

## 3.0 ALTERNATIVES TO THE PROPOSED PROJECT

### 3.1 INTRODUCTION

PG&E evaluated a number of alternatives for achieving the project objectives before deciding to recommend the proposed project to the CPUC. Early in the planning process, PG&E transmission planning engineers considered a number of potential electric planning solutions to address the low voltage risks at the Sonoma and Pueblo substations and other system reliability concerns discussed in Chapter 2. PG&E studied a number of options involving various combinations of modifications to existing substations and transmission lines, as well as construction of a new substation and new transmission lines in Napa and Sonoma counties.

In addition to new transmission line facilities, PG&E considered other potential options, such as installation of voltage support devices or new generation power plants. However, these other options were either inadequate to solve the identified voltage problems or, in the case of new generation, infeasible due to cost, timing or environmental issues. Thus, of the available planning solutions, only options involving the installation of new transmission facilities were capable of meeting PG&E's basic project objectives.

Of these transmission options, a new 115 kV transmission line between the Lakeville and Sonoma substations was determined to best meet project objectives while minimizing environmental impacts. PG&E then developed a number of feasible route alternatives for the proposed Lakeville-Sonoma 115 kV line. Figure 3-1 shows the proposed project and four alternative routes between the Lakeville and Sonoma substations that were identified as the best choices for such a line. They are made up of various combinations of numbered segments as listed in Table 3-1.

**Table 3-1  
Alternatives by Segment**

<b>Alternative</b>	<b>Segments</b>	<b>Total Miles</b>	<b>Estimated Cost</b>
Proposed Project	1 – 2 – 17	7.23	\$28,365,989
Alternative 1	1 – 3 – 12 – 11 – 9 – 8 – 7 – 5 – 6	8.45	\$32,925,905
Alternative 2	1 – 2 – 13 – 12 – 4 – 5 – 6	7.85	\$32,915,914
Alternative 3	14 – 10 – 11 – 4 – 5 – 6	8.30	\$34,274,976
Alternative 4	14 – 15 – 16 – 8 – 7 – 5 – 6	8.78	\$30,447,564

The alternatives are comprised of various combinations of pole types and configurations (e.g., single- and double-circuit lines, wood and tubular steel poles, some with distribution lines underneath) as shown in Figure 3-1 and Table 3-2. Construction of the transmission line along any of the alternative routes would require the same modifications to the Lakeville and Sonoma substations as with the

**Table 3-2  
15 kV Transmission Line Construction (for all segments and alternatives)**

Segment	Study Corridor (Ft)	Existing Lines	Proposed Construction	Miles (approx.)	Segment Miles (approx.)
1	200	Wood Pole Single-circuit w/ Distribution Under	TSP Double-circuit w/ Distribution Under	0.70	4.64
	200	Wood Pole Single-circuit	TSP Double-circuit	0.92	
	200	Wood Pole Single-circuit w/ Distribution Under	TSP Double-circuit w/ Distribution Under	0.22	
	200	Wood Pole Single-circuit	TSP Double-circuit	2.44	
2	200	Wood Pole Single-circuit w/ Distribution Under	TSP Double-circuit w/ Distribution Under	0.36	0.85
	200	Wood Pole Single-circuit	TSP Double-circuit	0.45	
3	200	Wood Pole Single-circuit w/ Distribution Under	TSP Double-circuit w/ Distribution Under	0.40	1.02
	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.21	
4	200	no Line	Wood Pole Single-circuit	0.52	1.52
	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.29	
5	1000	no Line	Wood Pole Single-circuit	1.11	0.50
	1000	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.41	
6	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.49	0.09
	200	Wood Pole Single-circuit	TSP Double-circuit	0.09	
7	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.22	0.22
	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.48	
8	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.76	0.97
	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.97	
9	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.53	0.53
	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.18	
10	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.21	0.21
	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.21	
11	400	Lattice Steel Structure	New TSP Single-circuit	4.69	4.69
	400	Lattice Steel Structure	New TSP Single-circuit	1.64	
12	1000	no Line	Wood Pole Single-circuit	0.34	1.15
	200	no Line	Wood Pole Single-circuit	0.09	
13	200	Wood Pole Distribution Line	Wood Pole Single-circuit w/ Distribution Under	0.73	1.74
	200	Wood Pole Single-circuit w/ Distribution Under	TSP and Wood Double-circuit w/ Distribution Under	1.74	

proposed project. Figure 3-2 shows the entire study area for the alternatives with all of the segments. Figures 3-3(a) and 3-3(b) show all of the alternative segments on aerial photos.

## **3.2 DESCRIPTION OF ALTERNATIVES**

This section describes the routes and key features of the alternatives. For a comparison of the environmental effects of the alternatives and reasons that the proposed project was selected, please see section 3.4 Comparison of Alternatives.

### **3.2.1 Alternative 1**

This alternative follows the same alignment as the proposed project along the west half of the route, but turns south at Felder Road and runs adjacent to a residential subdivision (Temelec) before turning east at Watmaugh Road and north along Highway 12. Like the proposed project, segment 1 would replace an existing single-circuit wood pole 115 kV transmission line with a double-circuit 115 kV transmission line on tubular steel poles. The east half of this alternative would involve installing a new single-circuit transmission line that would carry existing distribution lines underneath. One portion of segment 3 (the west half) would involve installing the new transmission line adjacent to a portion of the Temelec subdivision where no distribution or transmission lines currently exist (see the light pink portion of segment 3 shown in Figure 3-1). Alternative 1 is over one mile longer than the proposed project.

### **3.2.2 Alternative 2**

This alignment is similar to the proposed project route, except that it turns south at Arnold Drive and then cuts across agricultural lands (segment 4) before turning north along Highway 12. A portion of segment 4 would involve installing a new single-circuit transmission line where no distribution or transmission lines currently exist (see the light pink portion of segment 4 in Figure 3-1). This alternative is about half a mile longer than the proposed project.

### **3.2.3 Alternative 3**

This alignment is wholly different than the proposed project. A new single-circuit 115 kV transmission line on tubular steel poles would run parallel to an existing 120-foot 230 kV lattice tower transmission line near Adobe Road and Highway 116 (segment 14); it would then become a wood pole line turning north and running along the south and east sides of the Temelec residential subdivision before cutting across agricultural lands (segment 4) and turning north along Highway 12. A portion of segment 4 would involve installing the new line where no distribution or transmission lines currently exist (see the light pink portion of segment 4 in Figure 3-1). This alternative is over one mile longer than the proposed project.

### **3.2.4 Alternative 4**

This alignment is wholly different than the proposed project. A new single-circuit 115 kV transmission line on tubular steel poles would run parallel to an existing 230 kV lattice tower transmission line near Adobe Road and Highway 116 (segments 14 and 15), then it would become a wood pole line and turn north for a short segment crossing open space before joining up with an existing distribution line that runs north and meets up with Watmaugh Road. It would turn east at Watmaugh Road and then north along Highway 12. This alternative is one and a half miles longer than the proposed project.

### **3.2.5 No Project Alternative**

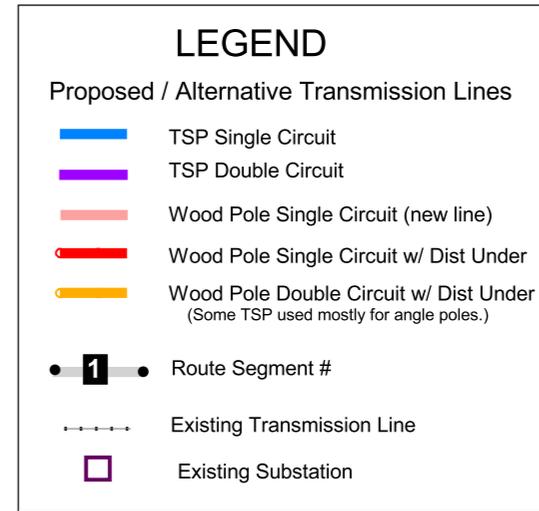
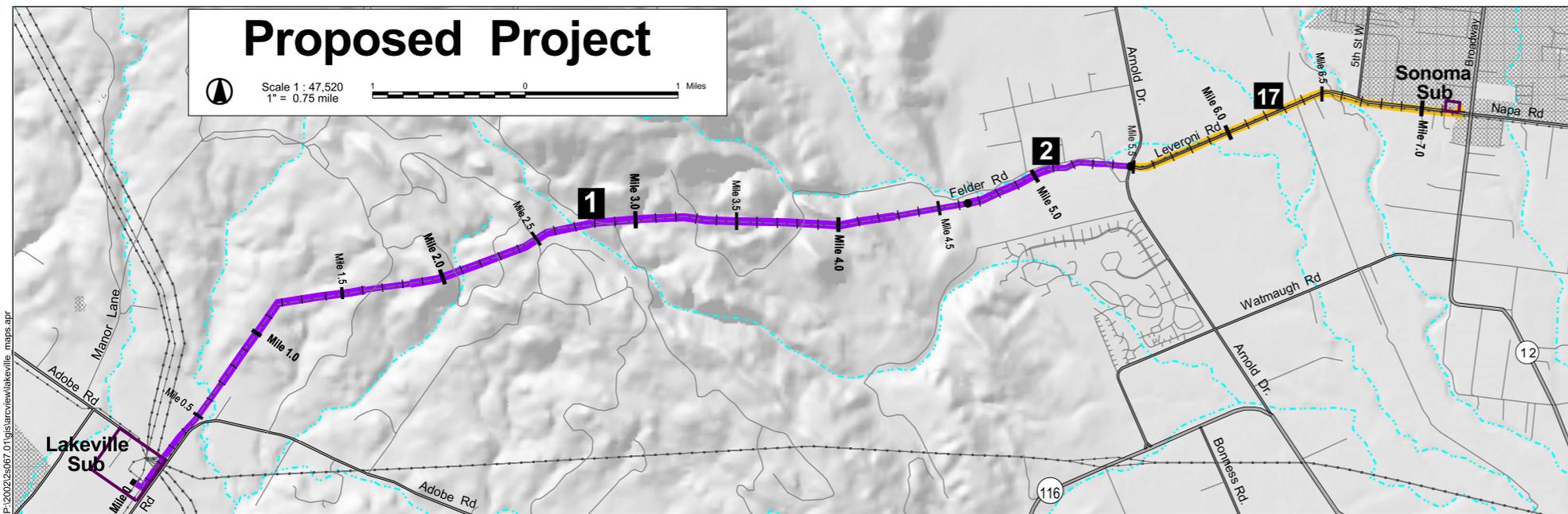
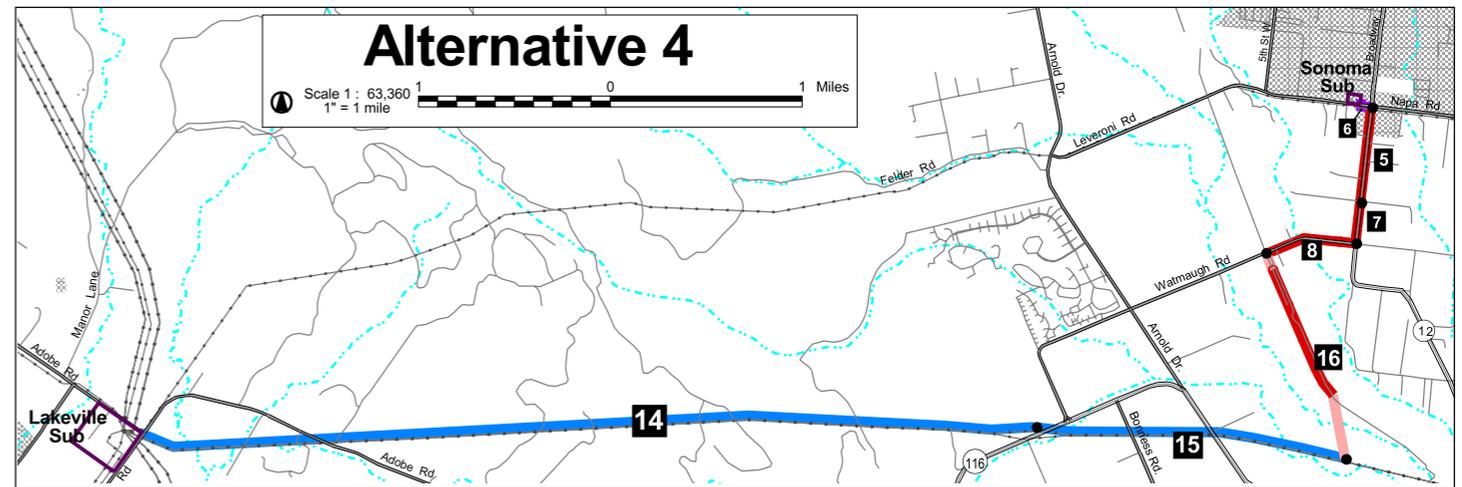
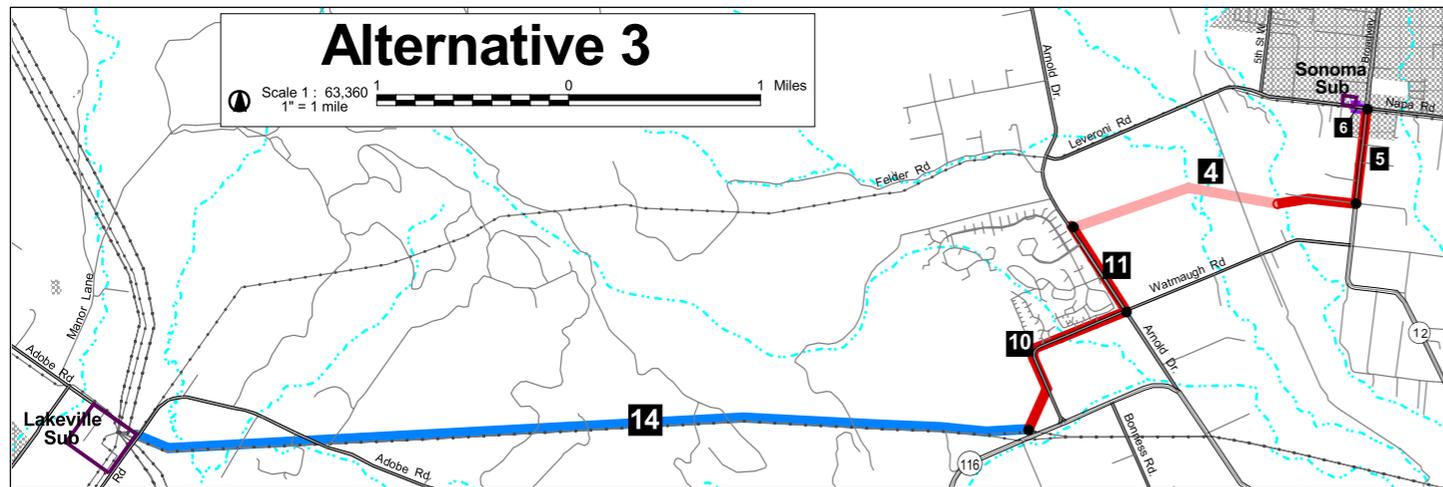
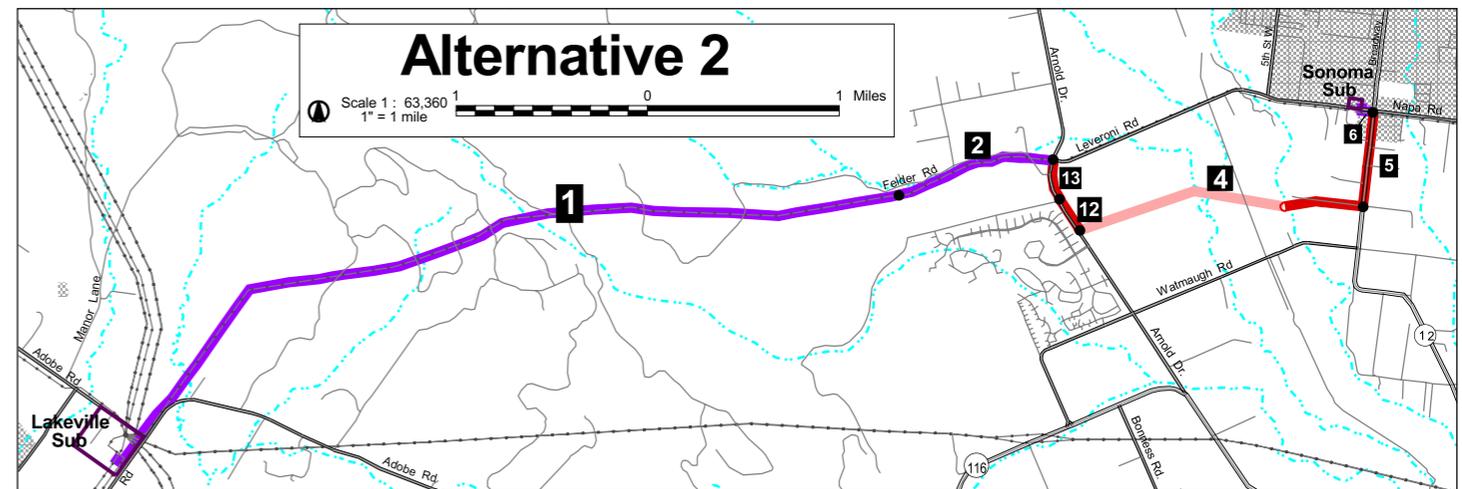
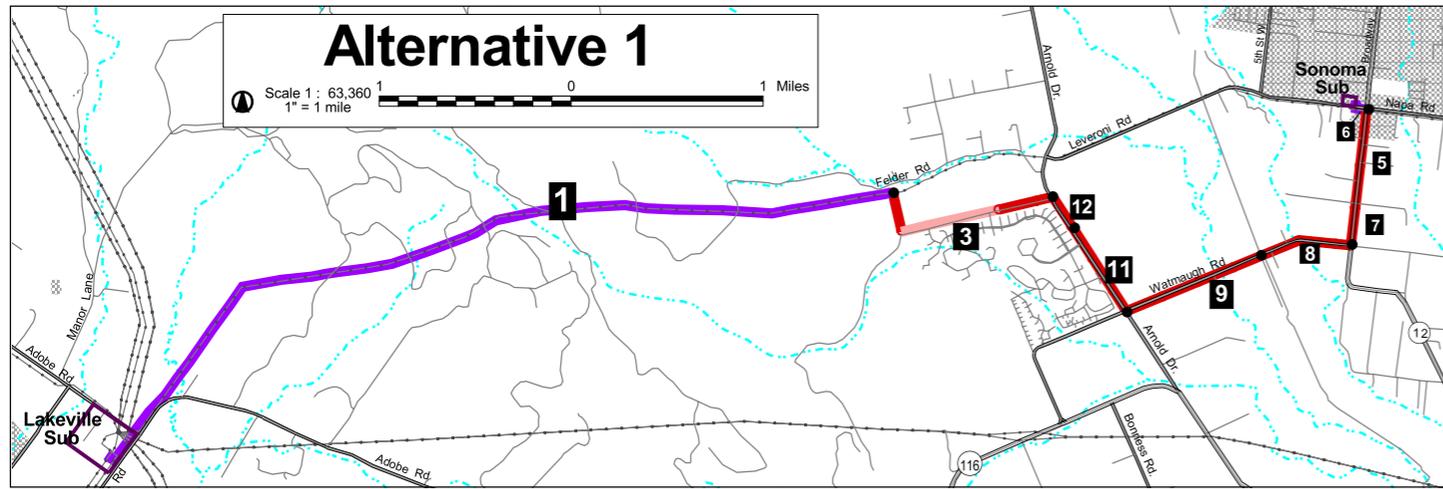
Transmission facilities would not be constructed under the “no project” alternative.

### **3.2.6 CEQA Review of Alternatives**

CEQA does not require a review of alternatives<sup>1</sup> where, as here, the proposed project will result in no significant environmental impacts after mitigation. (See Guidelines, Sec. 15126.6, subd. (a) and (f)(2)(A); Atlantic-Del Mar Reinforcement Project, A.01-07-004, Assigned Commissioner’s Ruling dated 10-16-02.) However, General Order No. 131-D requires that an Application for a PTC include the “[r]easons for adoption of the power line route or substation location selected, including comparison with alternative routes or locations, including the advantages and disadvantages of each.” This chapter provides a discussion of the alternatives to the proposed project that were considered by PG&E.

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<sup>1</sup> CEQA defines a “feasible alternative” as one that would attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. Economic viability is also taken into account when determining the feasibility of alternatives. (2004 CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, Section 15126.6 as amended December 1, 2003)



Source: PG&E GIS / EDAW, Inc. 2004

## Lakeville-Sonoma 115kV Transmission Line Project

FIGURE 3-1

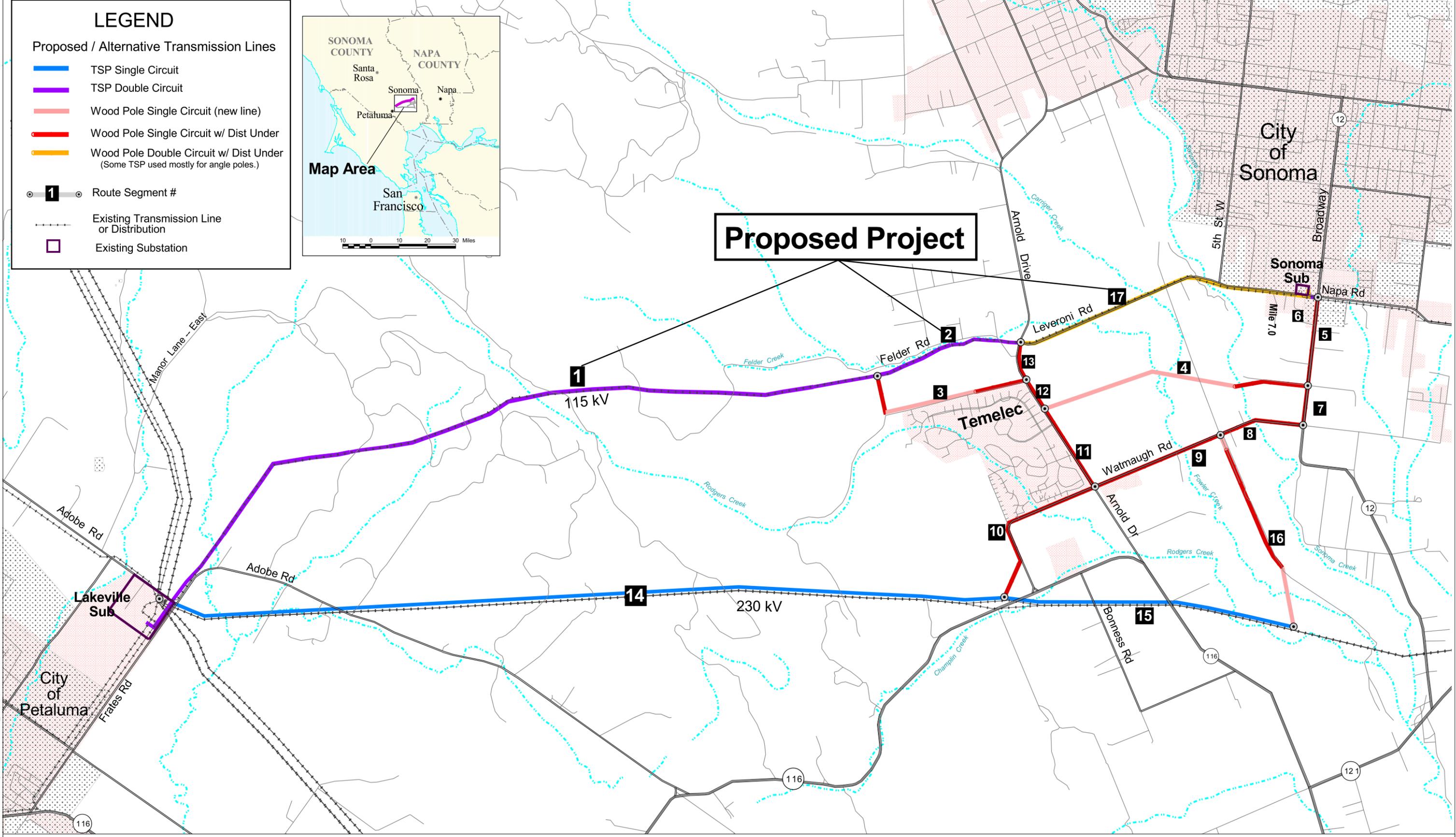
# LEGEND

## Proposed / Alternative Transmission Lines

- TSP Single Circuit
- TSP Double Circuit
- Wood Pole Single Circuit (new line)
- Wood Pole Single Circuit w/ Dist Under
- Wood Pole Double Circuit w/ Dist Under  
(Some TSP used mostly for angle poles.)
- 1 ○ Route Segment #
- Existing Transmission Line or Distribution
- Existing Substation



# Proposed Project



Source: PG&E GIS / EDAW, Inc. 2004

## Lakeville-Sonoma 115kV Transmission Line Project

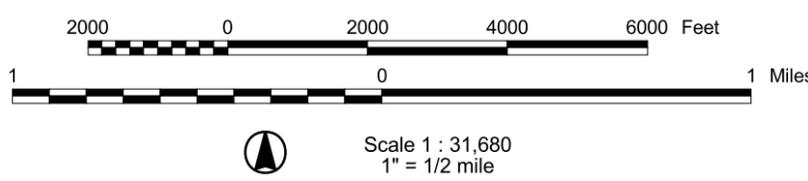
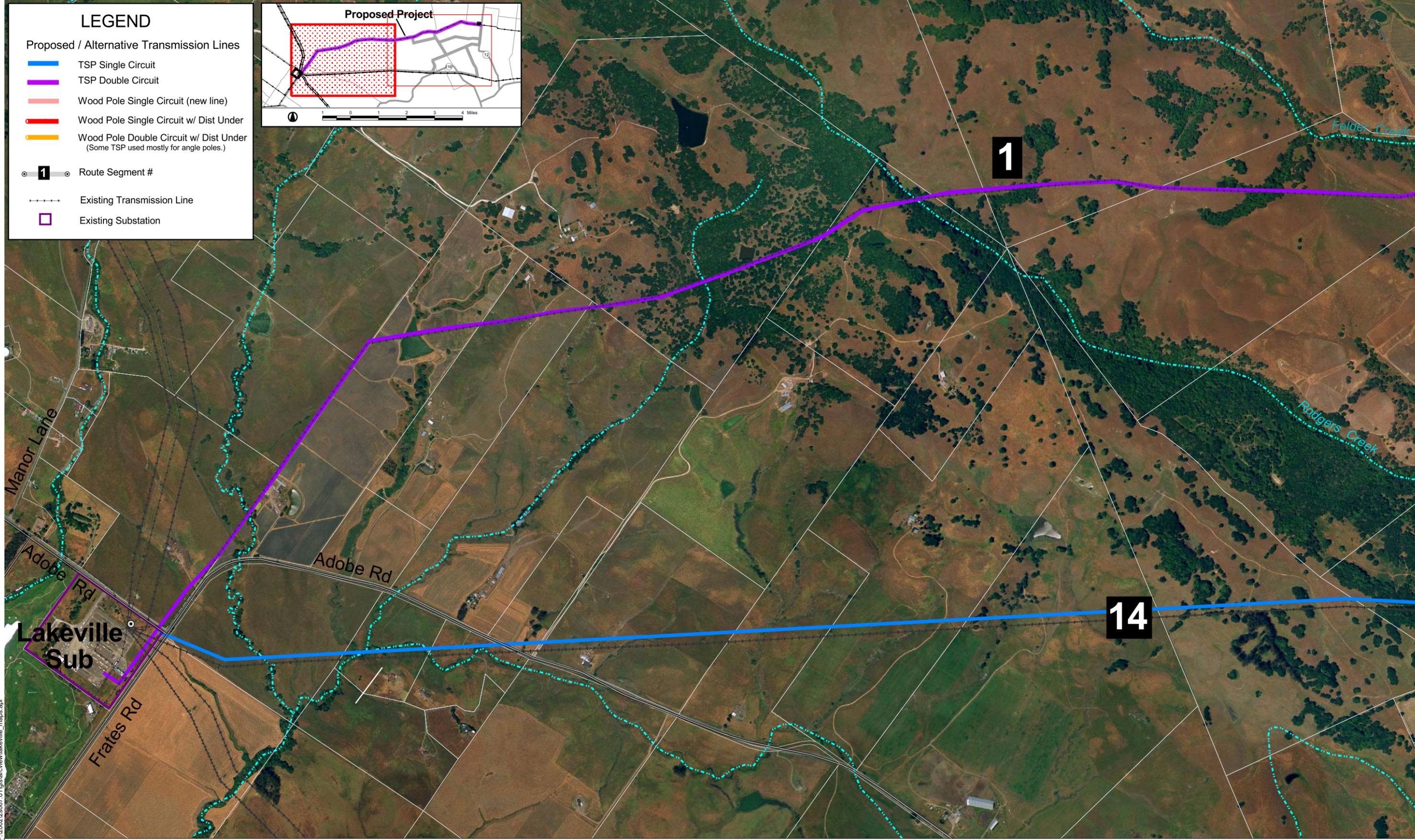
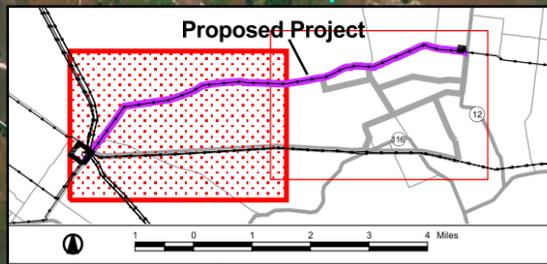


FIGURE 3-2  
**Study Area  
Showing All  
Route Segment Alternatives**

# LEGEND

## Proposed / Alternative Transmission Lines

- TSP Single Circuit
- TSP Double Circuit
- Wood Pole Single Circuit (new line)
- Wood Pole Single Circuit w/ Dist Under
- Wood Pole Double Circuit w/ Dist Under  
(Some TSP used mostly for angle poles.)
- 1 Route Segment #
- - - - Existing Transmission Line
- Existing Substation



Source: AirPhotoUSA (April, 2002) / PG&E / EDAW, Inc. 2004



## Lakeville-Sonoma 115kV Transmission Line Project



Scale 1 : 15,000  
1" = 1250 feet

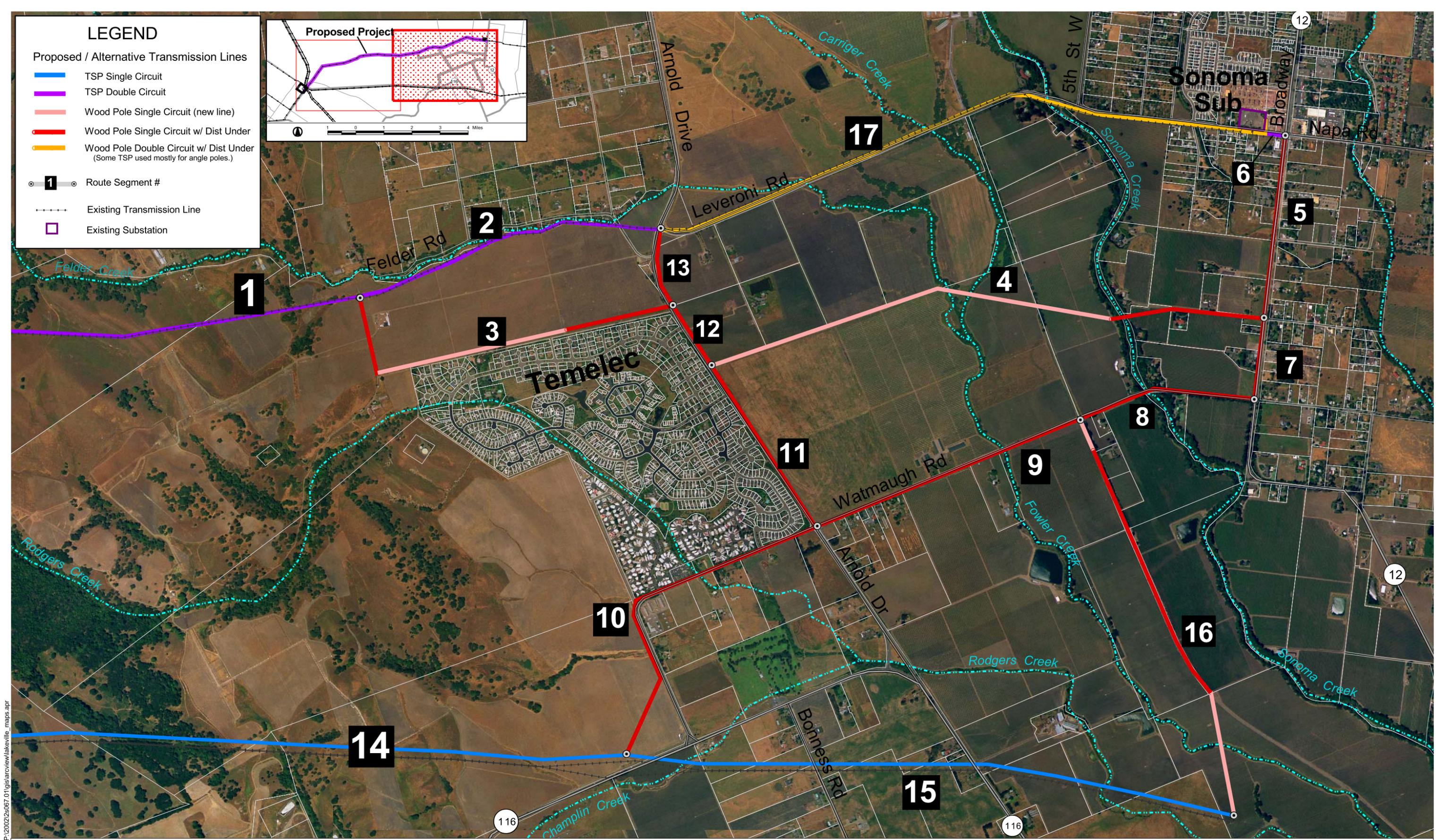
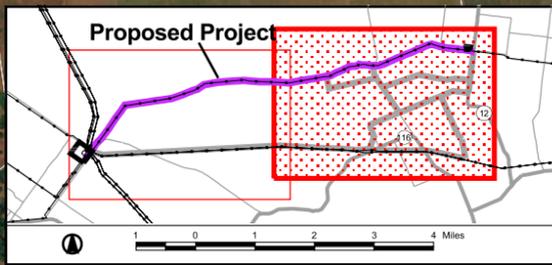
FIGURE 3-3(a)

## Alternative Route Segments on Aerial Photos West

# LEGEND

## Proposed / Alternative Transmission Lines

- TSP Single Circuit
- TSP Double Circuit
- Wood Pole Single Circuit (new line)
- Wood Pole Single Circuit w/ Dist Under
- Wood Pole Double Circuit w/ Dist Under (Some TSP used mostly for angle poles.)
- 1 Route Segment #
- Existing Transmission Line
- Existing Substation



Source: AirPhotoUSA (April, 2002) / PG&E / EDAW, Inc. 2004



Lakeville-Sonoma 115kV Transmission Line Project



Scale 1 : 15,000  
1" = 1250 feet

FIGURE 3-3(b)  
**Alternative Route Segments  
on Aerial Photos  
East**

### **3.3 DEVELOPMENT OF ALTERNATIVES AND SELECTION OF THE PROPOSED PROJECT**

In developing and evaluating potential alternatives to achieve the project objectives, PG&E considered such key factors as:

- Length of new line and number of new poles.
- Ability to use existing utility corridors.
- Ability to use existing rights-of-way.
- Ability to modify existing facilities rather than construct entirely new facilities.
- Avoidance or minimization of environmental impacts (especially biological and visual).
- Avoidance of farmland and vineyards.
- Avoidance of schools, residential and commercial land uses.
- Access to construct and maintain transmission line.
- Maintenance costs.
- Overall project cost.

Potential locations for new facilities were identified by PG&E land planners and construction managers through review of aerial photographs, field visits, discussions with property owners, and consultation with local planning agencies. With this information and the key factors above in mind, PG&E identified five feasible routes for constructing a transmission line between the Lakeville and Sonoma substations, including the proposed project.

### **3.4 COMPARISON OF ALTERNATIVES**

This section compares the proposed project with the alternatives, highlighting the key differences. Environmental impacts of the alternatives are discussed in more depth in section 3.5. Impacts of the proposed project are summarized in chapter 4 and discussed in detail in the rest of this PEA.

#### **3.4.1 Proposed Project – Summary of Environmental Impacts**

The proposed project was determined to be the environmentally preferred project alternative overall and most consistent with the key factors listed above. It modifies existing facilities and uses an existing utility corridor and existing rights-of-way, rather than constructing entirely new facilities in “greenfields” (open space) or vineyards. It is the shortest route, uses the fewest number of poles, and is the least expensive of the project alternatives. It maximizes use of existing access roads,

requiring only a few additional short segments of access roads for construction and maintenance. It offers the lowest maintenance costs, as annual inspections are already conducted for the existing line. This route also avoids schools. (The project alternatives all would place a new transmission line next to a school, residences and businesses where none currently exists<sup>2</sup>.)

All potentially significant environmental impacts associated with the proposed project can be mitigated to a less than significant level. In the context of the local environment, the key impacts of the proposed project are those related to biological and visual resources. (These are also emphasized in the comparison of alternatives.) Construction of the proposed project has the potential to impact two high-value wetland plant communities, a vernal marsh, and a vernal pool. However, these impacts can be avoided/mitigated by installing protective fencing and erosion control materials during construction. Special-status plants (Lobb's aquatic buttercup, cotula navarretia and Northern California black walnut) could also be affected, but avoidance/mitigation measures are available. Similarly, potential impacts related to Sudden Oak Death pathogen, invasive plants, valley oaks, heritage/landmark trees, and special-status wildlife species such as California Freshwater Shrimp and California Red-legged Frog can be avoided or mitigated to less than significant levels. The proposed project affects the least amount of farmland and vineyards of all the project alternatives.

The proposed project crosses the fewest county scenic corridors (2 as opposed to 3 to 4 with the project alternatives). The proposed project will have less than significant visual impacts on a "scenic vista" (Leveroni Road at Harrington Drive), two scenic landscape units (Sonoma Mountains and Sonoma Creek corridor), and the Sonoma Creek and Four Corners "gateways" into the City of Sonoma (see Figure 3-6). (The project alternatives would avoid the scenic vista and Sonoma Creek gateway, but would have greater visual impacts on the two scenic landscape units and Four Corners gateway at Broadway/Highway 12 and Napa Road.) The proposed project has a much less overall visual impact than the project alternatives, as it would be co-located on the same poles with an existing transmission line. In contrast, the project alternatives would install an entirely new single circuit transmission line in scenic open space and vineyards (segments 3, 4, 14, 15, and 16), which would create greater visual impacts.

Other impacts related to cultural resources (e.g., Petaluma Adobe state historic landmark building and an historic stone wall), geologic/seismic hazards, farmland conversion (only about 1/3-acre), land use compatibility, right-of-way easements, construction noise, public health and safety, use of hazardous materials during construction, traffic impacts during construction, and corona and induced current effects (e.g., potential for electric shock, fires or interference with television, radio and computer monitors) are less than significant or can be mitigated to a less than significant level.

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<sup>2</sup> Arnold Road, north edge of Temelec residential subdivision, and/or Highway 12, depending on which alternative.

With the exception of the No Project alternative, each of the alternatives would involve generally similar, but greater overall environmental impacts. Thus, the proposed project was selected because it poses fewer overall environmental impacts, modifies existing facilities rather than building entirely new facilities, is the shortest route and is the least expensive to build and maintain.

### **3.4.2 Alternative I – Summary of Environmental Impacts**

Environmental impacts with alternative I would be generally similar to the proposed project. However, in addition, alternative I could impact a cultural resource (CA-Nap-260 prehistoric habitation site) and require mitigation such as archaeological excavation. New right-of-way would need to be acquired along part of segment 3. The new transmission line would run parallel to Arnold Drive and Highway 12 (county-designated scenic corridors) for a distance of about 3/4-mile on each road. However, this is not considered a significant visual impact as there are existing distribution lines in place (which would be combined with the new transmission line), and thus it would not significantly change the existing visual character along these roads.

Use of this alternative would avoid crossing the Sonoma Creek & Leveroni “gateway” (a less than significant visual impact of the proposed project, as existing vegetation screens the transmission line). Segments 5 and 6 would conflict with the City of Sonoma’s General Plan policy to “enhance” the appearance of its designated Four Corners “gateway” at the Broadway/Highway 12 & Napa Road intersection. However, as the new transmission line would be combined with existing transmission and distribution lines on shared poles (albeit taller), there would not be a significant change from the existing visual character of the intersection and thus would not represent a significant visual impact.

Alternative I would bring the transmission line adjacent to a greater number of residences and businesses than the proposed project. It would install a new transmission line adjacent to homes (segments 3, 12, 11, 9, 8, 7 and 5), businesses (segments 5 and 7), as well as a school on the west side of Highway 12 in the middle of segment 5, where no transmission line currently exists (although distribution lines are in place along some of the segments).

Alternative I could result in a significant visual impact by placing a new transmission line along the north side of the Temelec residential subdivision where there is a neighborhood walkway with views of adjacent open space and vineyards (see Photo 7 in Chapter 15). As there are currently no transmission or distribution lines along the western half of segment 3, this would likely be a significant change in the existing visual character of the walkway and would likely be noticed by people who regularly use this walkway for relaxation, exercise, and views of adjacent open space.

Segment 8 runs down Watmaugh Road, which contains an extensive row of very large cypress trees along the southern side of the street (see photo). The particular tree species is notorious for having a weak root system and weak branches which often result in fallen trees and branches. Thus there is a much higher likelihood of tree-induced outages along segment 8. In addition, if a new line were built here, clearance for line sway would require substantial cutting of these trees. Cutting or removal of these trees for purposes of safety and reliability could create a significant visual impact from Watmaugh Road or Highway 12.

Alternative 1 is over one mile longer than the proposed project. A small portion would be outside of existing utility corridors (part of segment 3) and require new rights-of-way. Overall environmental impacts, construction and maintenance costs would be higher than with the proposed project, which is why this alternative was rejected.

### **3.4.3 Alternative 2 – Summary of Environmental Impacts**

Environmental impacts with alternative 1 would generally be similar to the proposed project. However, instead of segment 3, most of segment 4 would require a new right-of-way corridor and placement of a transmission line across agricultural lands where no lines currently exist (see light pink portion of segment 4 in Figure 3-1). Greater land use impacts related to acquisition of new right-of-way through active agricultural lands and vineyards, and the need for farm operators to work around transmission poles in their fields, would result from alternative 2; however, these could be mitigated to a less than significant level through strategic pole placement and monetary compensation.

Segment 4 could create a significant visual impact, as a new transmission line would be placed in open space/agricultural lands where there currently are no electrical lines. This would conflict with Sonoma County General Plan policies to retain the largely open, scenic character of important scenic landscape units, as well as with County policies to preserve scenic values along designated scenic highway corridors, as segment 4 would be visible from Arnold Road. Visual impacts of the east end of segment 4 would not be significant, as there is an existing distribution line.

This alternative would install a new transmission line adjacent to homes along segments 12, 13, 4, and 5 where no transmission line currently exists (although some distribution lines are in place). There is a school on the west side of Highway 12 in the middle of segment 5. There are also several businesses interspersed between the residences along segment 5. It would involve similar visual impacts to the City of Sonoma “gateway” at Broadway/Highway 12 – Napa Road intersection and along county scenic corridors (Arnold Drive and Highway 12) as discussed in alternative 1, but for a shorter distance. This alternative is about half a mile longer than the proposed project. Overall environmental impacts, construction and maintenance costs would be higher than with the proposed project, which is why this alternative was rejected.

**Existing view looking southwest at Watmaugh Road (Segment 8) from Highway 12**



**Existing view looking east at Segment 14 from Adobe Road**



### 3.4.4 Alternative 3 – Summary of Environmental Impacts

Environmental impacts with alternative 3 would generally be similar to the proposed project, even though it takes an entirely different route than the proposed project. However, in addition, it would place a single-circuit 115 kV tubular steel pole transmission line adjacent to an existing 120-foot 230 kV steel lattice tower transmission line along segment 14 (near Adobe Road and Highway 116).

Protocol-level surveys for special-status plants and California red-legged frog would be required along segments 10 and 14 to determine if additional impacts could occur in these areas. Suitable habitat for 18 species of special-status plants is found within these segments. Impacts to protected valley oaks and landmark and heritage trees might be less likely for alternative 3 than for the proposed project. Impacts to high-value wetlands could be less than those of the proposed project (although mitigation measures are available for both).

Alternative 3 could impact a cultural resource (CA-Nap-260 prehistoric habitation site) and require mitigation such as archaeological excavation. Impacts associated with segment 4 would be the same as previously described for alternative 2 (e.g., significant visual impact). It would involve similar visual impacts to the City of Sonoma “gateway” at Broadway/Highway 12 – Napa Road intersection and along county scenic corridors (Arnold Drive and Highway 12) as discussed in alternative 1, but for a shorter distance.

Segment 14 would place a new transmission line parallel to an existing 230 kV lattice tower transmission line, crossing Adobe Road and near Highway 116, both county scenic corridors. The Sonoma County General Plan encourages use of existing utility corridors, so the alternative is consistent with the General Plan in that regard.

A new or expanded right-of-way corridor would be needed with segment 14, next to the existing 230kV transmission line. Greater land use impacts related to acquisition of new right-of-way through active agricultural lands and vineyards (segments 4 and 14) would result; however, these could be mitigated to a less than significant level through strategic pole placement and monetary compensation.

This alternative would install a new transmission line adjacent to homes along segments 10, 11, 4, and 5 where no transmission line currently exists (although some distribution lines are in place). There is a school on the west side of Highway 12 in the middle of segment 5. There are also several businesses interspersed between the residences along segment 5. This alternative is over one mile longer than the proposed project. Overall environmental impacts, construction and maintenance costs would be higher than with the proposed project, which is why this alternative was rejected.

### 3.4.5 Alternative 4 – Summary of Environmental Impacts

Environmental impacts with alternative 4 would be similar to the proposed project, even though it also takes an entirely different route than the proposed project. However, in addition, Alternative 4 would also locate a single-circuit 115 kV tubular steel pole transmission line adjacent to an existing 230 kV lattice tower transmission line along segments 14 and 15 (near Adobe Road and Highway 116).

Additional surveys for special-status plants and California red-legged frog would be required for segments 14, 15, and 16 to determine if additional impacts could occur in these areas. Suitable habitat for 18 species of special-status plants is found within these segments. Impacts to protected valley oaks and landmark and heritage trees may be less likely for alternative 4 than for the proposed route.

Alternative 4 could impact a cultural resource (CA-Nap-266 lithic scatter site) and require mitigation such as archaeological excavation. Segments 14, 15 and 16, would require acquisition of new and/or expanded right-of-way corridors. Segment 16 would involve placement of a transmission line across agricultural lands where no lines currently exist. Greater land use impacts related to acquisition of new right-of-way through active agricultural lands and vineyards would result; however, these could be mitigated to a less than significant level through strategic pole placement and monetary compensation.

The northern end of segment 16 would be placed parallel to or co-located with an existing distribution line. The south part of segment 16 could create a significant visual impact, as a new transmission line would be placed in open space/agricultural lands where there currently are no electrical lines; however this part of segment 16 may not be highly visible from Arnold Drive because of the distance and because it would create a small link between an existing transmission line and an existing distribution line. Thus it may not be a substantial conflict with Sonoma County General Plan policies to retain the largely open, scenic character of important scenic landscape units.

It would involve similar visual impacts to the City of Sonoma “gateway” at Broadway/Highway 12 – Napa Road intersection and along county scenic corridor Highway 12 as discussed in alternative 1. Segments 14 and 15 would place a new transmission line parallel to an existing 230 kV lattice tower transmission line, crossing Adobe Road, Highway 116 and Arnold Road, which are county scenic corridors. The Sonoma County General Plan encourages use of existing utility corridors, so the alternative is consistent with the General Plan in that regard.

This alternative would install a new transmission line adjacent to homes along segments 16, 8, 7, and 5 where no transmission line currently exists (although some distribution lines are in place). There is

a school on the west side of Highway 12 in the middle of segment 5. There are also several businesses interspersed between the residences along segment 5.

The main difference with this alternative is the use of segment 16, which involves a small portion of new transmission line cutting across agricultural lands/vineyards where no power lines or roads currently exist (see light pink portion of segment 16 in Figure 3-1). Segment 16 meets up with an existing distribution line and continues north along a farm road until it reaches Watmaugh Road. This alternative would involve similar, potentially significant visual impacts associated with the cypress trees along Watmaugh Road (segment 8) as described above in alternative 1. This alternative is one and a half miles longer than the proposed project. Overall environmental impacts, construction and maintenance costs would be higher than with the proposed project, which is why this alternative was rejected.

### **3.4.6 No Project Alternative – Summary of Environmental Impacts**

The “no project” alternative would avoid the impacts associated with the proposed project. However, it is not considered a realistic option, as it would leave the local transmission system in a state of vulnerability with potential for low voltages, reliability criteria violations, overloading problems, transmission equipment damage, and power outages to area customers should the existing single-circuit Lakeville-Sonoma transmission line go out of service. This could be especially devastating if a power outage were to occur during the grape harvest and crush season (late August through early November), as it could be a few days before the line could be repaired, depending on the extent of the damage. Other replacement projects (such as new transmission lines, substations or power plants) would likely involve similar or greater environmental impacts, but may not be available in time to meet the proposed project’s objectives and timeline.

## **3.5 ANALYSIS OF ALTERNATIVE TRANSMISSION LINE ROUTES**

The following presents a more detailed analysis of the four alternative transmission line routes (summarized above), which were evaluated to see if they could avoid potentially significant environmental impacts associated with the proposed project. (However, as mentioned before, all environmental impacts of the proposed project can be mitigated to a less than significant level. As such, the Commission is not required to prepare an EIR or otherwise evaluate route alternatives under CEQA.)

### **3.5.1 Alternative 1 – Segments 1, 3, 12, 11, 9, 8, 7, 5, 6**

#### **3.5.1.1 Air Quality**

Air quality impacts with alternative 1 would be similar to the proposed project.

### 3.5.1.2 Biological Resources

Alternative I would result in construction impacts to biological resources that are very similar to those of the proposed route. Impacts to protected valley oaks and landmark and heritage trees, wetlands and aquatic resources, and special-status plants and wildlife would be nearly the same as those for the proposed route. For example, impacts to the vernal pool and the vernal marsh in segment I would be identical to those of the proposed project. Impacts from the spread of invasive plants and the sudden oak death (SOD) pathogen would be very similar to those of the proposed route. All of these impacts could be mitigated to a less than significant level. Some mitigation measures for the proposed route might need to be modified to apply to the alternative route segments. For example, the Erosion Control and Restoration Plan (see Appendix A), which includes measures for all land cover/land use zones in the project area, would need to include additional measures for any land cover/land use zones in segments 3, 5-9, 11 and 12 that differ from those of the proposed route. Table 3-4 lists special-status species observed or documented along alternative route segments. Cutting or removal of the cypress trees along Watmaugh Road (segment 8) would not constitute a significant impact on biological resources (as long as removal occurs during non-nesting season to protect birds), and would not conflict with County ordinances which permit tree trimming around utilities lines.

### 3.5.1.3 Cultural Resources

There are four previously identified cultural resources along the alternative I route: the Petaluma Adobe building (State Historic Landmark 18) inside the Petaluma Adobe State Historic Park, an historic stone wall (both discussed in Chapter 7), Temelec Hall (State Historic Landmark 237), and site CA-Nap-260 (a prehistoric habitation site). Temelec Hall was erected in 1858 by Granville P. Swift, a member of the Bear Flag Party. General Percifor Smith, U.S. military commander in California, lived nearby in 1849. CA-Nap-260 was first identified in 1958 when obsidian and clamshell were noted in midden deposits. The site is relatively extensive, measuring approximately 250' x 135' at the time it was originally recorded.

As with the proposed project, impacts to the Petaluma Adobe State Historic Park and the stone wall would be less-than-significant (see Chapter 7). There would be no impact on Temelec Hall (near segment 3) if alternative I is selected and constructed as currently proposed. There could be impacts to CA-Nap-260 should the site extend into the area where new transmission line poles are installed.

**Table 3-4  
Special-Status Species Observed or Documented Along Alternative Route Segments<sup>3</sup>**

Species	Segment																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<i>Cotula navarretia (Navarretia cotulifolia)</i>	X																
Lobb's aquatic buttercup ( <i>Ranunculus lobbii</i> )	X																
Northern California black walnut ( <i>Juglans hindsii</i> )				X				X									X
California freshwater shrimp ( <i>Syncaris pacifica</i> )				X				X									X
Steelhead ( <i>Oncorhynchus mykiss</i> )	X	X		X				X	X	X					X	X	X
Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )				X	X			X	X							X	X
River lamprey ( <i>Lampetra ayresi</i> )	X	X		X				X	X	X					X	X	X
Pacific lamprey ( <i>Lampetra tridentata</i> )	X	X		X				X	X	X					X	X	X
California red-legged frog ( <i>Rana aurora draytonii</i> )	X																
Northwestern pond turtle ( <i>Clemmys marmorata marmorata</i> )	X																
White-tailed kite ( <i>Elanus leucurus</i> )	X	X															
Golden eagle ( <i>Aquila chrysaetos</i> )*	X																
Other raptors	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Horned lark ( <i>Eremophila alpestris</i> )	X																
Pallid bat ( <i>Antrozous pallidus</i> )		X						X									

<sup>3</sup> As observed by Ganda biologists during field surveys conducted between August 2002 through July 2004. For more information on surveys see Chapter 6 Biological Resources.

Mitigation measure: A qualified professional archaeologist should re-survey and flag the location of CA-Nap-260 prior to construction. All project-related subsurface disturbances within 100 feet of the site should be monitored by the archaeologist. If subsurface archaeological resources are encountered, all potentially destructive work should halt in the vicinity until the nature of the cultural materials can be ascertained and treatment measures, if needed, can be developed and implemented. This may include controlled excavation prior to the placement of any new transmission line poles. See chapter 7 for recommended mitigation for minimizing impacts to the stone wall. If previously unidentified cultural resources are encountered during project construction, mitigation measure 7.2 shall be implemented (see chapter 7).

#### 3.5.1.4 Energy and Utilities

Impacts to energy and utilities would be similar to the proposed project.

#### 3.5.1.5 Geology

The geologic and soils environment in the project study area is discussed in Chapter 9 of this PEA. Figures 3-4 and 3-5 show geologic units and soil associations. Faults and regional seismicity are shown in Figure 9-1 of Chapter 9. These figures reflect geological and soil conditions at alternative locations. Table 3-6 provides information on mapped soil associations underlying alternative locations.

Surficial deposits consisting of Pleistocene Older Alluvium (Qoa on Figure 3-4) and Holocene Younger Alluvium (Qoy on Figure 3-4) underlie segments of alternative routes and substation sites. Bedrock units exposed in the alternative locations includes poorly consolidated deposits of the late Miocene age Petaluma Formation (Tnpe on Figure 3-4) and overlying and interfingering volcanic and volcanoclastic rocks of the Sonoma Volcanics (Tvs on Figure 3-4).

Alternative I would be subject to potential geologic hazards and result in construction impacts similar to those of the proposed project. For example, the active Rodgers Creek fault, with its potential for surface fault rupture, would be crossed by segment I as shown on Figure 3-4. In addition, the potential impacts of high seismic ground shaking, soil erosion, and slope instability would be similar to those of the proposed project. All of the potential impacts could be mitigated to a less than significant level.

#### 3.5.1.6 Hydrology and Water Quality

Hydrology and water quality impacts would be similar to the proposed project.

### 3.5.1.7 Land Use and Agriculture

Land use and agriculture impacts would be somewhat greater than the proposed project. New right-of-way would be acquired along part of segment 3 (see light pink portion shown on Figure 3-1), but this would not create significant land use impacts on the vineyard and residential subdivision, as property owners would be compensated for the value of the easement and restrictions on land uses under the transmission line. Segment 3 contains some vineyard farmland with Williamson Act designation, a small amount of which would be taken up by pole footprints, but that would not change its designation. No residences or businesses along segments 5 and 7 would need to be relocated.

Unlike the proposed project, alternative 1 would place a new transmission line next to a school, residences and businesses where no transmission line currently exists (although some distribution lines do exist) (see red and pink segments in Figure 3-1).

### 3.5.1.8 Noise

The primary difference between the proposed project and alternative 1 relative to noise is the proximity of sensitive receptors (schools, residences, churches, etc.). Alternative 1 would bring the transmission line adjacent to a greater number of residents (e.g., segments 3, 11, 12, 9, 8, 5 and 7). Construction noise would constitute a temporary impact to nearby residents. However, as with the proposed project, with implementation of mitigation measure 12-1, noise level impacts would be reduced to less than significant.

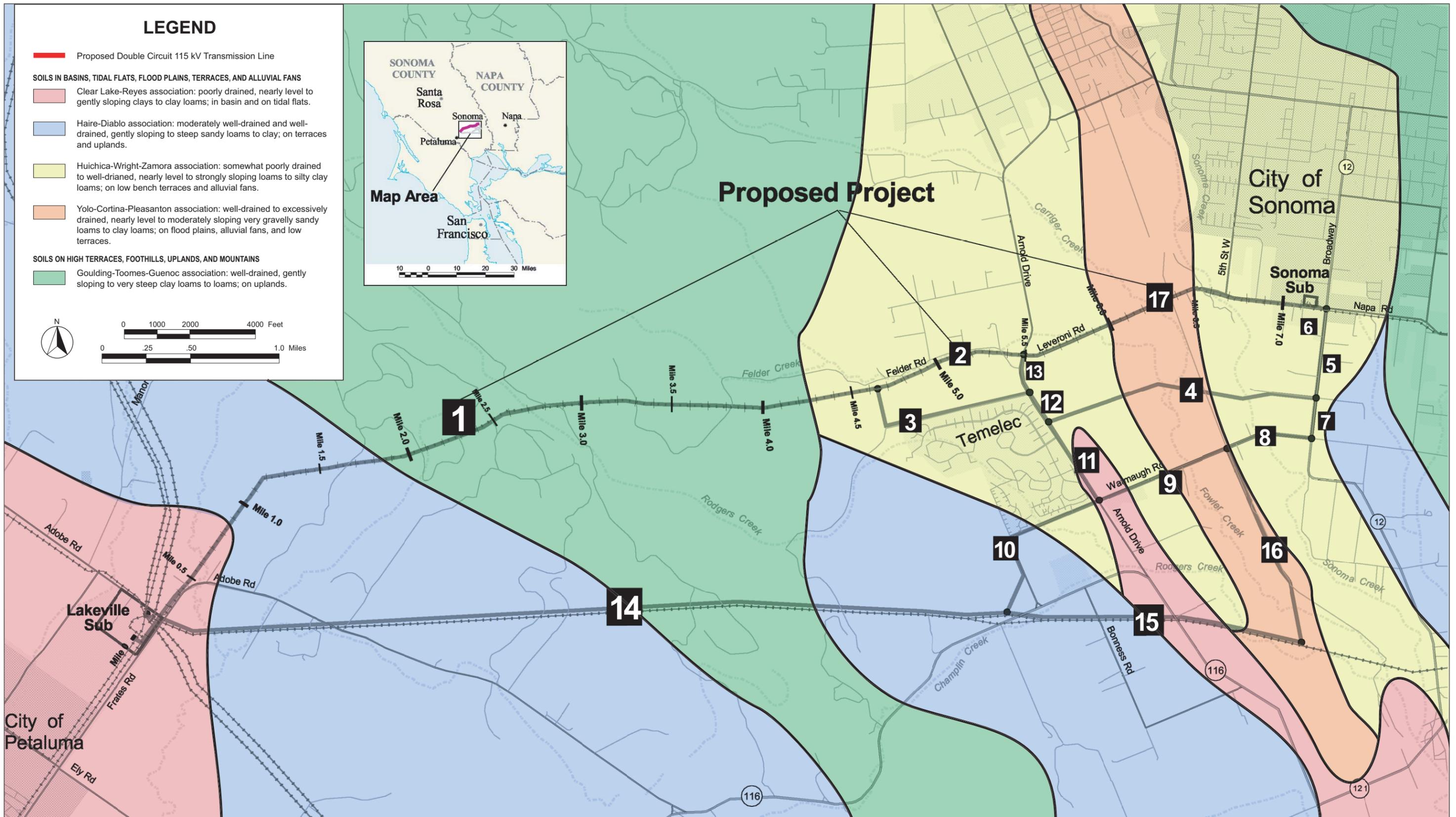
### 3.5.1.9 Public Health and Safety

Alternative 1 (segment 5) runs adjacent to a small church school on Highway 12, south of Leveroni / Napa Road, (see Figure 11-1). As construction activities will involve some hazardous emissions from vehicles and handling of hazardous materials within 0.25 mile of a school, this is considered a potentially significant impact. However, mitigation measure 13.1, prevailing westerly winds, and the fact that construction equipment will only be in the area temporarily could reduce this to a less than significant impact.

### 3.5.1.10 Transportation and Traffic

Transportation and traffic impacts would be similar to the proposed project. This alternative route would parallel California State Highway 12, thus construction would need to be coordinated with Caltrans and potential long-term plans for widening Highway 12 in this area.





Source: Generalized soil association map adapted from General Soil Map contained in Soil Survey of Sonoma County, California, United States Department of Agriculture in cooperation with University of California Agricultural Experiment Station, by Vernon C. Miller, Soil Conservation Service, issued May 1972.

**Lakeville-Sonoma 115 kV Transmission Line Project**

**FIGURE 3-5  
Generalized Soil Association Map**

**Table 3-6  
Mapped Soil Associations in Project Area**

Map Unit, Number and Name <sup>1</sup>	Soil Series and Percentage <sup>2</sup>	Topographic Location	Location by Segment - %/portion (N, S, E, W, C [central]) <sup>1</sup>	Erosion Potential <sup>3</sup>	Permeability <sup>4</sup>	Drainage	Shrink-Swell Potential	Corrosion Potential
1. Clear Lake-Reyes	Clear Lake – 50% Reyes – 40%	Basins, tidal flats	Lakeville ss – 100 1 – 12/W 9 – 28/W 14 – 5/W 15 – 30/C	Clear Lake – Slight Reyes – None to slight	Clear Lake – Slow Reyes – Slow	Clear Lake – Poorly drained Reyes – Poorly drained	Clear Lake – High Reyes – High	Clear Lake – High Reyes – High
2. Haire-Diablo	Haire – 45% Diablo – 45%	Terraces, uplands	1 – 21/W 10 – 55/W 14 – 21/W, E 15 – 45/W	Haire – Slight to moderate Diablo – Moderate	Haire – Slow Diablo – Slow	Haire – Moderately well-drained Diablo – Well-drained	Haire – Moderate Diablo – High	Haire – Moderate Diablo – High
3. Huichica-Wright-Zamora	Huichica – 35% Wright – 30% Zamora – 25%	Low bench terraces, alluvial fans	Sonoma ss – 100 1 – 5/E 2 – 100 3 – 100 4 – 69/W, E 5 – 100 6 – 100 7 – 100 8 – 81/E 10 – 45/E 11 – 100 12 – 100 13 – 100 15 – 13/E-C 17 – 64/W, E	Huichica – Slight Wright – None to slight Zamora – Slight	Huichica – Very slow Wright – Very slow Zamora – Slow	Huichica – Moderately well to somewhat poorly drained Wright – Somewhat poorly drained Zamora – Well-drained	Huichica – Moderate to high Wright – Low Zamora – Moderate	Huichica – Moderate to high Wright – High Zamora – Moderate

<sup>1</sup> Refer to Figure 3-5, Generalized Soil Associations Map for soil association distribution in project area.

<sup>2</sup> Other related soil series occupy remaining area percentage.

<sup>3</sup> Erosion hazard rating for typical soil profile.

<sup>4</sup> Permeability of surface horizon; may vary with depth.

**Table 3-6  
Mapped Soil Associations in Project Area**

<b>Map Unit, Number and Name<sup>1</sup></b>	<b>Soil Series and Percentage<sup>2</sup></b>	<b>Topographic Location</b>	<b>Location by Segment - %/portion (N, S, E, W, C [central])<sup>1</sup></b>	<b>Erosion Potential<sup>3</sup></b>	<b>Permeability<sup>4</sup></b>	<b>Drainage</b>	<b>Shrink-Swell Potential</b>	<b>Corrosion Potential</b>
4. Yolo-Cortina-Pleasanton	Yolo – 60% Cortina – 15% Pleasanton – 15%	Flood plains, alluvial fans, low terraces	4 – 31/C 8 – 19/W 9 – 40/E 15 – 12/E 16 – 100 17 – 36/C	Yolo – Slight Cortina – Slight Pleasanton - Slight	Yolo – Moderate Cortina – Very rapid Pleasanton – Moderately slow	Yolo – Well-drained Cortina – Excessively drained Pleasanton – Well-drained	Yolo – Low to moderate Cortina – Low Pleasanton - Low	Yolo – Low Cortina – Low Pleasanton - Low
5. Goulding-Toomes-Guenoc	Goulding – 70% Toomes – 10% Guenoc – 10%	Uplands	1 – 62/C 14 – 24/C	Goulding – Moderate Toomes – Slight to moderate Guenoc – Moderate to high	Goulding – Moderate Toomes – Moderate Guenoc – Moderate to slow	Goulding – Well-drained Toomes – Well-drained Guenoc – Well-drained	Goulding – Moderate Toomes – Moderate Guenoc - Moderate	Goulding – Moderate Toomes – Moderate Guenoc - Moderate

**Table 3-7  
Known Active and Potentially Active Faults – Lakeville Substation**

<b>Fault</b>	<b>Approx. Distance from Substation (km)</b>	<b>Age Classification</b>	<b>Activity Classification</b>	<b>Potential Rupture Length (km)</b>	<b>Mmax<sup>1</sup> (Mw)</b>	<b>PGA<sup>2</sup> (g)</b>
Bartlett Springs	70	Holocene & Early Quaternary	Active	85	7.1	0.0754
Burdell Mtn.	9	Early Quaternary	Potentially Active	18	6.5	0.3304
Carneros	—	Pre Quaternary ?	Not Active	Not active	—	—
Unnamed faults W of Carneros	17	Early Quaternary	Potentially Active	3	5.5 to 6	0.1522
Collayomi	60	Holocene & Late Quaternary	Active	29	6.5	0.0614
Concord-Green Valley	35	Holocene / Historic creep	Active	66	6.9	0.1328
Cordelia	36	Holocene & Late Quaternary	Active	19	6.6	0.13
Greenville	62	Holocene & Historic	Active	73	6.9	0.0754
Hayward	≤33	Historic	Active	86	7.1	0.1567
Hunting Creek-Berryessa	43	Holocene-Early Quaternary	Active	60	6.9	0.1088
Maacama (south)	41	Holocene	Active	41	6.9	0.114
Maacama (central)	82	Holocene / Historic creep	Active	60	7.1	0.0642
Maacama (north)	140	Holocene / Historic creep	Active	81	7.1	0.0371
Rogers Creek	3	Holocene	Active	63	7.0	0.542
San Andreas	28	Historic	Active	470	7.9	0.2714
Soda Creek	25	Late Quaternary	Potentially Active	19	6.6	0.1555
Tolay	<1 **	Early Quaternary	Potentially Active	16 to 35	6.5 to 6.9	0.5809
Vaca-Kirby Hills	50	Late Quaternary	Potentially Active	18 to 35	6.5 to 6.9	0.0937
West Napa	23	Holocene & Late Quaternary	Active	30	6.5	0.1596
Bartlett Springs	70	Holocene & Early Quaternary	Active	85	7.1	0.0754

\*\* Buried fault trace projects through/near the Lakeville Substation

<sup>1</sup> Mmax is designated as the maximum moment magnitude calculated from rupture area relationships.

<sup>2</sup> PGA is the peak ground acceleration resulting from an earthquake event.

**Table 3-8  
Known Active and Potentially Active Faults – Sonoma Substation**

<b>Fault</b>	<b>Approx. Distance from Substation (km)</b>	<b>Age Classification</b>	<b>Activity Classification</b>	<b>Potential Rupture Length (km)</b>	<b>Mmax<sup>1</sup> (Mw)</b>	<b>PGA<sup>2</sup> (g)</b>
Bartlett Springs	65	Holocene & Early Quaternary	Active	85	7.1	0.0813
Burdell Mtn.	16	Early Quaternary	Potentially Active	18	6.5	0.2192
Carneros	—	Pre Quaternary ?	Not Active	Not active	—	—
Unnamed faults W of Carneros	7	Early Quaternary	Potentially Active	3	5.5 to 6	0.2976
Collayomi	58	Holocene & Late Quaternary	Active	29	6.5	0.0636
Concord-Green Valley	24	Holocene / Historic creep	Active	66	6.9	0.1875
Cordelia	27	Holocene & Late Quaternary	Active	19	6.6	0.15
Greenville	55	Holocene & Historic	Active	73	6.9	0.09
Hayward	≤31	Historic	Active	86	7.1	0.17
Hunting Creek-Berryessa	34	Holocene-Early Quaternary	Active	60	6.9	0.14
Maacama (south)	44	Holocene	Active	41	6.9	0.11
Maacama (central)	85	Holocene / Historic creep	Active	60	7.1	0.06
Maacama (north)	145	Holocene / Historic creep	Active	81	7.1	0.04
Rogers Creek	4	Holocene	Active	63	7.0	0.51
San Andreas	36	Historic	Active	470	7.9	0.22
Soda Creek	15	Late Quaternary	Potentially Active	19	6.6	0.24
Tolay	9	Early Quaternary	Potentially Active	16 to 35	6.5 to 6.9	0.37
Vaca-Kirby Hills	40	Late Quaternary	Potentially Active	18 to 35	6.5 to 6.9	0.12
West Napa	13	Holocene & Late Quaternary	Active	30	6.5	0.26

<sup>1</sup> Mmax is designated as the maximum moment magnitude calculated from rupture area relationships.

<sup>2</sup> PGA is the peak ground acceleration resulting from an earthquake event.

### 3.5.1.11 Visual Resources

Alternative I would result in greater visual impacts than the proposed project. Alternative I could result in a significant visual impact, as it would place a new transmission line along the north side of the Temelec residential subdivision where there is a neighborhood walkway with views of adjacent open space and vineyards (see Photo 7 in Chapter 15). As there are currently no transmission or distribution lines along the western half of segment 3 (see the light pink portion of segment 3 in Figure 3-1), this would likely be a significant change in the existing visual character of the walkway and would likely be noticed by people who regularly use this walkway for relaxation, exercise, and views of adjacent open space.

Segments 5, 7, 11, and 12 would involve installing a new transmission line along Highway 12 and Arnold Drive, which are county-designated scenic corridors (see Figure 3-6). Highway 12 is also considered “eligible” for the State Scenic Highway program, but it has not officially been designated. Placing a new transmission line along the east side of Highway 12 and the west side of Arnold Road would not be considered a significant visual impact, as there are existing distribution lines in place (see photos of Highway 12 and Arnold Road below) and the new transmission line would be co-located with the existing distribution lines on shared poles (albeit taller than the existing poles).

Use of this alternative would avoid crossing the Sonoma Creek & Leveroni “gateway” (a less than significant visual impact of the proposed project, as existing vegetation screens the transmission line). However, Segments 5 and 6 would conflict with the City of Sonoma’s General Plan policy to “enhance” the appearance of its designated Four Corners “gateway” at the Broadway/Highway 12 & Napa Road intersection (see Figure 3-6 and CDE-6 Visual Policy 26 in chapter 15, section 15.2.1.3 of this PEA) (City of Sonoma 1995). However, as the new transmission line would be co-located with existing transmission and distribution lines on shared poles (albeit taller), there would not be a significant change from the existing visual character of the intersection and thus would not represent a significant visual impact. Appendix C – Visual Simulations, KOP 12 Existing View shows the current condition of the Four Corners intersection and existing transmission lines.

**Existing view looking north on Highway 12 from Segment 5**



**Existing view looking north on Arnold Road from Segment 11**



# LEGEND

## Scenic Road Status

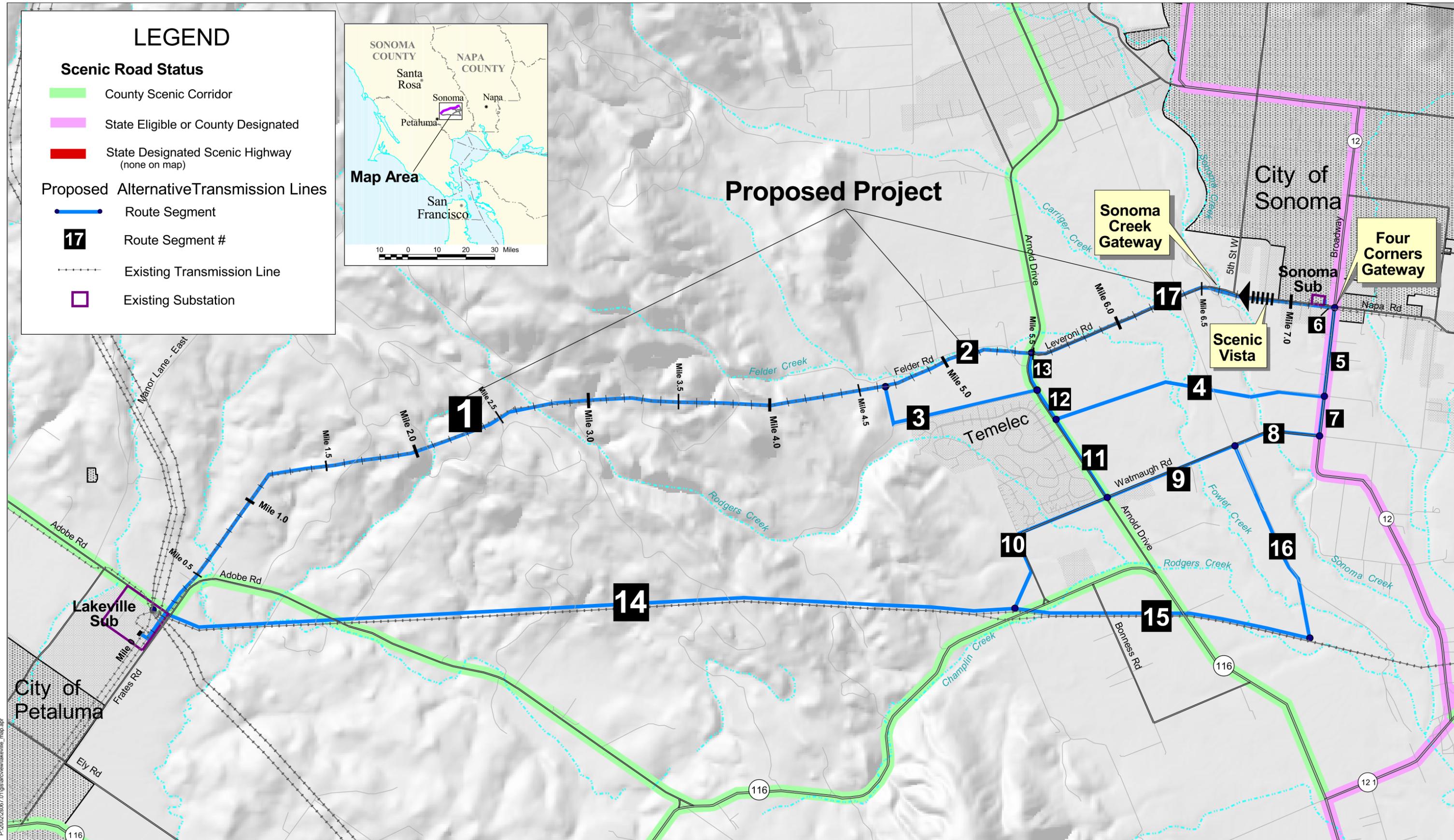
- █ County Scenic Corridor
- █ State Eligible or County Designated
- █ State Designated Scenic Highway (none on map)

## Proposed Alternative Transmission Lines

- Route Segment
- 17** Route Segment #
- - - - - Existing Transmission Line
- Existing Substation

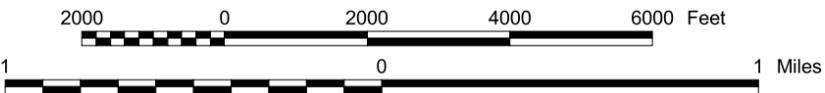


# Proposed Project



Source: PG&E GIS / EDAW, Inc. 2003

## Lakeville-Sonoma 115 kV Transmission Line Project



Scale 1 : 31,680  
1" = 1/2 mile

FIGURE 3-6

## Scenic Road Corridors

Due to the type and size of the cypress trees along Watmaugh Road (segment 8), extensive tree removal and cutting would be necessary for safety reasons, therefore adversely affecting the existing visual character of Watmaugh Road, as well as the view of the trees from Highway 12, which could be a significant visual impact, depending on the amount of cutting or tree removal needed (see previous photo).

#### 3.5.1.12 Corona and Induced Current Effects

Corona and induced current effects with alternative 1 would be greater than the proposed project; except for segment 1, a new transmission line would be built where none currently exists.

#### 3.5.1.13 Growth Inducing Impacts

Growth inducing impacts with alternative 1 would be similar to the proposed project.

#### 3.5.1.14 Cumulative Impacts

Cumulative impacts with alternative 1 would be similar to the proposed project.

### 3.5.2 **Alternative 2 – Segments 1, 2, 13, 12, 4, 5, 6**

#### 3.5.2.1 Air Quality

Air quality impacts with alternative 2 would be less than significant, similar to the proposed project. The route difference between the proposed project and alternative 2 would not result in any significant impacts to sensitive receptors along the route for either the construction or operation phases of the project.

#### 3.5.2.2 Biological Resources

Alternative 2 would result in construction impacts to biological resources that are very similar to those of the proposed route. Impacts to protected valley oaks and landmark and heritage trees, wetlands and aquatic resources, and special-status plants and wildlife would be nearly the same as those for the proposed route. Impacts to the vernal pool and vernal marsh in segment 1 would be identical to those of the project area; additionally, a second vernal pool in segment 4 could potentially be affected. Potential impacts from the spread of invasive plants and the SOD pathogen would be very similar to those of the proposed route. All of these impacts could be mitigated to a less-than-significant level. Some mitigation measures, such as the Erosion Control and Restoration Plan in Appendix A, might need to be modified to apply to the land cover/land use zones in segments 4-6, 12 and 13.

### 3.5.2.3 Cultural Resources

There are no known cultural resources along the alternative 2 route except for Petaluma Adobe historic building and the stone wall. See Chapter 7 for impacts and mitigation for the Petaluma Adobe historic landmark building and the stone wall, which would be the same with alternative 2.

Other mitigating measures for this alternative are limited to archaeological monitoring within 200 feet of a watercourse and work stoppage should previously unknown cultural resources be encountered during project-related subsurface disturbances. If previously unidentified cultural resources are encountered during project construction, mitigation measure 7.2 would be implemented (see chapter 7).

### 3.5.2.4 Energy and Utilities

Impacts to energy and utilities would be similar to the proposed project.

### 3.5.2.5 Geology

Alternative 2 would be subject to potential geologic hazards and result in construction impacts similar to the proposed project. For example, the active Rodgers Creek fault, with its potential for surface fault rupture, would be crossed by segment 1 as shown on Figure 3-4, Generalized Geologic Map. In addition, the potential impacts of high seismic ground shaking, soil erosion, and slope instability would be similar to those of the proposed project. All of the potential impacts could be mitigated to a less than significant level.

### 3.5.2.6 Hydrology and Water Quality

Hydrology and water quality impacts would be similar to the proposed project.

### 3.5.2.7 Land Use and Agriculture

Land use and agriculture impacts associated with alternative 2 would be similar to those with alternative 1 (and greater than the proposed project). However, instead of segment 3, most of segment 4 would require a new right-of-way corridor and placement of a transmission line across agricultural lands where no lines currently exist (see light pink portion of segment 4 in Figure 3-1). Greater land use impacts related to acquisition of new right-of-way through active agricultural lands and vineyards, and the need for farm operators to work around transmission poles in their fields, would result from alternative 2; however, these could be mitigated to a less than significant level through strategic pole placement and monetary compensation. Agricultural row crops are generally a compatible land use under transmission lines. Unlike the proposed project, this alternative would

also install a new transmission line adjacent to homes along segments 13, 12, 4, and 5 where no transmission line currently exists (although some distribution lines are in place).

### 3.5.2.8 Noise

Noise impacts with alternative 2 would be similar to those with alternative 1.

### 3.5.2.9 Public Health and Safety

Public health and safety impacts with alternative 2 would be similar to those with alternative 1.

### 3.5.2.10 Transportation and Traffic

Transportation and traffic impacts with alternative 1 would be similar to those with alternative 1.

### 3.5.2.11 Visual Resources

Like alternative 1, alternative 2 would raise the height of existing poles along Arnold Road and Highway 12 (county scenic corridors); this would not constitute a significant change and would not be a significant visual impact. Segment 4 could, however, create a significant visual impact, as a new transmission line would be placed in open space/agricultural lands where there currently are no electrical lines (see photo looking southeast at segment 4 from Arnold Road). This would conflict with Sonoma County General Plan policies to retain the largely open, scenic character of important scenic landscape units (Sonoma County 1998) (see policy OS-2 in chapter 15, section 15.2.1.2 of this PEA), as well as with County policies to preserve scenic values along designated scenic highway corridors, as segment 4 would be visible from Arnold Road.

Visual impacts of the east end of segment 4 would not be significant, as there is an existing distribution line that would be replaced by the new transmission line (see photo looking west at Segment 4 from intersection of Highway 12 and Sprecht Road). Use of this alternative would avoid crossing the Sonoma Creek & Leveroni “gateway”.

Segments 5 and 6 would conflict with the City of Sonoma’s General Plan policy to “enhance” the appearance of its designated Four Corners “gateway” at the Broadway/Highway 12 & Napa Road intersection (see Figure 3-6 and CDE-6 Visual Policy 26 listed in chapter 15, section 15.2.1.3 of this PEA). However, as the new transmission line would be co-located with existing transmission and distribution lines on shared poles (albeit taller), there would not be a significant change from the existing visual character of the intersection and thus would not represent a significant visual impact.

**Existing view looking southeast at Segment 4 from Arnold Road**



**Existing view looking west at Segment 4 from intersection of Highway 12 and Sprecht Road**



### 3.5.2.12 Corona and Induced Current Effects

Corona and induced current effects with alternative 2 would be greater than the proposed project; except for segments 1 and 2, a new transmission line would be built where none currently exists.

### 3.5.2.13 Growth Inducing Impacts

Growth inducing impacts would be similar to the proposed project.

### 3.5.2.14 Cumulative Impacts

Cumulative impacts would be similar to the proposed project.

## 3.5.3 **Alternative 3 – Segments 14, 10, 11, 4, 5, 6**

### 3.5.3.1 Air Quality

Air quality impacts with alternative 3 would be less than significant, similar to the proposed project. The route difference between the proposed project and alternative 3 would not result in any significant impacts to the sensitive receptors along those routes for either the construction or operations phases of the project.

### 3.5.3.2 Biological Resources

Alternative 3 would result in construction impacts to biological resources that are likely to be similar to those of the proposed route, although protocol-level surveys for special-status plants and California red-legged frog (CRLF) (*Rana aurora draytonii*) would be required along segments 10 and 14 to determine if additional impacts could occur in these areas. Suitable habitat for 18 species of special-status plants is found within these segments. Impacts to protected valley oaks and landmark and heritage trees might be less likely for alternative 3 than for the proposed route. Impacts to high-value wetlands could be less than those of the proposed route. One vernal pool, in segment 4, could be affected. One parcel within segment 10 may contain vernal pools. Potential impacts from the spread of invasive plants are likely to be similar, although different species of invasive plants from those noted for the proposed route could cause impacts. Potential impacts from the spread of the SOD pathogen would be very similar to those of the proposed route.

Potential impacts to sensitive aquatic species would be similar to the proposed project assuming that major streams such as Rodgers, Carriger and Sonoma creeks would be spanned by the transmission line and direct impacts to these stream zones would be avoided. The potential risk to nesting birds associated with operation and maintenance may be somewhat greater because the existing Lakeville-Sonoma transmission line would continue to operate along with the proposed new line. This risk would be minimized by implementation of existing avoidance measures for nesting birds.

It is likely that all of these potential impacts could be mitigated to a less-than-significant level although, for special-status plants and CRLF, the results of protocol-level surveys would be needed to determine this with certainty. Some mitigation measures, such as the Erosion Control and Restoration Plan in Appendix A, might need to be modified for alternative 3 segments.

#### 3.5.3.3 Cultural Resources

There is one previously identified cultural resource along the alternative 3 route. This consists of site CA-Nap-260, a prehistoric habitation site. CA-Nap-260 was first identified in 1958 when obsidian and clamshell were noted in midden deposits. The site is relatively extensive, measuring approximately 250' x 135' at the time it was originally recorded. There may be impacts to CA-Nap-260 should the site extend into the area where new transmission line poles are installed.

Mitigating Measure: A qualified professional archaeologist should re-survey and flag the location of CA-Nap-260 prior to construction. All project-related subsurface disturbances within 100 feet of the site should be monitored by the archaeologist. If subsurface archaeological resources are encountered, all potentially destructive work should halt in the vicinity until the nature of the cultural materials can be ascertained and treatment measures, if needed, can be developed and implemented. This may include controlled excavation prior to the placement of any new transmission line poles. If previously unidentified cultural resources are encountered during project construction, mitigation measure 7.2 shall be implemented (see chapter 7).

#### 3.5.3.4 Energy and Utilities

Impacts to energy and utilities would be similar to the proposed project.

#### 3.5.3.5 Geology

Alternative 3 would be subject to potential geologic hazards and result in construction impacts similar to those of the proposed project. For example, the active Rodgers Creek fault, with its potential for surface fault rupture, would be crossed by segment 14 as shown on Figure 3-4, Generalized Geologic Map. In addition, the potential impacts of high seismic ground shaking, soil erosion, and slope instability would be similar to those of the proposed project. All of the potential impacts could be mitigated to a less than significant level.

#### 3.5.3.6 Hydrology and Water Quality

Hydrology and water quality impacts would be similar to the proposed project.

### 3.5.3.7 Land Use and Agriculture

Segment 4 would require acquisition of a new right-of-way corridor and placement of a transmission line across agricultural lands where no lines currently exist. A new or expanded right-of-way corridor would be needed with segment 14, which would locate the new transmission line next to an existing 230kV transmission line. Greater land use impacts related to acquisition of new right-of-way through active agricultural lands and vineyards, and the need for farm operators to work transmission poles in their fields (segments 4 and 14) would result; however, these could be mitigated to a less than significant level through strategic pole placement and monetary compensation. Agricultural row crops are generally a compatible land use under transmission lines.

No residences or businesses along segments 5 and 7 would need to be relocated. Unlike the proposed project, this alternative would also install a new transmission line adjacent to homes along segments 5, 10, and 11 where no transmission line currently exists (although some distribution lines are in place).

### 3.5.3.8 Noise

Noise impacts with alternative 3 would be similar to those with alternative 1.

### 3.5.3.9 Public Health and Safety

Public health and safety impacts with alternative 3 would be similar to those with alternative 1.

### 3.5.3.10 Transportation and Traffic

Transportation and traffic impacts with alternative 3 would be similar to those with alternative 1.

### 3.5.3.11 Visual Resources

Segment 4 could create a significant visual impact, as a new transmission line would be placed in open space/agricultural lands where there currently are no electrical lines. This would conflict with Sonoma County General Plan policies to retain the largely open, scenic character of important scenic landscape units (Sonoma County 1998), as well as with County policies to preserve scenic values along designated scenic highway corridors, as segment 4 would be visible from Arnold Road. Visual impacts of the east end of segment 4 would not be significant, as there is an existing distribution line that would be replaced by the new transmission line.

Segments 5 and 11 would involve installing a new transmission line along Highway 12 and Arnold Drive, which are both county scenic corridors (see Figure 3-6). Highway 12 is also considered “eligible” for the State Scenic Highway program, but it has not officially been designated. Placing a

new transmission line along the east side of Highway 12 and the west side of Arnold Road would not be considered a significant visual impact, as there are existing distribution lines in place (see photos of Highway 12 and Arnold Road below) and the new transmission line would be co-located with the existing distribution lines on shared poles (albeit taller than the existing poles). This would not constitute a significant change to the existing environment and thus would not be a significant visual impact.

Segment 14 would place a new transmission line parallel to an existing 230 kV lattice tower transmission line, crossing Adobe Road and near Highway 116, both county scenic corridors. The Sonoma County General Plan encourages use of existing utility corridors, so the alternative is consistent with the General Plan in that regard.

Use of this alternative would avoid crossing the Sonoma Creek & Leveroni “gateway”. Segments 5 and 6 would conflict with the City of Sonoma’s General Plan policy to “enhance” the appearance of its designated Four Corners “gateway” at the Broadway/Highway 12 & Napa Road intersection (City of Sonoma 1995). However, as the new transmission line would be co-located with existing transmission and distribution lines on shared poles (albeit taller), there would not be a significant change from the existing visual character of the intersection and thus would not represent a significant visual impact.

#### 3.5.3.12 Corona and Induced Current Effects

Corona and induced current effects with alternative 3 would be greater than the proposed project; except for segment 14, a new transmission line would be built where none currently exists.

#### 3.5.3.13 Growth Inducing Impacts

Growth inducing impacts would be similar to the proposed project.

#### 3.5.3.14 Cumulative Impacts

Cumulative impacts would be similar to the proposed project.

### **3.5.4 Alternative 4 – Segments 14, 15, 16, 8, 7, 5, 6**

#### 3.5.4.1 Air Quality

Air quality impacts with alternative 4 would be less than significant, similar to the proposed project. The route difference between the proposed project and alternative would not result in any significant impacts to the sensitive receptors along those routes for either the construction or operations phases of the project.

#### 3.5.4.2 Biological Resources

Alternative 4 would result in construction impacts to biological resources that are likely to be similar to those of the proposed route, although protocol-level surveys for special-status plants and California red-legged frog would be required for segments 14, 15, and 16 to determine if additional impacts could occur in these areas. Suitable habitat for 18 species of special-status plants is found within these segments. Impacts to protected valley oaks and landmark and heritage trees may be less likely for alternative 4 than for the proposed route. Impacts to high-value wetlands could be similar to those of the proposed project.

Vernal pools were observed during September 2003 reconnaissance surveys, but the species composition, number and extent of these pools have not been determined. Potential impacts from the spread of invasive plants are likely to be similar, although different species of invasive plants from those noted for the proposed route could cause impacts. Potential impacts from the spread of the SOD pathogen would be very similar to those of the proposed route. Potential impacts to sensitive aquatic species would be similar to the proposed project assuming that major streams such as Rodgers, Carriger and Sonoma creeks would be spanned by the transmission line and direct impacts to these stream zones would be avoided.

The potential risk to nesting birds associated with operation and maintenance may be somewhat greater because the existing Lakeville-Sonoma transmission line would continue to operate along with the proposed new line. This risk would be minimized by implementation of existing avoidance measures for nesting birds.

It is likely that all of these potential impacts could be mitigated to a less than significant level although, for special-status plants and CRLF, the results of protocol-level surveys would be needed to determine this with certainty. Some mitigation measures, such as the Erosion Control and Restoration Plan (Appendix A), might need to be modified to cover alternative 4 segments.

#### 3.5.4.3 Cultural Resources

There is one previously identified cultural resource along the alternative 4 route. This consists of site CA-Nap-266, a lithic scatter site. There may be impacts to CA-Nap-266 should the site extend into the area where new transmission line poles are installed.

**Mitigating Measures:** A qualified professional archaeologist should re-survey and flag the location of CA-Nap-266 prior to construction. All project-related subsurface disturbances within 100 feet of the site should be monitored by the archaeologist. If subsurface archaeological resources are encountered, all potentially destructive work should halt in the vicinity until the nature of the cultural

materials can be ascertained and treatment measures, if needed, can be developed and implemented. This may include controlled excavation prior to the placement of any new transmission line poles. If previously unidentified cultural resources are encountered during project construction, mitigation measure 7.2 shall be implemented (see chapter 7).

#### 3.5.4.4 Energy and Utilities

Impacts to energy and utilities would be similar to the proposed project.

#### 3.5.4.5 Geology

Alternative 4 would be subject to potential geologic hazards and result in construction impacts similar to those of the proposed project. For example, the active Rodgers Creek fault, with its potential for surface fault rupture, would be crossed by segment 14 as shown on Figure 3-4, Generalized Geologic Map. In addition, the potential impacts of high seismic ground shaking, soil erosion, and slope instability would be similar to those of the proposed project. All of the potential impacts could be mitigated to a less than significant level.

#### 3.5.4.6 Hydrology and Water Quality

Hydrology and water quality impacts would be similar to those associated with the proposed project.

#### 3.5.4.7 Land Use and Agriculture

Segments 14, 15 and 16, would require acquisition of new and/or expanded right-of-way corridors. Segment 16 would involve placement of a transmission line across agricultural lands where no lines currently exist. Greater land use impacts related to acquisition of new right-of-way through active agricultural lands and vineyards, and the need for farm operators to work transmission poles in the middle of their fields in segments 14, 15 and 16, would result; however, these could be mitigated to a less than significant level through strategic pole placement and monetary compensation. Agricultural row crops are generally a compatible land use under transmission lines. No residences or businesses along segments 5 and 7 would need to be relocated. Unlike the proposed project, this alternative would also install a new transmission line adjacent to homes along segments 16, 8, 7, and 5 where no transmission line currently exists (although some distribution lines are in place).

#### 3.5.4.8 Noise

Noise impacts with alternative 4 would be similar to those with alternative 1.

#### 3.5.4.9 Public Health and Safety

Public health and safety impacts with alternative 4 would be similar to those with alternative 1.

#### 3.5.4.10 Transportation and Traffic

Transportation and traffic impacts with alternative 4 would be similar to those with alternative 1, but this alternative route would cross also California State Highway 116, so construction would need to be coordinated with Caltrans.

#### 3.5.4.11 Visual Resources

The northern end of segment 16 would be placed parallel to or co-located with an existing distribution line (see photo). The south part of segment 16 could create a significant visual impact, as a new transmission line would be placed in open space/agricultural lands where there currently are no electrical lines; however this part of segment 16 may not be highly visible from Arnold Drive because of the distance and because it would create a small link between an existing transmission line and an existing distribution line. Thus it may not be a substantial conflict with Sonoma County General Plan policies to retain the largely open, scenic character of important scenic landscape units.

Segments 5 and 7 would involve installing a new transmission line along Highway 12, a county scenic corridor. Highway 12 is also considered “eligible” for the State Scenic Highway program, but it has not officially been designated. Placing a new transmission line along the east side of Highway 12 would not be considered a significant visual impact, as there are existing distribution lines in place and the new transmission line would be co-located with the existing distribution lines on shared poles (albeit taller than the existing poles). Segments 14 and 15 would place a new transmission line parallel to an existing 230 kV lattice tower transmission line, crossing Adobe Road, Highway 116 and Arnold Road, which are county scenic corridors. The Sonoma County General Plan encourages use of existing utility corridors, so the alternative is consistent with the General Plan in that regard.

Use of this alternative would avoid crossing the Sonoma Creek & Leveroni “gateway”. Segments 5 and 6 would conflict with the City of Sonoma’s General Plan policy to “enhance” the appearance of its designated “gateway” at the Broadway/Highway 12 & Napa Road intersection. However, as the new transmission line would be co-located with existing transmission and distribution lines on shared poles (albeit taller), there would not be a significant change from the existing visual character of the intersection and thus would not represent a significant visual impact.

**Existing view from Segment I6**



Due to the type and size of the cypress trees along Watmaugh Road (segment 8), extensive tree removal and cutting would be necessary for safety reasons; therefore adversely affecting the existing visual character of Watmaugh Road, as well as the view of the trees from Highway 12, which would be a potentially significant visual impact, depending on the amount of cutting or tree removal needed.

#### 3.5.4.12 Corona and Induced Current Effects

Corona and induced current effects with alternative 4 would be greater than the proposed project; except for segments 14 and 15, a new transmission line would be built where none currently exists.

#### 3.5.4.13 Growth Inducing Impacts

Growth inducing impacts would be similar to the proposed project.

#### 3.5.4.14 Cumulative Impacts

Cumulative impacts would be similar to the proposed project.

### **3.6 NO PROJECT ALTERNATIVE**

Transmission facilities would not be constructed under the “No Project” alternative. While the No Project alternative would avoid impacts associated with the proposed project, it is not considered a realistic option. It would leave the local transmission system in a state of vulnerability with potential for low voltages, reliability criteria, violations, overloading problems, transmission equipment damage, and power outages to area customers should the existing single-circuit Lakeville-Sonoma transmission line go out of service. If no transmission system upgrades are made, then the area served by the Sonoma and Pueblo (in Napa) substations would be subject to electric service interruptions due to low voltage in the event of an outage of the Lakeville-Sonoma 115 kV line (or if equipment associated with this line fails) in particular during the summer months. To prevent system failure during peak demand periods (e.g., extremely hot summer days), it may become necessary to institute a program of controlled load shedding, which means that a portion of the system load would be disconnected to avoid equipment overload or system failures. This will result in interruption of electric service to customers.

This could be especially devastating if a power outage were to occur during the wine industry’s grape harvest and crush season (late August through early November), as it could be several days before the line could be repaired, depending on the extent of the damage. Agriculture is the number one industry in Sonoma and Napa Counties and so dropping load, especially during the crush season, which could also coincide with a heat wave, could affect grape processing. In addition, temperature control is very important to crushing facilities and storage, playing an important part in maintaining

wine quality. An outage in this service area could cause equipment failure, and if it is major refrigeration equipment, it would affect the wineries ability to cool wine tanks, etc. The impact if the wineries lost service during harvest/crush season could be substantial.

In addition, indirect impacts to human health and safety could potentially occur as a result of prolonged power outages or load shedding. The No Project alternative fails to meet any of PG&E's basic project objectives; thus it is rejected as infeasible. The No Project alternative would not be consistent with the General Plans of Sonoma County and the City of Sonoma, as reliable electrical service to existing and planned development would not be provided.

### **3.7 REFERENCES CITED**

City of Sonoma. 1995. 1995-2005 General Plan. Community Development Department. Adopted August 30.

Sonoma County. 1998. Sonoma County General Plan. Third Revision to Reflect Amendments and Corrections as of December 31, 1998. Permit and Resource Management Department. Available at: <http://www.sonoma-county.org/prmd/docs/gp/98gp-01.htm>