

D. COMPARISON OF ALTERNATIVES

D.1 INTRODUCTION

This section summarizes and compares the environmental advantages and disadvantages of the Proposed Project and the alternatives evaluated in this EIR (see Figures B-1 and B-2). This comparison is based on the environmental impacts of the Proposed Project and each alternative, as identified in Draft EIR Sections C.2 through C.13, and as modified and further evaluated in Section C of the Final EIR and in the responses to comments on the Draft EIR (Section H).

Section D.2 summarizes the Proposed Project and alternatives considered in this EIR. D.3 presents the environmentally superior “Build Scenario¹,” including a map of the environmentally superior transmission line routes and substation locations (Figure D-1). Section D.4 then compares the Environmentally Superior Build Scenario with the No Project Alternative, and identifies the resulting Environmentally Superior Alternative for this EIR.

D.2 SUMMARY COMPARISON OF PROPOSED PROJECT AND ALTERNATIVES

Table D-1 (on the following page) lists the alternatives evaluated in the Draft EIR and in this Final EIR for each listed component of the Proposed Project, as discussed in Section B.1 through B.6, and illustrated in Figures B-1 and B-2.

Table D-1 Characteristics of Alternatives Evaluated (by Area)

Proposed or Alternative Route Name		Total Length of Transmission Line (Approximate)	Length of Overhead Line (Approximate)	Length of Underground Line (Approximate)
Pleasanton Area				
Proposed South Area Transmission Line		5.5	2.8	2.7
S1: Vineyard-Isabel-Stanley		6.6	5.5	1.1
S2: Vineyard Avenue		5.5	1.5	4.0
S2/S2A: Zone 7 Water Plant to Vineyard Substation (with New or Old Vineyard)		5.9	0	5.9
S4: Eastern Open Space (with New or Old Vineyard)		6.6	3.7	2.9
S2 with S5 Quarry Route		5.9	3.0	2.9
S4 with S5 Quarry Route		7.3	5.7	1.6
LG: Local Generation		<0.1	0.1	0
Dublin/San Ramon Area				
Proposed Dublin Substation and Transmission Line	North Livermore Avenue to Dublin Substation	5.0	5.0	0
	Contra Costa-Newark Corridor to Dublin Substation	6.9	6.9	0
	Contra Costa-Newark Corridor to Dublin Substation with P2 underground	6.9	5.0	1.9
D1: South Dublin		3.1	2.3	0.8
D2: Dublin-San Ramon		4.4	3.8	0.6
D2 with Mitigation Measure A-6		4.3	4.3	0

¹ The environmentally superior “build” alternative is the alternative, aside from the No Project Alternative, that is determined to have the least overall environmental impact.

Table D-1 Characteristics of Alternatives Evaluated (by Area)

Proposed or Alternative Route Name	Total Length of Transmission Line (Approximate)	Length of Overhead Line (Approximate)	Length of Underground Line (Approximate)
North Livermore Area			
Proposed North Livermore Substation and Transmission Line	3.0	3.0	0
P1: Proposed Project Route and Substation with 1.0 Miles Underground	3.0	2.0	1.0
P2: Proposed Project Route and Substation with 3.0 Miles Underground	3.0	0	3.0
P3: Proposed Substation with 2.4 Miles Underground (May School Road)	2.4	0	2.4
L1: Raymond Road	1.0	0	1.0
L2: Hartman Road	7.2	3.5	3.7
Phase 2			
Proposed Phase 2 Transmission Line	10.0	10.0	0
T1: Stanislaus Corridor	to S1/S2/L1	14.2	14.2
	to Proposed/S4	17.3	17.3
T2: Switching Station	---	---	---

D.3 ENVIRONMENTALLY SUPERIOR “BUILD” ALTERNATIVE

The Draft EIR (Section D.2) describes in detail the process used for comparing alternatives. In order to meet the CEQA requirements to identify an environmentally superior alternative, the most important impacts in each area were identified and compared. The following sections (D.3.1 through D.3.4) have been updated from the Draft EIR based on additional analysis (in Section C of this Final EIR) and comments on the Draft EIR. These sections summarize the benefits and impacts of each alternative, and state whether the Proposed Project or which of the “build” alternatives is considered to be environmentally superior within each area. Section D.3.5 addresses the optimum combination of environmentally superior “build” alternatives. The Proposed Project and all alternatives are described in Final EIR Section B.1 and illustrated on Figure B-2.

D.3.1 PLEASANTON AREA

The Proposed Project in the Pleasanton area would consist of a 5.5 mile-long transmission line (2.8 miles overhead and 2.7 miles underground), and upgrades to the Vineyard Substation. Table D-2 summarizes advantages and disadvantages of these proposed and alternative routes. The shaded row indicates the environmentally superior “build” alternative.

Note that several new components have been added to this comparison since the Draft EIR. As described in Final EIR Section B.2 to B.4 and analyzed in Sections C.2 to C.4, both the S2 and S4 Alternatives have the potential to use any of three routes from the mid-point of Vineyard Avenue: (1) Old Vineyard (S2 as originally proposed in Draft EIR), (2) New Vineyard Avenue (S2 modified in this Final EIR), or (3) the Quarry Route (new Alternative S5 in this Final EIR).

In addition, the S2A Alternative has both overhead and underground options for the southernmost 1,000 feet. Because the Underground Option would minimize the visual impact in this area, it is considered to be Environmentally Superior to the Overhead Option. In the Pleasanton Area, two routes are considered to be *equally environmentally superior*. In this case, the decision regarding which route should be constructed will be made by the CPUC, based on its consideration of environmental, cost, and schedule factors. The two environmentally superior routes are:

- **The S2/S2A route, using New Vineyard Avenue, to the Vineyard Substation.** This route would be entirely underground from the Contra Costa-Newark transmission line to the substation. It minimizes visual impacts, utilizes corridors with greater construction access, and follows disturbed corridors (adjacent to or within existing roadways). However, it still passes residential areas along western Vineyard Avenue near Bernal Avenue. The impacts on these areas have been determined in this EIR to be less than significant, but they are still of concern to residents in the City of Pleasanton.
- **The S2/S2A route, using New Vineyard Avenue and the S5 Quarry Route** would result in nearly equal distances of overhead and underground lines (3.0 and 2.9 miles, respectively). The underground lines along Vineyard Avenue would protect the views across the valley, but the overhead lines through the quarry would be visible from the Shadow Cliffs Recreation Area. While this is not considered in this EIR to be a significant impact, it is still a major concern to the East Bay Regional Parks District.

D. Comparison of Alternatives

Table D-2 Alternatives Comparison -- Pleasanton Area Summary *

Proposed/Alternative		Advantages	Disadvantages
Proposed Route to Vineyard Substation		<ul style="list-style-type: none"> • Shortest overall route (5.5 miles) • Most overhead portions of route not visible from existing land uses 	<ul style="list-style-type: none"> • Most severe construction and operational impacts on narrow residential streets, particularly underground • Overhead construction through undisturbed corridor would affect habitat for sensitive species • Construction of access road near several landslides and debris flows (slope instability and additional grading potential) • Southern terminus adjacent to Verona fault zone
S1 Alternative (Vineyard-Isabel-Stanley)		<ul style="list-style-type: none"> • Best consolidation in existing corridors (utility, highway and railroad) • Eliminates construction through narrow residential streets (Proposed Project) • Least underground construction minimizes noise, dust, and traffic impacts 	<ul style="list-style-type: none"> • Second longest routes (6.6 miles) • Significant visual impact in Sycamore Grove Regional Park; impact on recreational trail users (eliminated with S2A) • Residences east of Isabel Avenue affected by adverse (not significant) visual impact • Greatest number of recorded of cultural resources
S2 Alternative (Vineyard-Bernal)	S2 as presented in Draft EIR	<ul style="list-style-type: none"> • Length same as Proposed Project (5.5 miles) • Next-to-least visual impact due to mostly underground • Use of larger streets allows greater setback from adjacent land uses 	<ul style="list-style-type: none"> • Significant visual impact in Sycamore Grove Regional Park; impact on recreational trail users • Greatest vineyard frontage (1.8 miles) • Most traffic; air quality and noise impacts from underground construction
	With Modified S2A Alternative, using Old Vineyard Ave.	<ul style="list-style-type: none"> • No construction in Sycamore Grove Regional Park • Eliminates visual impact (entire 5.9 mile transmission line underground) except for transition station adjacent to Tesla-Newark transmission corridor 	<ul style="list-style-type: none"> • Adds 1.0 miles of underground construction and associated impacts to S2 Alternative • Requires use of agricultural land adjacent to Foley Road • Potential construction disturbance to adjacent Del Valle Water Treatment Plant
	With Modified S2A Alternative, using New Vineyard Ave.	<p>Same impacts as above, plus:</p> <ul style="list-style-type: none"> • Greater distance from existing and future residences and planned Neal Elementary School (Vineyard Av. Corridor Specific Plan) 	<p>Same impacts as above, plus:</p> <ul style="list-style-type: none"> • Potential timing problem due to uncertainty in completion of New Vineyard Avenue construction
	With Modified S2A Alternative, using S5 Quarry Route	<ul style="list-style-type: none"> • Reduced construction impacts due to less underground construction • Reduces construction and operational impacts on homes along Vineyard Avenue 	<ul style="list-style-type: none"> • Mineral resources present (quarries) • Tubular steel poles and lines would be visible from Shadow Cliffs Regional Park on east and north sides
S4 Alternative (Eastern Open Space)	As presented in Draft EIR (using Old Vineyard Avenue)	<ul style="list-style-type: none"> • Eliminates construction through narrow residential streets (Proposed Project) • Avoids overhead lines near existing residential development (S1) 	<ul style="list-style-type: none"> • Second longest route overall (6.6 miles, 18% longer than proposed) • Greatest disturbance of habitat, especially underground construction cross-country south of Vineyard Ave • Greatest potential for impact to California red-legged frog proposed critical habitat
	S4 Alternative with New Vineyard Avenue	<ul style="list-style-type: none"> • Same as for S2A Alternative with New Vineyard Avenue, except: • <i>Disadvantages:</i> <ol style="list-style-type: none"> 1. Third longest overall route (6.6 miles) 2. Potential sedimentation/spill impacts from underground construction between future road and creek, from Old Vineyard to New Vineyard 	
	S4 Alternative with S5 Quarry Route	<ul style="list-style-type: none"> • Same as for S2A Alternative with S5 Quarry Route, except: • <i>Disadvantages:</i> <ol style="list-style-type: none"> 1. Longest overall route (7.3 miles) 2. Potential sedimentation/spill impacts from underground construction between future road and creek, from Old Vineyard to New Vineyard 	

* Impacts at Vineyard Substation would be the same under all alternatives.

D.3.2 NORTH LIVERMORE AREA

The Proposed Project in the North Livermore area includes a 3.0-mile overhead transmission line and a new five-acre substation. Two substation site alternatives were evaluated, in addition to several alternatives that would have different segments of the transmission line underground. The No Project Alternative is considered to be environmentally superior to the Proposed Project or any alternative in North Livermore. In response to comments on the Draft EIR, the P3 Alternative was modified to avoid a landslide and to reduce the visual impact of the transition station (see Final EIR Sections B.5 and C.4). Table D-3 illustrates advantages and disadvantages of alternatives.

Table D-3 Alternatives Comparison – North Livermore Area Summary

Proposed/Alternative		Advantages	Disadvantages
Proposed North Livermore Substation	Proposed Transmission Lines (Manning Road and N. Livermore Avenue)	<ul style="list-style-type: none"> Utilizes PG&E Co.'s existing vacant easement along Manning Road 	<ul style="list-style-type: none"> Substation and 3.0 miles of transmission lines would be highly visible in scenic area Close to Greenville fault (potential for strong ground motion) Potential conflict with future regional trail along Manning Road
	P1 Alternative (1 mile underground along N. Livermore)	<ul style="list-style-type: none"> Less overhead transmission line visible in scenic area (2.0 miles overhead; one mile underground) 	<ul style="list-style-type: none"> Significant visual impact of substation and east-west line would remain High liquefaction and corrosive soil potential affecting underground segment
	P2 Alternative (3.0 miles underground along N. Livermore and Manning)	<ul style="list-style-type: none"> Less overhead transmission line visible in scenic area (no overhead; 3.0 miles underground) 	<ul style="list-style-type: none"> Greatest construction impacts associated with underground cable installation Significant visual impact of substation would remain High liquefaction and corrosive soil potential affecting underground segment
	Modified P3 Alternative (2.4 miles underground along May School Road, Dagnino Road, and private road)	<ul style="list-style-type: none"> Shortest route to proposed substation site that eliminates overhead lines (2.4 miles; all underground) 	<ul style="list-style-type: none"> Greater construction impacts associated with underground cable installation Significant visual impact of substation would remain High liquefaction and corrosive soil potential affecting underground segment Potential impact to groundwater flow feeding the Springtown marsh/sensitive species habitat
L1 Alternative: Raymond Road (at Lorraine Road)	<ul style="list-style-type: none"> Least construction (1 mile underground; no overhead) Use of existing, disturbed corridor (Raymond Road) 	<ul style="list-style-type: none"> Significant impacts to groundwater hydrology and biological resources adjacent to bird's beak protected area Potential impacts on operation of FCC facility Significant visual impact of substation in rural setting 	
L2 Alternative: Hartman Road (near Las Positas College)	<ul style="list-style-type: none"> Adjacent to major (future) roadway Closest to areas of immediate growth and commercial development Least visual impact of all North Livermore substation alternatives 	<ul style="list-style-type: none"> Nearly twice as long as Proposed (7.2 miles) There are no existing roads in the substation area so construction impacts and disturbance of habitat would be more severe. Substation study area is near a seasonal wetland Crosses two potentially active faults Construction through an existing drainage (future Hartman Road) Passes Livermore Municipal Airport and City Water Treatment Plant Parallel to Hwy 84 construction; crosses SR 84, I-580, and UPRR tracks 	

D. Comparison of Alternatives

As in the Draft EIR, in the North Livermore area, the Proposed North Livermore Substation site is preferred, with a 2.4-mile underground route along May School and Dagnino Roads and a private road (Modified P3 Alternative). This underground route was proposed as a mitigation measure to reduce potential air quality impacts associated with the longer underground route (P2 Alternative). The substation site would result in a significant and unavoidable (**Class I**) visual impact, but impacts in nearly all other issue areas would be less than for the L1 and L2 Alternatives.

It is important to note that the advantages of this Environmentally Superior "Build" Alternative for North Livermore are only realized if either Alternatives D1 or D2 is selected. If the Proposed Dublin Substation is selected, the transmission line across PG&E's vacant easement (along Manning Road) would be constructed so the new 230 kV transmission line should be consolidated into either that or the P3 route.

D.3.3 DUBLIN/SAN RAMON AREA

The Proposed Project in Dublin/San Ramon would be a new five-acre substation in undeveloped private land near the Alameda/Contra Costa County line, and 5.0 miles of overhead transmission line (from North Livermore Avenue to the Proposed Dublin Substation). Table D-4 summarizes the key comparison factors in this area. The shaded/bold row indicates the environmentally superior alternative.

As shown in Table D-4, the D1 Alternative is environmentally superior for the Dublin/San Ramon area. The transmission line route is primarily within the gravel preserve so would have minimal visual impacts or construction disturbance to the public. While future land uses would be different (including industrial development and a park), the EIR considers impacts based on existing land uses and future projects only in the permitting process as of the time of the Notice of Preparation. Therefore, these future impacts (which are addressed in detail in Section H, Response to Comments, are somewhat speculative at this time) are not considered to be significant.

The substation site is in the commercially zoned portion of the Dublin Ranch development, in an area where commercial and industrial growth is focused and there is a high demand for electricity. This alternative also preserves the option of the Phase 2 Switching Station, in lieu of the significant visual impacts associated with the Phase 2 Proposed Project or the Stanislaus Corridor Alternative (see Section D.2.4).

If the Proposed Dublin Substation is selected, the Switching Station Alternative for Phase 2 (the environmentally superior Phase 2 alternative) could still be approved. The Switching Station Alternative requires that no more than two substations remain connected to the Contra Costa-Newark transmission line (at least one substation must move to the Tesla-Newark line).

Table D-4 Alternatives Comparison – Dublin/San Ramon Area Summary

Proposed/Alternative	Advantages	Disadvantages
Proposed Dublin Substation and Transmission Line from North Livermore	<ul style="list-style-type: none"> Substation site is not visible to public 	<ul style="list-style-type: none"> Significant visual impact along 5.0 mile transmission line route between N. Livermore and Proposed Dublin Substation; substation would be visually inconsistent with existing rural landscape Potentially significant construction and operation impacts of substation adjacent to actively eroding and destabilized creek Requires construction of several access roads and construction/operational disturbance of transmission line corridor Potential impacts to California red-legged frog proposed critical habitat Many landslides along transmission line route May induce growth already permitted
D1 Alternative (transmission line from Vineyard Substation)	<ul style="list-style-type: none"> Shortest route (3.1 miles) Substation in area zoned for commercial land use, closer to center of highest demand for electricity Transmission line traverses disturbed industrial area (gravel preserve) Flat terrain at substation site Enables Switching Station Alternative for Phase 2 (eliminating significant visual impacts) 	<ul style="list-style-type: none"> Substation within future commercial area reduces area available for development Potential for reduction of gravel resource availability in future Transmission line crossing of I-580 Freeway Substation would be visually inconsistent with <i>existing</i> rural landscape (slated for commercial development)
D2 Alternative (transmission line from San Ramon Substation)	<ul style="list-style-type: none"> Transmission line route passes through more developed areas than proposed route (adjacent to ongoing construction/ residential development) Eliminates significant visual impacts associated with transmission line between North Livermore Avenue and proposed Dublin Substation 	<ul style="list-style-type: none"> Potential construction disturbance (underground transmission line into substation) of many residences near San Ramon Substation Planned/ongoing residential development affected by adverse (not significant) visual impact. Construction associated with 20 miles of reconductoring could affect sensitive biological species and cultural resources Visual impact from Tassajara Road of transmission line in rural setting May induce growth not already permitted
D2 Alternative with Mitigation A-6 (direct connection to San Ramon-Pittsburg 230 kV line; addressed in Section C.13.3)	<ul style="list-style-type: none"> Eliminates construction at/near San Ramon Substation Eliminates need for construction disturbance and cost associated with underground construction, including crossing of Pleasanton fault 	<ul style="list-style-type: none"> See D2 above.

D.3.4 TESLA CONNECTION/PHASE 2

PG&E Co.’s proposed Phase 2 connection to the Tesla Substation would require 10 miles of transmission line construction between the existing Contra Costa-Newark 230 kV line and the Tesla Substation in eastern Alameda County. Two changes to the Phase 2 alternatives have been made in

D. Comparison of Alternatives

response to comments on the Draft EIR: (1) Switching Station Site 2 was moved out of the Sycamore Grove Regional Park and onto adjacent private property, and (2) the Brushy Peak Alternative was eliminated since it did not reduce impacts to Brushy Peak Preserve (see Section B.6). Table D-5 summarizes advantages and disadvantages; the shaded/bold row indicates the environmentally superior alternative.

Table D-5 Alternatives Comparison – Tesla Connection/Phase 2 Summary

Proposed/Alternative		Advantages	Disadvantages
Proposed Phase 2		<ul style="list-style-type: none"> Avoids vineyard disturbance Shorter transmission line than Stanislaus Corridor (10 miles) 	<ul style="list-style-type: none"> Overhead construction through undisturbed corridor Significant visual impact in vicinity of Brushy Peak Preserve and adverse impact at I-580 crossing
Stanislaus Corridor		<ul style="list-style-type: none"> Uses existing utility corridor Two sets of existing lattice towers would be removed and replaced by taller towers with smaller footings, spaced farther apart 	<ul style="list-style-type: none"> Construction disturbance to vineyards 14-17* miles longer than Proposed Phase 2
Switching Station	Switching Station Site 1 (westernmost site)	<ul style="list-style-type: none"> Eliminates need to construct new transmission line to Tesla Adjacent to Tesla-Newark transmission corridor Flat terrain with easy access from Hwy 84 Outside of park 	<ul style="list-style-type: none"> Located in or near active Verona fault zone Potential California red-legged frog habitat Close to Highway 84 (scenic corridor)
	Switching Station Site 2 (on private land southwest of Del Valle Water Plant)	<ul style="list-style-type: none"> Eliminates need to construct new transmission line to Tesla Adjacent to Tesla-Newark transmission corridor Outside of park 	<ul style="list-style-type: none"> Adverse (less than significant) visual impact from Sycamore Grove Regional Park Potential California red-legged frog habitat area (mitigable) Construction disturbance adjacent to Zone 7 access road
	Switching Station Site 3 (in Sycamore Grove Regional Park)	<ul style="list-style-type: none"> Eliminates need to construct new transmission line to Tesla Adjacent to Tesla-Newark transmission corridor 	<ul style="list-style-type: none"> Potential California red-legged frog habitat Located within the Sycamore Grove Regional Park adjacent to recreational trail Significant visual impact in park

* Total length depends on which route would connect with Stanislaus Corridor: 14 miles from S1/S2 Alternative and 17 miles from Proposed/S4 Alternative.

Between PG&E Co.’s Proposed Phase 2 and the construction of a new transmission line in the Stanislaus Corridor, the Stanislaus Corridor is environmentally superior due to it being an existing, occupied transmission corridor. However, assuming that Phase 2 is ultimately required, this alternative would have much greater impacts than any of the Switching Station alternatives, which would require no additional transmission line construction. The selection of the Switching Station site is partly driven by the location of the Pleasanton Area transmission line’s tap to the Contra Costa-Newark 230 kV line (in the Tesla-Newark corridor), and partly by the site-specific impacts of the station. Given that the S2/S2A alternative has been identified as environmentally superior in the Pleasanton Area (Section D.3.1), the Switching Station Site 2 is environmentally superior for Phase 2.

D.3.5 COMBINATION OF "BUILD" ALTERNATIVES

Each component of the Proposed Project and the related alternatives could conceivably be combined with components from the other areas. However, some of these combinations can be either (a) inefficient because they would require duplicative transmission lines in essentially parallel corridors (i.e., the combination of the Proposed South Area route or the S4 Alternative with the L2 Alternative), or (b) electrically infeasible due to the restriction on the capacity of underground transmission line segments (which would prevent adequate electricity to serve three substations from passing through the lines). Therefore, after determination of the environmentally superior alternative in each area (Sections D.3.1 through D.3.5), these alternatives were evaluated for their ability to work together.

One configuration of alternatives (S1 or S2 combined with D1 and L2) would have required all three area substations to be connected to the Contra Costa-Newark 230 kV line through one double-circuit loop. Because each of these alternatives includes an underground segment, this combination of alternatives would not be able to provide sufficient power to the substations. Had all of these alternatives been found environmentally superior, the Switching Station would need to be constructed immediately to allow a direct connection of two substations to the more highly rated Tesla-Newark line. However, because these three alternatives were not found to be environmentally superior, the Switching Station would not be required until Phase 2 (or, depending on construction of large power plants and future transmission in the region, possibly never, as discussed in Section A.2).

Phase 1

PG&E Co.'s Proposed Project would have all three substations (Vineyard, North Livermore, and Dublin) connected to the Contra Costa-Newark 230 kV line, at two different locations: the North Livermore and Dublin Substations would be connected in the North Livermore area where the CC-N line runs north-south, and the Vineyard Substation would connect to the CC-N line south of Highway 84. The environmentally superior Pleasanton Area S2/S2A transmission line route would also connect to the CC-N line in the Tesla-Newark corridor near the Del Valle Water Treatment Plant, and the D1 Alternative would continue north from the Vineyard Substation. The proposed North Livermore Substation would be connected to the north-south CC-N line, due east of May School Road (one mile south of the Proposed Project's tap point).

Phase 2

At the time when the CC-N line becomes overloaded, PG&E Co.'s Phase 2 would allow for connection of the North Livermore and Dublin Substations directly to the Tesla Substation. The Stanislaus Corridor Alternative would allow the same direct connection, but the Vineyard Substation (and also the Dublin Substation, with the D1 Alternative) would be connected to Tesla. However, as discussed in Section D.3.5, the Switching Station Alternative eliminates the need for construction of 10 to 12 miles (depending on the route) of transmission lines by allowing access to Tesla's power at a tap in Tesla-Newark corridor.

Conclusion

As illustrated in Figure D-1, the two Environmental Superior “Build” Scenarios would be substantially shorter overall than the Proposed Project. However, these scenarios also include more miles of underground line. Table D-5 summarizes the comparison of the Proposed Project with the Environmentally Superior “Build” Scenario.

Table D-6 Mileage Comparison: Proposed Project vs. Environmentally Superior Build Scenario

	Overhead Transmission		Underground Transmission		Total Miles
	Phase 1	Phase 2	Phase 1	Phase 2	
Proposed Project	10.7	10.0	2.7	0	23.4
Environmentally Superior Build with S2 Along Vineyard Avenue	2.3	0	9.1	0	11.4
Environmentally Superior Build with S5 Through Quarry	5.3	0	6.1	0	11.4

D.3.6 ILLUSTRATION OF THE ENVIRONMENTALLY SUPERIOR “BUILD” SCENARIO

As explained in Sections D.3.1 through D.3.5, the following alternatives were found to be environmentally superior in each area:

- **Pleasanton Area:** The S2/S2A Alternative with the S5 Quarry Route (overhead) or with the S2 route along Vineyard Avenue are equally environmentally superior.
- **North Livermore Area:** The proposed North Livermore Substation with the Modified P3 Alternative/mitigation segment (underground along May School and Dagnino Roads, and a private road) is environmentally superior.
- **Dublin/San Ramon Area:** The D1 Alternative is environmentally superior.
- **Phase 2:** The Switching Station Site 2, southwest of the Del Valle Water Treatment Plant and adjacent to the Tesla-Newark Corridor, is environmentally superior.

Figure D-1 illustrates the Environmentally Superior “Build” Scenario for the entire project area.

Figure D-1

Environmentally Superior Project

Start on ODD

page 2 of 2, Figure D-1

D.4 NO PROJECT ALTERNATIVE COMPARED WITH THE ENVIRONMENTALLY SUPERIOR “BUILD” SCENARIO

As shown in Tables D-2 through D-5, the Proposed Project would result in a range of construction and operational impacts, many of which can be reduced with implementation of mitigation. However, if the Proposed Project or an alternative is not constructed, PG&E Co. will be forced to respond to growing demand by expanding its existing system to the extent that is possible, and by curtailing service if growth in demand exceeds the transmission system’s capacity or reliability requirements for essential services (such as hospitals).

It is possible that delaying implementation of the Proposed Project will result in other alternatives being formulated, or currently infeasible alternatives becoming more likely. As an example, development of local power generation facilities could partially address the Tri-Valley region’s transmission constraints (as discussed in Section A.2.6). However, many of these small generation facilities would be required in order to supply the power needed to fully address the present limits on electric service. The impacts of thermal power generation, even small-scale, can also be significant (air quality degradation, noise and use of hazardous substances), although often mitigable as well.

The combination of components which has emerged from the EIR analysis as the Environmentally Superior “Build” Scenario minimizes the impacts of adding transmission capacity to the growing Tri-Valley region to the maximum extent feasible:

- The Vineyard Substation modifications are minor and the impacts of the underground S2A transmission line route would be short-term, associated with construction.
- Under Alternative D1, the new Dublin Substation would be constructed and operated in a commercially zoned area and once again, the impacts of the D1 transmission line will largely be short-term, associated with construction.
- Under the Proposed Project with the P3 Alternative/mitigation segment, the impacts of the North Livermore transmission line are similarly reduced to short-term, construction-related impacts associated with undergrounding.
- Under the Switching Station 2/Phase 2 Alternative, the construction and permanent visual impacts of 10 miles of new transmission line and towers across the Altamont Hills proposed in Phase 2 by PG&E Co. are avoided (as are those associated with 14-17 miles in the Stanislaus Corridor Alternative).

The new North Livermore Substation under the Environmentally Superior Build Scenario presents the greatest operational (long-term) impact since it would be sited in a relatively undeveloped area, with a Class I (significant, unavoidable) visual impact, as well as potentially significant biological impacts associated with sensitive species habitat in the Springtown Alkali Marsh. As discussed in Section E.1.2, wherein a Class I growth-inducement impact was found for the Proposed Dublin and North Livermore project components, the need for the additional electrical capacity associated with the Proposed North Livermore Project component in the next five years (the horizon for the Proposed Project) is in question, given the very long-term nature of the North Livermore Specific Plan (development over the next eight to 20 years), as well as the recent passage of Measure D. This is the one component of the Environmentally Superior Build Scenario, which could arguably be supplanted by

D. Comparison of Alternatives

the No Project Alternative, particularly since the new Dublin/D1 Substation would be able to serve North Livermore development along the I-580 corridor (i.e., where that development is starting, proximate to the L2 Alternative).

Similarly, as already discussed, the need for a Phase 2 has been cast into doubt by power flow studies performed by the California Independent System Operator in conjunction with PG&E Co., which show that this additional service from the Tesla Substation is likely not to be necessary, due to transmission system improvements underway and expected. Therefore, the No Project Alternative would be environmentally superior to the Phase 2 “build” scenario, even though it is the relatively benign Switching Station Site 2.

Therefore, the Complete Environmentally Superior Alternative would be:

- **Pleasanton Area:** The S2/S2A Alternative with the S5 Quarry Route (overhead) or with the S2 route along Vineyard Avenue are equally environmentally superior.
- **North Livermore Area:** No Project is environmentally superior.
- **Dublin/San Ramon Area:** The D1 Alternative is environmentally superior.
- **Phase 2:** No Project is environmentally superior.