Based on engineering review of other areas within the Big Creek corridor of similar construction, the only conductor type available to use which will increase capacity and not require tear-down of infrastructure is a 666.6 ACSS/TW conductor. This conductor type is very similar in electrical characteristics as the 605 ACSR conductor currently installed. As a result, the additional capacity does not eliminate the transient and post-transient voltage problems identified nor does it eliminate all single and double contingency overloads problems identified unless both Big Creek to Rector 220-kV lines and both Magunden to Vestal 220-kV lines are reconductored. The amount of total line reconductor involved would be approximately 203 miles thereby making this transmission capacity alternative unattractive from an economic perspective.

New Transmission

Additional transmission capacity can be developed by constructing a new 220-kV double-circuit line of approximately 14 miles and looping the existing Big Creek3-Springville 220-kV line into Rector forming the new Big Creek3-Rector No.2 220-kV line and new Rector-Springville 220-kV line. This alternative has been previously recommended by SCE for approval over the last several years but has not received CAISO approval.

Power flow studies performed indicate that the San Joaquin Valley Rector Loop alternative eliminates the base case overload, single contingency overload after operation of the Big Creek run-back scheme, and provides sufficient capacity to serve load under double-contingency outage conditions.

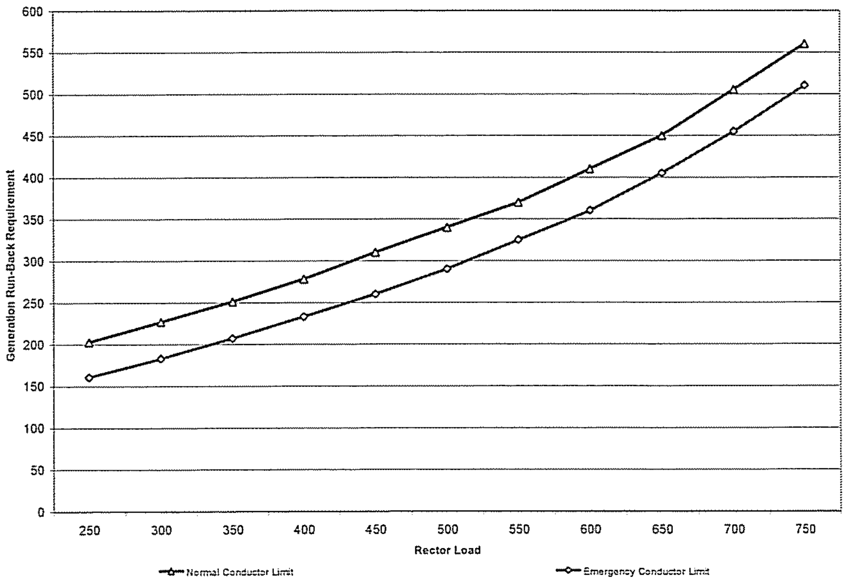
2. Generation Reduction

Generation reduction may sound like a viable alternative to mitigate the identified base case overload. However, such generation reduction would occur at a time when generation is needed the most, heavy summer conditions, and would impinge on SCE's ability to fulfill its load serving requirement as order the California Public Utilities Commission. In addition, the amount of generation curtailment would increase exponentially as load increases in the Rector and Vestal areas. Generally speaking, it is considered bad planning practice to rely on generation curtailment that is driven by increased load demand to avoid improving transmission capability. For this reason, SCE does not consider generation curtailment as a viable alternative to mitigate base case overloads identified and would therefore require one of the transmission upgrades identified above.

As far as outage related overloads, additional generation tripping can be implemented to mitigate any such overload as allowed by WECC and CAISO criteria. In order to include additional units to the existing Big Creek RAS, the RAS will need to be redesigned as there is no easy way available to add more units. Such redesign will require the scheme to be upgraded to meet today's standards and will necessitate presentation and approval by the WECC RAS Task Force prior to allowing the new RAS to be put in-service.

Sensitivity studies were performed which considered the units located at the Big Creek Powerhouse 3 to be available for tripping. Results of the studies indicate that all single contingency overload problems identified are mitigated with additional generation tripping. Based on the historical metered data, the amount of generation run-back or tripping required for safe and reliable operation of the system under the most limiting outage condition ranges from 203 MW to 560 MW with loads served out of Rector ranging from 250 MW up to 750 MW as shown below in Figure 15. Since additional capacity is not created, all N-2 outages that were identified to result in line overloads due to high load will require additional system reinforcement or a controlled load shedding scheme.

Figure 15
Run-Back Requirements
Outage of Big Creek1-Rector 220-kV Line



3. Controlled Load-Shedding

Controlled load-shedding, as an alternative to building new transmission facilities, is allowed by WECC for loss of two transmission lines but cannot be used to mitigate criteria violations identified under loss of one transmission facility. Since the existing system was identified to potentially experience a thermal problem under base case and single contingency conditions, this alternative was not evaluated on its own to solve these problems. In any event, telecomm and protection requirements for controlled load-shedding were identified for loss of two lines to support an upgrade alternative that mitigates the base case and single contingency problems but does not solve the double contingency problems.

Complete redundancy for any such load-shedding scheme will be required to ensure system integrity is maintained under outage conditions. Unlike generation, which can be curtailed if any component of the scheme fails, load cannot be curtailed in advance of the outage.

This will require additional telecommunication between all substations in the San Joaquin Valley including the Big Creek1, Big Creek3 and Magunden substations. The amount of load shedding and type of scheme required will drive the overall cost of this alternative. Faster tripping times will increase telecommunication and protection costs. Larger tripping size will require more distribution transformer banks to be transfer tripped and will increase cost.

220/66-kV Transformer Bank Tripping

The underlying 66-kV system is a radial network that is interconnected at the Rector substation by four 220/66-kV transformer banks. As a result, opening any one of these transformer banks does not shed any system load. System Operations has evaluated potential underlying 66-kV system arrangements that may allow SCE to sectionalize the system so that load shedding can be performed by opening a single 220/66-kV transformer bank. The result of the evaluation is that the underlying 66-kV system cannot be sectionalized since insufficient 66-kV transmission capacity exists. A significant amount of line reconductoring or construction of additional 66-kV lines will be required to allow system to be sectionalized in such a fashion. Furthermore, continued load growth will result in increased load shedding requirement that can not be interconnected on a single 220/66-kV transformer bank.

Distribution Transformer Bank Tripping

Since 220/66-kV transformer bank tripping cannot be utilized, System Protection has evaluated other potential tripping schemes and determined that distribution transformer bank (B-Bank) tripping is the best alternative available. Such scheme would require significant amount of telecommunication between the Rector A-station and the underlying B-Stations involved in the load shedding scheme.

4. Demand-Side Management

Since demand-side management is difficult to forecast and usually does not result in a significant load reduction in any one geographic area, this alternative was not considered as a viable option to eliminate the identified base case, single contingency and double contingency loading criteria violation.

Transient Stability Mitigation

Transient stability studies identified that a significant amount of single contingency outages in the San Joaquin Valley exceed the WECC transient voltage deviation limits at Rector. Since the WECC criteria specifically deal with impacts on neighboring utilities, no mitigation has been previously implemented for these transient voltage violations because previous studies did not identify a problem in neighboring utilities. Continued load growth in the San Joaquin Valley has resulted in degrading the transient voltage performance to a point where the existing RAS is no longer sufficient to maintain a stable operating condition. Various options exist to improve the voltage deviations identified under outage conditions. The options include improving response time of the existing RAS, adding power system stabilizers on four Big Creek units, utilizing existing transmission facilities more effectively, adding reactive support, adding more Big Creek units to the existing tripping scheme, and limiting Big Creek generation output.

Revised transient stability studies were performed for each outage in the San Joaquin Valley assuming the load conditions which previously yielded the worst voltage performance for each outage condition. All options considered focused on limiting the transient voltage deviations to no more than 30% in order to ensure potential A/C stalling problems are avoided. The following provides a brief discussion on the mitigation options.

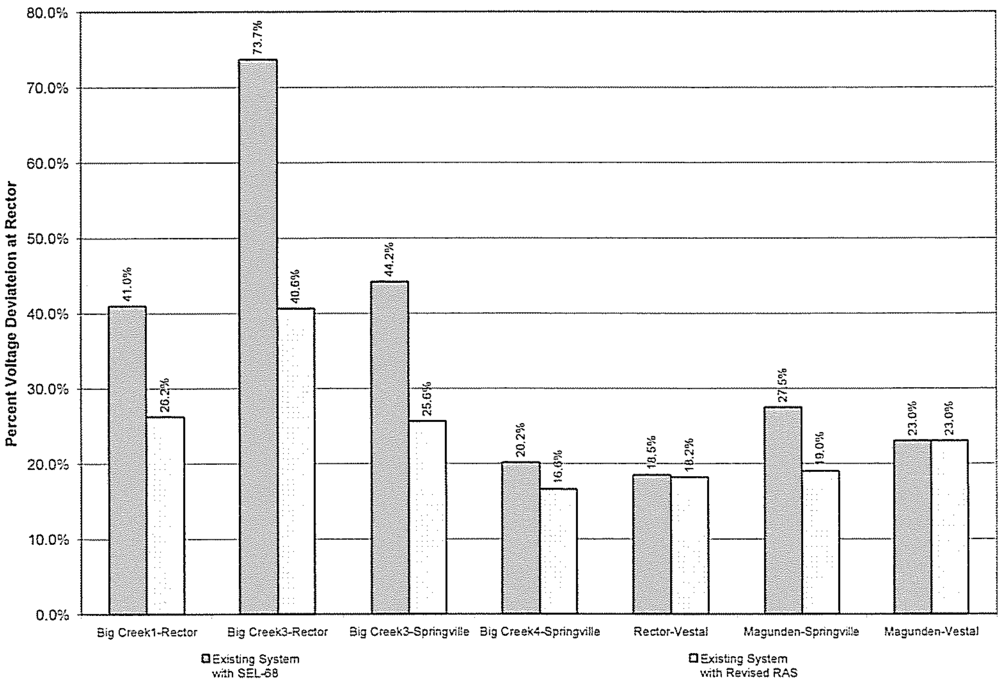
1. Improved Time Response of Existing RAS

   Currently, the Eastwood and Mammoth unit tripping time is 18-cycles as limited by inherit time delay in the SEL-68 stability relay. Improved time response for the existing scheme may be achieved by using the existing Big Creek N-2 Stability Trip instead of the SEL-68 for single outage conditions. This modification will decrease Eastwood and Mammoth unit tripping times from 18-cycles to 12-cycles. The potential drawback to this alternative is that tripping of the Eastwood and Mammoth units will occur under loss of one transmission line even if tripping was not required since current RAS does not have the flexibility to identify arming levels that would trigger the RAS.

Single Contingency Results

With the improved time response, all single contingencies were found to remain stable. However, this alternative does not result in limiting transient voltage deviations to less than 30% and does not provide the additional capacity required to mitigate potential base case overload problems identified. The maximum transient voltage deviation under single outage conditions are shown below in Figure 16. Transient stability plots for each single contingency are provided in Appendix D-1.

Figure 16
Maximum Transient Voltage Deviation
Single Outage Conditions with Improved RAS Response Time



Double Contingency Results

Transient stability response time does not improve for double contingency outages and therefore the results identified for the existing system remain unchanged.

2. Power System Stabilizers and Improved Time Response of Existing

RAS

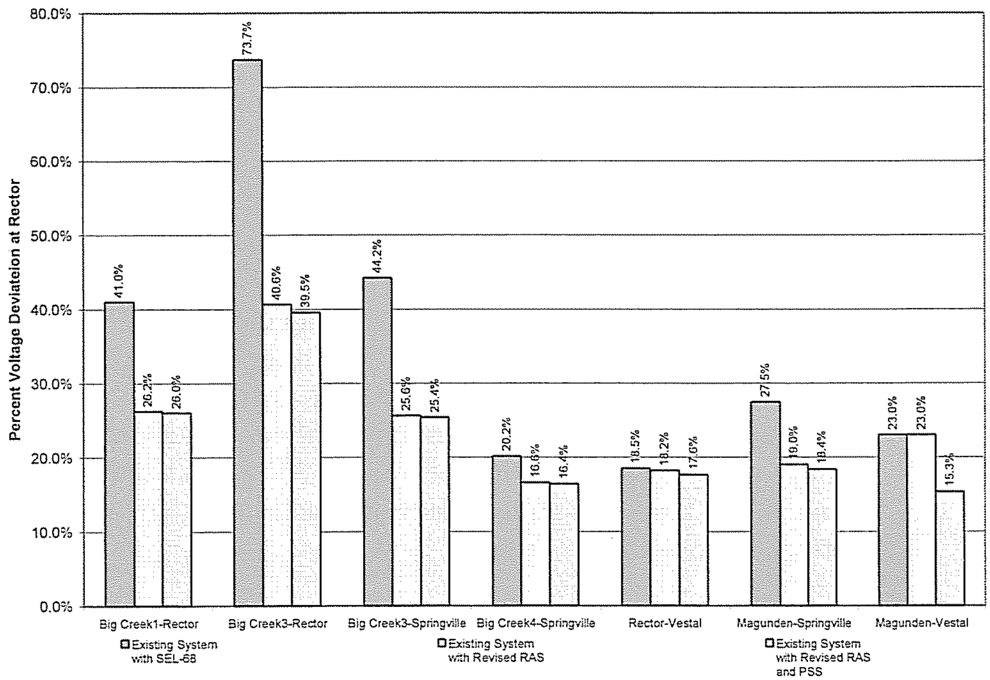
Four Big Creek units have been identified as viable candidates for adding power system stabilizers. In order to add power system stabilizers, the excitation systems of Unit 1 and 2 located at Big Creek2 and Unit 1 and 2 located at Big Creek4 need to be replaced from rotating excitation to static excitation. Revised excitation system models and new power system stabilizer models were provided by SCE's SSID group with the appropriate model parameters. All single and double line contingencies were reexamined to determine impacts of revised models. The single outage analysis was performed assuming the time response of the existing RAS is improved as discussed above.

Single Contingency Results

With the addition of power system stabilizers on four of the Big Creek units, transient stability studies identified very similar results as compared to studies without power system stabilizers. This alternative does not provide additional capacity required to mitigate potential base case overloads. The maximum transient voltage deviation under single outage conditions are shown below in Figure 17. Transient stability plots for each single contingency are provided in Appendix D-2.

Figure 17

Maximum Transient Voltage Deviation
Single Outage Conditions with Improved RAS Response Time and Power System Stabilizers



Double Contingency Results

Stability studies demonstrate that the growing oscillations identified when Big Creek output is in excess of 975 MW is eliminated with the new excitation system and power system stabilizers. Transient stability plots for this outage is also included in Appendix D-2.

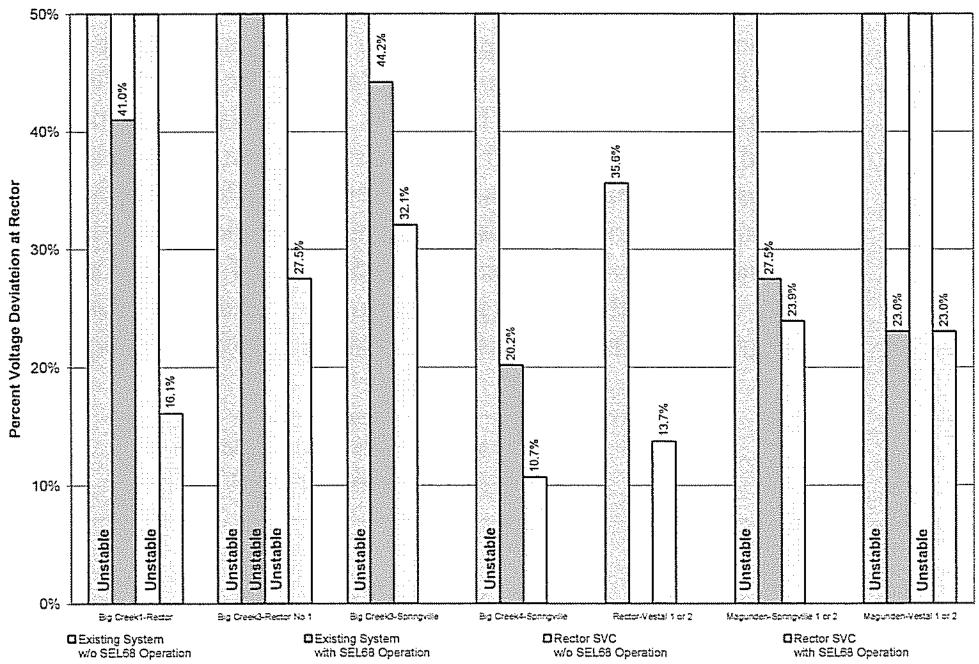
3. Additional Reactive Support

Transient stability studies for the existing system indicate that the most voltage sensitive bus in the San Joaquin Valley is Rector. Sensitivity studies were performed which considered the addition of an SVC at Rector in order to identify the amount of dynamic reactive support necessary to improve voltage performance to an acceptable level. While adding additional dynamic reactive support may eliminate the voltage problems identified, this alternative alone is insufficient to mitigate the base case, single contingency, and double contingency overload problems identified. As a result, additional mitigation measures will be required. The study was, nonetheless, performed to satisfy the CAISO request.

Single Contingency Results

With a 275 MVAR SVC at Rector, four of seven single contingencies evaluated did not trigger operation of the SEL-68 stability relay. The remaining three single contingencies required operation of the SEL-68 stability relay to maintain system stability. Results of the studies indicate that one of the single outages that did not trigger operation of the SEL-68, loss of the Big Creek3-Springville 220-kV line, would experience a transient voltage deviation in excess of 30%. Increasing the SVC at Rector to 300 MVAR reduces the transient voltage deviation to less than 30%. The maximum transient voltage deviations under single outage condition with the 275 MVAR SVC is shown below in Figure 18. Transient stability plots for each single contingency are provided in Appendix D-3.

Figure 18
Maximum Transient Voltage Deviation
Single Outage Conditions with 275 MVAR SVC at Rector



<u>Double Contingency Results</u>

With the SVC added at Rector, all cases resulted in stable conditions after operation of the N-2 Stability Trip which will trip the Eastwood and Mammoth units.

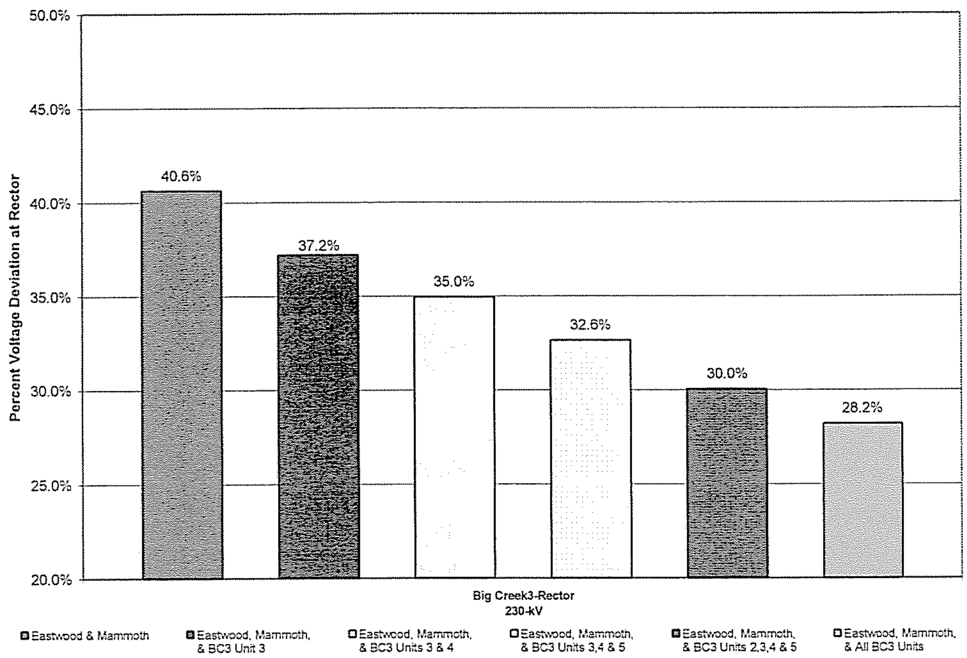
4. Additional Generation Tripping

The continued use of the SEL-68 stability relay can result in significant voltage deviations in the San Joaquin Valley without operation of the RAS as demonstrated under outage of Magunden-Springville and Magunden-Vestal 220-kV lines. As discussed above in Option 1, improvement to the generation tripping time response resulted in stable operating conditions with transient voltage deviations less than 30% for all but one of the single outage conditions. In order to improve the remaining single outage condition, additional generation tripping was evaluated. Sensitivity studies performed considered adding generation located at Big Creek 3 to the tripping scheme.

<u>Single Contingency Results</u>

Results of the study indicate that in addition to the Eastwood and Mammoth Units, all five generation units located at Big Creek3 need to be added to a newly designed tripping scheme in order to limit transient voltage deviations to less than 30%. The revised tripping scheme should trip generation in 12-cycles rather than 18-cycles. Total generation tripping will increase from 394 MW to 579 MW which is also sufficient to eliminate the identified single contingency overload. The transient voltage deviations under loss of the Big Creek3-Rector 220-kV line with various generation tripping additions is shown below in Figure 19. Transient stability plots are provided in Appendix D-4

Figure 19
Maximum Transient Voltage Deviation
Additional Big Creek Generation Tripping



Double Contingency Results

With additional Big Creek generation tripping, all cases resulted in stable conditions after operation of the N-2 Stability Trip.

5. Better Utilization of Existing Facilities

Several options were presented in the thermal mitigation section above to better utilize the existing transmission facilities. These options included series compensation, line reactor, permanent load transfer, and additional transmission capacity into Rector. Only options which involve looping transmission lines into the Rector substation were tested to determine if such projects provide sufficient system reinforcement to improve the transient voltage performance to within acceptable levels. The other options alone will not be sufficient to improve the transient voltage performance to within acceptable levels. Such a conclusion can be reached by reviewing transient voltage response under minimum load assumptions for outages impacting the Big Creek lines and recognizing that three of the four outages resulted in excessive transient voltage deviations even at minimum Rector load levels.

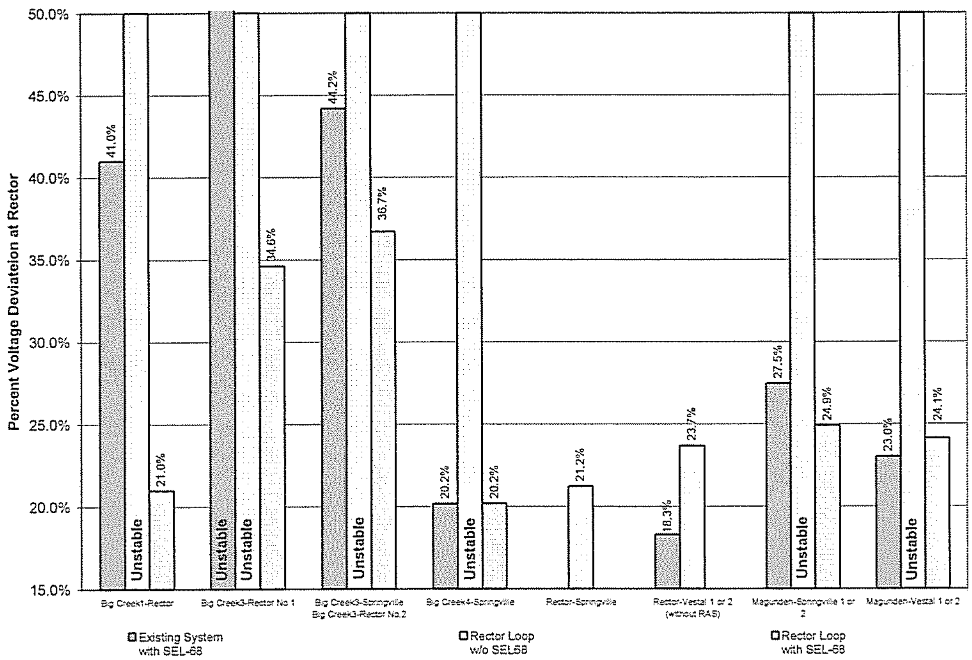
a. San Joaquin Valley Rector Loop

Single Contingency Results

With the San Joaquin Valley Rector Loop, six of the eight single contingencies evaluated triggered operation of the SEL-68 stability relay. The remaining two single contingencies did not require operation of the SEL-68 in order to maintain a stable operating condition. Results of the studies indicate that all single outages experience substantially better transient voltage deviation performance as compared to existing system. However, this alternative alone did not result in transient voltage deviations that were less than 30%. As a result, additional mitigation will be required to limit the transient voltage deviations to less than 30%. Transient stability plots for each single contingency are provided in Appendix D-5.

Figure 20

Maximum Transient Voltage Deviation
Single Outage Conditions with San Joaquin Valley Rector Loop



Double Contingency Results

With the addition of the San Joaquin Valley Rector Loop, all cases resulted in stable conditions after operation of the N-2 Stability Trip which will trip the Eastwood and Mammoth units.

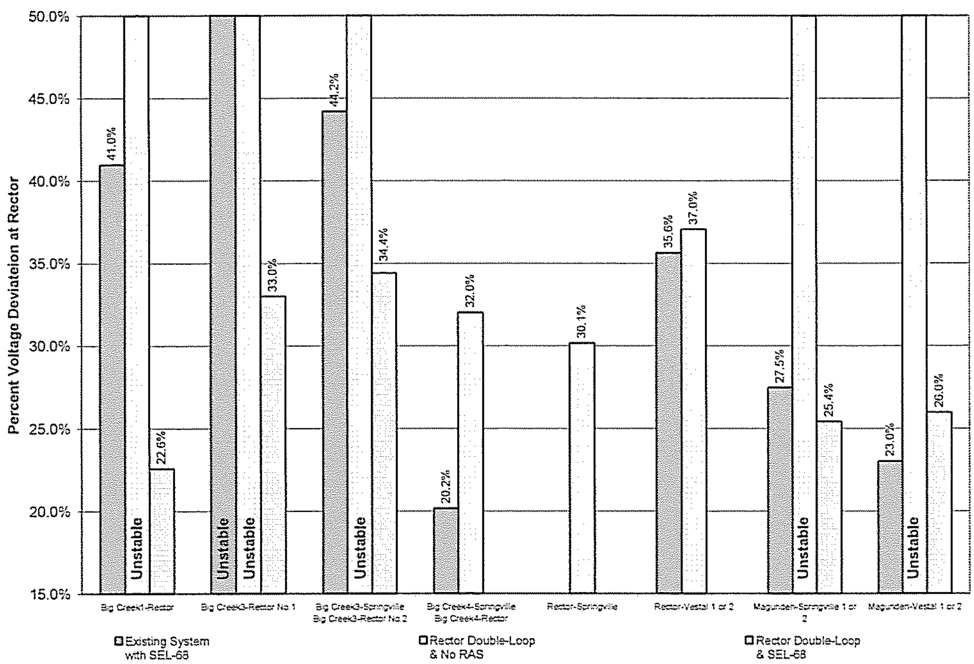
b. San Joaquin Valley Rector Double-Loop

Single Contingency Results

With the San Joaquin Valley Rector Double-Loop, five of the eight single contingencies evaluated triggered operation of the SEL-68 stability relay. The remaining three single contingencies did not require operation of the SEL-68 in order to maintain a stable operating condition. Results of the studies indicate that all single outages experience substantially better transient voltage deviation performance as compared to existing system. However, this alternative alone did not result in transient voltage deviations that were less than 30%. As a result, additional mitigation will be required to limit the transient voltage deviations to less than 30%.

Transient stability plots for each single contingency are provided in Appendix D-6.

Figure 21
Maximum Transient Voltage Deviation
Single Outage Conditions with San Joaquin Valley Rector Double-Loop



Double Contingency Results

With the addition of the San Joaquin Valley Rector Double-Loop, all cases resulted in stable conditions after operation of the N-2 Stability Trip which will trip the Eastwood and Mammoth units.

I. PROJECT ALTERNATIVES

Based on the results of the mitigation options above, four project alternatives were derived to mitigate the thermal overloads identified under base case, single contingency, and double contingency conditions as well as improve the transient voltage deviations and post-transient voltage criteria violations in the San Joaquin Valley. The project alternatives consist of multiple elements of the mitigation options studied above. Each alternative increases base case capacity to eliminate base case overload and additional dynamic support to improve transient voltage deviations. One of the alternatives includes a load shedding scheme necessary to manage the N-2 overload problems.

1. Line Reactor with additional Big Creek hydro tripping for N-1, load shedding for N-2 and SVC at Rector for Transient Voltage

   Base Case Overload Mitigation

   The 7Ω 220-kV line reactor on the Big Creek3-Rector 220-kV line eliminates the base case thermal overload problem identified beyond the ten-year planning window but did not provide sufficient capacity under loss of one or two 220-kV lines and did not improve the transient voltage response under outage conditions.

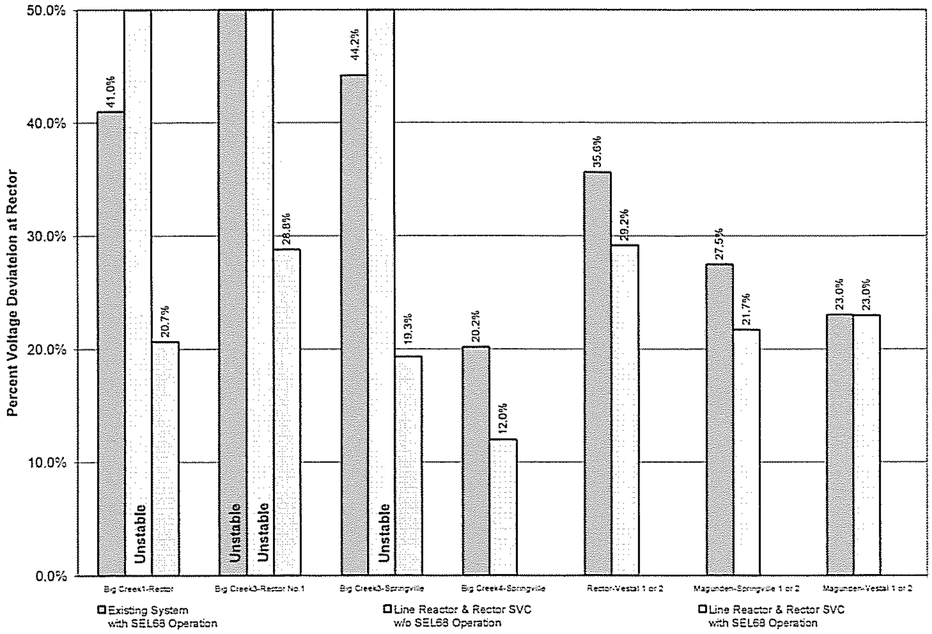
   Single Outage Overload and Transient Voltage Deviations Mitigation

   Under loss of either the Big Creek-Rector 220-kV line, loading on the remaining Big Creek-Rector 220-kV line was found to be at the maximum allowable limit with the existing run-back scheme. Continued load growth will necessitate expansion of the run-back scheme to include additional units located at Big Creek3. In addition, a 300 MVAR SVC at Rector is required to improve the excessive transient voltage deviations to within acceptable levels. Transient stability plots are shown in Appendix E-1.

   Double Outage Overload, Transient Stability and Post-Transient Voltage Mitigation

   With the line reactor and SVC included, the transient stability and post-transient voltage problems identified under loss of both Big Creek-Rector 220-kV lines are eliminated. Load shedding will still be required to eliminate thermal overload problems identified under loss of two lines due to insufficient line capacity.

Figure 22
Maximum Transient Voltage Deviation
Under Single Outage Conditions for Project Alternative One



2. San Joaquin Valley Rector Loop with SVC at Rector

<u>Overload Mitigation</u>

The San Joaquin Valley Rector Loop eliminates the base case, single contingency and double contingency thermal overload problems identified beyond the ten-year planning window.

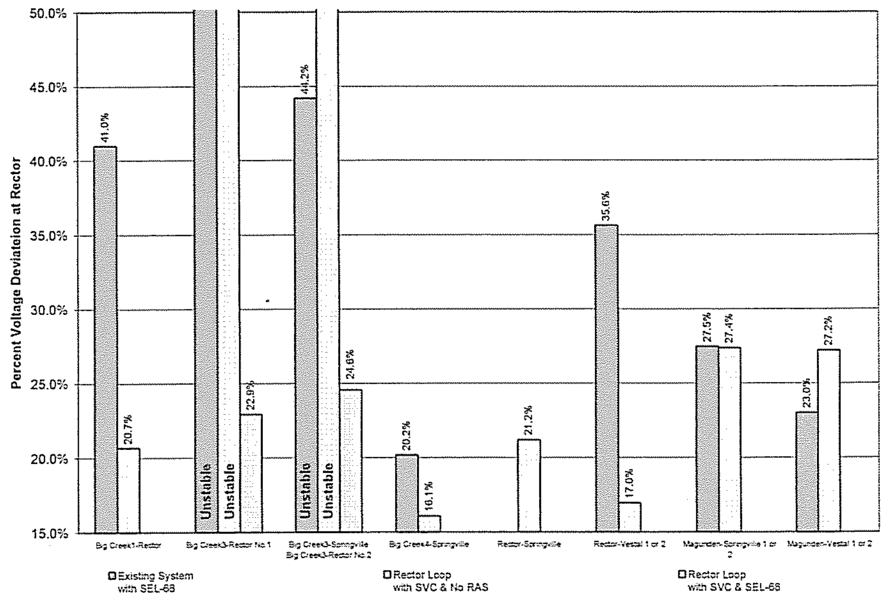
<u>Transient Voltage Mitigation</u>

The San Joaquin Valley Rector Loop and a 175 MVAR SVC at Rector improves the transient voltage deviations in the San Joaquin Valley to within acceptable levels. Transient stability plots are shown in Appendix E-2.

<u>Post-Transient Voltage Mitigation</u>

The San Joaquin Valley Rector Loop eliminates the post-transient voltage criteria violations identified under loss of two 220-kV transmission lines.

Figure 23
Maximum Transient Voltage Deviation
Under Single Outage Conditions for Project Alternative Two



3. Permanent Load Transfer from Rector to Springville with SVC at Rector

Overload Mitigation

Permanent transfer of load from Rector to eliminates the base case, single contingency and double contingency thermal overload problems identified beyond the ten-year planning window.

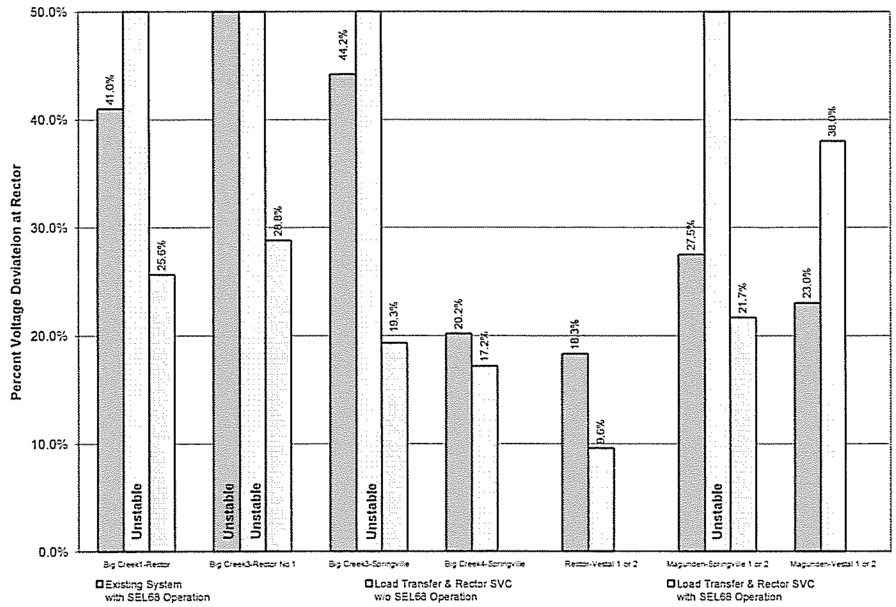
Transient Voltage Mitigation

Permanent load transfer and a 175 MVAR SVC at Rector resulted in improved transient voltage deviations at Rector but degraded performance at Springville. To improve transient voltage performance at both locations, an additional SVC at Springville or increased SVC at Rector will be required. Transient stability plots are shown in Appendix E-3.

Post-Transient Voltage Mitigation

The load transfer alternative was found to improve post-transient voltages to within allowable limits without the need to shed local area load. Continued load growth in the area will necessitate additional load transfer or additional system reinforcements to continue to serve load reliably.

Figure 24
Maximum Transient Voltage Deviation
Under Single Outage Conditions for Project Alternative Three



4. San Joaquin Valley Rector Double-Loop and 75 MVAR SVC

<u>Overload Mitigation</u>

The San Joaquin Valley Rector Double-Loop eliminates the base case, single contingency and double contingency thermal overload problems identified beyond the ten-year planning window.

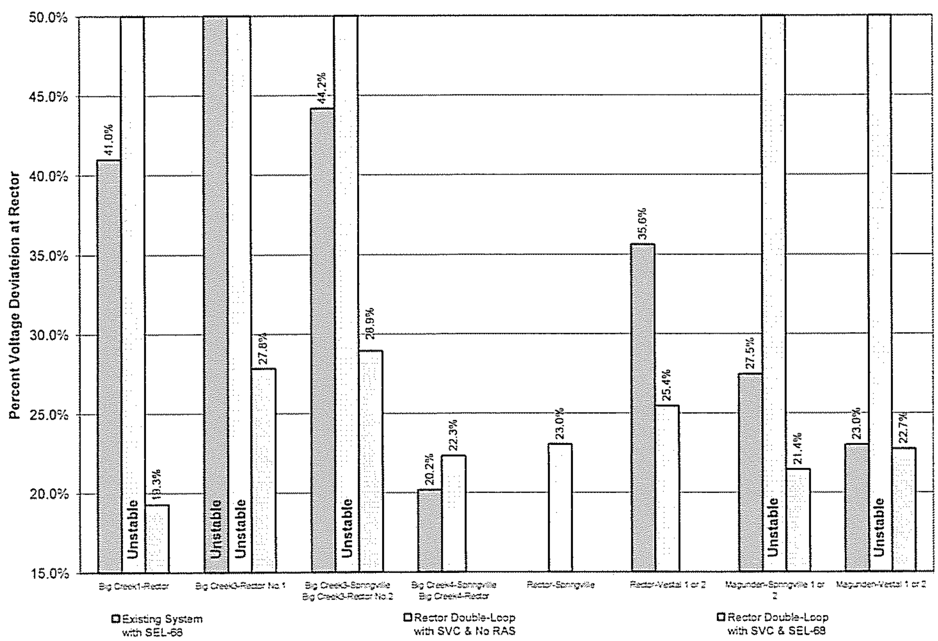
<u>Transient Voltage Mitigation</u>

The San Joaquin Valley Rector Double-Loop and a 75 MVAR SVC at Rector improves the transient voltage deviations in the San Joaquin Valley to within acceptable levels. Transient stability plots are shown in Appendix E-4.

Post-Transient Voltage Mitigation

The San Joaquin Valley Rector Double-Loop eliminates the post-transient voltage criteria violations identified under loss of two transmission lines.

Figure 25
Maximum Transient Voltage Deviation
Under Single Outage Conditions for Project Alternative Four

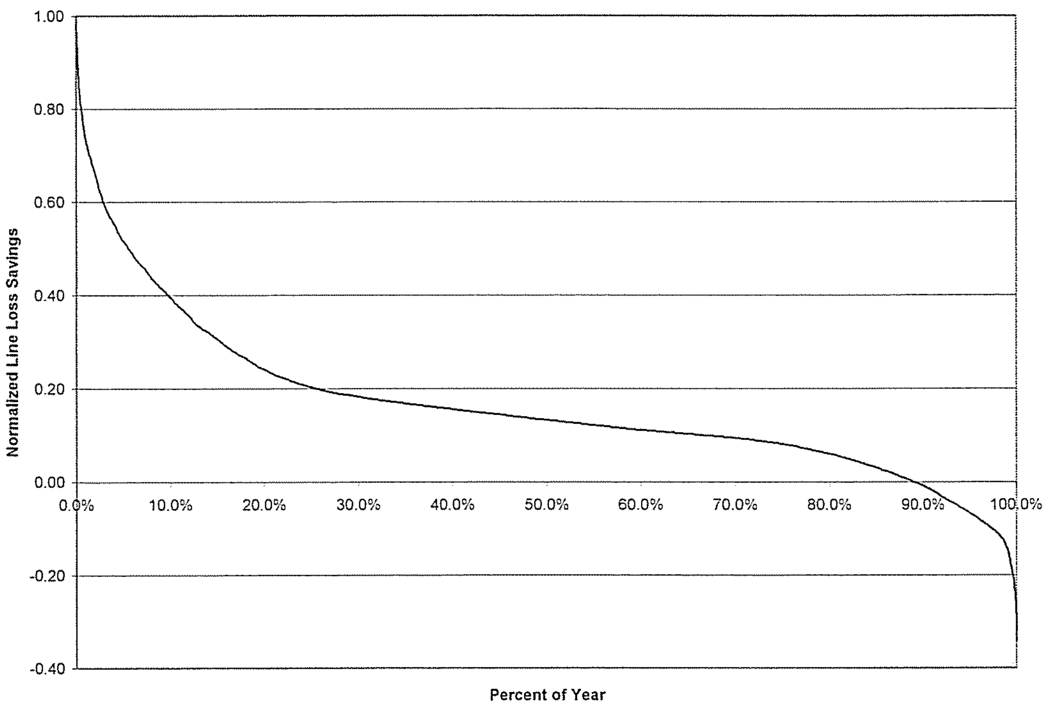


J. LINE LOSS REDUCTION

Power flow studies performed determined that 99.7% of the total line loss reduction achieved by each project alternative is realized on transmission lines located north of the SCE Magunden 230 kV substation. This finding allowed for a simplified power flow model to be utilized which only evaluated the system north of Magunden. Historical hourly data for total Big Creek hydro generation and net system loads were obtained and used in the simplified power flow to calculate losses on an hourly basis for the existing system and the system which includes the San Joaquin Valley Rector Loop. A line loss reduction normalized curve, shown below in

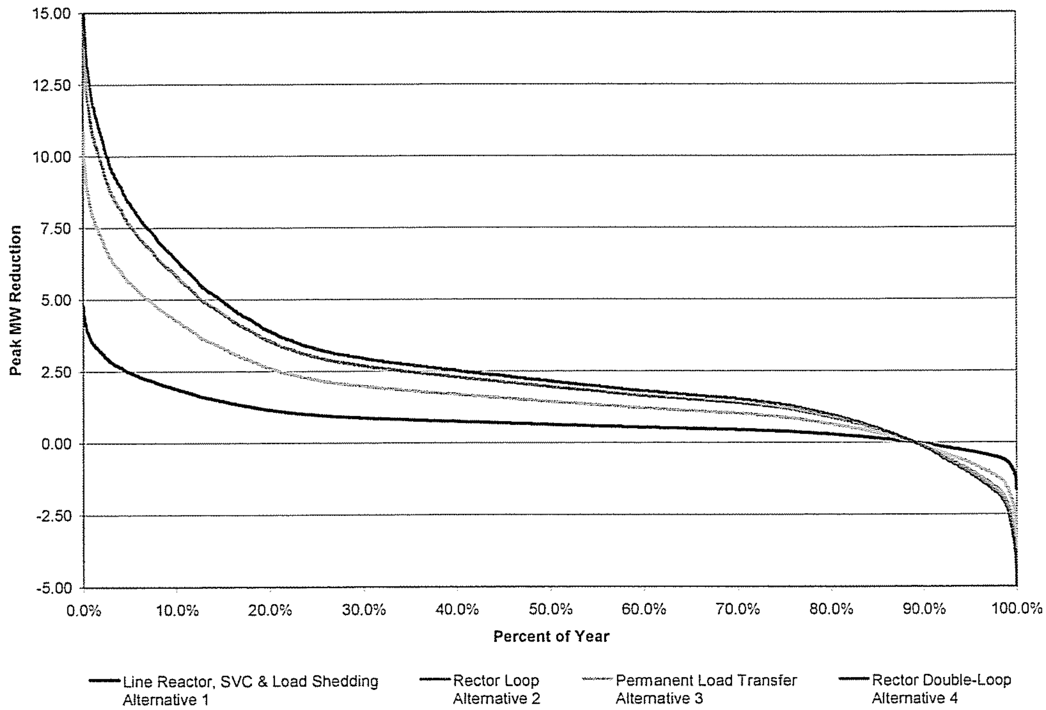
Figure 26, was developed which was then utilized to approximate the annual line loss savings for each project alternatives.

Figure 26
Normalized Line Loss Reduction Duration Curve
Based on Historical Metered Load and Generation Conditions



Peak line losses were determined by evaluating each project alternative under maximum load with maximum generation condition. The corresponding peak line loss reduction for each project alternative is then calculated by subtracting the total north of Magunden line losses for each project alternative from the total north of Magunden line losses identified for the existing system. Annual MW-hr line loss for each project alternative is then determined by applying the normalized line loss curve developed as shown below in Figure 27.

Figure 27
Annual Line Loss Reduction for Each Project Alternative
Based on Normalized Line Loss Reduction Curve



Utilizing the CAISO provided cost of energy, $43 per MW-hr, annual line loss savings were calculated for each project alternative. The 30-year net present worth loss savings were then derived assuming a 10% interest rate. Results of the line loss analysis are shown below in Table A.

TABLE A
LINE LOSS EVALUATION

	Existing	Alternative One	Alternative Two	Alternative Three	Alternative Four
Peak Line Losses	59.76	55.00	45.02	48.93	43.58
Peak Line Loss Reduction		4.76	14.74	10.83	16.18
Annual MW-hrs		6,793.5	21,037.0	15,456.6	23,092.1
Annual Savings		$ 292,120	$ 904,590	$ 664,634	$ 992,962
30-Yr Net		$2,753,789	$8.527,489	$6,265,445	$9,360,563

Present Worth					

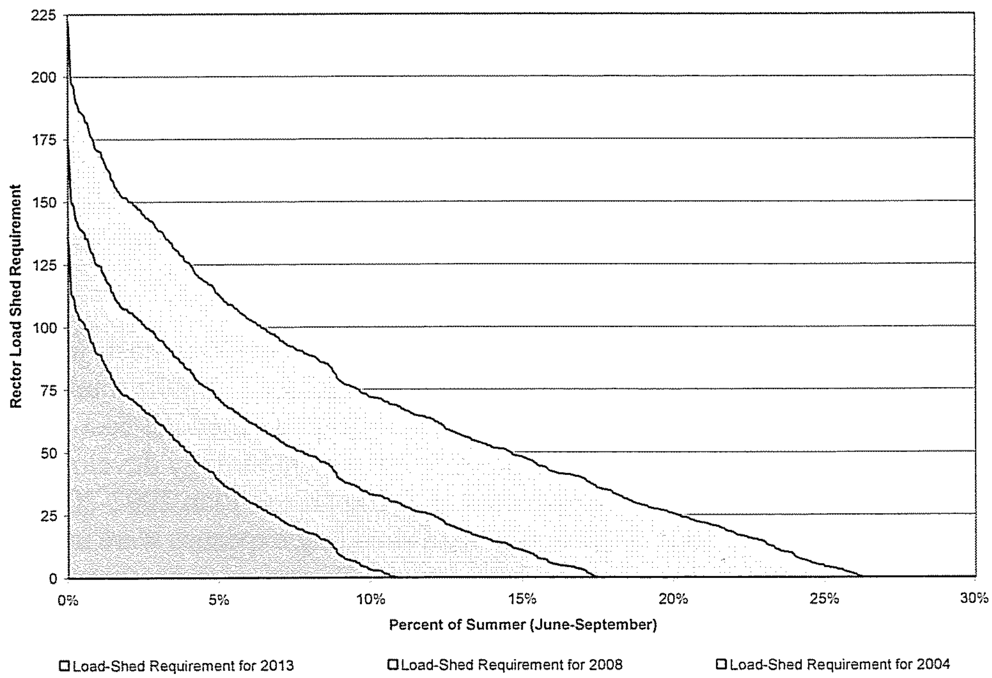
K. VALUE OF SERVICE (VOS) COST ANALYSIS

For practical and economic reasons, all electric transmission systems are planned to allow for some involuntary loss of firm load under some contingency conditions. This is the case with project alternative one which corrects base case and single outage overload problems identified but does not correct the thermal overload problems for loss of two transmission lines.

In order to properly compare all four project alternatives, costs associated with involuntary loss of firm load must be included into the total economic evaluation of alternative one. To properly capture the total cost associated with loss of firm load, the Value of Service methodology developed and included in the CAISO Controlled SCE Expansion Plan 2002-2006 dated November 21, 2001 and average load shedding exposure were utilized. Such load shedding exposure was derived by performing power flow studies to determine the maximum amount of load which can be served under the most limiting double-line outage, loss of both Magunden-Vestal 220-kV lines, and evaluating the load-duration curve for Rector. Based on power flow results, the maximum amount of load that can be served at Rector and Vestal under this outage condition was found to be 700 MW (220 MW at Vestal and only 480 MW at Rector).

The 2013 load forecast was used with the 2003 load duration curve in order to extrapolate the potential load shedding exposure in 2013. Based on this load extrapolation, the load shedding exposure was found to be 26% of the entire summer months which translates to subjecting San Joaquin Valley load to a potential involuntary load interruption every day for six hours during the summer peak period. This finding is shown below in Figure 28.

Figure 28
Load Shedding Exposure during Summer Months
Based on 2013 Load Forecast



The risk exposure for experiencing such involuntary interruption of service to load is the risk of losing initial line as a result of a forest fire, a splice failure, high wind or any other cause that would cause a prolonged outage, and then losing a second line during the next six-hour period. Such a risk is greater than the risk exposure attributed to simultaneous loss of two transmission lines.

Risk Exposure

To quantify this risk exposure, historic outage data for the entire Big Creek corridor was evaluated for the last ten years. Results obtained by evaluating the entire Big Creek corridor equally represent any given line in the corridor. This conclusion is based on the fact that the transmission lines in the corridor are similar, were constructed at approximately the same timeframe, involve a similar environment in that they traverse national forestry, Los Padres and Angeles National Forests in the south and Sequoia and Sierra National Forests to the north, and serve agricultural communities along the way. Based on review of the data, SCE has experienced, on average, one overlapping outage of transmission lines located within the same corridor per year. In addition, the data indicates that in nine cases out of ten, the simultaneous outage occurred during the peak period of the summer months.

With these findings, the risk exposure of losing any two lines within the same corridor that can lead to involuntary loss of service to load can be determined. This is done by multiplying the total risk exposure for the Big Creek corridor by the ratio of number of same corridor overlapping outages that can lead to involuntary loss of service to load and the total number of same corridor overlapping outages in the Big Creek System.

There are three overlapping outages can trigger involuntary loss of load. These outages are loss of both Big Creek-Rector 220-kV lines, loss of both Rector-Vestal 220-kV lines and loss of both Magunden-Vestal 220-kV lines. The total number of same corridor overlapping outages in the entire Big Creek system is fifteen. The potential exposure of triggering involuntary loss of load during the peak period is derived as follows:

$$\text{Risk of Shedding Load} = \frac{\text{1 N-1-1 Outage}}{\text{Year}} \times \frac{\text{3 N-1-1}}{\text{15 N-1-1}} \times \frac{\text{9 N-1-1 during Summer On-Peak}}{\text{10 Total N-1-1 for entire year}}$$

Risk of shedding load is calculated to be 0.18 times per year or once every 5.6 years.

Outage Duration

The overlapping outage duration is derived by considering the total number of hours identified for the ten overlapping outages and dividing by ten to obtain the average duration per occurrence as follows:

$$\text{Duration} = \frac{\text{36.8 hours total hours for 10 occurrences}}{\text{10 occurrences}}$$

From the above equation, the outage duration is calculated to be 3.68 hours.

Amount of Load Shedding

The amount of load shedding is determined by integrating the area under the identified load shedding exposure during summer months as shown in Figure 28 in order to obtain an average MW load shed. Depending on what year the outage occurs, the amount of load shedding will differ as the area increases with load growth. For purposes of conducting the value of service cost, the load shedding identified for year 2013 was used. This amount of load shedding was identified to be approximately 51,546,407 kW-hours.

Value of Service Cost

The calculated Value of Service cost is determined by considering the type of customers involved, amount of energy involved and outage duration. Based on previous work performed, the estimated Value of Service cost is $14 per kW-hour. For the 3.68 average outage duration, the total Value of Service cost is $1,202,750 identified as follows:

$$\text{Value of Service} = 51{,}546{,}407 \text{ kW-hours} \times \frac{1}{2208 \text{ hours}} \times \frac{\$14}{\text{kW-hour}} \times 3.68 \text{ hours}$$

Cost Exposure

The levelized cost exposure for any given year is identified to be the Value of Service cost identified above multiplied the calculated risk of shedding load. Total cost associated with involuntary load interruption is then determined by taking the present-worth value of the levelized cost exposure over 30 years. This cost was found to be approximately $2.0 million.

L. ECONOMIC EVALUATION OF PROJECT ALTERNATIVES

The four project alternatives that were identified to improve service in the San Joaquin Valley to meet WECC criteria were evaluated from an economic perspective to determine the most cost-effective project alternative. The economic evaluation included the line loss reduction and Value of Service cost estimates identified above.

Capital cost for each element of each project alternative were determined by inflating the capital costs to the corresponding year where the capital is required, assuming a 3% inflation rate. Annual carrying charges were then calculated for each project element by applying a rate of 15 percent for a period of 30 years consistent with standard utility practice. The 2004 present worth cost of capital requirement was then determined by taking the 30-year present worth of the identified annual carrying charges for each project element and discounting back from the year capital was required to

2004. Summation of all project element 30-year present-worth cost for each project alternative yields the total present-worth of each project alternative.

Based on the economic analysis, the most economic project alternative was found to be Alternative Two, which consists of the San Joaquin Valley Rector Loop and a 175 MVAR SVC at Rector. The cost comparison for all four alternatives is shown below in Table B.

Table B
Project Cost Comparisons
(Net-Present-Worth in millions)

	Alternative One	**Alternative Two**	**Alternative Three**	**Alternative Four**
Annual Carrying Charges	$79.40	$52.78	$103.97	$71.48
Line Loss Savings	$2.75	$8.53	$6.27	$9.36
Total:	$76.65	$44.25	$97.70	$62.12
Value of Service	$2.0	$0.0	$0.0	$0.0

The following provide detailed discussion of each project alternative and corresponding costs.

1. Alternative 1: Line reactor on Big Creek3-Rector 220-kV line with a 300 MVAR SVC at Rector and a controlled load-shedding scheme for simultaneous loss of two lines or overlapping (within six-hour window) loss of two lines.

   This project alternative is the least robust project alternative in that it does not allow SCE to serve the entire San Joaquin Valley load under outage conditions. The alternative consists of installing a new 220-kV 7Ω line reactor to eliminate potential base case overloads, installing a new 300 MVAR SVC to improve transient stability performance under outage conditions to an acceptable level, redesigning the existing Big Creek RAS in order to eliminate single contingency overloads that would occur as load continues to increase, and implementation of a new load dropping scheme in order to eliminate thermal overload violations identified under loss of two lines. The estimated capital cost, provided in 2004 dollars, for this alternative is $71.0 million.

   Project Elements and Work Scope

a. Line Reactor – Install a new 7Ω 220-kV line reactor on the Big Creek3-Rector 220-kV line at the Rector end in year 2006.
b. Rector SVC – Install a new 220-kV 300 MVAR SVC at Rector in year 2006.

c. Load Shedding Scheme – Install redundant telecommunication and protection requirements in accordance with WECC RAS Task Force criteria to shed load under loss of any two lines in the same corridor between Big Creek, Rector, and Magunden.

d. Big Creek RAS – The existing Big Creek RAS does not have flexibility to expand so redesign of the RAS will be required in 2010 to add units located at Big Creek3. The redesign of the scheme will require scheme to be brought to current WECC RAS standards.

Table C-1
Alternative One
Annual Carrying Charges

Project Element	*Year*	*2004 Dollars*	*Inflation Factor*	*Inflated Capital Cost*	*Annual Carrying Charges*
Line Reactor	*2006*	*$4,000,000*	$(1.03)^2$	*$4,243,600*	*$636,540*
300 MVAR SVC	*2006*	*$30,000,000*	$(1.03)^2$	*$31,827,000*	*$4,774,050*
Load-Shedding	*2006*	*$7,000,000*	$(1.03)^6$	*$7,426,300*	*$1,113,945*
Big Creek RAS	*2010*	*$30,000,000*	$(1.03)^6$	*$35,821,569*	*$5,373,235*

The project element costs, provided in 2004 dollars, were inflated to reflect the estimated in-service year. Annual carrying charges were then calculated for each project element as shown above in Table C-1. The 30-year present worth for the annual carrying charges incurred in each year were calculated, discounted back to 2004, and summed together to reflect the total 2004 net present-worth annual carrying charges for alternative one as shown below in Table C-2.

Table C-2
Alternative One
Present-Worth Analysis for Annual Carrying Charges

Year	*Annual Carrying Charges*	*30-Year Uniform Series Factor*	*Discount Years*	*Discount Factor (10%)*	*2004 Present-Worth*
2006	*$6,524,535*	*9.42691*	*2*	*0.82645*	*$50,831,802*
2010	*$5,373,235*	*9.42691*	*6*	*0.56447*	*$28,592,100*
2004 Present-Worth for Annual Carrying Charges :					*$79,423,902*

The total costs associated with project alternative one is determined by taking the 2004 present-worth cost of annual carrying charges and subtracting the present-worth line loss reduction achieved. In addition, project alternative one also contains the cost associated with involuntary loss of service.

$$\text{Net Cost}_{\text{Project Alternative One}} = \text{Capital Cost} - \text{Line Loss Reduction} + \text{VOS Cost}$$
$$\text{Net Cost}_{\text{Project Alternative One}} = \$79{,}423{,}902 - \$2{,}753{,}789 + \text{VOS Cost}$$
$$\text{Net Cost}_{\text{Project Alternative One}} = \$76{,}670{,}113 + \text{VOS Cost}$$

2. Alternative 2: San Joaquin Valley Rector Loop with 175 MVAR SVC at Rector.

This project alternative will allow SCE to serve the entire San Joaquin Valley load under base case, single outage and double outage conditions. The alternative consists of constructing a new 220-kV transmission line of approximately 15-20 miles in order to loop the existing Big Creek3-Springville 220-kV line into Rector and installing a new 175 MVAR 220-kV dynamic VAR device to eliminate single and double contingency transient voltage criteria violations as well as post-transient voltage criteria violations identified under loss of two lines. The estimated capital cost, provided in 2004 dollars, for this alternative is $46.1 million.

Project Elements and Work Scope

a. Rector Loop – Construct 15-20 miles of double-circuit 220-kV with lattice tower construction type "O" and one single 1033 ACSR conductor on each side and connect into existing Rector line positions by adding four new 220-kV circuit-breakers in year 2008.

b. Rector SVC – Install a new 220-kV 175 MVAR SVC at Rector in year 2006.

Table D-1
Alternative Two
Annual Carrying Charges

Project Element	*Year*	*2004 Dollars*	*Inflation Factor*	*Inflated Capital Cost*	*Annual Carrying Charges*
175 MVAR SVC	*2006*	*$17,500,000*	$(1.03)^2$	*$18,565,750*	*$2,784,863*
Rector Loop	*2008*	*$28,600,000*	$(1.03)^4$	*$32,189,552*	*$4,828,433*

The project element costs, provided in 2004 dollars, were inflated to reflect the estimated in-service year. Annual carrying charges were then calculated for each project element as shown above in Table D-1. The 30-year present worth for the annual carrying charges incurred in each year were calculated, discounted back to 2004, and summed together to reflect the total 2004 net present-worth annual carrying charges for alternative two as shown below in Table D-2.

Table D-2
Alternative Two
Present-Worth Analysis for Annual Carrying Charges

Year	*Annual Carrying Charges*	*30-Year Uniform Series Factor*	*Discount Years*	*Discount Factor (10%)*	*2004 Present-Worth*
2006	*$2,784,863*	*9.42691*	*2*	*0.82645*	*$21,696,505*
2008	*$4,828,433*	*9.42691*	*4*	*0.68301*	*$31,088,704*
2004 Present-Worth for Annual Carrying Charges :					*$52,782,209*

The total costs associated with project alternative two is determined by taking the present-worth cost of annual carrying charges and subtracting the present-worth line loss reduction achieved.

Net Cost $_{\text{Project Alternative Two}}$ = Capital Cost – Line Loss Reduction
Net Cost $_{\text{Project Alternative Two}}$ = $52,782,209 – $8,527,489
Net Cost $_{\text{Project Alternative Two}}$ = $44,257,720

3. Alternative 3: Permanently transfer load served out of Rector to Springville and install a new 200 MVAR SVC at Rector.

The alternative consists of installing additional A-Bank capacity and additional subtransmission line capacity and voltage support within the Springville 66-kV radial network in order to accommodate load transfer. In addition, a new 200 MVAR SVC is required to improve transient voltage response to within acceptable levels. The estimated capital cost, provided in 2004 dollars, for this alternative is $93.3 million.

Project Elements and Work Scope

a. A-Bank Capacity – Install two new 230/66-kV 280 MVA transformer banks at Springville to support additional service to load by 2006. Transfer of load will result in eliminating the current need to increase Rector A-Bank capacity so cost estimates will be based on differential of adding two banks at Springville and eliminating need for A-bank capacity at Rector.

b. Rector SVC – Install a new 220-kV 200 MVAR SVC at Rector by year 2006.

c. Springville Subtransmission upgrades – Tear down and rebuild approximately 100 miles of existing low capacity 66-kV conductor in the Springville system to support permanent load transfer by 2007.

d. Subtransmission Reactive Support – Install new 66-kV shunt and 66-kV dynamic reactive support by 2007 to maintain adequate voltage and power quality to load transfer customers sensitive to power quality such as the California Milk Produces located within Rector and Springville systems.

e. Subtransmission Capacity – Construct four new 66-kV transmission lines from Springville to load pockets in Rector system where load is to be transferred by 2008. The new 66-kV lines will be located on new easements of approximately 35-40 miles. Construction will be double-circuit light-duty tubular steel poles.

Table E-1
Alternative Three
Annual Carrying Charges

Project Element	*Year*	*2004 Dollars*	*Inflation Factor*	*Inflated Capital Cost*	*Annual Carrying Charges*
A-Bank Capacity	*2006*	*$9,400,000*	*$(1.03)^2$*	*$9,972,460*	*$1,495,869*
200 MVAR SVC	*2006*	*$20,000,000*	*$(1.03)^2$*	*$21,218,000*	*$3,182,700*
Subtrans Upgrades	*2007*	*$35,000,000*	*$(1.03)^3$*	*$38,245,445*	*$5,736,817*
Subtrans. VARs	*2007*	*$3,500,000*	*$(1.03)^3$*	*$3,824,545*	*$573,682*
Subtrans. Capacity	*2008*	*$21,000,000*	*$(1.03)^4$*	*$23,635,685*	*$3,545,353*

The project element costs, provided in 2004 dollars, were inflated to reflect the estimated in-service year. Annual carrying charges were then calculated for each project element as shown above in Table E-1. The 30-year present worth for the annual carrying charges incurred in each year were calculated, discounted back to 2004, and summed together to reflect the total 2004 net present-worth annual carrying charges for alternative three as shown below in Table E-2.

Table E-2
Alternative Three
Present-Worth Analysis for Annual Carrying Charges

Year	*Annual Carrying Charges*	*30-Year Uniform Series Factor*	*Discount Years*	*Discount Factor (10%)*	*2004 Present-Worth*
2006	*$4,678,569*	*9.42691*	*2*	*0.82645*	*$36,450,122*
2007	*$6,310,499*	*9.42691*	*3*	*0.75131*	*$44,694,310*
2008	*$3,545,353*	*9.42691*	*4*	*0.68301*	*$22,827,371*
		2004 Present-Worth for Annual Carrying Charges :			*$103,971,803*

The total costs associated with project alternative three is determined by taking the present-worth cost of annual carrying charges and subtracting the present-worth line loss reduction achieved.

Net Cost $_{\text{Project Alternative Three}}$ = Capital Cost – Line Loss Reduction
Net Cost $_{\text{Project Alternative Three}}$ = $103,971,803 – $6,265,445
Net Cost $_{\text{Project Alternative Three}}$ = $97,706,358

4. Alternative 4: San Joaquin Valley Rector Double Loop with 75 MVAR SVC at Rector.

   This project alternative is similar to project alternative two but consists of looping both Big Creek-Springville 220-kV lines into Rector and installing a smaller size SVC. As a result, transmission cost will be twice as high and SVC costs will be approximately half as much. The estimated capital cost for this alternative is $64.7 million.

   Project Elements and Work Scope

   a. Rector Double Loop – Construct two 15-20 miles of double-circuit 220-kV with lattice tower construction type "O" and one single 1033 ACSR conductor on each side and connect into existing Rector line positions by adding eight new 220-kV circuit-breakers in year 2008.

   b. Rector SVC – Install a new 220-kV 75 MVAR SVC at Rector in year 2006.

Table F-1
Alternative Four
Annual Carrying Charges

Project Element	*Year*	*2004 Dollars*	*Inflation Factor*	*Inflated Capital Cost*	*Annual Carrying Charges*
75 MVAR SVC	*2006*	*$7,500,000*	*$(1.03)^2$*	*$7,956,750*	*$1,193,513*
Rector Double Loop	*2008*	*$57,200,000*	*$(1.03)^4$*	*$64,379,104*	*$9,656,866*

The project element costs, provided in 2004 dollars, were inflated to reflect the estimated in-service year. Annual carrying charges were then calculated for each project element as shown above in Table F-1. The 30-year present worth for the annual carrying charges incurred in each year were calculated, discounted back to 2004, and summed together to reflect the total 2004 net present-worth annual carrying charges for alternative four as shown below in Table F-2.

Table F-2
Alternative Four
Present-Worth Analysis for Annual Carrying Charges

Year	*Annual Carrying Charges*	*30-Year Uniform Series Factor*	*Discount Years*	*Discount Factor (10%)*	*2004 Present-Worth*
2006	*$1,193,513*	*9.42691*	*2*	*0.82645*	*$9,298,500*
2008	*$9,656,866*	*9.42691*	*4*	*0.68301*	*$62,177,410*
				2004 Capital Present-Worth:	*$71,475,910*

The total costs associated with project alternative four is determined by taking the present-worth cost of annual carrying charges and subtracting the present-worth line loss reduction.

$$\text{Net Cost}_{\text{Project Alternative Four}} = \text{Capital Cost} - \text{Line Loss Reduction}$$
$$\text{Net Cost}_{\text{Project Alternative Four}} = \$71,475,910 - \$9,360,563$$
$$\text{Net Cost}_{\text{Project Alternative Four}} = \$62,115,347$$

M. CONCLUSION

Load growth in the San Joaquin Valley, particularly at Rector, has eroded available capacity for delivery of Big Creek hydro generation during peak load period conditions, degraded transient stability performance under single and double outage conditions, and impacted post-transient voltage performance under simultaneous or overlapping outage of both Big Creek-

Rector 220-kV lines. As load continues to increase in the Valley, the identified problems will be exacerbated to the point were reliable service to load will be compromised. System upgrades will be required to restore system performance to within acceptable limits.

With the current load forecast, power flow studies identified base case, single outage, and double outage overload problems in the San Joaquin Valley. The existing run-back portion of the Big Creek RAS is insufficient to mitigate the identified problems and should be modified to reflect system limitations. In addition, transient stability studies identified that continued load growth resulting in disproportionate line loading will degrade transient performance under loss of one transmission line to the point were potential voltage collapse can occur under loss of one transmission line.

Thermal Overloads

1. Base Case Overloads

   With the continued load growth in the San Joaquin Valley, base case overloads with all facilities in service and under certain operating conditions were identified when loads at Rector exceed 650 MW. This load is expected to be attained by year 2008 based on current load forecast projections. Additional transmission capacity will be required to mitigate the identified base case overload. Consideration of implementing congestion management as a viable alternative for mitigating the identified base case overload which is attributed to load growth is inappropriate as such limitation will impinge SCE's ability to serve its load as mandated by the CPUC.

2. Single Contingency Overloads

   Power flow studies have identified additional generation limitations **if** the Big Creek RAS scheme is not in service or the SEL-68 stability relay is not available. The current System Operating Bulletin indicates a limit of 690 MW under this condition. Studies have identified that the limit, which includes emergency capability, ranges from 490 MW to 840 MW under the most limiting outage, loss of the Big Creek1-Rector 220-kV line, and loads served from Rector ranging from 700 MW down to 250 MW respectively.

   With the RAS scheme in service, single contingency overloads were identified under maximum Big Creek hydro generation and maximum load at Rector even after tripping or running back the Eastwood and Mammoth Pool units. Additional unit tripping, unit run-back or transmission capacity will be required to mitigate the thermal loading in excess of the emergency limit on the Big Creek3-Rector 220-kV line under outage of the Big Creek1-Rector 220-kV line.

3. Double Contingency Overloads

   Several outages did not result in a power flow case convergence due to voltage limitations. These outages were examined closely and were identified to result in a significant thermal conductor overload problem even if the voltage problems are resolved. Simultaneous or overlapping outages of two lines located in the same corridor between Big Creek, Rector and Magunden result in insufficient capacity on the remaining lines to adequately serve the entire loads.

Transient Instability

1. Single Contingency

   Transient stability studies performed without implementation of the existing Big Creek RAS determined that the thermal limitations identified when the RAS scheme is not in service or the SEL-68 stability relay is not available are more restrictive than the limitations identified for system instability. As a result, the limitations identified for thermal overload will be imposed on the Big Creek hydro units when the Big Creek RAS is not in service or when the SEL-68 stability relay is not available.

   With the RAS scheme in service, continued load growth will result in system instability under outage of the Big Creek3-Rector 220-kV line even after tripping the existing Big Creek generation participating in the RAS. Under this outage, system instability was identified when the collective Big Creek Project output is in excess of 975 MW with Rector load levels less than or equal to 550 MW and 950 MW with Rector load levels greater than 550 MW. In addition, a number of single outages were identified to remain stable but experienced a significantly high transient voltage deviation.

2. Double Contingency

   Transient stability studies identified undamped growing oscillations under simultaneous outage of the Big Creek1-Rector 220-kV together with the Big Creek3-Rector 220-kV and operation of the Big Creek RAS when the collective Big Creek hydro generation output is in excess of 975 MW. All other N-2 outages were found to be within criteria when the collective Big Creek hydro generation output is at maximum.

A number of options were examined to improve system performance under base case, single outage, and double outage conditions. These options included modifications to the existing Big Creek RAS, additional power system stabilizers, series compensation, line reactors, additional dynamic support, additional generation tripping, permanent load transfer and additional transmission capacity into Rector.

Results of the study identified that none of these options alone were sufficient to eliminate both the thermal overload problems and transient stability problems. As a result, four project alternatives, comprised of various elements, were examined to identify the best transmission alternative available to mitigate the identified problems. These alternatives include:

1. Line reactor (7 Ω) on Big Creek3-Rector 220-kV with 300 MVAR SVC at Rector and additional Big Creek 3 generation tripping for N-1 and Rector load shedding for N-2

2. Big Creek3-Springville 220-kV line loop into Rector with 175 MVAR SVC at Rector

3. Permanent load transfer from Rector to Springville with 200 MVAR SVC at Rector

4. Big Creek3-Springville 220-kV and Big Creek4-Springville 220-kV line loop into Rector with 75 MVAR SVC at Rector

These four project alternatives were found to be sufficient to improve overall system performance to within acceptable levels. Economic evaluation performed and summarized below identified Alternative 2 to be the most cost effective project alternative.

Project Cost Comparisons
(Net Present-Worth in millions)

	Alternative One	Alternative Two	Alternative Three	Alternative Four
Annual Carrying Charges	$79.40	$52.78	$103.97	$71.48
Line Loss Savings	$2.75	$8.53	$6.27	$9.36
Total:	$76.65	$44.26	$97.71	$62.12
Value of Service	$2.0	$0.0	$0.0	$0.0

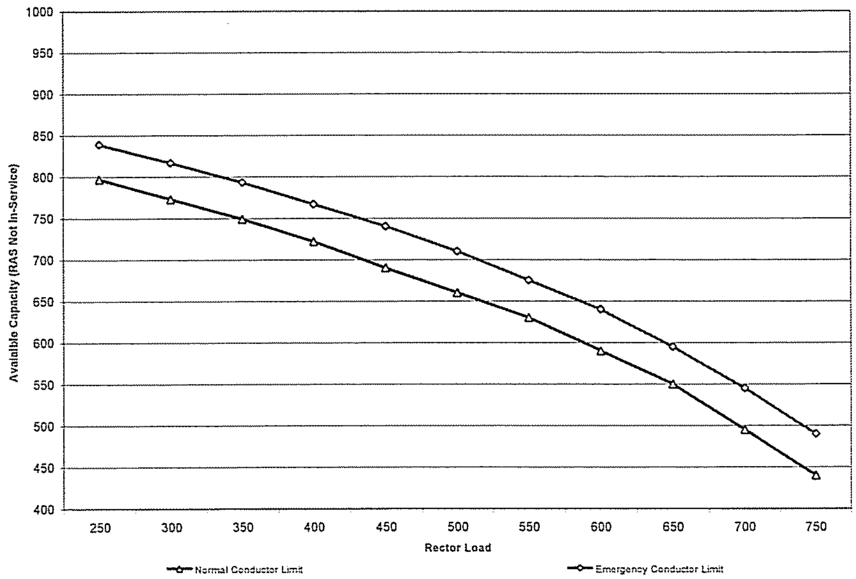
N. RECOMMENDATION

SCE recommends project Alternative 2 as the most economic project alternative required to improve system performance in the San Joaquin Valley to within acceptable levels. This project alternative will eliminate base case, single contingency and double contingency thermal overload problems as well as transient stability problems identified under loss of one or two transmission facilities.

The following recommendations are also made until such time that the recommended project alternative is put in service:

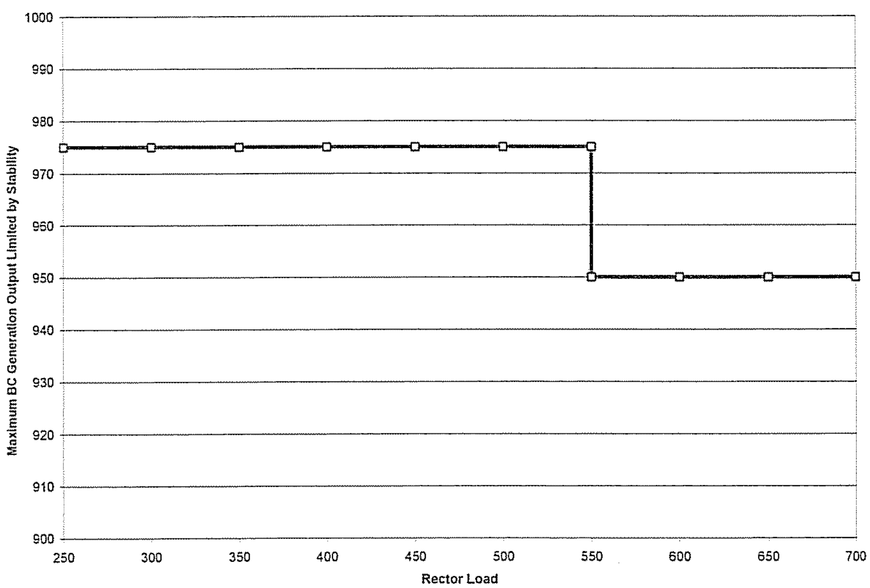
1. Revise existing System Operating Bulletin 204 to include implementation of Operating Nomogram, which limits the collective Big Creek hydro generation based on load served out of Rector when the Big Creek RAS is not in service **or** the SEL-68 stability relay located at the Magunden 220-kV substation is not available. The limitation will range from 840 MW down to 545 MW with load served out of Rector ranging from 250 MW up to 700 MW as shown below:

Operating Nomogram limiting Big Creek Hydro Generation
When the Big Creek RAS or SEL-68 Stability Relay are not Available



2. Limit the collective Big Creek hydro generation output to no more than 975 MW with Rector loads less than or equal to 550 MW and 950 MW with loads served out of Rector greater than 550 MW as shown below:

Available Capacity for Big Creek Hydro Generation
With Big Creek RAS and SEL-68 Stability Relay In-Service



3. To avoid potential voltage collapse in the area, implement an Operating Procedure for loss of any one Big Creek-Rector 220-kV line if the line cannot be restored within one-hour. The Operating Procedure will call for transferring as much load as possible from Rector to Springville. If loads at Rector are still above 430 MW, load shedding will be initiated until the Rector A-Bank load is reduced down to 430 MW.

TABLES

TABLE 1
Dynamic Simulation Data
Generator Model (gensal)

	Big Creek Powerhouse 1				Big Creek Powerhouse 2 & 2A					
	1	2	3	4	1	2	3	4	5	6
Ld	0.5358	0.5358	0.7000	0.6535	0.4675	0.5178	0.4386	0.4342	0.6885	0.6550
L'd	0.3000	0.3000	0.2570	0.3000	0.1890	0.1920	0.2250	0.2250	0.2200	0.2000
L"d	0.2330	0.2330	0.2088	0.2843	0.1765	0.1913	0.2150	0.2147	0.2121	0.1964
Lq	0.3376	0.3376	0.4410	0.4181	0.2945	0.3262	0.2763	0.2763	0.4338	0.4127
L'q	0	0	0	0	0	0	0	0	0	0
L"q	0.2330	0.2330	0.2088	0.2843	0.1765	0.1913	0.2150	0.2147	0.2121	0.1964
Ll	0.1864	0.1864	0.1670	0.2275	0.1412	0.1530	0.1845	0.1718	0.1697	0.1571
Ra	0	0	0	0	0	0	0	0	0	0
T'do	7.000	7.000	9.960	12.200	6.984	7.120	7.289	7.105	6.800	6.950
T"do	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
T'qo	0	0	0	0	0	0	0	0	0	0
T"qo	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
S1	0.1556	0.1556	0.2777	0.2012	0.3123	0.3123	0.2647	0.2647	0.2877	0.2942
S12	0.3214	0.3214	0.6129	1.1967	0.9444	0.9444	0.9704	0.9704	0.9500	1.0000
H	6.4369	7.3127	5.6971	4.0434	5.1277	5.6394	4.3736	4.0798	4.2948	4.0475
Rcomp	0	0	0	0	0	0	0	0	0	0
Xcomp	-0.0998	-0.0998	-0.0919	-0.0641	-0.04033	-0.04136	-0.0578	-0.0519	-0.0888	-0.0383

	Big Creek Powerhouse 3					Big Creek 4		Big Creek 8		Eastwood
	1	2	3	4	5	1	2	1	2	
Ld	0.3200	0.3171	0.3200	0.5000	0.9800	0.5750	0.6020	0.6465	0.6500	0.9100
L'd	0.2100	0.2300	0.2100	0.2100	0.3000	0.2650	0.2250	0.3000	0.3000	0.2660
L"d	0.2062	0.1210	0.1900	0.2100	0.2460	0.2571	0.2177	0.2424	0.2627	0.2060
Lq	0.1915	0.2000	0.1960	0.3100	0.3500	0.3623	0.2727	0.4073	0.4095	0.5800
L'q	0	0	0	0	0	0	0	0	0	0
L"q	0.2062	0.1210	0.1900	0.2100	0.2460	0.2571	0.2177	0.2424	0.2627	0.2060
Ll	0.1649	0.0970	0.1500	0.1700	0.1970	0.2057	0.1742	0.1939	0.2102	0.1650
Ra	0	0	0	0	0	0	0	0	0	0
T'do	7.000	6.300	6.300	9.400	6.400	8.650	7.184	11.300	6.500	13.400
T"do	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.101
T'qo	0	0	0	0	0	0	0	0	0	0
T"qo	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.206
S1	0.1266	0.1266	0.1266	0.3750	0.2055	0.2784	0.2096	0.0646	0.1378	0.1222
S12	0.4737	0.4737	0.4737	1.0360	0.6478	1.3396	0.7647	0.1452	0.4583	0.5300
H	3.4150	3.3970	3.3400	3.2300	3.2200	4.1217	4.6857	5.7200	2.8700	5.1380
Rcomp	0	0	0	0	0	0	0	0	0	0
Xcomp	-0.0717	-0.0761	-0.0707	-0.086	-0.1365	-0.0566	-0.0461	-0.0804	-0.1062	-0.0570

	Mammoth		Portal
	1	2	
Ld	0.6000	0.7400	0.5300
L'd	0.3500	0.3500	0.3300
L"d	0.3310	0.3391	0.3200
Lq	0.3500	0.4200	0.3500
L'q	0	0	0
L"q	0.3310	0.3391	0.3200
Ll	0.2640	0.2710	0.2560
Ra	0	0	0
T'do	9.000	7.800	3.260
T"do	0.050	0.050	0.050
T'qo	0	0	0
T"qo	0.0500	0.0500	0.0500
S1	0.1200	0.1200	0.2470
S12	0.4550	0.4550	0.5490
H	2.6300	2.6300	1.9200
Rcomp	0	0	0
Xcomp	-0.0570	-0.0550	-0.0860

TABLE 2
Dynamic Simulation Data
Excitation System Model (excd2)

	Big Creek Powerhouse 1				Big Creek Powerhouse 2 & 2A				Mammoth	
	1	2	3	4	1	2	5	6	1	2
Tr	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Ka	550	550	1000	1000	550	550	550	550	400	400
Ta	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Tb	10	10	10	10	2.2	2.2	1.2	1.2	4.1	4.1
Tc	0.25	0.25	0.25	0.25	0.2	0.2	0.05	0.05	0.80	0.80
Vrmax	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Vrmin	0	0	0	0	0	0	0	0	0	0
Ke	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Te	1.00	1.00	1.50	1.50	2.38	2.38	1.96	2.98	4.06	3.56
Kf	2.00	2.00	1.00	0.25	0.55	0.35	0.70	0.20	0.70	0.70
Tf1	7.0	7.0	7.0	2.0	7.0	7.0	9.1	6.0	1.6	1.6
Tf2	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.2	10	10
E1	1.8362	1.8362	1.8362	2.0078	1.7505	1.7505	2.0898	1.8671	2.0850	2.0850
SE1	0.0832	0.0832	0.0834	0.1304	0.0815	0.0815	0.0461	0.0358	0.0820	0.0820
E2	2.2621	2.2621	2.2621	3.0117	2.3341	2.3341	2.7129	2.5086	2.6860	2.6860
SE2	0.2409	0.2409	0.2409	1.0000	0.2705	0.2705	0.1142	0.2288	0.4390	0.4390

TABLE 2
Dynamic Simulation Data
Excitation System Model (excd2)

	Big Creek Powerhouse 3				Big Creek 4		Big Creek 8	
	1	2	3	4	1	2	1	2
Tr	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Ka	500	500	500	500	550	550	500	500
Ta	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Tb	10	10	10	10	2.9	3.2	10	10
Tc	0.70	0.25	0.50	0.50	0.20	0.20	0.25	0.25
Vrmax	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Vrmin	0	0	0	0	0	0	0	0
Ke	1.00	1.00	1.00	1.00	1.00	1.00	0.25	0.50
Te	3.68	1.35	2.78	3.7	2.93	3.46	0.30	0.58
Kf	1.00	1.40	1.00	1.00	0.30	0.65	2.00	2.00
Tf1	0.7	7.0	0.5	0.5	2.9	3.5	7.0	7.0
Tf2	7.00	0.30	7.00	7.00	0.26	0.40	0.30	0.30
E1	1.6220	1.6220	1.6220	1.7830	1.6730	1.6245	2.0197	1.7380
SE1	0.0422	0.0422	0.0422	0.1270	0.1103	0.2264	0.0323	0.0267
E2	1.9685	1.9685	1.9685	2.5970	2.0213	2.0457	2.6930	2.0660
SE2	0.0909	0.0909	0.0909	0.5380	0.2571	1.0533	0.0732	0.1064

TABLE 2
Dynamic Simulation Data
Excitation System Model

(exst1)

	Big Creek 2		Eastwood	Portal
	3	4		
Tr	0.010	0.010	0.000	0.015
Vimax	0.1	0.1	0.2	0.2
Vimin	-0.1	-0.1	-0.2	-0.2
Tc	0.05	0.05	3.33	1.00
Tb	2	2	10	10
Ka	430	430	200	50
Ta	0.02	0.02	0.05	0.02
Vrmax	5.0	5.0	5.0	3.6
Vrmin	0	0	-5	0
Kc	0.05	0.05	0.10	0.10
Kf	0.02	0.02	0.00	0.00
Tf	1.5	1.5	1.0	1.0
Tc1	1.0	1.0	1.0	0.3
Tb1	1.0	1.0	1.0	0.1
Vamax	5	5	99	99
Vamin	0	0	-99	0
Xe	0.04	0.04	0.00	0.00
Ilr	2.8	2.8	99	99
Klr	5	5	0	0

(exst4b)

	Existing	Possible	Possible	Possible
	BigCreek3	Big Creek 2		BigCreek 4
	5	1	2	2
Tr	0.005	0.020	0.020	0.020
Kpr	1.5	4.0	4.0	5.0
Kir	2	1	1	3
Ta	0.07	0.01	0.01	0.01
Vrmax	2.70	1.00	1.00	1.00
Vrmin	-2.70	-0.87	-0.87	-0.87
Kpm	1.0	1.0	1.0	0.5
Kim	0	0	0	0
Vmmax	99	1	1	1
Vmmin	-99	-0.87	-0.87	-0.87
Kg	0	0	0	0
Kp	9.3	5.0	5.0	6.5
Ang P	0	0	0	0
Ki	0	0	0	0
Kc	0.113	0.08	0.08	0.08
Xl	0.124	0	0	0
Vbmax	11.63	8.0	8.0	8.0

TABLE 3
Dynamic Simulation Data
Governor Model (hygov4)

	Big Creek Powerhouse 1				Big Creek Powerhouse 2 & 2A						Eastwood
	1	2	3	4	1	2	3	4	5	6	
Tg	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500
Tp	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	1.0000
Uo	0.0103	0.0343	0.0343	0.0136	0.0047	0.0313	0.0532	0.1032	0.0355	0.0344	0.0440
Uc	-0.15660	-0.09364	-0.09364	-0.08590	-0.01483	-0.02900	-0.10220	-0.11290	-0.04400	-0.04790	-0.02300
Pmax	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Pmin	0	0	0	0	0	0	0	0	0	0	0
Rperm	0.08260	0.08260	0.08230	0.05820	0.02620	0.05160	0.05810	0.05240	0.04470	0.07160	0.09400
Rtemp	0.60	0.60	0.60	0.60	0.60	0.40	0.02	0.01	0.25	0.25	0.35
Tr	0.50	0.20	0.20	0.30	0.20	0.50	3.00	5.10	0.60	0.60	10.00
Tw	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.0
At	2.00	1.30	1.00	1.40	1.50	1.24	1.00	1.05	1.10	1.02	1.44
Dturb	0.5	0.5	0.5	0.5	0.5	0.5	5.65	0.05	4.00	7.00	0.5
Ho	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Qnl	0.0500	0.0500	0.0500	0.0250	0.0250	0.0350	0.0630	0.0590	0.0250	0.0300	0.0800
DB1	0	0	0	0	0	0	0	0	0	0	0
EPS	0	0	0	0	0	0	0	0	0	0	0
DB2	0	0	0	0	0	0	0	0	0	0	0
GV1	0.0500	0.0500	0.0500	0.0250	0.0250	0.1780	0.0865	0.1880	0.0690	0.0300	0.2100
PGV1	0.0000	0.0000	0.0000	0.0000	0.0000	0.3273	0.0915	0.1423	0.0651	0.0000	0.1400
GV2	0.2500	0.2500	0.2500	0.2500	0.2560	0.2250	0.0931	0.2846	0.2160	0.1160	0.3000
PGV2	0.2800	0.3100	0.2750	0.5400	0.2200	0.4290	0.1019	0.2909	0.4429	0.2617	0.2800
GV3	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.2699	0.4139	0.2850	0.1840	0.4000
PGV3	0.5100	0.5500	0.4500	0.6500	0.4600	0.7000	0.3325	0.4903	0.5509	0.3486	0.4300
GV4	0.6000	0.6000	0.6000	0.6000	0.5020	0.5000	0.3405	0.4834	0.3710	0.4113	0.5000
PGV4	0.8000	0.8800	0.6750	0.8300	0.7050	0.7800	0.4543	0.6149	0.6771	0.7657	0.5800
GV5	0.8000	0.8000	0.8000	0.7000	0.5510	0.6000	0.4163	0.6194	0.5400	0.4720	0.6000
PGV5	0.9800	1.0800	0.8250	0.9200	0.7750	0.8500	0.5804	0.8069	0.8506	0.8337	0.7100
GV6	0.8600	0.8600	0.8800	0.8700	0.6345	0.7310	0.6691	0.6849	0.5780	0.5200	0.7000
PGV6	1.0000	1.1800	0.9000	0.9900	0.8750	0.9382	0.9566	0.9029	0.8686	0.8857	0.8500

	Big Creek Powerhouse 3					Big Creek 4		Big Creek 8		Mammoth	
	1	2	3	4	5	1	2	1	2	1	2
Tg	0.0500	0.0500	0.0500	0.0500	0.0500	0.1250	0.1250	0.0500	0.0500	0.0500	0.0500
Tp	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
Uo	0.0476	0.0307	0.0490	0.0390	0.0330	0.0292	0.0194	0.0280	0.0115	0.0079	0.0073
Uc	-0.06990	-0.03850	-0.04000	-0.05500	-0.04000	-0.02950	-0.02250	-0.03730	-0.03570	-0.04840	-0.01600
Pmax	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Pmin	0	0	0	0	0	0	0	0	0	0	0
Rperm	0.04619	0.04581	0.04140	0.11100	0.05200	0.03970	0.04500	0.03083	0.05000	0.04270	0.04230
Rtemp	0.30	0.60	0.60	0.10	0.10	0.05	0.005	0.60	0.60	0.35	0.05
Tr	0.08	0.40	0.08	2.00	2.00	15.00	20.00	0.20	0.40	1.00	5.00
Tw	2.0	2.0	2.0	2.0	2.0	1.5	1.5	2.0	2.0	2.0	2.0
At	1.10	1.20	1.20	1.20	1.40	1.25	1.19	1.20	1.20	1.06	1.06
Dturb	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	3.2	0.5
Ho	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Qnl	0.0500	0.0250	0.0500	0.0500	0.0250	0.0607	0.0380	0.0500	0.0625	0.0363	0.0363
DB1	0	0	0	0	0	0	0	0	0	0	0
EPS	0	0	0	0	0	0	0	0	0	0	0
DB2	0	0	0	0	0	0	0	0	0	0	0
GV1	0.2000	0.1000	0.2000	0.2000	0.2000	0.3307	0.1576	0.0500	0.1000	0.0000	0.0000
PGV1	0.1200	0.0360	0.1200	0.1200	0.1200	0.3054	0.0813	0.0000	0.1500	0.0000	0.0000
GV2	0.3000	0.2000	0.2500	0.2500	0.3000	0.3936	0.1855	0.2160	0.2000	0.1000	0.1000
PGV2	0.3000	0.1570	0.2240	0.2240	0.2100	0.3901	0.1120	0.2500	0.2300	0.0530	0.0530
GV3	0.4000	0.4000	0.4000	0.4000	0.4000	0.4667	0.2622	0.3250	0.4000	0.2000	0.2000
PGV3	0.4400	0.4080	0.4200	0.4100	0.3600	0.4847	0.2033	0.4000	0.4000	0.1600	0.1600
GV4	0.6000	0.6000	0.6000	0.6000	0.6000	0.5303	0.4756	0.4700	0.6000	0.4000	0.4000
PGV4	0.7400	0.7020	0.7100	0.7100	0.7400	0.5659	0.5084	0.6000	0.7110	0.3960	0.3960
GV5	0.8000	0.8000	0.8000	0.8000	0.8000	0.6710	0.6744	0.6400	0.8000	0.6000	0.6000
PGV5	0.9800	0.9450	0.9700	0.9450	1.0400	0.7633	0.7882	0.8000	0.8733	0.6600	0.6600
GV6	0.8250	0.8400	0.8500	0.8400	0.8800	0.7947	0.8703	0.7250	0.9500	0.8000	0.8000
PGV6	1.0000	1.0000	1.0000	1.0000	1.0700	0.9281	0.9851	0.9000	0.9870	0.8600	0.8600

TABLE 4
Dynamic Simulation Data
Power System Stabilizers Model (pss2a)

	(existing)	(possible PSS)			
	Eastwood	Big Creek 2		BigCreek 4	
		1	2	1	2
J1	2	1	1	1	1
K1	0	0	0	0	0
J2	3	3	3	3	3
K2	0	0	0	0	0
Tw1	10	20	20	10	10
Tw2	0	20	20	10	10
Tw3	10	20	20	10	10
Tw4	0	0	0	0	0
T6	0	0	0	0	0
T7	0	20	20	10	10
Ks2	0	1.9507	1.7732	1.2131	1.0671
Ks3	0	1	1	1	1
Ks4	0	1	1	1	1
T8	0	0.5	0.5	0.5	0.5
T9	0	0.1	0.1	0.1	0.1
N	0	1	1	1	1
M	0	5	5	5	5
Ks1	20	25	25	25	25
T1	0.2073	0.25	0.25	0.4	0.4
T2	0.0225	0.05	0.05	0.067	0.067
T3	0.1562	0.2	0.2	0.4	0.4
T4	0.0112	0.04	0.04	0.067	0.067
Vstmax	0.10	0.1	0.1	0.1	0.1
Vstmin	-0.10	-0.1	-0.1	-0.1	-0.1

Table 5
Big Creek Hydro Generation Assumptions

Powerhouse	Unit	Previous Model MW Values	New Model MW Values
Big Creek Powerhouse1	1	17.5	19.9
	2	17.5	21.6
	3	17.2	21.6
	4	25	31.2
Big Creek Powerhouse2	1	49.3	50.8
	2	49.2	52.0
	3	15.8	18.7
	4	15.6	19.7
	5	16.9	17.0
	6	18.8	18.5
Big Creek Powerhouse3	1	34	35.0
	2	34	35.0
	3	34	35.0
	4	40.6	41.0
	5	36.5	39.0
Big Creek Powerhouse4	1	50	50.4
	2	42	50.6
Big Creek Powerhouse8	1	25.8	24.4
	2	38.7	44.0
Mammoth Pool Powerhouse	1	93.5	93.5
	2	93.5	93.5
Eastwood Powerstation		207	207.0
Portal Powerhouse		Not Modeled	9.6
Total Generation Available		972.4	1029

Table 6
2004-2008 CAISO Assessment
Localized Heavy Summer Load Forecast
1-in-10 Adjusted Local Area Coincident Loads
(Non-Coincident to System)

Substation	2004	2005	2006	2007	2008	2013
Rector 66-kV	614.7	626.1	635.3	644.4	652.9	702.3
Springville 66-kV	200.7	203.9	207.2	210.4	213.8	229.1
Vestal 66-kV	188.1	192.2	196.7	200.8	205.1	227.7

Table 7
2004-2008 CAISO Assessment
Localized Heavy Summer Load Forecast
1-in-10 Adjusted Local Area A-Bank Load

Substation	2004	2005	2006	2007	2008	2013
Rector 66-kV	650.3	662.5	672.1	681.8	690.7	742.8
Springville 66-kV	221.6	225.2	228.8	232.3	236.0	253.1
Vestal 66-kV	203.9	208.6	213.5	218.0	222.7	247.3

TABLE 8
Positive Sequence and Zero Sequence Impedance

Fault Location	Positive Sequence	Zero Sequence
Big Creek1 220-kV bus	0.00218 + j0.02603	0.00198 + j0.02125
Big Creek3 220-kV bus	0.00175 + j0.02347	0.00109 + j0.01546
Big Creek4 220-kV bus	0.00303 + j0.02926	0.00280 + j0.02860
Rector 220-kV bus	0.00576 + j0.03474	0.00069 + j0.01819
Vestal 220-kV bus	0.00433 + j0.02771	0.00288 + j0.03568
Springville 220-kV bus	0.00447 + j0.03333	0.00302 + j0.04541
Magunden 220-kV bus	0.00138 + j0.01284	0.00333 + j0.02595

CALIFORNIA ISO

FINAL
Released: July 29, 2004

GENERAL SESSION MINUTES
BOARD OF GOVERNORS
June 24, 2004
ISO Headquarters
Folsom, California

Chairperson Michael Kahn called the meeting to order. Roll call was taken and the presence of a quorum was determined.

ATTENDANCE

The following members were in attendance:

Mike Florio
Tim Gage
Michael Kahn (chairperson)

Jeff Tranen, Transition Manager, attended by telephone

GENERAL SESSION

The following agenda items were discussed in General Session:

Chairperson Kahn commented regarding management changes and thanked Jeff Tranen for stepping in during the transition period. Chairperson Kahn announced that Marcie Edwards would be serving as Interim CEO and that a search for a full time CEO was in process.

Chairperson Kahn also commented on recent Court of Appeals decision, noting that the ISO would continue to cooperate with FERC and work closely with them on reliability issues. The Board also thanked ISO staff involved with the summer reliability issues.

PUBLIC COMMENT

Alan Comnes, Director, Government and Regulatory Affairs, Dynegy Power Corp. representing West Coast Power, spoke regarding resource adequacy and the June 10 ruling by the California Public Utilities Commission. Mr. Comnes also addressed the proposal from the Transition Team regarding intrazonal congestion.

Ron Nunnally, Southern California Edison, expressed support for two projects relative to transmission upgrades of the Edison portion of the ISO grid.

Brian Hitson, Pacific Gas & Electric, spoke regarding the intrazonal congestion management issues, suggesting that the ISO explore alternatives.

APPROVAL OF GENERAL SESSION MINUTES

Mr. Gage moved for the approval of General Session Minutes from May 27, 2004. Motion seconded by Mr. Florio and approved, 3-0-0.

APPROVAL OF THE SOUTHWEST TRANSMISSION EXPANSION PLAN (STEP) SHORT-TERM TRANSMISSION UPGRADES

Jeff Miller, ISO Regional Transmission Manager, Grid Planning Department, reviewed the background of the Southwest Transmission Expansion Plan (STEP), stating that the project had full support of stakeholders. Mr. Miller noted that additional projects are in progress and would be presented to Board in Fall 2004.

Motion

Mr. Gage:

MOVED, that the Board of Governors:

1. ***Grants its approval of the Southwest Transmission Expansion Plan (STEP) Short-Term Transmission Upgrades as documented in the ISO Board Memorandum dated June 18, 2004, and finds that the transmission upgrades to be performed as part of the STEP are necessary and cost effective additions to the ISO Controlled Grid.***
2. ***Grants its approval to the proposed series reactor (12.75 ohms and 317 MVA normal rating) on the Devers – San Bernardino 230 kV No. 1 line, or an alternative solution that meets the same need at a lower cost.***
3. ***Directs Southern California Edison ("SCE") to complete an upgrade of the series capacitors on the Palo Verde-Devers 500 kV line to a minimum 2700 Amp normal rating by June 2006.***
4. ***Directs SCE to complete the addition of a second Devers 500/230 kV transformer by June 2006.***
5. ***Directs SCE to complete the addition of a dynamic voltage support device at Devers Substation (SVC or STATCOM) by June 2006. The final size of this device will be determined in the detailed engineering phase of the project.***
6. ***Directs San Diego Gas & Electric ("SDG&E") to complete an upgrade of the series capacitors on the Hassayampa-North Gila-Imperial Valley 500 kV line to a minimum 2200 Amp normal***

rating by June 2006. This upgrade will require close coordination between SDG&E and the other owners of these facilities (Arizona Public Service Company and the Imperial Irrigation District).

7. ***Directs SDG&E to complete the addition of a 300 MVA, 230 kV phase-shifting transformer at Imperial Valley Substation. This upgrade will require close coordination between SDG&E and the Imperial Irrigation District.***

Motion seconded by Mr. Florio and approved, 3-0-0.

APPROVAL OF THE CROSS VALLEY RECTOR LOOP PROJECT

Mr. Miller then presented the Cross Valley Rector Loop project for approval by the Board. Mr. Miller noted that it is a reliability project proposed by Southern California Edison with a project cost of $46.1 million.

Motion

Mr. Gage:

MOVED, that the Board of Governors,

1. ***Approves the Cross Valley Rector Loop Project, as proposed, as the preferred long-term transmission alternative to address the identified reliability concerns in the area of the San Joaquin Valley served by Southern California Edison Company ("SCE") beginning in 2006, and directs SCE to proceed with design, environmental, and licensing activities for the proposed project.***
2. ***Approves ISO support, before FERC, of SCE recovery of reasonably-incurred costs associated with the permitting and construction of the Cross Valley Rector Loop Project.***

Motion seconded by Mr. Florio and approved, 3-0-0.

APPROVAL OF THE LAKEVILLE-SONOMA 115 KV TRANSMISSION LINE PROJECT

Gary DeShazo, ISO Regional Planning Manager, Grid Planning, requested approval for building a second Lakeville-Sonoma 115kV transmission line, noting reliability issues for 2006.

Motion

Mr. Florio:

MOVED, that the Board of Governors,

1. ***Approve the Lakeville – Sonoma 115 kV Transmission Line Project, as proposed, as the preferred long-term transmission***

alternative to address the identified reliability concerns in the Lakeville / Sonoma area beginning in 2006, and directs Pacific Gas & Electric Company ("PG&E") to proceed with design, environmental, and licensing activities for the proposed project.

2. ***Authorize Management to support, before FERC, PG&E's recovery of reasonably-incurred costs associated with the permitting and construction of the Lakeville – Sonoma 115 kV Transmission Line Project.***

Motion seconded by Mr. Gage and approved, 3-0-0.

TRANSMISSION MAINTENANCE COORDINATION COMMITTEE-ACTIVITY UPDATE

Tom French, ISO Manager of Transmission Engineering and Maintenance and Chair of the Transmission Maintenance Coordination Committee updated the Board member regarding TMCC activities and changes to the maintenance standards and requirements.

At this time, General Session was recessed until later in the day.

UPDATE ON MD02

The meeting was called back to order.

Mark Rothleder, ISO Phase 1B Manager, updated the Board on the progress of Phase 1B, reviewing the schedule and current issues.

Randy Abernathy, ISO Vice President, Market Services, explained the need for MD02, and that MD02 is a multi-purpose infrastructure, including reliability and market improvements and technology and infrastructure upgrades. Mr. Abernathy and Jim Detmers, ISO Vice President, Operations, discussed the reliability efforts and the projects underway to implement these changes.

Dan Yee, ISO Chief Information Officer, explained that the new system would allow more reliable technologies and discussed the upgrades to the technology and infrastructure.

Mr. Abernathy then reviewed the program timelines and the estimated program costs for the Board.

ISO TRANSITION TEAM BRIEFING - FORWARD INTRA-ZONAL CONGESTION MANAGEMENT

Brian Theaker, ISO Director of Regulatory Affairs, briefed the Board on activities of the Transition Team regarding forward intra-zonal congestion management for Summer 2005. Mr. Theaker explained the problem, the options considered and the evaluation criteria for the issues, as well as the next steps for the ISO.

The Board inquired about possible use of RMR units and requested a follow-up on the issue at the July Board meeting, with input from all parties. The Board suggested that information being provided in advance of the meeting.

PROPOSED SCOPE OF 2004 OPERATIONS AUDIT

Tim Cherry, PricewaterhouseCoopers, reported on the scope of the Operations Audit for 2004, explaining the background of the operational audit and the outreach made to market participants for input on this year's audit. He stated he also conferred with ISO Directors and Managers regarding the scope of the audit. He stated that the observation period would be July 12 through July 25, then post-observation data analysis in August and September, with the report issued in October 2004.

MONTHLY REPORTS

MARKET ANALYSIS REPORT

Greg Cook, ISO Manager of Market Monitoring, Department of Market Analysis, presented the market highlights for May 2004.

OPERATIONS REPORT

Rich Cashdollar, ISO Director of Engineering & Maintenance, updated the Board on the 2004 Action Plan, noting that 70 items were currently being tracked.

REGULATORY UPDATE

Anthony Ivancovich, ISO Senior Regulatory Counsel updated the Board of recent FERC and CPUC filings. Mr. Ivancovich explained the FERC Order of June 17th regarding MD02 and the status of Tariff Amendment filings.

LEGISLATIVE UPDATE

Mary McDonald, ISO Director of State Affairs, updated the Board on the status of AB2006, and reported that AB428, the direct access bill, had failed to pass. She also reported on meetings with various groups regarding summer forecast and conservation programs.

Terri Moreland, ISO Director of Federal Affairs, reported that the Energy Omnibus bill passed the House, but the Senate would probably not follow suit. She also advised that Suedeen Kelly's nomination for FERC Commissioners had been approved.

MARKET SERVICES UPDATE

FERC Rerun Status Report

Don Fuller, ISO Director of Settlements, updated the Board on the status of the preparatory reruns, stating that the preparatory reruns would be completed before the July Board meeting, a two-month dispute window would occur, and then actual refund rerun work would start in September. The Board requested that a one-page fact sheet on reruns be prepared and requested that the ISO Communications Department prepare a press release for the public regarding the rerun process.

NEW BUSINESS ISSUES AND FUTURE AGENDA ITEMS

There were no new business issues or future agenda items.

CLOSING

There being no further business, the meeting was adjourned.

Appendix D

APPENDIX D Proposed Project Road Story and Structure Inventory

Structure Number	Ahead Span (feet)	Structure Description	Structure Height (feet)
Station Rack	287	Rack at Rector	40
Station Rack	277	Rack at Rector	40
Structure #1*	949	Tubular Pole	130
Structure #2*	844	Tubular Pole	130
Structure #3*	882	Tubular Pole	130
Structure #4*	990	Tubular Pole	130
Structure #5*	994	Tubular Pole	140
Structure #6*	918	Tubular Pole	130
Structure #7*	913	Tower	122
Structure #8	877	Tubular Pole	120
Structure #9	829	Tubular Pole	120
Structure #10	1034	Tubular Pole	120
Structure #11	878	Tubular Pole	140
Structure #12	745	Tubular Pole	130
Structure #13	895	Tower	131
Structure #14	870	Tower	131
Structure #15	965	Tubular Pole	130
Structure #16	1003	Tubular Pole	130
Structure #17	924	Tubular Pole	120
Structure #18	935	Tubular Pole	120
Structure #19	1020	Tubular Pole	130
Structure #20	939	Tubular Pole	130
Structure #21	767	Tubular Pole	130
Structure #22	865	Tubular Pole	130
Structure #23	832	Tubular Pole	120
Structure #24	849	Tubular Pole	120
Structure #25	909	Tubular Pole	130
Structure #26	949	Tubular Pole	130
Structure #27	963	Tubular Pole	130
Structure #28	1096	Tubular Pole	140
Structure #29	931	Tubular Pole	130
Structure #30	926	Tubular Pole	120
Structure #31	989	Tubular Pole	120
Structure #32	958	Tubular Pole	130

Structure Number	Ahead Span (feet)	Structure Description	Structure Height (feet)
Structure #33	1005	Tubular Pole	130
Structure #34	1086	Tubular Pole	130
Structure #35	1081	Tubular Pole	130
Structure #36	982	Tubular Pole	130
Structure #37	917	Tubular Pole	130
Structure #38	982	Tubular Pole	130
Structure #39	1081	Tubular Pole	130
Structure #40	1067	Tubular Pole	130
Structure #41	1057	Tubular Pole	130
Structure #42	1010	Tubular Pole	130
Structure #43	959	Tubular Pole	120
Structure #44	934	Tubular Pole	120
Structure #45	981	Tubular Pole	120
Structure #46	1064	Tubular Pole	130
Structure #47	454	Tubular Pole	130
Structure #48	1123	Tubular Pole	130
Structure #49	1094	Tubular Pole	130
Structure#50	653	Tower	131
Structure#51	812	Tower	122
Structure #51A	767	Tubular Pole	120
Structure #52	680	Tubular Pole	120
Structure #53	901	Tubular Pole	130
Structure #54	952	Tubular Pole	140
Structure #55	827	Tower	140
Structure #55A	944	Tubular Pole	130
Structure #56	987	Tubular Pole	120
Structure #57	941	Tubular Pole	130
Structure #58	909	Tubular Pole	130
Structure #59	834	Tubular Pole	120
Structure #60	888	Tubular Pole	120
Structure #61	908	Tubular Pole	140
Structure #62	926	Tubular Pole	140
Structure #63	949	Tubular Pole	120
Structure #64	916	Tubular Pole	120
Structure #65	849	Tubular Pole	120

Structure Number	Ahead Span (feet)	Structure Description	Structure Height (feet)
Structure #66	841	Tubular Pole	120
Structure #67	819	Tubular Pole	130
Structure #68	841	Tubular Pole	130
Structure #69	826	Tubular Pole	120
Structure #70	858	Tubular Pole	120
Structure #71	863	Tubular Pole	120
Structure #72	824	Tubular Pole	120
Structure #73	836	Tower	122
Structure #74	819	Tubular Pole	130
Structure #74A	836	Tubular Pole	120
Structure #75	807	Tubular Pole	130
Structure #76	1050	Tubular Pole	120
Structure #77	1163	Tubular Pole	135
Structure #78	1087	Tubular Pole	130
Structure #79	1008	Tubular Pole	130
Structure #80	1008	Tubular Pole	130
Structure #81	978	Tubular Pole	130
Structure #82	899	Tubular Pole	130
Structure #83	952	Tubular Pole	140
Structure #84	838	Tubular Pole	130
Structure #85	690	Tubular Pole	120
Structure #86	399	Tubular Pole	120
Structure #87	858	Tubular Pole	120
Structure #88	692	Tubular Pole	120
Structure #89	704	Tower	122
Structure #90	920	Tubular Pole	140
Structure #91	1004	Tower	131
Structure #92	1107	Tubular Pole	140
Structure #93	1100	Tubular Pole	140
Structure #94	894	Tubular Pole	130
Structure #95	1203	Tubular Pole	140
Structure #96	999	Tower	131
Structure #97	1118	Tubular Pole	140
Structure #98	1067	Tower	140
Structure #99	904	Tubular Pole	120

Structure Number	Ahead Span (feet)	Structure Description	Structure Height (feet)
Structure #100	1005	Tubular Pole	120
Structure #101	917	Tubular Pole	130
Structure #102	1140	Tubular Pole	130
Structure #102A	583	Tubular Pole	130
Structure #103	0	Tubular Pole	120
Structure #104	0	Single phase tap pole	125
Structure #105	0	Single phase tap pole	125
Structure #106	0	Single phase tap pole	125
Structure #107	0	Single phase tap pole	120
Structure #108	0	Single phase tap pole	145
Structure #109	0	Single phase tap pole	145

*Note: Structures 1 through Structure 7 would be paralleled by structures of the same type and height for the replacement of the existing Big Creek 3-Rector and Big Creek 1-Rector 220 kV transmission towers.

SAN JOAQUIN CROSS VALLEY LOOP PROJECT
ROAD STORY
ALTERNATIVE 1 (CONSTRUCTION VERSION)

PRELIMINARY DESIGN
SUBJECT TO REVISION

LEGEND

EXISTING ROADS
NEW ROADS
NEW STRUCTURES
TRANSMISSION LINE CENTERLINE
RIGHT OF WAY
EXISTING AND RETAINED DOWN LINE ACCESS (IN SCE ROW)
MAXIMUM AREA FOR STRUCTURE CONSTRUCTION SETUP AREAS

TYPICAL STRUCTURE REMOVAL AREA
EXISTING STRUCTURES TO BE REMOVED
WIRE-STRINGING TENSION SITES
WIRE-STRINGING PULL SITES
WIRE-STRINGING SPLICING SITES
GUARD STRUCTURE LOCATIONS

NOTE: PRELIMINARY LOCATIONS SHOWN. CONSTRUCTION AREAS, STRUCTURE TYPES, AND LOCATIONS WILL BE FIELD VERIFIED AND ADJUSTED AS NECESSARY DURING FINAL ENGINEERING.

NOTE: AERIAL PHOTO BASE MAP OF TULARE COUNTY (2004)

SCALE 1"= 400'

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MAY 8, 2008

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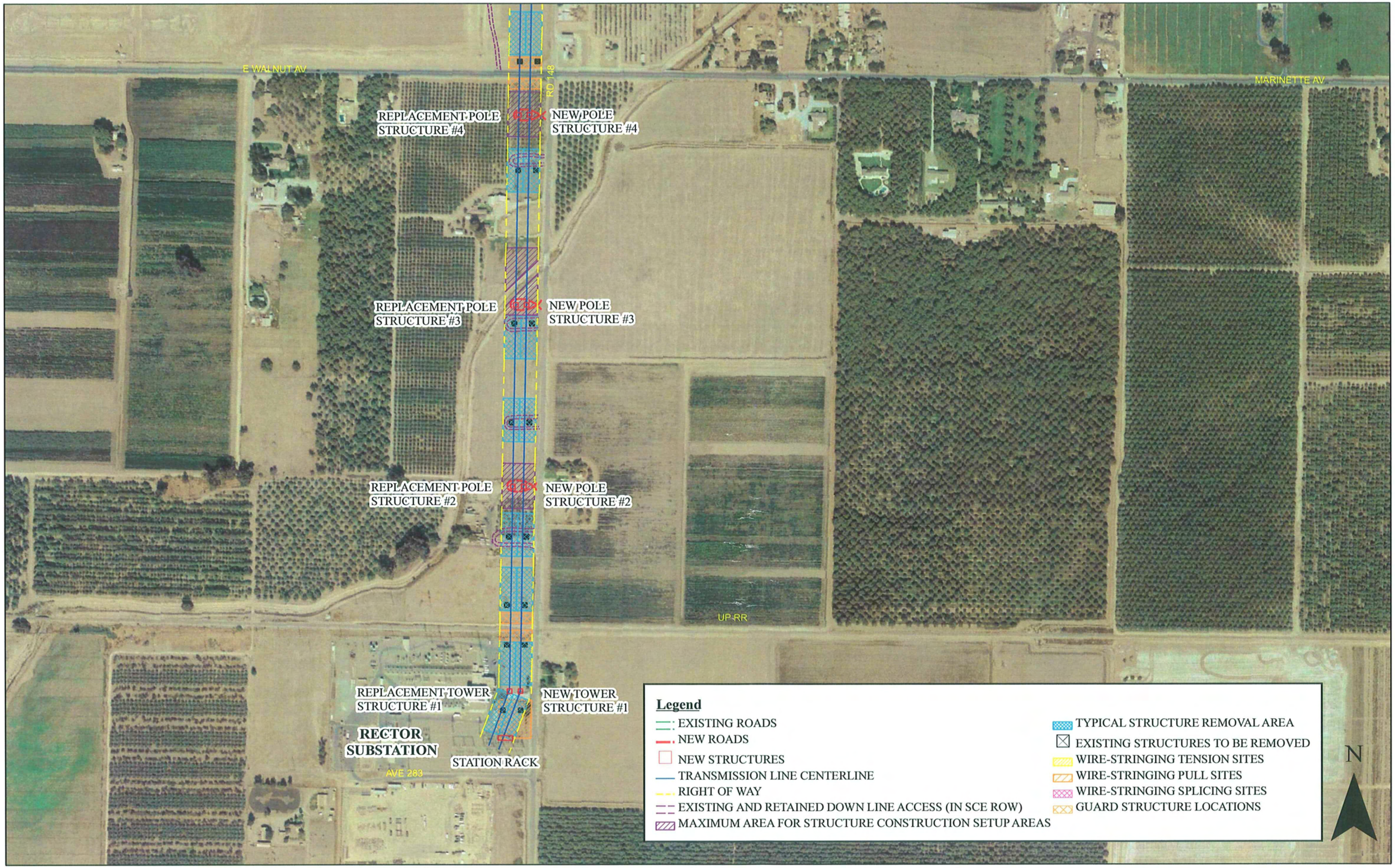
05/08/2008



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SAN JOAQUIN CROSS VALLEY LOOP PROJECT ROAD STORY - ALTERNATIVE 1 (CONSTRUCTION VERSION)

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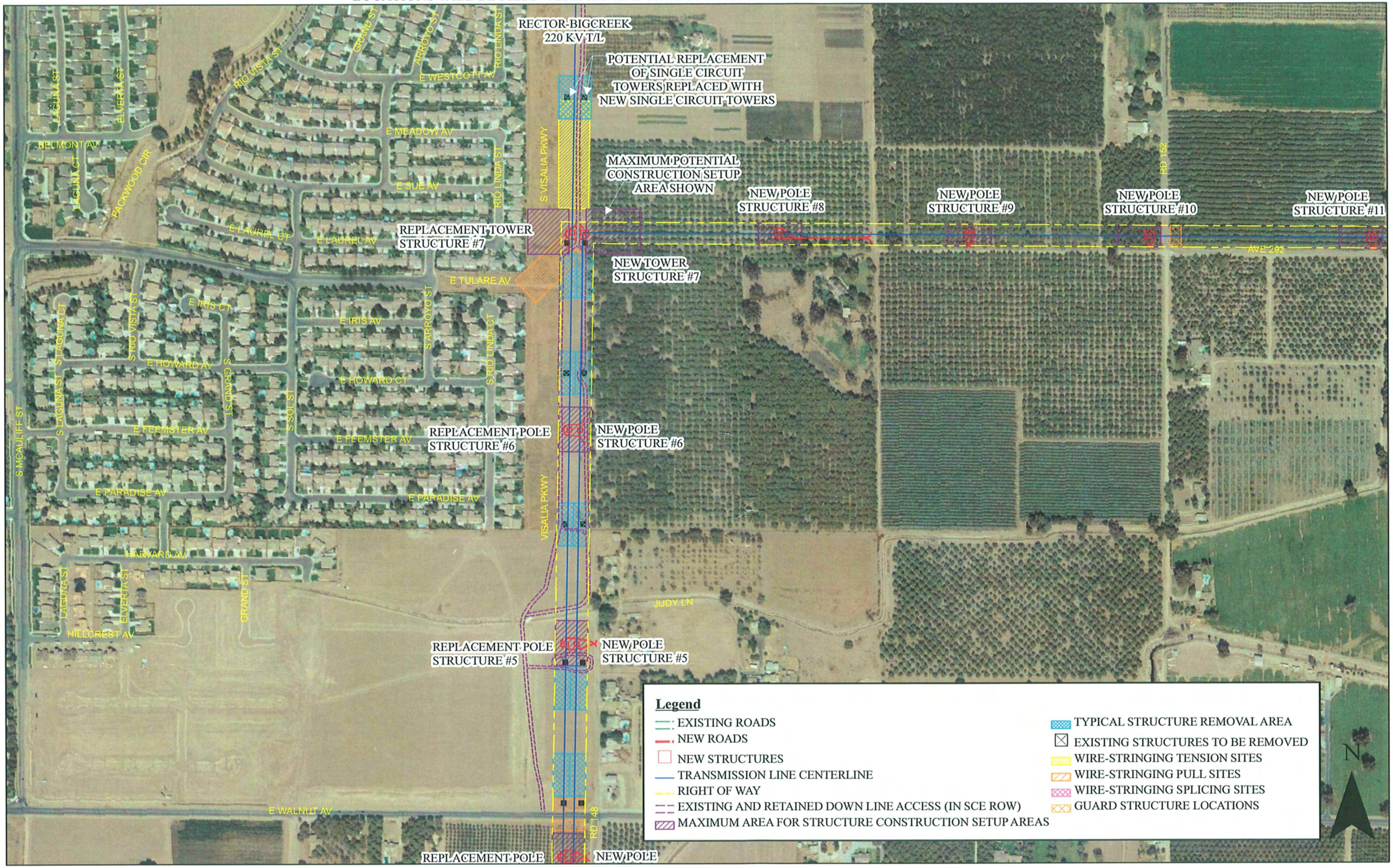

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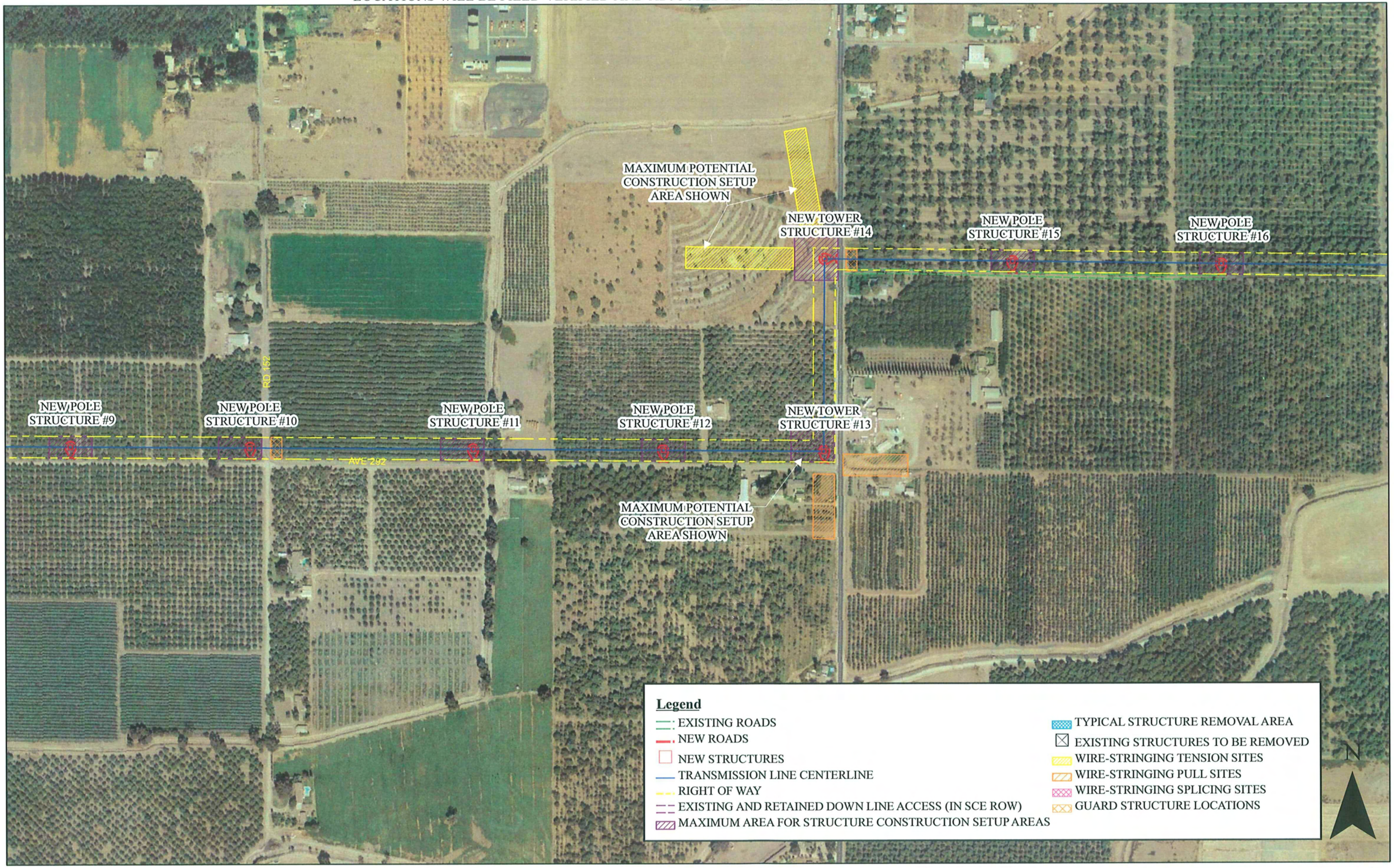

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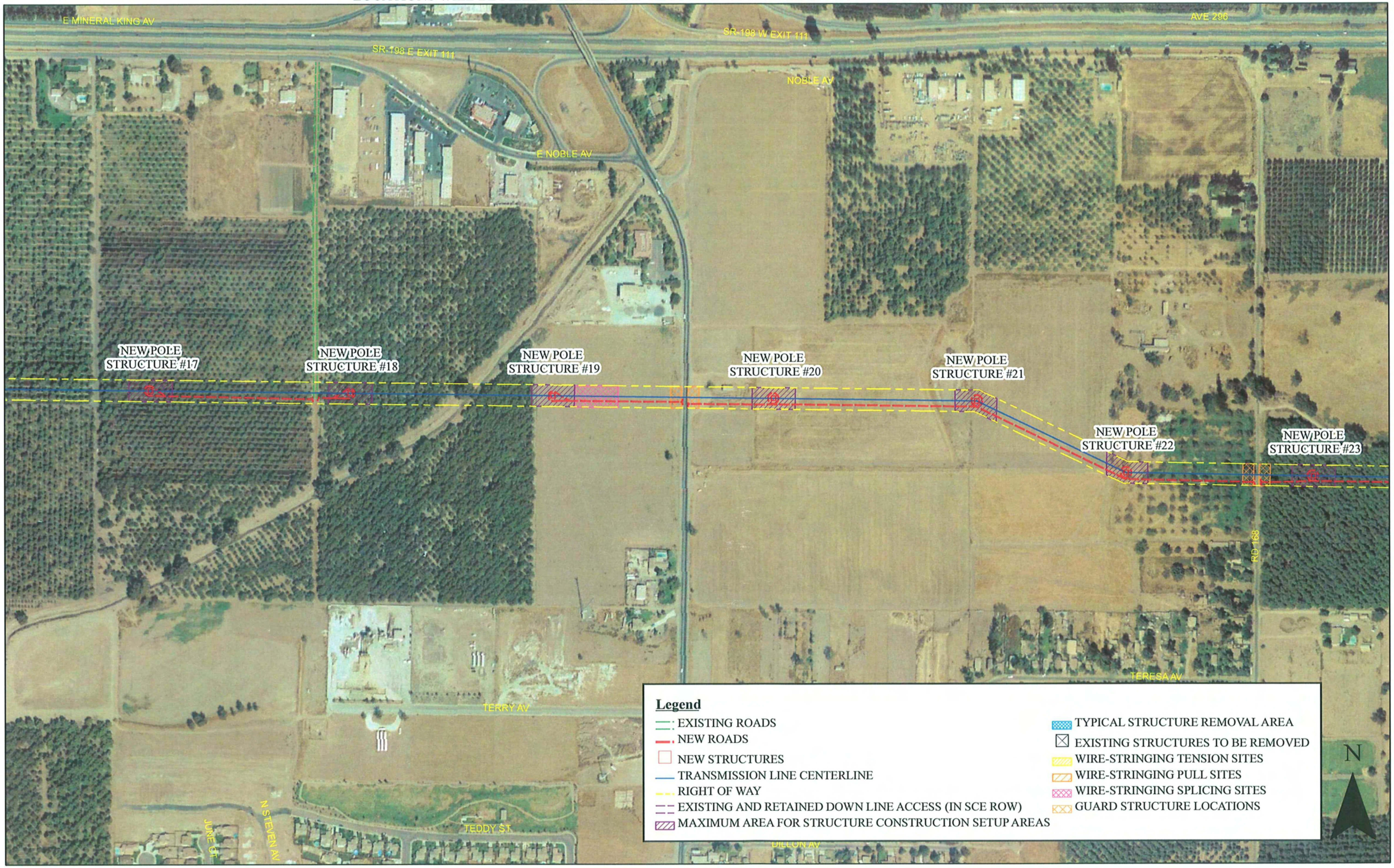

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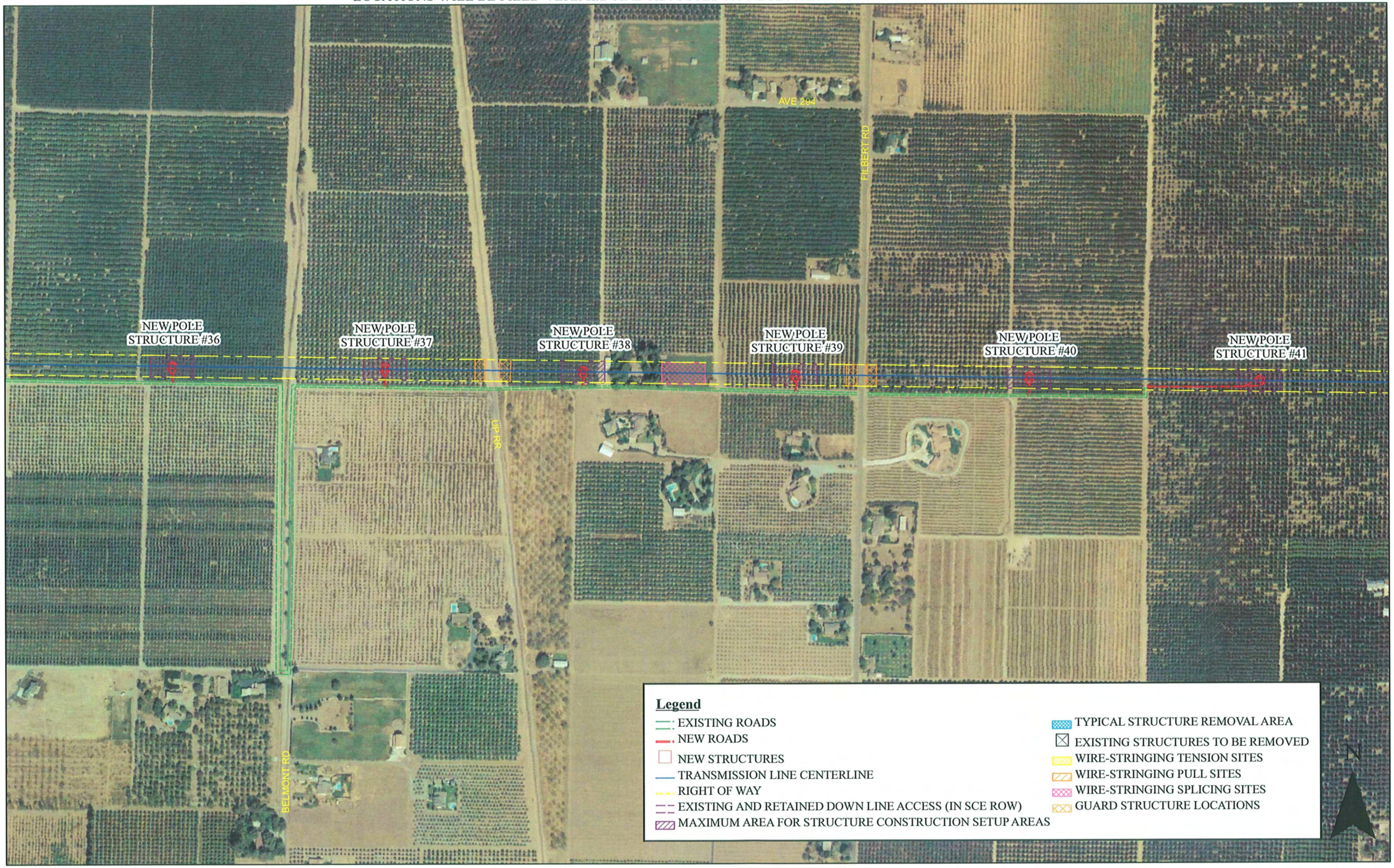

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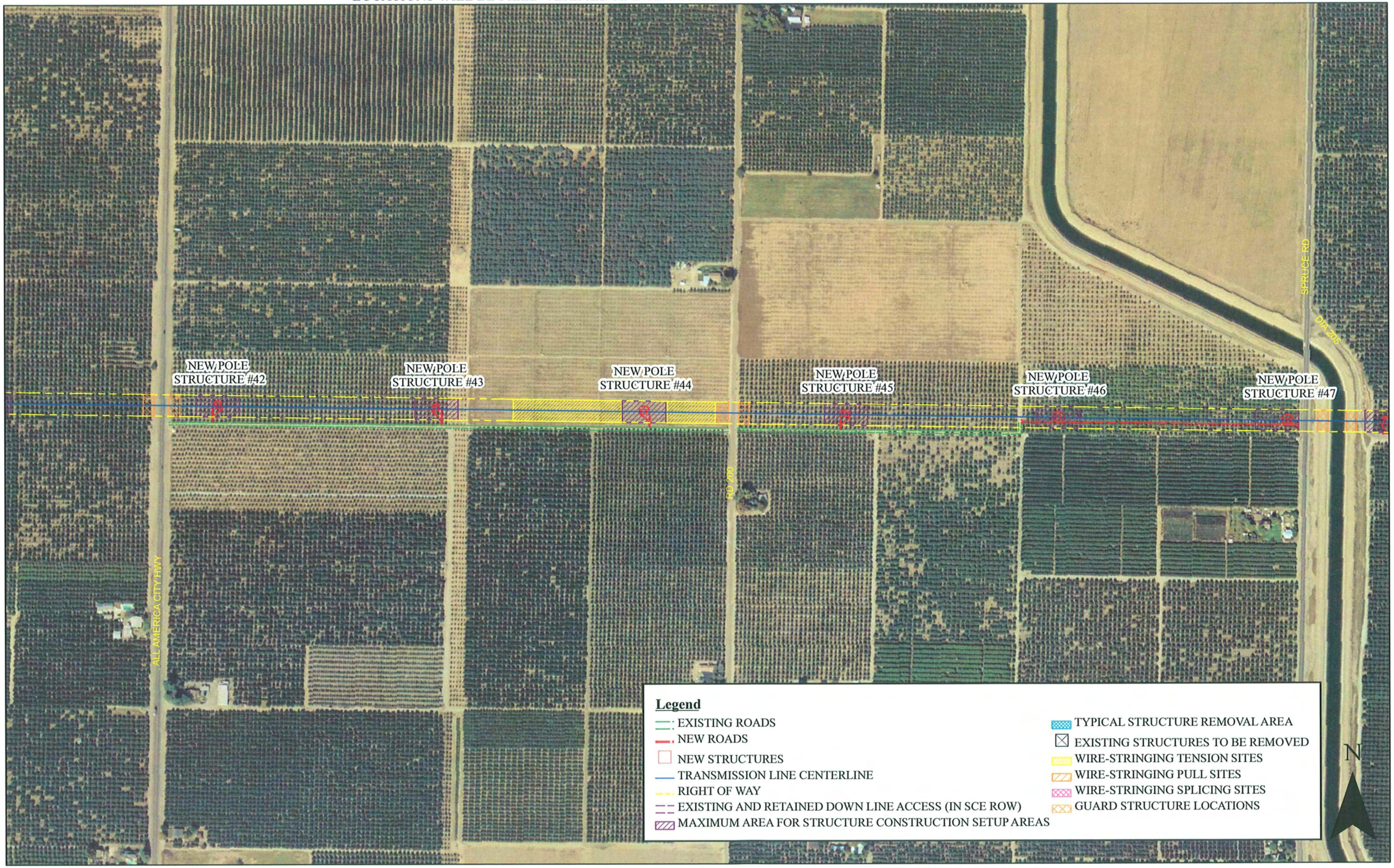

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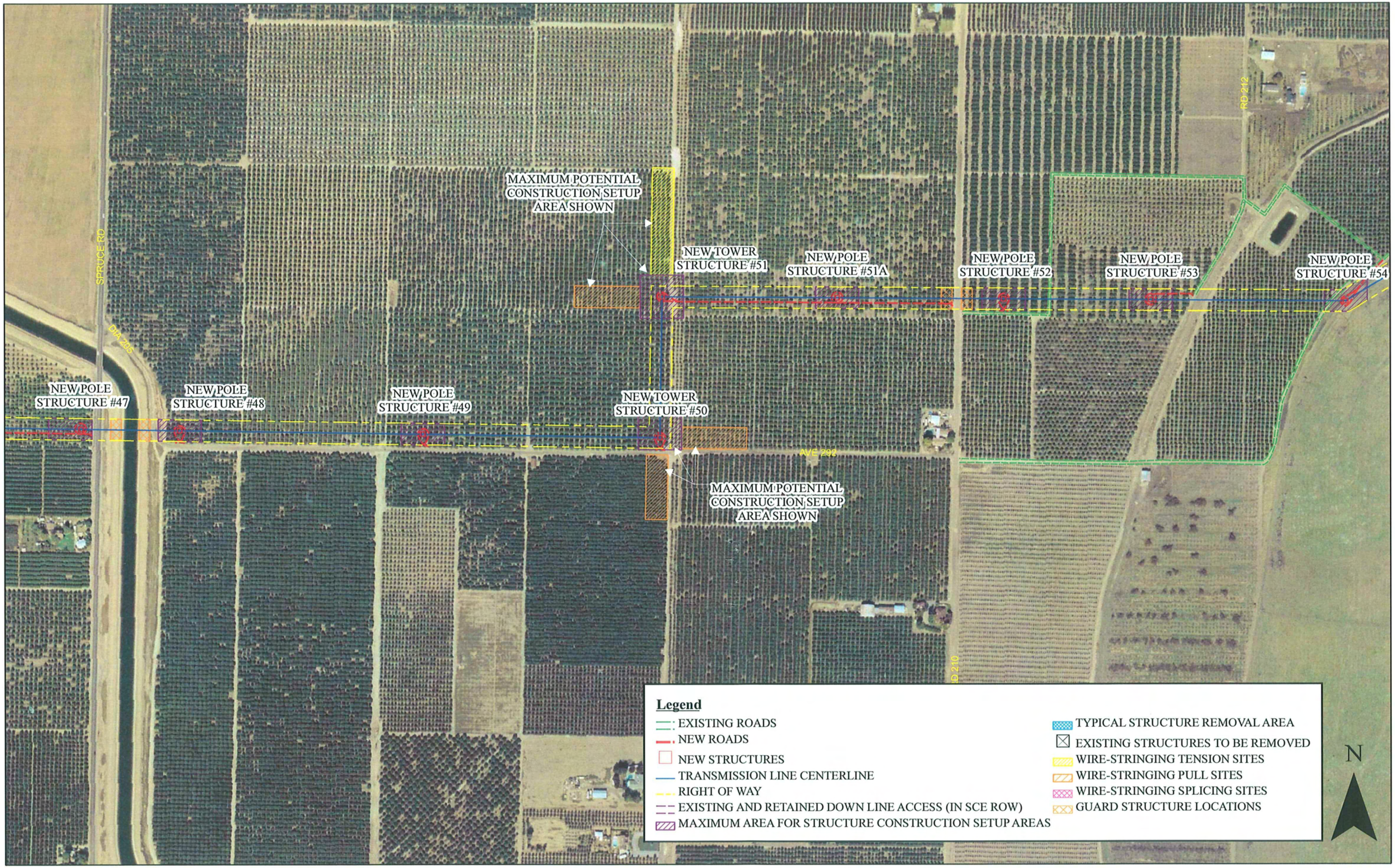

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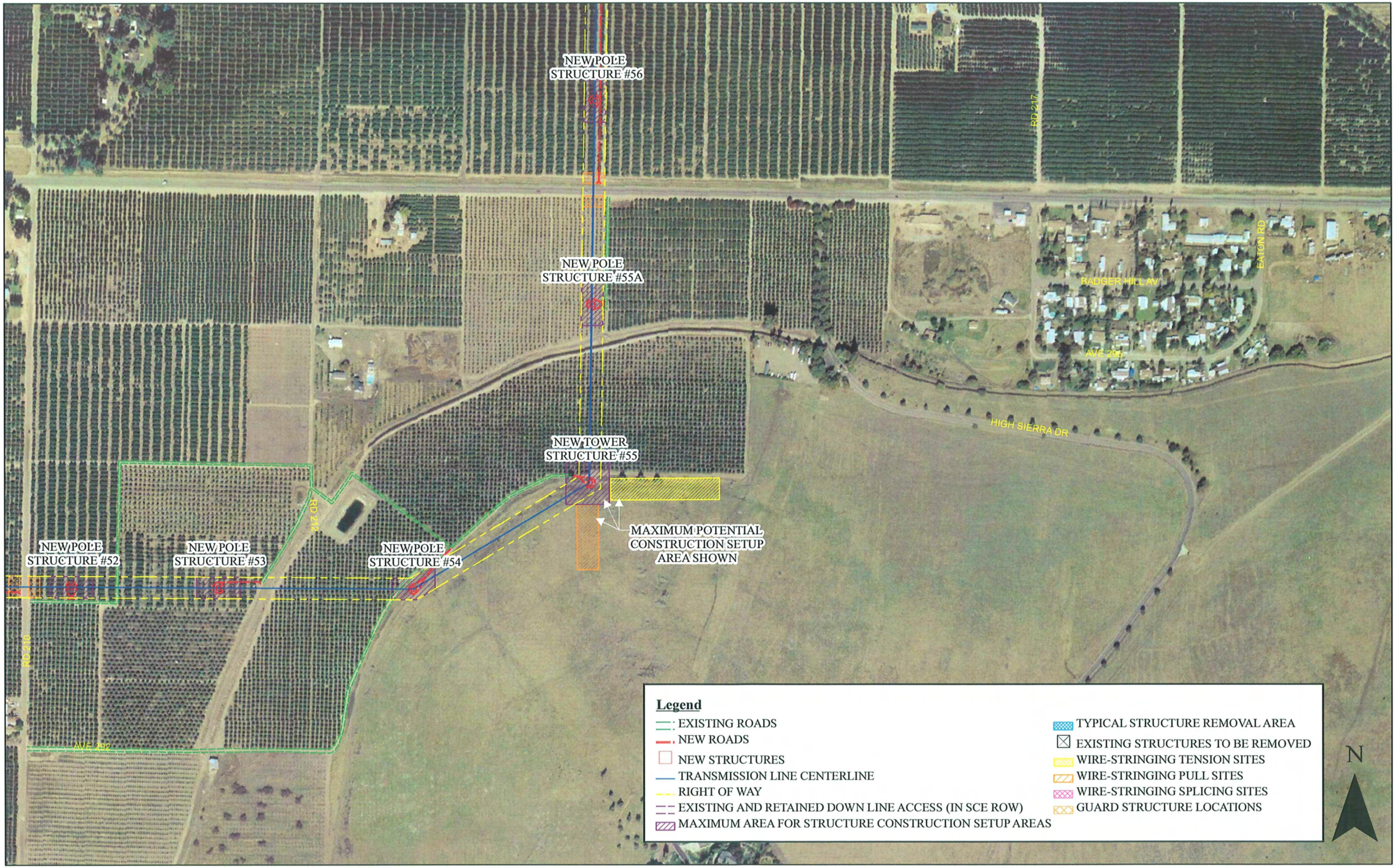

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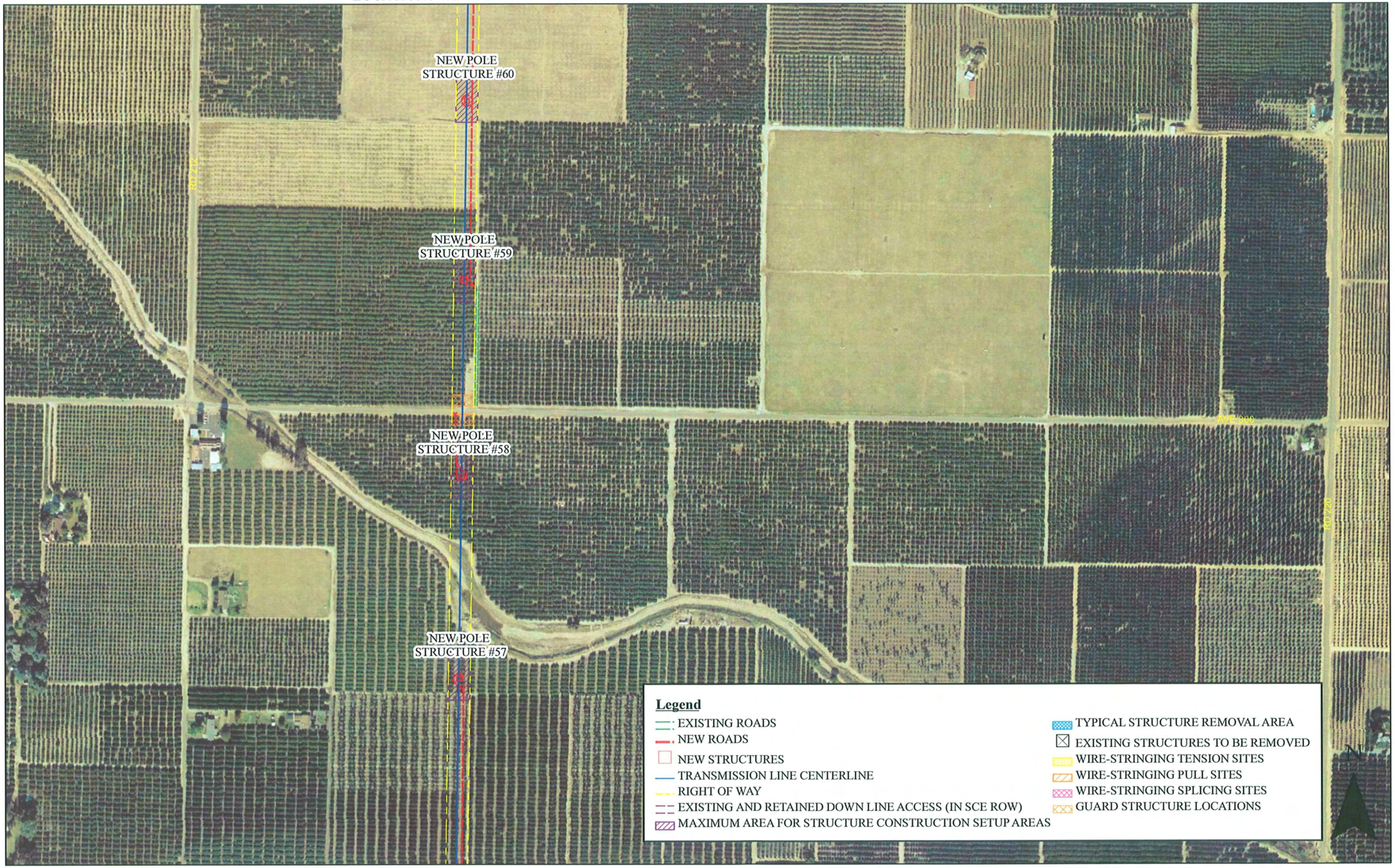

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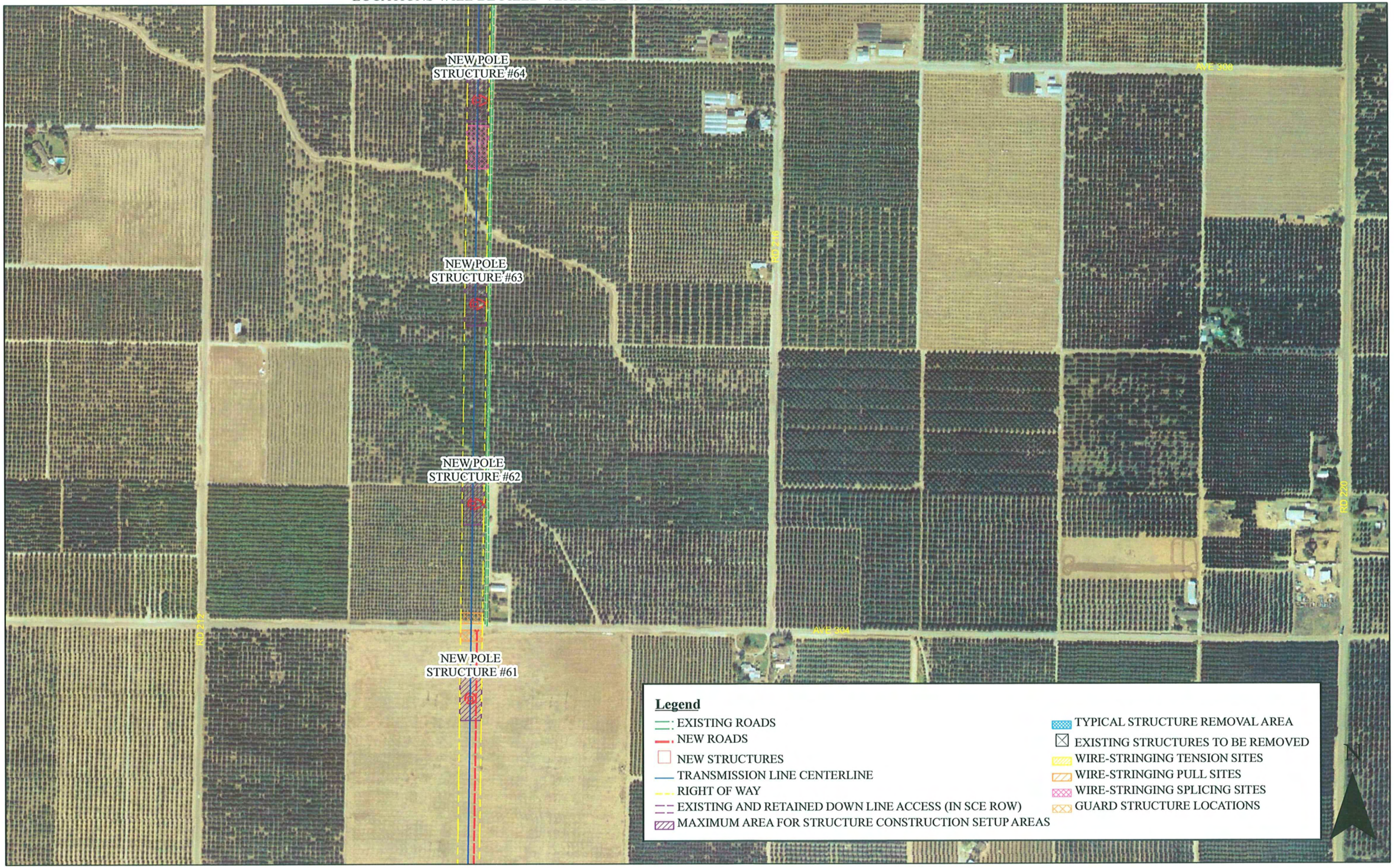

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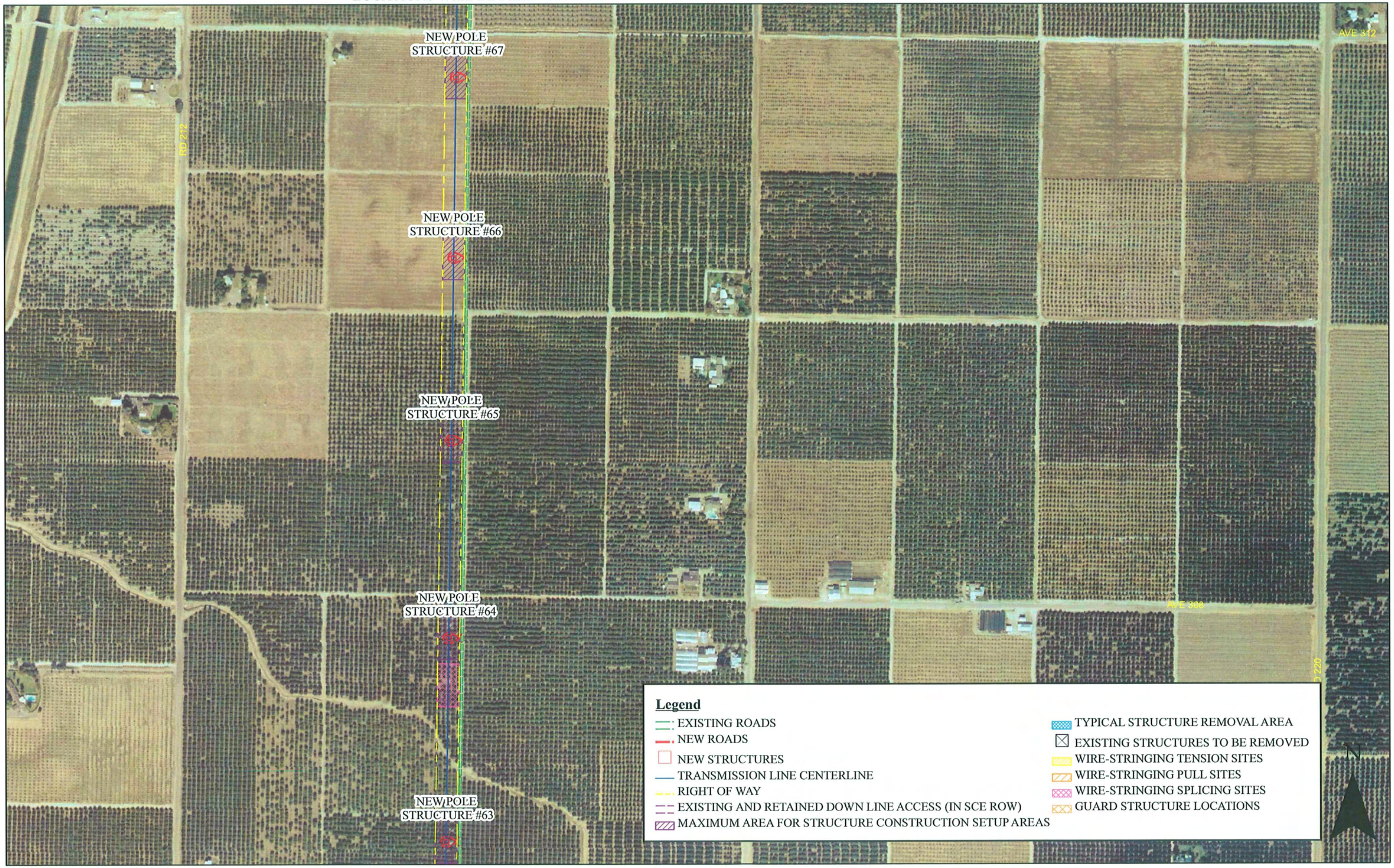

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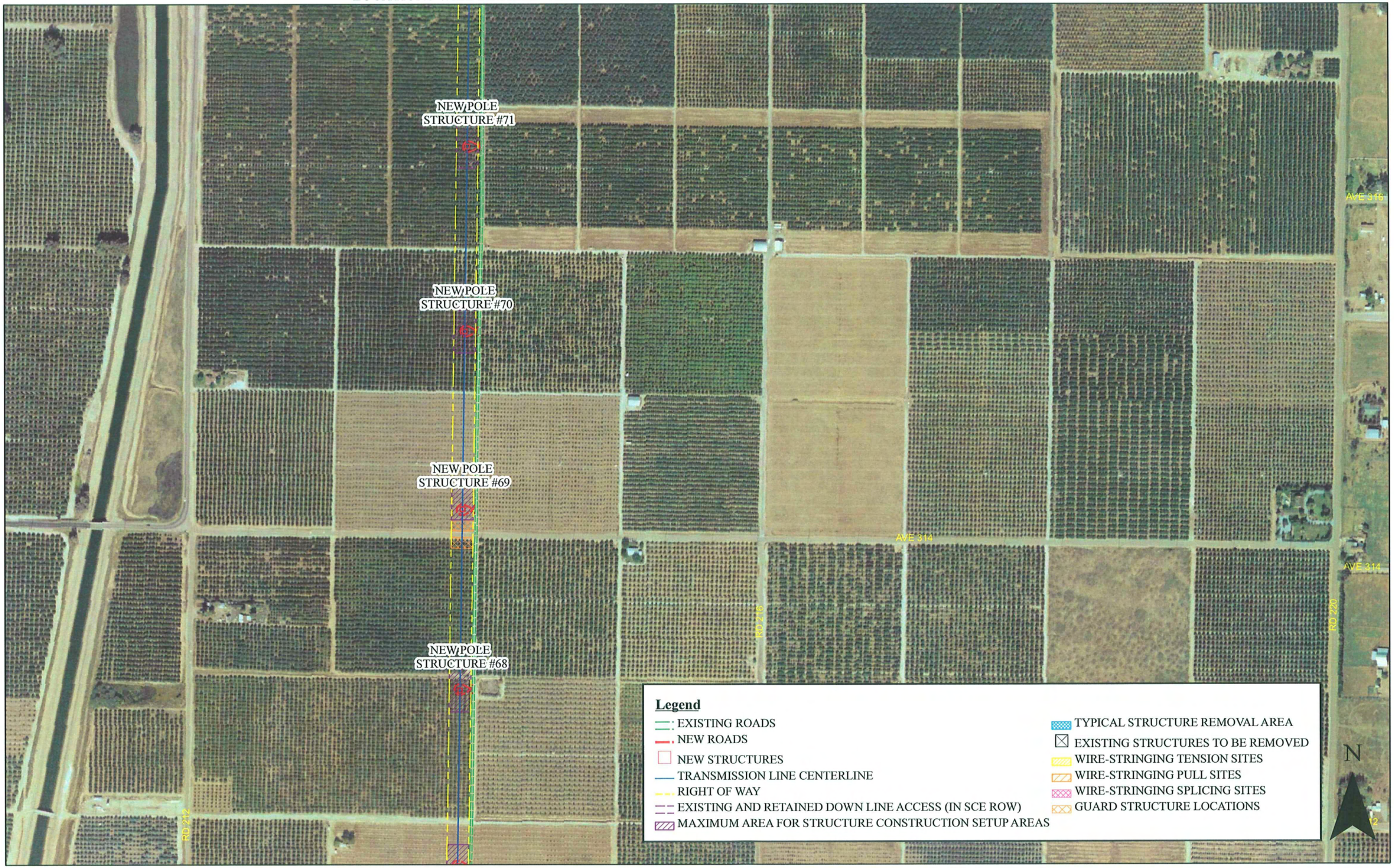

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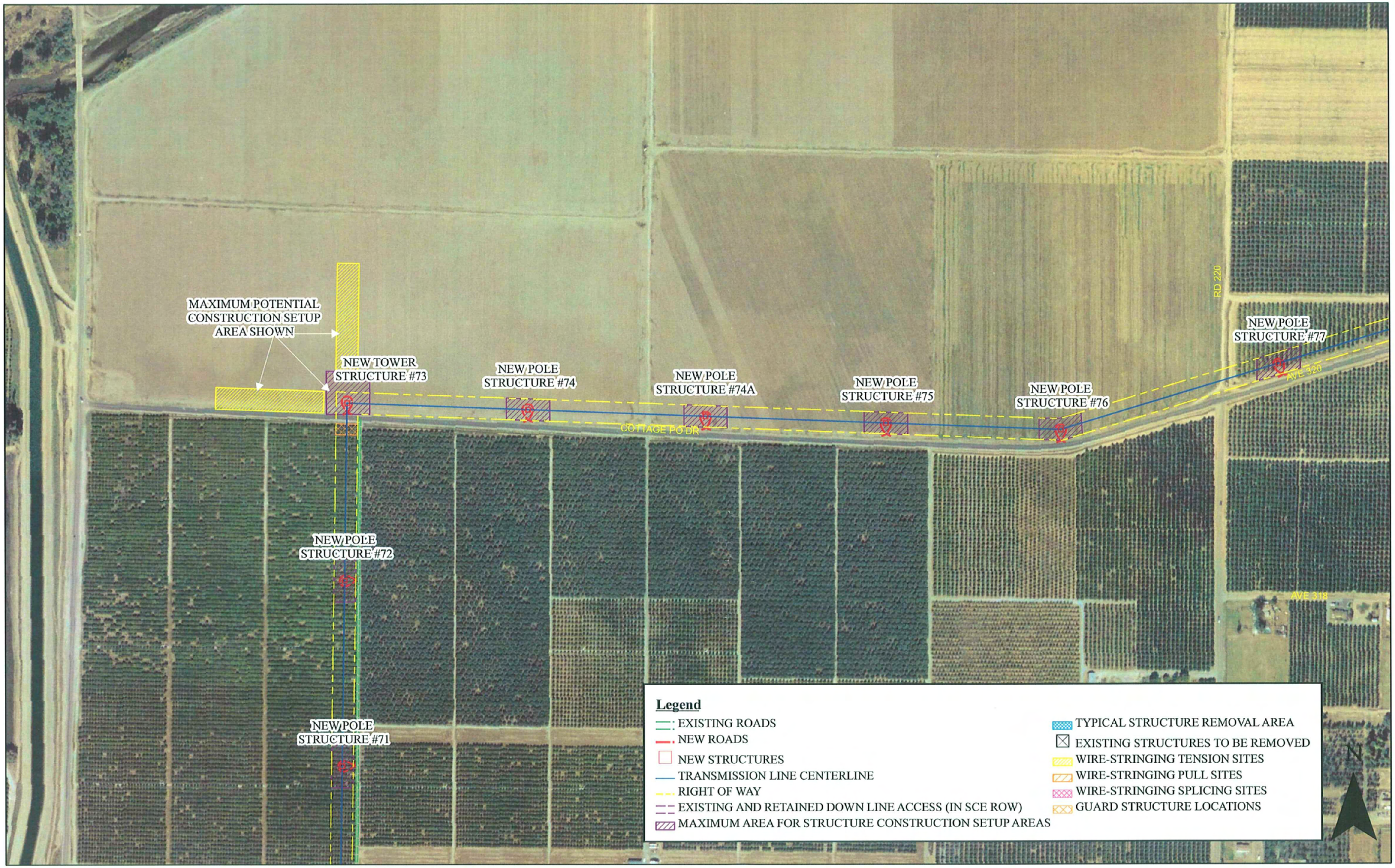
MAXIMUM POTENTIAL CONSTRUCTION SETUP AREA SHOWN
NEW TOWER STRUCTURE #73
NEW POLE STRUCTURE #74
NEW POLE STRUCTURE #74A
NEW POLE STRUCTURE #75
NEW POLE STRUCTURE #76
NEW POLE STRUCTURE #77
NEW POLE STRUCTURE #72
NEW POLE STRUCTURE #71
COTTAGE PO DR
RD 220
AVE 320
AVE 318
Legend
EXISTING ROADS
NEW ROADS
NEW STRUCTURES
TRANSMISSION LINE CENTERLINE
RIGHT OF WAY
EXISTING AND RETAINED DOWN LINE ACCESS (IN SCE ROW)
MAXIMUM AREA FOR STRUCTURE CONSTRUCTION SETUP AREAS
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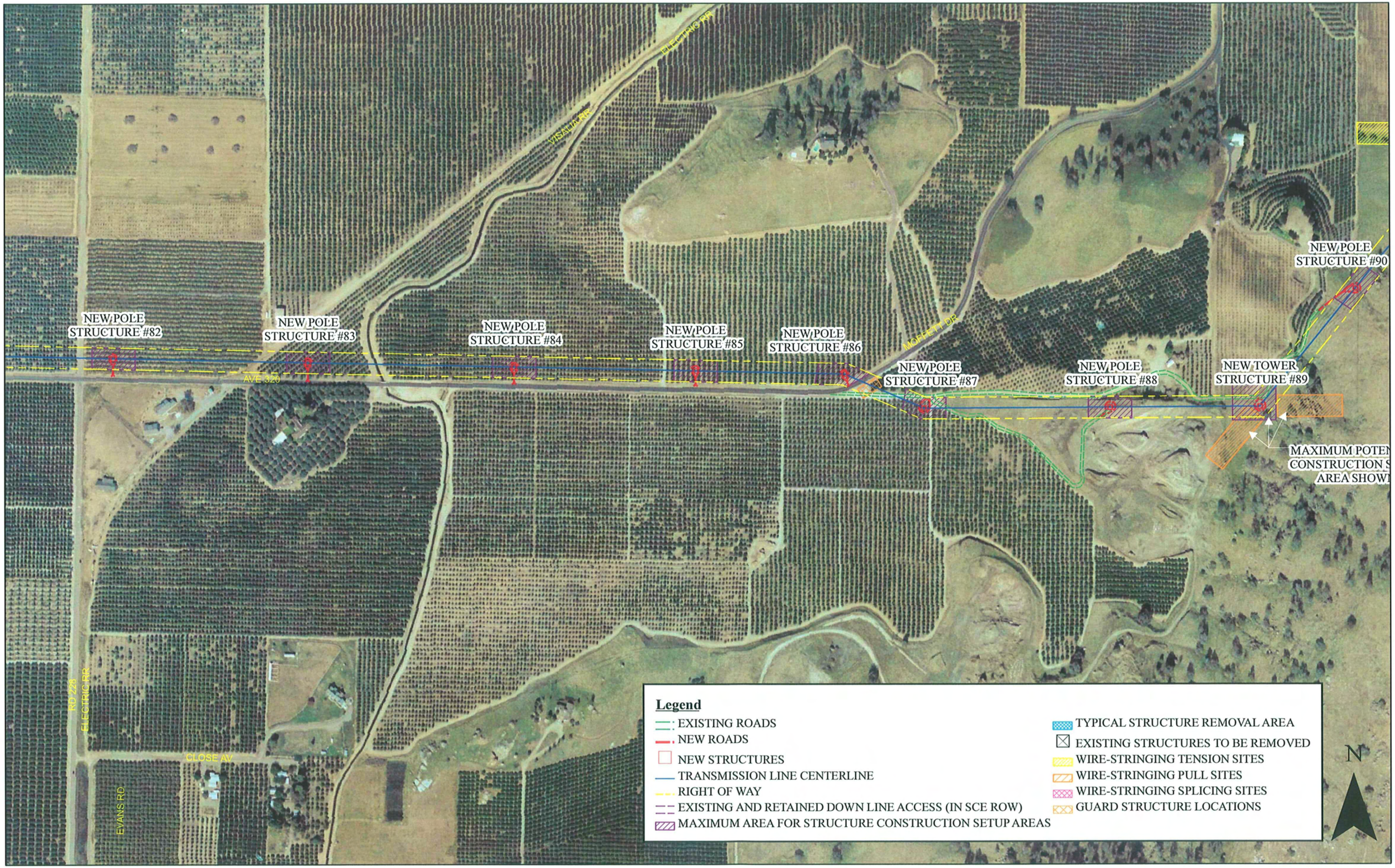
NOTE: PRELIMINARY LOCATIONS SHOWN. CONSTRUCTION AREAS, STRUCTURE TYPES, AND LOCATIONS WILL BE FIELD VERIFIED AND ADJUSTED AS NECESSARY DURING FINAL ENGINEERING

05/08/2008

SCALE 1"= 400'

NOTE: PRELIMINARY LOCATIONS SHOWN. CONSTRUCTION AREAS, STRUCTURE TYPES, AND LOCATIONS WILL BE FIELD VERIFIED AND ADJUSTED AS NECESSARY DURING FINAL ENGINEERING



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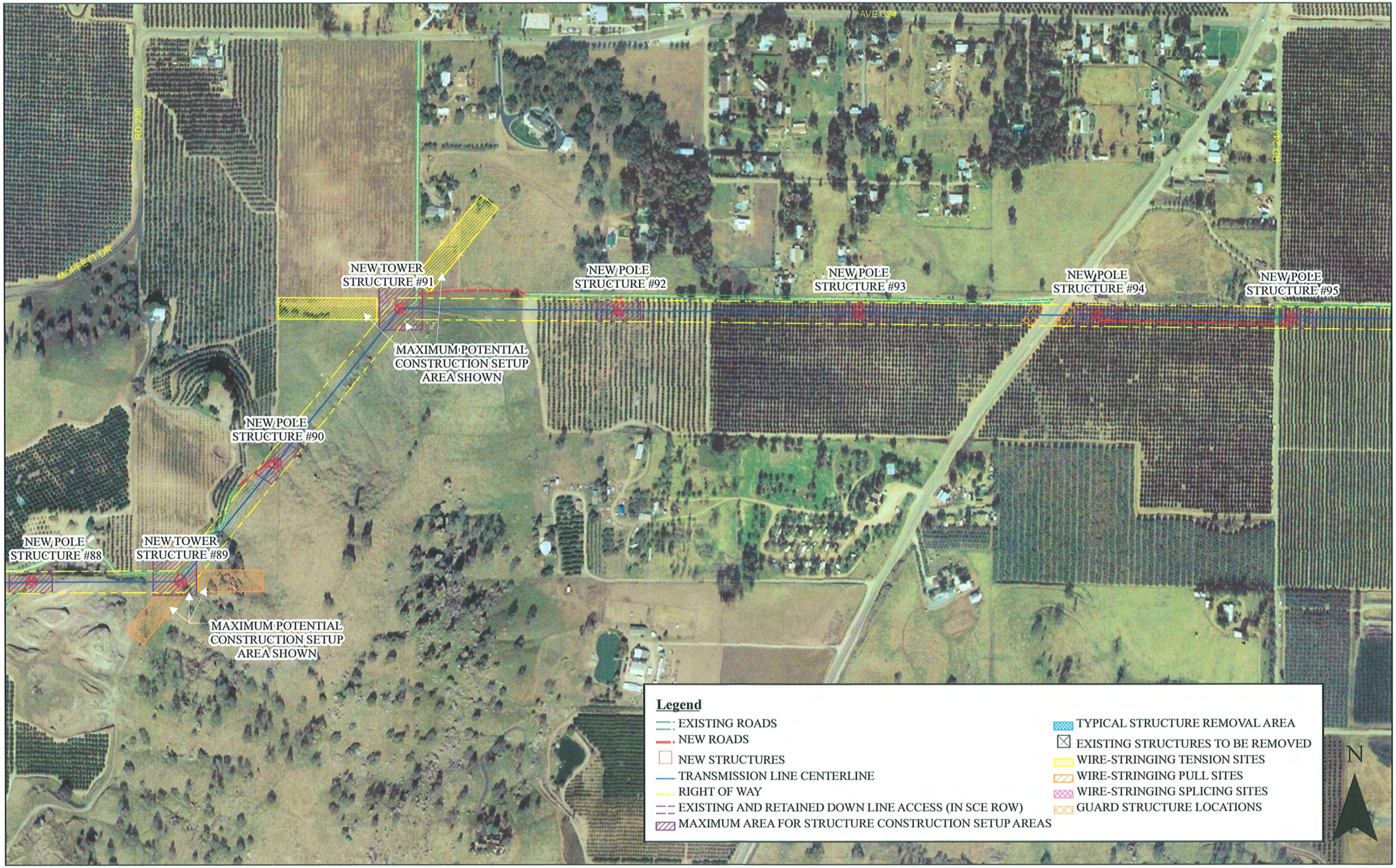
NOTE: PRELIMINARY LOCATIONS SHOWN. CONSTRUCTION AREAS, STRUCTURE TYPES, AND LOCATIONS WILL BE FIELD VERIFIED AND ADJUSTED AS NECESSARY DURING FINAL ENGINEERING



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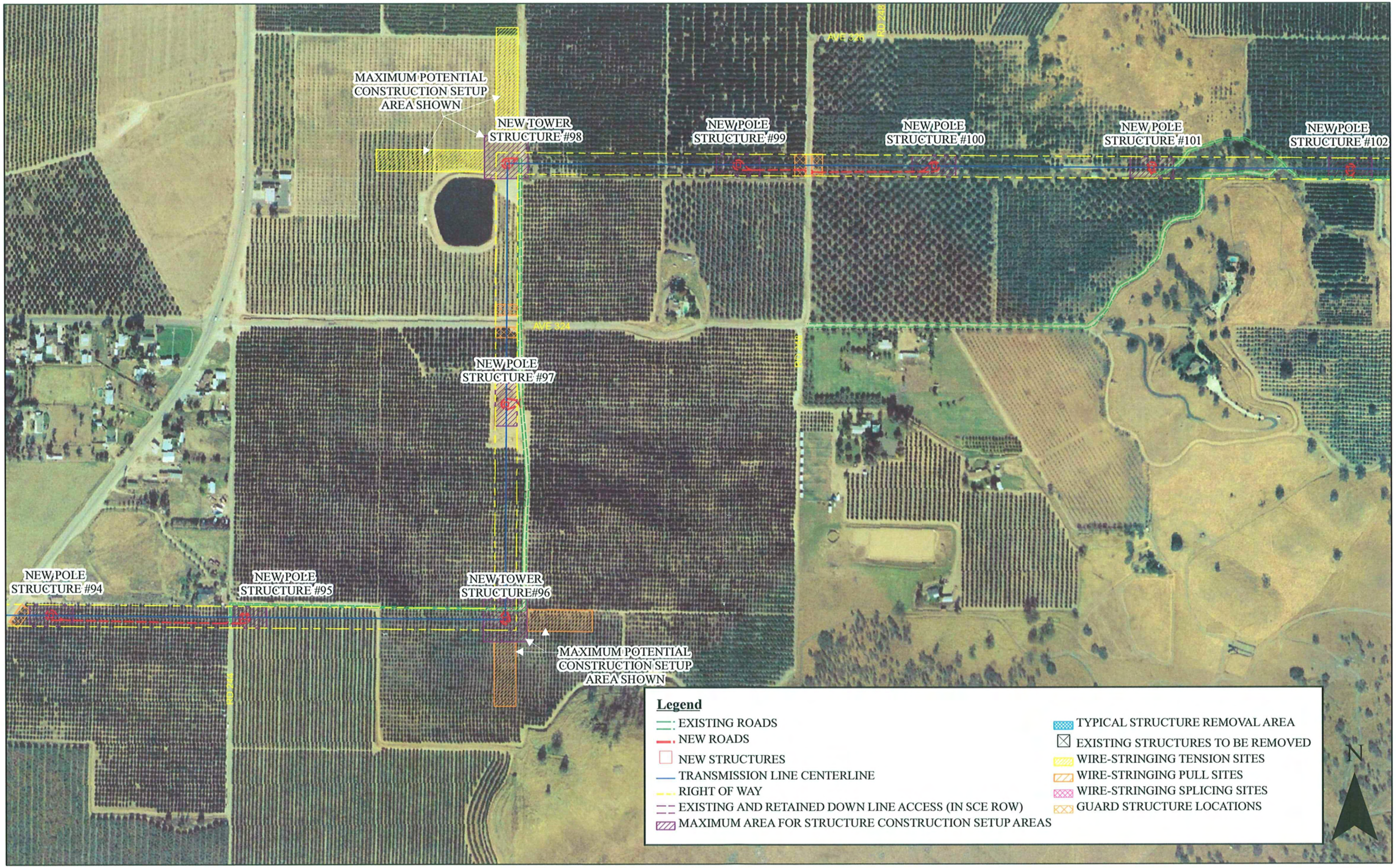
SAN JOAQUIN CROSS VALLEY LOOP PROJECT ROAD STORY - ALTERNATIVE 1 (CONSTRUCTION VERSION)

NOTE: PRELIMINARY LOCATIONS SHOWN. CONSTRUCTION AREAS, STRUCTURE TYPES, AND LOCATIONS WILL BE FIELD VERIFIED AND ADJUSTED AS NECESSARY DURING FINAL ENGINEERING



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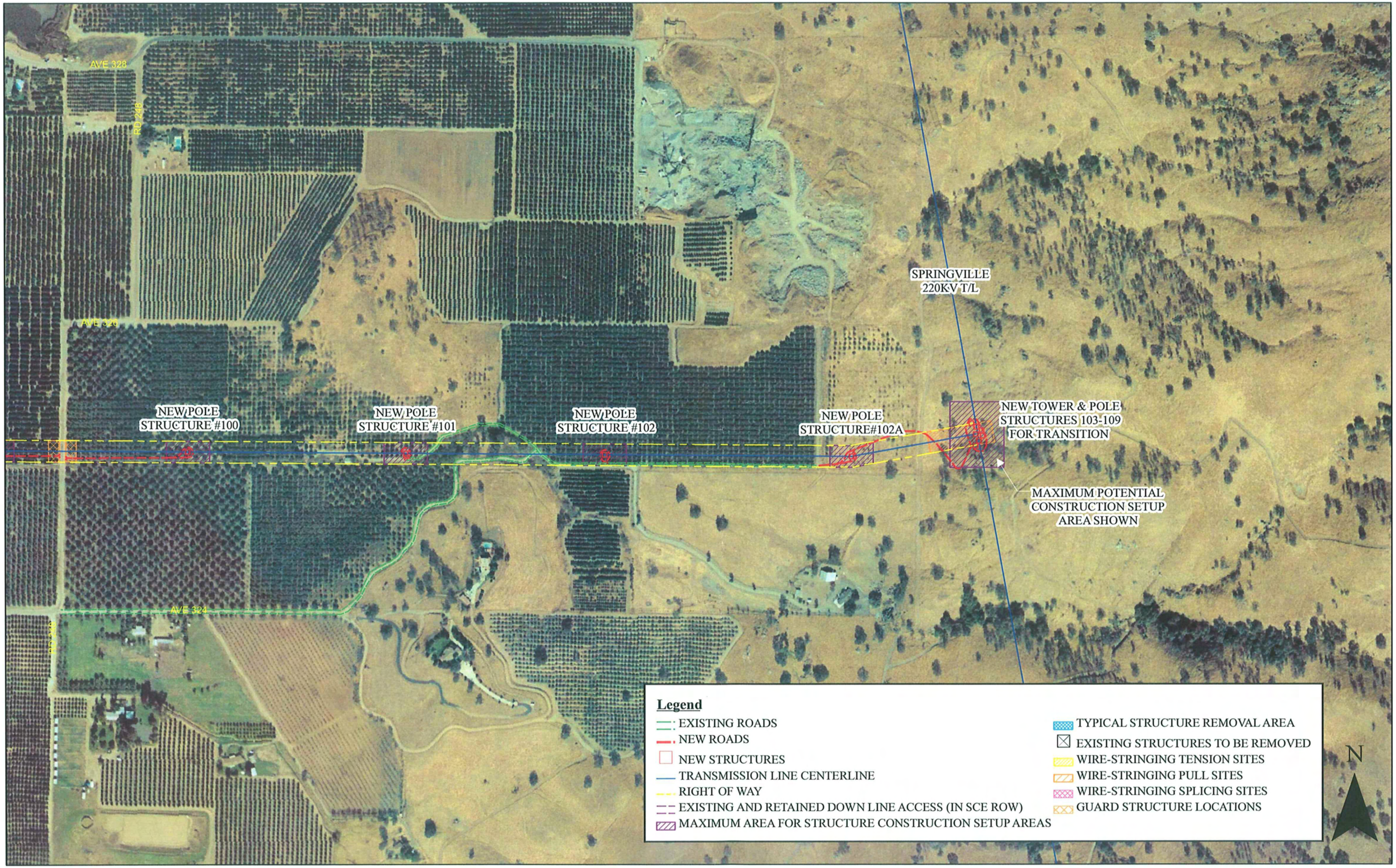
SAN JOAQUIN CROSS VALLEY LOOP PROJECT ROAD STORY - ALTERNATIVE 1 (CONSTRUCTION VERSION)

NOTE: PRELIMINARY LOCATIONS SHOWN. CONSTRUCTION AREAS, STRUCTURE TYPES, AND LOCATIONS WILL BE FIELD VERIFIED AND ADJUSTED AS NECESSARY DURING FINAL ENGINEERING

05/08/2008



SCALE 1"= 400'

Appendix E

APPENDIX E Public Involvement

Southern California Edison (SCE) encourages communication and outreach to local communities, local businesses, elected and appointed officials, and other interested parties. SCE's goal is to ensure that it understands and addresses, where possible, issues of interest or potential concern regarding its proposed projects.

Target audiences for the activities are the property owners along the proposed routes, local communities, local businesses, elected and appointed government officials, and other interested parties. Following is a summary of the activities conducted as part of the San Joaquin Cross Valley Loop Transmission Project (Proposed Project) Public Involvement Plan.

Project Fact Sheet

SCE developed two Project Fact Sheets (attached) and mailed these to all property owners within 300 feet of the proposed project route. Additionally, the Project Fact Sheets were sent to elected and appointed government officials, and other interested parties in the area. The fact sheets provided basic information about the Proposed Project purpose, description, and schedule. They also provided contact information for the local SCE Regional Manager to answer questions.

Project Update

SCE also developed a Project Update which was mailed in March 2008. This provided the community with a brief update on the current project status.

Project Website

A website for the Proposed Project was also developed. The website can be found at www.sce.com/crossvalley. The website contains all public information distributed at the open houses and is updated weekly.

Open House

SCE hosted two open houses for the Proposed Project during November 2006 and January 2007. The open house is designed to provide area residents, businesses, local officials, and others interested in this project with direct access to the San Joaquin Cross Valley Loop Project team including SCE's project manager, technical experts, and others involved in project planning. Invitations to the open houses (attached) were mailed to all property owners within 300 feet of the proposed project routes, elected and appointed government officials, and other interested parties in the project area. The open houses were held on the following dates and locations:

- November 15, 2006 – Freedom Elementary School in the City of Farmersville
- January 18, 2007 – Woodlake Veterans Memorial Center in the City of Woodlake

Additionally, SCE placed advertisements (attached) in local newspapers (Fresno Bee, Visalia Times Delta, Valley Voice, Foothill Sun) to inform residents and others about the open house.

Copies of the "story boards" used during the open house are attached. Each attendee at the open houses was given a copy of the story board handouts to take with them.

Based on questions, comments and suggestions received from the public during the open houses, SCE developed a third route to the far north, and also made adjustments to the original proposed alternative route 1.

Stakeholder Briefings

SCE personnel met with the City of Visalia, Farmersville, Woodlake, Exeter and the County of Tulare elected and appointed officials, including county supervisors and/or their staff, and regional planning officials. City officials, including city managers, planning directors and council members were also contacted. All elected officials were provided project fact sheets and were invited to attend the open houses.

In addition, SCE personnel also met with federal and state legislators and/or their staff whose districts are traversed by the project. Briefings have also taken place in Sacramento, Washington D.C. and local district offices.

Fact Sheet

San Joaquin Cross Valley Loop Transmission Project

November 2006

Important community information concerning a proposed Southern California Edison Company (SCE) project in your area.

SCE proposes to construct a new double-circuit 220 kilovolt (kV) transmission line to meet the projected need for electricity and to maintain electric system reliability in Tulare County.

WHY IS THE PROJECT NEEDED?

Tulare County is one of the fastest growing regions in California. This increased growth has resulted in an increased demand for electricity. SCE's Rector Substation, located southeast of Visalia, is part of the electrical system that serves Tulare County. SCE has determined that the existing transmission lines, which deliver electricity to Rector Substation, are operating at or near their limits and will be unable to deliver sufficient electricity to safely and reliably serve this increased demand. As a result, SCE is proposing to construct the San Joaquin Cross Valley Loop Transmission Project. With this project, SCE can increase its ability to deliver electricity from SCE's hydro-electric facilities in the Sierras to Rector Substation to serve Tulare County during periods of high electrical demand.

PROJECT LOCATION AND DESCRIPTION

The proposed project consists of the construction of a new double-circuit 220 kV transmission line that would connect the existing Big Creek 3-Springville 220 kV transmission line near Lemon Cove into the Rector Substation (see Figure 2). The proposed transmission line route is approximately 20 miles long. The 220 kV transmission line would be constructed on approximately 109 tubular poles and 11 lattice steel towers ranging in height from 120 to 140 feet (see Figure 1).

TYPICAL STRUCTURE DESIGN

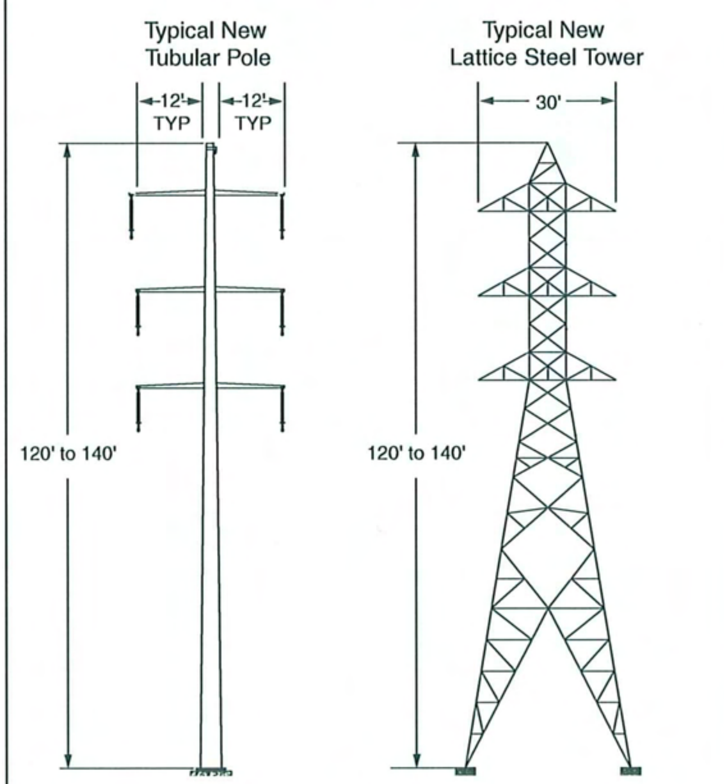


Figure 1

Beginning at Rector Substation and heading north for approximately two miles within SCE's existing right-of-way (ROW), SCE proposes to replace two existing single-circuit 220 kV lines, currently side by side in the ROW, with one double-circuit 220 kV transmission line. This would create sufficient space in the ROW to accommodate construction of the first two miles of the proposed double-circuit 220 kV transmission line. The existing lines would be placed on 12 tubular poles and two lattice steel towers ranging in height from 120 to 140 feet. The proposed double-circuit line would be constructed on another 12 tubular poles and one new lattice tower, side by side with the rebuilt lines, within the existing ROW.

The remaining 18 miles of the proposed transmission line would be constructed within a new 100 foot wide ROW to be acquired by SCE. The proposed transmission line would proceed east from SCE's existing ROW north of Rector Substation to its intersection with the Big Creek 3-Springville 220 kV transmission line located east of Lemon Cove and Highway 198 (see Figures 3A and 3B). This section of the line would be constructed on 97 tubular poles and nine lattice steel towers ranging in height from 120 to 140 feet.

PROJECT APPROVAL PROCESS

The proposed San Joaquin Cross Valley Loop Transmission Project falls within the jurisdiction of the California Public Utilities Commission (CPUC). The CPUC is responsible for ensuring that construction of this project complies with the requirements of the California Environmental Quality Act (CEQA). During project planning activities, SCE will conduct information and outreach activities designed to help inform area residents, businesses, and other interested parties about the project. At the conclusion of project planning, SCE will submit an application to the CPUC requesting authority to construct the project. SCE anticipates that it will submit its application

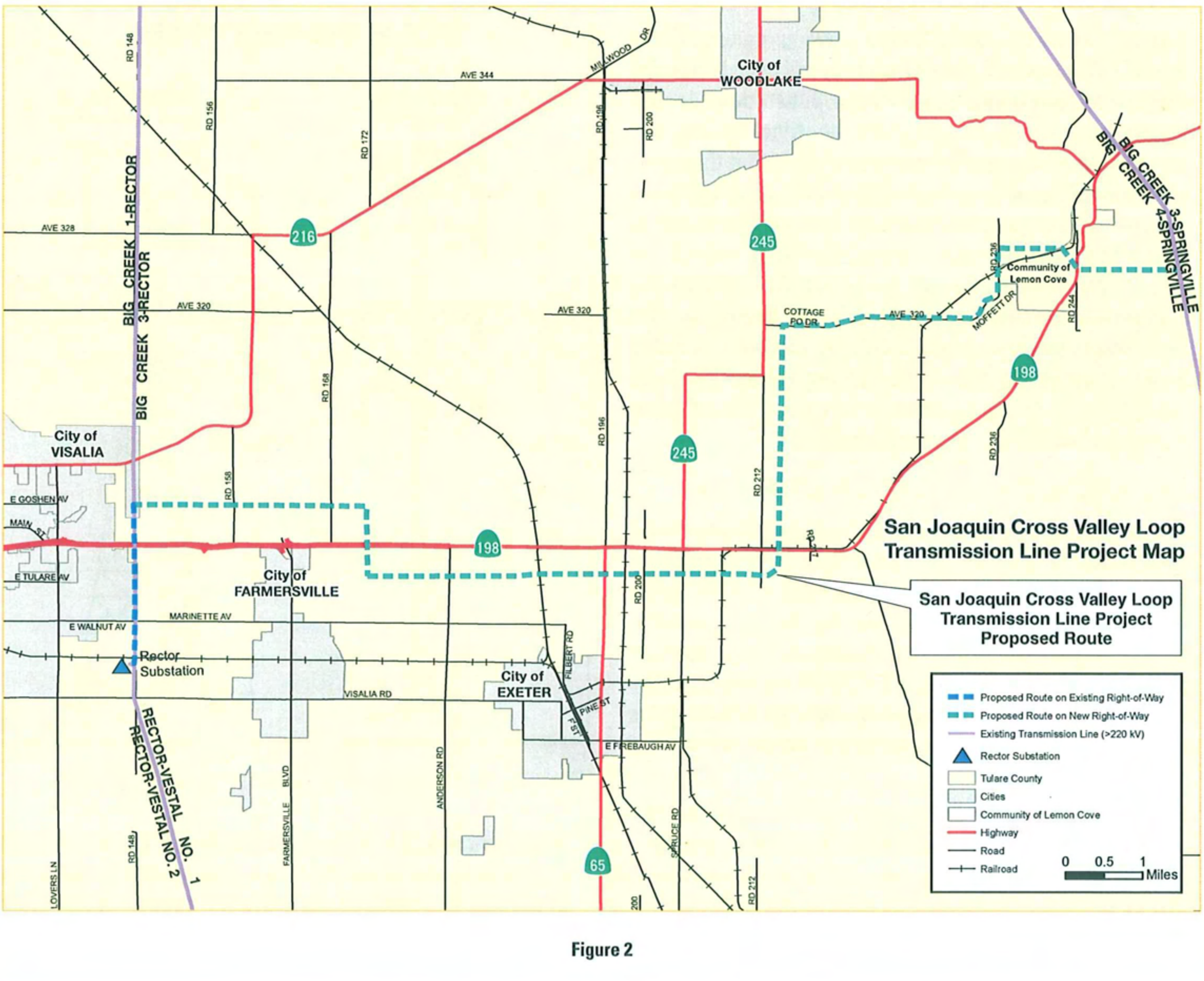


Figure 2

to the CPUC in December 2006. The CPUC will review SCE's application and will either approve the project as filed, approve the project with modifications, or deny the project.

PUBLIC OUTREACH AND COMMUNICATIONS

SCE has had preliminary discussions regarding the project with local property owners, local government officials, and other interested parties. SCE will continue to communicate with these parties throughout all phases of this project.

SCE has scheduled a public open house to be held ***Wednesday, November 15, from 4:30 pm to 7:30 pm, at Freedom Elementary School, Multipurpose Building, 575 E. Citrus Drive, Farmersville CA*.** The open house is designed to provide up-to-date information on the project, answer questions that the public may have about the project, and allow the public to meet the project team. The open house will be advertised in local newspapers, and on SCE's website http://www.sce.com/crossvalley.

OTHER LOCAL PROJECTS

In order to meet the growing electric needs of the area, SCE has filed an application for approval to construct the Riverway Substation proposed to be located in Visalia. Other SCE projects are being planned for construction in the San Joaquin Valley to serve the increasing demand for electricity and to maintain reliable electric service. As planning progresses on these projects, SCE will provide specific information to the affected community.

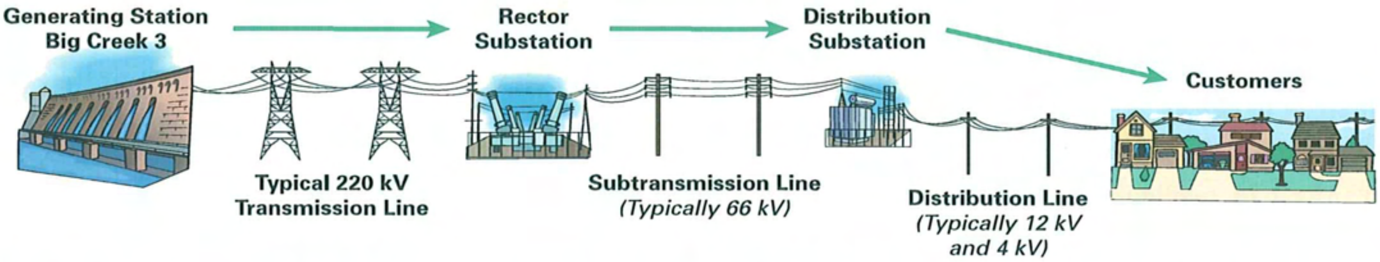
PROJECTED TIMELINE

November 15, 2006	Project open house
December 2006	SCE submits application to the CPUC for authorization to construct the proposed project
Summer 2008	Proposed start of construction upon receipt of all required approvals
Spring 2009	Project completed

Figure 3A
Existing view from Avenue 320 looking west.

Figure 3B
Simulation of Avenue 320 looking west.

PATH OF ELECTRICITY



The information presented in this section provides general information about how electricity is delivered to homes and businesses to help illustrate how the specific SCE project being proposed fits into the bigger picture of delivery of electricity. The specific SCE project elements referred to in this fact sheet are detailed under sections entitled: "WHY IS THIS PROJECT NEEDED" and "PROJECT DESCRIPTION."

Electricity is produced at power plants often located many miles away from where it is used. Transmission lines are the "freeways" of the electrical system, moving large amounts of electricity over long distances from these power plants to the customers who will use it. To do this most efficiently and with the least amount of energy loss along the way, the electricity must be transported at high voltages, normally ranging from 220,000 volts (220 kilovolts or 220 kV) to 500,000 volts (500 kilovolts or 500 kV).

In order for this electricity to be used by businesses or homes, the voltages must be first reduced through the use of transformers. These transformers are located at facilities known as substations. The voltage reduction is usually done in stages – first from 220 kV to 66 kV, and then from 66 kV to 12 kV and 4 kV. Lower voltage distribution lines deliver power from these smaller substations to neighborhoods where it can be used by homes and businesses.

SAVE THE DATE

SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION LINE PROJECT

OPEN HOUSE

Wednesday, November 15

4:30 p.m. – 7:30 p.m.

Freedom Elementary School
Multipurpose Building
575 E. Citrus Drive
Farmersville, CA 93223

ADDITIONAL INFORMATION

If you have any questions or comments about the project, or would like to be added to the project mailing list, please contact:

William Delain
SCE Region Manager
(559) 685-3213
william.delain@sce.com
SCE San Joaquin Valley Service Center
2425 S. Blackstone Street
Tulare, CA 93274

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Hoja de Datos

Proyecto de Transmisión *San Joaquin Cross Valley Loop Transmission* — Noviembre 2006

Información para la comunidad sobre cambios a un proyecto de Southern California Edison Company (SCE) en su área.

SCE ha presentado una propuesta para una nueva línea de transmisión de circuito doble y 220 kilovoltios (kV) de modo de estar en condiciones de abastecer la demanda y mantener la confiabilidad del sistema eléctrico en el Condado de Tulare.

NECESIDAD DEL PROYECTO

El Condado de Tulare es una de las regiones más dinámicas de California. Este crecimiento ha resultado en una mayor demanda eléctrica. La Subestación Rector de SCE, ubicada al sudeste de Visalia, integra un sistema que suministra electricidad al Condado de Tulare. SCE ha determinado que las actuales líneas de transmisión, las cuales transportan electricidad a la Subestación Rector, están funcionando sobre o cerca de sus límites y no estarán en condiciones de abastecer electricidad de forma segura y confiable para cubrir la mayor demanda. A fin de solucionar este problema, SCE propone el proyecto de transmisión *San Joaquin Cross Valley Loop Transmission Project* (Proyecto), gracias al cual la compañía podrá transportar más electricidad generada en sus plantas hidroeléctricas en las Sierras hasta la Subestación Rector para abastecer al Condado de Tulare durante las épocas de demanda eléctrica alta.

UBICACIÓN Y DESCRIPCIÓN DEL PROYECTO

El proyecto consiste en el tendido de una nueva línea de transmisión de circuito doble y 220 kilovoltios (kV) que, cerca de Lemon Cove, conectaría la actual línea de transmisión Big Creek 3-Springville de 220 kV con la Subestación Rector (vea la Figura 2). Esta nueva línea de transmisión tiene alrededor de 20 millas de largo, y sería tendida sobre aproximadamente 109 postes tubulares y 11 torres de celosía de acero con una altura de 120 a 140 pies (vea la Figura 1).

La línea saldría de la Subestación Rector con dirección norte por casi dos millas dentro de la actual superficie de uso público (ROW por sus siglas en inglés) de SCE. SCE propone reemplazar/reconstruir dos líneas de circuito simple de 220 kV, actualmente ubicadas de forma paralela en la superficie de uso público, con una línea de transmisión de circuito doble y 220 kV. Esto crearía suficiente espacio en la superficie de uso público para permitir el tendido de las dos primeras millas de la línea de transmisión San Joaquin Cross Valley Loop Transmission Line de 220 kV. Esta sección reconstruida sería tendida sobre 12 postes tubulares y dos postes

TYPICAL STRUCTURE DESIGN

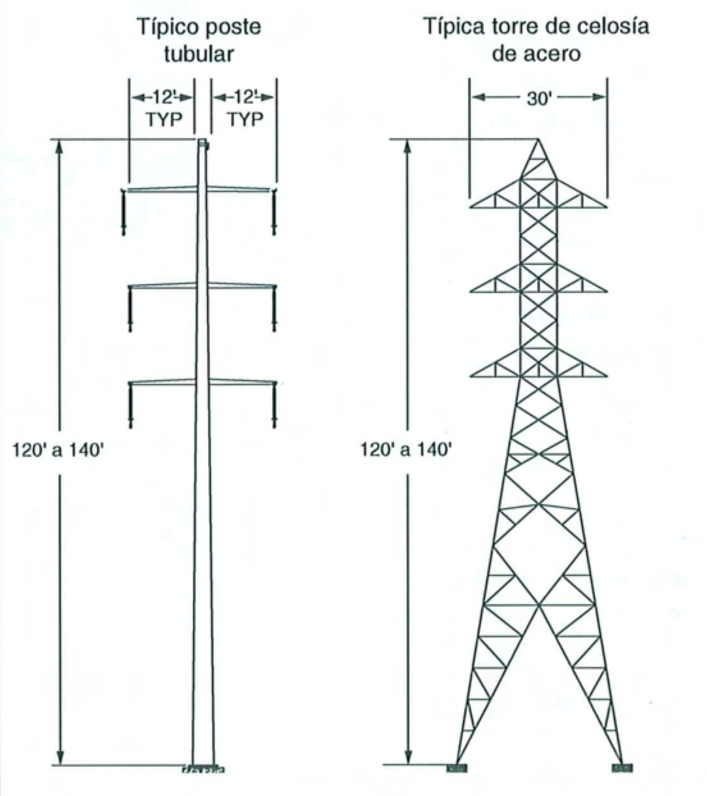

Figura 1

ESTADO ACTUAL DEL PROYECTO

Actualmente SCE está realizando estudios ambientales del proyecto, los cuales están preparados en conformidad con leyes ambientales como CEQA. Los documentos ambientales serán incluidos en la solicitud de SCE ante la CPUC, quien los revisará de forma completa e independiente.

CONTACTO Y COMUNICACIÓN CON EL PÚBLICO

SCE ha iniciado un diálogo preliminar respecto al proyecto con propietarios locales, funcionarios públicos y otros sectores interesados. SCE continuará reuniéndose con propietarios locales, funcionarios públicos y otros sectores interesados durante todas las fases de este proyecto.

SCE organizará una reunión pública el ***miércoles 15 de noviembre de 4:30 p.m. a 7:30 p.m. en Freedom Elementary School, Multipurpose Building, 575 E. Citrus Drive, Farmersville CA.*** La Reunión Pública busca presentar información actualizada sobre el proyecto, responder a las preguntas del público y presentar al equipo técnico a cargo del proyecto. La Reunión Pública será anunciada en periódicos locales y en la página de Internet de SCE http://www.sce.com/crossvalley.

OTROS PROYECTOS LOCALES

A fin de responder a la creciente necesidad eléctrica de la zona, SCE ha presentado una solicitud para la construcción de la Subestación Riverway en Visalia. Además, SCE tiene otros proyectos en el Valle de San Joaquín para abastecer la creciente demanda eléctrica y mantener la confiabilidad del servicio eléctrico. Conforme estos planes avancen, SCE ofrecerá información específica a la comunidad interesada.

PLAZO PROPUESTO

15 de noviembre de 2006	Reunión Pública
Diciembre de 2006	SCE presentará ante la CPUC una solicitud para construir el proyecto
Verano de 2008	Fecha sugerida para el inicio de la construcción luego de recibir los permisos necesarios
Primavera de 2009	Finalización del proyecto

Figura 3A
Vista actual de la Avenida 320 en dirección oeste.

Figura 3B
Simulación de la Avenida 320 en dirección oeste.

de celosía de acero con una altura de 120 a 140 pies. La línea propuesta sería tendida sobre otros 12 postes tubulares, al lado de los postes de las líneas reconstruidas, y una nueva torre de celosía sobre la actual superficie de uso público. Las 18 millas restantes de la línea de transmisión propuesta serían tendidas en una nueva superficie de uso público de 100 pies de ancho a ser adquirida por SCE. La línea de transmisión propuesta continuaría desde la actual superficie de uso público de SCE ubicada al norte de la Subestación Rector con dirección este hasta su intersección con la línea de transmisión Big Creek 3 Springville de 220 kV ubicada al este de Lemon Cove y la Carretera 198 (vea las Figuras 3A y 3B). Esta sección de la línea sería tendida sobre 97 postes tubulares y 9 postes de celosía de acero con una altura de entre 120 y 140 pies.

PROCESO DE APROBACIÓN DEL PROYECTO

El proyecto *San Joaquin Cross Valley Loop Transmission Project* entra en la jurisdicción de la Comisión de Servicios Públicos de California (CPUC). La CPUC es responsable de asegurar que la construcción de este proyecto cumpla los requisitos de la *California Environmental Quality Act* (CEQA). Durante la fase de planificación del proyecto SCE implementará actividades de difusión para informar a los residentes, negocios y otros sectores interesados locales. Al final de esta fase, SCE presentará ante la CPUC una solicitud de autorización para construir el proyecto. SCE prevé presentar su solicitud ante la CPUC en diciembre de 2006. Luego, la CPUC analizará la solicitud y puede aprobar el proyecto tal como fue presentado, aprobarlo con modificaciones o bien rechazarlo.

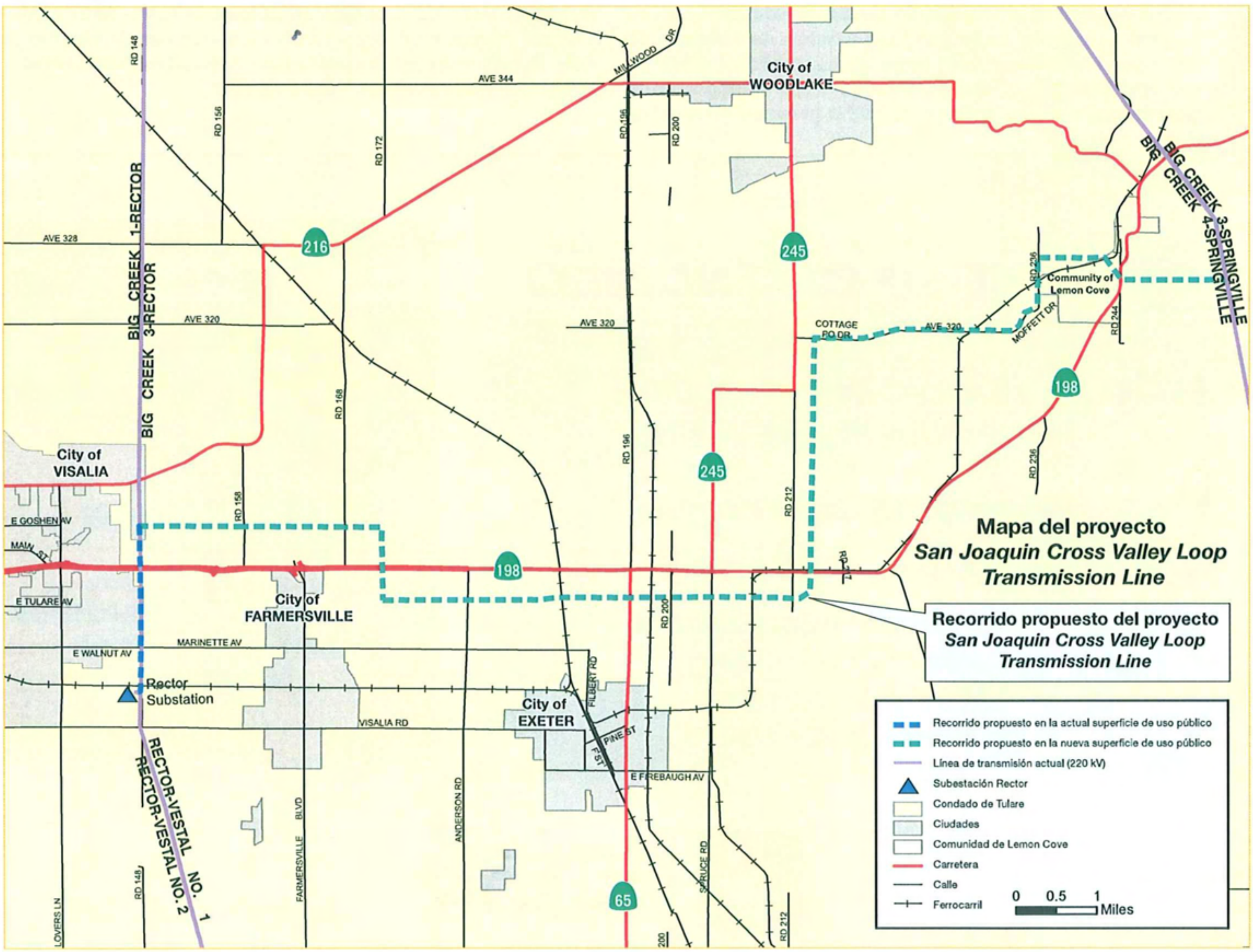

Figura 2

EL RECORRIDO DE LA ELECTRICIDAD

Esta sección contiene información general sobre la forma en que la electricidad llega a los hogares y negocios de nuestros usuarios de modo de ilustrar cómo el proyecto de SCE se adapta al panorama general del suministro eléctrico. Los componentes específicos del proyecto de SCE mencionados en esta hoja de datos se tratan en las secciones "NECESIDAD DEL PROYECTO" y "DESCRIPCIÓN Y UBICACIÓN DEL PROYECTO".

La electricidad es producida en centrales eléctricas que en muchas ocasiones están ubicadas a millas de distancia de sus usuarios finales. Las líneas de transmisión eléctrica son las "carreteras" del sistema eléctrico, transportando grandes cantidades de electricidad a grandes distancias.

Para lograr esto de la forma más eficiente y con la menor pérdida de energía, la electricidad debe transportase en altos voltajes, variando de 220,000 voltios (220 kilovoltios o 220 kV) hasta 500,000 voltios (500 kilovoltios o 500 kV).

A fin de que esta electricidad pueda ser usada en negocios y viviendas, es necesario usar transformadores para reducir su voltaje. Los transformadores están ubicados en instalaciones conocidas como subestaciones. Por lo general, la reducción voltaica se realiza en etapas: primero de 220 kV a 66 kV, y luego de 66 kV a 12 y 4 kV. Las líneas de distribución de bajo voltaje transportan la electricidad desde estas subestaciones pequeñas a los usuarios.

MARQUE SU CALENDARIO

REUNIÓN INFORMATIVA SOBRE EL PROYECTO *SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION LINE*

Miércoles 15 de noviembre

4:30 p.m. - 7:30 p.m.

Freedom Elementary School
Multipurpose Building
575 E. Citrus Drive
Farmersville, CA 93223

INFORMACIÓN ADICIONAL

Si tiene preguntas o comentarios sobre este proyecto o desea incluir sus datos en la lista de correo, comuníquese con:

William Delain
Gerente Regional de SCE
(559) 685-3213
william.delain@sce.com
SCE San Joaquin Valley Service Center
2425 S. Blackstone Street
Tulare, CA 93274

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Fact Sheet

San Joaquin Cross Valley Loop Transmission Project
Alternative Route #2

January 2007

Important community information concerning a proposed Southern California Edison Company (SCE) project in your area

SCE proposes to construct a new double-circuit 220 kilovolt (kV) transmission line to meet the projected need for electricity and to maintain electric system reliability in Tulare County.

WHY IS THE PROJECT NEEDED?

Tulare County is one of the fastest growing regions in California. This increased growth has resulted in an increased demand for electricity. SCE's Rector Substation, located southeast of Visalia, is part of the electrical system that serves Tulare County. SCE has determined that the existing transmission lines, which deliver electricity to Rector Substation, are operating at or near their limits and will be unable to deliver sufficient electricity to safely and reliably serve this increased demand. As a result, SCE is proposing to construct the San Joaquin Cross Valley Loop Transmission Project (Project). The Project would consist of the construction of a new double-circuit 220 kV transmission line. This line would connect an existing 220 kV line, located between SCE's hydro-electric facilities in the Sierras and SCE's Springville Substation east of Strathmore, into Rector Substation. With this Project, SCE can increase its ability to deliver electricity from SCE's hydro-electric facilities in the Sierras to Rector Substation to serve Tulare County during periods of high electrical demand.

SCE has identified three potential routes for this new double-circuit 220 kV transmission line. These routes are depicted on Figure 1 and identified as Proposed Route, Alternative Route #l and Alternative Route #2. SCE is still evaluating which of the identified transmission line routes best serves the electrical needs of Tulare County while taking into consideration potential impacts to the community and the environment. Upon completion of this evaluation, SCE will seek authorization from the California Public Utilities Commission to construct the Project along the transmission line route which best meets this objective.

The purpose of this fact sheet is to provide specific information regarding Alternative Route #2.

ALTERNATIVE ROUTE #2 LOCATION AND DESCRIPTION

Alternative Route #2 would consist of the construction of a new double-circuit 220 kV transmission line that would connect the existing Big Creek 3-Springville 220 kV transmission line into Rector Substation (see Figure 1). This 220 kV transmission line would be approximately 23 miles long and would be constructed on approximately 112 tubular poles and seven lattice steel towers ranging in height from 110 to 150 feet (see Figure 2).

Beginning at Rector Substation and heading north for approximately 11 miles within SCE's existing right-of-way (ROW), SCE would replace two existing single-circuit 220 kV lines, currently side-by-side in the ROW, with one double-circuit 220 kV transmission line. This would create sufficient space in the ROW to

SAVE THE DATE

SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION LINE PROJECT

OPEN HOUSE

January 18, 2007

4:30 pm - 7:30 pm

Woodlake Veterans Memorial Center,
355 S. Acacia St., Woodlake, CA

accommodate construction of the first 11 miles of Alternative Route #2. The existing lines would be placed on 52 tubular poles and two lattice steel towers ranging in height from 110 to 150 feet. Alternative Route #2 would be constructed on another 52 tubular poles and one new lattice steel tower, side-by-side with the rebuilt lines, within the existing ROW.

The remaining 12 miles of the transmission line would be constructed within a new 100-foot-wide ROW to be acquired by SCE. From SCE's existing ROW north of Rector Substation, Alternative Route #2 would proceed east to its intersection with the Big Creek 3-Springville 220 kV transmission line located approximately two miles northeast of Woodlake. This section of the line would be constructed on 60 tubular poles and six lattice steel towers ranging in height from 110 to 150 feet.

Figure 3A depicts a typical existing view and Figure 3B is a simulation of that view after completion of the Project.

PROJECT APPROVAL PROCESS

The proposed San Joaquin Cross Valley Loop Transmission Project falls within the jurisdiction of the California Public Utilities Commission (CPUC). At the conclusion of project planning, SCE will submit an application to the CPUC requesting authority to construct the Project. SCE anticipates that it will submit its application to the CPUC in the Spring of 2007. The CPUC will review the Project application in compliance with the requirements of the California Environmental Quality Act (CEQA) and will either approve the Project as filed, approve the Project with modifications, or deny the Project.

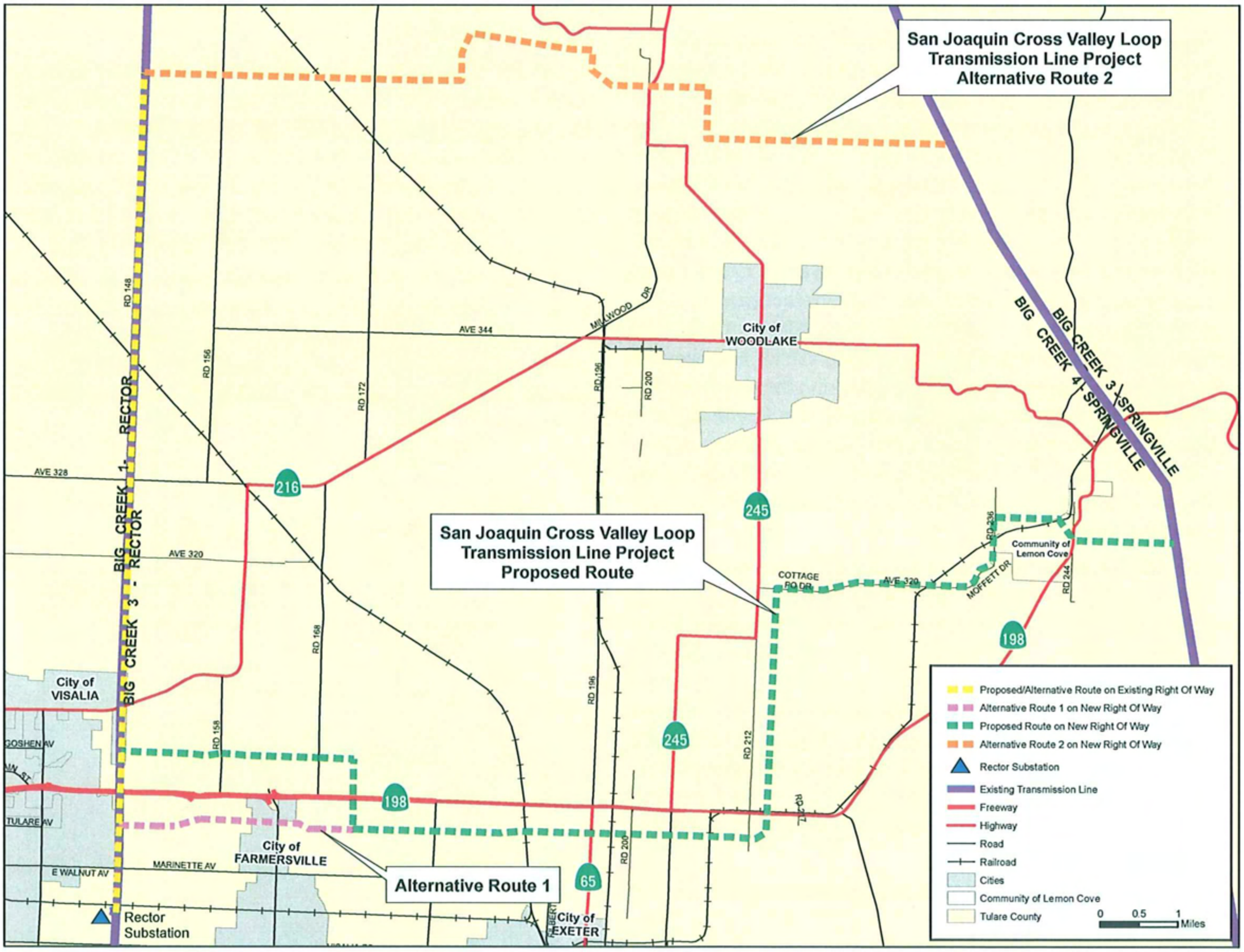


Figure 1

PUBLIC OUTREACH AND COMMUNICATIONS

SCE will continue to communicate with members of the public including local property owners, local government officials, and other interested parties regarding this Project. SCE has scheduled a public open house to be held ***Thursday, January 18, from 4:30 pm to 7:30 pm, at Woodlake Veterans Memorial Center, 355 S. Acacia St., Woodlake, CA***. This open house is designed to provide up-to-date information on the Project, including specific information related to Alternative #2. SCE representatives will be on hand to answer questions that you may have about the Project. The open house will be advertised in local newspapers, and on SCE's website http://www.sce.com/crossvalley.

OTHER LOCAL PROJECTS

In order to meet the growing electrical needs of the area, SCE has filed an application for approval to construct the Riverway Substation proposed to be located in Visalia. Other SCE projects are being planned for construction in the San Joaquin Valley to serve the increasing demand for electricity and to maintain reliable electric service. As planning progresses on these projects, SCE will provide specific information to each affected community.

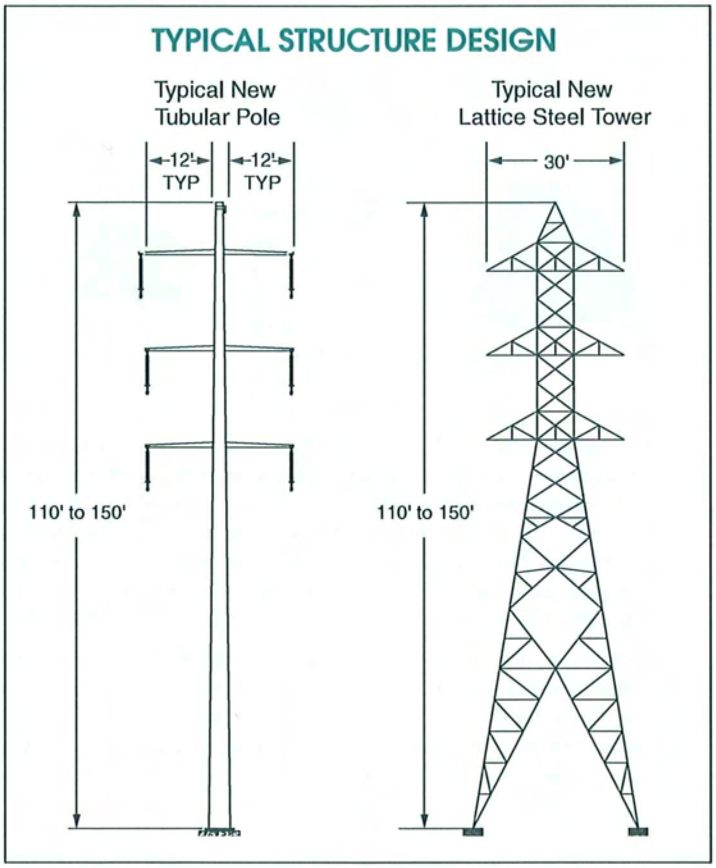


Figure 2

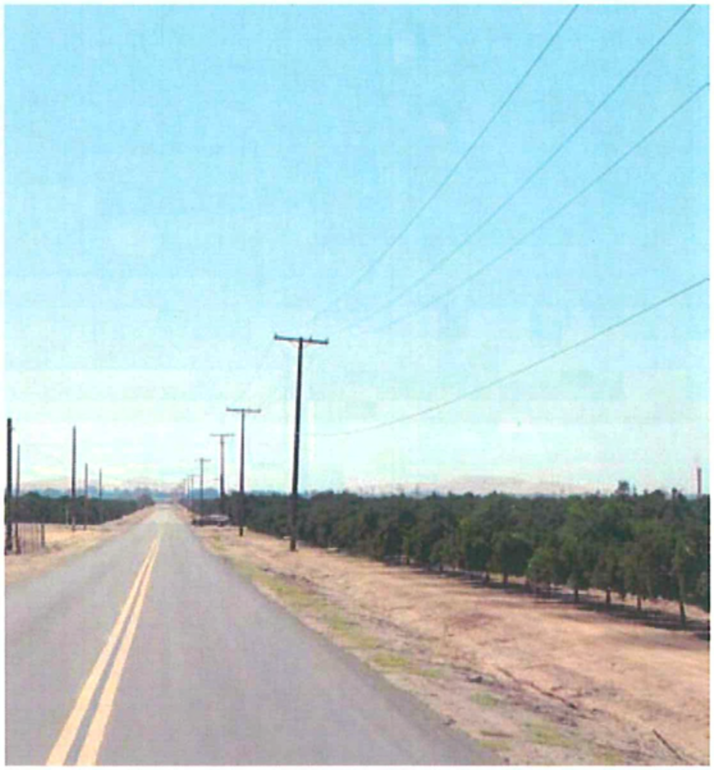


Figure 3A: Typical Existing View

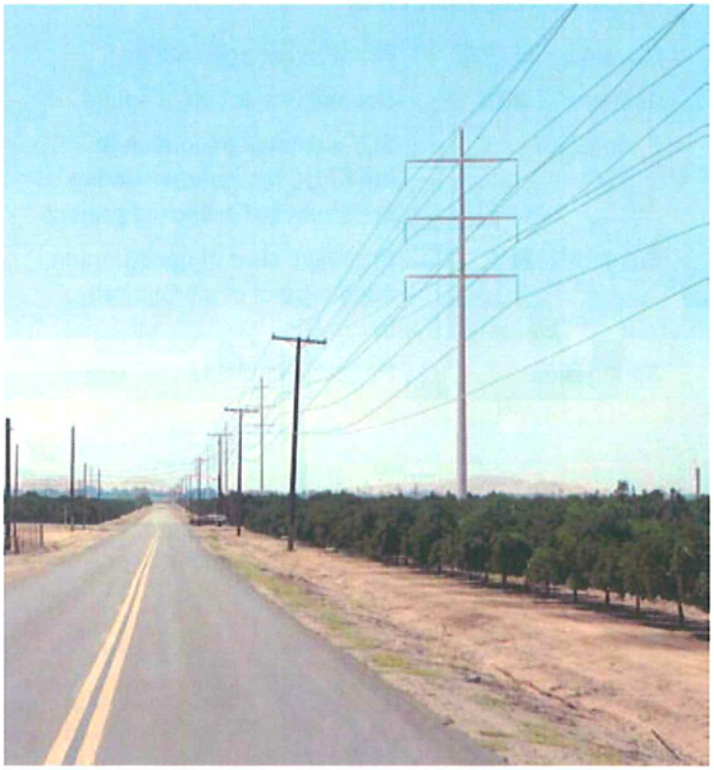
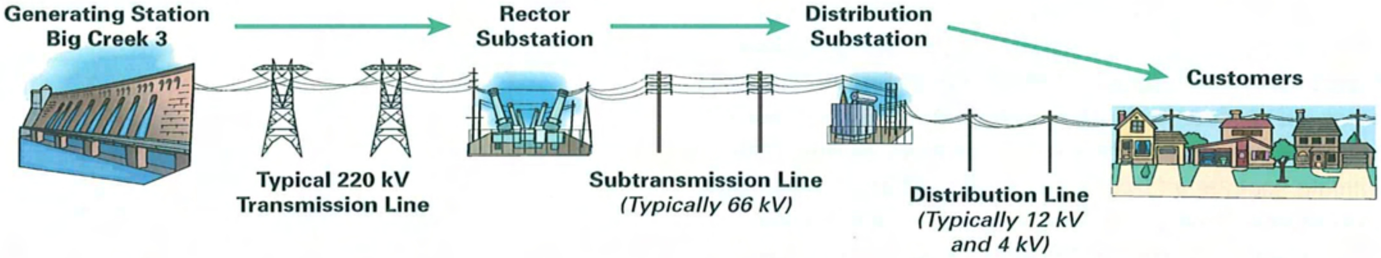


Figure 3B: Simulation of View after Completion of Project

PATH OF ELECTRICITY



The information presented in this section provides general information about how electricity is delivered to homes and businesses to help illustrate how the specific SCE project being proposed fits into the bigger picture of delivery of electricity. The specific SCE project elements referred to in this fact sheet are detailed under sections entitled: "WHY IS THIS PROJECT NEEDED" and "PROJECT DESCRIPTION."

Electricity is produced at power plants often located many miles away from where it is used. Transmission lines are the "freeways" of the electrical system, moving large amounts of electricity over long distances from these power plants to the customers who will use it. To do this most efficiently and with the least amount of energy loss along the way, the electricity must be transported at high voltages, normally ranging from 220,000 volts (220 kilovolts or 220 kV) to 500,000 volts (500 kilovolts or 500 kV).

In order for this electricity to be used by businesses or homes, the voltages must be first reduced through the use of transformers. These transformers are located at facilities known as substations. The voltage reduction is usually done in stages – first from 220 kV to 66 kV, and then from 66 kV to 12 kV and 4 kV. Lower voltage distribution lines deliver power from these smaller substations to neighborhoods where it can be used by homes and businesses.

PROJECTED TIMELINE

November 15, 2006	First Project open house
January 18, 2007	Second Project open house
Spring 2007	SCE submits application to the CPUC for authorization to construct the proposed project
Summer 2008	Proposed start of construction upon receipt of all required approvals
Spring 2009	Project completed

ADDITIONAL INFORMATION

If you have any questions or comments about the project, or would like to be added to the project mailing list, please contact:

William DeLain,
SCE Region Manager
(559) 685-3213
william.delain@sce.com
SCE San Joaquin Valley Service Center
2425 S. Blackstone Street
Tulare, CA 93274

SOUTHERN CALIFORNIA EDISON®
An *EDISON INTERNATIONAL®* Company

Información actualizada sobre un proyecto de Southern California Edison para instalar una línea de transmisión en su área

ACTUALIZACIÓN PARA LA COMUNIDAD

Proyecto de transmisión San Joaquin Cross Valley Loop   Marzo de 2008

PROYECTO SAN JOAQUIN CROSS VALLEY LOOP

El Condado de Tulare es una de las regiones más dinámicas de California. Este crecimiento ha resultado en una mayor demanda eléctrica. SCE ha determinado que las actuales líneas de transmisión, las cuales transportan electricidad a la Subestación Rector ubicada al sudeste de Visalia, están funcionando sobre o cerca de sus límites y no estarán en condiciones de abastecer electricidad de forma segura y confiable para cubrir la mayor demanda. A fin de solucionar este problema, SCE ha desarrollado el proyecto San Joaquin Cross Valley Loop Transmission, el cual consiste en instalar una nueva línea de transmisión de 19 millas de largo y 220 kilovoltios en circuito doble. Esta línea estará conectada a una línea de 220 kilovoltios preexistente, gracias a lo cual SCE podrá transportar más electricidad generada en sus plantas hidroeléctricas Big Creek ubicadas en las montañas Sierra Nevada hasta la Subestación Rector.

Datos generales del proyecto

En 2006 y a principios de 2007, SCE organizó dos reuniones públicas sobre el proyecto y se reunió con varios representantes del gobierno local, líderes de la comunidad, grupos de interés y propietarios individuales. Como resultado de los comentarios recibidos y a fin de evaluar otras alternativas viables y posibles modificaciones al recorrido, SCE decidió aplazar la presentación ante la Comisión de Servicios Públicos de California de un Certificado de Conveniencia y Necesidad Pública vinculado al proyecto. A lo largo del último año, SCE realizó más estudios ambientales y técnicos sobre recorridos alternativos, tanto potenciales como modificados, y continuó solicitando la opinión de líderes de la comunidad y grupos de interés. Actualmente, SCE está informando que en mayo de 2008 solicitará un Certificado de Conveniencia y Necesidad Pública, buscando aprobación para desarrollar una versión similar pero modificada del proyecto presentado a la comunidad a fines de 2006 y principios de 2007 (denominado Alternativa 1). Las modificaciones a la Alternativa 1 incluyen:

- Instalación de la línea de transmisión de modo de que quede ubicada en o cerca de los linderos, caminos y derechos de vía actualmente en uso siempre que sea posible.
- Reencaminamiento de la línea al sudeste del área de Lemon Cove.

La Alternativa 1 es el recorrido preferente de SCE debido a que produciría los menores impactos ambientales y es el más económico. Además, en su presentación SCE incluirá dos recorridos alternativos. Los dos recorridos alternativos (Alternativa 2 y Alternativa 3) se describen a continuación. La Alternativa 3 fue desarrollada por SCE durante el año pasado.

Descripciones del recorrido

Alternativa 1 (recorrido propuesto)

El recorrido propuesto para la línea de transmisión tiene unas 19 millas de largo. La línea de transmisión partiría de la Subestación Rector avanzando una milla hacia el norte dentro de un derecho de vía de SCE actualmente en uso. SCE propone cambiar dos líneas preexistentes de 220 kilovoltios en circuito simple, actualmente ubicadas de forma paralela en el derecho de vía, por una línea de transmisión de 220 kilovoltios en circuito doble. Esto dejaría espacio suficiente dentro del derecho de vía para facilitar la construcción de la primera milla de la nueva línea de transmisión de 220 kilovoltios en circuito doble. Las 18 millas restantes de la línea de transmisión propuesta serían construidas dentro de un nuevo derecho de vía de 100 pies de ancho a ser adquirido por SCE y avanzaría hacia el este hasta la intersección con la línea de transmisión de 220 kilovoltios Big Creek 3 – Springville, ubicada al este de Lemon Cove y la Carretera 198. Las modificaciones a este recorrido incluyen instalar la línea de modo de que quede ubicada en o cerca de los linderos, caminos y derechos de vía actualmente en uso siempre que sea posible así como encaminar la línea hacia el sudeste de Lemon Cove (ver Figura 1, abajo). La línea de transmisión propuesta sería instalada sobre unos 108 postes de acero tubular y 14 torres de celosía de acero con una altura que oscila entre los 120 y los 150 pies.

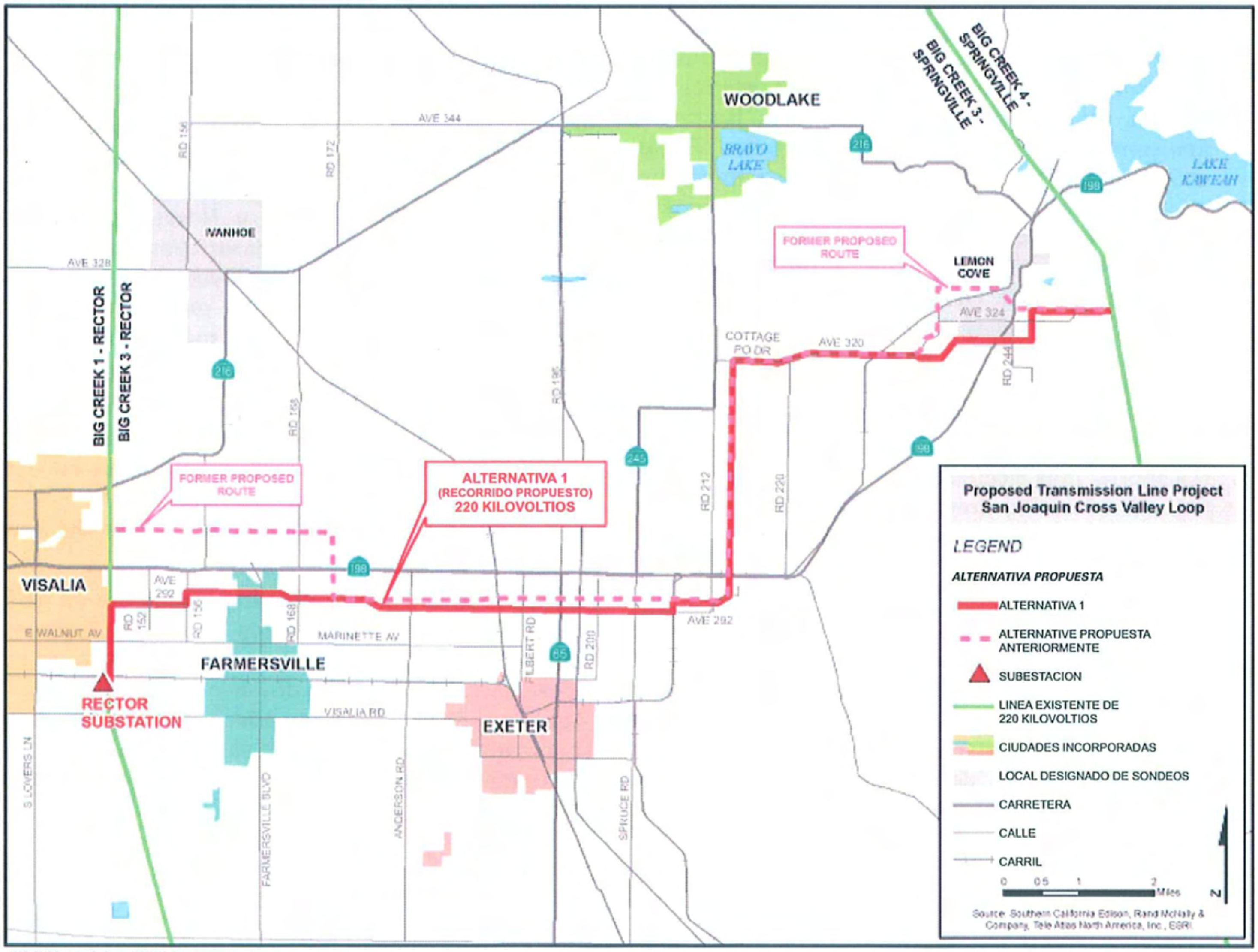


Figura 1

Alternativa 2

El recorrido de la Alternativa 2 tiene unas 23 millas de largo. La línea de transmisión partiría de la Subestación Rector, avanzando 11 millas hacia el norte dentro de un derecho de vía de SCE actualmente en uso. SCE propone cambiar dos líneas preexistentes de 220 kilovoltios en circuito simple, actualmente ubicadas de forma paralela en el derecho de vía, por una línea de transmisión de 220 kilovoltios en circuito doble. Esto dejaría espacio suficiente dentro del derecho de vía para facilitar la construcción de las primeras 11 millas de la nueva línea de transmisión de 220 kilovoltios en circuito doble. Las 12 millas restantes de la línea de transmisión propuesta serían construidas dentro de un nuevo derecho de vía de 100 pies de ancho a ser adquirido por SCE y avanzaría hacia el este hasta la intersección con la línea de transmisión de 220 kilovoltios Big Creek 3 – Springville aproximadamente dos millas al norte de la ciudad de Woodlake (ver Figura 2, abajo). La línea de transmisión Alternativa 2 sería instalada sobre unos 157 postes de acero tubular y 9 torres de celosía de acero con una altura que oscila entre los 120 y los 150 pies.

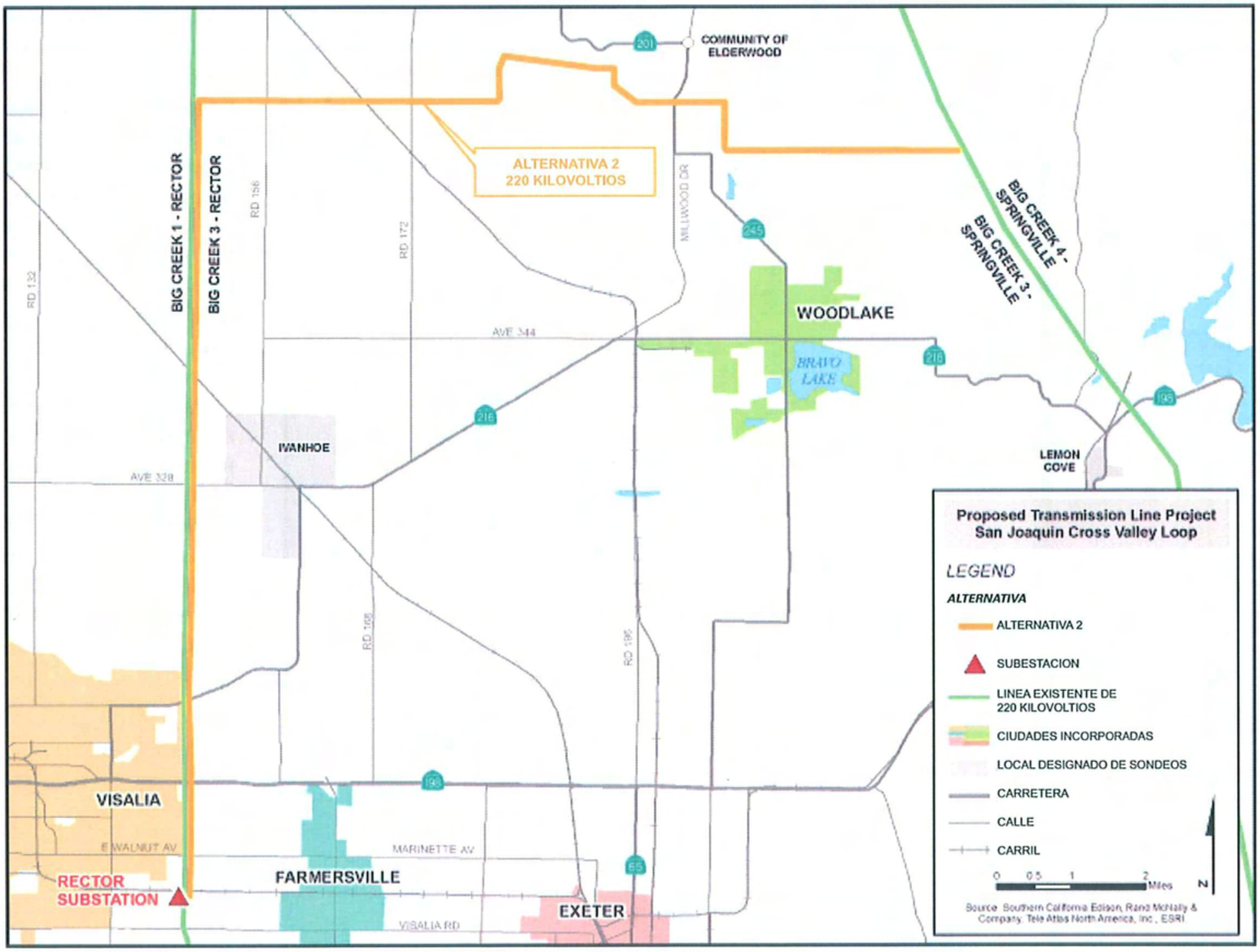


Figura 2

Alternativa 3

El recorrido de la Alternativa 3 tiene unas 24 millas de largo. La línea de transmisión partiría de la Subestación Rector, avanzando 14 millas hacia el norte dentro de un derecho de vía de SCE actualmente en uso. SCE propone cambiar dos líneas preexistentes de 220 kilovoltios en circuito simple, actualmente ubicadas de forma paralela en el derecho de vía, por una línea de transmisión de 220 kilovoltios en circuito doble. Esto dejaría espacio suficiente dentro del derecho de vía para facilitar la construcción de las primeras 14 millas de la nueva línea de transmisión de 220 kilovoltios en circuito doble. Las 10 millas restantes de la línea de transmisión propuesta serían construidas dentro de un nuevo derecho de vía de 100 pies de ancho a ser adquirido por SCE y avanzaría hacia el este hasta la intersección con la línea de transmisión de 220 kilovoltios Big Creek 3 – Springville aproximadamente 49 millas al sur de las instalaciones hidroeléctricas de SCE actualmente en uso (ver Figura 3, a la izquierda). La línea de transmisión Alternativa 3 sería instalada sobre unos 140 postes de acero tubular y 57 torres de celosía de acero con una altura que oscila entre los 120 y los 160 pies.

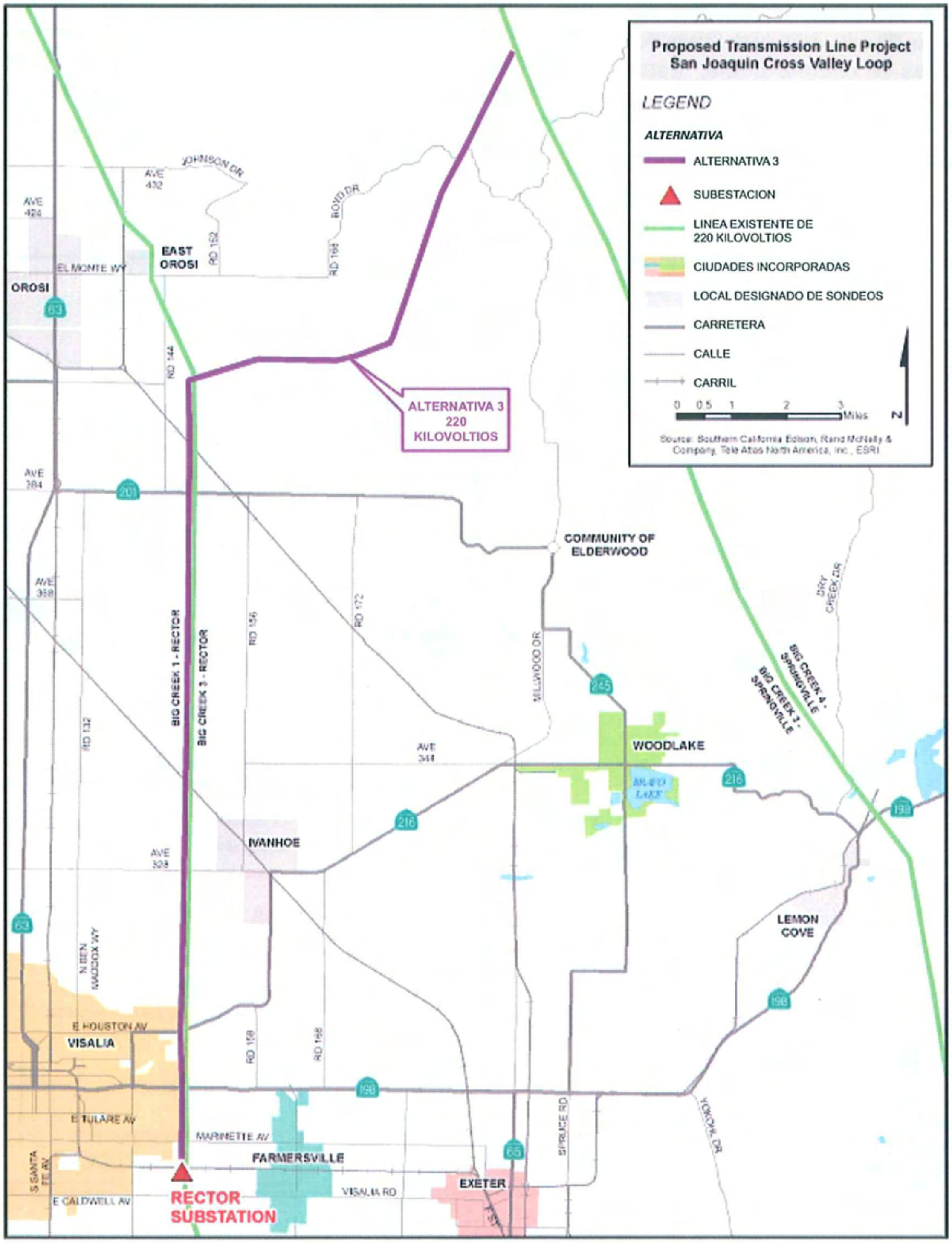
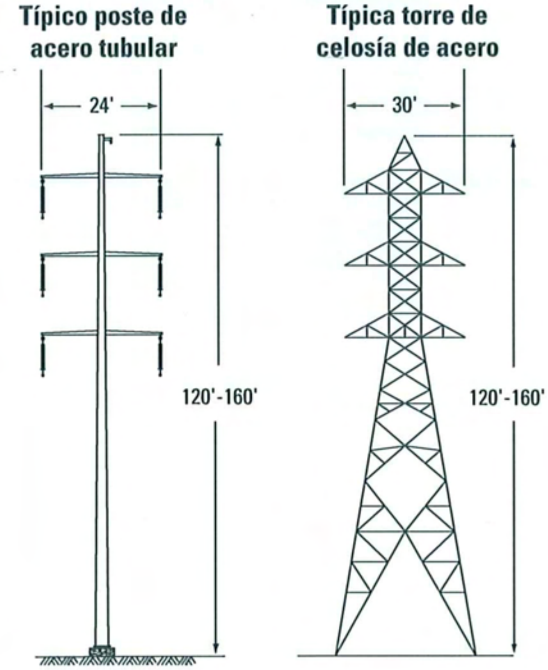


Figura 3

Figura 4. La línea de transmisión de 220 kilovoltios en circuito doble sería instalada sobre postes de acero tubular y torres de celosía de acero con una altura que oscila entre los 120 y los 160 pies, tal como se observa en los siguientes gráficos y simulación visual.



Simulación de la línea de transmisión de 220 kilovoltios en circuito doble desde la Avenida 320 en dirección oeste.

Plazo

Mayo de 2008

SCE prevé solicitar ante la Comisión de Servicios Públicos de California un Certificado de Conveniencia y Necesidad Pública.

→

Mediados de 2009

Plazo previsto para la decisión de la Comisión de Servicios Públicos de California.

→

Mediados de 2011

Finalización del proyecto.

PROCESO DE APROBACIÓN DEL PROYECTO

SCE debe solicitar un Certificado de Conveniencia y Necesidad Pública a fin de obtener los permisos necesarios para la construcción de la línea de transmisión propuesta. La Comisión de Servicios Públicos de California es el organismo regulador estatal encargado de establecer las tarifas eléctricas y otorgar permisos para la construcción de ciertas instalaciones eléctricas. La solicitud de SCE incluirá una Evaluación Ambiental del Proponente, la cual analiza los impactos ambientales creados por la línea de transmisión propuesta y los recorridos alternativos.

La Comisión de Servicios Públicos de California examinará la solicitud de conformidad con la Ley para la Calidad Ambiental de California (en inglés, California Environmental Quality Act) y podría aprobar el proyecto tal como fue presentado, aprobarlo con modificaciones o bien rechazarlo.

OTROS PROYECTOS LOCALES

SCE está desarrollando otros proyectos en el Valle de San Joaquín a fin de abastecer la creciente demanda de electricidad y mantener la seguridad y confiabilidad del servicio eléctrico. Conforme estos planes avancen, SCE ofrecerá información específica a la comunidad interesada.

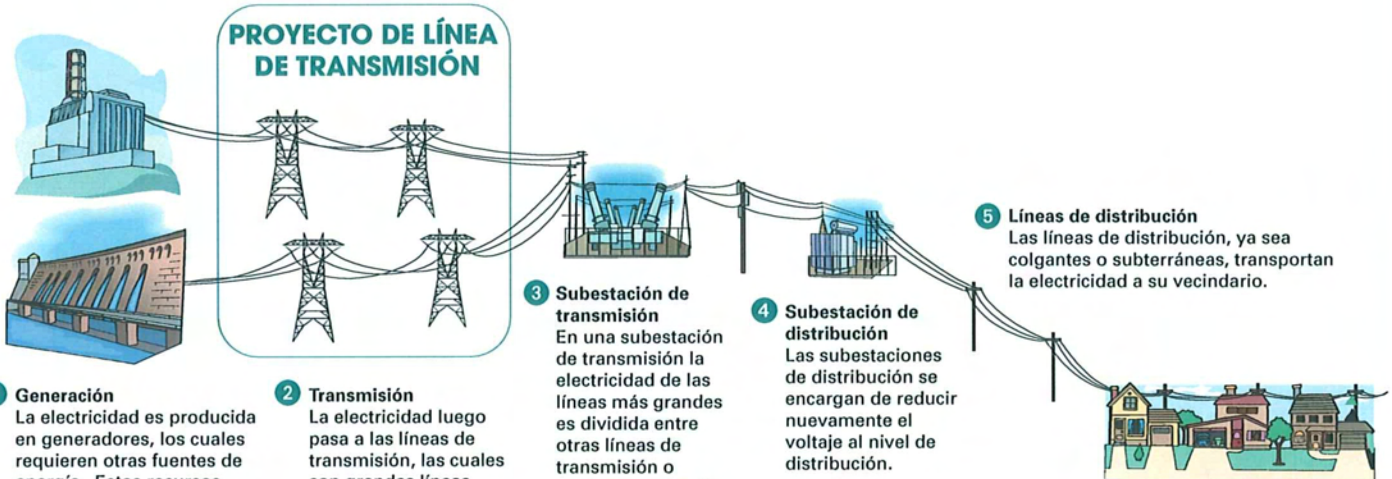
Para más información

Para obtener información actualizada sobre el proyecto San Joaquin Cross Valley Loop visite *www.sce.com/crossvalley*. En caso de preguntas o inquietudes o para ser incluido en la lista de distribución del proyecto no dude en comunicarse con:

Bill DeLain
Region Manager
Southern California Edison
Centro de Servicio de Tulare
(559) 685-3213
william.delain@sce.com

El recorrido de la electricidad

El siguiente gráfico muestra cómo este proyecto de SCE se adapta al panorama general del suministro eléctrico.



1 Generación
La electricidad es producida en generadores, los cuales requieren otras fuentes de energía. Estos recursos incluyen gas natural (un combustible fósil); agua a desnivel para las centrales hidroeléctricas; energía nuclear y recursos renovables como energía solar y eólica.

2 Transmisión
La electricidad luego pasa a las líneas de transmisión, las cuales son grandes líneas tendidas sobre torres de metal. Suelen ser comparadas con las carreteras debido a que transportan cantidades enormes de electricidad a grandes distancias.

3 Subestación de transmisión
En una subestación de transmisión la electricidad de las líneas más grandes es dividida entre otras líneas de transmisión o subtransmisión de voltaje similar o inferior a fin de ser transportada a otros sitios.

4 Subestación de distribución
Las subestaciones de distribución se encargan de reducir nuevamente el voltaje al nivel de distribución.

5 Líneas de distribución
Las líneas de distribución, ya sea colgantes o subterráneas, transportan la electricidad a su vecindario.

6 Usuarios
Las luces, electrodomésticos y otros aparatos del usuario ponen a trabajar a la electricidad.

Acerca de SCE

Una subsidiaria de Edison International (NYSE:EIX), Southern California Edison es la principal compañía eléctrica de California y abastece a una población de más de 13 millones de personas a través de 4.8 millones de cuentas en un área de servicio de 50,000 millas cuadradas dentro del centro, la costa y el sur de California.

Buen vecino

Durante años, SCE ha asumido el compromiso de ser un buen vecino en el Valle de San Joaquín, tal como lo demuestran los siguientes hechos:

- Operación del Centro de Tecnología Agrícola (AgTac).
- Construcción de un nuevo centro de servicio al cliente en Porterville.
- Patrocinio de organizaciones y programas comunitarios.

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Updated information concerning a proposed Southern California Edison transmission line project in your area

COMMUNITY UPDATE

San Joaquin Cross Valley Loop Transmission Project — March 2008

THE SAN JOAQUIN CROSS VALLEY LOOP PROJECT

Tulare County is one of the fastest growing regions in California. This increased growth has resulted in an increased demand for electricity. Southern California Edison (SCE) has determined that the existing transmission lines, which deliver electricity to Rector Substation located southeast of Visalia, are operating at or near their limits and will be unable to deliver sufficient electricity to safely and reliably serve this increased demand. As a result, SCE is proposing to construct the San Joaquin Cross Valley Loop Project, which consists of the construction of a new 19 mile double-circuit 220 kilovolt transmission line. This line would connect to an existing 220 kilovolt line, which would allow SCE to deliver additional power from SCE's Big Creek hydroelectric facilities in the Sierra Nevada Mountains into Rector Substation.

Project Background

In 2006 and early 2007, SCE held two public open houses for the project and conducted various meetings with local government representatives, community leaders and stakeholders, and individual property owners. As a result of comments received, SCE delayed the filing of an application for a Certificate of Public Convenience and Necessity for the proposed project with the California Public Utilities Commission in order to evaluate whether other feasible alternatives and potential route modifications existed.

Over the past year, SCE conducted additional environmental and engineering analyses of potential and modified route alternatives and continued to seek input from community leaders and stakeholders. SCE now is advising the community that it will file a Certificate of Public Convenience and Necessity application in May 2008, and with this application, will seek approval to construct a similar but modified version of the project that was shared with the community in late 2006 and early 2007 (referred to as Alternative 1). Modifications to Alternative 1 include:

- Construction of the transmission line to stay at or near existing property lines, roads and electrical utility right-of-way where possible.
- Re-routing of the line southeast of the Lemon Cove area.

Alternative 1 is SCE's preferred route because it has the fewest environmental impacts and is the most economical.

In addition, SCE will include two alternative routes in its application. Both alternative routes (Alternative 2 and Alternative 3) are further described below. Alternative 3 was developed by SCE over the past year.

Route Descriptions

Alternative 1 (Proposed Route)

The proposed transmission line route is approximately 19 miles long. The transmission line would begin at Rector Substation and proceed north for one mile within SCE's existing right-of-way. SCE proposes to replace two existing single-circuit 220 kilovolt lines, currently side by side in the right-of-way, with one double-circuit 220 kilovolt transmission line. This would create sufficient space in the right-of-way to accommodate construction of the first mile of the new double-circuit 220 kilovolt transmission line. The remaining 18 miles of the proposed transmission line would be constructed within a new 100-foot wide right-of-way to be acquired by SCE and would run east until the line intersects with the Big Creek 3 – Springville 220 kilovolt transmission line located east of Lemon Cove and Highway 198. Modifications to this proposed transmission route include constructing the line at or near existing property lines, roads and electrical utility right-of-way where possible, and routing the line southeast of Lemon Cove (See Figure 1 below). The proposed transmission line would be constructed on approximately 108 tubular poles and 14 lattice steel towers ranging in height from 120 to 150 feet.

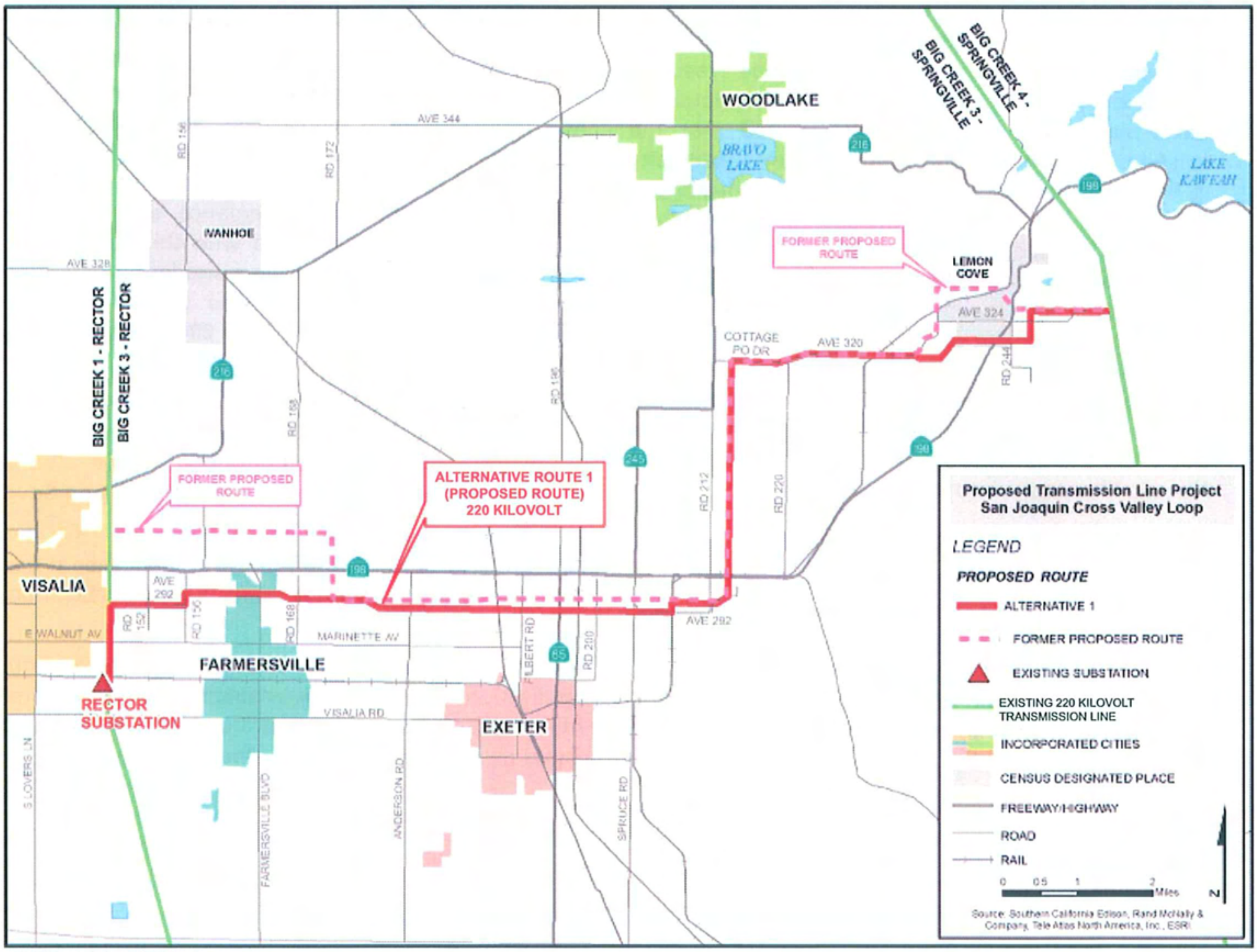


Figure 1

Alternative 2

The Alternative 2 transmission line route is approximately 23 miles long. The transmission line would begin at Rector Substation and proceed north for 11 miles within SCE's existing right-of-way. SCE proposes to replace two existing single-circuit 220 kilovolt lines, currently side by side in the right-of-way, with one double-circuit 220 kilovolt transmission line. This would create sufficient space in the right-of-way to accommodate construction of the first 11 miles of the new double-circuit 220 kilovolt transmission line. The remaining 12 miles of the proposed transmission line would be constructed within a new 100-foot wide right-of-way to be acquired by SCE and would run east until the line intersects with the Big Creek 3 – Springville 220 kilovolt transmission line approximately two miles north of the city of Woodlake (See Figure 2 below). The Alternative 2 transmission line would be constructed on approximately 157 tubular poles and 9 lattice steel towers ranging in height from 120 to 150 feet.

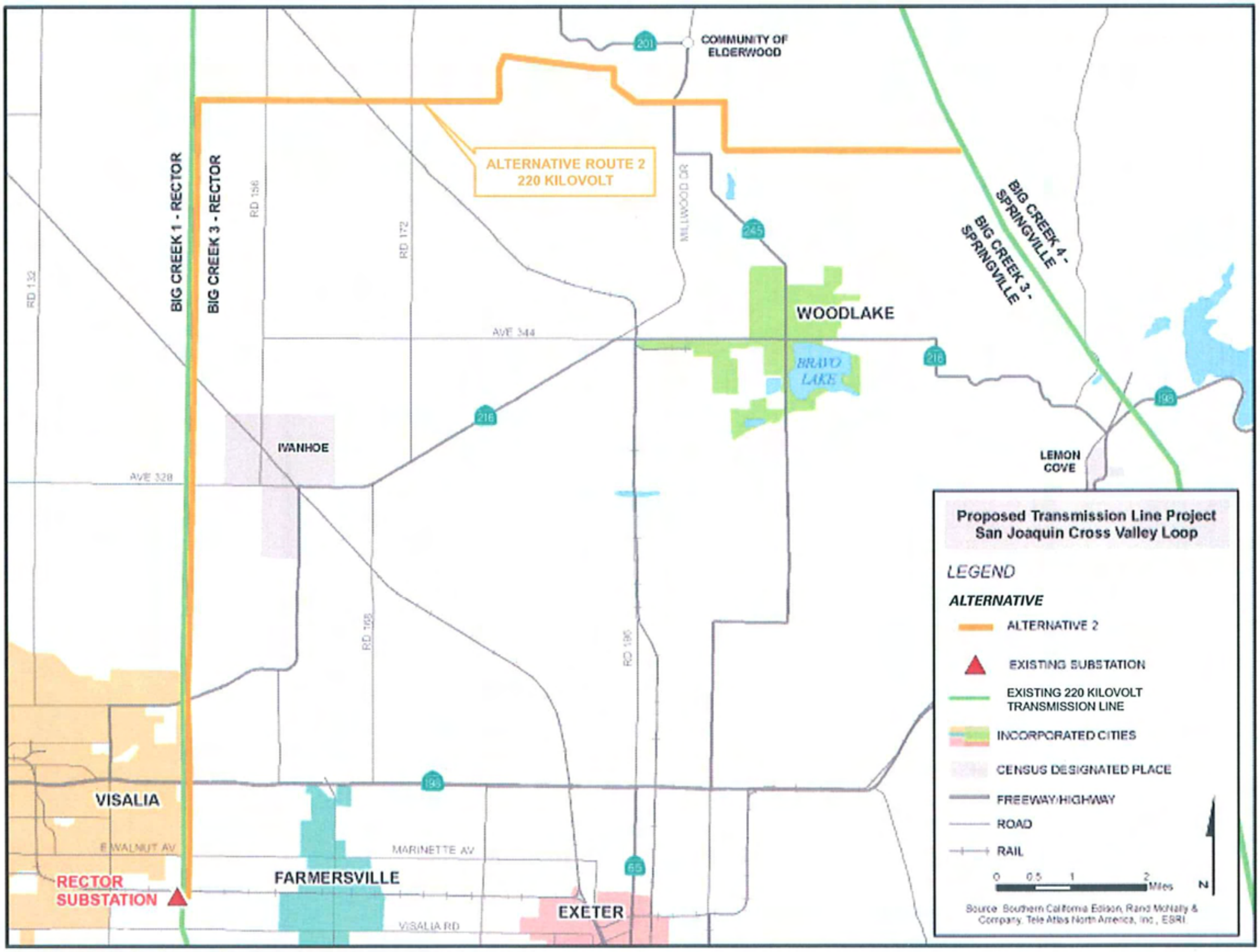


Figure 2

Alternative 3

The Alternative 3 transmission line route is approximately 24 miles long. The transmission line would begin at Rector Substation and proceed north for 14 miles within SCE's existing right-of-way. SCE proposes to replace two existing single-circuit 220 kilovolt lines, currently side by side in the right-of-way, with one double-circuit 220 kilovolt transmission line. This would create sufficient space in the right-of-way to accommodate construction of the first 14 miles of the new double-circuit 220 kilovolt transmission line. The remaining 10 miles of the proposed transmission line would be constructed within a new 100-foot wide right-of-way to be acquired by SCE and would run east until the line intersects with the Big Creek 3 - Springville 220 kilovolt transmission line approximately 49 miles south of SCE's existing hydroelectric facilities (See Figure 3 left). The Alternative 3 transmission line would be constructed on approximately 140 tubular poles and 57 lattice steel towers ranging in height from 120 to 160 feet.

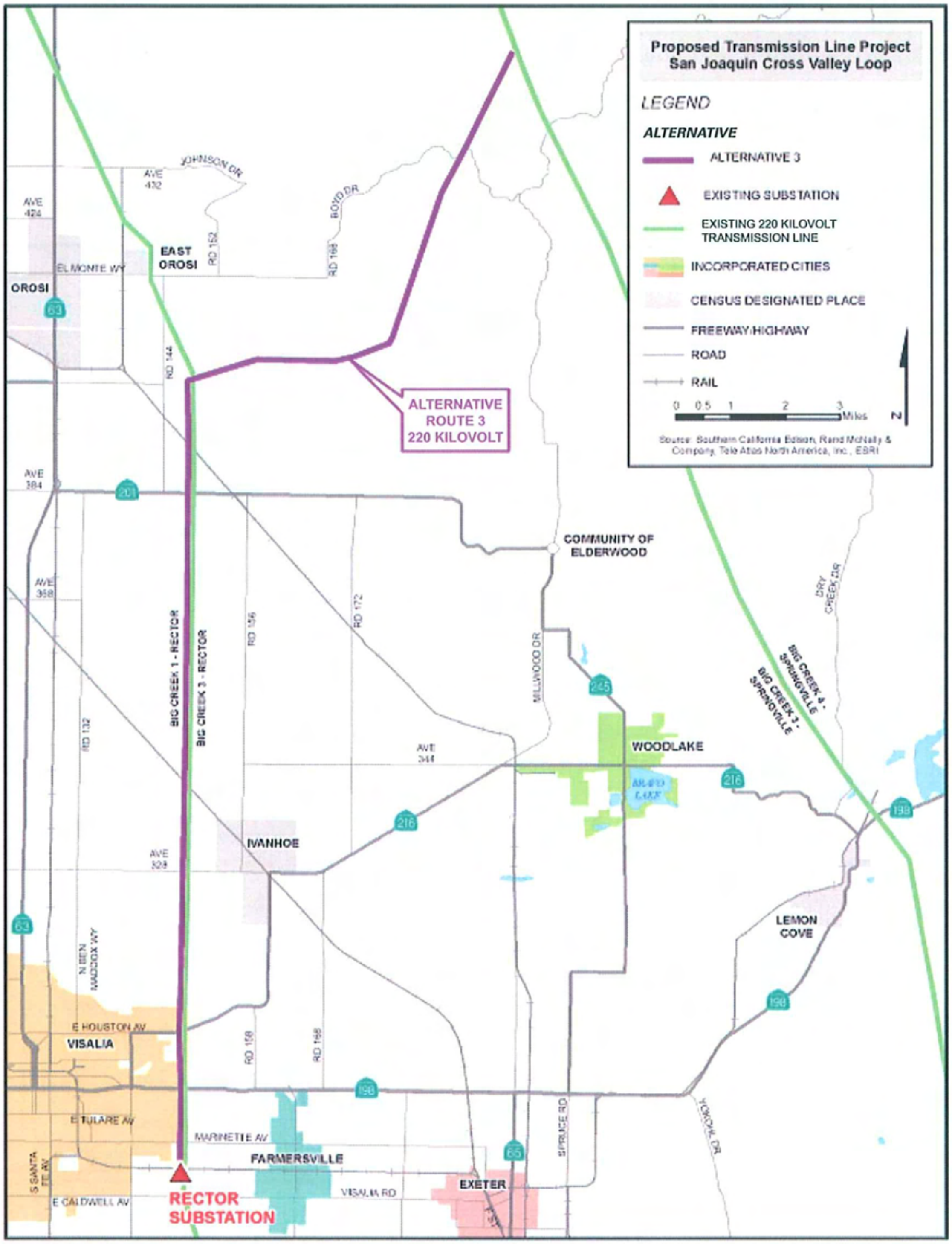
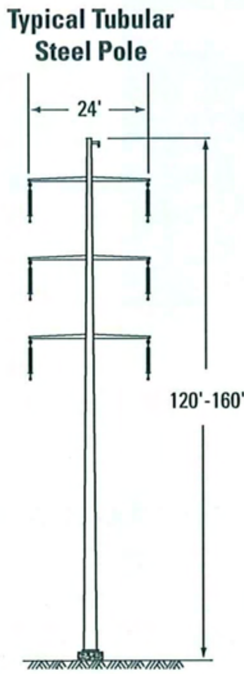


Figure 3

Figure 4. The proposed double-circuit 220 kilovolt transmission line would be constructed on tubular poles and lattice steel towers ranging in height from 120 to 160 feet, as shown in the graphics and visual simulation below.



Simulation of the proposed double-circuit 220 kilovolt transmission line from Avenue 320 looking west.

Timeline

May 2008	Mid 2009	Mid 2011
SCE expects to file its application for a Certificate of Public Convenience and Necessity with the California Public Utilities Commission.	The California Public Utilities Commission decision is expected.	Project is expected to be complete.

PROJECT APPROVAL PROCESS

SCE must submit an application for a Certificate of Public Convenience and Necessity for approval to construct the proposed transmission line project. The California Public Utilities Commission is the state regulatory agency that sets electricity rates and issues permits for the construction of certain electric facilities. SCE's application will include a Proponent's Environmental Assessment, which will evaluate the environmental impacts of the proposed transmission line project and the alternative routes.

The California Public Utilities Commission will review the application in accordance with the California Environmental Quality Act and will either approve the project as filed, approve the project with modifications or deny the project.

OTHER LOCAL PROJECTS

Other SCE projects are being planned in the San Joaquin Valley to serve the increased demand for electricity and to maintain safe and reliable electric service. As planning progresses on these projects, SCE will provide specific information to each affected community.

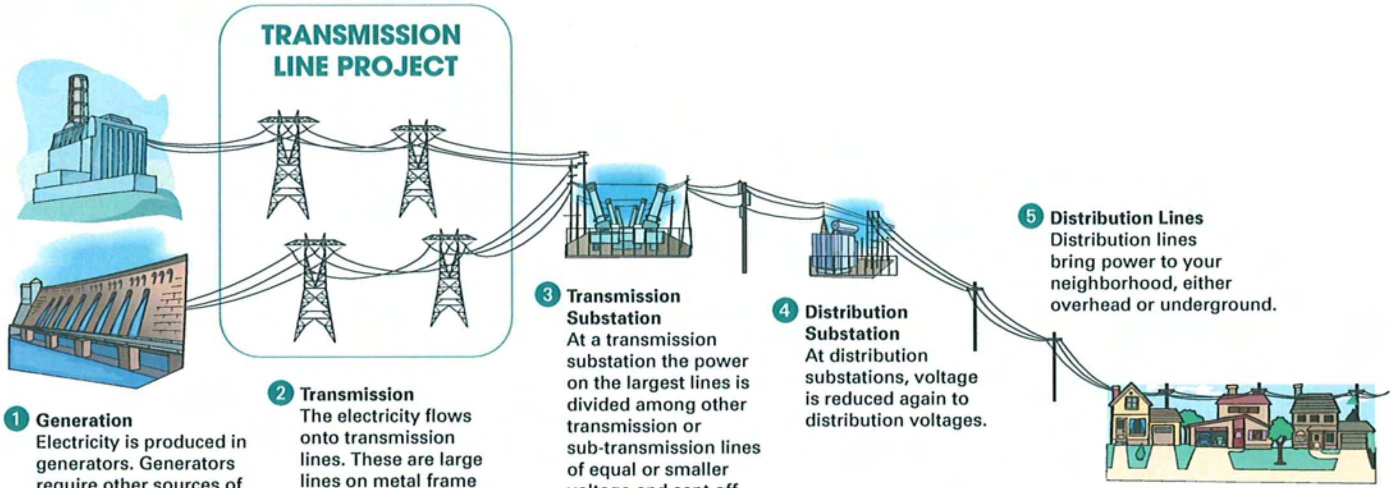
For More Information

For up-to-date information on the San Joaquin Cross Valley Loop Project, please visit www.sce.com/crossvalley. If you have questions or comments about the project or would like to be added to the project mailing list, please contact:

Bill DeLain
Region Manager
Southern California Edison
Tulare Service Center
(559) 685-3213
william.delain@sce.com

The Path of Electricity

The information below shows how the specific SCE project being proposed fits into the bigger picture of the delivery of electricity.



1. **Generation**
Electricity is produced in generators. Generators require other sources of energy. These resources include natural gas, a fossil fuel; falling water in hydroelectric plants; nuclear energy and renewable resources, like solar and wind.

2. **Transmission**
The electricity flows onto transmission lines. These are large lines on metal frame towers. They are often compared to freeways because they transfer huge amounts of electricity over long distances.

3. **Transmission Substation**
At a transmission substation the power on the largest lines is divided among other transmission or sub-transmission lines of equal or smaller voltage and sent off to other locations.

4. **Distribution Substation**
At distribution substations, voltage is reduced again to distribution voltages.

5. **Distribution Lines**
Distribution lines bring power to your neighborhood, either overhead or underground.

6. **Customers**
The customer's lights, appliances and other equipment put electricity to work.

About SCE

An Edison International (NYSE:EIX) company, Southern California Edison is the largest electric utility in California, serving a population of more than 13 million via 4.8 million customer accounts in a 50,000-square-mile service area within Central, Coastal and Southern California.

Good Neighbor

For many years, SCE has been committed to being a good neighbor in the San Joaquin Valley. This commitment is demonstrated by SCE's:

- Operation of the Agricultural Technology Center (AgTac).
- Construction of a new customer service center in Porterville.
- Sponsorship of community organizations and programs.

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OPEN HOUSE

Southern California Edison Company (SCE) invites you to join the San Joaquin Cross Valley Loop Transmission Line Project team at an open house in your community. The purpose of the open house is to provide project specific information and answer questions that you may have. The project team will have project maps and other material available for viewing. Please plan on attending the open house listed below.

Wednesday, November 15

4:30 p.m. – 7:30 p.m.

Freedom Elementary School Multipurpose Room • 575 E. Citrus Drive • Farmersville, CA 93223

*For additional information please contact **William Delain** at (559) 685-3213*

About the Project

Tulare County is one of the fastest growing regions in California. This increased growth has resulted in an increased demand for electricity. SCE's Rector Substation, located southeast of Visalia, is part of the electrical system that serves Tulare County. SCE has determined that the existing transmission lines, which deliver electricity to Rector Substation, are operating at or near their limits and will be unable to deliver sufficient electricity to safely and reliably serve this increased demand. With this project, SCE can increase its ability to deliver electricity from SCE's hydro-electric facilities in the Sierras to Rector Substation to serve Tulare County during periods of high electrical demand.

The proposed project consists of the construction of a new double-circuit 220 kV transmission line that would connect the existing Big Creek 3-Springville 220 kV transmission line near Lemon Cove into the Rector Substation. The proposed transmission line route is approximately 20 miles long. The 220 kV transmission line would be constructed on approximately 109 tubular poles and 11 lattice steel towers ranging in height from 120 to 140 feet.

San Joaquin Cross Valley Loop Transmission Line Project - Alternative Route #2 OPEN HOUSE

Southern California Edison Company (SCE) invites you to join the **San Joaquin Cross Valley Loop Transmission Line Project** team at an open house in your community. The purpose of the open house is to provide project specific information and answer questions that you may have. The project team will have project maps and other material available for viewing. Please plan on attending the open house listed below.

Thursday, January 18

4:30 p.m. – 7:30 p.m.

Woodlake Veterans Memorial Center • 355 S. Acacia Street • Woodlake, CA

For additional information please contact ***William DeLain*** *at (559) 685-3213*

About the Project

Tulare County is one of the fastest growing regions in California. This increased growth has resulted in an increased demand for electricity. SCE's Rector Substation, located southeast of Visalia, is part of the electrical system that serves Tulare County. SCE has determined that the existing transmission lines, which deliver electricity to Rector Substation, are operating at or near their limits and will be unable to deliver sufficient electricity to safely and reliably serve this increased demand. With this project, SCE can increase its ability to deliver electricity from SCE's hydro-electric facilities in the Sierras to Rector Substation to serve Tulare County during periods of high electrical demand.

The Project would consist of the construction of a new double-circuit 220 kV transmission line that would connect the existing Big Creek 3-Springville 220 kV transmission line into the Rector Substation. Additional project information can be found on SCE's website www.sce.com/crossvalley

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Appendix F

San Joaquin Cross Valley Loop Transmission Project
Alternative 1 Proposed Route
300' Ownership Listing Date: 03-26-2008

APN	BOOK & PAGE	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP	SITUS ADDRESS	SITUS CITY/STATE/ZIP	SITUS COUNTY
101-060-048	101-06	Po Box 800	Rosemead	CA	91770	n/avail	n/avail	Tulare
101-070-003	101-07	29305 Road 152	Visalia	CA	93292	29305 Road 152	Visalia Ca 93292	Tulare
101-070-004	101-07	939 S Mcauliff St	Visalia	CA	93292	14899 Avenue 295	Visalia Ca	Tulare
101-090-015	101-09	Po Box 2622	Visalia	CA	93279	n/avail	Ca	Tulare
101-100-005	101-10	15570 Avenue 292	Visalia	CA	93292	15570 Avenue 292	Visalia Ca 93292	Tulare
101-100-006	101-10	Po Box 774	Visalia	CA	93279	15634 Avenue 292	Visalia Ca	Tulare
101-100-009	101-10	Po Box 2622	Visalia	CA	93279	29341 Road 156	Visalia Ca 93292	Tulare
101-130-001	101-13	15199 Avenue 292	Visalia	CA	93292	15199 Avenue 292	Visalia Ca 93292	Tulare
101-130-016	101-13	15302 Avenue 288	Visalia	CA	93292	15379 Avenue 292	Visalia Ca 93292	Tulare
101-130-025	101-13	15302 Avenue 288	Visalia	CA	93292	n/avail	Ca	Tulare
101-130-027	101-13	1933 W Caldwell Ave Ste 1	Visalia	CA	93277	29185 Road 156	Visalia Ca 93292	Tulare
101-130-032	101-13	22388 Avenue 206	Lindsay	CA	93247	29185 Road 156	Visalia Ca 93292	Tulare
101-130-039	101-13	29305 Road 152	Visalia	CA	93292	n/avail	Ca	Tulare
101-140-002	101-14	14818 E Judy Ave	Visalia	CA	93292	14818 E Judy Ave	Visalia Ca 93292	Tulare
101-140-004	101-14	1350 W San Joaquin Ave	Tulare	CA	93274	n/avail	Ca	Tulare
101-140-007	101-14	28932 Road 148	Visalia	CA	93292	28932 Avenue 148	Visalia Ca	Tulare
101-140-008	101-14	28908 Road 148	Visalia	CA	93292	28908 Road 148	Visalia Ca 93292	Tulare
101-150-004	101-15	1840 S Julieann Ct	Visalia	CA	93277	28888 Avenue 148	Visalia Ca	Tulare
101-150-020	101-15	15302 Avenue 288	Visalia	CA	93292	28868 Avenue 148	Visalia Ca	Tulare
101-150-021	101-15	14840 Avenue 288	Visalia	CA	93292	14840 Avenue 288	Visalia Ca 93292	Tulare
101-150-025	101-15	28868 Road 148	Visalia	CA	93292	28868 Road 148	Visalia Ca 93292	Tulare
101-150-026	101-15	28852 Road 148	Visalia	CA	93292	28852 Road 148	Visalia Ca 93292	Tulare
101-190-003	101-19	Po Box 800	Rosemead	CA	91770	n/avail	n/avail	Tulare
101-190-018	101-19	1444 Tampico Ave	Salinas	CA	93906	1610 S Rio Linda St	Visalia Ca 93292	Tulare
101-190-019	101-19	1604 S Rio Linda St	Visalia	CA	93292	1604 S Rio Linda St	Visalia Ca 93292	Tulare
101-190-020	101-19	1600 S Rio Linda St	Visalia	CA	93292	1600 S Rio Linda St	Visalia Ca 93292	Tulare
101-190-021	101-19	3124 Stevenson Dr	Pebble Beach	CA	93953	1550 S Rio Linda St	Visalia Ca 93292	Tulare
101-190-022	101-19	1544 S Rio Linda St	Visalia	CA	93292	1544 S Rio Linda St	Visalia Ca 93292	Tulare
101-190-023	101-19	1540 S Rio Linda St	Visalia	CA	93292	1540 S Rio Linda St	Visalia Ca 93292	Tulare
101-190-024	101-19	1534 S Rio Linda St	Visalia	CA	93292	1534 S Rio Linda St	Visalia Ca 93292	Tulare
101-190-025	101-19	1530 S Rio Linda St	Visalia	CA	93292	1530 S Rio Linda St	Visalia Ca 93292	Tulare
101-190-026	101-19	1526 S Rio Linda St	Visalia	CA	93292	1526 S Rio Linda St	Visalia Ca 93292	Tulare
101-190-069	101-19	707 W ACEQUIA	VISALIA	CA	93291	n/avail	n/avail	Tulare
101-200-040	101-20	1328 S Rio Linda Ct	Visalia	CA	93292	1328 S Rio Linda Ct	Visalia Ca 93292	Tulare
101-200-041	101-20	1619 S 79th Ln	Phoenix	AZ	85043	1338 S Rio Linda Ct	Visalia Ca 93292	Tulare
101-200-042	101-20	Po Box 2589	Watsonville	CA	95077	1348 S Rio Linda Ct	Visalia Ca 93292	Tulare
101-200-043	101-20	1416 S Rio Linda Ct	Visalia	CA	93292	1416 S Rio Linda Ct	Visalia Ca 93292	Tulare
101-200-044	101-20	1430 S Rio Linda Ct	Visalia	CA	93292	1430 S Rio Linda Ct	Visalia Ca 93292	Tulare
101-200-045	101-20	1440 S Rio Linda Ct	Visalia	CA	93292	1440 S Rio Linda Ct	Visalia Ca 93292	Tulare
101-200-046	101-20	1500 S Rio Linda St	Visalia	CA	93292	1500 S Rio Linda St	Visalia Ca 93292	Tulare
101-200-047	101-20	1510 S Rio Linda St	Visalia	CA	93292	1510 S Rio Linda St	Visalia Ca 93292	Tulare
101-200-048	101-20	1520 S Rio Linda St	Visalia	CA	93292	1520 S Rio Linda St	Visalia Ca 93292	Tulare

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101-200-063	101-20	Po Box 800	Rosemead	CA	91770	n/avail	n/avail	Tulare
101-200-064	101-20	707 W ACEQUIA	VISALIA	CA	93291	n/avail	n/avail	Tulare
101-230-042	101-23	4341 E Laurel Ave	Visalia	CA	93292	4341 E Laurel Ave	Visalia Ca 93292	Tulare
101-230-043	101-23	1142 S Rio Linda St	Visalia	CA	93292	1142 S Rio Linda St	Visalia Ca 93292	Tulare
101-230-044	101-23	1136 S Rio Linda St	Visalia	CA	93292	1136 S Rio Linda St	Visalia Ca 93292	Tulare
101-230-045	101-23	1126 S. RIO LINDA ST	Visalia	CA	93292	1126 S Rio Linda St	Visalia Ca 93292	Tulare
101-230-046	101-23	1118 S Rio Linda St	Visalia	CA	93292	1118 S Rio Linda St	Visalia Ca 93292	Tulare
101-230-047	101-23	1108 S Rio Linda St	Visalia	CA	93292	1108 S Rio Linda St	Visalia Ca 93292	Tulare
101-230-048	101-23	1100 S Rio Linda St	Visalia	CA	93292	1100 S Rio Linda St	Visalia Ca 93292	Tulare
101-230-049	101-23	33753 Road 188	Woodlake	CA	93286	1044 S Rio Linda St	Visalia Ca 93292	Tulare
101-320-002	101-32	643 N Westwood St	Porterville	CA	93257	1626 S Rio Linda St	Visalia Ca 93292	Tulare
101-320-003	101-32	643 N Westwood St	Porterville	CA	93257	1634 S Rio Linda St	Visalia Ca 93292	Tulare
101-320-004	101-32	643 N Westwood St	Porterville	CA	93257	1710 S Rio Linda St	Visalia Ca 93292	Tulare
101-320-005	101-32	643 N Westwood St	Porterville	CA	93257	1722 S Rio Linda St	Visalia Ca 93292	Tulare
101-320-006	101-32	643 N Westwood St	Porterville	CA	93257	1738 S Rio Linda St	Visalia Ca 93292	Tulare
101-320-007	101-32	643 N Westwood St	Porterville	CA	93257	1742 S Rio Linda St	Visalia Ca 93292	Tulare
101-320-008	101-32	643 N Westwood St	Porterville	CA	93257	1754 S Rio Linda St	Visalia Ca 93292	Tulare
101-320-009	101-32	643 N Westwood St	Porterville	CA	93257	1758 S Rio Linda St	Visalia Ca 93292	Tulare
101-320-010	101-32	643 N Westwood St	Porterville	CA	93257	4343 E Hillcrest Av	Visalia Ca 93292	Tulare
101-320-070	101-32	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-028	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-029	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-030	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-031	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-032	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-033	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-034	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-035	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-036	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
101-330-059	101-33	643 N Westwood St	Porterville	CA	93257	n/avail	Ca	Tulare
111-190-001	111-19	22388 Avenue 206	Lindsay	CA	93247	n/avail	Ca	Tulare
111-190-002	111-19	Po Box 535	Farmersville	CA	93223	29358 Road 164	Visalia Ca 93292	Tulare
111-190-010	111-19	29241 ROAD 168	VISALIA	CA	93292	29241 Road 168	Visalia Ca 93292	Tulare
111-190-014	111-19	Po Box 535	Farmersville	CA	93223	16691 Avenue 296	Visalia Ca 93292	Tulare
111-190-015	111-19	4637 W Addisyn Ct	Visalia	CA	93291	n/avail	Ca	Tulare
111-190-017	111-19	Po Box 535	Farmersville	CA	93223	321 E Noble Ave	Farmersville Ca 9322	Tulare
111-190-019	111-19	29169 Road 168	Visalia	CA	93292	29241 Road 168	Visalia Ca 93292	Tulare
111-190-020	111-19	17770 Avenue 288	Exeter	CA	93221	29241 Road 168	Visalia Ca 93292	Tulare
111-190-021	111-19	29220 Road 168	Visalia	CA	93292	29351 Road 168	Visalia Ca 93292	Tulare
111-190-022	111-19	6133 W Babcock Ct	Visalia	CA	93291	n/avail	Ca	Tulare
111-190-026	111-19	18445 Ave 304	Visalia	CA	93291	n/avail	Ca	Tulare
111-190-027	111-19	18445 Avenue 304	Visalia	CA	93292	n/avail	Ca	Tulare

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APN	BOOK & PAGE	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP	SITUS ADDRESS	SITUS CITY/STATE/ZIP	SITUS COUNTY
111-220-007	111-22	2327 N Anderson Rd	Exeter	CA	93221	2327 N Anderson Rd	Exeter Ca 93221	Tulare
111-220-023	111-22	17594 Avenue 288	Exeter	CA	93221	17594 Avenue 288	Exeter Ca 93221	Tulare
111-230-004	111-23	53 Mccormick Ln	Atherton	CA	94027	n/avail	Ca	Tulare
111-230-008	111-23	9232 Ave 320	Visalia	CA	93277	n/avail	Ca	Tulare
111-230-009	111-23	17594 Avenue 288	Exeter	CA	93221	n/avail	Ca	Tulare
111-230-010	111-23	2975 N FARMERSVILLE BLVD	FARMERSVILLE	CA	93223	n/avail	n/avail	Tulare
111-230-011	111-23	2975 N FARMERSVILLE BLVD	FARMERSVILLE	CA	93223	n/avail	n/avail	Tulare
111-240-006	111-24	1830 Ladera Vista Dr	Fullerton	CA	92831	n/avail	Ca	Tulare
111-240-009	111-24	2856 N Anderson Rd	Exeter	CA	93221	n/avail	Ca	Tulare
111-240-016	111-24	5020 W Mineral King Ave	Visalia	CA	93291	n/avail	Ca	Tulare
111-240-018	111-24	1830 Ladera Vista Dr	Fullerton	CA	92831	18575 Avenue 296	Exeter Ca 93221	Tulare
111-240-020	111-24	2856 N Anderson Rd	Exeter	CA	93221	2856 Road 180	Exeter Ca	Tulare
111-250-016	111-25	562 Camino Verde	South Pasadena	CA	91030	n/avail	Ca	Tulare
111-250-033	111-25	143 High Sierra Dr	Exeter	CA	93221	n/avail	Ca	Tulare
111-250-058	111-25	Po Box 366	Farmersville	CA	93223	n/avail	Ca	Tulare
111-250-059	111-25	Po Box 366	Farmersville	CA	93223	n/avail	Ca	Tulare
111-260-002	111-26	615 Sequoia Dr	Exeter	CA	93221	666 W Marinette Ave	Exeter Ca 93221	Tulare
111-260-006	111-26	6230 Alameda St	Huntington Park	CA	90255	n/avail	Ca	Tulare
111-260-029	111-26	2284 N Belmont Rd	Exeter	CA	93221	n/avail	Ca	Tulare
111-260-033	111-26	2520 N Filbert Rd	Exeter	CA	93221	2520 Road 192	Exeter Ca	Tulare
111-260-035	111-26	2602 N Belmont Rd	Exeter	CA	93221	2602 N Belmont Rd	Exeter Ca 93221	Tulare
111-260-043	111-26	2527 N Filbert Rd	Exeter	CA	93221	2527 N Filbert Rd	Exeter Ca 93221	Tulare
111-260-046	111-26	2655 N Filbert Rd	Exeter	CA	93221	2655 N Filbert Rd	Exeter Ca 93221	Tulare
NO APN (S.B.E. 872	111-26	1416 Douglas Street	Omaha	NE	68179	n/avail	n/avail	Tulare
111-270-010	111-27	6230 Alameda St	Huntington Park	CA	90255	n/avail	Ca	Tulare
111-270-012	111-27	Po Box 373	Exeter	CA	93221	2839 N Filbert Rd	Exeter Ca 93221	Tulare
111-270-018	111-27	38 Rotterdam Ct	Visalia	CA	93277	n/avail	Ca	Tulare
111-270-038	111-27	2803 W Border Links Dr	Visalia	CA	93291	n/avail	Ca	Tulare
111-270-043	111-27	188 E BERKELEY AVE	TULARE	CA	93274	29201 N Filbert Rd	Exeter Ca 93221	Tulare
111-270-046	111-27	1425 N Anderson Rd	Exeter	CA	93221	n/avail	Ca	Tulare
112-150-007	112-15	150 W Pine St	Exeter	CA	93221	n/avail	Ca	Tulare
112-150-010	112-15	43882 Skyline Dr	Three Rivers	CA	93271	n/avail	Ca	Tulare
112-150-015	112-15	610 E Gish Rd	San Jose	CA	95112	n/avail	Ca	Tulare
112-150-017	112-15	2800 COTTAGE WAY	SACRAMENTO	CA	95825	n/avail	n/avail	Tulare
112-150-018	112-15	Po Box 217	Exeter	CA	93221	n/avail	Ca	Tulare
112-150-024	112-15	610 E Gish Rd	San Jose	CA	95112	n/avail	Ca	Tulare
112-160-001	112-16	Po Box 1268	Ventura	CA	93002	n/avail	Ca	Tulare
112-160-002	112-16	Po Box 44140	Lemon Cove	CA	93244	n/avail	Ca	Tulare
112-160-003	112-16	Po Box 217	Exeter	CA	93221	n/avail	Ca	Tulare
112-160-006	112-16	Po Box 217	Exeter	CA	93221	n/avail	Ca	Tulare
112-160-018 (see ma	112-16	Po Box 175	Exeter	CA	93221	n/avail	Ca	Tulare
112-160-021	112-16	2800 COTTAGE WAY	SACRAMENTO	CA	95825	n/avail	n/avail	Tulare

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112-160-028	112-16	Po Box 217	Exeter	CA	93221	n/avail	Ca	Tulare
112-180-002	112-18	2302 N Kaweah Ave	Exeter	CA	93221	n/avail	Ca	Tulare
112-180-012	112-18	3276 N Gill Rd	Exeter	CA	93221	n/avail	Ca	Tulare
112-180-014	112-18	3305 N Gill Rd	Exeter	CA	93221	n/avail	Ca	Tulare
112-180-018	112-18	3305 N Gill Rd	Exeter	CA	93221	n/avail	Ca	Tulare
112-190-001	112-19	2300 N Gill Rd	Exeter	CA	93221	2300 N Gill Rd	Exeter Ca 93221	Tulare
112-190-002	112-19	1901 S Lexington St	Delano	CA	93215	n/avail	Ca	Tulare
112-200-011	112-20	20569 Avenue 300	Exeter	CA	93221	n/avail	Ca	Tulare
112-200-012	112-20	20569 Avenue 300	Exeter	CA	93221	n/avail	Ca	Tulare
112-200-017	112-20	22256 Yokohl Dr	Exeter	CA	93221	2944 Road 200	Exeter Ca 93221	Tulare
112-200-021	112-20	2800 COTTAGE WAY	SACRAMENTO	CA	95825	n/avail	n/avail	Tulare
112-200-030	112-20	20569 Avenue 300	Exeter	CA	93221	n/avail	Ca	Tulare
113-010-009	113-01	24780 E South Ave	Orange Cove	CA	93646	n/avail	Ca	Tulare
113-010-011	113-01	Po Box 175	Exeter	CA	93221	n/avail	Ca	Tulare
113-010-013	113-01	Po Box 175	Exeter	CA	93221	n/avail	Ca	Tulare
113-010-017	113-01	2975 N FARMERSVILLE BLVD	FARMERSVILLE	CA	93223	n/avail	n/avail	Tulare
113-160-016 (see map	113-16	Po Box 175	Exeter	CA	93221	n/avail	Ca	Tulare
113-180-003	113-18	Po Box 175	Exeter	CA	93221	n/avail	Ca	Tulare
113-180-006	113-18	12252 Avenue 440	Orosi	CA	93647	n/avail	Ca	Tulare
113-180-013	113-18	Po Box 44389	Lemon Cove	CA	93244	25600 Avenue 324	Exeter Ca	Tulare
113-200-001	113-20	125 Carmel St	San Francisco	CA	94117	n/avail	Ca	Tulare
113-200-002	113-20	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-200-003	113-20	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-210-013	113-21	12252 Avenue 440	Orosi	CA	93647	n/avail	Ca	Tulare
113-210-015	113-21	12252 Avenue 440	Orosi	CA	93647	n/avail	Ca	Tulare
113-210-017	113-21	Po Box 44066	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-210-018	113-21	5001 California Ave Ste 230	Bakersfield	CA	93309	24792 Avenue 328	Lemon Cove Ca	Tulare
113-210-020	113-21	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-210-026	113-21	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-210-034	113-21	883 Joyner Ave	Exeter	CA	93221	24803 Avenue 324	Lemon Cove Ca 93286	Tulare
113-210-037	113-21	Po Box 44192	Lemon Cove	CA	93244	24803 Avenue 324	Lemon Cove Ca 93286	Tulare
113-250-001	113-25	Po Box 175	Exeter	CA	93221	n/avail	Ca	Tulare
113-250-003	113-25	Po Box 365	Santa Maria	CA	93456	n/avail	Ca	Tulare
113-250-006	113-25	24001 Ave 324	Lemon Cove	CA	93244	224001 Avenue 32	Lemon Cove Ca 93244	Tulare
113-250-008	113-25	24001 Ave 324	Lemon Cove	CA	93244	24001 Avenue 324	Lemon Cove Ca 93244	Tulare
113-250-013	113-25	Po Box 44197	Lemon Cove	CA	93244	24081 Avenue 320	Lemon Cove Ca	Tulare
113-250-016	113-25	3739 E Paradise Ave	Visalia	CA	93292	32216 Hwy 198	Lemon Cove Ca	Tulare
113-250-017	113-25	Po Box 686	Three Rivers	CA	93271	32206 Sierra Dr B	Lemon Cove Ca	Tulare
113-250-018	113-25	Po Box 686	Three Rivers	CA	93271	32206 Sierra Dr	Lemon Cove Ca	Tulare
113-250-019	113-25	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-250-026	113-25	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-250-048	113-25	2049 Century Park E Ste 250	Los Angeles	CA	90067	n/avail	Ca	Tulare

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113-250-065	113-25	621 Dove Ct	Exeter	CA	93221	n/avail	Ca	Tulare
113-250-066	113-25	Po Box 44047	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-250-068	113-25	Po Box 44047	Lemon Cove	CA	93244	32265 Road 244	Lemon Cove Ca	Tulare
113-250-070	113-25	Po Box 1800	Visalia	CA	93279	n/avail	Ca	Tulare
113-250-073	113-25	23795a Avenue 324	Woodlake	CA	93286	23795 Avenue 324	Woodlake Ca 93286	Tulare
113-260-020	113-26	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-260-021	113-26	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-270-004	113-27	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-270-005	113-27	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-270-006	113-27	24780 E South Ave	Orange Cove	CA	93646	n/avail	Ca	Tulare
113-270-018	113-27	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-280-005	113-28	Po Box 175	Exeter	CA	93221	n/avail	Ca	Tulare
113-280-008	113-28	Unavailable - exhausted all available resources	n/avail	n/avail	n/avail	n/avail	Ca	Tulare
113-280-008	113-28	2975 NO FARMERSVILLE BLVD	FARMERSVILLE	CA	93223	n/avail	n/avail	Tulare
113-280-008	113-28	1406 W Beverly Dr	Visalia	CA	93277	n/avail	Ca 93277	Tulare
113-280-009	113-28	Unavailable - exhausted all available resources	n/avail	n/avail	n/avail	n/avail	n/avail	Tulare
113-280-009	113-28	2975 NO FARMERSVILLE BLVD	FARMERSVILLE	CA	93223	n/avail	n/avail	Tulare
113-280-009	113-28	1406 W Beverly Dr	Visalia	CA	93277	n/avail	Ca 93277	Tulare
113-280-010	113-28	Po Box 365	Santa Maria	CA	93456	n/avail	Ca	Tulare
113-280-012	113-28	2302 N Kaweah Ave	Exeter	CA	93221	n/avail	Ca	Tulare
113-290-009	113-29	Po Box 44066	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-290-011	113-29	2001 Wilshire Blvd Ste 325	Santa Monica	CA	90403	n/avail	Ca	Tulare
113-290-014	113-29	Po Box 5019	Santa Maria	CA	93456	21224 Avenue 314	Exeter Ca	Tulare
113-290-021	113-29	612 N Pepper St	Woodlake	CA	93286	n/avail	Ca	Tulare
113-330-003	113-33	Po Box 44066	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-330-026	113-33	Po Box 175	Exeter	CA	93221	n/avail	Ca	Tulare
113-330-037	113-33	Po Box 24	Exeter	CA	93221	n/avail	Ca	Tulare
113-330-053	113-33	Po Box 127	Ivanhoe	CA	93235	n/avail	Ca	Tulare
113-330-054	113-33	813 N B St	Exeter	CA	93221	n/avail	Ca	Tulare
113-330-055	113-33	Po Box 44066	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-330-056	113-33	Po Box 44066	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-350-022	113-35	23009 Avenue 320	Woodlake	CA	93286	23009 Avenue 320	Woodlake Ca 93286	Tulare
113-350-025	113-35	23009 Avenue 320	Woodlake	CA	93286	n/avail	Ca	Tulare
113-350-032	113-35	Po Box 396	Exeter	CA	93221	n/avail	Ca	Tulare
113-350-034	113-35	22875 Avenue 320	Woodlake	CA	93286	n/avail	Ca	Tulare
113-350-035	113-35	22875 Avenue 320	Woodlake	CA	93286	22875 Avenue 320	Woodlake Ca 93286	Tulare
113-350-036	113-35	22875 Avenue 320	Woodlake	CA	93286	22875 Avenue 320	Woodlake Ca 93286	Tulare
113-350-038	113-35	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-350-039	113-35	Po Box 44259	Lemon Cove	CA	93244	n/avail	Ca	Tulare
113-360-001	113-36	Po Box 175	Exeter	CA	93221	n/avail	Ca	Tulare
115-010-002	115-01	22114 Boston Ave	Exeter	CA	93221	n/avail	Ca	Tulare
115-010-011	115-01	Po Box 1008	Exeter	CA	93221	n/avail	Ca	Tulare

SOURCE: FIRST AMERICAN REAL ESTATE
DATA LAST UPDATED: (03-10-2008)

San Joaquin Cross Valley Loop Transmission Project
Alternative 1 Proposed Route
300' Ownership Listing Date: 03-26-2008

APN	BOOK & PAGE	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP	SITUS ADDRESS	SITUS CITY/STATE/ZIP	SITUS COUNTY
115-010-019	115-01	125 Carmel St	San Francisco	CA	94117	n/avail	Ca	Tulare
115-010-027	115-01	22114 Boston Ave	Exeter	CA	93221	n/avail	Ca	Tulare
115-020-001	115-02	Po Box 217	Exeter	CA	93221	30594 Road 212	Exeter Ca 93221	Tulare
115-020-002	115-02	30761 Road 216	Exeter	CA	93221	n/avail	Ca	Tulare
115-020-003	115-02	199 High Sierra Dr	Exeter	CA	93221	30657 Road 216	Exeter Ca 93221	Tulare
115-020-014	115-02	150 W Pine St	Exeter	CA	93221	21412 Avenue 304	Exeter Ca 93221	Tulare
115-150-005 (see ma	115-15	Po Box 175	Exeter	CA	93221		Ca	Tulare
115-160-001	115-16	Po Box 5019	Santa Maria	CA	93456	n/avail	Ca	Tulare
115-160-009	115-16	3017 W. KEOGH	Visalia	CA	93291	n/avail	Ca	Tulare
115-160-010	115-16	2302 N Kaweah Ave	Exeter	CA	93221	n/avail	Ca	Tulare
115-170-011	115-17	150 W Pine St	Exeter	CA	93221	n/avail	Ca	Tulare
NO APN (S.B.E. 885-	115-17	1416 Douglas Street	Omaha	NE	68179	n/avail	n/avail	Tulare
115-190-001	115-19	21201 Avenue 296	Exeter	CA	93221	21201 Avenue 296	Exeter Ca 93221	Tulare
115-190-002	115-19	753 Orchard Dr	Paso Robles	CA	93446	21249 Avenue 296	Exeter Ca 93221	Tulare
115-190-011	115-19	150 W Pine St	Exeter	CA	93221	n/avail	Ca	Tulare
115-190-012	115-19	1 High Sierra Dr	Exeter	CA	93221	n/avail	Ca	Tulare
115-190-017	115-19	2800 COTTAGE WAY	SACRAMENTO	CA	95825	n/avail	n/avail	Tulare
127-020-024	127-02	Po Box 800	Rosemead	CA	91770	n/avail	n/avail	Tulare
127-020-025	127-02	Po Box 800	Rosemead	CA	91770	n/avail	n/avail	Tulare
127-020-026	127-02	28303 Road 148	Visalia	CA	93292	28303 Avenue 148	Visalia Ca	Tulare
NO APN (S.B.E 148-	127-02	Po Box 800	Rosemead	CA	91770	n/avail	n/avail	Tulare
127-030-032	127-03	Po Box 800	Rosemead	CA	91770	n/avail	n/avail	Tulare
127-030-035	127-03	28687 Road 148	Visalia	CA	93292	n/avail	Ca	Tulare
127-030-036	127-03	28687 Road 148	Visalia	CA	93292	28685 Avenue 148	Visalia Ca	Tulare
127-030-037	127-03	1416 Douglas Street	Omaha	NE	68179	n/avail	n/avail	Tulare
127-030-038 NEW A	127-03	315 E Acequia Ave	Visalia	CA	93291	n/avail	Visalia Ca 93291	Tulare
127-030-038 NEW A	127-03	891 S Mcauliff St	Visalia	CA	93292	n/avail	Ca	Tulare
127-040-001	127-04	6343 W Mineral King Ave	Visalia	CA	93277	28518 Avenue 148	Visalia Ca	Tulare
127-040-019	127-04	15302 Avenue 288	Visalia	CA	93292	15302 Avenue 288	Visalia Ca 93292	Tulare
127-040-044	127-04	29002 Road 156	Visalia	CA	93292	n/avail	Ca	Tulare
127-040-047	127-04	P O BOX 566	FARMERSVILLE	CA	93223	n/avail	n/avail	Tulare
127-040-048	127-04	1416 Douglas Street	Omaha	NE	68179	n/avail	n/avail	Tulare
127-050-003	127-05	15093 Avenue 280	Visalia	CA	93292	n/avail	Ca	Tulare
127-050-004	127-05	Po Box 22127	San Diego	CA	92192	n/avail	Ca	Tulare
128-020-010	128-02	29198 Road 156	Visalia	CA	93292	29198 Road 156	Visalia Ca 93292	Tulare
128-250-013	128-25	P O BOX 1247	VISALIA	CA	93279	n/avail	n/avail	Tulare
128-250-014	128-25	147 E FRONT ST	FARMERSVILLE	CA	93223	n/avail	n/avail	Tulare
128-260-001	128-26	15991 Avenue 296	Visalia	CA	93292	n/avail	Ca	Tulare
128-260-002	128-26	32531 Road 138	Visalia	CA	93292	29328 Road 156	Visalia Ca 93292	Tulare
128-260-003	128-26	29258 Road 156	Visalia	CA	93292	29258 Road 156	Visalia Ca 93292	Tulare
128-260-004	128-26	799 W. MARINETTE UNIT A	Exeter	CA	93221	29210 Road 156	Visalia Ca 93292	Tulare
128-260-005	128-26	1350 W San Joaquin Ave	Tulare	CA	93274	n/avail	Ca	Tulare
128-260-006	128-26	950 W Orchard St	Visalia	CA	93277	n/avail	Ca	Tulare

SOURCE: FIRST AMERICAN REAL ESTATE
DATA LAST UPDATED: (03-10-2008)

San Joaquin Cross Valley Loop Transmission Project
Alternative 1 Proposed Route
300' Ownership Listing Date: 03-26-2008

APN	BOOK & PAGE	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP	SITUS ADDRESS	SITUS CITY/STATE/ZIP	SITUS COUNTY
128-260-007	128-26	15991 Avenue 296	Visalia	CA	93292	15991 Avenue 296	Visalia Ca 93292	Tulare
128-260-009	128-26	950 W Orchard St	Visalia	CA	93277	n/avail	Ca	Tulare
128-260-010	128-26	950 W Orchard St	Visalia	CA	93277	n/avail	Ca	Tulare
128-260-011	128-26	1240 E Caldwell	Visalia	CA	93277	n/avail	Ca	Tulare
128-260-012	128-26	891 S Mc Auliff	Visalia	CA	93277	n/avail	Ca	Tulare
128-260-014	128-26	Po Box 205	Farmersville	CA	93223	n/avail	Ca	Tulare
128-260-015	128-26	Po Box 205	Farmersville	CA	93223	29268 Road 156	Visalia Ca 93292	Tulare

SOURCE: FIRST AMERICAN REAL ESTATE
DATA LAST UPDATED: (03-10-2008)

Appendix G

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
Serving the San Joaquin Valley

Bill DeLain
Region Manager
(559) 685-3213

May 28, 2008

Steve Salomon
City Manager
City of Visalia
425 East Oak Street
Visalia, CA 93279

Dear Steve:

As we discussed over recent months with you, city staff, and the Council, Southern California Edison Company (SCE) will be filing an application with the California Public Utilities Commission (CPUC) for authority to build the San Joaquin Cross Valley Loop 220 kV Transmission Line, a portion of which is proposed to be constructed very near or within the eastern boundary of the City of Visalia.

CPUC General Order 131-D, which governs this approval process, requires SCE to request a written position statement from the cities and counties through which the proposed project will traverse regarding the project, and to include those position statements in the application. The purpose of this letter is to request from you a written position statement regarding this project.

The enclosed Fact Sheet was mailed to residents and other interested parties within the project vicinity in Visalia. Briefly, Electrical demand in the San Joaquin Valley, specifically in the region served through SCE's "Rector Transmission System" is growing and will exceed Southern California Edison's (SCE) capacity to serve this area, especially during peak periods on hot days. To meet the areas increasing electrical demand and to improve electric reliability in the area, SCE proposes to construct the San Joaquin Cross Valley Loop Transmission Line Project (Project).

The Project includes the following primary components:

- Construction of a new, 220 kV transmission line connecting the existing Big Creek Rector Transmission lines with the Big Creek-Springville Transmission Lines
- Replacing some distance of existing twin-tower, single-circuit 220 kV transmission lines in the Big Creek-Rector Transmission Right-of-Way with a single-pole, double-circuit 220 kV Transmission line.

More detailed information on the project is included in the enclosed Fact Sheet.

We ask you to review the project information and send us a written statement from the City of Visalia regarding the project by June 15, 2008. Of course, I am available to discuss this project further and to answer any questions the City of Visalia may have beforehand, if you wish.

Thank you for your cooperation.

Sincerely,

Bill DeLain
Region Manager

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Bill DeLain
Region Manager
(559) 685-3213

May 1, 2008

Jean Rousseau
County Administrative Officer
County of Tulare
2800 West Burrel Avenue
Visalia, CA 93291

Dear Jean:

As we have discussed with the County of Tulare over the past months, Southern California Edison Company (SCE) will be filing an application with the California Public Utilities Commission (CPUC) for authority to build the San Joaquin Cross Valley Loop 220 kV Transmission Line. The application includes three proposed alternative routes. Two of these alternatives are located exclusively in un-incorporated areas of Tulare County. A significant portion of a third alternative route is in un-incorporated Tulare County.

CPUC General Order 131-D, which governs this approval process, requires SCE to request a written position statement from the cities and counties through which the proposed project will traverse regarding the project, and to include those position statements in the application. The purpose of this letter is to request from you a written position statement regarding this project.

The enclosed Fact Sheet was mailed to residents and other interested parties within the project vicinities in Tulare County. Briefly, Electrical demand in the San Joaquin Valley, specifically in the region served through SCE's "Rector Transmission System" is growing and will exceed Southern California Edison's (SCE) capacity to serve this area, especially during peak periods on hot days. To meet the areas increasing electrical demand and to improve electric reliability in the area, SCE proposes to construct the San Joaquin Cross Valley Loop Transmission Line Project (Project).

The Project includes the following primary components:

- Construction of a new, 220 kV transmission line connecting the existing Big Creek-Rector Transmission Lines with the Big Creek-Springville Transmission Lines
- Replacing some distance of existing twin-tower, single-circuit 220 kV transmission lines in the Big Creek-Rector Transmission Right-of-Way with a single-pole, double-circuit 220 kV transmission line.

2425 So. Blackstone Street
Tulare, CA 93274-6953

We ask you to review the Project information, and send us a written statement from the City of Farmerville regarding the Project by May 15, 2008 for inclusion in the CPUC application. Of course, I am available to discuss this Project further and to answer any questions the City of Farmersville may have beforehand, if you wish.

Thank you for your cooperation.

Sincerely,

Bill DeLain

Bill DeLain

Enclosures

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Bill DeLain
Region Manager
(559) 685-3213

May 1, 2008

René Miller, City Manager
City of Farmersville
909 West Visalia Road
Farmersville, CA 93223

Dear René:

As we discussed during our recent meeting, Southern California Edison Company (SCE) will be filing an application with the California Public Utilities Commission (CPUC) for authority to build the San Joaquin Cross Valley Loop 220 kV Transmission Line, a portion of which is proposed to be constructed in the City of Farmersville.

CPUC General Order 131-D, which governs this approval process, requires SCE to request a written position statement from the cities and counties through which the proposed project will traverse regarding the project, and to include those position statements in the application. The purpose of this letter is to request from you a written position statement regarding this project.

The enclosed Fact Sheet was mailed to residents and other interested parties within the project vicinity in Farmersville. Briefly, electrical demand in the San Joaquin Valley, specifically in the region served through SCE's "Rector Transmission System" is growing and will exceed Southern California Edison's (SCE) capacity to serve this area, especially during peak periods on hot days. To meet the increasing electrical demand and to improve electric reliability in the area, SCE proposes to construct the San Joaquin Cross Valley Loop Transmission Line Project (Project).

The Project includes the following primary components:

- Construction of a new 220 kV transmission line connecting the existing Big Creek-Rector transmission lines with the Big Creek-Springville transmission lines
- Replacing some distance of existing twin-tower, single-circuit 220 kV transmission lines in the Big Creek-Rector Transmission Right-of-Way with a single-pole, double-circuit 220 kV transmission line.

2425 So. Blackstone Street
Tulare, CA 93274-6953

We ask you to review the Project information and send us a written statement from the County of Tulare regarding the Project by May 15, 2008 for inclusion in the CPUC application. Of course, I am available to discuss this project further and to answer any questions the County of Tulare may have beforehand, if you wish.

Thank you for your cooperation.

Sincerely,

Bill DeLain

Enclosures

City of Farmersville

May 12, 2008

Mr. Bill DeLain
Southern California Edison
2425 S. Blackstone Street
Tulare, CA 95274-6953

Dear Bill:

Thank you for your letter dated May 1, 2008. Council and staff have reviewed the Fact Sheet you sent to us. I have enclosed with this letter the Resolution that was passed by Council in April, 2008 and a copy of the site plan for the industrial park the City has planned. Council is disappointed with the decision of SCE to put the Cross Valley Loop through our community. Council and staff believe that Route 3 is the better choice.

Council and SCE staff has met several times over the past 2 years; and each time we have been very clear about the desire to place these lines outside of the Farmersville City limits (preferably Route 3). The Route 1 lines, as you are proposing, go directly though the area of our community, that the City Council has industrial and commercial development planned. Interest to build and grants to finance the construction have been developing in recent years. This project will directly impact the industrial development as the lines will bisect the parcel where the industrial park will locate and make the site map difficult to develop. Since the City has requested but not received any maps to confirm the location of the line through town, staff is guessing the lines will be over the entrance to the industrial park and shave off the southern end of the commercial development on the east side of Farmersville Boulevard.

Our community is a low income Hispanic community. The jobs, this type of development will bring, are very important to our residents. Additionally, the City desperately needs commercial development to meet the needs of the community.

Further, the elimination of many hundreds of acres of agriculture land along Route 1 will impact Farmersville residents even more as many are employed by the agriculture industry in the fields as well as the packing houses.

Upon review of the fact sheet several items come to mind that support choosing Route 3. First Route 3 would follow an existing power line which is very old and in desperate need of improvements. This project would ensure those improvements, which will have to be done some time in the future, will get done. Regardless of which route is chosen the route along Road 148 (Route 3) would need replacement anyway. Secondly, Route 3 would only require 7 miles of new right of way and construction while Route 1 will require 23 miles of new right of way and construction. Thirdly, Route 3 would affect only 8 land owners covering mostly grazing pasture rather than 185 parcels of land, much of which is prime agricultural, industrial and commercial land.

The City of Farmersville believes the Valley is in need of additional electricity, however, Council and Staff believes that Route 1 would have crippling effects on our city's ability to develop industrially and commercially as directed by our city's General Plan and the Highway 198 Specific Plan. Route 1 also is in direct conflict with the City's ability as well as surrounding areas ability to follow the direction the given by both the County's General Plan and the Regional Blue Print which are both in their final stages of development. It is for these reasons that we feel Route 3 is by far the most reasonable option and quite frankly the most common sense approach to solving the issue the South Valley Loop proposes to solve.

Yours Truly,

Rene' Miller
City Manager

2008-11

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FARMERSVILLE IN OPPOSITION TO THE PROPOSED CROSS VALLEY LOOP ROUTE 1 THROUGH FARMERSVILLE CITY LIMITS

WHEREAS, it is stated that Tulare County faces shortages in supply of electricity in the future; and

WHEREAS, Southern California Edison Company (SCE) supplies electricity to the Tulare County area; and

WHEREAS, SCE is proposing to the California Public Utilities Commission a proposed plan and two alternate routes to supply the additional electricity to Tulare County Grid; and

WHEREAS, the proposed Route 1 will slice through the northern portion of our City in an area that has been reserved for economic development and includes a portion of the City's Redevelopment Area thereby eliminating the productive use of at least a 100 foot strip of land through this area of the City not to mention the many other land owners along this route who farm and have homes that will be adversely affected by this project; and

WHEREAS, Alternate Route #3 would utilize much more SCE existing right-of-way and cross over grazing land which would affect only 7 land owners; and

WHEREAS, the City (which qualifies as an economically disadvantaged community) desperately needs the tax revenue to be generated by not only the 100 foot strip, but neighboring properties as well that could provide jobs and services to the residents of the community; and

WHEREAS, the proposed project Route 1 would be detrimental to the property owners developing the sites who would likely now be deterred from locating commercial and industrial development in this area designated for this needed development, and

WHEREAS, the sitting of power transmission lines along the proposed Route 1 will cut across our City's entrance from State Highway 198 along Farmersville Boulevard marring the view along this proposed scenic entrance to our community forever.

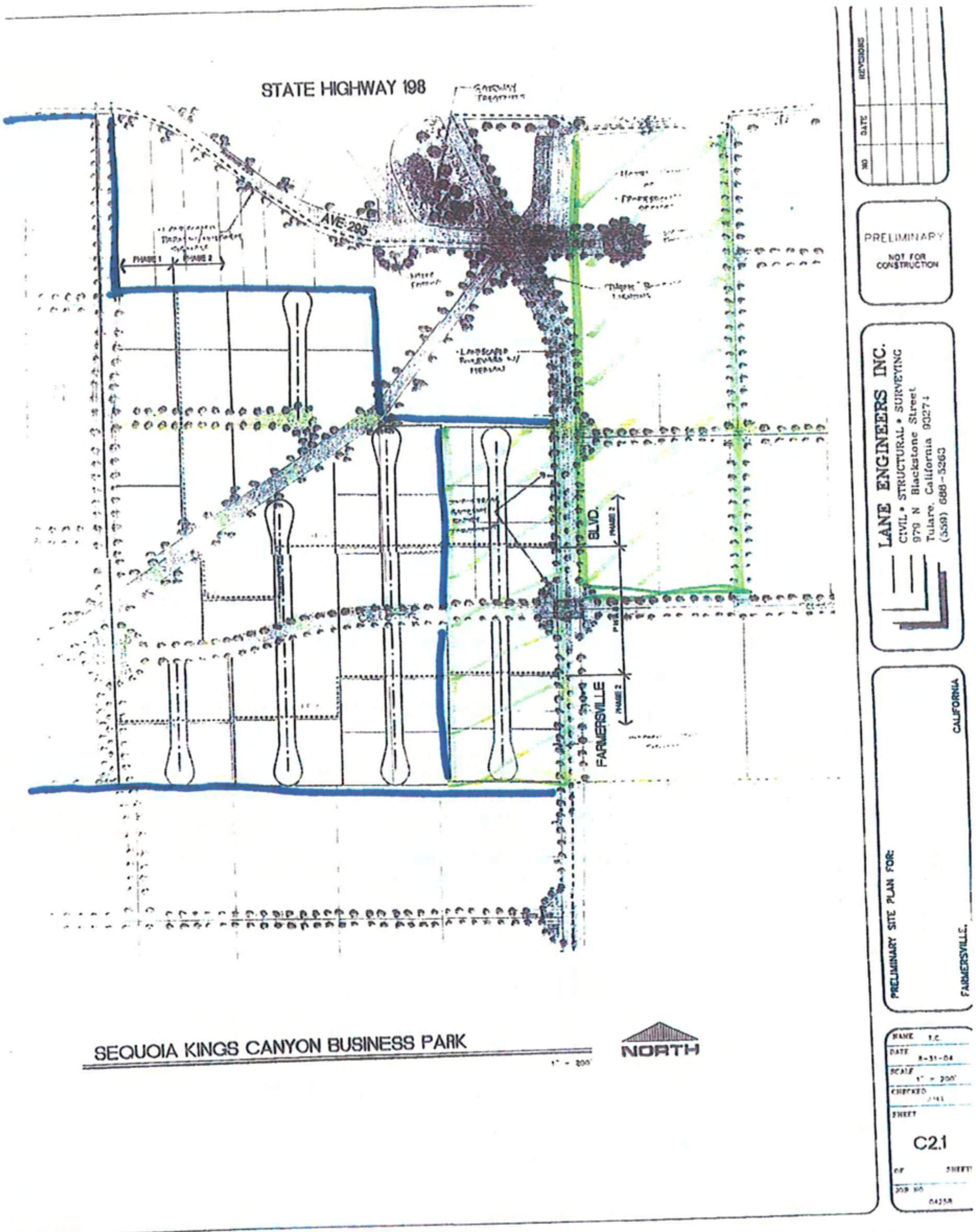
NOW, THEREFORE, BE IT RESOLVED BY THE City Council of the City of Farmersville that we hereby oppose SCE's Proposed Route 1 and support SCE's Route 3.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Farmersville held on April 14, 2008, by the following vote:

AYES: Santana, Boyer, Hosier, Benavides
NOES: None
ABSENT: Rowlett
ABSTAIN: None

APPROVED: ______________________
Leonel Benavides, MAYOR

ATTEST: ______________________
Rosemary Silva, CITY CLERK



Area for Proposed lines.

Commercial development

Boundaries of proposed industrial park.

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

January 3, 2008

Mr. Matthew Armstrong, M.A., RPA, Archaeologist/Project Supervisor
Pacific Legacy, Inc.
1525 Seabright Avenue
Santa Cruz, CA 95062

Sent by FAX to: 831-423-0587
Number of Pages: 2

Re: Request for a Sacred Lands File records search for the proposed **Southern California Edison Cross Valley Transmission Line Project**, located in The following USGS 7.5 Minute Quadrangles all in Tulare County, California: Stokes Mountain, Ivanhoe, Orange Cove South, Monson, Woodlake, Visalia, Exeter, Rocky Hill, Kaweah, and Chicencoop Canyon.

Dear Mr. Armstrong:

The Native American Heritage Commission was able to perform a record search of its Sacred Lands File (SLF) for the affected project area (APE). The SLF search did indicate the presence of numerous Native American cultural resources in the project area.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes that may have knowledge of cultural resources in the project area. In particular, we recommend that you contact Clint Linton Ken Woodrow and Lalo Franco as well as the other persons on the attached list of Native American contacts. They do have knowledge as to whether or not the known cultural resources identified may be at-risk by the proposed project. The Commission makes no recommendation of a single individual or group over another. It is advisable to contact the person listed; if they cannot supply you with specific information about the impact on cultural resources, they may be able to refer you to another tribe or person knowledgeable of the cultural resources in or near the affected project area (APE).

Lack of surface evidence of archeological resources does not preclude the existence of archeological resources. In fact, a Native American tribe may be the only source of information about a cultural resource. Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Native American Contacts
Tulare County
January 3, 2008

Santa Rosa Rancheria
Clarence Atwell, Chairperson
P.O. Box 8 — Tache
Lemoore , CA 93245 — Tachi
(559) 924-1278 — Yokut
(559) 924-3583 Fax

Kenneth Woodrow
1179 Rock Haven Ct. — Foothill Yokuts
Salinas , CA 93906 — Mono
831-443-9702

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589 — Yokuts
Porterville , CA 93258
chairman@tulerivertribe.nsn.
(559) 781-4271
(559) 781-4610 FAX

Santa Rosa Rancheria
Lalo Franco, Director - Cultural Deparment
P.O. Box 8 — Yokuts
Lemoore , CA 93245 — Tachi
(559) 925-2831
(559) 469-3556 - CELL

Wukchumni Tribe
Susan Weese, C/o Lalo Franco
2504 West Beech Street. — Wukchumni
Visalia , CA 93277
(559) 925-2831 - Lalo Franco

Sierra Nevada Native American Coalition
Lawrence Bill, Interim Chairperson
P.O. 125 — Mono
Dunlap , CA 93621 — Foothill Yokuts
(559) 338-2354

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American with regard to cultural resources for the proposed Southern California Edison Cross Valley Transmission Line Project across 11 USGS Quadrangle Map areas of Tulare County, California for which Sacred Lands File searches and Native American Contacts lists were requested.

SOUTHERN CALIFORNIA
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April 30, 2008

Lawrence Bill, Interim Chairperson
Sierra Nevada Native American Coalition
P.O. Box 125
Dunlap, CA 93621

Dear Mr. Bill:

The Southern California Edison Company (SCE) is filing an application with the California Public Utilities Commission to construct a high voltage (220 kV) transmission line interconnection between its existing Rector Substation, located about one quarter mile east of Visalia, and existing high voltage transmission lines passing north-south across the foothills of the western Sierra Nevada Mountains. This is a system reliability project required to serve the growing energy needs of the local community. We have received information from the California Native American Heritage Commission (NAHC) that there may be resources of concern to the local Native American community, including burials and an unnamed village site, present on or near one or more of the proposed project routes. We are contacting you as recommended by NAHC staff for further information in order that these resources may properly be taken into consideration in the project planning and permitting process.

Three alternative project routes are under consideration (see enclosed map). The first, and SCE's Proposed Project, proceeds in a generally easterly direction from Rector Substation to the transmission line interconnection point. Alternatives 2 and 3 proceed from Rector Substation following a progressively more northerly route to a transmission line interconnection point. The objective of Alternatives 2 and 3 is to minimize community objections to the project along SCE's Proposed Project route (primarily Farmersville).

Archaeological studies of the project routes to-date indicate that the foothill areas appear to be the most sensitive with regard to the presence of prehistoric archaeological sites. The routes of Alternatives 2 and 3 cross significantly more foothill lands than the Proposed Project (½ mile for the Proposed Project vs. 5 miles for Alternative 2 and 10 miles for Alternative 3). Most of the lands crossed by all of the various project routes are private, and SCE's access to them for purposes of archaeological survey has been limited. We do know that there are at least 14 archaeological sites within ½ mile of the Alternative 3 route centerline in the foothills, and probably more in the portion of Stone Corral Canyon we could not access. There are also 13 archaeological sites within ½ mile of the Alternative 2 route centerline in the foothills. We know of one archaeological site within ½ mile of the Proposed Project centerline in the foothills.

2244 Walnut Grove Avenue
Rosemead, CA 91770

We request your response to this letter by Friday, May 30, 2008. We welcome your input in the form best suited to you. You may contact me by regular mail addressed to the undersigned at Southern California Edison Company, Corporate Environment, Health & Safety, P.O. Box 800, Rosemead, CA 91770, by email at thomas.t.taylor@sce.com, or by voice at 626-302-9540. Your comments will be made part of the project record regardless of the medium you choose.

Sincerely,

Thomas T. Taylor, Manager
Biological & Archaeological Resources

Enclosure

cc: Michelle Holiday, SCE Public Affairs

Distribution List

Clarence Atwell, Chairperson
Santa Rosa Rancheria
P.O. Box 8
Lemoore, CA 93245

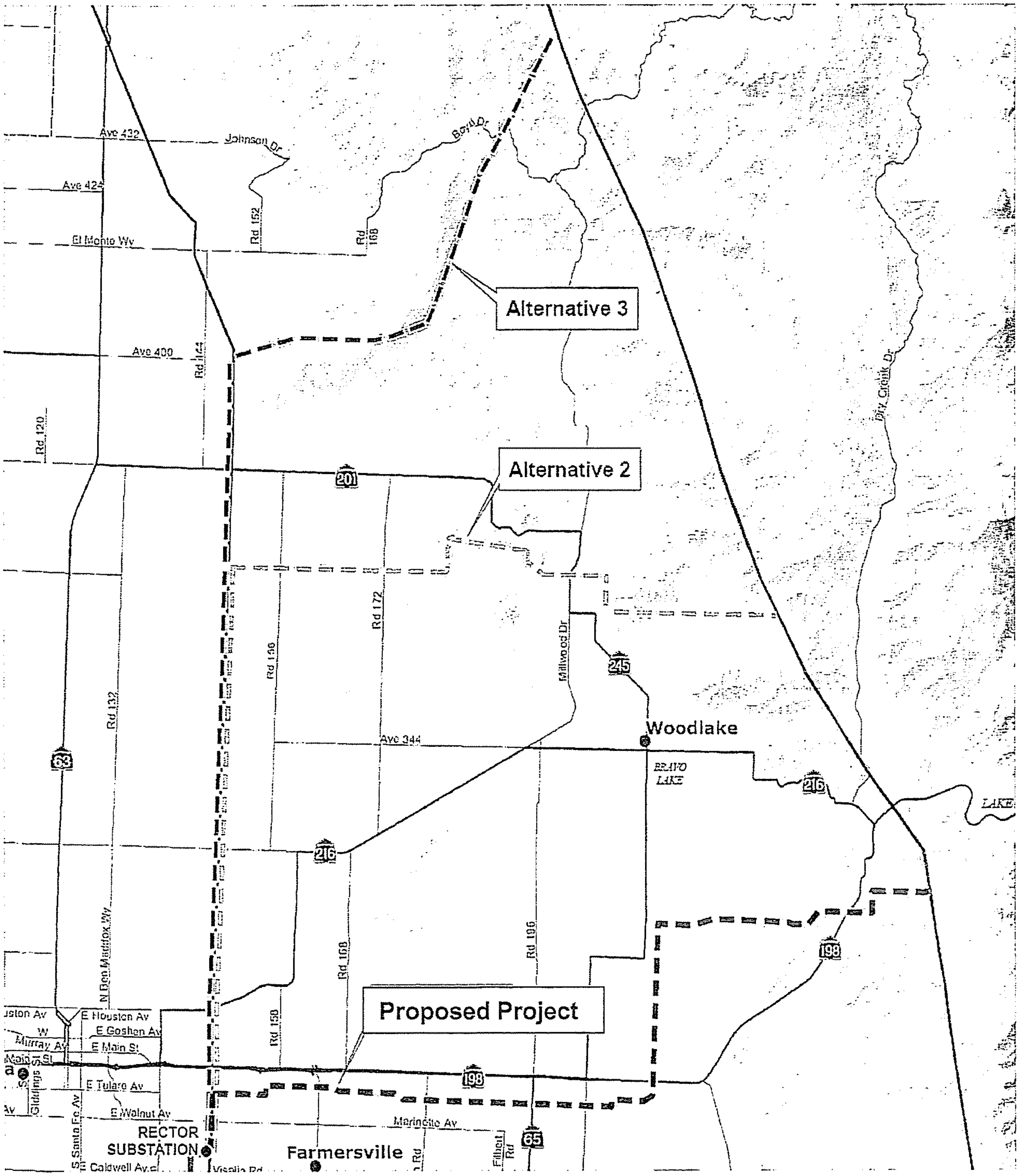
Neil Peyron, Chairperson
Tule River Indian Tribe
P.O. Box 589
Porterville, CA 93258

Susan Weese, c/o Lalo Franco
Wukchumni Tribe
2504 West Beech Street
Visalia, CA 93277

Lawrence Bill, Interim Chairperson
Sierra Nevada Native American Coalition
P.O. Box 125
Dunlap, CA 93621

Kenneth Woodrow
1179 Rock Haven Ct.
Salinas, CA 93906

Lalo Franco, Director
Cultural Department
Santa Rosa Rancheria
P.O. Box 8
Lemoore, CA 93245



220 kV Transmission Line Route Alternatives for SCE's San Joaquin Cross Valley Loop Project

SOUTHERN CALIFORNIA
EDISON®
An EDISON INTERNATIONAL® Company

April 30, 2008

Neil Peyron, Chairperson
Tule River Indian Tribe
P.O. Box 589
Porterville, CA 93258

Dear Mr. Peyron:

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2244 Walnut Grove Avenue
Rosemead, CA 91770

We request your response to this letter by Friday, May 30, 2008. We welcome your input in the form best suited to you. You may contact me by regular mail addressed to the undersigned at Southern California Edison Company, Corporate Environment, Health & Safety, P.O. Box 800, Rosemead, CA 91770, by email at thomas.t.taylor@sce.com, or by voice at 626-302-9540. Your comments will be made part of the project record regardless of the medium you choose.

Sincerely,

Tom Taylor

Thomas T. Taylor, Manager
Biological & Archaeological Resources

Enclosure

cc: Michelle Holiday, SCE Public Affairs

Distribution List

Clarence Atwell, Chairperson
Santa Rosa Rancheria
P.O. Box 8
Lemoore, CA 93245

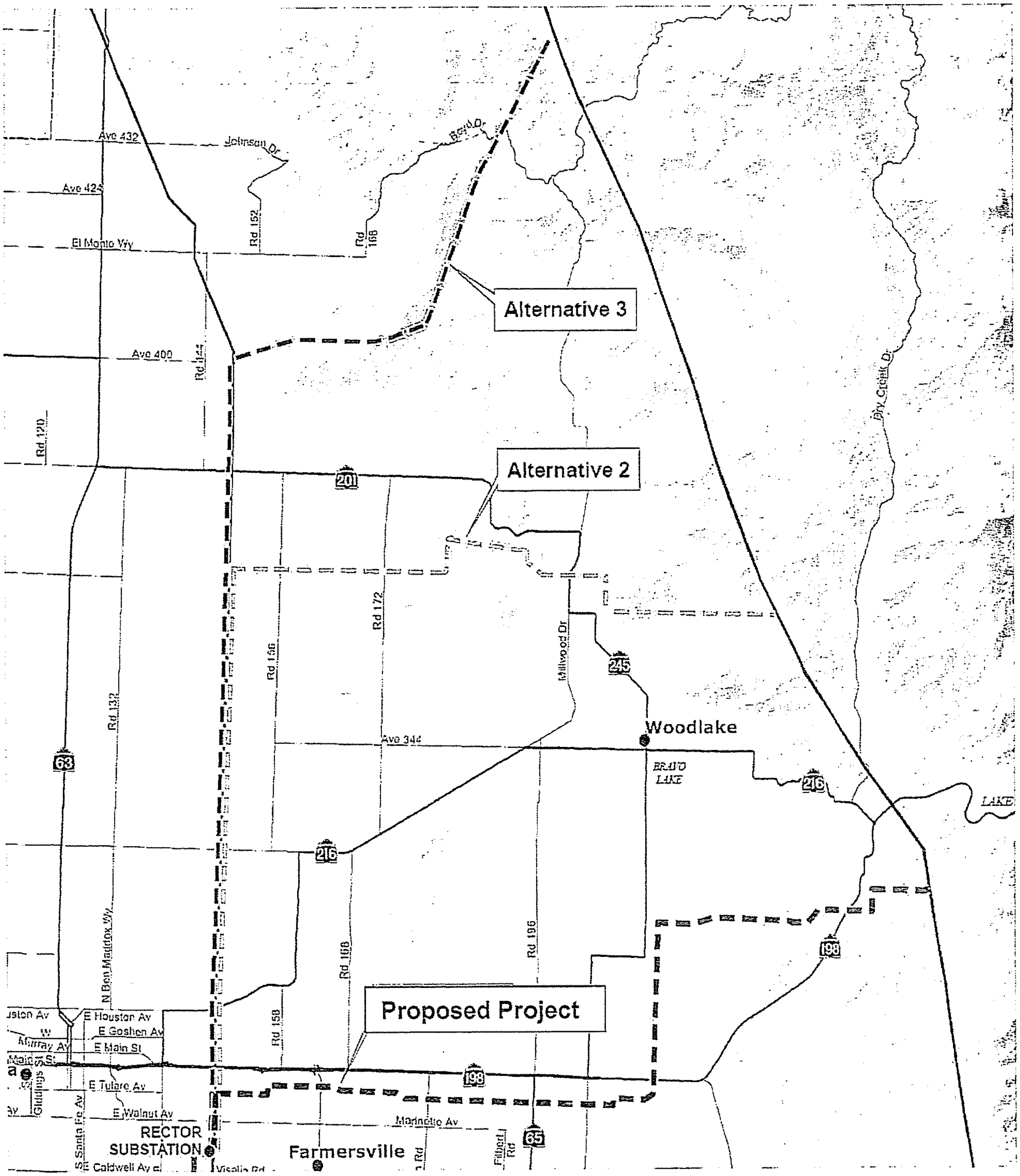
Neil Peyron, Chairperson
Tule River Indian Tribe
P.O. Box 589
Porterville, CA 93258

Susan Weese, c/o Lalo Franco
Wukchumni Tribe
2504 West Beech Street
Visalia, CA 93277

Lawrence Bill, Interim Chairperson
Sierra Nevada Native American Coalition
P.O. Box 125
Dunlap, CA 93621

Kenneth Woodrow
1179 Rock Haven Ct.
Salinas, CA 93906

Lalo Franco, Director
Cultural Department
Santa Rosa Rancheria
P.O. Box 8
Lemoore, CA 93245



220 kV Transmission Line Route Alternatives for SCE's San Joaquin Cross Valley Loop Project

SOUTHERN CALIFORNIA
EDISON®
An EDISON INTERNATIONAL® Company

April 30, 2008

Lalo Franco, Director
Cultural Department
Santa Rosa Rancheria
P.O. Box 8
Lemoore, CA 93245

Dear Mr. Franco:

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Sincerely,

Thomas T. Taylor, Manager
Biological & Archaeological Resources

Enclosure

cc: Michelle Holiday, SCE Public Affairs

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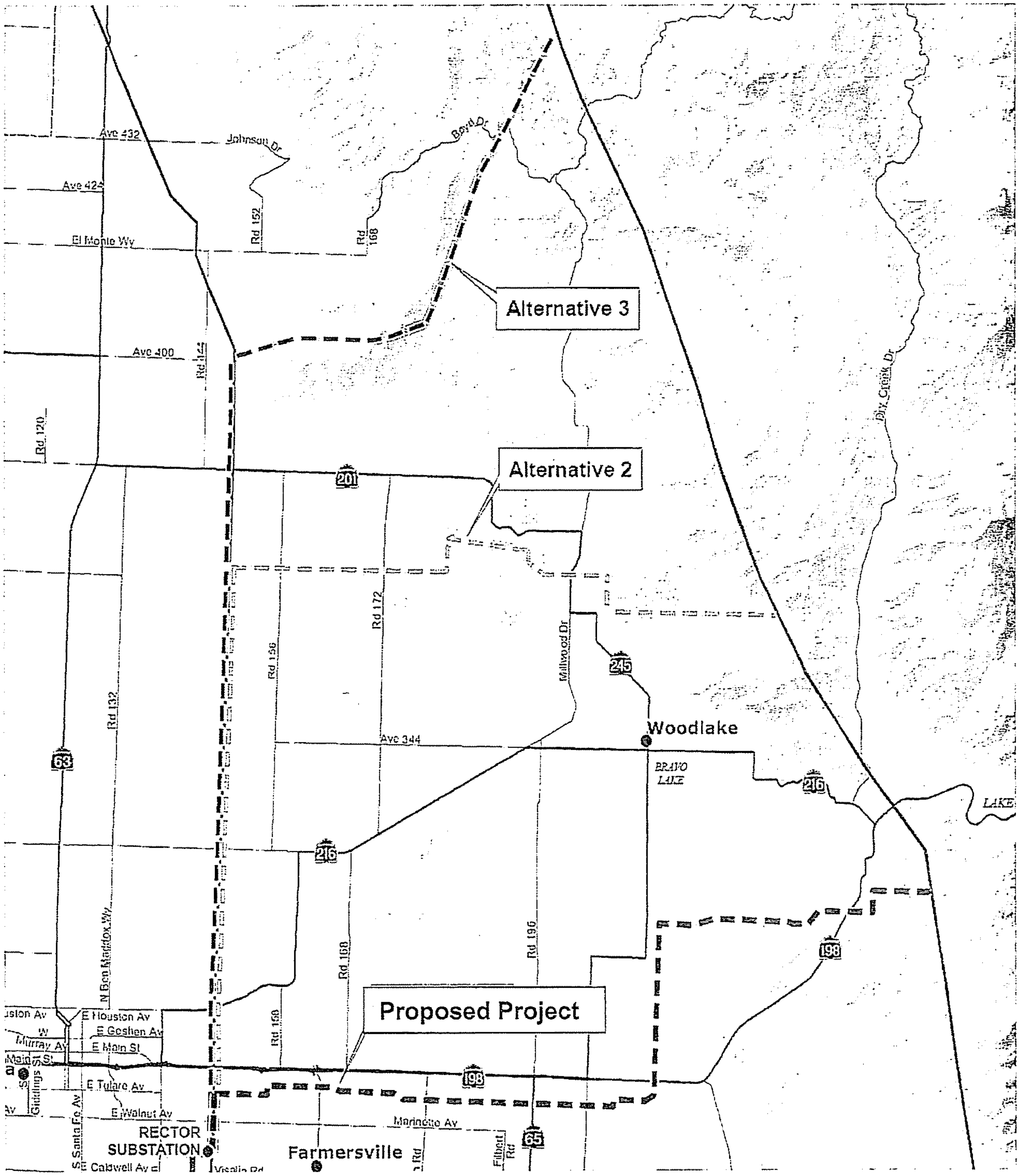

220 kV Transmission Line Route Alternatives for SCE's San Joaquin Cross Valley Loop Project

SOUTHERN CALIFORNIA
EDISON®
An *EDISON INTERNATIONAL®* Company

April 30, 2008

Clarence Atwell, Chairperson
Santa Rosa Rancheria
P.O. Box 8
Lemoore, CA 93245

Dear Mr. Atwell:

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Biological & Archaeological Resources

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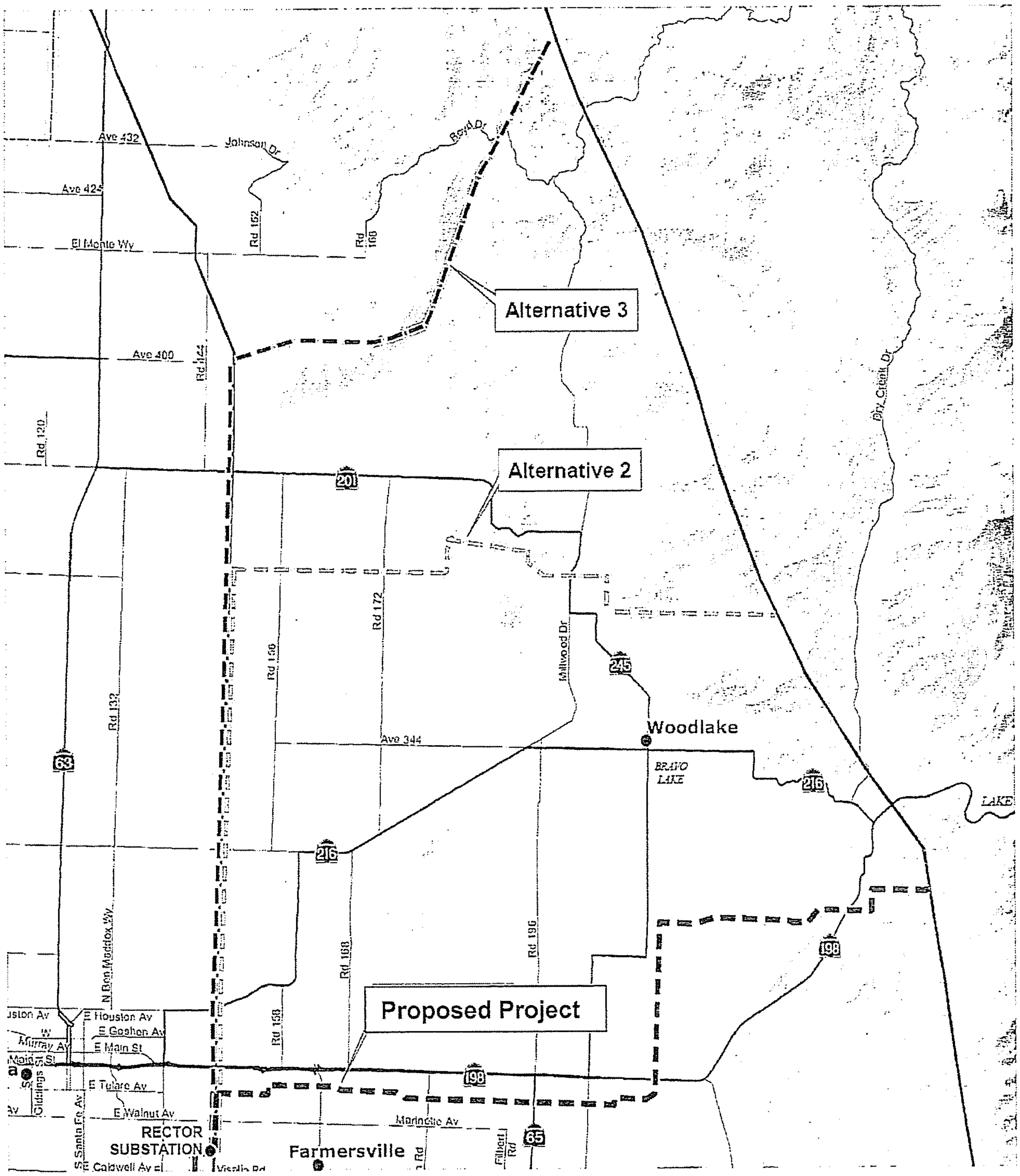

220 kV Transmission Line Route Alternatives for SCE's San Joaquin Cross Valley Loop Project

SOUTHERN CALIFORNIA
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An *EDISON INTERNATIONAL*® Company

April 30, 2008

Susan Weese, c/o Lalo Franco
Wukchumni Tribe
2504 West Beech Street
Visalia, CA 93277

Dear Ms. Weese:

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Biological & Archaeological Resources

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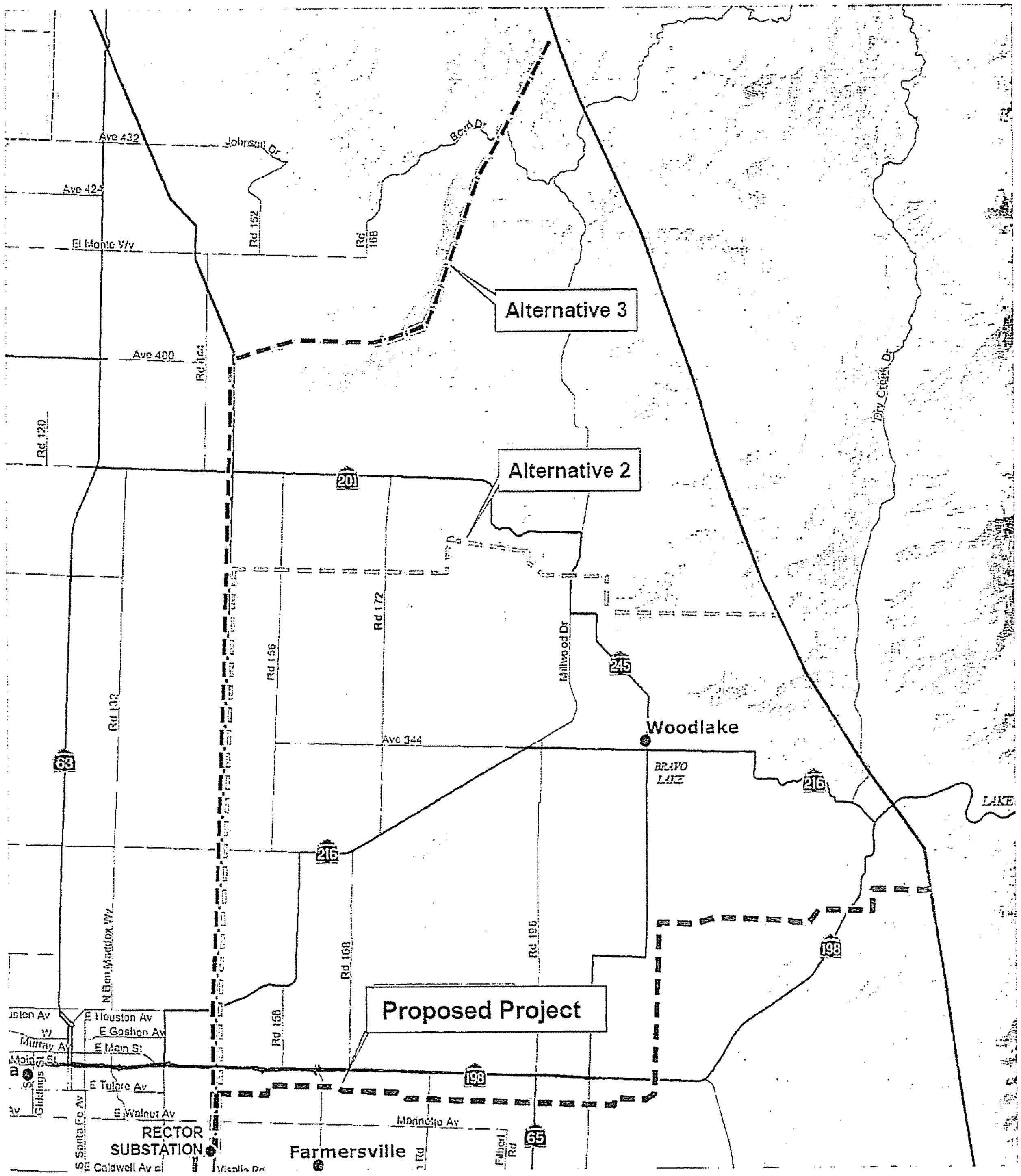

220 kV Transmission Line Route Alternatives for SCE's San Joaquin Cross Valley Loop Project

SOUTHERN CALIFORNIA
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April 30, 2008

Kenneth Woodrow
1179 Rock Haven Ct.
Salinas, CA 93906

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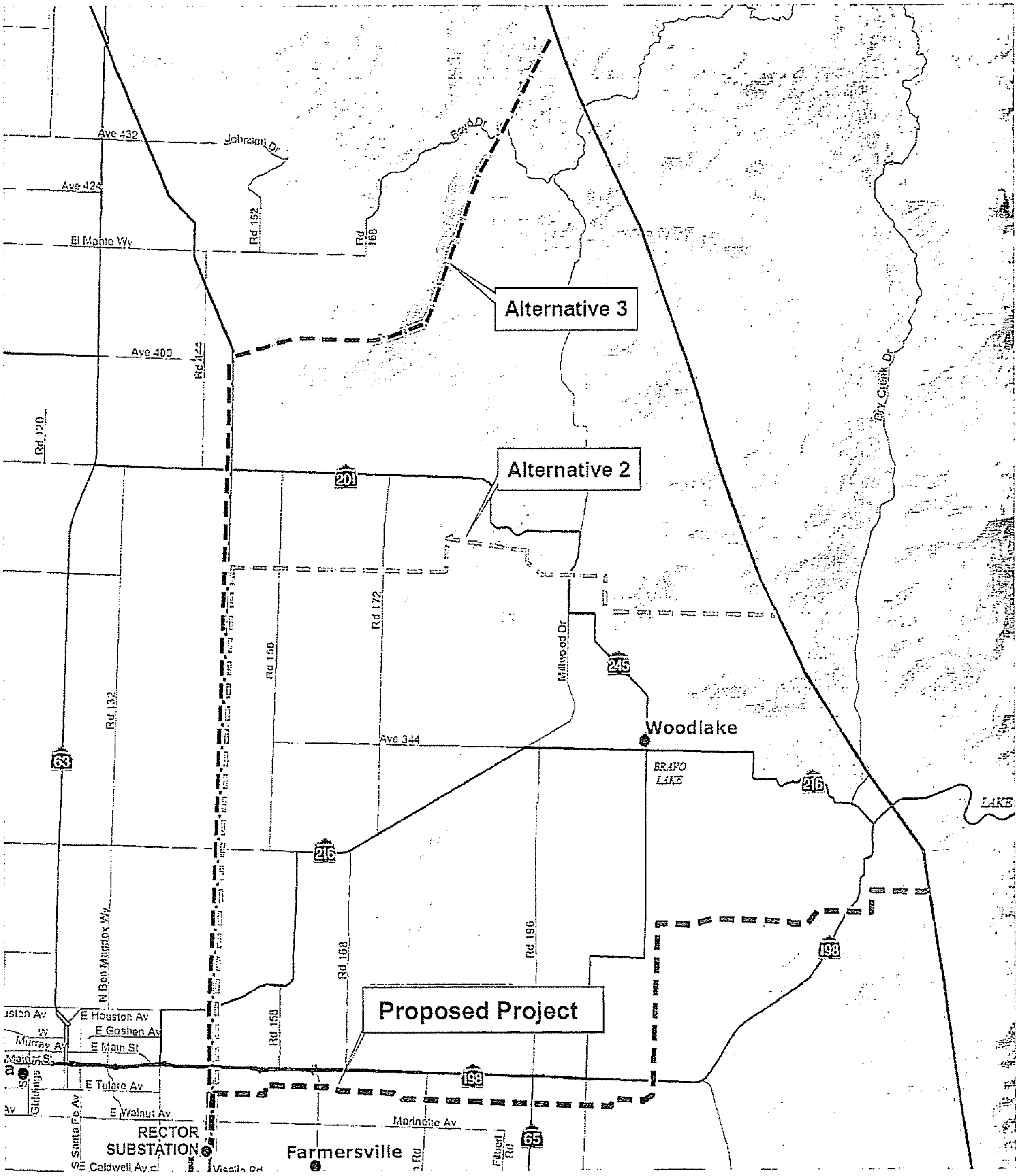

220 kV Transmission Line Route Alternatives for SCE's San Joaquin Cross Valley Loop Project

Appendix H

TRACK ➤ INFO SERVICES, LLC

Environmental FirstSearch™ Report

Target Property:

CA

Job Number: SJXVL

PREPARED FOR:

Southern California Edison

2244 Walnut Grove Ave.

Rosemead, CA 91770

04-10-08

Tel: (866) 664-9981 *Fax: (818) 249-4227*

Environmental FirstSearch
Search Summary Report

Target Site:

CA

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	02-08-08	1.00	0	0	0	0	0	0	0
NPL Delisted	Y	02-08-08	0.50	0	0	0	0	-	0	0
CERCLIS	Y	02-08-08	0.50	0	0	0	0	-	0	0
NFRAP	Y	02-08-08	0.50	0	0	0	0	-	0	0
RCRA COR ACT	Y	04-01-08	1.00	0	0	0	0	0	0	0
RCRA TSD	Y	04-01-08	0.50	0	0	0	0	-	0	0
RCRA GEN	Y	04-01-08	0.25	0	0	0	-	-	0	0
Federal IC / EC	Y	02-08-08	0.25	0	0	0	-	-	0	0
ERNS	Y	12-31-07	0.12	0	0	-	-	-	0	0
Tribal Lands	Y	12-01-05	1.00	0	0	0	0	0	0	0
State/Tribal Sites	Y	08-08-07	1.00	0	0	0	0	0	0	0
State Spills 90	Y	11-06-07	0.12	0	1	-	-	-	0	1
State/Tribal SWL	Y	04-09-08	0.50	0	0	0	1	-	0	1
State/Tribal LUST	Y	10-18-07	0.50	0	1	1	7	-	1	10
State/Tribal UST/AST	Y	01-03-07	0.25	0	0	3	-	-	0	3
State/Tribal EC	Y	NA	0.25	0	0	0	-	-	0	0
State/Tribal IC	Y	04-27-07	0.25	0	0	0	-	-	0	0
State/Tribal VCP	Y	08-15-06	0.50	0	0	0	0	-	0	0
State/Tribal Brownfields	Y	08-08-07	0.50	0	0	0	0	-	0	0
Floodplains	Y	09-01-98	0.50	0	0	0	0	-	0	0
State Other	Y	08-08-07	0.25	0	0	0	-	-	0	0
Oil & Gas Wells	Y	01-08-01	0.50	0	0	0	0	-	0	0
- TOTALS -				0	2	4	8	0	1	15

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to TRACK Info Services, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in TRACK Info Services's databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although TRACK Info Services uses its best efforts to research the actual location of each site, TRACK Info Services does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of TRACK Info Services's services proceeding are signifying an understanding of TRACK Info Services's searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Environmental FirstSearch
Site Information Report

Request Date:	04-10-08	**Search Type:**	LINEAR 18.49 mile(s)
Requestor Name:	Phuong K. Tran	**Job Number:**	SJXVL
Standard:	ASTM-05	Filtered Report	

Target Site:

CA

Demographics

Sites:	15	**Non-Geocoded:**	1	**Population:**	NA
Radon:	NA				

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)		UTMs
Longitude:	-119.12296	-119:7:23	**Easting:**	309472.168
Latitude:	36.34102	36:20:28	**Northing:**	4023664.482
			Zone:	11

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 0.25 Mile(s)

ZIP Code	City Name	ST	Dist/Dir	Sel
93221	EXETER	CA	0.00 --	Y
93244	LEMON COVE	CA	0.00 --	Y
93286	WOODLAKE	CA	0.00 --	Y
93292	VISALIA	CA	0.00 --	Y

Services:

	Requested?	Date
Sanborns	No	
Aerial Photographs	No	
Historical Topos	No	
City Directories	No	
Title Search/Env Liens	No	
Municipal Reports	No	
Online Topos	No	

Environmental FirstSearch
Sites Summary Report

Target Property: CA

JOB: SJXVL

TOTAL: 15 **GEOCODED:** 14 **NON GEOCODED:** 1 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	SPILLS	SCE RECTOR SUBSTATION G_SL0610727058/NOT REPORTED	28361 ROAD 148 VISALIA CA	0.01 NW	1
2	LUST	LEMON COVE FIRE STATION T0610700144/CASE CLOSED	32490 SIERRA DR LEMON COVE CA 93244	0.09 NE	13
3	UST	BARBA RESIDENCE TISID-STATE50189/ACTIVE	2490 FILBERT EXETER CA 93221	0.19 SW	5
4	LUST	LEMON COVE ANTIQUE MALL T0610700202/CASE CLOSED	32396 SIERRA DR LEMON COVE CA 93244	0.21 NE	12
5	UST	FRANK R EDMISTON TISID-STATE50548/ACTIVE	31159 212 EXETER CA 93221	0.23 NW	6
6	UST	ROBERT J TUCKER TISID-STATE50549/ACTIVE	30937 212 EXETER CA 93221	0.24 NW	7
7	LUST	TUL922 GA0000000932	2300 NORTH GILL ROAD Exeter CA	0.28 SW	10
8	LUST	CASA BLANCA MARKET T0610700385/CASE CLOSED	28809 ROAD 156 VISALIA CA 93292	0.29 SE	3
9	LUST	KIMBALL TOPPERS T0610700437/POLLUTION CHARACTERI	16385 AVE 296 VISALIA CA 93277	0.38 NE	4
10	LUST	HATHAWAY S NURSERY T0610700032/REMEDIATION PLAN	16013 AVE 296 VISALIA CA 93277	0.38 NE	8
11	LUST	TUL1077 GA8825528800	16528 DILLON AVE Visalia CA	0.39 SW	9
12	LUST	TUL1056 GA4045789420	16528 DILLON AVE Visalia CA	0.39 SW	9
13	LUST	TUL1008 GA9497617423	22208 BOSTON AVENUE Exeter CA	0.44 SE	11
14	SWL	LINDCOVE AG FIELD STATION WMUD5D100803N02/ACTIVE	22963 CARSON AVENUE EXETER CA 93221	0.47 SW	2

Environmental FirstSearch
Sites Summary Report

Target Property: CA

JOB: SJXVL

TOTAL: 15 **GEOCODED:** 14 **NON GEOCODED:** 1 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
15	LUST	FOOTHILL AUTOMOTIVE T0610700275/CASE CLOSED	32812 SIERRA DR LEMON COVE CA 93244	NON GC	

Environmental FirstSearch
Site Detail Report

Target Property: CA

JOB: SJXVL

STATE SPILLS SITE

SEARCH ID: 1 **DIST/DIR:** 0.01 NW **MAP ID:** 1

NAME: SCE RECTOR SUBSTATION
ADDRESS: 28361 ROAD 148
VISALIA CA
CONTACT:

REV: 01/03/07
ID1: G_SL0610727058
ID2:
STATUS: NOT REPORTED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

Please note that some SLIC data previously provided by the State Water Resources Control Board via the Regional Boards is not currently provided by the agency in the new GEOTRACKER format. To ensure that our data is as complete as possible we have retained the original Regional Boards SLIC records as well as loaded all GEOTRACKER SLIC listings. GEOTRACKER records are distinguished by an initial G at the start of the ID.

LEAD AGENCY: *CENTRAL VALLEY RWQCB (REGION 5F)*
LEAD AGENCY CONTACT: *BRUCE MYERS*
LEAD AGENCY CASE NUMBER: *2050118*
RESPONSIBLE PARTY:
SUBSTANCE RELEASED (please note that not all codes are available and some records may remain encoded): *01051, 39504, TPHU*
RECENT DTW:
STATUS:

Environmental FirstSearch
Site Detail Report

Target Property: CA

JOB: SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 15 **DIST/DIR:** 0.09 NE **MAP ID:** 13

NAME:	LEMON COVE FIRE STATION	REV:	01/12/06
ADDRESS:	32490 SIERRA DR	ID1:	T0610700144
	LEMON COVE CA 93244	ID2:	
	TULARE	STATUS:	CASE CLOSED
CONTACT:		PHONE:	

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *5F*
LOCAL CASE NUMBER: *537*
RESPONSIBLE PARTY: *COUNTY EXECUTIVE OFFICER*
ADDRESS OF RESPONSIBLE PARTY: *2800 BURREL. VISALIA. CA 93291*
SITE OPERATOR: *MEERS. WILLIAM*
WATER SYSTEM:

CASE NUMBER: *5T54000144*
CASE TYPE: *AQUIFER AFFECTED*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *OTHER CAUSE*
LEAK SOURCE: *TANK*
HOW LEAK WAS DISCOVERED: *TANK CLOSURE*
DATE DISCOVERED (blank if not reported): *1988-12-27*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported): *1988-12-27*
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *INFORMAL ENFORCEMENT ACTIONS. INCLUDING NOTICE OF VIOLATIONS AND STAFF ENFORCEMENT LETTERS*
DATE OF ENFORCEMENT (blank if not reported): *1989-02-14*

ENTER DATE (blank if not reported): *1989-03-10*
REVIEW DATE (blank if not reported): *1996-12-20*
DATE OF LEAK CONFIRMATION (blank if not reported): *1989-02-13*
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1989-03-16*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported): *1990-03-26*
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1990-06-18*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported): *1996-03-18*
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1996-12-20*
REPORT DATE (blank if not reported): *1989-02-13*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *1*
MTBE TESTED: *SITE NOT TESTED FOR MTBE. INCLUDES UNKNOWN AND NOT ANALYZED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: CA

JOB: SJXVL

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 3 **DIST/DIR:** 0.19 SW **MAP ID:** 5

NAME:	BARBA RESIDENCE	**REV:**	01/01/94
ADDRESS:	2490 FILBERT	**ID1:**	TISID-STATE50189
	EXETER CA 93221	**ID2:**	
	Tulare	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Environmental FirstSearch
Site Detail Report

Target Property: CA **JOB:** SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 14 **DIST/DIR:** 0.21 NE **MAP ID:** 12

NAME:	LEMON COVE ANTIQUE MALL	**REV:**	01/12/06
ADDRESS:	32396 SIERRA DR	**ID1:**	T0610700202
	LEMON COVE CA 93244	**ID2:**	
	TULARE	**STATUS:**	CASE CLOSED
CONTACT:		**PHONE:**	

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *5F*
LOCAL CASE NUMBER: *582*
RESPONSIBLE PARTY: *JOHN and CHRISTINE LALLO*
ADDRESS OF RESPONSIBLE PARTY: *24570 AVENUE 330 - LEMON COVE, CA 93244*
SITE OPERATOR: *JOHN T. LALLO*
WATER SYSTEM:

CASE NUMBER: *5T54000202*
CASE TYPE: *AQUIFER AFFECTED*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *CORROSION*
LEAK SOURCE: *TANK*
HOW LEAK WAS DISCOVERED: *TANK CLOSURE*
DATE DISCOVERED (blank if not reported): *1990-03-30*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported): *1990-03-30*
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency): *EXCAVATE AND TREAT-REMOVE CONTAMINATED SOIL AND TREAT (INCLUDES SPREADING OR LAND FARMING)*
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *INFORMAL ENFORCEMENT ACTIONS. INCLUDING NOTICE OF VIOLATIONS AND STAFF ENFORCEMENT LETTERS*
DATE OF ENFORCEMENT (blank if not reported): *1990-08-23*

ENTER DATE (blank if not reported): *1990-05-04*
REVIEW DATE (blank if not reported): *1997-02-06*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1990-06-29*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported): *1993-09-30*
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1994-01-18*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported): *1994-01-18*
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1997-02-06*
REPORT DATE (blank if not reported): *1990-04-23*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE
MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *1*
MTBE TESTED: *SITE NOT TESTED FOR MTBE. INCLUDES UNKNOWN AND NOT ANALYZED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: CA

JOB: SJXVL

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 4 **DIST/DIR:** 0.23 NW **MAP ID:** 6

NAME:	FRANK R EDMISTON	**REV:**	01/01/94
ADDRESS:	31159 212	**ID1:**	TISID-STATE50548
	EXETER CA 93221	**ID2:**	
	Tulare	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

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Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Target Property: CA

JOB: SJXVL

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 5 **DIST/DIR:** 0.24 NW **MAP ID:** 7

NAME:	ROBERT J TUCKER	**REV:**	01/01/94
ADDRESS:	30937 212	**ID1:**	TISID-STATE50549
	EXETER CA 93244	**ID2:**	
	Tulare	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.
The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.
Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.
Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Target Property: CA

JOB: SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 11 **DIST/DIR:** 0.28 SW **MAP ID:** 10

NAME:	TUL922	REV:	01/08/07
ADDRESS:	2300 NORTH GILL ROAD	ID1:	GA0000000932
	EXETER CA	ID2:	
	TULARE	STATUS:	
CONTACT:		PHONE:	

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD:
LOCAL CASE NUMBER:
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *YES*
MTBE CLASS: *

Target Property: CA **JOB:** SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 6 **DIST/DIR:** 0.29 SE **MAP ID:** 3

NAME: CASA BLANCA MARKET
ADDRESS: 28809 ROAD 156
VISALIA CA 93292
TULARE
CONTACT:

REV: 01/12/06
ID1: T0610700385
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *5F*
LOCAL CASE NUMBER: *740*
RESPONSIBLE PARTY: *JOSEPHINE CIENFUEGOS*
ADDRESS OF RESPONSIBLE PARTY: *1105 AMELUXEN AVE.. HACIENDA HEIGHTS CA 91745*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *5T54000411*
CASE TYPE: *UNDEFINED*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED: *TANK CLOSURE*
DATE DISCOVERED (blank if not reported): *1997-04-17*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported): *1997-04-17*
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *CLOS*
DATE OF ENFORCEMENT (blank if not reported): *1965-01-01*

ENTER DATE (blank if not reported): *1997-07-01*
REVIEW DATE (blank if not reported): *1997-07-01*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1998-05-01*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *2003-10-23*
REPORT DATE (blank if not reported): *1997-06-18*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million): *EQUAL TO 3.2*
MTBE CNTS: *1*
MTBE FUEL: *1*
MTBE TESTED: *YES*
MTBE CLASS: *

Target Property: CA **JOB:** SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 8 **DIST/DIR:** 0.38 NE **MAP ID:** 4

NAME: KIMBALL TOPPERS
ADDRESS: 16385 AVE 296
VISALIA CA 93277
TULARE
CONTACT:

REV: 01/12/06
ID1: T0610700437
ID2:
STATUS: POLLUTION CHARACTERIZATION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *5F*
LOCAL CASE NUMBER: *777*
RESPONSIBLE PARTY: *KIMBALL TOPPERS*
ADDRESS OF RESPONSIBLE PARTY: *16385 AVE 296 VISALIA TULARE 93277*
SITE OPERATOR: *GARY NICHOLS*
WATER SYSTEM:

CASE NUMBER: *5T54000464*
CASE TYPE: *AQUIFER AFFECTED*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED: *TANK CLOSURE*
DATE DISCOVERED (blank if not reported): *1998-07-22*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported): *1998-07-22*
STATUS: *POLLUTION CHARACTERIZATION*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *NONE TAKEN*
DATE OF ENFORCEMENT (blank if not reported): *1965-01-01*

ENTER DATE (blank if not reported): *1999-05-13*
REVIEW DATE (blank if not reported): *1998-05-13*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *2000-01-27*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported): *1998-09-24*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration): *1999-10-25*
MTBE GROUNDWATER CONCENTRATION (parts per billion): *EQUAL TO 920000*
MTBE SOIL CONCENTRATION (parts per million): *EQUAL TO 200*
MTBE CNTS: *2*
MTBE FUEL: *1*
MTBE TESTED: *YES*
MTBE CLASS: *A*

Target Property: CA

JOB: SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 7 **DIST/DIR:** 0.38 NE **MAP ID:** 8

NAME: HATHAWAY S NURSERY
ADDRESS: 16013 AVE 296
VISALIA CA 93277
TULARE
CONTACT:

REV: 01/12/06
ID1: T0610700032
ID2:
STATUS: REMEDIATION PLAN
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *5F*
LOCAL CASE NUMBER: *403*
RESPONSIBLE PARTY: *WILLIAM R. HAYNES*
ADDRESS OF RESPONSIBLE PARTY: *UNDEFINED*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *5T54000031*
CASE TYPE: *AQUIFER AFFECTED*
SUBSTANCE LEAKED: *REGULAR GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED: *TANK CLOSURE*
DATE DISCOVERED (blank if not reported): *1986-08-21*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported): *1986-08-21*
STATUS: *REMEDIATION PLAN*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *COR*
DATE OF ENFORCEMENT (blank if not reported): *1988-08-04*

ENTER DATE (blank if not reported): *1987-10-27*
REVIEW DATE (blank if not reported): *1998-03-18*
DATE OF LEAK CONFIRMATION (blank if not reported): *1988-05-18*
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1990-02-27*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported): *1993-09-01*
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1993-09-02*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported): *1996-12-18*
DATE REMEDIAL ACTION UNDERWAY (blank if not reported): *1996-10-31*
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported): *1987-10-27*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration): *1997-01-30*
MTBE GROUNDWATER CONCENTRATION (parts per billion): *LESS THAN 5*
MTBE SOIL CONCENTRATION (parts per million): *LESS THAN 0.5*
MTBE CNTS: *2*
MTBE FUEL: *1*
MTBE TESTED: *YES*
MTBE CLASS: *C*

Target Property: CA

JOB: SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 10 **DIST/DIR:** 0.39 SW **MAP ID:** 9

NAME:	TUL1077	REV:	01/08/07
ADDRESS:	16528 DILLON AVE	ID1:	GA8825528800
	VISALIA CA	ID2:	
	TULARE	STATUS:	
CONTACT:		PHONE:	

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD:
LOCAL CASE NUMBER:
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *YES*
MTBE CLASS: *

Target Property: CA **JOB:** SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 9 **DIST/DIR:** 0.39 SW **MAP ID:** 9

NAME:	TUL1056	**REV:**	01/08/07
ADDRESS:	16528 DILLON AVE	**ID1:**	GA4045789420
	VISALIA CA	**ID2:**	
	TULARE	**STATUS:**	
CONTACT:		**PHONE:**	

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD:
LOCAL CASE NUMBER:
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *YES*
MTBE CLASS: *

Target Property: CA **JOB:** SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 12 **DIST/DIR:** 0.44 SE **MAP ID:** 11

NAME: TUL1008
ADDRESS: 22208 BOSTON AVENUE
EXETER CA
TULARE
CONTACT:

REV: 01/08/07
ID1: GA9497617423
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD:
LOCAL CASE NUMBER:
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *YES*
MTBE CLASS: *

Target Property: CA

JOB: SJXVL

SOLID WASTE LANDFILL SITE

SEARCH ID: 2 **DIST/DIR:** 0.47 SW **MAP ID:** 2

NAME:	LINDCOVE AG FIELD STATION	REV:	07/03/00
ADDRESS:	22963 CARSON AVENUE	ID1:	WMUD5D100803N02
	EXETER CA 93221	ID2:	
	TULARE	STATUS:	ACTIVE
CONTACT:	LOUIS WHITENDALE	PHONE:	2095922408

WMUDS FACILITY INFORMATION (blank = not reported)

Regional ID :
NPDES ID :
Region: *5F*
Edit Date:
Last Edit:

Waste Discharger Facility: *Yes*

Sub Chapter 15 Facility: *No*
Solid Waste Assessment Test Site: *No*
Toxic Pits Cleanup Act Facility: *Yes*
RCRA Facility: *No*
Department of Defense Facility: *No*
Municipal Solid Waste Facility: *No*

Total WMUS at Facility: *1*
Facility Open to the Public: *No*
Facility Type: *AGR*
SIC 1 and SIC 2: *7391 /*

Primary Waste Type: *HAZARDOUS: WASHWATER WASTE (product waswater wastes: e.g.. photo reuse*
Secondary Waste Type:
Tons Per Day: *0*
Complexity: *CATEGORY B - Any facility having a physical. chemical. or biological waste treatment system (except for septic systems with subsurface disposal). or any Class II or III disposal site. or facilites without treatment systems that are complex. such as marina*

LAND OWNER INFORMATION

Land Owner:
Department:
Contact and Phone: .
Land Owner Address: . .

AGENCY INFORMATION

Agency Name: *UNIVERSITY OF CALIFORNIA*
Department:
Agency Contact and Phone: *FRED PERRY. 9167523932*

WASTE MANAGEMENT UNIT INFORMATION (blank = not reported)

WMU ID : *5D100803N02-01*
WMU Status:
WMU Size in Acres:
Year WMU Will Reach Capacity:
Close Plan: *0*
Avg Depth to Groundwater: *0*
Primary Liner Present: *0*

Target Property: CA

JOB: SJXVL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 13 **DIST/DIR:** NON GC **MAP ID:**

NAME: FOOTHILL AUTOMOTIVE
ADDRESS: 32812 SIERRA DR
LEMON COVE CA 93244
TULARE
CONTACT:

REV: 01/12/06
ID1: T0610700275
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *5F*
LOCAL CASE NUMBER: *657*
RESPONSIBLE PARTY: *MIKE SMITH*
ADDRESS OF RESPONSIBLE PARTY: *P. O. BOX 12 , LEMON COVE, CA 93244*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *5T54000282*
CASE TYPE: *AQUIFER AFFECTED*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED: *TANK CLOSURE*
DATE DISCOVERED (blank if not reported): *1992-01-21*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported): *1992-07-21*
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency): *OTHER ACTIONS TAKEN-REMEDIAL ACTIONS OTHER THAN THOSE ACCOUNTED FOR BY THE OTHER CODES HAVE TAKEN PLACE AT A SITE*
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *CLOS*
DATE OF ENFORCEMENT (blank if not reported): *1995-04-03*

ENTER DATE (blank if not reported): *1993-02-22*
REVIEW DATE (blank if not reported): *1995-05-30*
DATE OF LEAK CONFIRMATION (blank if not reported): *1993-01-04*
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1999-04-29*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1999-07-01*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported): *1999-08-05*
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported): *2001-08-10*
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *2002-10-16*
REPORT DATE (blank if not reported): *1993-01-04*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration): *1999-05-26*
MTBE GROUNDWATER CONCENTRATION (parts per billion): *LESS THAN 5*
MTBE SOIL CONCENTRATION (parts per million): *LESS THAN 0.5*
MTBE CNTS: *2*
MTBE FUEL: *1*
MTBE TESTED: *YES*
MTBE CLASS:

Environmental FirstSearch Descriptions

NPL: *EPA* NATIONAL PRIORITY LIST - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money.
A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.
FINAL - Currently on the Final NPL
PROPOSED - Proposed for NPL

NPL DELISTED: *EPA* NATIONAL PRIORITY LIST Subset - Database of delisted NPL sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.
DELISTED - Deleted from the Final NPL

CERCLIS: *EPA* COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.
PART OF NPL- Site is part of NPL site
DELETED - Deleted from the Final NPL
FINAL - Currently on the Final NPL
NOT PROPOSED - Not on the NPL
NOT VALID - Not Valid Site or Incident
PROPOSED - Proposed for NPL
REMOVED - Removed from Proposed NPL
SCAN PLAN - Pre-proposal Site
WITHDRAWN - Withdrawn

NFRAP: *EPA* COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.
NFRAP – No Further Remedial Action Plan
P - Site is part of NPL site
D - Deleted from the Final NPL
F - Currently on the Final NPL
N - Not on the NPL
O - Not Valid Site or Incident
P - Proposed for NPL
R - Removed from Proposed NPL
S - Pre-proposal Site
W – Withdrawn

RCRA COR ACT: *EPA* RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
RCRAInfo facilities that have reported violations and subject to corrective actions.

RCRA TSD: *EPA* RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM TREATMENT, STORAGE, and DISPOSAL FACILITIES. - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that treat, store, dispose, or incinerate hazardous waste.

RCRA GEN: *EPA* RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM GENERATORS - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that generate or transport hazardous waste or meet other RCRA requirements.
LGN - Large Quantity Generators
SGN - Small Quantity Generators
VGN – Conditionally Exempt Generator.
Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities.

Federal IC / EC: *EPA* BROWNFIELD MANAGEMENT SYSTEM (BMS) - database designed to assist EPA in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield grant Programs.
FEDERAL ENGINEERING AND INSTITUTIONAL CONTROLS- Superfund sites that have either an engineering or an institutional control. The data includes the control and the media contaminated.

ERNS: *EPA/NRC* EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

Tribal Lands: *DOI/BIA* INDIAN LANDS OF THE UNITED STATES - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are Federally-administered lands within a reservation which may or may not be considered part of the reservation.

State/Tribal Sites: *CA EPA* SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories. The categories are:
1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
Please Note: FirstSearch Reports list the above sites as DB Type (STATE).
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)
Please Note: FirstSearch Reports list the above sites as DB Type (OTHER).
Each Category contains information on properties based upon the type of work taking place at the site. For example, the CalSites database is now one of the six categories within SMPBRD and contains only confirmed

sites considered as posing the greatest threat to the public and/or the potential public school sites will be found within the School Property Evaluation Program, and those properties undergoing voluntary investigation and/or cleanup are in the Voluntary Cleanup Program.

CORTESE LIST-Pursuant to Government Code Section 65962.5, the Hazardous Waste and Substances Sites List has been compiled by Cal/EPA, Hazardous Materials Data Management Program. The CAL EPA Dept. of Toxic Substances Control compiles information from subsets of the following databases to make up the CORTESE list:

1. The Dept. of Toxic Substances Control; contaminated or potentially contaminated hazardous waste sites listed in the CAL Sites database. Formerly known as ASPIS are included (CALSITES formerly known as ASPIS).

2. The California State Water Resources Control Board; listing of Leaking Underground Storage Tanks are included (LTANK)

3. The California Integrated Waste Management Board; Sanitary Landfills which have evidence of groundwater contamination or known migration of hazardous materials (formerly WB-LF, now AB 3750).

Note: Track Info Services collects each of the above data sets individually and lists them separately in the following First Search categories in order to provide more current and comprehensive information: CALSITES: SPL, LTANK: LUST, WB-LF: SWL

State Spills 90: *CA EPA* SLIC REGIONS 1 - 9- The California Regional Water Quality Control Boards maintain report of sites that have records of spills, leaks, investigation, and cleanups.

State/Tribal SWL: *CA IWMB/SWRCB/COUNTY* SWIS SOLID WASTE INFORMATION SYSTEM-The California Integrated Waste Management Board maintains a database on solid waste facilities, operations, and disposal sites throughout the state of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites. For more information on individual sites call the number listed in the source field..

Please Note: This database contains poor site location information for many sites in the First Search reports; therefore, it may not be possible to locate or plot some sites in First Search reports.

WMUDS-The State Water Resources Control Board maintained the Waste Management Unit Database System (WMUDS). It is no longer updated. It tracked management units for several regulatory programs related to waste management and its potential impact on groundwater. Two of these programs (SWAT & TPCA) are no longer on-going regulatory programs as described below. Chapter 15 (SC15) is still an on-going regulatory program and information is updated periodically but not to the WMUDS database. The WMUDS System contains information from the following agency databases: Facility, Waste Management Unit (WMU), Waste Discharger System (WDS), SWAT, Chapter 15, TPCA, RCRA, Inspections, Violations, and Enforcement's.

Note: This database contains poor site location information for many sites in the First Search reports; therefore, it may not be possible to locate or plot some sites in First Search reports.

ORANGE COUNTY LANDFILLS LIST- A list maintained by the Orange County Health Department.

State/Tribal LUST: *CA SWRCB/COUNTY* LUSTIS- The State Water Resources Control Board maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks. Information for this database is collected from the states regional boards quarterly and integrated with this database.

SAN DIEGO COUNTY LEAKING TANKS- The San Diego County Department of Environmental Health maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks within its HE17/58 database. For more information on a specific file call the HazMat Duty Specialist at phone number listed in the source information field.

State/Tribal UST/AST: *CA EPA/COUNTY/CITY* ABOVEGROUND STORAGE TANKS LISTING-The Above Ground Petroleum Storage Act became State Law effective January 1, 1990. In general, the law requires owners or operators of AST's with petroleum products to file a storage statement and pay a fee by July 1, 1990 and every two years thereafter, take specific action to prevent spills, and in certain instances implement a groundwater monitoring program. This law does not apply to that portion of a tank facility associated with the production oil and regulated by the State Division of Oil and Gas of the Dept. of Conservation.

SWEEPS / FIDS STATE REGISTERED UNDEGROUND STORAGE TANKS- Until 1994 the State Water Resources Control Board maintained a database of registered underground storage tanks statewide referred to as the SWEEPS System. The SWEEPS UST information was integrated with the CAL EPA's Facility Index System database (FIDS) which is a master index of information from numerous California agency environmental databases. That was last updated in 1994. Track Info Services included the UST information from the FIDS database in its First Search reports for historical purposes to help its clients identify where tanks may possibly have existed. For more information on specific sites from individual paper files archived at the State Water Resources Control Board call the number listed with the source information.

INDIAN LANDS UNDERGROUND STORAGE TANKS LIST- A listing of underground storage tanks currently on Indian Lands under federal jurisdiction. California Indian Land USTS are administered by US EPA Region 9.

CUPA DATABASES & SOURCES- Definition of a CUPA: A Certified Unified Program Agency (CUPA) is a local agency that has been certified by the CAL EPA to implement six state environmental programs within the local agency's jurisdiction. These can be a county, city, or JPA (Joint Powers Authority). This program was established under the amendments to the California Health and Safety Code made by SB 1082 in 1994.

A Participating Agency (PA) is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A Designated Agency (DA) is an agency that has not been certified by the CUPA but is the responsible local agency that would implement the six unified programs until they are certified.

Please Note: Track Info Services, LLC collects and maintains information regarding Underground Storage Tanks from majority of the CUPAS and Participating Agencies in the State of California. These agencies typically do not maintain nor release such information on a uniform or consistent schedule; therefor, currency of the data may vary. Please look at the details on a specific site with a UST record in the First Search Report to determine the actual currency date of the record as provided by the relevant agency. Numerous efforts are made on a regular basis to obtain updated records.

State/Tribal IC: *CA EPA* DEED-RESTRICTED SITES LISTING- The California EPA's Department of Toxic Substances Control Board maintains a list of deed-restricted sites, properties where the DTSC has placed limits or requirements on the future use of the property due to varying levels of cleanup possible, practical or necessary at the site.

State/Tribal VCP: *CA EPA* SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.

The SMBRPD displays information in six categories. The categories are:

1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)

Please Note: FirstSearch Reports list the above sites as DB Type VC. Each Category contains information on properties based upon the type of work taking place at the site. The VC category contains only those properties undergoing voluntary investigation and/or cleanup and which are listed in the Voluntary Cleanup Program.

Floodplains: *FEMA* FLOODPLAINS – database of 100 year and 500 year flood zone boundaries for select counties in the United States

RADON: *NTIS* NATIONAL RADON DATABASE - EPA radon data from 1990-1991 national radon project collected for a variety of zip codes across the United States.

State Other: *CA EPA/COUNTY* SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.

The SMBRPD displays information in six categories. The categories are:

1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)

Please Note: FirstSearch Reports list the above sites as DB Type (STATE).

5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)

Please Note: FirstSearch Reports list the above sites as DB Type (OTHER).

Each Category contains information on properties based upon the type of work taking place at the site. For

example, the CalSites database is now one of the six categories within SMPBRD and contains only confirmed sites considered as posing the greatest threat to the public and/or the potential public school sites will be found within the School Property Evaluation Program, and those properties undergoing voluntary investigation and/or cleanup are in the Voluntary Cleanup Program.
LA COUNTY SITE MITIGATION COMPLAINT CONTROL LOG- The County of Los Angeles Public Health Investigation Compliant Control Log.
ORANGE COUNTY INDUSTRIAL SITE CLEANUPS- List maintained by the Orange County Environmental Health Agency.
RIVERSIDE COUNTY WASTE GENERATORS-A list of facilities in Riverside County which generate hazardous waste.
SACRAMENTO COUNTY MASTER HAZMAT LIST-Master list of facilities within Sacramento County with potentially hazardous materials.
SACRAMENTO COUNTY TOXIC SITE CLEANUPS-A list of sites where unauthorized releases of potentially hazardous materials have occurred.

OIL & GAS WELLS: *CADC* Listing of completions, pluggings and permits. Data is obtained only from digital data provided by the California Department of Conservation.

Environmental FirstSearch Database Sources

NPL: *EPA* Environmental Protection Agency

Updated quarterly

NPL DELISTED: *EPA* Environmental Protection Agency

Updated quarterly

CERCLIS: *EPA* Environmental Protection Agency

Updated quarterly

NFRAP: *EPA* Environmental Protection Agency.

Updated quarterly

RCRA COR ACT: *EPA* Environmental Protection Agency.

Updated quarterly

RCRA TSD: *EPA* Environmental Protection Agency.

Updated quarterly

RCRA GEN: *EPA* Environmental Protection Agency.

Updated quarterly

Federal IC / EC: *EPA* Environmental Protection Agency

Updated quarterly

ERNS: *EPA/NRC* Environmental Protection Agency

Updated semi-annually

Tribal Lands: *DOI/BIA* United States Department of the Interior

Updated annually

State/Tribal Sites: *CA EPA* The CAL EPA, Depart. Of Toxic Substances Control
Phone: (916) 323-3400

Updated quarterly/when available

State Spills 90: *CA EPA* The California State Water Resources Control Board

Updated when available

State/Tribal SWL: *CA IWMB/SWRCB/COUNTY* The California Integrated Waste Management Board
Phone:(916) 255-2331
The State Water Resources Control Board
Phone:(916) 227-4365
Orange County Health Department

Updated quarterly/when available

State/Tribal LUST: *CA SWRCB/COUNTY* The California State Water Resources Control Board
Phone:(916) 227-4416
San Diego County Department of Environmental Health

Updated quarterly/when available

State/Tribal UST/AST: *CA EPA/COUNTY/CITY* The State Water Resources Control Board
Phone:(916) 227-4364
CAL EPA Department of Toxic Substances Control
Phone:(916)227-4404
US EPA Region 9 Underground Storage Tank Program
Phone: (415) 972-3372
ALAMEDA COUNTY CUPAS:
* County of Alameda Department of Environmental Health
* Cities of Berkeley, Fremont, Hayward, Livermore / Pleasanton, Newark, Oakland, San Leandro, Union
ALPINE COUNTY CUPA:
* Health Department (Only updated by agency sporadically)
AMADOR COUNTY CUPA:
* County of Amador Environmental Health Department
BUTTE COUNTY CUPA
* County of Butte Environmental Health Division (Only updated by agency biannually)
CALAVERAS COUNTY CUPA:
* County of Calaveras Environmental Health Department
COLUSA COUNTY CUPA:
* Environmental Health Dept.
CONTRA COSTA COUNTY CUPA:
* Hazardous Materials Program
DEL NORTE COUNTY CUPA:
* Department of Health and Social Services
EL DORADO COUNTY CUPAS:
* County of El Dorado Environmental Health - Solid Waste Div (Only updated by agency annually)
* County of El Dorado EMD Tahoe Division (Only updated by agency annually)
FRESNO COUNTY CUPA:
* Haz. Mat and Solid Waste Programs
GLENN COUNTY CUPA:
* Air Pollution Control District
HUMBOLDT COUNTY CUPA:
* Environmental Health Division
IMPERIAL COUNTY CUPA:
* Department of Planning and Building
INYO COUNTY CUPA:
* Environmental Health Department
KERN COUNTY CUPA:
* County of Kern Environmental Health Department
* City of Bakersfield Fire Department

KINGS COUNTY CUPA:
* Environmental Health Services
LAKE COUNTY CUPA:
* Division of Environmental Health
LASSEN COUNTY CUPA:
* Department of Agriculture
LOS ANGELES COUNTY CUPAS:
* County of Los Angeles Fire Department CUPA Data as maintained by the Los Angeles County Department of Public Works
* County of Los Angeles Environmental Programs Division
* Cities of Burbank, El Segundo, Glendale, Long Beach/Signal Hill, Los Angeles,Pasadena, Santa Fe Springs, Santa Monica, Torrance, Vernon
MADERA COUNTY CUPA:
* Environmental Health Department
MARIN COUNTY CUPA:
* County of Marin Office of Waste Management
* City of San Rafael Fire Department
MARIPOSA COUNTY CUPA:
* Health Department
MENDOCINO COUNTY CUPA:
* Environmental Health Department
MERCED COUNTY CUPA:
* Division of Environmental Health
MODOC COUNTY CUPA:
* Department of Agriculture
MONO COUNTY CUPA:
* Health Department
MONTEREY COUNTY CUPA:
* Environmental Health Division
NAPA COUNTY CUPA:
* Hazardous Materials Section
NEVADA COUNTY CUPA:
* Environmental Health Department
ORANGE COUNTY CUPAS:
* County of Orange Environmental Health Department
* Cities of Anaheim, Fullerton, Orange, Santa Ana
* County of Orange Environmental Health Department
PLACER COUNTY CUPAS:
* County of Placer Division of Environmental Health Field Office
* Tahoe City
* City of Roseville Roseville Fire Department
PLUMAS COUNTY CUPA:
* Environmental Health Department
RIVERSIDE COUNTY CUPA:
* Environmental Health Department
SACRAMENTO COUNTY CUPA:
* County Environmental Mgmt Dept, Haz. Mat. Div.
SAN BENITO COUNTY CUPA:
* City of Hollister Environmental Service Department
SAN BERNARDINO COUNTY CUPAS:
* County of San Bernardino Fire Department, Haz. Mat. Div.
* City of Hesperia Hesperia Fire Prevention Department
*City of Victorville Victorville Fire Department
SAN DIEGO COUNTY CUPA:
* The San Diego County Dept. of Environmental Health HE 17/58
SAN FRANCISCO COUNTY CUPA:
* Department of Public Health
SAN JOAQUIN COUNTY CUPA:
* Environmental Health Division
SAN LUIS OBISPO COUNTY CUPAS:
* County of San Luis Obispo Environmental Health Division

* City of San Luis Obispo City Fire Department
SAN MATEO COUNTY CUPA:
* Environmental Health Department
SANTA BARBARA COUNTY CUPA:
* County Fire Dept Protective Services Division
SANTA CLARA COUNTY CUPAS:
* County of Santa Clara Hazardous Materials Compliance Division
* Santa Clara County Central Fire Protection District (Covers Campbell, Cupertino, Los Gatos, & Morgan Hill)
* Cities of Gilroy, Milpitas, Mountain View, Palo Alto, San Jose Fire, Santa Clara, Sunnyvale
SANTA CRUZ COUNTY CUPA:
* Environmental Health Department
SHASTA COUNTY CUPA:
* Environmental Health Department
SIERRA COUNTY CUPA:
* Health Department
SISKIYOU COUNTY CUPA:
* Environmental Health Department
SONOMA COUNTY CUPAS:
* County of Sonoma Department Of Environmental Health
* Cities of Healdsburg / Sebastopol, Petaluma, Santa Rosa
STANISLAUS COUNTY CUPA:
* Department of Environmental Resources Haz. Mat. Division
SUTTER COUNTY CUPA:
* Department of Agriculture
TEHAMA COUNTY CUPA:
* Department of Environmental Health
TRINITY COUNTY CUPA:
* Department of Health
TULARE COUNTY CUPA:
* Environmental Health Department
TUOLUMNE COUNTY CUPA:
* Environmental Health
VENTURA COUNTY CUPAS:
* County of Ventura Environmental Health Division
* Cities of Oxnard, Ventura
YOLO COUNTY CUPA:
* Environmental Health Department
YUBA COUNTY CUPA:

Updated quarterly/annually/when available

State/Tribal IC: *CA EPA* The California EPA Department of Toxic Substances Control.

Updated Updated quarterly/annually/when available

State/Tribal VCP: *CA EPA* The California EPA Department of Toxic Substances Control.

Updated Updated quarterly/annually/when available

Floodplains: *FEMA* Federal Emergency Management Agency

Updated when available

RADON: *NTIS* Environmental Protection Agency, National Technical Information Services

Updated periodically

State Other: *CA EPA/COUNTY* The CAL EPA, Depart. Of Toxic Substances Control
Phone: (916) 323-3400
The Los Angeles County Hazardous Materials Division
Phone: (323) 890-7806
Orange County Environmental Health Agency
Phone: (714) 834-3536
Riverside County Department of Environmental Health, Hazardous Materials Management Division
Phone:(951) 358-5055
Sacramento County Environmental Management Department

Updated quarterly/when available

OIL & GAS WELLS: *CADC* California Department of Conservation.

Updated quarterly

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: CA

JOB: SJXVL

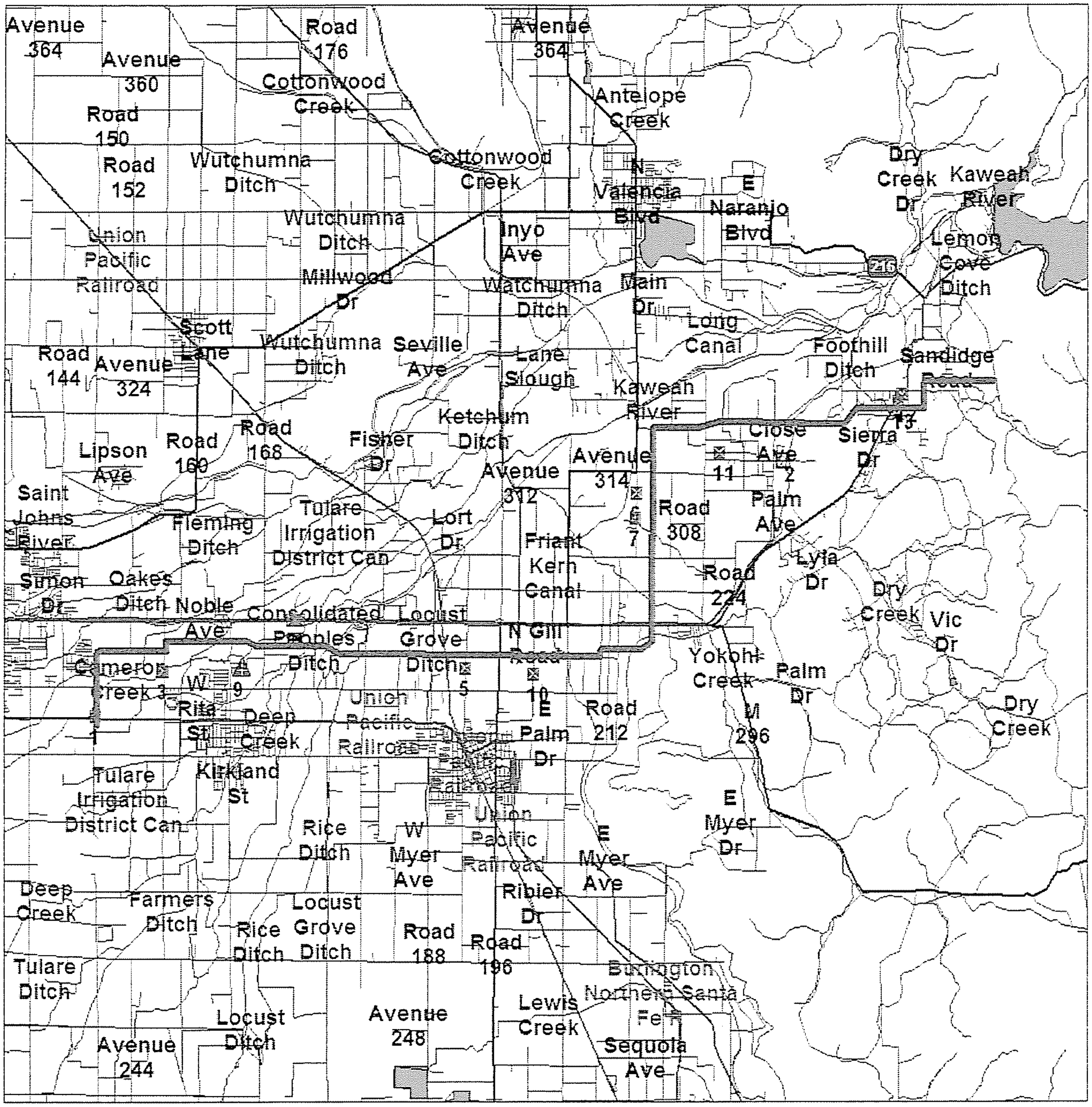
Street Name	Dist/Dir	Street Name	Dist/Dir
Arroyo St	0.19 NW	North Anderson	0.03 SW
Avenue 288	0.00 --	NORTH Anderson Rd	0.00 --
Avenue 292	0.00 --	NORTH Farmersville B	0.00 --
Avenue 294	0.22 NE	NORTH Filbert Rd	0.00 --
Avenue 295	0.24 NW	NORTH Gill Rd	0.00 --
Avenue 296	0.00 --	NORTH Kaweah Ave	0.00 --
Avenue 300	0.00 --	NORTH Spruce Rd	0.00 --
Avenue 304	0.00 --	Rio Linda St	0.09 NW
Avenue 314	0.00 --	Road 148	0.02 NW
Avenue 318	0.19 SE	Road 152	0.00 --
Avenue 320	0.01 SW	Road 156	0.00 --
Avenue 324	0.00 --	Road 166	0.23 SW
Avenue 326	0.09 NW	Road 168	0.00 --
Cottage P O Dr	0.00 --	Road 208	0.00 --
Drive 164	0.19 NE	Road 210	0.00 --
E College Ave	0.20 NW	Road 212	0.00 --
E Howard Ave	0.09 NW	Road 220	0.00 --
E Howard Ct	0.14 NW	Road 223	0.00 --
E Iris Ave	0.15 NW	Road 224	0.03 SW
E Judy Ave	0.00 --	Road 228	0.00 --
E Laurel Ave	0.09 NW	Road 236	0.21 NW
E Meadow Ave	0.12 NW	Road 240	0.00 --
E Paradise Ave	0.10 NW	Road 244	0.00 --
E Sue Ave	0.10 NW	Road 248	0.00 --
EAST College Ave	0.20 NW	S Arroyo St	0.14 NW
EAST Howard Ave	0.09 NW	S Casablanca St	0.19 NW
EAST Howard Ct	0.14 NW	S Grand St	0.25 NW
EAST Iris Ave	0.15 NW	S Rio Linda Ct	0.09 NW
EAST Judy Ave	0.00 --	S Sol St	0.25 NW
EAST Laurel Ave	0.09 NW	Sandidge Rd	0.10 NW
EAST Meadow Ave	0.12 NW	Sierra Dr	0.00 --
EAST Paradise Ave	0.10 NW	SOUTH Arroyo St	0.14 NW
EAST Sue Ave	0.10 NW	SOUTH Casablanca St	0.19 NW
Feemster Ave	0.09 NW	SOUTH Grand St	0.25 NW
Goodale Ln	0.24 NE	SOUTH Rio Linda Ct	0.09 NW
High Sierra Dr	0.24 SE	SOUTH Sol St	0.25 NW
Moffet Dr	0.00 --	Spruce Ave	0.23 NW
N Anderson Rd	0.00 --	State Highway 198	0.22 NE
N Farmersville Blvd	0.00 --	Teresa St	0.19 SW
N Filbert Rd	0.00 --	Tulare Ave	0.00 --
N Gill Rd	0.00 --	Valley View Rd	0.02 SW
N Kaweah Ave	0.00 --	Visalia Pky	0.03 NW
N Spruce Rd	0.00 --	Wescott Ave	0.16 NW
Noble Ave	0.21 NE		

Environmental FirstSearch

1 Mile Radius from Line

Single Map:

, CA



Source: U.S. Census TIGER Files

Linear Search Line ....

Identified Site, Multiple Sites, Receptor ....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand..........

Railroads ....

Floodplains: 100 Year, 500 Year ....

Oil Gas Wells ....

Appendix I

APPENDIX I Aesthetics Background Information

VISUAL SIMULATION METHODS

As part of the Southern California Edison Company (SCE) Cross Valley Loop Project visual resources analysis, Environmental Vision produced a series of visual simulations to illustrate "before" and "after" visual conditions in the project area. The simulations illustrate the location, scale and appearance of the proposed project as seen from representative public viewpoints. The visual study employs photographs taken in June 2006 using a single lens reflex (SLR) camera. All but two of the images use a 50mm lens which represents a horizontal view angle of 40 degrees. The simulation from Avenue 304 (Figure 4.1-20) was photographed with a 28mm lens representing a horizontal view angle of 65 degrees, and the simulation from Avenue 320 (Figure 4.1-21) uses a 35mm lens representing a view angle of 54 degrees.

Environmental Vision employed computer modeling and rendering techniques to produce the visual simulation images. The computer-generated visual simulations are the results of an objective analytical and computer modeling process described briefly below.

The eleven simulation vantage points are summarized in the table below and delineated on Figure 5. Visual simulations have been prepared to illustrate the transmission project as seen from the following locations along the 18.6-mile-long project route:

Location (Figure #)	Viewpoint Number*
Road 148 at irrigation canal (Figure 4.1-13)	#3
South Rio Linda Street (Figure 4.1-14)	#6
Farmersville Boulevard north of Terry (Figure 4.1-15)	#12
Farmersville Boulevard at Noble (near Highway 198) (Figure 4.1-16)	#13
Highway 198 at Southern Pacific railroad crossing (near Structure 38) (Figure 4.1-17)	#20
Road 210 near Avenue 292 (Figure 4.1-18)	#25
Highway 198 near Road 212 (Figure 4.1-19)	#26
Avenue 304 looking toward proposed pole 61 (Figure 4.1-20)	#29
Avenue 320 (Cottage PO) (Figure 4.1-21)	#32
Highway 198 near Avenue 324 (Figure 4.1-22)	#36
Avenue 324 looking toward proposed connection point (Figure 4.1-23)	#39

* For photograph viewpoint locations, refer to Figure 4.1-2.

Existing GIS and engineering data and digital aerial photographs supplied by SCE engineers provided the basis for developing an initial digital model. Three-dimensional models of the proposed transmission poles were also developed using design data and GIS project data supplied by SCE. The three-dimensional computer model of the proposed transmission facility was combined with the digital site model to produce a complete computer model of the proposed project. A set of computer-generated perspective plots were then produced to represent the selected viewpoints.

For each of the simulation viewpoints, viewer location was digitized from topographic maps using 5 feet as the assumed eye level. Computer "wire frame" perspective plots were then overlaid on photographs of the key observation points to verify scale and viewpoint location. Digital visual simulation images were then produced based on computer renderings of the 3-D model combined with digital versions of the selected site photographs. The final "hardcopy" visual simulation images contained in the report were printed from the digital image files and produced in color on 8.5 by 11 inch sheets as Figures 4.1-13 through 4.1-23.

Public Plans and Policies

The following section describes plans and policies related to visual quality for the jurisdictions crossed by the San Joaquin Cross Valley Loop Project route. The construction and operation of this project does not conflict with any environmental plans, policies, or regulations adopted by agencies with jurisdiction over local aesthetic regulations. Because the project is exempt from local planning restrictions based on CPUC GO 131-D (Section XIV.B), the following is provided for informational purposes only.

<u>Documents Reviewed</u>

The following is a list of documents that were reviewed for this analysis:

- City of Visalia General Plan Policy Summary
- City of Farmersville General Plan Update
- City of Farmersville Highway 198 Corridor Specific Plan
- County of Tulare County General Plan
- California Department of Transportation: Scenic Highway Program
- City of Visalia General Plan

Although the project lies wholly within the County of Tulare, a portion of it is within several hundred feet of the southeastern boundary of the City of Visalia and within the City's sphere of influence. The discussion below identifies plans and policies relevant to visual quality that are important. The City of Visalia General Plan is not comprehensively updated, but the following elements of the plan recognize the value of visual quality and give general guidance.

Land Use Element 2020 Plan. The City of Visalia has addressed visual quality in the Goal and Policies chapter of the Land Use Element. The applicable policies of this chapter are discussed below.

Goal 1: Preserve and Enhance Visalia's Unique Character

Community Identity Objectives

Maintain and enhance Visalia's physical diversity, visual qualities and small town characteristics. (Chapter 1, page 1-18).

In Chapter 2, Existing Conditions and Projections, the plan also identifies community values and recommends ways to preserve these values:

Visalia Community Values (Table 2-1): Community Image

Natural & rural landscape: Area agricultural lands and natural features like Great Valley Oak trees and waterways have combined to create scenic vistas and highly valued rural open space system.

'Scenic corridor': Agricultural land uses and large Valley Oaks along both sides of SH 198 and 99 to Akers Rd. have created a unique western entryway to Visalia. This rural gateway has also created an open space buffer to SH 99 which has contributed to Visalia's uniqueness in the San Joaquin Valley. (Chapter 2, p. 2-3)

Scenic Highways Element, Adopted 1976.

This element of the General Plan addresses the fact that Highway 198 is eligible for scenic highway designation and provides recommendations for the route west of Road 156 within the sphere of influence of the city. These primarily address land uses visible and immediately adjacent to the corridor.

It recommends for the eastern section of Highway 198 the following:

198-East The 198-East element adopted by the city council on July 7, 1975, recommended the following land use policies, which were aimed at protecting the visual quality of this study area:

1. It is recommended that no industrial uses be allowed within the corridor due to the basic incompatibility of such uses with the character which must be provided within the gateway entrance to Visalia. The basic non-compatibility of manufacturing within an area which receives high visibility from tourist travelers cannot be overlooked and provisions must be made to assure that industrial growth does not continue.

5. It is recommended that street trees be required as part of any new construction, along major arterials with a maximum separation of 40 feet.

The project will be partially visible from portions of Highway 198, however within the sphere of influence of the City of Visalia, the project will not be visually prominent. Also, numerous existing distribution lines, cell towers, industrial, commercial and residential land uses are currently visible from the highway, and the addition of distant transmission poles will not be visually incompatible with the landscape setting of this policy.

Waterways and Trails Master Plan, December 2004

This plan proposes the construction of non-motorized recreation trail along Cameron Creek. A portion of proposed trail will follow the existing power line easement with an optional alignment along the creek. The project parallels this creek for a short distance near the Rector Substation and crosses it just north of the Rector Substation (between poles 3 and 4). The trail system might include amenities such as kiosks and rest areas (p. i-8). No visual guidelines are recommended for this master plan, and the current conditions of Cameron Creek are more evocative of the utilitarian agricultural land use of the area than a naturalistic creek. Given that the project proposes replacing the existing lattice tower structures with tubular steel poles which take up less ground area, the project will potentially facilitate siting trail facilities along this section, thus being entirely compatible with this master plan.

City of Farmersville General Plan Update, 2004

The project route passes through the city limits of the City of Farmersville. The City of Farmersville General Plan Update adopted in 2004 includes a number of objectives, policies and concerns regarding visual quality. This particular plan won a 2004 National Planning Award from the American Planning Association. The following sections address visual quality:

Part I: Land Use, Circulation, Open Space/Conservation Elements

Chapter 1: Introduction

General Plan Objectives

One of the objectives of the general plan is to:

"Create a unique and attractive city by investing in projects that will enhance Farmersville's appearance and marketability." (p. 1-4)

Chapter 2: Land Use Element

Issue One: Community Image

Goals, Objectives, Action Plans

Public Improvements

I. Foster an attractive, clean and well-maintained community.

The City should design and install "Welcome to Farmersville" community identification signs at the Highway 198/Farmresville Boulevard interchange. (p. 2-15)

This is further discussed below under Issue Fourteen.

Issue Fourteen: Special Issues: State Highway 198

Goals, Objectives, Action Plans

I. The city shall take actions to establish an attractive development pattern along lands fronting State Highway 198.

2. Require attractive landscape and building designs that will reflect positively on Farmersville. (p. 2-67)

The General Plan discusses issues surrounding the entrance to the city from Highway 198 at Farmersville Boulevard. The plan points out that this interchange should be considered a gateway to the city and measures should be taken to establish attractive development along the highway including working in concert with Caltrans to provide landscaping within the Highway198 right-of-way. This development could include commercial and industrial land uses augmented by landscaping and welcome signage.

Part II: Community Profile

Chapter 3: Resources

A. Scenic Resources

This section of the plan includes extensive analysis of the scenic qualities of roadways in the City as part of the Community Profile. Major travel corridors in the City were evaluated for their scenic qualities. The particular point at which the project crosses Farmersville Boulevard was given the lowest rating in terms of visual resources as it is characterized by "visual chaos" (p. 3-2). Existing overhead utilities and unscreened farm equipment contribute to the low visual quality of the area. No specific policies are associated with the community profile visual evaluation, however, given the community's concern with this road as a gateway, mitigation measures for this crossing are proposed as part of the project in Section VI. Mitigation measures proposed as part of the project will ensure compatibility with Farmersville General Plan Policies.

City of Farmersville Highway 198 Corridor Specific Plan

In addition to the General Plan, the City of Farmersville prepared a specific plan addressing issues in northern Farmersville along the Highway 198 corridor and around the Farmersville Boulevard interchange. This area is "generally bounded by State Highway 198 to the north, Road 168 to the east, approximately 350 feet south of Terry Avenue on the south, and approximately one-half mile west of Farmersville Boulevard on the west" (p. 1-1). The project falls within this area. Like the General Plan, many of the policies and goals address the fact that the Farmersville Boulevard interchange is a gateway to the city and, as such, should be attractively planned. Following are other policies and goals related to visual quality in this area:

Purpose and Scope of Plan

- "The Specific Plan will be utilized to ensure that future land uses will be served with an orderly and efficient infrastructure system, and that development contributes in a positive manner to the gateway aesthetics, and quality of life in the City." (Page 1-1)

- "To establish gateway treatments that enhance the overall community image" (Page 1-4)

Historical Background (of the Plan)

-"The Specific Plan implements the General Plan goals, objectives and action plans and policies in the Farmersville Land Use Element:, which state as follows:

> Foster an attractive, clean and well-maintained community. ...
>
> Promote commercial development that is aesthetically attractive ...
>
> The City shall take actions to establish an attractive development pattern along lands fronting State Highway 198." (pp. 1-6 and 1-7).

State Highway 198 Corridor (East of Farmersville Boulevard)

"Screening may be desired at certain locations along the frontage using a treeline as a strong edge element. In other locations along State Highway 198, it may be desirable to create "view windows" so passing motorists can catch a glimpse of a future structure such as a well designed hotel...." (p. 4-8)

Primary Gateways: Farmersville Boulevard

"A treeline along the east and west right-of-way could be evergreen, with the primary intersections along the corridor ...As an alternative, a strong treeline could be established along both sides of the corridor providing shade" (p. 4-10).

4.5 Specific Plan Circulation

Specific streetscape treatments for arterials such as Farmersville Boulevard are detailed and depicted in conceptual plans in this section. These include street tree plantings spaced at 35 feet on center and smaller median tree plantings (p. 4-15 through 4-16.)

Chapter 5: Design Guidelines

Chapter 5 of the Specific Plan includes recommended tree species as well as conceptual plans for streetscape treatments along Farmersville Boulevard and at major intersections

The type of planting recommended in the Specific Plan would partially screen views of the project from Farmersville Boulevard. As part of the project, mitigation measures including tree planting in the project right-of-way are proposed to screen views of the project from Farmersville Boulevard and improve the visual quality of this area (refer to in Section VI).

Structural Design and Theme Integration

"Undesirable elements of project design include ... highly reflective surfaces" (p. 5-16)

As described in Section VI Mitigation Measures general mitigation measures to reduce the project's potential glare effects include the installation of non-specular conductors and dulled or weathered finish poles.

County of Tulare General Plan

The County of Tulare General Plan includes several policy elements recognizing visual quality. These primarily relate to establishing scenic corridors along county highways. The Tulare County General Plan is currently being updated. Anticipated revisions include further development of guidelines for scenic corridors along Highway 198. Following are polices and goals related to this:

Section 1: Land Use and Urban Boundaries

Goal LU.1.D Recreation and Scenic Values

Policies:

1LU.D.1. State highways of significant scenic value, in addition to those already identified by the state, should be identified for possible addition to the Preliminary Plan of Scenic Highways recently completed by the State.

1LU.D.2. County highways of significant scenic importance should be identified and proposed for treatment as locally sponsored routes to complement the proposed State System.

1LU.D.7. Areas along principal highway entrances to communities which lend themselves to treatment or preservation as scenic corridors should be identified and proposed for such treatment.

Tulare County General Plan Update (2001), Section 5, Scenic Highways

Additionally, the Tulare County General plan includes a specific section addressing Scenic Highways which gives recommendations for establishing a scenic corridor zoning ordinance that will include the following provisions:

Architectural Review – Design standards so that building and other structures incompatible with significant features of either the urban or rural environment will be controlled.

Site Plan Review – Layout and landscaping of all development regulated so that the scenic quality of the area is not destroyed. This might include the screening of subdivisions from the roadway, depressed parking areas and other procedures discussed previously in the subdivision control section of this chapter.

Land Use – In rural areas, permitted land uses limited to single-family residential, agriculture, parks, trails, open space, and other appropriate uses. A conditional use permit may be utilized for certain uses, including compatible commercial.

Building Heights – Regulation of building height so that scenic resources are not visually obstructed. (p. 5-5)

Existing views from the Highway include existing distribution lines. The transmission line is consistent with elements found in the agricultural landscape along Highway 198 which currently include distribution lines and cell towers.

California Department of Transportation: California Scenic Highway Program

The State Scenic Highways program, a provision of the Streets and Highways code, was established by the Legislature in 1963 to preserve and enhance the natural beauty of California (Caltrans, 1996). The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a state scenic highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives from Caltrans the designation. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways. However, state legislation is required.

There are no designated State Scenic Highways within the project viewshed. However,

Highway 198 is an eligible State Scenic Highway. The project route parallels Highway 198 for approximately eight miles and crosses it in two places—just south of Lemon Cove and at the base of Badger Hill.

A local interest group, the Three Rivers Village Foundation, is currently spearheading an initiative to designate a 16-mile stretch of Highway 198 as an official State Scenic Highway. The route begins at Road 248 (Mile marker 28.27), and extends east into the foothills. The beginning of this scenic route will be approximately one mile north of where project site crosses Highway 198 near Lemon Cove.

The most sensitive portion of Highway 198, the section from Lemon Cove north, is not affected by the project. The existing visual character of this segment of Highway 198 includes views of vertical man-made structures such as distribution lines and cell towers, and is not as sensitive.

Appendix J

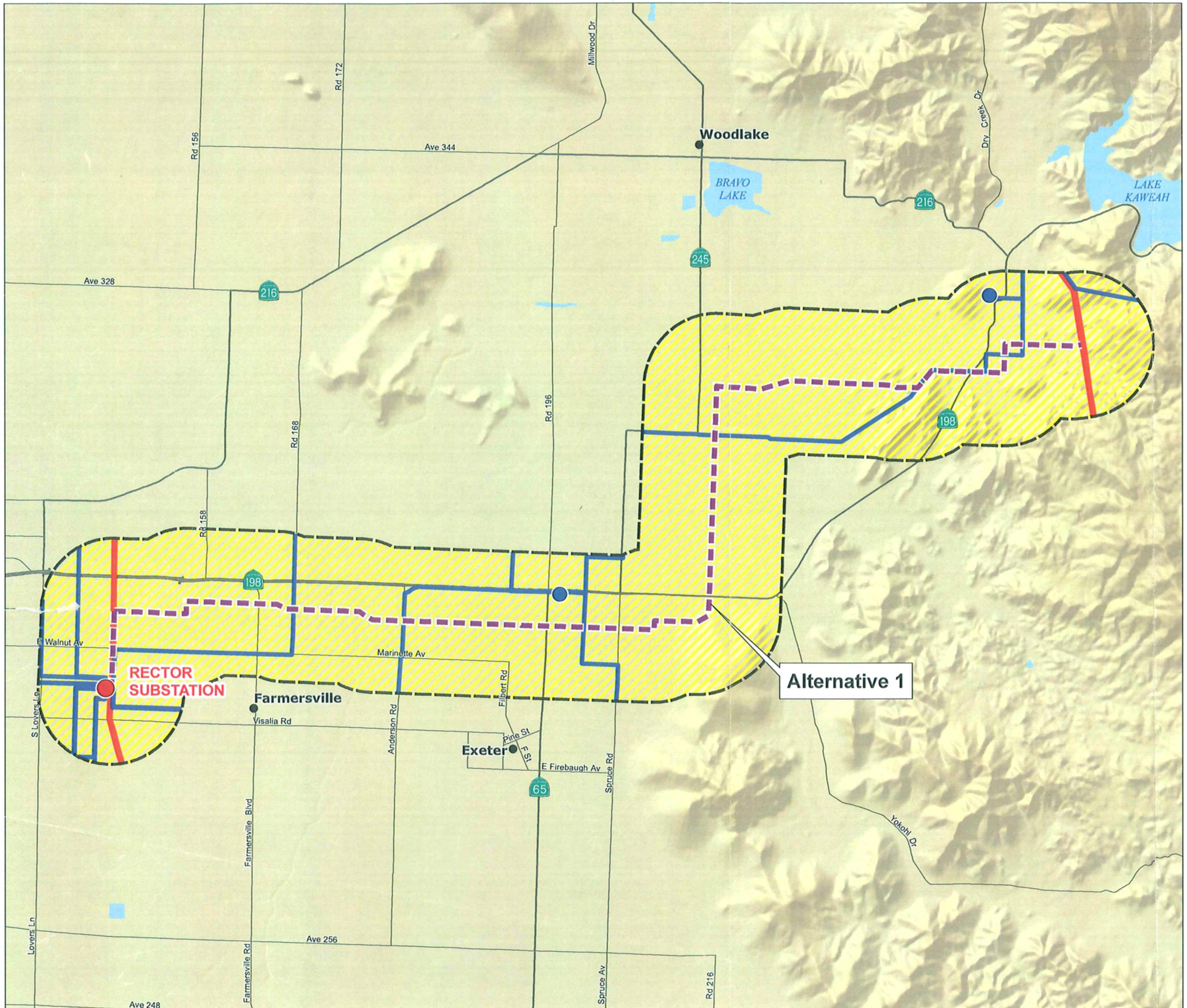
APPENDIX J Permit and Review Requirements

In addition to the CPCN, SCE is required to obtain a number of other permits from federal state and local agencies. The following lists the permits, approvals, and licenses that SCE anticipates obtaining from jurisdictional agencies.

Permit/Approval/Consultation	Agency	Jurisdiction/Purpose
Federal Agencies		
Section 7 Consultation, Endangered Species Act	US Fish and Wildlife Service	Construction, operation, and maintenance on land that may affect a federally listed species or its habitat; incidental take authorization (if required)
Section 10 of the Rivers and Harbors Act	US Army Corps of Engineers	Construction across Navigable Waters
Nationwide or Individual Permit (Section 404 of the Clean Water Act)	US Army Corps of Engineers	Construction impacting Waters of the United States, including wetlands
Section 106 Review, National Historic Preservation Act	Advisory Council on Historic Preservation	Construction, operation, and maintenance on land that may affect cultural or historic resources
State Agencies		
Certificate of Public Convenience and Necessity	California Public Utilities Commission	Overall project approval and California Environmental Quality Act review
National Pollutant Discharge Elimination System Construction Storm water Permit	California Regional Water Quality Control Board (RWQCB)	Storm water discharges associated with construction activities disturbing more than 1 acre of land
Section 401 Water Quality Certification (or waiver)	RWQCB	Certifies that project is consistent with state water quality standards
Encroachment Permit	California Department of Transportation	Construction, operation, and maintenance within, under, or over state highway ROW
Endangered Species Consultation	California Department of Fish and Game	Construction, operation, and maintenance that may affect a state-listed species or its habitat; incidental take authorization (if required)
Local Agencies		
Encroachment Permit (ministerial)	City of Visalia City of Farmersville Tulare County	Construction, operation, and maintenance within, under, or over city road ROW

Appendix K

Appendix K
Electrical Infrastructure Within One Mile of Proposed Project



One Mile Radius

Alternative 1 (Proposed Project)

Existing Electrical (SCE, 2007)

220 kV Transmission Line

66 kV Transmission Line

220 kV Substation

66 kV Substation

Transportation Lines (TBM, 2008)

Water (TBM, 2008)

Cities (ESRI, 2000)

0 0.5 1 2 Miles

Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.

SOUTHERN CALIFORNIA EDISON

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