5. Alternatives

5.1 Introduction

A required component of a SEIR is the identification and evaluation of a "range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project" (State CEQA Guidelines §15126.6(a)). As such, the selection of alternatives focuses on those alternatives capable of eliminating or reducing any significant environmental effects of the proposed Project, even if these alternatives would impede to some degree the attainment of project objectives or would be more costly (State CEQA Guidelines §15126.6(b)).

The range of alternatives analyzed within a SEIR is governed by the "rule of reason". A SEIR need not consider every conceivable alternative to a project (State CEQA Guidelines §15126.6(a). Rather, the SEIR must evaluate only those alternatives necessary to permit a reasoned choice between the alternatives and the proposed Project (State CEQA Guidelines §15126.6(f)). A SEIR also need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote or speculative (State CEQA Guidelines §15126.6(f)(3)). Additionally, the "no project" alternative must be evaluated along with its impacts. The "no project" analysis discusses the existing conditions at the time the Notice of Preparation (NOP) is published, as well as what would be reasonably expected to occur in the foreseeable future if the Project is not approved, based on current plans and consistent with available infrastructure and community services (State CEQA Guidelines §15126.6(e)(2)).

Based on the alternatives analysis, an environmentally superior alternative is designated from among the alternatives. If the environmentally superior alternative is the "no project" alternative, the SEIR must identify an environmentally superior alternative from among the other alternatives (State CEQA Guidelines §15126.6(e)(2)).

5.2 Criteria for Selection of Alternatives

To determine a reasonable range of feasible alternatives, the following screening criteria were applied, which are derived from the State CEQA Guidelines (§15126.6 et seq.):

- Does the alternative meet most of the basic Project objectives?
- Is the alternative feasible (e.g., site suitability; economic viability; availability of infrastructure; ability to achieve policy consistency; other plans or regulatory limitations; ability to reasonably acquire, control, or otherwise have access to an alternative site)?
- Does the alternative avoid or substantially lessen any significant effects of the proposed Project (including consideration of whether the alternative itself could create significant effects potentially greater than those of the proposed Project)?

As discussed in Section 2.2, *Project Objectives*, the purpose of the Strauss Wind Energy Project (SWEP) is to construct and operate a commercial wind-energy generation facility. The Applicant has identified the following objectives for the Project:

1. To develop a wind energy project with a generation capacity of approximately 102 megawatts (MW) of electricity—producing approximately 300 gigawatt-hours (GWh) of electricity annually—in an area where the wind resources are known to be sufficient to do so;
2. To develop an economically viable wind energy project that will support commercially available financing;
3. To begin operating the wind project in time to meet milestones of an existing power purchase agreement and to qualify for certain tax credits; and
4. To provide project property owners with a stable, secondary source of income to supplement income from ranching and farming operations to support ranch maintenance and improvements.

The first objective identified by the Applicant represents the fundamental underlying purpose of the Project. The alternatives selected for analysis must fulfill this underlying Project purpose and meet most of these four objectives. In addition, Section 2.2 lists certain public objectives identified by the Applicant that would be advanced by the Project, including contributions to fulfilling local and State goals related to renewable energy, reducing greenhouse gas emissions, promoting economic viability of agricultural uses, and providing additional tax revenues.

The screening process for alternatives also focuses on identifying alternatives that would reduce or avoid the proposed Project's identified significant impacts. Significant unavoidable impacts have been identified for the proposed Project related to aesthetics/visual resources, biological resources, and land use and planning, which means that feasible mitigation is not available to reduce these impacts to a less-than-significant level (see Section 6.1, *Significant Unavoidable Impacts*).

5.3 Alternatives Considered

During the preparation of this SEIR, the County considered several potential alternatives for the proposed SWEP. As described above, the purpose for formulating alternatives is to identify a reasonable range of feasible options for achieving most Project objectives while reducing or avoiding the proposed Project's significant environmental impacts. Possible alternatives were identified via the LWEP EIR, SWEP SEIR scoping process (see Section 1.5.1, *Scoping*), consultation with agencies, and exploration of ideas generated by the SEIR preparation team.

The following potential alternatives were considered in identifying the Project alternatives to be carried forward for analysis.

- **82.5-MW Wind Energy Project.** This is the one alternative from the ~~The~~ EIR for the Lompoc Wind Energy Project (LWEP) that is being considered for the SWEP. The reason that this alternative is considered is that the LWEP EIR concluded ~~that~~ this alternative as the environmentally superior alternative (ESA) to the LWEP ~~at that time~~. This alternative was a wind energy project consisting of 55 1.5-MW wind turbine generators (WTGs) providing a generating capacity of 82.5 MW. This alternative was considered because it would have reduced visual impacts of the proposed LWEP by eliminating WTGs visible from County parks. It also would have reduced avian impacts and other biologically related impacts due to the reduced number of WTGs and corresponding reduced ground disturbance associated with WTG foundations, access roads and other infrastructure. Like the proposed SWEP, this alternative would include construction of a substation, O&M facility, power collection lines, and a 115-kV transmission line. The transmission

line differed from SWEP, and a portion of the LWEP line along San Miguelito Road would have been consolidated with the existing PG&E electrical distribution line to minimize visual and biological impacts. ~~in that it had a different alignment and a portion of the line was combined with the existing 115-kV line that serves the Imerys Filtration diatomaceous earth mine.~~ For SWEP, this alternative would reduce the number of oak trees that are proposed to be removed. It would also reduce visual impacts as seen from Jalama County Park. For a full description of this alternative, see Sections 5.3.1.2, ~~5.3.2, and~~ 5.4.2 and 5.4.4 of the LWEP EIR.

- **Modified Project Layout, Including Elimination of WTGs E-7 and E-8.** The access road and pads for the SWEP's two easternmost WTGs, E-7 and E-8, would require the removal of approximately 382 native oak trees. This alternative would eliminate WTGs E-7 and E-8 from the proposed Project, reducing the total number of WTGs to 29. To minimize the reduction in generating capacity associated with removal of WTGs E-7 and E-8, a new 3.8-MW WTG would be added to the north string of turbines, and WTGs W-7 and N-3 would be changed to 3.8-MW turbines from the Project's proposed 1.79-MW turbines. A new construction access road would provide access from the laydown area up to WTG E-1 and a new access road would be also constructed to provide access to WTG E-2 to eliminate all direct impacts on Coastal Zone resources.
- **Alternative Switchyard Location.** The Applicant originally considered two possible locations for the Project's switchyard where the Project's transmission line would connect to PG&E's system. The Applicant selected one of these sites for the switchyard. The other site is a possible alternative location for the switchyard.
- **Turbine Blade Delivery Alternatives.** Due to their length, turbine blades can be difficult to transport and, if transported by truck as proposed, would necessitate modifications to San Miguelito Road, including removal of approximately 158 oak trees. In addition, adverse impacts would occur along other portions of the truck transport route. The following three alternatives were considered to reduce impacts associated with blade transport:
  - **Segmented Turbine Blades.** This potential alternative includes the possible use of two-piece turbine blades, which would be easier to transport than full-size blades.
  - **Helicopter or Airship Transport of Turbine Blades.** This potential alternative involves the possible use of heavy-lift helicopters or airships to transport blades to the SWEP site.
  - **Rail Delivery of Turbine Blades.** This potential alternative would involve the transport of turbine components using the rail spur along San Miguelito Road to the Imerys Filtration diatomaceous earth mine.
- **Alternate Surface Transport Routes.** This potential alternative involves consideration of possible alternative routes for truck transport of the WTG components, including the turbine blades, through the Lompoc area and to the SWEP site. Although no significant and unavoidable transportation impacts have been identified related to the Project's transport of WTG components, this alternative has the potential to reduce adverse impacts in Lompoc associated with surface transport, such as localized traffic congestion, temporary removal of roadway infrastructure (signs and signals), and loss of certain street trees.
- **Siting WTGs Below Ridgelines.** This potential alternative was suggested in scoping comments received in response to the NOP. It would involve a redesign of the wind farm site plan to relocate WTGs away from ridgetops and also make necessary corresponding changes to access roads and

power collection lines to serve the revised WTG locations. This conceptual alternative was suggested as possible way to reduce the potential for bird fatalities from striking WTG blades and bat fatalities from air pressure differentials near spinning WTG blades.

- **No Project Alternative.** CEQA requires evaluation of a No Project alternative. Under the No Project Alternative, the SWEP would not be approved and conditions at the Project site would remain unchanged for the foreseeable future.

Four of these possible alternatives have been carried forward for further analysis. More detailed descriptions of the alternatives carried forward are presented in Section 5.5, below. The others were eliminated due to either infeasibility, inability to meet most Project objectives, or ineffectiveness in reducing or avoiding significant Project impacts, as explained in Section 5.4 below.

5.4 Alternatives Eliminated from Further Consideration

Per State CEQA Guidelines Section 15126.6(c), a SEIR must identify any alternatives that were considered, but rejected by the Lead Agency, and to provide a brief explanation as to the reasons underlying the Lead Agency's determination. As discussed above, alternatives were assessed for their ability to reasonably achieve the primary or basic project objectives and reduce the significant environmental impacts of the proposed Project. Also, their technical, legal, and regulatory feasibility were evaluated. Based on these screening criteria, the alternatives eliminated from consideration in the SEIR are briefly described below along with the rationale for their elimination.

Please note that a number of alternatives were considered and then eliminated from detailed analysis in the LWEP EIR, including alternative sites and alternative power line routes. These alternatives remain eliminated for the SWEP for the reasons provided in the LWEP EIR. For more information, see Section 5.2 of the LWEP EIR.

5.4.1 82.5-MW Wind Energy Project

As described in Section 5.3 above, this alternative was analyzed in the LWEP EIR and was identified as the environmentally superior alternative~~ at that time~~. Because this alternative has already been analyzed in the LWEP EIR, it does not need to be re-analyzed in this SEIR. The reader should refer to Sections 5.3.1.2, ~~5.3.2, and~~ 5.4.2, and 5.4.4 of the LWEP EIR for an analysis of the impacts of this alternative.

During the Draft SEIR public comment period, a number of comments were received requesting a Project design like the LWEP. As stated above in Section 5.3, this alternative would reduce impacts to oak trees and visual impacts as seen from Jalama County Park, as compared to the SWEP. Although this alternative was previously analyzed, there are reasons why this alternative ~~either~~ would either not be feasible today, would not meet Project objectives, or would result in certain adverse impacts that would not occur with the proposed Project. The reasons are as follows:

- **Economic Feasibility.** This alternative would not generate the 102 MW of power intended by the proposed Project, which would not allow the Project to meet the terms of its Power Purchase Agreement with Marin Clean Energy ~~and would likely have an adverse effect on the financial viability of the Project~~. In addition, it would likely threaten the financial viability of the Project. Financial viability of wind energy projects depends on available wind resources and project scale, among many factors. It is reasonable to infer this alternative would not be feasible given the scale of infrastructure needed to be built to support the project, regardless of its

energy output, and the need to site the WTGs to capture the prime wind resources. This argument is supported by documentation from the LWEP Conditional Use Permit (CUP) approval process. The Santa Barbara County Planning Commission (hearing 9/30/2008) found the 82.5-MW project infeasible, and approved the proposed 65 WTG, 97.5-MW project instead. The Board of Supervisors approved the same project on appeal (hearing 2/10/09). The Findings for Approval state, in part:

> "*These alternatives would prohibit WTGs in areas of prime wind resources and limit the generation capacity of the project in the most productive areas. The project proponent states that the restriction of WTGs along the southern ridges would make these project alternatives economically infeasible. Although the County has not been provided with the proponent's proprietary wind study data or financial analysis, County staff have independently verified that the southern ridge has much greater wind resource potential than the rest of the project site…"*
>
> *"The wind resource maps strongly support the proponent's contention that the alternatives are economically infeasible. Furthermore, limiting the project to less than its commercial power generation potential would not fully realize the public and private project objectives or benefits, including development of alternative energy sources, sustained viability of agricultural uses, and additional tax revenues.*"

- **Project Design – Construction Feasibility.** Following LWEP approval and EIR certification, the Applicant conducted additional geotechnical studies. The studies led to major design revisions that necessitated far more grading and earthwork than had been evaluated in the LWEP EIR, including construction of large retaining walls, one of which would exceeded 1,000 feet long. The added cost and potential delays for further environmental review associated with the need to modify the approved project were likely among the reasons why the Applicant never built the project. This record strongly suggests that the proposed LWEP and the 82.5-MW alternative described in the EIR were not reasonably buildable projects, nor would they be realistic alternatives to the currently proposed SWEP. ~~In addition, geotechnical investigations conducted after approval of the LWEP led to engineering changes, including the need to construct large retaining walls that would have been very costly to implement and would have resulted in additional impacts not evaluated in the LWEP EIR.~~

- **Transmission Line Viability.** ~~Also, a~~ A major difference between this alternative and the proposed Project is that much of the transmission line under this alternative would have been designed and constructed by PG&E, whereas the transmission line for the proposed Project would be designed and constructed by the Applicant. ~~The viability and costs associated with having PG&E construct the transmission line are not known. Even if this approach proved to be viable,~~ The Applicant explains that the Point of Interconnection Agreement for SWEP requires that the transmission line be built by the Applicant and not PG&E. Even if the Interconnection Agreement were modified to allow PG&E to construct the line, it is unknown if it is viable for PG&E to construct the line and ~~viability and costs associated with having PG&E construct the transmission line are not known. Even if this approach proved to be viable,~~ it would likely result in a substantial delay in Project implementation while PG&E performed the necessary work to build the 115-KV line, including planning, engineering, and easement acquisition.

- **Impacts to Birds.** One of the most significant impacts associated with both this alternative and the SWEP is avian and bat mortality due to collisions with WTGs[1]. The turbines associated with this alternative would be approximately 100 feet shorter than the SWEP turbines; however, this alternative would have 25 more turbines on site than the SWEP (55 turbines versus 30 turbines). Most of the WTGs for the alternative would be located on or near ridgelines. There is no evidence that many shorter turbines would reduce bird or bat mortality when compared to fewer taller turbines. There is increasing evidence that fewer but larger, more power-efficient wind turbines may have a lower collision rate per megawatt (Marques et al. 2014). A recent study analyzing a dataset of 1,670 wind turbines in the U.S. between 2008 and 2014 found that breeding bird abundance decreased with smaller turbines, although it also decreased with increasing blade length. In addition, the study estimated each additional turbine leads to the disappearance of three breeding birds, on average (Miao et al., 2019). Repowering old-generation smaller turbines with fewer larger turbines appears to be an effective method of reducing mortality for certain birds[2]. In the Altamont Pass area, several Audubon chapters have reached settlement agreements with wind operators to replace existing small old-generation wind generators with fewer large turbines as a measure to reduce bird mortality[3]. Various other risk comparisons between small and large turbines are summarized by Marques et al. (2014), such as differences between migrant versus resident birds, songbirds versus raptors, and seasonal or year-to-year variation. Research into these differences is ongoing and future guidelines or recommendations may be developed "as credible results become available" Marques et al. (2014). Please see General Response GR-4: Use of More and Smaller Turbines in Chapter 8 for more information.

  There are conflicting studies in the literature, and it is evident that more research is needed to determine the right number, size, and placement of wind turbines to reduce bird and bat collisions for any particular site. Without definitive studies, it is difficult to choose an alternative design over the proposed design with respect to limiting bird/bat impacts. State and federal guidelines and others recognize that specific turbine locations affect the potential hazard to birds or bats and identify certain siting generalities, such as avoiding locations near wetlands or nests, or on flight paths such as migratory routes or between habitat areas such as foraging areas or nest sites. But the guidelines provide little detail beyond these generalities and the generalities themselves seem to have minimal predictive value (see General Response GR-2 in Chapter 8). The Applicant has taken into consideration over 10 years of accumulated data on wind measurements and avian/bat use of the Project site to develop the proposed SWEP design (see General Response GR-3: Consistency with State and Federal Guidelines for Wind Energy Facilities in Chapter 8). Thus, there is no substantial basis to conclude that the alternative would

[1] It is understood that bats can be killed by wind turbines even if there is no physical collision. This language is being used to simplify the discussion. Please see the discussion of Impact BIO-10 for a fuller description of the impacts of spinning turbine blades on bats.

[2] S. Smallwood and B. Karas. 2009. Avian and Bat Fatality Rates at Old-Generation and Repowered Wind Turbines in California. Journal of Wildlife Management 73:1062–1071.

[3] For example: Media Release: Audubon Society Chapters, California Attorney General and Wind Companies Reach Agreement on Altamont Pass Old wind turbines to be replaced with new turbines that are safer for birds. http://goldengateaudubon.org/wp-content/uploads/101203-Audubon-PR-re-Altamont-Settlement-_final_.pdf

result in less impacts to birds and bats than the SWEP, but evidence seems to suggest the alternative might result in greater impacts due to 25 more turbines.

Due to this fact, the LWEP was not considered as an alternative for SWEP because it has more turbines than the 82.5-MW Alternative. LWEP proposed 65 turbines, 10 more than the 82.5-MW environmentally superior Alternative and more than double SWEP's proposed 30 turbines.

- **Impacts to Oak Trees.** The LWEP EIR did not identify significant impacts to oak trees. The proposed layout of WTGs and access roads for LWEP avoided oak trees. Also, the shorter WTG blades for LWEP were transportable on San Miguelito Road without road widening and with little or no anticipated loss of trees. The SWEP as proposed in the project description would result in loss of approximately 607 trees for WTGs, transmission line, access roads, and San Miguelito Road modifications; the Modified Project Layout alternative (see Section 5.5.2) would take out approximately 225 trees in these areas. Hence, the LWEP and the alternative would have had much less impact than the SWEP to oak trees.

  However, the relative impacts to oak trees for construction of the 115-KV transmission line for LWEP and SWEP are not so clear. When the LWEP EIR was completed, PG&E had not yet completed engineering plans for the LWEP transmission line, and pole locations were not finalized. Many more poles were planned for the LWEP design than the SWEP design. Consolidation of the transmission line with the existing distribution line along San Miguelito Road was intended to minimize biological and visual impacts for LWEP. Yet, possible grading and oak tree impacts of the LWEP line are uncertain because they were never specifically identified. In contrast, SWEP's impacts to oak trees are much better known, as the Applicant has prepared detailed tree surveys and preliminary construction plans for the transmission line. Of the 607 proposed oak trees proposed to be removed for SWEP (or the 225 proposed for the Modified Project Layout), the transmission line would result in loss of approximately 62 oak trees.

  Thus, based on the information available, it is reasonable to conclude that the SWEP, including the transmission line, would remove substantially more oak trees than the 82.5-MW Alternative, though how many more trees is not known.

- **Land Disturbance.** This alternative would involve greater land disturbance than the SWEP, due to the 55 WTGs compared to 30 for the SWEP (or 29 for the SWEP Modified Project Layout alternative). This would result in greater potential impacts to the endangered Gaviota tarplant, which is concentrated in the central and northern portions of the site along with smaller populations in scattered locations in the western portion of the site. In particular, the LWEP would have a larger impact on tarplant in the north-central and south-central portions of the Project site where LWEP had more WTGs located than SWEP.

The major trade-offs between this alternative and SWEP involve bird/bird mortality and oak tree loss. While the SWEP would result in the loss of more oak trees than this alternative, this alternative (and the LWEP) would likely result in greater bird/bird mortality, due to the larger number of smaller WTGs. Oak tree impacts can be mitigated to some extent through oak tree replacement (see Mitigation Measures BIO-4a and BIO-4b, along with the Modified Project Layout alternative described in Sections 5.3 above and 5.5.2 below). Bird and bat mortality are less readily mitigated.

Based on the above considerations, ~~For these reasons,~~ this alternative has been eliminated from detailed evaluation in this SEIR.

5.4.2 Segmented Wind Turbine Blades

During the scoping process, a comment was received requesting analysis of the potential use of two-piece turbine blades to reduce impacts to San Miguelito Road when hauling up to 224.7-foot long blades to the Project site. General Electric, as part of its "Cypress" platform, is the only current commercial manufacturer of two-piece wind turbine blades for onshore turbines, although other companies have prototypes under development. The Cypress platform is a 5.3-158 wind turbine (5.3-MW, 158-meter rotor diameter). This platform is larger than the 137-meter rotor diameter for the SWEP's proposed 3.8-MW turbines. The two-piece blade design is not commercially available for the proposed 3.8-MW or 1.79-MW turbines (GE, 2019), thus making the use of segmented wind turbine blades currently infeasible for the Project's proposed WTGs.

If the Cypress platform were to be used for the Project rather the proposed 1.79-MW and 3.8-MW WTGs, the length of each blade segment would be at least 210 feet long (assuming the blade is segmented into two equal-length sections), which is not substantially shorter than the blades for the proposed 3.8-MW turbines (224.7 feet). As a result, substantial modifications to San Miguelito Road would still be needed. Because the Cypress platform is much taller than Project's proposed WTGs (591 ft. versus 492 ft.), they would be much more visually prominent than the proposed WTGs, resulting in increased visual impacts.

Use of the Cypress platform would entail major re-engineering of the proposed Project, revised impact analysis, new FAA and VAFB concurrence, and would set back the Project schedule many months and possibly much longer. It is also not known at this time whether the large Cypress WTGs would be optimal for wind conditions at the Project site.

For the reasons described above, this alternative has been eliminated from detailed evaluation.

5.4.3 Helicopter/Hybrid Airship Transport of Turbine Blades

During the scoping process, a comment was received requesting an analysis of the feasibility of the use of helicopters to transport turbine blades in order to avoid the Applicant's proposed modifications to San Miguelito Road needed to accommodate transport of the blades by truck. The largest heavy-lift helicopters available in the U.S. are manufactured and operated by ~~Erikson Skycrane~~ Erickson, Inc. These are the types of helicopters used to lift heavy loads and have a rated payload capacity of up to 25,000 lbs. (~~Erikson~~ Erickson 2019). The proposed turbines would require blades between 159.8 and 224.7 feet long, depending on final size. These blades would weigh between 21,000 and 34,170 lbs. The actual payload capacity of the ~~Skycrane~~ helicopter depends on multiple factors including altitude, temperature, wind speed, lift duration, rigging weight, and object shape. ~~The length and aerodynamic nature of the blades would reduce the available capacity of the Skycrane below the weight of the short blades, making this alternative infeasible.~~

While the weight of the SWEP smaller blades is less than the maximum lift capacity of the Erickson's heavy-lift helicopter, the S-64, this helicopter would not be able to safely lift and transport these blades. In addition to the weight of the blade, the weight of the stand and rigging for the blade need to be considered. Due to the airfoil shape of a turbine blade, it needs to be suspended further below the helicopter than other payloads to prevent the helicopter's rotor wash from causing the blade to move and affect the stability of the helicopter's flight. This extra rigging and the stand that holds the blade adds up to a 1,000 lbs. of additional weight. Further, when payloads approach the upper range of the helicopter's lift capacity, less fuel can be carried by the aircraft, which restricts the range of the

aircraft and would necessitate locating the staging area for the helicopter loads very close to the proposed Project site, probably within a few miles of the site. Also, because such heavy loads can be difficult to manage except under ideal conditions, there is a real possibility that a helicopter would need to drop its load mid-flight to avoid crashing. While this is not a frequent occurrence, it would create a hazard zone beneath the flight path which would need to be clear of people and structures. A representative of Erickson, Inc., was asked whether a S-64 helicopter could be used to transport the Project's smaller 21,000-lbs. blades and stated that such a lift would be pushing the limits of the aircraft. In his opinion, the S-64 could not manage that weight safely (Reavis 2019).

Hybrid airships are under development that will be capable of lifting heavy payloads. A hybrid airship is a type of aircraft that generates lift primarily through the buoyancy of a lighter than air gas. Examples of heavy-lift hybrid airships include the Aeroscraft ML868, Hybrid Air Vehicles Airlander 10, and Lockheed Martin LMH-1. The Aeroscraft ML868 is still under development and the and Hybrid Air Vehicles Airlander 10 and Lockheed Martin LMH-1 are not yet in commercial production. Heavy-lift hybrid airships are not currently an available option for lifting heavy payloads, such as modern wind turbine blades, but may become an option within the next few years.

For the reasons described above, this alternative has been eliminated from detailed evaluation.

5.4.4 Rail Delivery of Turbine Components

During the scoping process, a comment was received requesting the analysis of the feasibility of rail transport for the wind turbine blades in order to avoid the Applicant's proposed modifications to parts of San Miguelito Road and within the City of Lompoc. The only railroad running in the vicinity of the proposed Project is the Union Pacific Railroad line which runs southeast from the Lompoc-Surf Station at the intersection of Ocean Avenue and Park Road, paralleling Ocean Avenue. The railroad enters the City of Lompoc along West Laurel Ave until North 7th Street. At North 7th Street, the railroad has a "Y" turnaround, whereby the rail spur extends south through the City of Lompoc along San Miguelito Road up to the White Hills Freight Depot within the Imerys Filtration diatomaceous earth mine. The rail spur is primarily used to haul bulk freight out of the mine.

Use of the rail spur does not avoid the impacts associated with the improvements to San Miguelito Road, as the turbine blades would still need to be transported to the site via the areas of San Miguelito Road requiring modifications. Additionally, use of this railroad spur to transport the wind turbine blades would result in increased disturbance to the ongoing mining operations, by preventing the use of the rail spur to haul bulk freight out of the mine while the rail spur is being used to transport the blades.

For the reasons described above, this alternative has been eliminated from detailed evaluation.

5.4.5 Siting WTGs Below Ridgelines

During the scoping process, a number of comments ~~was~~ were received suggesting an alternative that would involve a redesign of the wind farm site plan to relocate WTGs away from ridgetops as possible way to reduce the potential for bird kills from striking WTG blades and bat kills from air pressure differentials near spinning WTG blades. In addition to moving WTGs off ridgetops, this alternative would also require changes to access roads and power collection lines to serve the revised WTG locations.

It is necessary to locate the WTGs close to the ridgeline in order to best exploit the wind resource at the Project site. Shifting WTGs any substantial distance away from ridgetops would result in a failure to capture the maximum capacity of the wind resource. Wind energy developers conduct detailed measurements of wind speeds, patterns, and durations at a site in order to identify the optimal locations for siting WTGs. The positions of the WTGs relative to each other is also an important siting consideration as exposure to the "wake" of a WTG can hamper the performance of nearby WTGs.

There are anecdotal and written recommendations to avoid wind turbine siting on ridgelines to reduce potential bird or bat mortality, although state and federal guidelines provide little guidance regarding ridgelines (see General Response GR-3 in Chapter 8). This general recommendation has had little predictive value and most understanding of potential hazards has come from post-construction mortality monitoring. At the Altamont Pass Wind Resource Area, red-tailed hawk fatalities occur more frequently than expected by chance at WTGs located on ridge tops and swales, whereas Golden eagle fatalities are higher at WTGs located on slopes (Marques et al. 2014). Even if it is presumed that WTGs should not be sited on ridgelines, it is worth pointing out that most of the Project's WTGs are not proposed on or near prominent ridgelines. Eleven of the Project's 30 proposed WTGs are located near what could be considered relatively prominent ridgelines. The highest ridges within or along the edges of the Project site exceed 1900 feet in elevation and connecting to these highest ridgelines are lower elevation ridges above 1600 feet in elevation. Eleven of the Project's proposed WTGs are sited on or very near to ridgelines over 1600 feet in elevation and several of these are just slightly over 1600 feet. Nine of the WTGs over 1600 feet in elevation are located below a nearby ridge that exceeds 1900 feet in elevation. Seventeen of the proposed WTGs are located at elevations between 1300 and 1600 feet in elevation and three WTGs are located at elevations below 1300 feet. Figures 5-1a and 5-1b show the locations of WTGs in relation to prominent ridgelines. Please see General Response GR-2 in Chapter 8 for information on the proposed locations of WTGs in relation to ridgelines.

Moving the WTGs ~~off the~~ from ridgetop~~s~~ or hilltop locations would place the WTGs on steeper side slopes, necessitating additional land disturbance and earth movement to create the WTG pads and access roads, resulting in increased environmental impacts. Mid-slope locations for wind turbine generators would require more grading than locations at the top of slopes (such as ridges) or at the bottom of slopes (canyon bottoms and draws). This is because access roads can be placed along ridgelines with minimal cutting and filling of the land. Similarly, relatively little cutting and filling would be required along canyon bottoms or draws because of the relatively gentle slopes; however, these lower-elevation locations are the most sensitive biologically and would necessitate the removal of a large number of trees and other vegetation. Mid-slope locations require greater amounts of cut and fill to carve access roads across the slopes, and large amounts of cut, fill, and compaction would be required to create large building pads to accommodate the wind turbines and their foundations, as well as adjacent level areas where cranes would be placed to erect the wind turbines. ~~The two models of WTGs proposed for the Project have rotor diameters of 328 feet and 449.5 feet. To avoid having the spinning WTG blades overlap ridgelines would require that the WTGs be located a substantial distance from any ridgeline, placing them at substantially lower elevations than planned.~~ As a result, the earth movement required to locate the WTGs away from ridgelines would be significant and the loss of WTG generating capacity is expected to be substantial. In some locations, moving the WTGs off ridgelines would affect the more heavily vegetated lower slopes of hillsides with potential adverse effects on oak trees, native vegetation, and wildlife habitat.

For the reasons described above, this alternative has been eliminated from detailed evaluation.

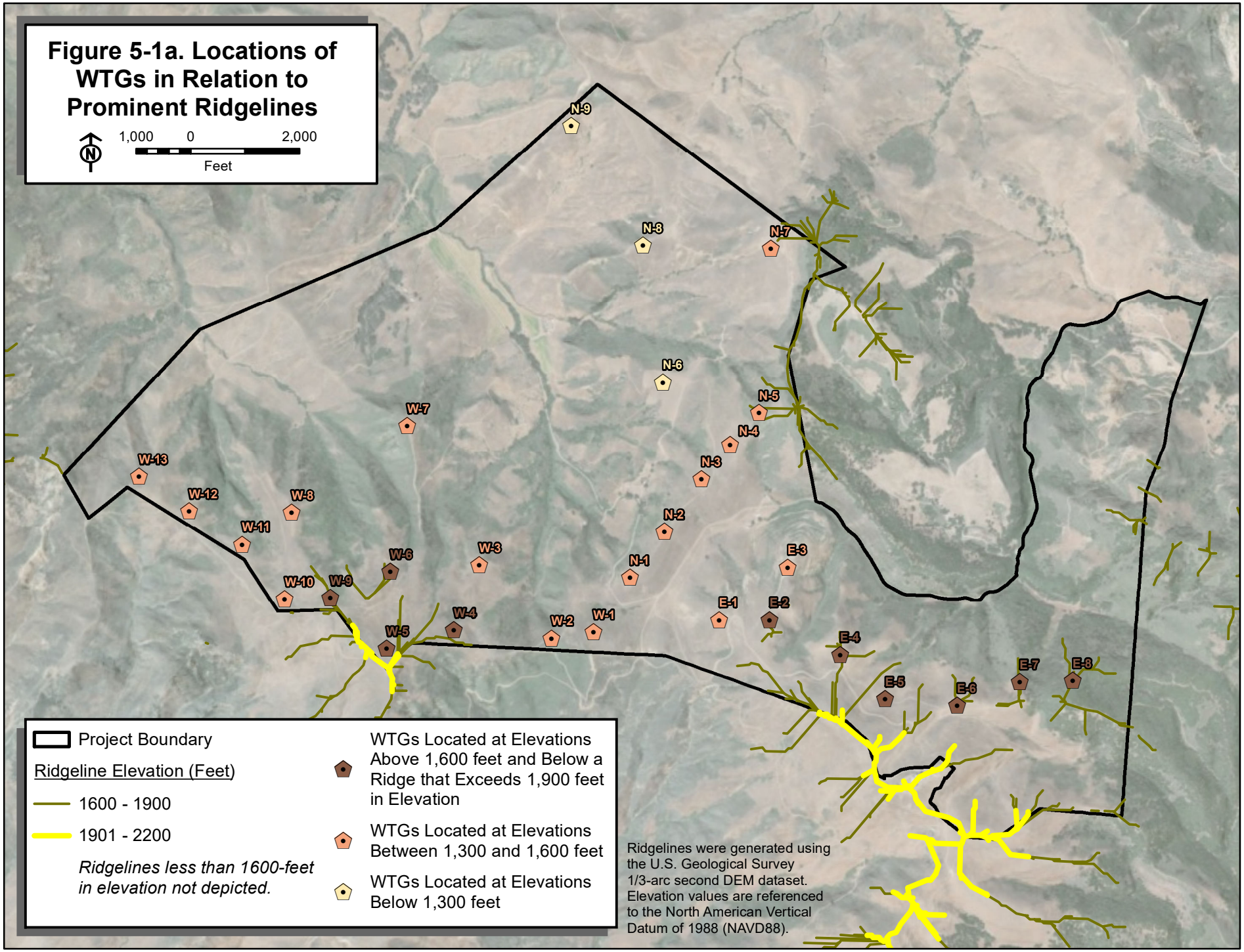
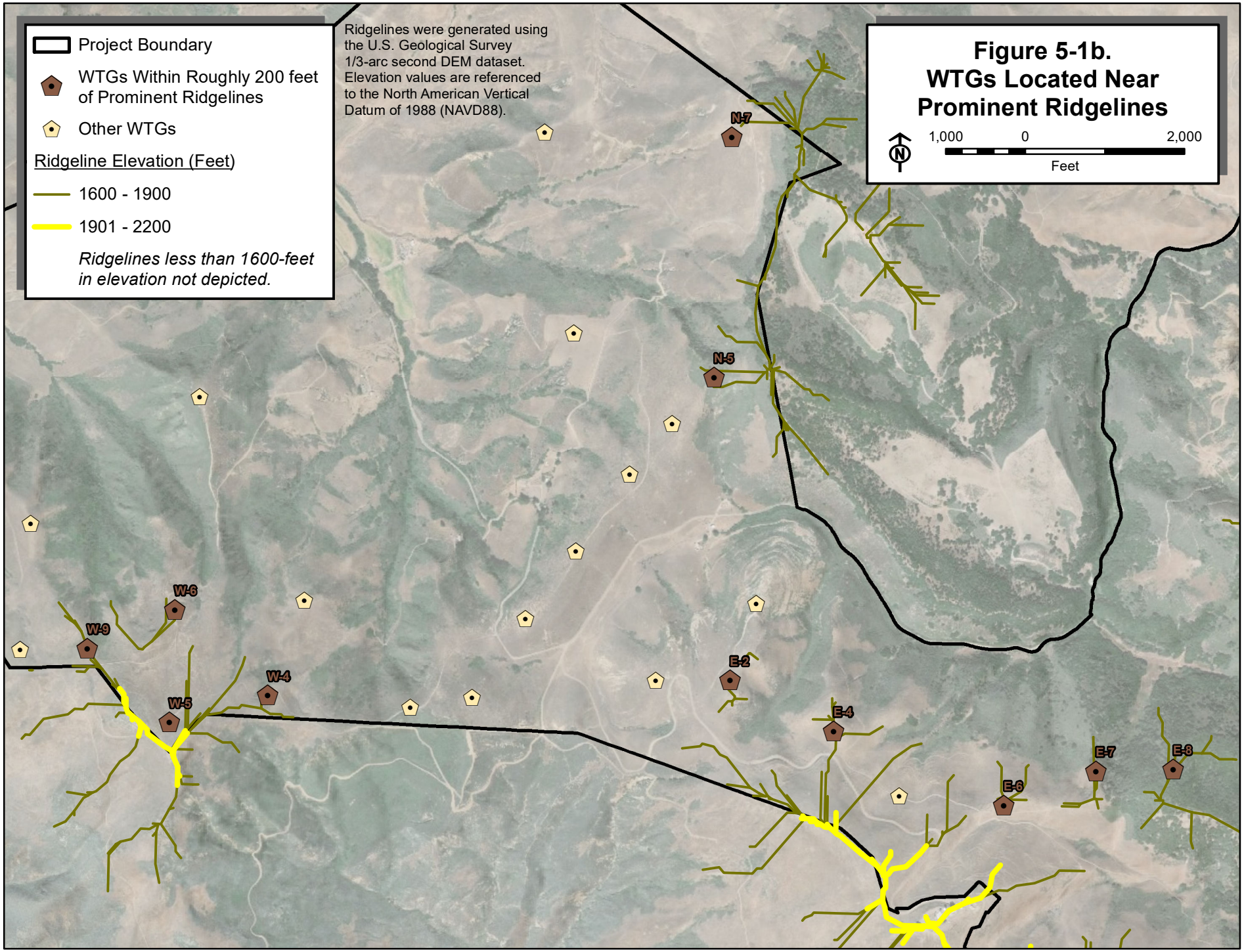


Figure 5-1a. Locations of WTGs in Relation to Prominent Ridgelines
1,000 0 2,000
Feet
N-9
N-8
N-7
N-6
N-5
N-4
N-3
N-2
N-1
W-7
W-13
W-12
W-8
W-11
W-6
W-3
W-10
W-9
W-4
W-5
W-2
W-1
E-3
E-1
E-2
E-4
E-5
E-6
E-7
E-8
Project Boundary
Ridgeline Elevation (Feet)
1600 - 1900
1901 - 2200
Ridgelines less than 1600-feet in elevation not depicted.
WTGs Located at Elevations Above 1,600 feet and Below a Ridge that Exceeds 1,900 feet in Elevation
WTGs Located at Elevations Between 1,300 and 1,600 feet
WTGs Located at Elevations Below 1,300 feet
Ridgelines were generated using the U.S. Geological Survey 1/3-arc second DEM dataset. Elevation values are referenced to the North American Vertical Datum of 1988 (NAVD88).


Project Boundary
WTGs Within Roughly 200 feet of Prominent Ridgelines
Other WTGs
Ridgeline Elevation (Feet)
1600 - 1900
1901 - 2200
Ridgelines less than 1600-feet in elevation not depicted.
Ridgelines were generated using the U.S. Geological Survey 1/3-arc second DEM dataset. Elevation values are referenced to the North American Vertical Datum of 1988 (NAVD88).
Figure 5-1b.
WTGs Located Near Prominent Ridgelines
1,000
0
2,000
Feet
N-7
N-5
W-6
W-9
W-4
W-5
E-2
E-4
E-6
E-7
E-8

5.5 Alternatives Analysis

In selecting feasible alternatives for analysis, the SEIR preparers considered alternatives to the various components of the Project as well as alternate methods of installation and operation. The alternatives selected for analysis are described below along with discussions of their respective impacts in comparison to the proposed Project.

The SEIR must provide sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison to the proposed Project. If an alternative would cause significant effects in addition to those that would be caused by the proposed Project, the significant effects of the alternative must be discussed, but in less detail than the effects of the proposed Project. (State CEQA Guidelines §15126.6(d).)

Four alternatives have been selected for evaluation, including the No Project Alternative. These alternatives were selected because they are capable of achieving most Project objectives, are potentially feasible, and have the potential to reduce significant impacts associated with the proposed Project. The selected alternatives are:

- No Project Alternative
- Modified Project Layout, Including Elimination of WTGs E-7 and E-8
- Alternative Switchyard Location
- Alternative Surface Transport Route

Descriptions of these alternatives are provided below along with brief descriptions of their impacts in comparison to the proposed Project, including how each alternative could reduce the significant impacts of the proposed Project.

5.5.1 No Project Alternative

CEQA requires that the impacts associated with a "No Project" alternative be evaluated as part of the EIR (CEQA Guidelines Section 15126.6(e)(1)). For a project that would involve construction or other property development activities, the No Project Alternative is the circumstance under which a project does not proceed. If disapproval of the project under consideration would result in predictable actions by others, such as a proposal for another project, this No Project consequence should be discussed (CEQA Guidelines Section 15126.6(e)(3)(B)). The CEQA Guidelines further direct the Lead Agency to analyze the impacts of the No Project Alternative by projecting what would reasonably be expected to occur in the foreseeable future if a proposed Project was not approved (CEQA Guidelines Section 15126.6(e)(3)(C)).

Under the No Project Alternative, the SWEP and associated transmission line would not be constructed, and the underlying land uses at the Project site would remain unchanged. PG&E would not interconnect an additional 102 MW of renewable generating capacity from wind energy development in the Lompoc area. However, PG&E and other electric utilities would continue to seek alternative locations for development of renewable energy sources to meet the State's mandated goal of 60 percent of electricity sales from renewable sources by 2030. The precise locations of future renewable energy development are currently unknown, but would most likely occur outside of the Lompoc area.

Comparative Impacts

Aesthetics/Visual Resources

Under the No Project Alternative, there would be no WTGs or supporting infrastructure that could impact visual resources. In the absence of the SWEP, the Project site, transmission line route, and san Miguelito Road would remain in their current condition for the foreseeable future. It is possible that a similar wind energy project may be constructed at another location to provide renewable energy, but no specific project is proposed at this time. The existing environmental setting for aesthetics would not change under this alternative.

Agriculture Resources

With implementation of the No Project Alternative, there would be no temporary or permanent impacts to farmland in the Project area. The current agricultural and grazing activities at the Project site described in Section 4.3.1 would continue into the foreseeable future. There are no foreseeable projects that may occur under the No Project Alternative that could affect the agricultural resources in the Project area.

Air Quality

This alternative would create no short-term construction or long-term operations air pollutant emissions, and so would result in no new air quality impacts. While other renewable energy projects may be built to achieve State renewable energy goals, none are proposed at this time that would have an affect the air quality of the local Project area.

Biological Resources

Under the No Project Alternative, temporary and permanent impacts to biological resources associated with construction and operation of the SWEP would not occur. In the absence of the SWEP, it is possible that a similar wind energy project may be constructed at another location to provide renewable energy, but no specific project is proposed at this time. The existing environmental setting for biological resources would not change under this alternative and the biological resource impacts described in Section 4.5 would not occur

Archaeological and Tribal Cultural Resources

Under the No Project Alternative, there would be no new ground-disturbing activities. Existing conditions at the Project site would continue into the foreseeable future and the impacts to cultural and tribal resources associated with the SWEP would not occur. There would be no change to the environmental setting for cultural resources.

Energy

Under the No Project Alternative, there would be no Project-related consumption of fossil fuels. None of the beneficial effects of the Project would occur under this alternative, including generation of wind energy in support of State renewable energy goals. While other renewable energy development projects may be proposed in the future in the absence of the proposed Project, there are currently no other proposals for renewable energy projects in the vicinity of the Project area.

Fire Hazards and Emergency Services

Under the No Project Alternative, there would be no new development that would affect fire protection and emergency services. The existing fire protection and emergency services infrastructure in the Project area would remain unchanged from current conditions, and there would be no construction activities that would increase fire risk in the Project area. No new impacts would occur under this alternative.

Geology and Soils

Under the No Project Alternative, there would be no new adverse impacts related to geology or soils. The proposed construction of WTGs at the Project site would not occur, eliminating the need for grading and drainage changes. The geology and soil conditions in the Project area would remain unchanged from current conditions.

Greenhouse Gas Emissions

Under the No Project Alternative, the proposed renewable energy project would not be constructed and the direct and indirect GHG emissions from the Project's construction and operation would not occur. However, the substantially larger beneficial GHG emissions reduction impacts associated with the Project would also not occur. Approval of utility-scale renewable energy projects is consistent with the County's Energy and Climate Action Plan (ECAP) GHG emissions reduction measures (Measure RE 4, Utility-Scale Renewable Energy Projects) and is also consistent with State of California renewable energy and GHG emissions reduction regulations and goals. While other renewable energy projects will likely occur to help meet State GHG emissions reduction goals, there are no other local foreseeable utility-scale projects to help meet County GHG emissions reduction goals. Therefore, the No Project Alternative would eliminate all of the beneficial GHG emissions impacts of the SWEP.

Hazards and Hazardous Materials

Under the No Project Alternative, no new adverse risks, hazardous materials use and transport, or safety impacts would occur. The existing risks and safety issues in the Project area and the use and transport of hazardous materials would remain unchanged from current conditions.

Hydrology and Water Quality

Under the No Project Alternative, there would be no new adverse impacts to water resources. Proposed removal of riparian vegetation and watercourse encroachment would not occur, eliminating the need for site restoration and revegetation plans. The water resources in the Project area would remain unchanged from current conditions.

Land Use and Planning

Under the No Project Alternative, no new adverse land use impacts would occur. The residential and agricultural land uses described in Section 4.13.1 would remain unchanged from current conditions, and there are no foreseeable projects that may occur under the No Project Alternative that would affect the existing quality of life in the Project area.

Noise

With implementation of the No Project Alternative, there would be no temporary or permanent noise impacts in the Project area. The ambient noise levels in the Project area described in Section 4.14.1 would remain unchanged from current conditions.

Paleontological Resources

Under the No Project Alternative, there would be no new ground-disturbing activities. The impacts to paleontological resources associated with the SWEP would not occur. There would be no change to the environmental setting for paleontological resources as described in Section 4.15.1.

Recreation

With implementation of the No Project Alternative, there would be no temporary or permanent impacts to recreation in the Project area. The current recreation activities described in Section 4.16.1 would continue unchanged. There are no foreseeable projects that may occur under the No Project Alternative that could adversely affect recreation in the Project area.

Transportation and Traffic

Under the No Project Alternative, no new impacts to the existing transportation system would occur, and there would be no change to the daily traffic volume and intersection levels of service that are summarized in Section 4.17.1. Currently, there are no foreseeable projects that may occur under the No Project Alternative that could affect traffic and transportation in the Project area.

Utilities and Service Systems

With implementation of the No Project Alternative, there would be no change to the existing utilities and service systems that are described in Section 4.18.1. There are no foreseeable projects that may occur under the No Project Alternative that could create a demand for utilities and service systems in the Project area or otherwise affect the operation of these systems.

5.5.2 Modified Project Layout, Including Elimination of WTGs E-7 and E-8

This alternative was identified to reduce the severity of the significant and unavoidable impacts to oak woodlands and to eliminate direct impacts to Coastal Zone resources. This alternative would be implemented at the same site as the Project, and Project construction practices and regulatory requirements would be unchanged. Project components would also be unchanged with the exception of:

- The elimination WTGs E-7 and E-8 and associated new roads and widening of existing roads from the eastern string;
- Construction of a new 1.79-MW WTG along the access road on the north string between proposed WTGs N-8 and N-9 (the newly proposed WTG would be designated as WTG N-10);
- Substitution of the proposed Project's 1.79-MW WTGs at locations W-7 and N-3 with larger 3.8-MW WTGs; and

- Construction of a new access road from the laydown area to WTG E-1 and a new access road from WTG E-1 to WTG E-2 to eliminate direct impacts on Coastal Zone resources.

As currently proposed, WTGs E7 and E8 would be located in particularly rugged and steep terrain and would require existing roads to be graded and widened as well as construction of new roads to accommodate equipment. The elimination of WTGs E-7 and E-8 under this alternative would reduce the earthwork and grading activities required along the eastern string. Furthermore, this alternative would avoid the removal of approximately 382 oak trees, which are proposed for removal under the proposed Project (and potentially more if the Fire Department requires defensive-space clearing around each WTG). There would be additional grading impacts associated with construction of a new access road to WTG E-1, but all grading in the Coastal Zone would be eliminated with this alternative. With implementation of this alternative, there would be 29 WTGs installed (one less than the proposed Project) and the maximum electrical generating capacity would be approximately 98.14 MW (compared to 102 MW for the proposed Project). In total, this alternative would include the construction of twenty-three 3.8-MW WTGs and six 1.79-MW WTGs. It would also include construction of the other components of the Project, including the electrical collection lines, substation, O&M building, transmission line, and switchyard. The site plan for this alternative is presented in Figure 5-2.

In its comments on the Draft SEIR, the Applicant has indicated its support for this alternative.

Comparative Impacts

Aesthetics/Visual Resources

This alternative would result in a slight reduction in Project visibility and the associated impacts. While the removal of WTGs E-7 and E-8 would reduce by two the number of visible WTGs from SR-1 (KOP 1) and La Purisima Mission (KOP 8), there would be no change in the impact from Jalama Beach County Park (KOP 4). The elimination of E-7 and E-8 combined with the addition of N-10 would result in a net reduction of one visible WTG when viewed from the northern portion of Lompoc Valley including Harris Grade Road (KOP 9) and SR-1 (KOP 10). From both of these locations, the change in WTG size for N-3 and N-7 would result in no readily discernible difference. From some locations in the northern portion of the City of Lompoc, an additional WTG (N-10) would be visible under this alternative while the WTG change at N-7 would result in no readily discernible difference. Overall, this alternative would result in a slight reduction in Project visibility and the associated visual impact but not to the degree that any of the visual impact significance findings would change.

Agricultural Resources

This alternative would involve construction of a new WTG (N-10) in an area of the Project site that is currently developed for dryland farming, which would slightly increase permanent disturbance to active agriculture. As WTG N-10 would only be located on designated Grazing Land, this alternative would have no effect on Important Farmland. Impacts to agricultural resources would be slightly greater than the proposed Project due to the added disturbance to an actively farmed area, but there would be no change in the severity of impact compared to the proposed Project. Impacts would remain less than significant.

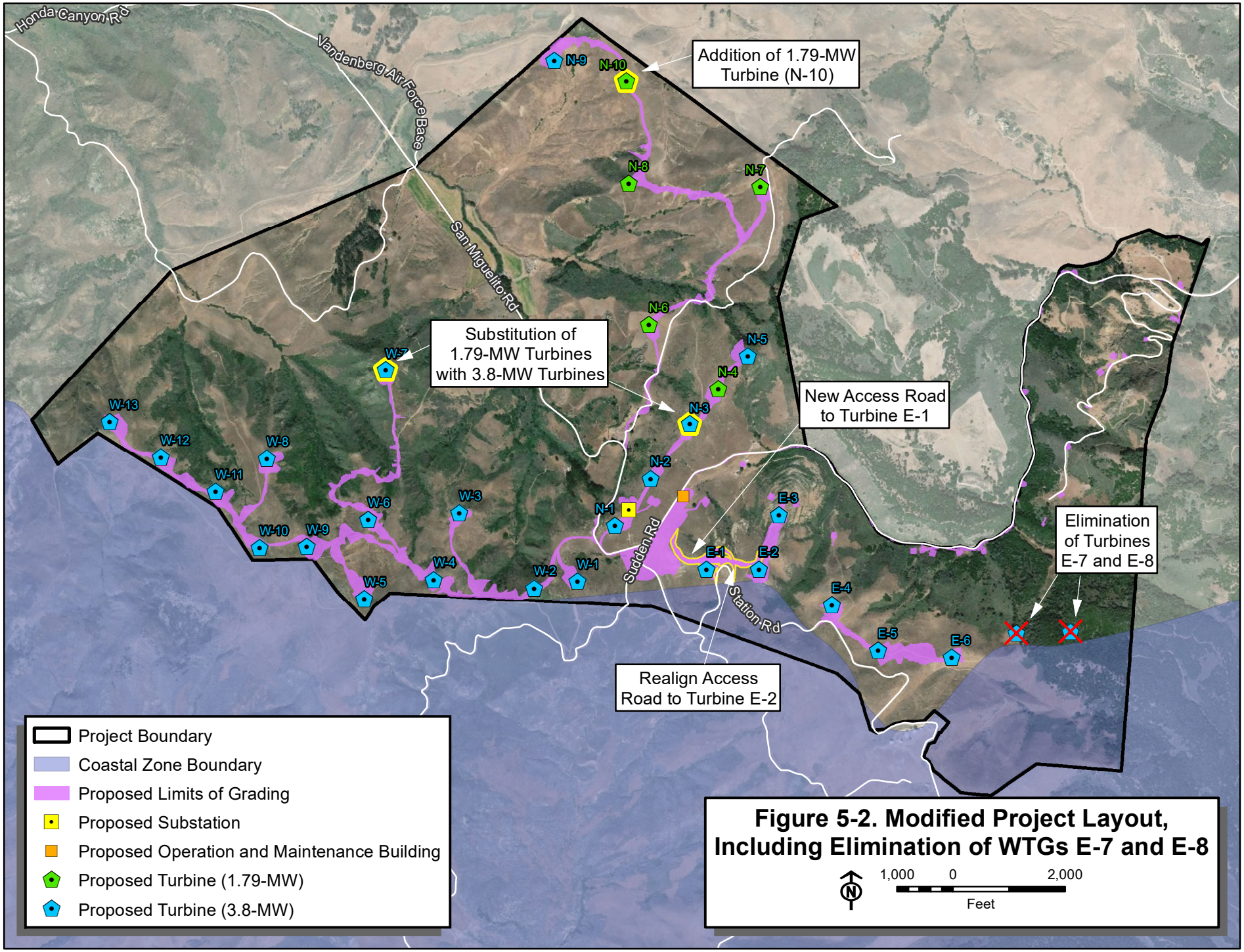


Figure 5-2. Modified Project Layout, Including Elimination of WTGs E-7 and E-8

Air Quality

This alternative would reduce the short-term construction and long-term operation air pollutant emissions in comparison with the proposed SWEP. The construction emission reductions would occur due to one fewer WTG being constructed, a reduction in overall grading requirements, and a substantial reduction in tree removal. However, these construction emissions reductions are not substantial enough to change the determined Project unmitigated and mitigated impact levels, nor affect the recommended air quality mitigation measures. The operation emissions, which would be slightly reduced due to a shorter length of unpaved road and one fewer WTG to maintain, would continue to be less than significant. Overall, this alternative would marginally reduce the adverse air quality impacts in comparison with the SWEP.

Biological Resources

This alternative would reduce impacts to oaks by approximately 63 percent by eliminating WTGs E-7 and E-8 and the access roads to those WTGs. The Project as proposed would remove approximately 607 oak trees; with this alternative, approximately 225 oak trees would be removed. One fewer WTG would marginally decrease potential for bird and bat strikes with the WTGs; however, this reduction is expected to be minor. Larger WTGs at W-7 and N-3 would have a negligible effect on bird and bat strike potential, as the difference in height is only 65 feet. ~~While~~ The realigned access road<u>s</u> to WTG E-2 and WTG-3 would impact <u>an additional 1.1 acres of</u> ~~slightly more~~ native grassland, <u>as well as have an additional impact of 3.9 acres to Gaviota tarplant</u> ~~it would slightly reduce impacts to Gaviota tarplant by decreasing the length of road within a mapped population~~. The <u>realigned</u> access road to WTG E-1 would affect ~~primarily non-native grassland and would have minimal effect on~~ <u>an additional 1.8 acres of native grassland</u> ~~patches mapped in the area as the road could likely be aligned to avoid them. However, the realigned access road crosses a mapped population of Gaviota tarplant~~ <u>and result in an additional impact of 2.9 acres to a mapped population of Gaviota tarplant</u>. Direct impacts in the Coastal Zone would be eliminated with the alternative. Overall, this alternative would substantially reduce impacts to oaks, would result in a minor increase in impacts to Gaviota tarplant, and would not appreciably change the severity of impacts to other biological resources. Nonetheless, because oak woodlands are sensitive and take decades to recover even when restoration is successful, the impacts to approximately 225 oaks under this alternative would remain significant and unavoidable.

Archaeological and Tribal Cultural Resources

No cultural or tribal resources are located at the sites of WTGs E-7 and E-8. Therefore, the removal of these two WTGs would not eliminate any impacts on archaeological or Tribal Cultural Resources associated with the proposed Project. The addition of WTG N-10 would increase the impacts to the western one-fifth of resource SBA-3847 by adding a larger turbine pad with its associated grading. The turbine proposed at N-10 would also be visible from the locations of two Tribal Cultural Resource sites where Tribal cultural practices occur periodically. Increasing the size of the turbines at WTGs W-7 and N-3 could increase grading and may result in increased impacts on sites SBA-3992 and SBA-3840, respectively. The new access road to WTG E-1 would increase disturbance at cultural resource sites SBA-2757 and SBA-3848, and the new access road to WTG E-2 may result in additional impacts to sites SBA-3848, SBA-2754, and SBA-2757, the latter being CRHR eligible. The additional impacts under this alternative would require implementation of mitigation measures identified in Section 4.6.4 to reduce impacts. Overall, the severity of impacts under this alternative would remain the same as the SWEP.

Energy

Under this alternative, the adverse impacts to energy would be identical to the proposed Project while the beneficial effects would be slightly reduced. Given that the design and construction of this alternative would be very similar to the proposed Project, with the exception of the installation of one less WTG, this alternative would consume nearly the same quantity of fossil fuels during construction and would require identical modifications to PG&E's electrical system. The potential generation capacity under this alternative (98.14 MW) would be slightly less beneficial for federal and State renewable energy goals than under the SWEP (102 MW). Similar to the proposed Project, this alternative would continue to support renewable energy goals and would continue to have a less-than-significant impact on nonrenewable energy resources as well as on the existing electrical system.

Fire Hazards & Emergency Services

Under this alternative, the elimination of two WTGs along the eastern string and the addition of one WTG along the northern string would not alter the types or severity of impacts to emergency service response times or to anticipated fire risk as described for the SWEP. Impacts associated with fire hazards and emergency services would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.8.4.

Geology and Soils

The elimination of two WTGs along the eastern string would not avoid potential impacts associated with geology or soils that may occur from construction and operation of the SWEP. Furthermore, the addition of WTG N-10 would not create a new impact that has not already been discussed for the proposed Project. Similarly, the construction of new access roads to WTGs E-1 and E-2 under this alternative would not result in new or more severe impacts to soils or geology compared to the proposed Project. Earth movement in the Coastal Zone would be eliminated with the alternative. All geology- and soils-related impacts under this alternative would be basically the same as the SWEP and would require the implementation of mitigation measures to reduce impacts to a less-than-significant level.

Greenhouse Gas Emissions

While there may be reductions in GHG emissions from the construction and operation of this alternative, the primary factor in the long-term GHG emissions reduction is the total electrical generating capacity of the Project. Given that the proposed SWEP is marginally larger than this alternative in generating capacity (102 MW compared to 98.14 MW), the beneficial GHG emissions effects, as well as the local and State GHG emissions regulations and policy conformance, of this alternative would be marginally less than under the proposed SWEP.

Hazards and Hazardous Materials

The elimination of two WTGs along the eastern string would not avoid potential hazard-related impacts to the public from construction and operation of the SWEP. The location of alternative WTG N-10 would be over 3,000 feet from the nearest participating or nonparticipating residence and, therefore, would not create a new impact that has not already been discussed for the proposed Project. Similarly, the new access roads to WTGs E-1 and E-2 associated with this alternative would not result in new or greater hazards than the proposed Project. All hazard-related impacts under this alternative would be

identical to the SWEP. Impacts associated with blade icing and ice throw, blade throw, tower failure, EMF exposure, worker safety, and release of hazardous materials would remain less than significant.

Hydrology and Water Quality

The elimination of two WTGs along the eastern string would not avoid potential impacts to hydrology and water quality that would occur from construction and operation of the SWEP. Furthermore, the addition of WTG N-10 would not create a new impact that has not already been discussed for the proposed Project. All hydrology and water quality-related impacts under this alternative would be identical to the SWEP. Impacts associated with erosion/sedimentation, pollutant discharge, stormwater runoff, and groundwater would remain less than significant, while impacts associated with riparian vegetation removal would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.12.4.

Land Use and Planning

Construction and operation of the proposed Project's eastern WTG string, including WTGs E-7 and E-8, would be supported by access roads and grading activities that extend into the Coastal Zone. This alternative would eliminate all construction and grading within the Coastal Zone. This alternative would not be subject to the requirements of the County's Coastal Land Use Plan and Coastal Zoning Ordinance, but would be subject to the requirements of the Comprehensive Plan and the Land Use and Development Code.

This alternative would result in substantially reduced impacts to trees (including coast live oaks) than SWEP, in both the Coastal Zone and Inland areas. This alternative would reduce the number of trees lost from approximately 607 to 225 and eliminate altogether the loss of 81 trees in the Coastal Zone. Whereas SWEP was found inconsistent with County policies and ordinances concerning tree protection, this alternative is consistent with them. This alternative would also be consistent with County plans, policies, and ordinances. Quality of life impacts during Project construction and operation would not be significant with implementation of the mitigation measures identified in Section 4.13.4.

Noise

The elimination of two WTGs along the eastern string would not avoid potential noise impacts to residences from construction and operation of the SWEP. The location of alternative WTG N-10 would be over 3,000 feet from the nearest participating or nonparticipating residence and, therefore, would not create a new impact that has not already been discussed for the proposed Project. All noise-related impacts under this alternative would be identical to the SWEP. Impacts associated with temporary construction noise and long-term operational noise would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.14.4.

Paleontological Resources

Impacts to paleontological resources under this alternative would be identical to the SWEP. The elimination of two WTGs along the eastern string would not avoid impacts to High Potential Rock Units occurring within the Project area, as shown in Figure 4.15-1 and Table 4.15-1. Furthermore, the addition of WTG N-10 and the new access roads to WTGs E-1 and E-2 would not create a new impact that has not already been discussed for the proposed Project. Impacts during construction and

operation would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.15.4.

Recreation

Impacts to recreational resources under this alternative would be identical to the SWEP. The elimination of WTGs E-7 and E-8, and the addition of WTG N-10, would not change the temporary impacts to recreational groups who regularly use the Project area, nor change the permanent impacts to scenic-related recreation. Temporary impacts would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.16.4.

Transportation and Traffic

Impacts to transportation and traffic under this alternative would not substantially differ from the SWEP. The elimination of WTGs E-7 and E-8 and the addition of WTG N-10 would not change the Project-related construction traffic levels and LOS, nor would it alter the potential for road blockages and traffic delays, possible safety concerns along roadways, or roadway damage. Construction impacts would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.17.4.

Utilities and Service Systems

Impacts to utilities and service systems under this alternative would be very similar to the SWEP. The elimination of WTGs E-7 and E-8 would not substantially reduce the total amount of solid waste generated during construction, and the siting of a new WTG along the northern string would not create a new impact to existing utilities. Construction impacts would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.18.4.

5.5.3 Alternative Switchyard Location

This alternative was identified to reduce the severity of the significant but mitigable impact associated with views of the proposed switchyard from SR-1 and to reduce the significant and unavoidable visual impact associated with the section of the transmission line along the ridge entering the proposed switchyard location.

This alternative would place the Project's switchyard at a location along the proposed transmission line route that is approximately 1.1 miles south and west of the Project's proposed switchyard location. This alternate location for the switchyard is in the hills on the Imerys mine property. This location for the switchyard would reduce the total length of the Project's 115-kV transmission line to 6.2 miles, compared to 7.3 miles in length for the proposed Project. Like the proposed Project, the existing PG&E 115-kV transmission line would need to be re-conductored between the Cabrillo Substation in Lompoc and the Project switchyard, but due to the more southerly location of the alternate switchyard site, approximately 1.7 miles of re-conductoring would need to occur compared to 0.6 mile under the proposed Project. This alternative is shown in Figure 5-3.


Figure 5-3. Alternative Switching Station Location
0
0.5
Miles
Pine Ave
N H St
N A St
E Highway 246
W Ocean Ave
E Ocean Ave
Proposed Switching Station
S J St
S A St
1
Alternative Switching Station
San Miguelito Rd
New Transmission Line
Reconductored Transmission Line

Comparative Impacts

Aesthetics/Visual Resources

With the relocation of the proposed switchyard, this alternative would avoid the adverse visual impact that would occur at KOP 2 (viewing of the switchyard by travelers along southbound SR-1, just south of the City of Lompoc). The switchyard at the alternative location would likely be visible from some public roads and residential areas in Lompoc, short portions of SR-1 and San Miguelito Road, and a few residences along San Miguelito Road. However, depending on the final switchyard design, the alternative switchyard location is not likely to result in new, significant visual impacts given the partial screening (to varying degrees) provided by intervening terrain and the use of the existing power line poles (rather than installing a second set of structures). Although this alternative would not eliminate or reduce the significant and unavoidable impacts expected to occur at KOP 4 (Jalama Beach) and KOP11 (Upper San Miguelito Road), overall visual impacts are expected to be less adverse under this alternative.

Agricultural Resources

Impacts to agriculture resources under this alternative would not substantially differ from the proposed Project. The proposed location of the WTGs, substation, and access roads would not change relative to the existing agricultural activities of grazing and dryland farming. Impacts would remain less than significant.

Air Quality

The air quality impacts for this alternative would not differ substantially from the proposed Project. The differences in transmission line construction needs would cause minor work increases and decreases. Overall, the emissions differences would be minor in the context of the Project's total construction emissions increases and the same mitigation measures would apply. However, this alternative would reduce the short-term localized construction emissions impacts that would occur from the proposed switchyard construction site that is located adjacent to a residential neighborhood. Air quality impacts would remain less than significant after mitigation.

Biological Resources

The alternative switchyard location supports a small amount of mapped seacliff buckwheat (0.003 acre), the host plant for the federally listed El Segundo blue butterfly. There are also four scattered, small occurrences of black-flowered figwort (CRPR 1B.2) consisting of 1 to 4 plants each in the general area; however, these occurrences may be able to be avoided during micrositing. The reduction in transmission line length would result in a minor reduction in ground disturbance under this alternative. Overall, impacts from this alternative would be comparable to the proposed Project. This alternative would not introduce any new impacts that would not occur under the proposed Project. Impact conclusions and mitigation would remain the same as described in Section 4.5.4.

Archaeological and Tribal Cultural Resources

The relocation of the proposed switchyard would avoid potential impacts to cultural resource SBA-2465 by eliminating switchyard grading and two pole pads located within the resource. The new location does not contain cultural resources in or near the proposed impact areas, and this alternative would marginally reduce impacts by avoiding this cultural resource site. Nonetheless, the overall severity of impacts under this alternative would be the same as the SWEP.

Energy

There would be no change to energy-related impacts under this alternative. The design and construction of this alternative would not substantially change from the SWEP, as this alternative would only differ in a slight reduction in the mileage of transmission line construction (i.e., 1.1 less miles) which correlates to an increased mileage in reconductoring. This alternative would consume nearly the same quantity of fossil fuels during construction, and the potential generation capacity under this alternative would be identical to the SWEP (102 MW). Similar to the SWEP, this alternative would continue to support renewable energy goals and would continue to have a less-than-significant impact on nonrenewable energy resources as well as on the existing electrical system.

Fire Hazards & Emergency Services

Under this alternative, the relocation of the proposed switchyard would not alter the types and severity of impact to emergency service response times or to the anticipated fire risk as described for the SWEP. Impacts to fire hazards and emergency services would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.8.4.

The County Fire Department has indicated that the alternative switchyard location has certain disadvantages compared to the switchyard location for the proposed Project. The proposed location would allow faster access to the switchyard in case of emergency. The alternative switchyard location is more remote and would delay the Fire Department's ability to protect it from wildfire or to contain an incident at the switchyard.

Geology and Soils

The relocation of the proposed switchyard would not avoid potential impacts to geology or soils that may occur from construction and operation of the SWEP. Furthermore, the alternative switchyard site would not create a new impact that has not already been discussed for the proposed Project. All geology and soil-related impacts under this alternative would be identical to the SWEP, and would require implementation of the mitigation measures in Section 4.9.4 to reduce impacts to a less-than-significant level.

Greenhouse Gas Emissions

The total MW capacity of this alternative would remain identical to the proposed Project (i.e., 102 MW). Therefore, there would be no change in either the beneficial GHG emissions effects or the local and state GHG emissions regulations and policy conformance under this alternative as compared to the SWEP. There would be minor changes to the construction GHG emissions, but any changes, whether it be a minor increase or minor decrease, would be minimal in comparison to the beneficial GHG emissions impacts of the Project.

Hazards and Hazardous Materials

The relocation of the alternative switchyard would not create a new impact that has not already been discussed for the proposed Project. All hazard-related impacts under this alternative would be identical to the SWEP. Impacts associated with blade icing and ice throw, blade throw, tower failure, EMF exposure, worker safety, and release of hazardous materials would remain less than significant.

Hydrology and Water Quality

This alternative would not avoid potential impacts to hydrology and water quality that may occur from construction and operation of the SWEP. Furthermore, the relocation of the switchyard would not create a new impact that has not already been discussed for the proposed Project. All hydrology and water quality-related impacts under this alternative would be identical to the SWEP. Impacts to erosion/sedimentation, pollutant discharge, stormwater runoff, and groundwater would remain less than significant, while impacts associated with riparian vegetation removal would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.12.4.

Land Use and Planning

Construction and operation of the alternative switchyard would involve activities similar to those described in SEIR Section 2.6.14. As there would be no change to the location of the WTG sites, all land use impacts described for the SWEP would be identical under this alternative. Compatibility impacts associated with the County's Coastal Land Use Plan and Coastal Zoning Ordinance, as well as to the Comprehensive Plan and the Land Use and Development Code would remain less than significant. Quality of life impacts during WTG operation would remain less than significant with implementation of the noise mitigation measures identified in Section 4.13.4.

Noise

The relocation of the switchyard would slightly reduce temporary noise impacts to residences adjacent to the proposed switchyard site. However, the noise impacts associated with the remaining aspects of Project construction would not change (i.e., transmission line construction, access road improvements, truck traffic, helicopter use). Furthermore, this alternative would have no change to the long-term WTG noise described for the SWEP. Impacts associated with temporary construction noise and long-term operational noise would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.14.4.

Paleontological Resources

Impacts to paleontological resources under this alternative would be identical to the SWEP. The relocation of the switchyard site would not avoid impacts to High Potential Rock Units occurring throughout the Project area, as shown in Figure 4.15-1 and Table 4.15-1, nor would it create a new impact that has not already been discussed for the proposed Project. Impacts during construction and operation would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.15.4.

Recreation

Impacts to recreational resources under this alternative would be identical to the SWEP. The relocation of the switchyard site would not change the temporary impacts to recreational groups who regularly use the Project area, nor change the permanent impacts to scenic-related recreation. Temporary impacts would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.16.4.

Transportation and Traffic

Impacts to transportation and traffic under this alternative would not substantially differ from the SWEP. The alternative switchyard location would not change the overall Project-related construction traffic levels and LOS, nor would it alter the potential for road blockages and traffic delays, possible safety concerns along roadways, or roadway damage. Construction impacts would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.17.4.

Utilities and Service Systems

Impacts to utilities and service systems under this alternative would be identical to the SWEP. The slight reduction in transmission line construction (i.e., 1.1 less miles) would not substantially change the total amount of solid waste generated during construction, and the alternative switchyard site would not create a new impact to existing utilities. Construction impacts would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.18.4.

5.5.4 Alternate Surface Transport Route

This alternative was identified to further reduce the significant but mitigable impacts associated with traffic disruptions and the temporary infrastructure dismantling in the City of Lompoc.

This alternative would alter the proposed surface transport route for the wind turbine blades and other large turbine components. As discussed in Section 2.6.2, *Construction Access*, the proposed local route for wind turbine blade transportation begins at I-5 and proceeds westerly along CA-166 to CA-101 South, and then proceeds along Highways CA-135 and CA-1 to Santa Lucia Canyon Road and Ocean Avenue, ~~CA-246,~~ and then entering the City of Lompoc ~~streets~~ from the west.

This alternative would alter the transportation route to move the majority of the transport outside of the City of Lompoc and reduce the number of turns that are required within the City of Lompoc. The alternate surface transport route would deviate from the proposed transport route at the intersection of CA-1 and Santa Lucia Canyon Road. The blades would then travel south along Santa Lucia Canyon Road, which becomes Floradale Avenue. The blades would proceed south along Floradale Avenue, making an easterly turn at W. Ocean Avenue. The blades would then proceed east along W. Ocean Avenue, entering the City of Lompoc and proceeding to South I Street where the route would turn south for one block before re-connecting with the ~~portion of the~~ proposed transport route at the intersection of South I Street and Cypress Avenue. This alternative surface transportation route is shown on Figure 5-4.

The proposed surface transportation route would require ~~the same number of turns~~ one less turn from CA-1 through to South I street ~~but~~ and would reduce the length of transport within the City of Lompoc from approximately 2.67 miles to approximately 1.9 miles, although the overall length of the transport route would increase slightly. Additionally, this route would move one of the required turns outside of the City of Lompoc, as the CA-1 and W. Ocean Avenue turn would now be made outside of the City.

In its comments on the Draft SEIR, the Applicant has indicated its support for this alternative.


Figure 5-4. Alternate Surface Transport Route
0
1
Miles
Santa Lucia Canyon Rd
1
Mission Hills
Lompoc
1
N H St
W Ocean Ave
E Ocean Ave
S I St
S F St
E Cypress Ave
Floradale Ave
W Ocean Ave
Proposed Transportation Route
Alternate Transportation Route

Comparative Impacts

Aesthetics/Visual Resources

The transportation alternative would neither introduce a new significant visual impact, nor eliminate or reduce significant and unavoidable impacts that would occur with implementation of the SWEP. Visual resource impacts would remain significant under this alternative.

Agricultural Resources

The alternative transport route would be located along Prime Farmland for approximately 3.4 miles. Prime Farmland has been designated by the California Department of Conservation both east and west of Floradale Avenue as it extends south of the Federal Correctional Institution towards W. Ocean Avenue. Prime Farmland has also been designated north and south of W. Ocean Avenue until it intersects with V Street, with the exception of a 0.25-mile stretch of W. Ocean Avenue between North Z Street and V Street that borders residential development to the north.

This alternative does not require the widening of existing roadways into adjacent Farmland, and no new impacts to agricultural resources would occur. Furthermore, the proposed location of the WTGs, substation, and access roads relative to existing agricultural activities would not change. Impacts to agriculture resources under this alternative would not differ from the proposed Project and would remain less than significant.

Air Quality

The air quality impacts for this alternative would not differ substantially from the proposed Project. The slight increase in the blade transportation route would slightly increase the construction emissions. However, the emissions increase would be minor in the context of the Project's total construction emissions increases, and the same mitigation measures would continue to apply. This alternative route would to a small extent reduce the short-term localized construction emissions impacts of blade transportation, while moving the location of these impacts, based on the reduction of the route length through populated areas within Lompoc. Air quality impacts would remain less than significant after mitigation.

Biological Resources

This alternative would neither introduce a new significant biological resource impact, nor eliminate or reduce significant and unavoidable impacts that would occur with implementation of the SWEP. Impacts to biological resources would remain significant under this alternative.

Archaeological and Tribal Cultural Resources

This alternative would neither introduce a new significant impact to cultural and tribal resources, nor eliminate or reduce significant impacts that would occur with implementation of the SWEP. Impacts to cultural and tribal resources would be the same as the proposed Project and the mitigation measures identified in Section 4.6.4 would need to be implemented to reduce impacts.

Energy

There would be no change to energy-related impacts under this alternative. The design and construction of this alternative would not substantially change from the SWEP, as this alternative

would only differ in the proposed transport route through the City of Lompoc. While an alternative route may require a slight increase in fossil fuel consumption during transport, the total fossil fuel use during construction would be comparable to the SWEP. Furthermore, potential generation capacity would be identical to the SWEP (102 MW) and this alternative would continue to support renewable energy goals. Both the transportation alternative and the proposed SWEP would have a less-than-significant impact on nonrenewable energy resources as well as on the existing electrical system.

Fire Hazards & Emergency Services

The alternative transport route would not introduce a new fire hazard that has not already been discussed for the proposed Project, nor would it create a new conflict with an adopted emergency evacuation/response plan. Impacts to fire hazards and emergency services would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.8.4.

Geology and Soils

This alternative would neither introduce a new significant impact to geology and soils, nor eliminate or reduce significant impacts that would occur with implementation of the SWEP. Impacts to geology and soils would remain less than significant with implementation of the mitigation measures identified in SEIR Section 4.9.4.

Greenhouse Gas Emissions

The total electrical generating capacity of this alternative would remain identical to the proposed Project (i.e., 102 MW). Therefore, there would be no change in either the beneficial GHG emissions effects or the local and state GHG emissions regulations and policy conformance under this alternative as compared to the SWEP. There would be a minor increase to the construction GHG emissions due to the slightly longer blade transportation route, but this increase is minimal in comparison to the beneficial GHG emissions impacts of the Project.

Hazards and Hazardous Materials

The alternative transport route would not create a new hazard-related impact that has not already been discussed for the proposed Project, nor would the alternative avoid any of the potential impacts that would occur with implementation of the SWEP. Impacts associated with blade icing and ice throw, blade throw, tower failure, EMF exposure, worker safety, and release of hazardous materials would remain less than significant.

Hydrology and Water Quality

This alternative would neither introduce a new significant impact to hydrology and water quality, nor eliminate or reduce significant impacts that would occur with implementation of the SWEP. Impacts to hydrology and water quality would remain less than significant with implementation of the mitigation measures identified in Section 4.12.4.

Land Use and Planning

Under the alternative transport route, increased noise from transport vehicles would shift west of CA-1 and would primarily affect communities along Floradale Avenue and W. Ocean Avenue. While the

specific communities affected by transport noise would slightly vary, this alternative would not introduce a new significant impact nor eliminate or reduce significant impacts that would occur under the SWEP. Land use impacts would remain less than significant with implementation of the mitigation measures identified in Section 4.13.4.

Noise

This alternative would neither introduce a new significant noise impact, nor eliminate or reduce significant impacts that would occur with implementation of the SWEP. Receptors in the City of Lompoc that would experience increased construction traffic noise under the SWEP would have reduced impacts under this alternative, because the transport route would avoid off-site locations north of W. Ocean Avenue. Impacts to residences and other receptors in the City of Lompoc south of W. Ocean Avenue would not change and would remain less than significant with implementation of the mitigation measures identified in Section 4.14.4.

Paleontological Resources

This alternative would neither introduce a new significant impact to paleontological resources, nor eliminate or reduce significant impacts that would occur with implementation of the SWEP. Impacts to paleontological resources would remain less than significant with implementation of the mitigation measures identified in Section 4.15.4.

Recreation

Impacts to recreational resources under this alternative would be identical to the SWEP. The alternative transportation route would not change the temporary impacts to recreational groups who regularly use the Project area, nor change the permanent impacts to scenic-related recreation. Impacts would remain significant but could be reduced to a less-than-significant level with implementation of the mitigation measures identified in Section 4.16.4.

Transportation and Traffic

The alternative transport route would neither introduce a new significant transportation/traffic impact, nor eliminate or reduce significant and unavoidable impacts that would occur with implementation of the SWEP. However, it would reduce the need for temporary removal of public infrastructure along streets in the City of Lompoc and reduce the short-term disruptions associated with blade transport through the city described in Impact USS-4. The alternative would transfer the impacts of oversized truck movements to different roadways and transfer one of the critical turning locations from the W. Ocean Avenue/H Street intersection to the W. Ocean Avenue/Floradale Avenue intersection. This shift would result in a reduction in impact severity because the turning activities would be transferred from an intersection in the Lompoc central business district to an intersection within a largely residential area; however, one turn in the Lompoc central business district would still be required (at Ocean Avenue/I Street). The overall change in impacts, however, would be relatively small as the SWEP and the alternative would both result in significant transportation/traffic impacts.

Utilities and Service Systems

This alternative would neither introduce a new significant impact to utilities and service systems, nor eliminate or reduce significant impacts that would occur with implementation of the SWEP. Impacts

to utilities and service systems would remain less than significant with implementation of the mitigation measures identified in Section 4.18.4.

5.6 Comparison of Alternatives

The impacts of each of the alternatives in comparison to the proposed Project are discussed in Section 5.5 above. Table 5-1 provides a summary comparison of the alternatives and the proposed Project based on the impact discussions in Section 5.5. The No Project Alternative is not included in Table 5-1 as no impacts would occur under that alternative.

In accordance with CEQA requirements, an "environmentally superior alternative" must be identified among the alternatives analyzed in an SEIR. The environmentally superior alternative is the alternative found to have an overall advantage compared to the other alternatives based on the impact analysis in the SEIR. Of the alternatives analyzed, the No Project Alternative would result in the fewest adverse environmental impacts but would not provide the beneficial reductions in long-term GHG emission associated with the proposed Project (see Impact GHG-1 in Section 4.10). Despite the absence of this beneficial GHG impact, the No Project Alternative is considered the environmentally superior alternative because it would avoid the adverse impacts associated with construction and operation of a wind-energy project at the Project site. However, in accordance with State CEQA Guidelines Section 15126.6(e)(2), if the No Project Alternative is identified as the environmentally superior alternative, an SEIR is required to identify an environmentally superior alternative from among the other alternatives.

The environmentally superior alternative is generally considered to be the alternative that would result in the fewest significant environmental impacts. However, just tallying the number of significant environmental impacts can sometimes be misleading, because some significant impacts may be more serious or substantive than others. For instance, a temporary impact can be significant, but a permanent significant impact is often more important to consider in comparing the impacts among alternatives. Similarly, some resources are considered more important or sensitive than others. For example, impacts on threatened or endangered species would be considered more substantive than impacts on common species.

The Modified Project Layout, Including Elimination of WTGs E-7 and E-8, is the environmentally superior alternative primarily due to its reduced disturbance of native vegetation in comparison to the proposed Project, particularly the reduction in loss of native oak trees. Also, because this alternative would have one less WTG than the proposed Project, there would be slightly reduced impacts on visual resources (due to visibility of a smaller number of WTGs) and air quality (due to reduced construction emissions). This alternative also eliminates direct impacts in the Coastal Zone . Overall, this alternative reduces 18 impacts compared to the proposed Project, including impacts associated with aesthetics, air quality, biological resources, land use, and vegetative waste disposal.

If the Modified Project Layout alternative were to be combined with the Alternative Switchyard Location alternative, there would be ~~an even greater~~ some additional reduction in impacts due to construction of a shorter transmission line than the proposed Project, primarily resulting in reduced impacts related to visual resources, air quality, and biological resources. However, The County Fire Department has indicated that the alternative switchyard location has certain disadvantages compared to the switchyard location for the proposed Project in terms of emergency access and associated response times. ~~Further,~~ If the Modified Project Layout alternative ~~could also~~ were to be combined with the Alternative Surface Transport Route alternative, it would ~~to~~ reduce temporary disruptions associated with blade transport through the City of Lompoc. Therefore, while the Modified

Project Layout alternative is the single alternative most capable of reducing adverse impacts associated with the proposed Project, the combination of ~~all three alternatives~~ the Modified Project Layout Alternative and the Alternative Surface Transport Route Alternative would be the most effective in reducing adverse impacts.

The County of Santa Barbara is under no obligation to adopt the environmentally superior alternative. Identification of the environmentally superior alternative is a SEIR requirement, but it does not constrain or limit the County's decision on the proposed Project. In rendering a decision on the Project, County decision makers will need to consider other factors in addition to the Project's significant environmental impacts.

5.7 References

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Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
Meets most Project objectives?		Yes	Yes	Yes
Reduces impacts compared to the proposed Project?		19 reduced impacts 2 reduction in significance determinations No impacts in the Coastal Zone	15 reduced impacts 1 reduction in significance determinations Same Coastal Zone impacts as the proposed Project	4 reduced impacts No changes to significance determinations Same Coastal Zone impacts as the proposed Project
Aesthetics\Visual Resources				
VIS-1: WTG Visibility.	Construction and operation of the WTGs and related structures have the potential to be visible in the vicinity of the Project. (Class I)	*Slightly Reduced.* WTG visibility and associated visual contrast would be slightly reduced compared to the proposed Project. (Class I)	*Similar.* Impacts would not differ from the proposed Project. (Class I)	*Similar.* Impacts would not differ from the proposed Project. (Class I)
VIS-2: Views from Jalama Beach County Park, Miguelito County Park, and La Purisima Mission.	Westernmost WTGs could be visible to users of Jalama Beach County Park; Northeastern-most WTGs could be visible to users of La Purisima Mission. (Class I – Jalama Beach Co. Park) (Class III – La Purisima Mission)	*Similar.* Impacts to views from Jalama Beach County Park (Class I) and La Purisima Mission (Class III) would not substantially differ from the proposed Project.	*Similar.* Impacts would not differ from the proposed Project. (Class I and Class III)	*Similar.* Impacts would not differ from the proposed Project. (Class I and Class III)
VIS-3: Views from State Route 1.	WTGs could be visible throughout from the SR-1 corridor and the Lompoc Valley. (Class III)	*Similar.* Impacts on views from State Route 1 would not substantially differ from the proposed Project. (Class III)	*Similar.* Impacts would not differ from the proposed Project. (Class III)	*Similar.* Impacts would not differ from the proposed Project. (Class III)
VIS-4: Transmission Line Skyline Silhouette.	Placement of the transmission power line in the area of SR-1 introduces three new structures that could partially silhouette against the skyline. (Class III)	*Similar.* Impacts on views from State Route 1 would not substantially differ from the proposed Project. (Class III)	*Similar.* Impacts would not substantially differ from the proposed Project. (Class III)	*Similar.* Impacts would not differ from the proposed Project. (Class III)
VIS-5: Transmission Line Visibility.	Construction and operation of the transmission line could be visible from public roadways and residential areas. (Class III – Majority of San Miguelito Road & SR-1) (Class I – South Lompoc roads and residential areas and two segments of San Miguelito Road)	*Similar.* Impacts on views from San Miguelito Road and some roads and residential areas in south Lompoc would not substantially differ from the proposed Project. (Class I and Class III)	*Reduced.* Impacts on views from San Miguelito Road would be the same as the proposed Project (Class I) for two road segments south of Miguelito County Park. Impacts on views from public roadways and residential areas in south Lompoc would be reduced (Class III). All other viewing locations would experience impacts similar to the proposed Project.	*Similar.* Impacts would not differ from the proposed Project. (Class I and Class III)
VIS-6: Transmission Line and Switchyard Visibility from State Route 1.	Placement of the transmission line switchyard in the area of SR-1 introduces a new industrial facility that could be visible from SR-1. (Class II)	*Similar.* Impacts on views from State Route 1 would not substantially differ from the proposed Project. (Class II)	*Reduced.* Impacts on views from SR-1 would be substantially reduced (Class III).	*Similar.* Impacts would not differ from the proposed Project. (Class II)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
VIS-7: San Miguelito Road Landscape.	Vehicular transport of Project components would require road widening and tree removal that could alter the landscape characteristics along portions of San Miguelito Road. (Class I)	*Similar.* Impacts on views from San Miguelito Road would not substantially differ from the proposed Project. (Class I)	*Similar.* Impacts would not differ from the proposed Project. (Class I)	*Similar.* Impacts would not differ from the proposed Project. (Class I)
VIS-8: Nighttime Lighting.	The Project could result in nighttime lighting impacts. (Class III – Facility lighting) (Class I – FAA hazard lighting)	*Similar.* Impacts on aesthetics / visual resources would not substantially differ from the proposed Project. (Class I and Class III)	*Similar.* Impacts would not differ from the proposed Project. (Class I and Class III)	*Similar.* Impacts would not differ from the proposed Project. (Class I and Class III)
Agricultural Resources				
AG-1: Important Farmland/ Williamson Act Contract Lands.	Development of the SWEP and power line installation could result in the temporary and permanent disturbance of farmland. (Class III)	*Similar.* Impacts to agricultural resources would be slightly greater than the proposed Project due to the added disturbance to an actively farmed area, but there would be no change in the severity of impact. (Class III)	*Similar.* Impacts to agriculture resources would not substantially differ from the proposed Project. (Class III)	*Similar.* Impacts to agriculture resources under this alternative would not differ from the proposed Project. (Class III)
Air Quality				
AQ-1: Short-Construction Emissions.	Construction emissions could result in a considerable net increase of pollutants that would violate air quality standards or contribute substantially to an existing or projected air quality violation. (Class II)	*Slightly Reduced.* Short-term construction air pollutant emissions would be slightly reduced compared to the proposed Project. (Class II)	*Slightly Reduced.* Short-term localized construction emissions associated with transmission line construction site would be slightly reduced. (Class II)	*Similar.* Impacts would not differ substantially from the proposed Project. Emission increases associated with the slightly longer blade transport route would be minor in the context of total construction emissions. (Class II)
AQ-2: Long-term Operation Emissions.	Operation emissions could result in a considerable net increase of pollutants that would violate air quality standards or contribute substantially to an existing or projected air quality violation. (Class III)	*Slightly Reduced.* Long-term operation air pollutant emissions would be slightly reduced compared to the proposed Project. (Class III)	*Similar.* Long-term operation air pollutant emissions would not differ substantially from the proposed Project. (Class III)	*Similar.* Long-term operation air pollutant emissions would not differ substantially from the proposed Project. (Class III)
Biological Resources				
BIO-1a: Vegetation and Wildlife Habitat Impacts during Construction.	Vegetation and wildlife habitat could be temporarily and permanently lost during construction. (Class II)	*Slightly Reduced.* Overall vegetation and habitat impacts would be reduced compared to the proposed Project due to the net reduction of one WTG but impacts to sensitive native grassland would be slightly increased. (Class II)	*Slightly Reduced.* The reduction in transmission line length would result in a minor reduction in ground disturbance under this alternative. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Vegetation and wildlife habitat impacts would be the same. (Class II)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
BIO-1b: Vegetation and Wildlife Habitat Impacts during O&M.	Vegetation and wildlife habitat could be impacted during O&M. (Class II)	*Similar.* O&M impacts would not differ appreciably from the proposed Project, but the net reduction of one WTG may marginally decrease impacts. (Class II)	*Similar.* O&M impacts would not differ appreciably from the proposed Project, but the reduced transmission line length may marginally decrease impacts. (Class II)	*Similar.* Impacts would not differ from the proposed Project. O&M impacts would be the same. (Class II)
BIO-2a: Construction Impacts to Woodland and Forest.	Oak woodland and tanoak forest could be impacted during construction. (Class I)	*Reduced.* Impacts to oaks would be reduced by 67%. However, because oak woodlands are sensitive and take decades to recover even when restoration is successful, impacts to 225 oaks under this alternative would remain significant and unavoidable. (Class I)	*Slightly Reduced.* Impacts would not differ appreciably from the proposed Project, but the reduced transmission line length may slightly decrease impacts. (Class I)	*Similar.* Impacts would not differ from the proposed Project. Oak woodland and tanoak forest impacts would be the same. (Class I)
BIO-2b: O&M Impacts to Woodland and Forest.	Oak woodland and tanoak forest could be impacted during Project operations. (Class III)	*Similar.* O&M impacts would not differ appreciably from the proposed Project, but the net reduction of one WTG may marginally decrease impacts. (Class III)	*Similar.* Impacts would not differ appreciably from the proposed Project, but the reduced transmission line length may marginally decrease impacts. (Class III)	*Similar.* Impacts would not differ from the proposed Project. O&M impacts would be the same. (Class III)
BIO-3: Wetlands, Seeps, and Springs, and Features Subject to Regulation by the USACE, Santa Barbara County, or CDFW.	Direct loss of wetlands and seeps would occur at creek crossings, the laydown yard, water well, road improvement and access road locations, pole locations along the transmission line, and WTG pads. Additionally, soil erosion or spills could reduce water quality during construction. (Class II)	*Similar.* Impacts would not differ appreciably from the proposed Project, but the net reduction of one WTG may marginally decrease impacts. (Class II)	*Similar.* Impacts would not differ appreciably from the proposed Project, but the reduced transmission line length may marginally decrease impacts. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Impacts to jurisdictional resources would be the same. (Class II)
BIO-5a: Construction Impacts to Gaviota Tarplant.	Impacts to Gaviota tarplant and designated critical habitat could occur during construction. (Class II)	*Slightly Reduced.* The realigned access road to WTG E-1 would slightly increase impacts to Gaviota tarplant because it is within a mapped population. However, the realigned access road to WTG E-2 would reduce impacts to Gaviota tarplant by slightly decreasing the length of road within a mapped population. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Impacts to Gaviota tarplant would be the same. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Impacts to Gaviota tarplant would be the same. (Class II)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
BIO-5b: O&M Impacts to Gaviota Tarplant.	Occasional disturbance to small areas of Gaviota tarplant habitat could occur as a result of operations or maintenance activities involving clearing or vehicle operation in occupied habitat. (Class II)	*Slightly Reduced.* O&M impacts would not differ appreciably from the proposed Project, but the slight reduction in widening an existing access road length in a mapped population may marginally decrease impacts. (Class II)	*Similar.* Impacts would not differ from the proposed Project. O&M impacts would be the same. (Class II)	*Similar.* Impacts would not differ from the proposed Project. O&M impacts would be the same. (Class II)
BIO-6: Other Special-Status Plants.	A number of other special-status plant species may be present on site or in the transmission line corridor and could be lost during construction. (Class II)	*Slightly Reduced.* Impacts would be slightly reduced compared to the proposed Project due to the net reduction of one WTG. (Class II)	*Similar.* There are four scattered, small occurrences of black-flowered figwort (CRPR 1B.2) consisting of 1 to 4 plants each in the general area of the alternative switchyard location; however, these occurrences may be able to be avoided during micrositing. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Impacts to special-status plants would be the same. (Class II)
BIO-7: Common Wildlife.	Individual animals could be injured or killed by vehicles, equipment, or large holes during construction. (Class II)	*Slightly Reduced.* Impacts would be slightly reduced compared to the proposed Project due to the net reduction of one WTG. (Class II)	*Slightly Reduced.* Impacts would be slightly reduced compared to the proposed Project due to the reduced transmission line length. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Impacts to common wildlife would be the same. (Class II)
BIO-8: Nesting Birds.	Nesting birds could potentially lose nests through destruction or abandonment. (Class II)	*Slightly Reduced.* Impacts would be slightly reduced compared to the proposed Project due to the net reduction of one WTG. (Class II)	*Slightly Reduced.* Impacts would be slightly reduced compared to the proposed Project due to the reduced transmission line length. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Impacts to nesting birds would be the same. (Class II)
BIO-9: Special-Status Wildlife.	Direct and indirect impacts could occur to special-status wildlife species. (Class II)	*Slightly Reduced.* Impacts would be slightly reduced compared to the proposed Project due to the net reduction of one WTG. (Class II)	*Slightly Increased.* The alternative switchyard location supports a small amount of mapped seacliff buckwheat (0.003 acre), the host plant for the federally listed El Segundo blue butterfly. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Impacts to special-status wildlife would be the same. (Class II)
BIO-10: Avian and Bat Collisions with WTGs.	Unknown numbers of special status and non-sensitive birds and bats are could be at risk of dying through collisions with the WTGs over the duration of the Project. (Class I)	*Slightly Reduced.* Impacts would be slightly reduced compared to the proposed Project due to the net reduction of one WTG. (Class I)	*Similar.* Impacts would not differ from the proposed Project. O&M impacts to birds and bats from WTGs would be the same. (Class I)	*Similar.* Impacts would not differ from the proposed Project. O&M impacts to birds and bats from WTGs would be the same. (Class I)
BIO-11: Avian and Bat Collisions with Power Lines and Meteorological Towers.	Birds and bats could collide with transmission and power collection poles, transmission and power collection lines, and meteorological towers. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Overhead transmission facilities and meteorological towers would be the same. (Class II)	*Slightly Reduced.* The reduced transmission line length would slightly decrease impacts. (Class II)	*Similar.* Impacts would not differ from the proposed Project. O&M impacts would be the same. (Class II)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
BIO-12: Avian Displacement from WTGs.	Birds with habitat within 200 feet of WTG towers may be displaced. (Class III)	*Similar.* While impacts would be slightly reduced compared to the proposed Project due to the net reduction of one WTG, the two larger WTGs would marginally increase the area of displacement at WTGs W-7 and N-3. (Class III)	*Similar.* Impacts would not differ from the proposed Project. Avian displacement would be the same. (Class III)	*Similar.* Impacts would not differ from the proposed Project. Avian displacement would be the same. (Class III)
BIO-13a: Indirect Construction Effects (Wildlife).	Indirect impacts to wildlife could occur during construction from a variety of sources, resulting in temporary wildlife displacement. (Class III)	*Slightly Reduced.* Impacts would be slightly reduced compared to the proposed Project due to the net reduction of one WTG. (Class III)	*Slightly Reduced.* Impacts would be slightly reduced compared to the proposed Project due to the reduced transmission line length and associated decrease in ground disturbance. (Class III)	*Similar.* Impacts would not differ from the proposed Project. Indirect impacts to wildlife would be the same. (Class III)
BIO-13b: Indirect O&M Effects (Wildlife).	Indirect operational impacts could occur to terrestrial wildlife compared to pre-Project levels. (Class III)	*Similar.* O&M impacts would not differ appreciably from the proposed Project, but the net reduction of one WTG may marginally decrease impacts. (Class III)	*Similar.* O&M impacts would not differ appreciably from the proposed Project, but the reduced transmission line length may marginally decrease impacts. (Class III)	*Similar.* Impacts would not differ from the proposed Project. (Class III)
BIO-14: Indirect Impacts (Vegetation).	Invasive species carried from other work sites could establish on site and displace native plant species or interfere with revegetation; topsoil removal and equipment operation could reduce the ability of soils to support vegetation. (Class II)	*Slightly Reduced.* Impacts would not differ appreciably from the proposed Project, but the net reduction of one WTG may slightly decrease indirect impacts. (Class II)	*Slightly Reduced.* Impacts would not differ appreciably from the proposed Project, but the reduced transmission line length and associated reduction in ground disturbance may slightly decrease indirect impacts. (Class II)	*Similar.* Impacts would not differ from the proposed Project. Indirect impacts to vegetation would be the same. (Class II)
Archaeological and Tribal Cultural Resources				
CULT-1: Known Prehistoric Archaeological Sites.	Construction activities could result in significant impacts to 29 prehistoric archaeological sites. (Class II)	*Similar.* No impacts on cultural or tribal resources would be avoided by the elimination of WTGs E-7 and E-8. There is the potential for slightly increased disturbance of several cultural resource sites near WTGs N-10, W-7, and N-3, and the access road to WTG E-2. (Class II)	*Slightly Reduced.* The reduced length of the transmission line under this alternative would avoid potential impacts to one cultural resource site. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
CULT-2: Unidentified Archaeological Resources.	Impacts to unidentified subsurface archaeological resources may occur as a result of earth-disturbing activities. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
CULT-3: Unauthorized Artifact Collection.	Impacts to known and unidentified archaeological resources may occur as a result of increased public access to archaeological sites via new or improved roads. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
CULT-4: Impacts on Traditional Cultural Properties.	Construction of WTGs could adversely affect Native cultural practices at known Traditional Cultural Properties (Sacred Sites). (Class III)	*Similar.* Impacts would be similar to the proposed Project. WTG N-10 would be visible from the Traditional Cultural Properties (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
Energy				
EEU-1: Federal and State Renewable Energy Goals.	The Project could be consistent with federal goals and state legislation related to the use of renewable energy. (Class IV)	*Similar.* The beneficial effects of the proposed Project would be slightly reduced. (Class IV)	*Similar.* There would be no change to energy-related impacts under this alternative. (Class IV)	*Similar.* There would be no change to energy-related impacts under this alternative. (Class IV)
EEU-2: Nonrenewable Energy Resources.	Construction and operation of the Project could result in consumption of diesel fuel and gasoline. (Class III)	*Similar.* Fuel consumption would be similar to the proposed Project. (Class III)	*Similar.* Fuel consumption would be similar to the proposed Project, although slightly increased due to construction of a longer transmission line. (Class III)	*Similar.* Fuel consumption would be similar to the proposed Project. (Class III)
EEU-3: New/Altered PG&E Facilities.	Impacts from temporary and long-term modifications to the PG&E system to implement the Project could occur. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)	*Similar.* Impacts would be the similar to the proposed Project although the amount of work on PG&E's system would be slightly increase. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
Fire Hazards and Emergency Services				
FPES-1: Increased Fire Risk (Construction).	The Project could result in an increased risk of wildland fires that could spread to more developed areas. Fire risks include vehicle exhaust, sparks, welding, parking on dry grass, and fuel tanks. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
FPES-2: Increase Fire Risk (Operations).	Operation of the Project could increase baseline fire risks. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
FPES-3: Fire Department Response Times.	The Project could have the potential to increase demand for fire protection services. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. However, the more remote location of the switchyard would increase emergency response time. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
FPES-4: Emergency Services Response Times.	The Project could temporarily increase the need for emergency medical services during construction. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
FPES-5: Interference with Fire Prevention Techniques.	The Project could interfere with controlled burns in the Project area. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
FPES-6: Emergency Evacuation/Response.	The temporary closure of Sudden Road and Upper Miguelito Canyon Road during construction could hinder emergency response. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
Geology and Soils				
GEO-1: Fault Rupture.	There could be a risk of damage to structures by fault rupture. (Class III)	*Similar.* The modified layout would not change hazards associated with fault rupture. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
GEO-2: Ground Shaking and Liquefaction.	A major earthquake could result in ground shaking, liquefaction, or seismically induced landslides resulting in damage to structures or exposure of people to injury or death. (Class II)	*Similar.* The modified layout would not change hazards associated with ground shaking and liquefaction. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
GEO-3: Landslides.	Construction activities could increase the potential for landslides and/or reactivate existing landslides. (Class II)	*Similar.* The modified layout would not substantially change the potential for landslides. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
GEO-4: Soil Erosion.	Construction could accelerate or increase the potential for erosion from water and wind. (Class II)	*Similar.* The modified layout would not substantially change the potential for soil erosion. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
GEO-5: Expansive Soils.	Project structures could be damaged by expansive soils. (Class II)	*Similar.* The modified layout would not substantially change the potential for damage from expansive soils. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
GEO-6: Sewage Effluent Disposal.	Soils could be found incapable for use of septic or alternative wastewater disposal. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
GEO-7: Compressible and Collapsible Soil, Subsidence.	Subsidence or compressible or collapsible soils could cause settlement damage to structures and roadways. (Class II)	*Similar.* The modified layout would not substantially change the potential for damage from subsidence or compressible or collapsible soils. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
Greenhouse Gas Emissions				
GHG-1: Reduction in GHG Emissions.	The Project would result in GHG emissions reductions in the power generation sector, resulting in a beneficial effect related to greenhouse gas emissions. (Class IV)	*Similar.* The potential to offset GHG emissions in the power generation sector would be reduced slightly compared to the proposed Project, but impacts would remain similar. (Class IV)	*Similar.* Impacts would be the same as the proposed Project. (Class IV)	*Similar.* Impacts would be the same as the proposed Project. (Class IV)
Hazards and Hazardous Materials				
RISK-1: Tower Failure and Blade Throw.	There could be a risk to the public from possible WTG tower collapse or blade throw. (Class III)	*Similar.* The modified layout of this alternative, including installation of one less WTG, does not substantially change potential hazards. (Class III)	*Similar.* The different switchyard location and shorter transmission line associated with this alternative does not change potential hazards. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
RISK-2: Blade Icing and Ice Throw.	Risk to the public could occur from blade icing and ice throw. (Class III)	*Similar.* The modified layout of this alternative, including installation of one less WTG, does not substantially change potential hazards associated with blade icing and ice throw. (Class III)	*Similar.* The different switchyard location and shorter transmission line associated with this alternative does not change potential hazards associated with blade icing and ice throw. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
RISK-3: Electromagnetic Field Effect.	Electromagnetic fields could cause a possible hazard when associated with the siting of high-voltage overhead power lines or cables in proximity to residences. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
RISK-4: Utility/Turbine Interface and Worker Safety.	Construction workers could be exposed to safety risks, including electrical shock and falls. Risk could occur to members of public who incidentally or intentionally enter the Project site. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
RISK-5: Release of Hazardous Materials.	Accidental spills or leakage of hazardous materials could occur, including fuels (gasoline and diesel), lubricants, motor oil, and paints. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)
RISK-6: Radiofrequency Radiation.	The Project could expose people to radiofrequency radiation (RFR) in excess of the IEEE-ANSI C95.1-1992 standard. (No Impact)	*Similar.* Impacts would be the same as the proposed Project. (No Impact)	*Similar.* Impacts would be the same as the proposed Project. (No Impact)	*Similar.* Impacts would be the same as the proposed Project. (No Impact)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
Hydrology and Water Quality				
WAT-1: Erosion and Sedimentation.	Project-related ground disturbance could induce erosion and sedimentation into local watercourses. (Class III)	*Similar.* The modified layout of this alternative, including installation of one less WTG, does not substantially change the potential for erosion and sedimentation. (Class III)	*Slightly Reduced.* The shorter transmission line would result in slightly reduced growth disturbance during construction. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
WAT-2: Pollutant Discharge.	Water quality could be affected by small fuel or oil spills, concrete, and trash and litter during construction and operation. (Class III)	*Similar.* The modified layout of this alternative, including installation of one less WTG, does not substantially change the potential for pollutant discharge. (Class III)	*Slightly Reduced.* The shorter transmission line would result in slightly reduced potential for pollutant discharge during construction. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
WAT-3: Stormwater Runoff/Flooding.	Temporary and permanent land disturbance could affect stormwater runoff/flooding and stormwater quality. (Class III)	*Similar.* The modified layout of this alternative, including installation of one less WTG, does not substantially change potential impacts related to stormwater runoff. (Class III)	*Similar.* The alternative switchyard location and shorter transmission line does not substantially change potential impacts related to stormwater runoff. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
WAT-4: Groundwater.	The Project could substantially deplete groundwater supplies or interfere with groundwater recharge. (Class III)	*Similar.* The modified layout of this alternative, including installation of one less WTG, does not substantially change potential impacts related to groundwater. (Class III)	*Similar.* The alternative switchyard location and shorter transmission line does not substantially change potential impacts related to groundwater. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
WAT-5: Riparian Vegetation Removal.	The Project could result in the removal or reduction of vegetation from the buffer zone of streams, creeks, or wetlands, which could affect water quality. (Class II)	*Similar.* Impacts would not differ appreciably from the proposed Project, but the net reduction of one WTG may marginally decrease impacts. (Class II)	*Similar.* Impacts would not differ appreciably from the proposed Project, but the reduced transmission line length may marginally decrease impacts. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
Land Use and Planning				
LU-1a: LUDC Visual Impact Development Standards.	Potential inconsistency with County Plans, Policies, and Development Standards concerning visual impacts. (Class III)	*Reduced.* This alternative would not be subject to the requirements of the County's Coastal Land Use Plan and Coastal Zoning Ordinance but would be subject to the requirements of the Comprehensive Plan and the Land Use and Development Code. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
LU-1b: Tree Protection.	The proposed Project is inconsistent with County Plans, Policies, and Development Standards concerning tree removal. (Class I)	*Reduced.* The elimination of WTGs E-7 and E-8 would substantially reduce tree loss, including a 67% reduction of loss of oak trees. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class I)	*Similar.* Impacts would be the same as the proposed Project. (Class I)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
LU-2: FAA Air Navigation Requirements.	Potential conflict with FAA air navigation requirements from installation of WTGs and meteorological towers, and possible use of helicopters during construction. (Class III)	*Similar.* Impacts to air navigation would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
LU-3: Compatibility with VAFB Operations.	Potential incompatibility with VAFB operations, such as radar, telemetry antennas, and microwave links. (Class III)	*Similar.* Compatibility with VAFB operations would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
LU-4: Quality of Life – Traffic.	Construction activities would result in increased traffic in relatively quiet neighborhoods. (Class II)	*Similar.* Construction traffic impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	Slightly Reduced. Temporary traffic impacts in Lompoc associated with blade transport would be reduced (Class II)
LU-5a: Quality of Life – Noise.	Noise from Project construction could cause temporary impacts to quality of life of residences within and surrounding the Project area. (Class II)	*Similar.* Construction noise impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
LU-5b: Quality of Life – Noise.	Noise from WTG operation could potentially impact quality of life of nearby residences. (Class II)	*Similar.* Operational noise impacts would be similar to the proposed Project. (Class II)	Similar. Impacts would be the same as the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
LU-6: Coastal Resources.	Possible unpermitted encroachment into the Coastal Zone, impacting coastal resources. (Class II)	*Reduced.* The elimination of widening a portion of an existing road in the Coastal Zone would result in reduced impacts. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
LU-7: Decommissioning and Reclamation Plan.	Long-term impacts to land use following end of Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
Noise				
NOI-1: Short-term Construction Noise.	Some types of construction equipment could generate short-term noise impacts to residences less than 2,000 feet from a construction area. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)
NOI-2: Long-term Wind Turbine Generator Noise.	Adjacent residences could be exposed to substantial noise levels during Project operations. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)
Paleontological Resources				
PALEO-1: Exposure and Potential Destruction of Significant Paleontological Resources.	Ground-disturbing activities such as mechanical excavation, drilling, or trenching could affect paleontological resources. (Class II)	*Similar.* Ground disturbance would be substantially similar to the proposed Project and, therefore, impacts would be similar. (Class II)	*Similar.* Ground disturbance would be substantially similar to the proposed Project and, therefore, impacts would be similar. (Class II)	*Similar.* Ground disturbance would be would the same as the proposed Project and, therefore, impacts would be similar. (Class II)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
PALEO-2: Unauthorized Fossil Collection.	Unauthorized collection of fossils by construction workers or operational personal may occur. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
Recreation				
REC-1: Loss of Recreation.	Project construction-related activities could interfere with recreational activities in the Project area. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
Transportation and Traffic				
TC-1: LOS and V/C Ratio.	Project-related construction traffic could temporarily affect traffic levels and LOS on Project area roadways. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)
TC-2: Roadway Safety.	Long, heavy trucks used to deliver equipment during construction could present safety concerns and physical modifications to the roadway or nearby trees will be required. (Class II)	Similar. Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Slightly Reduced.* The change in transport route would slightly reduce impact severity because a portion of the turning activities would be transferred to a less constrained area. (Class II)
TC-4: Road Blockages/Traffic Delays.	During peak construction, several oversized trucks per day could slow traffic and necessitate temporary blockages of intersections. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Slightly Reduced.* The change in transport route would slightly reduce impact severity because a portion of the turning activities would be transferred to a less constrained area. (Class II)
TC-5: Damage to Roadways.	Trucks carrying heavy equipment could damage existing streets. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)	*Similar.* Impacts would be similar to the proposed Project. (Class II)
TC-6: Soil on Roadways.	Project vehicles could track dust and soil onto public roads. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)
Utilities and Service Systems				
USS-1: Solid Waste Generation.	The Project would potentially exceed Santa Barbara County thresholds for solid waste generation during construction. (Class II)	*Reduced.* Vegetative waste due to removal of oaks trees and other vegetation would be reduced compared to the proposed Project. (Class II)	*Slightly Reduced.* Due a shorter length of transmission line, vegetative waste from construction would be slightly reduced compared to the proposed Project (Class II)	*Similar.* Impacts would be the same as the proposed Project. (Class II)
USS-2: Water Supply.	The proposed Project would consume water during both construction and operation, but adequate supplies exist to meet these needs. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be similar to the proposed Project. (Class III)	*Similar.* Impacts would be the same as the proposed Project. (Class III)

Table 5-1. Comparison of Alternatives (Excluding No Project)

	Proposed Project	Modified Project Layout	Alternative Switchyard Location	Alternate Surface Transport Route
USS-3: Wastewater.	The Project would generate nominal amounts of wastewater but would not affect the capacity of the local waste-water treatment system. (Class III)	***Similar***. Impacts would be the same as the proposed Project. (Class III)	***Similar***. Impacts would be the same as the proposed Project. (Class III)	***Similar***. Impacts would be the same as the proposed Project. (Class III)
USS-4: Public Infrastructure.	The Project would require temporary relocations of minor facilities within the City of Lompoc. (Class III)	***Similar***. Impacts would be the same as the proposed Project. (Class III)	***Similar***. Impacts would be the same as the proposed Project. (Class III)	***Slightly Reduced***. Impacts associated with temporary removal of street infrastructure (signs, signals, lights) would be reduced within central Lompoc. (Class III)