

E. Other Federal Requirements and CEQA Considerations

Section E.1 includes discussions of various topics required by CEQA and/or NEPA, including a description of the significant and unavoidable impacts (Class I) identified in Sections C.2 through C.15. Section E.2 discusses applicable federal environmental regulations, including NEPA, and describes how compliance with these regulations will occur as part of the Forest Service's review of the proposed Project.

E.1 Long-Term Implications

E.1.1 Relationship Between Short-Term Uses and Long-Term Productivity of the Environment

The Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations (40 Code of Federal Regulations [CFR] Part 1500 *et seq.*) require that an Environmental Impact Statement (EIS) discuss issues related to environmental sustainability. In general, this EIS discussion is not included as environmental effects for which either significance is defined, or mitigation is recommended. However, the discussion, as it relates to environmental consequences, must be included in the EIS, including consideration of “the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity” (42 United States Code [USC] Section 4332[C] [iv]).

In this section, the short-term effects and uses of various components of the environment in the vicinity of the proposed Project are related to long-term effects and the maintenance and enhancement of long-term productivity. “Short term” refers to the total duration of the proposed Project and alternatives, whereas “long term” refers to an indefinite period beyond the construction of the Project and associated facilities. The specific impacts of the proposed Project and alternatives vary in kind, intensity, and duration according to the activities occurring at any given time. The proposed Project and alternatives involve tradeoffs between long-term productivity and short-term uses of the environment.

Construction activities would result in a number of temporary impacts that would cease upon completion of the construction phase. Such impacts include the temporary exposure of the fill materials and the native soils along the transmission line routes to the effects of wind, rain, and runoff, which could cause erosion and sedimentation in the area; water quality impacts from storm water run-off and from potential spills, leaks, or accidental releases of hazardous substances; biological resource impacts from the destruction of habitat; and air quality impacts from increased emissions of criteria pollutants. The impacts on soils, water, and biological resources would be mitigable. The impacts on air quality would not be mitigable to a less-than-significant level. The proposed Project and all alternatives would exceed the South Coast Air Quality Management District (SCAQMD) and Antelope Valley Air Quality Management District (AVAQMD) daily regional significant emissions thresholds for a number of pollutants during construction even after mitigating to the extent feasible. Alternative 1 would exceed the SCAQMD Localized Significance Thresholds (LST) for PM10 (Class I) during the construction work for undergrounding, while all of the other Project alternatives would not have significant localized impacts after the implementation of the proposed mitigation measures. Alternative 3 would result in the lowest annual (2008) emissions while Alternative 1 has much higher air quality impacts that occur during the underground transmission line construction and would require additional mitigation beyond that required for the proposed

Project and other alternatives. Alternative 5 has a significantly longer route than all of the other alternatives and has the second highest estimated construction emissions.

The transmission towers and associated facilities may exist for decades and longer. Over the long term, several decades to several hundred years, natural environmental balances are expected to be restored. Many of the effects discussed in Section C are considered to be short term (occurring only during construction activities). These impacts could be further reduced by the mitigation measures discussed in Section C.

The long-term benefits of the proposed Project and alternatives include facilitating the distribution of renewable wind energy from the Antelope Valley-Tehachapi region and accommodating the area's potential for renewable power generation in order to achieve the State of California RPS goal of 20 percent renewables by 2017 and prevent overloading of existing transmission facilities in the SCE transmission grid, specifically the Antelope-Mesa 220-kV transmission line.

E.1.2 Significant Environmental Effects Which Cannot Be Avoided if the Proposed Project is Implemented

The environmental impacts of the proposed Project are described in Section C (Environmental Analysis of the proposed Project/Action and Alternatives). Impacts that are significant and cannot be reduced to less-than-significant levels through the application of feasible mitigation measures have been characterized as Class I impacts. All significant and unavoidable Class I impacts resulting from the proposed Project are summarized below. Complete descriptions of these impacts are presented in Section C.

Air Quality

The proposed Project's NO_x and PM₁₀ emissions, even after implementation of all feasible mitigation measures, will remain above the SCAQMD and AVAQMD daily significance threshold values. Therefore, the daily emissions from the proposed Project would cause significant and unavoidable impacts (Class I).

Forest Management

Although most of the proposed Project route would follow along the slopes of ridgelines, along valley or canyon bottoms, or alongside roadways where the transmission line would not present an obstacle to fire suppression or fire-fighting activities, an approximately 5-mile portion of the proposed Project route would follow along the top of Del Sur Ridge. Along this stretch of Del Sur Ridge Road, mechanical fuel removal could create a firebreak, but it would not be a safe location for firefighters to use as a holding point, nor would it be an area where aircraft could fight the fire. This combination of restrictions would result in a substantial reduction to the defensibility of the ridgeline and is considered a potentially significant and unavoidable impact (Class I) to aggressive aerial fire suppression activities and community safety.

Land Use and Public Recreation

Operation of the proposed Project would cause long-term impacts to existing residential, commercial, and open space land uses. Therefore, the proposed Project's restriction of current or future land uses on private property in the North Area, further encroachment on open space in the Center Area, and long-term land use disturbance of the Veluzat Motion Picture Ranch in the South Area would be considered a significant and unavoidable impact (Class I). There are no mitigation measures available to reduce this operational impact.

~~The Pacific Crest National Scenic Trail (PCT) is a 126-mile semi-primitive, non-motorized trail within the ANF, and is designated as a natural or natural-appearing environment. The 2005 ANF Land Management Plan lists as~~

~~one of its strategies for the PCT: “to protect the trail experience, and provide for the conservation and enjoyment of its nationally important scenic, historic, natural and cultural qualities.” Use of larger towers and an expanded corridor would alter the quality of the portion of the PCT that is traversed by the ROW, and consequently, would negatively affect the recreational experience of this designated natural scenic trail. Under the proposed Project, the larger towers and expanded ROW would change the natural or scenic quality of the trail, creating significant, unavoidable impacts to recreational users of the PCT (Class I).~~

Noise

The proposed Project may result in violations of local standards due to corona noise. The closest sensitive noise receptor to the proposed Project route is the Veluzat Motion Picture Ranch (Motion Picture Ranch), which is immediately adjacent to the proposed transmission ROW in Haskell Canyon in unincorporated Los Angeles County. The Motion Picture Ranch conducts outdoor filming of movies, television shows, and music videos in the vicinity of where the proposed transmission line would be built. The Los Angeles County Noise Ordinance presents a noise standard of 45 dBA for noise-sensitive areas such as the Motion Picture Ranch. Therefore, operational corona noise levels between 40 to 50 dBA at the Motion Picture Ranch may exceed Los Angeles County Ordinance Standards and would result in a significant and unmitigable impact (Class I) to the operations of the Motion Picture Ranch.

Socioeconomics

Operational impacts resulting from the proposed Project would obstruct, restrict, and interfere with filming activities and associated operations at the Veluzat Motion Picture Ranch. The operation of the proposed Project would negatively affect revenues for the Veluzat Motion Picture Ranch by precluding the facility’s current business activities. As proposed, no mitigation is available that could reduce the permanent impacts of the Project to Veluzat Motion Picture Ranch revenues to less-than-significant levels. Therefore, the proposed Project would result in significant and unavoidable impacts (Class I) to business revenue.

Visual Resources

The proposed Project would substantially degrade the visual quality of landscape on Lake Elizabeth Road (Second Priority County Scenic Highway). Three new towers would be silhouetted against the skyline. The tower furthest left would be on private land, north of the ANF boundary. The center and right towers would be located inside the ANF, where the Forest Service’s Visual Quality Objectives/Scenic Integrity Objectives (VQOs/SIOs) would apply to these last two towers. Because these towers have an industrial character and do not repeat form, line, color, or texture of the characteristic landscape, they meet the definition of Unacceptable Modification VQO and Unacceptably Low SIO. Under the proposed Project, the taller and wider lattice steel towers, access roads, and expanded ROW would adversely affect this scenic vista, and substantially degrade the existing visual character of the ANF, creating significant, unavoidable impacts to these visual resources (Class I).

The Pacific Crest National Scenic Trail (PCT) is a 126-mile semi-primitive, non-motorized trail within the ANF, and is designated as a natural or natural-appearing environment. The 2005 ANF Land Management Plan lists as one of its strategies for the PCT: “to protect the trail experience, and provide for the conservation and enjoyment of its nationally important scenic, historic, natural and cultural qualities.” Use of larger towers would alter the scenic quality of that portion of the PCT that is directly traversed by the ROW, as well as views of the ROW that can be seen from the PCT. Visual effects of the proposed Project would be three levels below the High Scenic Integrity Objective of this area, thereby resulting in a Very Low SIO, which would be considered a significant, unavoidable impact to the trail’s aesthetic attributes (Class I).

E.1.3 Irreversible and Irretrievable Commitment of Resources

Pursuant to Section 15126.2 (c) of the California Environmental Quality Act (CEQA) Guidelines, an Environmental Impact Report (EIR) must address significant irreversible and irretrievable environmental changes that would be caused by a proposed project. Also, 1502.16 of the National Environmental Policy Act (NEPA) requires the environmental document to include a discussion of “any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented.” These changes include uses of nonrenewable resources during construction and operation, long-term or permanent access to previously inaccessible areas, and irreversible damages that may result from project-related accidents.

Implementation of the proposed Project or alternatives would result in the consumption of energy as it relates to the fuel needed for construction-related activities. Approximately 375,000 gallons of fossil fuels would be required for Project construction (see Appendix 3). Additionally, construction would require the manufacture of new materials, some of which would not be recyclable at the end of the proposed Project’s lifetime, and the energy required for the production of these materials, which would also result in an irretrievable commitment of natural resources. The anticipated equipment, vehicles, and materials required for construction of the proposed Project and alternatives are detailed in Section B. Maintenance and inspection of the proposed Project would not change appreciably from SCE’s existing activities in Project area, and thus would not cause a substantial increase in the consumption or use of nonrenewable resources.

Impacts associated with the proposed Project and its alternatives would primarily occur during construction activities and would include the clearing and grading of tower pads, the grading of existing access roads, tower removal, and transportation. New access and spur or stub roads would also be required at some tower locations. These activities would cause temporary or permanent loss of native vegetation and foraging habitat, which would in turn have the potential to impact a number of sensitive plants and wildlife. Construction activities could result in potential impacts to listed and special-status plant species; federal- and State-listed amphibians, including arroyo toad and California red-legged frog; and special status amphibians, reptiles, birds, and mammals. However, with the implementation of recommended ~~project~~ mitigation measures, impacts to listed plant and animal species would be reduced to less than significant levels. Construction activities would also have the potential for the introduction of non-native and invasive plant species that could threaten native vegetation communities and wildlife; however, with implementation of recommended mitigation measures for weed and non-native plant species control, potential impacts would be reduced to less than significant levels.

The proposed project and each of its alternatives would result in permanent land disturbances, as follows:

- Proposed Project and Alternative 3: Approximately 58.5 acres total (21.2 acres on USFS lands, and 36.4 acres on non-USFS lands)
- Alternative 1: Approximately 75.9 acres total (33.4 acres on USFS lands, and 42.5 acres on non-USFS lands)
- Alternative 2: Approximately 58.0 acres total (21.2 acres on USFS lands, and 36.8 acres on non-USFS lands)
- Alternative 4: Approximately 61.2 acres total (22.9 acres on USFS lands, and 38.3 acres on non-USFS lands)
- Alternative 5: Approximately 59 acres total (2.6 acres on USFS lands, and 56.4 acres on non-USFS lands).

These permanent land disturbances would result in the loss of various habitat types; however, the total net loss of individual habitat types, and their respective qualities, varies in response to each alternative’s ROW and the lands which it traverses. For example, Alternative 5 would result in the third greatest net permanent land disturbance, and the greatest permanent land disturbance on non-USFS lands. However, the overall habitat quality associated with Alternative 5 is considered slightly less than that associated with the proposed Project and Alternatives 1

through 4. Consequently, the impacts associated with the total permanent loss of undisturbed, high quality habitat would be greater for the proposed Project and Alternatives 1 through 4 than for Alternative 5. Alternatives 1, 2, and 4 would have more adverse impacts to biological resources than the proposed Project and would require the creation of additional miles of access and spur roads than the proposed Project, and as such would impact a larger area of undisturbed habitat. Alternative 5 would create the potential for the greatest impacts to biological resources. This alternative would be constructed within 18.4 miles of existing utility corridor and would require the construction of approximately 18.8 miles of new ROW across portions of the ANF, isolated NFS lands near the City of Acton, BLM land, and private lands. Under Alternative 5 the impact to native vegetation would be greater than the proposed Project as approximately 24 additional acres of land would be temporarily disturbed. However, the total impacts to habitat on NFS lands would be greatly reduced when compared to the proposed Project. For example, implementation of Alternative 5 would result in a total land disturbance from all project activities of approximately 10 acres on NFS lands compared to approximately 44 acres for the proposed Project. The construction of a new ROW, much of which would be located in undisturbed habitat, has the potential to impact previously undisturbed foraging habitat, native vegetation, listed and special-status plant species, and animal species. Conversely, approximately 93 percent of the proposed Project and Alternative 3 would be constructed within an existing utility ROW. As such, construction activities would occur primarily along existing access and spur roads.

As described in Section C.4 (Cultural Resources), impacts to cultural resources are site-specific. Construction activities associated with the proposed Project and Alternatives 1, 2, 3, and 4 would result in potentially significant damage or destruction of a part or all of twelve culturally or historically sensitive sites. Alternative 5 would result in impacts to thirteen sites. In addition, grading of Forest Service roads during construction would cause permanent alterations for the road alignments in some locations. Implementation of mitigation measures would subsequently reduce all potentially significant impacts to less-than-significant levels.

The proposed Project and alternatives would generally have similar significant but mitigable impacts to Geology, Soils, and Paleontological resources as discussed in Section C.5. However, Alternative 1 includes the construction of an underground segment in the City of Santa Clarita that would result in more excavation and ground disturbance in the potentially fossil bearing Saugus Formation. Therefore, Alternative 1 has a slightly greater potential for damage to or destruction of significant fossils. Alternative 1 would also have additional significant but mitigable impacts resulting from interference with access to known mineral resources, such as the Bouquet Canyon Stone Quarry. Alternative 1 would introduce underground infrastructure that would permanently alter topography along Del Sur Ridge, which neither the proposed Project nor any of the other alternatives would include.

The proposed Project and Alternatives 1 through 5 would have the same significant impacts related to soil erosion and sedimentation, groundwater disturbance, or flood hazards. However, Alternative 3 would have less potential for soil erosion and sedimentation compared to the other alternatives since the land disturbance associated with demolition of the existing single-circuit towers between Mile 20.3 (Haskell Canyon) and Mile 25.6 (Pardee Substation) would not occur. Alternative 1 is considered to have a greater potential to affect the Santa Clara Valley East Groundwater Basin than the other alternatives due to underground construction of transmission facilities, which is considered highly invasive and would have greater potential to disturb the underlying groundwater basins. Alternative 1 would also have greater potential to degrade surface water or groundwater due to spills of potentially harmful materials used during construction and operational activities compared to the other alternatives. Alternatives 1 and 2 are considered to have greater impacts related to increased runoff from impervious areas than the remaining alternatives, where impacts are generally the same.

The proposed Project and alternatives would result in several significant, unavoidable impacts to existing land uses. All Class I land use impacts are associated with a permanent preclusion to or degradation of an existing land use. For example, operational activities would permanently preclude existing residential land uses under the proposed Project and each of the alternatives. In the North Area of the Project route, the proposed Project and Alternatives 1, 2, 3, and 4 would expand the existing ROW over residential property, which would preclude future use of this land. Alternative 5 would require the establishment of a new ROW, which would require relocation of some residences and preclude use of lands in the ROW, and would expose a larger number of land uses to construction and operational impacts along the route as a result of the extended length of the route. Operation of the proposed Project in addition to Alternatives 1, 2, and 3 would permanently preclude some of the established filming activities at the Veluzat Motion Picture Ranch. Alternatives 4 and 5 would not be sited across areas used by the Motion Picture Ranch for outdoor sets and scenery, and as such, would have no impact to the filming activities at the Ranch. Alternative 5 would create an additional Class I impact, as it would contribute to the long-term loss or degradation of a recreational resource. Alternative 5 would not be located within an existing utility corridor along an 18.8-mile segment, and consequently would introduce a new industrial land use across recreational trails in Ritter Ranch (i.e., Sierra Pelona Trail). These trails are currently located in an open space and natural setting, and by erecting a new set of transmission towers across these trails, the alternative would change the natural or scenic quality of this recreational resource. Although the proposed Project and Alternatives 1, 2, 3, and 4 would construct a transmission line across the PCT, they would remove an existing transmission line that crosses the trail prior to constructing a new line. As such, the Project and Alternatives 1, 2, 3, and 4 would not increase the total amount of industrial development across the PCT from its current condition.

The proposed Project and alternatives would all adversely affect scenic vistas, and substantially degrade the existing visual character of the ANF. Alternative 1 would place the transmission line underground, away from and out of sight from Bouquet Canyon Road resulting in a beneficial impact for viewers along Bouquet Canyon Road. The proposed Project, Alternatives 1, 2, and 3, would result in significant, unavoidable impacts to the Veluzat Motion Picture Ranch. However, Alternative 4 would re-route the Project alignment east of the Veluzat Motion Picture Ranch, away from Ranch property, which would result in no impacts to the ranch. The new ROW established under Alternative 5 would also avoid impacts to the Veluzat Motion Picture Ranch, as well as impacts to several other scenic vistas due to the new alignment remaining generally east of the ANF. However, Alternative 5 would introduce new significant, but mitigable impacts to visual resources by degrading the existing visual character or quality of the area as viewed from locations in Lancaster, Leona Valley, and Agua Dulce.

During the proposed Project's operational phase, the transport of electrical power generated from nonrenewable resources (e.g., natural gas, large hydroelectric, coal) would continue. Because the proposed Project would facilitate the distribution of renewable wind energy from the Antelope Valley-Tehachapi region and accommodate the area's potential for renewable power generation in order to achieve the State of California Renewable Portfolio Standard (RPS) goals and would prevent overloading of existing transmission facilities in the SCE grid, the irreversible and irretrievable resource commitments are considered to be acceptable.

E.1.4 Growth-inducing Effects

Section 15126.2(d) of the State CEQA Guidelines requires that an EIR discuss the ways in which a proposed project may foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The discussion must additionally address how a proposed project may remove obstacles to growth, or encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population above what is assumed in local and

regional land use plans, or in projections made by regional planning authorities. Significant growth impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies. 40 CFR 1502.16(b) requires that an EIS discuss indirect effects and their significance. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (1508.8(b)).

E.1.4.1 Growth Caused by ~~Direct and Indirect Project~~ Employment

As discussed in Section B.2, Description of the Proposed Project/Action, construction of the proposed Project would occur over an estimated 13-month period and require a daily workforce ranging between 20 and 120 persons, with an average daily workforce of approximately 50 persons. Operation and maintenance of the proposed Project would be conducted by SCE's existing labor force and would not create new jobs locally or regionally (see Section B.2.3).

Section C.12, Socioeconomics, provides a detailed assessment of the existing labor force within the proposed Project area. Due to the location of the Project area, and the size of the labor force within Los Angeles County, it is assumed that the labor force required for construction would come from within Los Angeles County. At the peak of construction-related activities, the proposed Project would require an estimated 0.06 percent of the total Los Angeles County construction workforce, the majority of which would be expected to commute to and from the Project's work sites. Although a limited number of construction personnel may choose to stay at existing local hotels during construction in lieu of commuting, there is an adequate supply of hotels and visitor-related services within the Project area to temporarily accommodate out-of-town (non-commuting) personnel. Therefore, no growth in residential housing or services would ~~occur~~ result from construction-related employment. Over the long term, operation of the Project would have no direct impact on population growth, as no long-term increase in employment would result from Project operations.

E.1.4.2 Development of Wind Generation in the Tehachapi Area

In the late 1970s and early 1980s, the CEC conducted wind resource evaluations throughout the state, and discovered promising sites in the Tehachapi pass and in the adjacent Antelope Valley. Tehachapi is a mountain pass area spreading into the adjacent Mojave Desert. The land in the expanded Tehachapi Wind Resource Area is diverse, ranging from high desert floor to mountain pass, to tall mountains. Elevation spans from 2,500 feet to near 8,000 feet.

As discussed in Section A.3.2, Senate Bill 1078 requires electrical corporations (investor-owned utilities) starting in 2003 to increase procurement of renewables-based generation such that the consumption from this source is increased by one percent per year until 20 percent consumption is reached no later than the end of 2017. Senate Bill 1038, enacted in the same year, required the Energy Commission to prepare a plan for the development of renewable resources. This plan was submitted to the Legislature in December of 2003. It identifies 8,000 MW of potential renewables generation available to meet the SB1078 goal of 20 percent in 2017. One-half of this 8,000 MW is wind generation in the Tehachapi Mountains. Decision 04-06-010 identifies the amount of wind power in Tehachapi to be 4060 MW.

In 2003, the California Power and Conservation Financing Authority, the Energy Commission and the CPUC jointly adopted the Energy Action Plan, which accelerated achievement of the 20 percent procurement goal to 2010. To reach this goal, a total of about 6,600 MW of renewables generation is needed, from which a little more than half (3,700 MW) was identified by the Energy Commission as Tehachapi wind power.

Information taken from the American Wind Energy Association website, January 18, 2006, (www.awea.org) indicates that 608.72 MW of wind generation is on-line in the Tehachapi area. Currently, 17 wind projects totaling approximately 3,950 MW are identified for the Tehachapi area in the CAISO Interconnection Queue (<http://www.caiso.com>) as of May 24, 2006. The list includes:

Los Angeles County:

- 200 MW connecting to Antelope (12/12/07)

Kern County:

- 300 MW connecting to Antelope (12/31/08)
- 201 MW to Monolith Substation (12/31/09)
- 300 MW to Monolith Substation (12/31/09)
- 250 MW to Antelope Substation (12/31/08)
- 300 MW to TBD Bakersfield (11/30/07)
- 51 MW to proposed new Dutchwind Substation (12/15/09)
- 400 MW to Cottonwind (12/31/09)
- 120 MW to Segment 3 230 Collector Loop Tehachapi (12/31/07)
- 33.1 MW to Vincent Substation (1/1/08)
- 34 MW to Canwind Substation (1/1/08)
- 51 MW to Segment 3 of Antelope Transmission Project (3/31/10)
- 220 to Tehachapi Conceptual Substation #1 (12/31/08)
- 180 to Tehachapi Conceptual Substation #2 (12/31/08)
- 550 to Tehachapi Conceptual Substation #1 (12/31/09)
- 600 to Tehachapi Conceptual Substation #1 (12/31/09)
- 160 to Tehachapi Conceptual Substation #5 (12/31/09)

From these in-queue projects, only one was known to be in the application and permitting process with Kern County at the time the preparation of this EIR/EIS was initiated. This project is called the PdV Wind Energy Project (PdV) and the project proponent is Power Partners Southwest, LLC, a wholly-owned subsidiary of enXco, Inc. PdV would generate up to 300 MW of renewable wind power for distribution through Antelope Substation. Please see Section E.3 for a detailed discussion of the potential environmental effects of PdV. This analysis is included in this document for two main reasons. First, construction of the Antelope-Pardee transmission line (proposed Project) would enable the interconnection of PdV and, therefore, effects of PdV are indirect effects of the proposed Project. In addition, PdV was the only active wind project that was in the application and permitting process with the County when this EIR/EIS was initiated and, therefore, was the only project that had a relatively developed project description available for consideration in this analysis. The proposed Project would provide transmission capacity that would facilitate development of wind energy projects in the Tehachapi and Antelope Valley and, therefore, would contribute to growth in wind energy development in the region.

E.1.4.3 Growth Related to the Provision of Additional Electric Power

As outlined in Section A.3, Purpose and Need, the primary purposes of the proposed Project are to provide transmission capacity for planned wind energy projects, prevent overloading of SCE's existing transmission facilities, and increase system reliability. The location of the PdV Wind Energy Project, the first wind energy project expected to be served by the Antelope-Pardee Transmission Project, is within an area of the State that is considered to be one of the world's leading wind energy centers, and SCE, pursuant to several State and federal goals and policies related to renewable energy sources, is obligated to accommodate future wind generated electricity in southern California. As such, the proposed Project is not intended to supply power related to growth for any particular development, either directly or indirectly and would not result in direct growth inducing impacts. However, the proposed Project could facilitate growth indirectly in the southern California area through the additional increased capacity available. As discussed in Section A.3.1, the proposed Project would initially be operated at 220-kV in order to meet current transmission needs associated with ongoing wind development. However, the line would be built to 500-kV standards so that as renewable power loads increase, future

overloading of transmission facilities would be avoided. The CAISO maintains that the use of 500-kV standards for the proposed Project will avoid the future need to construct and/or tear down and replace multiple 220-kV facilities with 500-kV facilities to meet growing power generation and transmission needs. Therefore, the additional available capacity could be considered growth inducing.

Section C.12.1.1 (Demographic Characteristics) provides a description of the existing and projected population within the proposed Project area. Between 2000 and 2020, the populations of Los Angeles County and the Cities of Lancaster and Santa Clarita are anticipated to increase by 28, 26 and 31 percent, respectively. Both locally and regionally, the proposed Project area is experiencing substantial population growth, which is reflected in the large number of proposed and planned future residential development projects listed in the Table B.3-1 and shown in Figure B.3-1. This growth is expected to occur with or without implementation of the proposed Project. With the proposed Project, SCE is responding to sources of alternative energy generation that are being proposed by independent, third-party generators in a manner that accommodates anticipated future load growth in a timely manner and would be consistent with local planning documents and policies (see Section C.12.2.3). An assessment of the potential significant cumulative impacts of the proposed Project is provided in Section C.X.13 of each issue area discussion, where "X" is between 2 (Air Quality) and 15 (Visual Resources).

E.2 Compliance with Applicable Federal Environmental Regulations and Policies

The proposed Project has been developed in accordance with the requirements of the environmental statutes and regulations outlined below:

E.2.1 National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. §§ 4321-4347)

National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. §§ 4321-4347) Section 102 (2) (C) states that all agencies of the Federal Government shall -- include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on -- (i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

This EIR/EIS has been prepared in accordance with the requirements and guidelines as set forth in: (1) Section 102 of NEPA; (2) the Council on Environmental Quality (CEQ) Regulations on Implementing National Environmental Policy Act Procedures (40 CFR 1500 et seq.); and (3), the U.S. Department of Agriculture Procedures for Implementing the National Environmental Policy Act (NEPA) (7 CFR 1b). Potential environmental effects have been included in the evaluation of the Proposed Action. Reasonable alternatives have been considered during the planning process, the relationship between short-term uses and long-term productivity, and irreversible and irretrievable commitments of resources involved in the proposed action have been considered and all procedural review requirements have and/or will be met. The analysis of the proposed Project is therefore considered consistent with and in compliance with the requirements of NEPA.

E.2.2 Endangered Species Act

The Endangered Species Act (ESA) of 1973, as Amended (Public Law 93-205) and the Fish and Wildlife Coordination Act of 1958 (Public Law 85-624). The Endangered Species Act (ESA) protects threatened and endangered species, as listed by the U.S. Fish and Wildlife Service (USFWS), from unauthorized take, and directs federal agencies to ensure that their actions do not jeopardize the continued existence of such species. Several listed species are either known to occur or have been historically documented in or near the Project area. These species, which have been fully addressed within the context of this EIR/EIS include: California condor, California gnatcatcher, California red-legged frog, arroyo toad, Santa Ana sucker, and unarmored three-spine stickleback. The proposed Project, or potential alternatives to the proposed Project, is not expected to result in the take of these or any other federally listed species with the implementation of project mitigation measures. Based on the potential construction and operation effects of the proposed Project, the existing baseline conditions, and the known habitat requirements for the listed species that may be present in the project area; the proposed Project may affect, but is not likely to adversely affect species or their critical habitat. In compliance with the requirements of this act, the USDA Forest Service will initiate informal consultation with the USFWS, as needed, regarding the Project.

E.2.3 Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs).

Section 402 of the CWA requires that any activity, including river or stream crossing during road, pipeline, or transmission line construction, which may result in a discharge into a State water body, must be certified by the applicable RWQCB to ensure that the proposed activity does not violate state and/or federal water quality standards. For the proposed Project, NPDES permits would be issued by the Lahontan RWQCB and the Los Angeles RWQCB. In order to comply with NPDES regulations, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared for the proposed Project construction activities. Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (USACE) to regulate the discharge of dredge or fill material to the waters of the U.S. and adjacent wetlands through the issuance of individual site-specific or general (Nationwide) permits for such discharges.

A Section 404 permit would be required for the proposed Project construction activities involving excavation or replacement of fill material into waters of the United States. In addition, a Water Quality Certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for Water Quality Certification (or waiver thereof) from the RWQCBs. Section 303(d) of the federal Clean Water Act (CWA, 33 USC 1250, et seq., at 1313(d)), requires states to identify waters that do not meet water quality standards after applying certain required technology-based effluent limits. These waters are referred to as “impaired” water bodies. States are required to compile this information in a list (Section 303(d) List) and submit the list to the USEPA for review and approval. Two water bodies in the vicinity of the proposed Project that are on the Section 303(d) List: Santa Clara River (Reaches 8 and 9) and Mint Canyon Creek (Reach 1). Santa Clara Reach 8 is listed for chloride and coliform, Santa Clara Reach 9 is listed for coliform, and Mint Canyon Creek is listed for nitrate and nitrite.

E.2.4 National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 as amended in 1980 and 1992 (16 USC 470 *et seq.*), provides for the listing of historic properties and sites in the National Register of Historic Places and provides for the protection of these properties and sites. The act provides for a state historic preservation officer (SHPO) with whom consultation is required in matters relating to properties or sites either on the National Register or potentially eligible for listing on the National Register. The federal law that deals with cultural resources that could be affected by federal undertakings is the National Historic Preservation Act (NHPA) of 1966, as amended. Section 106 of the Act requires that federal agencies take into account the effect of a federal undertaking on properties listed in or eligible for the National Register of Historic Places (NRHP). The agencies must afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on the undertaking. A federal undertaking is a project that is federally funded, takes place on federal land, or that requires a federal permit or license. Section 106 applies to the Project because the Project route crosses the Angeles National Forest and a permit from the USDA Forest Service is required.

For cultural resources that cannot be avoided by the Project in the APE for the northern and central segments, NRHP eligibility must be evaluated and a determination of eligibility must be made by the Forest Service with concurrence by the SHPO. If cultural resources in the northern segment APE and central segment APE can be avoided, they need not be evaluated as stipulated in the programmatic agreement between the Forest Service, SHPO, and ACHP.

E.2.5 Clean Air Act

The Clean Air Act (CAA), as revised in 1990, (PL 101-542, 42 USC 7401) requires the U.S. Environmental Protection Agency (EPA) and states to carry out programs intended to ensure attainment of National Ambient Air Quality Standards. The General Conformity Requirements of the Code of Federal Regulations require that federal actions do not interfere with state programs to improve air quality in nonattainment areas. A comparison of the project emissions to the General Conformity *de minimis* limits is included in Section C.2.5.

The United States Environmental Protection Agency (USEPA) has issued a number of National Ambient Air Quality Standards (NAAQS). Pollutants regulated under these standards include ozone, nitrogen dioxide (NO₂), carbon monoxide (CO), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and sulfur dioxide (SO₂). Additional information regarding the NAAQS that are relevant to the Project is provided Section C.2.1.2. The South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB) are the responsible agencies for providing attainment plans and meeting attainment with these standards; and the USEPA reviews and approves these plans and regulations that are designed to attain and maintain attainment with the NAAQS.

USEPA has a number of other regulations under the authority of the federal Clean Air Act (such as New Source Review (NSR), Prevention of Significant Deterioration (PSD), Title V permitting program, etc.); however, none of these regulations apply to this Project because the Project would have no operating stationary emission sources. The USEPA does have on-road and off-road engine emission reduction programs that indirectly affect the Project's emissions through the phasing in of cleaner on-road and off-road equipment engines.

The USDA Forest Service regulates the portion of the Project's route that goes through the Angeles National Forest (ANF) and the Forest Service has prepared a planning document for the ANF. The Angeles National Forest Strategy does not include any air quality strategies that would be significantly impacted by the construction or operation of the proposed Project. The Angeles National Forest air quality strategies are identified in Section C.2.5.

The CARB has issued a number of California Ambient Air Quality Standards (CAAQS). These standards include pollutants not covered under the NAAQS and also require more stringent standards than provided under the NAAQS. Pollutants regulated under these standards include ozone, nitrogen dioxide (NO₂), carbon monoxide (CO), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), sulfur dioxide (SO₂), lead, sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Additional information regarding the CAAQS that are relevant to the Project is provided Section C.2.1.2. Additionally, CARB has a Portable Equipment Registration Program that allows owners or operators of portable engines and associated equipment to register their units under a statewide portable program to operate their equipment, which must meet specified program emission requirements, throughout California without having to obtain individual permits from local air districts. Portable non-mobile source equipment larger than 50 horsepower that are not registered under the standard program would be required to obtain local air quality permits.

The proposed Project is routed through two separate local jurisdictions, the SCAQMD and the AVAQMD. The local jurisdictions are responsible for planning, implementing, and enforcing federal and State ambient standards within their jurisdictions. The regulations of these agencies are focused on stationary sources; therefore, most of the local agency regulations are not relevant to this Project. However, both agencies have visible emissions, nuisance, and fugitive dust regulations with which the Project's construction will need to comply. The specific regulations are identified in Section C.2.2.3.

Clean Air Act Conformity

The 1990 amendments to federal CAA Section 176 require the USEPA to promulgate rules to ensure that federal actions conform to the appropriate SIP. These rules, known together as the General Conformity Rule (40 CFR Section 51.850-.860 and 40 CFR Section 93.150-.160), require any federal agency responsible for an action in a nonattainment or attainment/maintenance area to determine that the action conforms to the applicable SIP or that the action is exempt from the General Conformity Rule requirements. This means that federally supported or funded activities will not (1) cause or contribute to any new federal air quality standard violation, (2) increase the frequency or severity of any existing federal standard violation, or (3) delay the timely attainment of any federal standard, interim emission reduction, or other milestone. Actions can be exempt from a conformity determination if an applicability analysis shows that the total direct and indirect emissions from the project construction and operation activities would be less than specified emission rate thresholds, known as *de minimis* limits, and that the emissions would be less than 10 percent of the area emission budget.

The part of the Project area in Antelope Valley is in nonattainment for the federal 8-hour ozone standard. Additionally, the part of the Project area within the SCAB is in nonattainment of the federal 8-hour ozone, CO, PM₁₀, and PM_{2.5} standards. The SCAB is designated as attainment/unclassified for the federal nitrogen dioxide and sulfur dioxide (federal) standards.

Potential air quality impacts have been assessed in this Draft EIR/EIS. Both short and long-term emissions of criteria pollutants resulting from the construction and operation of the proposed Project were evaluated. The proposed Project has the potential to contribute air pollutant emissions during the construction of the project. The annual emissions would not exceed the General Conformity Rule *de minimis* emission thresholds for any pollutant. However, implementation of Mitigation Measures A-1a through A-1i are required to ensure that the maximum annual emissions of NO_x and PM₁₀ remain below their respective *de minimis* limits. Therefore, a comprehensive General Conformity analysis would not be required and the project impacts would be less than significant with mitigation. These findings are similar for all of the project alternatives; with the exception that Alternative 1 which exceeds the NO_x *de minimis* limit in the SCAB, which would require NO_x emission offsets if that alternative were to be selected /approved.

E.2.6 Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) was passed by Congress as part of the Agriculture and Food Act of 1981 (Public Law 97-98). The purpose of the FPPA is to minimize the impact that federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses (NRCS, 2006). Actions are subject to FPPA requirements if they may irreversibly convert farmland, either directly or indirectly, to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purposes of the FPPA, assistance from a federal agency includes: acquiring or disposing of land; providing financing or loans; managing property; or providing technical assistance. The USDA Natural Resources Conservation Service (NRCS) is responsible for administering the FPPA.

If an action is subject to the FPPA, the responsible federal agency must contact the local (project area) Service Center office of the NRCS. A Land Evaluation and Site Assessment (LESA) system is used to determine an impact rating score for farmland conversion associated with the federal action. The responsible federal agency and the NRCS work together to complete the LESA and obtain an impact rating score, using form AD-1006 (the Farmland Conversion Impact Rating form). This impact rating score is used as an indicator for the responsible federal agency to consider alternative sites for the proposed action, if the potential adverse impacts on designated farmland exceed the recommended allowable impact rating score of 260 points.

For the proposed Project, the NRCS Service Center in Lancaster was determined to be the local office that should conduct the LESA. On August 30, 2005, Form AD-1006 was submitted by the USDA Forest Service (on behalf of Aspen Environmental Group) to the NRCS Lancaster Service Center with regards to the proposed Project. The alternatives were not addressed at this time because they were not clearly enough defined to complete the LESA. Between August and November of 2005, the Lancaster Service Center conducted a LESA for the proposed Project area located in the vicinity of designated prime farmland. The Lancaster Service Center and the USDA Forest Service jointly determined that the final impact rating score for the proposed Project is 113.

On March 7, 2006, FormAD-1006 was submitted by the USDA Forest Service (on behalf of Aspen Environmental Group) to the NRCS Lancaster Service Center, with regards to the proposed Project as well as Alternatives 1, 2A, 2B, 3, 4, and 5. The proposed Project was included on this Form AD-1006 because the information available to calculate areas of potentially affected farmland was more accurate than when Form AD-1006 was originally submitted for the proposed Project alone. By re-submitting the form for the proposed Project and all alternatives at the same time and by using the most recently available information for the proposed Project and each alternative, an equivalent level of evaluation will be provided for each. Confirmation was provided by the NRCS on March 17, 2006, that this Form AD-1006 (Appendix 7) and all supporting documents were received. Supporting documents included descriptions and maps indicating the location and surrounding area of the proposed Project and alternatives. As of March 17, 2006, the NRCS is in the process of evaluating these materials according to the LESA system (Nguyen, 2006).

E.2.7 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 U.S.C Section 703-712) implements various treaties and conventions between the U.S. and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing or possessing migratory birds is unlawful. The proposed Project would not entail taking, killing, or possession of any migratory birds listed under this act. Therefore, the Project is in compliance with and supports the intent of this act.

E.2.8 National Forest Land Management Act

While the National Forest Land Management Act (NFMA) requires preparation of plans for all units of the National Forest system, the agency's regulations—found at 36 CFR, part 219—provide the detail of how those plans are prepared, reviewed, and implemented. The Forest Service is required (under 36 CFR 219.10) to review all site-specific projects, including authorized uses of the land, to ensure they are consistent with the 2005 ANF Land Management Plan (Forest Plan), per the National Forest Management Act (NFMA) (16 U.S.C 1600-1614, as amended). A Special Use authorization cannot be issued to SCE without first ensuring its consistency with the Forest Plan (through improvement in design and/or Forest Plan amendment). Any proposed Forest Plan amendments pertaining to this Project will be included as part of the need for action and included in the appropriate alternatives analyzed in this document. The Forest Plan amendments must be completed before Special Use authorization(s) can be issued to the Applicant (SCE) for the proposed Project or a Project alternative.

The Antelope-Pardee Transmission Project would not be consistent with management direction in the governing 2005 ANF Land Management Plan. As such, the Forest Plan would need to be amended to change Scenic Integrity Objectives within the Project route for the proposed Project or any of the Project alternatives. Installation of a fully aboveground facility such as the proposed Project's transmission line (or undergrounding as proposed in Alternative 1) and associated facilities would not be consistent with Forest Plan direction for desired landscape characters or scenic integrity objectives (Forest Plan, Part 3, p. 6). Specifically, the Forest Plan amendment would require a change in the Scenic Integrity Objective in portions of the Liebre-Sawmill Place and the Santa Clara Canyons Place. If an alternative is approved that moves any portion of the new transmission line outside the existing 1,000-foot-wide Saugus-Del Sur Utility Corridor identified in the Forest Plan, the Forest Plan would need to be amended to reroute the designated alignment of the Utility Corridor to correspond to the approved transmission line alignment through NFS lands. In addition, Forest Plan Policy ANF S1-Pacific Crest Trail is intended to protect scenic integrity of foreground views as well as from designated viewpoints. Where practicable, this policy seeks to avoid establishing nonconforming land uses within the viewshed of the Pacific Crest Trail.

E.2.9 Wild and Scenic Rivers Act

In accordance with the Wild and Scenic Rivers Act (Public Law 90-542), certain selected rivers in the United States are to be protected and preserved in free-flowing condition because of their “outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values...” Every wild, scenic, or recreational river in a free-flowing condition, or upon restoration of this condition, is eligible for inclusion in the National Wild and Scenic Rivers System. If determined to be eligible, a suitability analysis is conducted for the river's current level of development, accounting for water resource projects, shoreline development, and accessibility. A recommendation is also made that the eligible river be placed in one or more of three classes: wild, scenic, and/or recreational. Prior to official designation, eligible rivers are afforded federal protection against activities or actions that could potentially interfere with the “outstandingly remarkable values” (ORVs) of the river that make it eligible for the recommended classification/s within the National Wild and Scenic Rivers System.

In the Angeles National Forest, San Francisquito Canyon Creek is currently eligible to be included in the National Wild and Scenic River System (USDA, 2005) as a Recreational River. Table E.2-1 shows criteria that Congress (or the responsible federal agency) uses to establish a designated river's classification as Recreational, in accordance with the Wild and Scenic Rivers Act.

After a river is determined to be eligible for the National Wild and Scenic Rivers System, all existing facilities, management actions, and approved uses may continue in the river corridor, provided they do not interfere with the protection of the river’s ORV’s or potential classification. The corridor width for eligible and designated rivers is usually one quarter mile on both sides of the river. Uses of the eligible river corridor must comply with the Forest Service Handbook (FSH) 1909.12, Chapter 8.2, which discusses activities that are permitted, restricted, or prohibited in the eligible river corridor for each of the three potential classifications.

Table E.2-1. Criteria for Recreational River Classification in the National Wild and Scenic Rivers System	
Attribute	Criteria
Water Resources Development	The existence of low dams, diversions, or other modifications of the waterway is acceptable, provided the waterway remains generally natural and riverine in appearance.
Shoreline Development	Substantial evidence of human activity is acceptable. The presence of extensive residential development and a few commercial structures is acceptable. Lands may have been developed for the full range of agricultural and forestry uses. May show evidence of past and ongoing timber harvest.
Accessibility	The existence of parallel roads or railroads on one or both banks as well as bridge crossings and other river access points is acceptable.
Water Quality	Rivers will not be precluded from recreational classification because of poor water quality at the time of their study, provided a water quality improvement plan exists or is developed.

Source: USDA, 2005

For an eligible river under the recreational classification, such as San Francisquito Creek, the construction of new transmission lines is permitted when there is “no reasonable alternative,” and the transmission line must be situated in an existing right-of-way (USDA, 2006). During the environmental review process for the proposed Project, consistent with CEQA and NEPA, it will be determined if there is an environmentally superior (CEQA) or preferred (NEPA) alternative to the proposed Project. If it is determined that there is no reasonable alternative to the proposed Project and the proposed Project is selected for construction, as described in Section B of this EIR/EIS, it would be located within the existing Saugus-Del Sur ROW through the Angeles National Forest, thereby complying with the FSH 1909.12, as described above. Furthermore, construction and operation of the proposed Project would not affect the criteria for the classification of San Francisquito Creek as a Recreational River in the National Wild and Scenic Rivers System, as described in Table E.2-1 above. Therefore, the proposed Project would be in full compliance with the Wild and Scenic Rivers Act.

E.2.10 Executive Order 11990 – Protection of Wetlands

Executive Order 11990, dated May 24, 1977, is intended to support NEPA by directing federal agencies and programs to avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modification of wetlands, and to avoid direct or indirect support of new construction in wetlands whenever a practicable alternative exists. New construction is defined as including dredging and filling activities. No wetlands, by either State or federal definition, will be affected by the construction of the proposed Project. Consequently, the proposed Project would be in compliance of this Executive Order.

E.2.11 Executive Order 13045 – Protection of Children from Environmental Risks

Executive Order 13045 (EO 13045), Protection of Children from Environmental Health Risks and Safety Risks, was issued in 1997 and implemented by the USEPA in April of 1998. EO 13045 developed as a result of the establishment of the National Agenda to Protect Children’s Health from Environmental Threats (National Agenda) in 1996 and the Office of Children’s Health Protection (OCHP) in 1997. The purpose of EO 13045 is

to minimize harm incurred by children as a result of health and safety risks associated with federal regulatory actions. Children are typically more susceptible to many environmental hazards than adults are because of their smaller size, weight, and stage of development, among other factors.

EO 13045 is applicable if it is a federal rule that concerns an environmental health or safety risk, is economically significant, and may disproportionately impact children. If EO 13045 is applicable, the federal agency must explain to the U.S. Office of Management and Budget (OMB) why alternatives to the chosen action would not be acceptable. EO 13045 also applies to all regulatory actions that are subject to Executive Order 12866, Regulatory Planning and Review. Per EO 12866, federal agencies must report planned regulatory actions to the Office of Information and Regulatory Affairs (OIRA). EO 13045 requires that any agency reporting a planned regulatory action to the OIRA as a result of EO 12866 must additionally present an evaluation of the environmental health or safety effects of the planned regulation on children and an explanation of why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the agency (EO 13045, Section 5-501) to the OMB.

The proposed Project is not a regulatory action which would result in a rule, so EO 13045 is not applicable. Furthermore, the proposed Project would not disproportionately impact children, compared to the rest of the population, so even if the proposed Project were a regulatory action resulting in a rule, it would be in compliance with EO 13045.

E.2.12 Executive Order 12898 – Environmental Justice

On February 11, 1994, President Clinton issued an "Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (Executive Order 12898, 1994). This Order is designed to focus federal attention on environmental and human health conditions in minority communities and low-income communities. The Order is further intended to promote non-discrimination in federal programs substantially affecting human health and the environment and to provide for information access and public participation relating to such matters.

The approach in this EIS/SEIR is to achieve compliance with the letter and spirit of the President's Executive Order by addressing the question of whether and how the impacts of the proposed Project and alternatives (as described in Section C of this EIR/EIS) may disproportionately affect minority (sometimes referred to as people of color) populations and low-income populations.

The aim of this analysis is to achieve compliance with the letter and spirit of Executive Order 12898 and to address any community concerns raised in the scoping process for this EIS/EIR. This section analyzes the distributional patterns of minority and low-income populations using census tracts¹ traversed and within 0.5 miles of the proposed Project and alternative transmission line corridors to characterize the distribution of such populations.

E.2.12.1 Methodology

As defined by the "Final Guidance for Incorporating Environmental Justice Concerns" contained in EPA's NEPA Compliance Analysis (Guidance Document) (EPA 1998), minority (people of color) and low-income populations are identified where either:

¹ A census tract is a small, relatively permanent statistical subdivision of a city or county delineated by a local committee of census data users for the purpose of presenting data. Census tract boundaries normally follow visible features, but may follow governmental unit boundaries and other non-visible features in some instances; they always nest within counties. Designed to be

- The minority or low-income population of the affected area is greater than 50 percent of the affected area’s general population; or
- The minority or low-income population percentage of the area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

In 1997, the President’s Council on Environmental Quality issued Environmental Justice Guidance that defines minority and low-income populations as follows:

- Minorities = individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black not of Hispanic origin; or Hispanic (without double-counting non-white Hispanics falling into the Black/African-American, Asian/ Pacific Islander, and Native American categories)
- Low-income populations are identified as populations with mean annual incomes below the annual statistical poverty level.

In the following Environmental Justice analysis, the percentages of minority and low-income populations were examined for each census tract traversed and within 0.5 miles of the proposed Project and alternative transmission line corridors. For purposes of consistency and in compliance with USDA Forest Service guidelines, US Census data is used to determine minority and low-income population percentages. A disproportionate environmental justice impact would occur if a significant unavoidable environmental impact (Class I) associated with the proposed Project or alternatives was to occur in an area identified as having a population of greater than 50 percent for either the low-income or minority categories.

E.2.12.2 Environmental Justice Analysis

This Environmental Justice analysis consists of the identification of minority and low-income populations affected, and a determination of whether there is a disproportionate impact to these populations if a significant unavoidable impact (Class I) has been identified for the proposed Project or alternative (as described in Section C, Environmental Analysis).

Proposed Project

Table E.2-2 identifies the minority and low-income percentages of the population of each census tract traversed or within one-half mile of the proposed Project route.

Table E.2-2. Population Characteristics of Census Tracts Traversed or Within 0.5-Miles of Proposed Project Route		
Jurisdiction	Low Income Percentage	Minority Percentage
9012.05	8.8%	30.9%
9012.06	6.1%	17.9%
9012.07	7.5%	23.4%
9200.14	14.8%	32.7%
9200.15	4.5%	27.0%
9200.16	6.6%	24.1%
9200.27	0.0%	26.6%
9201.07	0.0%	0.0%
9201.08	0.0%	0.0%
9201.09	0.0%	27.9%
9201.10	1.2%	26.0%

relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment, census tracts average about 4,000 inhabitants.

Jurisdiction	Low Income Percentage	Minority Percentage
9201.11	4.8%	25.9%

Source: US Census Bureau. Census 2000
(http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_lang=en)

As identified above in Table E.2-2, no census tracts identified as being traversed or within one-half mile of the entire proposed Project route contain more than 50 percent minority population. Furthermore, as identified above in Table E.2-2, no census tracts evaluated contain more than 50 percent low-income population. Therefore, any identified significant unavoidable (Class I) impacts associated with the proposed Project (as identified in Section C, Environmental Analysis) would not be disproportionate to minority or low-income populations within the affected area of the proposed Project route. No environmental justice impacts would occur as a result of the proposed Project.

Alternative 1: Partial Undergrounding of Antelope-Pardee Transmission Line

Alternative 1 would place sections of the proposed 500-kV transmission line underground in specific high-impact segments of the proposed route. Alternative 1 would deviate from the proposed Project route between Mile 22.7 and Mile 25.6 (Alternative 1 Mile 26.2) in the City of Santa Clarita. However, while the route would be slightly different than the proposed Project, the jurisdictions and census tracts potentially impacted by this alternative would be identical to those presented above in Section E.2.11.2.1, proposed Project. As with the proposed Project, no census tracts affected within the Alternative 1 route contain a minority or low-income population greater than 50 percent. Therefore, any significant unavoidable (Class I) impacts associated with Alternative 1 (as identified in Section C, Environmental Analysis) would not be disproportionate to minority or low-income populations within the affected area of the Alternative 1 route. No environmental justice impacts would occur as a result of Alternative 1: Partial Undergrounding of Antelope-Pardee Transmission Line.

Alternative 2: Antelope-Pardee East Mid-Slope

The route followed by Alternative 2 would differ from the proposed Project route only within a portion of the ANF. Consequently, while the route would be slightly different than the proposed Project, the jurisdictions and census tracts potentially impacted by this alternative would be identical to those presented above in Section E.2.11.2.1, proposed Project. As with the proposed Project, no census tracts affected within the Alternative 2 route contain a minority or low-income population greater than 50 percent. Therefore, any significant unavoidable (Class I) impacts associated with Alternative 2 (as identified in Section C, Environmental Analysis) would not be disproportionate to minority or low-income populations within the affected area of the Alternative 2 route. No environmental justice impacts would occur as a result of Alternative 2: Antelope-Pardee East Mid-Slope.

Alternative 3: Antelope-Pardee Single-Circuit 500-kV Towers between Haskell Canyon and Pardee Substation

The route followed by Alternative 3 would be the same as the proposed Project route. Therefore, the same jurisdictions and census tracts presented above in Section E.2.11.2.1, proposed Project, would be affected. As described above in Section E.2.11.2.1, proposed Project, no census tracts affected within the route contain a minority or low-income population greater than 50 percent. Therefore, any significant unavoidable (Class I) impacts associated with Alternative 3 (as identified in Section C, Environmental Analysis) would not be disproportionate to minority or low-income populations within the affected area of the Alternative 3 route. No

environmental justice impacts would occur as a result of Alternative 3: Antelope-Pardee Single-Circuit 500-kV Towers between Haskell Canyon and Pardee Substation.

Alternative 4: Antelope-Pardee Re-Routing of New Right-of-Way along Haskell Canyon

This alternative would follow the proposed Project route until approximately Mile 17.5, north of Haskell Canyon Road. At this point, the transmission line would proceed in a southerly direction in a new ROW through the ANF (1.3 miles, of which 0.3 miles would be on private land in-holdings), before exiting the ANF and entering the existing Pardee-Vincent 500-kV ROW, where it would head west and rejoin the proposed Project route at approximately Mile 20.6 (proposed Project Mile 20.3). While the route followed by Alternative 4 would be different than the proposed Project, this change would not alter the census tracts or jurisdictions identified for the proposed Project above in Table E.2-2, Population Characteristics of Census Tracts Traversed or Within 0.5-Miles of Proposed Project Route.

As described above in Section E.2.11.2.1, proposed Project, no census tracts affected within the route contain a minority or low-income population greater than 50 percent. Therefore, any significant unavoidable (Class I) impacts associated with Alternative 4 (as identified in Section C, Environmental Analysis) would not be disproportionate to minority or low-income populations within the affected area of the Alternative 4 route. No environmental justice impacts would occur as a result of Alternative 4: Antelope-Pardee Re-Routing of New Right-of-Way along Haskell Canyon.

Alternative 5: Antelope-Pardee Sierra-Pelona Re-Route

As shown in Figure B.4-13, this alternative would provide for a completely overhead 500-kV transmission line along an entirely new route than the proposed Project for approximately 31.9 miles, rejoining the proposed Project at Mile 20.3 (Alternative 5 Mile 31.9). Table E.2-3 identifies the low-income and minority percentages of the population of each census tract traversed or within one-half mile of the proposed Alternative 5 route.

Table E.2-3. Population Characteristics of Census Tracts Traversed or Within 0.5-Miles of Alternative 5: Antelope-Pardee Sierra-Pelona Re-Route		
Jurisdiction	Low Income Percentage	Minority Percentage
9108.03	2.7%	16.2%
9108.05	8.5%	18.9%
9108.08	3.5%	27.9%
9108.10	1.2%	24.8%
9200.20	7.4%	24.8%
9200.26	0.0%	20.2%
9200.32	1.4%	35.4%
9200.33	11.2%	24.0%

Source: US Census Bureau. Census 2000
(http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_lang=en)

As identified above in Table E.2-3, no census tracts identified as being traversed or within one-half mile of the Alternative 5 route contain more than 50 percent minority population. Furthermore, as identified above in Table 2, no census tracts evaluated contain more than 50 percent low-income population. Therefore, any identified significant unavoidable (Class I) impacts associated with Alternative 5 (as identified in Section C, Environmental Analysis) would not be disproportionate to minority or low-income populations within the affected area of the proposed new route. No Environmental Justice impacts would occur as a result of Alternative 5: Antelope-Pardee Sierra-Pelona Re-Route.

E.3 Indirect Effects of the PdV Wind Energy Project

NEPA (CEQ Regulations § 15008.8(b) and CEQA (State CEQA Guidelines § 15358(a)(2) both define indirect effects as effects caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. In addition, Section 15064(d)(2) of State CEQA Guidelines provides the following example of indirect effects: "...the construction of a new sewage treatment plant may facilitate population growth in the service area due to the increase in sewage treatment capacity and may lead to an increase in air pollution."

The Antelope-Pardee Transmission Project is intended to provide transmission capacity for a portion of the wind energy resources that are expected to develop in Kern County and northern Los Angeles County. When initially energized to 220 kV, the Antelope-Pardee Transmission Project would provide the capacity needed to carry approximately 350 MW of power generated by new wind energy projects. Specific information is available for only one planned wind project that could be served by the proposed Project, which is a project known as the PdV Wind Energy Project ("PdV"), located in the south Tehachapi Mountains in rural Kern County. See Figure E.3-1 (PdV Wind Energy Project Location). At the time the preparation of this EIR/EIS was initiated, this was the only wind energy project with an active application under review by Kern County. The PdV Wind Energy Project is expected to generate up to 300 MW of wind power. Therefore, assuming that

no other sources of power generation come on-line and seek transmission via the proposed Project prior to the PdV Wind Energy Project, then the proposed Antelope-Pardee transmission line would provide the full transmission capacity required for the PdV project. Because the proposed Antelope-Pardee Transmission Project would potentially provide the transmission capacity needed to deliver power generated by the proposed PdV Wind Energy Project, the potential development of PdV is considered an indirect effect of the proposed Project. At this time, no information is available for any other specific wind energy projects that might be served by the proposed Project.

The indirect effects analysis of the PdV Wind Energy Project is based on information available in the pending application submitted to Kern County (PPS, 2005). The same analysis approach and significance criteria used for the proposed Project were utilized in this analysis of PdV project. Kern County plans to circulate the Notice of Preparation of an EIR for the PdV Wind Energy Project by July of 2006 (Denney, 2006).

Renewable Energy

California has a rapidly growing demand for electricity and wind energy is one of the most suitable renewable energy sources available to meet the California Renewable Portfolio Standard (RPS). Legislation enacting the RPS (SB 1078) was signed into law in September, 2004. This legislation requires retail sellers of electricity to purchase 20 percent of their electricity from renewable sources by 2017. Under the RPS, retail sellers of electricity are required to increase their procurement of eligible renewable energy resources by at least 1 percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017. Subsequent to the RPS, California's Energy Action Plan set a target of 20 percent renewable energy by 2010, which is a more aggressive goal than established in SB 1078 (see Section A.3.2).

The Antelope Transmission Project would provide transmission capacity for wind energy resources generated north of Antelope Substation, in the Tehachapi Wind Resource Area of southeastern Kern County. According to the Tehachapi Collaborative Study Group (TCSG), a total of 4,060 MW of wind generation are anticipated to be produced in this area, with associated transmission capacity required (CPUC, 2005). As discussed above, at the time the preparation of this EIR/EIS was initiated, the only wind energy project for which descriptive information was available is the PdV Wind Energy Project. Another wind energy project, the Aero Wind Energy Project, had previously submitted an application to Kern County, but that application was not considered active by the County at the time preparation of this EIR/EIS was initiated. Because it is not located near an existing SCE transmission line, it is unlikely that the Aero Wind Energy Project could be directly served by the proposed Project. Therefore, the Aero Wind Energy Project's impacts are not considered indirect effects of the proposed Project.

Zone Change Application

The PdV Wind Energy Project Revised Application for Zone Change was submitted by Power Partners Southwest, LLC (a wholly-owned subsidiary of enXco, Inc.) to the Kern County Planning Department in December of 2005. The proposed PdV Wind Energy Project is located entirely on private land within Kern County and is subject to review under CEQA, with Kern County acting as Lead Agency. Per Kern County's Zoning Ordinance, the proposed project site is subject to separate zoning classifications, with the majority being Exclusive Agriculture (Zone A), and the rest classified as Geologic Hazard (Zone GH), Floodplain (Zone FP), and Platted Lands Residential Suburban (Zone PLRS). Approximately 62.51 percent, or 3,922.77 acres, of the entire project site is proposed for rezoning to a combination of Exclusive Agriculture and Wind Energy (Zone WE). All project-related facilities, including wind turbines and other infrastructure, would be situated in the areas with Wind Energy zone overlay.

E.3.1 Project Description

The PdV Wind Energy Project would provide a supply of renewable (wind) energy for southern California consumers, particularly in the Los Angeles metropolitan area. The proposed PdV Wind Energy Project would provide up to 300 MW of wind energy, using between 107 and 300 turbines. Each turbine would provide between 1 MW and 2.8 MW of energy. The proposed project site is 6,275.1 acres in size, located in a rural Kern County area of the South Tehachapi Mountains.

The project area consists of a gradually sloping plateau, sloping from northwest to southeast. It is mostly undeveloped. The elevation of the site ranges from 5,800 feet above mean sea level (m.s.l.) in the north to 3,100 feet above m.s.l. in the south toward the Antelope Valley. The Project is bounded on all four sides by vacant land. The project is approximately 40 miles southeast of Bakersfield and 20 miles northwest of the western most exterior boundary of Edwards Air Force Base. The area is comprised of native and nonnative species typical of the upper Mojave Desert and lower reaches of the Tehachapi Mountains. Some of the plant communities on the proposed site include pine-oak woodland, oak savannah, chaparral, non-native annual and native perennial grassland, joshua tree woodland, Mojavean juniper woodland and scrub, Mojave creosote bush scrub, and Mojave mixed woody scrub (terminology of Holland, 1986). Most of the project area supports native desert plant communities.

Historical and ongoing agricultural use of the area has led to the construction of several paved and unpaved roadways within the proposed PdV site. Land uses on the proposed site include open space, former agriculture, recreation, and low-density residential.

E.3.1.1 Project Components

Wind Turbines and Foundations

A wind turbine is a rotary engine equipped with blades and mounted on a tower. The turbines used for PdV would each have three blades, which are used to capture wind power and transfer it to the turbine. Each turbine would be an up-wind, active yaw design, which means that each rotor would face into the wind (up-wind) and electronic sensors would be used to position (yaw) the rotor in the ideal direction for maximum capture of wind power by the blades (DWIA, 2003). The PdV turbines would be mounted on tubular towers and installed on the sloping topography of the proposed site in turbine rows.

None of the turbines used for PdV would exceed 400 feet at the highest point, due to air traffic restrictions. Each turbine would have monitors, alarms, and an automatic braking system for malfunctions or excessive winds. The turbines would be monitored by a site control and data acquisition system. The spacing between turbines in a given row would vary based on the size of the turbine (1 MW or 2.8 MW), with a minimum of one turbine per row and a maximum of 45 turbines per row, with a maximum of 26 rows. Each turbine would be installed on a foundation made of steel and concrete. Foundations would be designed for the specific soil conditions at individual turbine sites (PPS, 2005)

Power Collection System

A power collection system would be designed and installed throughout the proposed wind project site (where turbines are situated) in order to collect the energy generated by the turbines. As power is generated by the individual wind turbines, it would travel through pad-mounted transformers connected to the turbines through an electrical system. Junction boxes, which are essentially containers used to protect electrical equipment from the elements, would be located throughout the project site to facilitate the electrical connection between turbines and

transformers. Power collection lines and cables would be installed underground wherever possible. Any required overhead installations would be constructed in accordance with the Kern County Code.

Project Interconnection and Substation Facility

The proposed site would be equipped with an interconnection and substation facility located near SCE's existing 230-kV transmission lines which run from Magunden Substation in the north to Antelope Substation in the south. This facility would adjust the voltage of power generated by the PdV wind turbines in order to make it compatible with the existing transmission lines described above. Power generated through the PdV Wind Energy Project could then be transported south, to Antelope Substation, using existing transmission lines. The PdV substation, which would be operated remotely (with periodic maintenance), would include an area to house the following: power generation and relaying equipments, station batteries, and site control and data acquisition system (PPS, 2005).

Construction, Operation, and Maintenance

Construction of the proposed PdV Wind Energy Project would occur in the following phases: 1) roads and pads; 2) electrical infrastructure; 3) turbine installation; 4) substation and interconnection; 5) electrical system upgrades; 6) turbine commissioning; and 7) project finalization. At the time of the preparation of this document, the general construction schedule for PdV is not yet available. The operation and maintenance schedule would be determined by the manufacturer of the wind turbines. Scheduled maintenance would occur at least every six months on each turbine.

E.3.2 Air Quality

E.3.2.1 Affected Environment

The PdV Wind Energy Project (PdV) is located within the Mojave Desert Air Basin (MDAB) as well as the jurisdiction of the Kern County Air Pollution Control District (KCAPCD). The project area is in nonattainment of the federal and State ozone standard and the State PM10 standard, and is in attainment or unclassified for all other federal and State ambient air quality standards. The project area is subject to high winds predominately from the west-southwest.

E.3.2.2 Impacts and Mitigation Measures

The PdV Wind Energy Project must comply with all rules and regulations applicable at the time of the project's construction and operation. The PdV Wind Energy Project will undergo a separate EIR process and will be required to comply with all relevant rules and regulations in force at the time of the project construction, including those that may be developed from any control measures that may be identified in the future 8-hour ozone attainment plan. The currently approved 1-hour ozone maintenance plan (KCAPCD, 2003) does not include any control measures that would apply to the construction or operation of the PdV Wind Energy Project. PdV would not cause a significant population growth within the MDAB portion of Kern County. Therefore, the development of this project would be consistent with the currently approved air quality plan.

The PdV Wind Energy Project is not on federal lands and does not require any federal approvals, so General Conformity does not apply to this project. In addition, due to the relatively remote area of the proposed PdV Wind Energy Project and the large footprint of the site and the site's emissions the construction and operation of the project would not expose sensitive receptors to substantial pollutant concentrations.

The KCAPCD CEQA Guidelines (KCAPCD, 1999) provide two separate emissions-based significance criteria. The first is the presumption that a project would have less-than-significant impacts if the project emissions are less than the offset thresholds of their New and Modified Source Review Rule 210.1. The second is the presumption that a project would have less-than-significant impacts if the indirect motor vehicle trip emissions are less than 137 lbs/day for NO_x and VOC. Emissions related to PdV have not yet been determined, so a comparison with another recent wind farm project, the Shiloh I Wind Plant Project (E & E, 2005), has been used to determine the potential for the PdV Wind Energy Project to exceed the KCAPCD significance thresholds.

PdV Impact A-1: Construction emissions would exceed the KCAPCD regional emission thresholds.

KCAPCD Rule 210.1 is the District's New Source Review rule, which sets out permitting requirements for new and modified major stationary sources of pollutants. These regulations specify emission offset thresholds above which projects are required to obtain emission offsets, traditionally by buying emission reduction credits that have been generated at other stationary sources. The offset thresholds from Rule 210.1 have been identified by the KCAPCD as appropriate CEQA significance criteria, and these offset thresholds are as follows:

- NO_x – 25 tons/year
- VOC – 25 tons/year
- PM₁₀ – 15 tons/year
- SO_x – 27 tons/year

The PdV Wind Energy Project is not a major residential development, so it would have limited ongoing onroad emissions from operations and maintenance. Additionally, this project would not have significant indirect mobile source emissions. Therefore, the PdV Wind Energy Project would not exceed this KCAPCD indirect source emission significance threshold.

The PdV Wind Energy Project was compared to the Shiloh I Wind Plant Project emissions determinations (E & E, 2005) by comparing project size in terms of area footprint, number and type wind turbines, and site variables such as amount of unpaved roads necessary to be traveled during construction. Based on this comparison it has been determined that there is a potential for PdV construction emissions to exceed the KCAPCD annual NO_x and PM₁₀ emission thresholds. Therefore, appropriate mitigation would be required to reduce the levels of these two pollutants.

Mitigation Measures A-1a through A-1h, described below, would reduce the PdV Wind Energy Project construction NO_x and PM₁₀ emissions to the extent feasible. However, due to the limited scope of available information regarding the PdV Wind Energy Project, it is not known if the mitigation measures described below would reduce the NO_x and PM₁₀ emission levels below the KCAPCD regional significance thresholds. Therefore, pending the final construction emission analysis the PdV Impact A-1 could either be less than significant with mitigation incorporated (**Class II**), or if the mitigated NO_x or PM₁₀ emissions remain above the regional significance thresholds the impacts would be significant and unavoidable, even with the use of the mitigation measures described below (**Class I**).

Mitigation Measures for PdV Impact A-1

PdV A-1a Develop Construction Fugitive Dust Control Plan. The project owner shall develop a Fugitive Dust Emission Control Plan (FDECP) for construction work. Measures to be incorporated into the plan include, but are not limited to the following:

- Water the disturbed areas of the active construction sites at least three times per day.
- Enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturer's specifications to exposed piles with a five percent or greater silt content.

- Non-toxic soil binders shall be applied to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions.
- Maintain unpaved road vehicle travel to the lowest practical speeds, and no greater than 15 mph, to reduce fugitive dust emissions.
- All vehicle tires shall be inspected, are to be free of dirt, and washed as necessary prior to entering paved roadways.
- Install wheel washers or wash the wheels of trucks and other heavy equipment where vehicles exit the site.
- Cover all trucks hauling soil and other loose material, or require at least two feet of freeboard.
- Establish a vegetative ground cover (in compliance with biological resources impact mitigation measures) or otherwise create stabilized surfaces on all unpaved areas at each of the construction sites within 21 days after active construction operations have ceased.
- Increase the frequency of watering, or implement other additional fugitive dust mitigation measures, to all disturbed fugitive dust emission sources when wind speeds (as instantaneous wind gusts) exceed 25 miles per hour (mph).
- Travel routes to each construction site shall be developed to minimize unpaved road travel.

PdV A-1b Properly Maintain Mechanical Equipment. The construction contractor shall ensure that all mechanical equipment associated with project construction is properly tuned and maintained in accordance with the manufacturer's specifications.

PdV A-1c Use Ultra Low-Sulfur Diesel Fuel. California Air Resources Board (CARB) certified ultra low-sulfur diesel (ULSD) fuel containing 15 ppm sulfur or less shall be used in all diesel-powered construction equipment.

PdV A-1d Restrict Engine Idling to 10 Minutes. Diesel engine idle time shall be restricted to no more than 10 minutes.

PdV A-1e Off-road Diesel-fueled Equipment Standards. All offroad construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Section 2423(b)(1) unless that such engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a Tier 1 engine. In the event a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers that the use of such devices is not practical for specific engine types. Equipment properly registered under and in compliance with CARB's Statewide Portable Equipment Registration Program are in compliance with this mitigation measure.

PdV A-1f On-road Vehicle Standards. All on-road construction vehicles shall meet all applicable California on-road emission standards and shall be licensed in the State of California. This does not apply to construction worker personal vehicles.

PdV A-1g Off-road Gasoline-fueled Equipment Standards. All offroad stationary and portable gasoline powered equipment shall have EPA Phase 1/Phase 2 compliant engines, where the specific engine requirement shall be based on the new engine standard in affect two years prior to the initiating project construction.

PdV A-1h Reduction of Helicopter Emissions. Helicopter use will be limited to the extent feasible and helicopters with low emitting engines shall be used to the extent practical.

These mitigation measures are focused on reducing NOx and PM10 emissions to the extent feasible.

PdV Impact A-2: The project would create objectionable odors.

The PdV Wind Energy Project's construction equipment and construction operations, such as the potential for some small areas of asphalt paving and the use of maintenance/inspection equipment may create mildly objectionable odors. These odors would be temporary and would not affect a substantial number of people. Therefore, the odor impacts from the PdV Wind Energy Project's construction and operation would be less than significant with no mitigation measures required (**Class III**).

E.3.3 Biological Resources

E.3.3.1 Affected Environment

Regional Setting

The PdV Wind Energy Project site is located on the western edge of the Mojave Desert in the northwestern portion of the Antelope Valley on the lower southeast-facing (desert) slopes of the Tehachapi Mountains. The project area is situated in the Mojave Desert Floristic Province, adjoining the California Floristic Province (Hickman, 1992). Consequently, the project area lies in an important biogeographic transition zone for plants and animals.

The proposed PdV site covers approximately 6,275 acres, or 9.8 square miles of the Cottonwood Creek watershed at elevations ranging from approximately 5,300 feet above sea level in the north to approximately 2,800 feet above sea level in the south. Cottonwood Creek is one of the major watersheds draining the southern slopes of the Tehachapi Mountains.

Vegetation Communities

Native Plant Communities and Wildlife Habitats. The PdV project area lies mainly on the eastern side of Cottonwood Creek, but crosses the main stem of this drainage in at least three locations. Numerous ephemeral and intermittent tributaries cross the proposed project area. Cottonwood Creek and its tributaries provide a physical link between desert scrub plant communities on the floor of the Antelope Valley with a diverse array of plant communities at higher elevations. The size and elevational range of the project area encompasses a number of native plant communities, including: pine-oak woodland, oak savannah, chaparral, non-native annual and native perennial grassland, Joshua tree woodland, Mojavean juniper woodland and scrub, Mojave creosote bush scrub, and Mojave mixed woody scrub (terminology of Holland, 1986). The relative acreages of native habitats in the project area are unknown at this time, although the Application states that the project area is mostly on undeveloped "desert scrub" land.

Agricultural Land. The southern portions of the project area may include agricultural lands. Extensive areas of natural vegetation on the floor of the Antelope Valley have been converted to irrigated and dry-farmed cereal crops, orchards, cattle grazing, and other agricultural uses. Large areas of former agricultural land in this region lie fallow and have revegetated with ruderal as well as native forb and shrub species. Agricultural land, both active and fallow, is not considered wildlife habitat, although many wildlife species will use active, and especially fallow agricultural land to varying degrees as foraging and breeding habitat. The relative acreage of agricultural land in the project area is unknown at this time.

Other Wildlife Habitats. The project site may also contain natural and man-made features that provide wildlife habitat, such as vernal pools and stock ponds.

Special Status Species

Special Status Plants. Although a record search of the California Natural Diversity Database (CNDDB, 2006) did not identify sensitive plant species in the project area, habitat in the region has the potential to support a variety of sensitive plant species and these species have been documented to occur in the region. Some of the plant species that may occur in the project area include pale-yellow layia (*Layia heterotricha*), Palmer’s mariposa lily (*Calochortus palmeri* var. *palmeri*), Baja navarretia (*Navarretia peninsularis*), and round leaf fillaree (*Erodium macrophyllum*). Coulter’s goldfields (*Lasthenia glabrata* ssp. *coulteri*) are also common in the region and may occur in the wind farm area.

Special-Status Animals. The wind farm location is situated in the transition zone between desert scrub plant communities on the floor of the Antelope Valley and a diverse array of plant communities located in the Tehachapi Mountains. Subsequently the potential for the area to support a broad array of sensitive wildlife is high. Table E.3-1 contains a list of the special-status species listed as threatened or endangered under the federal or California Endangered Species Acts, species proposed for listing, species of special concern, and other species which have been identified by the USFWS, Forest Service, or CDFG as unique or rare and which have the potential to occur within the proposed project area.

Table E.3-1. Special-Status Wildlife Species*				
Common Name	Scientific Name	Regulatory Status	Occurrence	Habitat Associations
INVERTEBRATES				
Grapevine Creek pyrgulopsis	<i>Pyrgulopsis greggi</i>	Narrow endemic	Described from Grapevine Creek, approx. 20 mi W of project area; high potential for this and/or other narrowly endemic <i>Pyrgulopsis</i> snails to inhabit Cottonwood Creek watershed (Herschler, 1995)	Substrate and aquatic plants in springs and streams
Tejon Canyon shoulderband	<i>Helminthoglypta concolor</i>	Narrow endemic	Described from upper reaches of Tejon Canyon watershed in Tehachapi Mountains, approx. 5 mi N Cottonwood Creek watershed; high potential for this and/or other narrowly endemic <i>Helminthoglypta</i> snails to inhabit Cottonwood Creek watershed (Roth and Hochberg, 1992)	White fir forest and pine-oak woodland; chaparral
Grapevine Creek shoulderband	<i>Helminthoglypta uvasana</i>	Narrow endemic	Described from Grapevine Creek, approx. 20 mi W of project area; high potential for this and/or other narrowly endemic <i>Helminthoglypta</i> snails to inhabit Cottonwood Creek watershed (Roth and Hochberg 1988)	Valley oak savannah; chaparral; willow riparian woodland
Tehachapi Mountains silverspot butterfly	<i>Speyeria egleis tehachapina</i>	FSS	Tehachapi Mountains; moderate to high potential of occurring in Cottonwood Creek watershed (CDFG 2005)	Grassland; oak savannah; chaparral
AMPHIBIANS				
Tehachapi slender salamander	<i>Batrachoseps stebbinsi</i>	Forest Service Sensitive; ST	Known from several populations on north- and south-facing slopes of Tehachapi Mountains; high potential of occurring in upper Cottonwood Creek watershed	Pine-oak woodland
Yellow-blotched salamander	<i>Ensatina eschscholtzii croceator</i>	Forest Service Sensitive; CSC	Known from several populations on north- and south-facing slopes of Tehachapi Mountains; high potential of occurring in upper Cottonwood Creek watershed	Pine-oak woodland; oak savannah
Western spadefoot	<i>Scaphiopus hammondi</i>	FSS; CSC	Nearest record is from south slope Tehachapi Mountains, approx. 12 mi W of project area; moderate potential of occurring in middle and lower portions of project area in association with Cottonwood Creek	Breeds in vernal pools, stock ponds; aestivates in grassland and along washes
Foothill yellow-legged frog	<i>Rana boylei</i>	FSS; CSC	Nearest locality is south slope Tehachapi Mountains, less than 5 mi from project area; presumed extirpated from Tehachapi Mountains, but region has not been thoroughly surveyed	Breeds in streams; uses adjacent uplands to forage and aestivate
California red-legged frog	<i>Rana aurora draytonii</i>	FT; CSC	Nearest locality is south slope Tehachapi Mountains, less than 5 mi from project area; presumed extirpated from Tehachapi Mountains, but region has not been thoroughly surveyed	Breeds in streams; uses adjacent uplands to forage and aestivate
REPTILES				

Table E.3-1. Special-Status Wildlife Species*				
Common Name	Scientific Name	Regulatory Status	Occurrence	Habitat Associations
Desert tortoise	<i>Gopherus agassizi</i>	FT; ST	Formerly widespread in Antelope Valley; presumed extirpated; nearest extant populations are near Mojave, approx. 25 mi NE of project area; low potential of occurrence	Desert scrub; Joshua tree-juniper woodland
California horned lizard	<i>Phrynosoma coronatum</i>	Forest Service Sensitive; CSC	Reaches eastern distributional limits in project area; narrowly sympatric with desert horned lizard (<i>P. platyrhinos</i>), which inhabits Valley floor in this area; high potential of occurring in project area	Chaparral; oak woodland; pine-oak woodland; grassland
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	Forest Service Sensitive; CSC	Known from Cottonwood Creek watershed; ranges throughout project area in suitable soils	Chaparral; oak woodland; pine-oak woodland; grassland
Southern rubber boa	<i>Charina bottae umbratica</i>	Forest Service Sensitive; ST	Known from Tehachapi Mountains, approx. 15 mi W of project area; moderate to high potential of occurring in upper Cottonwood Creek watershed	Chaparral; oak woodland; pine-oak woodland
BIRDS				
California condor	<i>Gymnogyps californianus</i>	FE; SE	Historic range included Antelope Valley and Tehachapi Mountains; birds occasionally seen foraging in Tehachapi Mountains; moderate to high potential that one or more birds include project area in foraging area	Forages over extensive grassland and open woodland habitats
Cooper's hawk	<i>Accipiter cooperi</i>	CSC	Occurs throughout Tehachapi Mountains; high potential for occurrence in middle and upper portions of project area	Oak woodland; oak savannah; oak-pine woodland; riparian woodland
Sharp-shinned hawk	<i>Accipiter striatus</i>	CSC	Wintering birds occur throughout Tehachapi Mountains; high potential for occurrence in middle and upper portions of project area in fall and winter	Oak woodland; oak savannah; oak-pine woodland; riparian woodland
Golden eagle	<i>Aquila chrysaetos</i>	CSC (FP)	Occurs throughout Tehachapi Mountains; high potential for occurrence in middle and upper portions of project area	Forages over desert scrub, grassland and oak savannah; nests on cliff faces and steep, rocky slopes
Ferruginous hawk	<i>Buteo regalis</i>	FSS; CSC	Wintering birds occur throughout Tehachapi Mountains; high potential for occurrence in middle and upper portions of project area in fall and winter	Forages over desert scrub, grassland and oak savannah
Northern harrier	<i>Circus cyaneus</i>	CSC	Resident throughout Tehachapi Mountains; winter visitor in Mojave Desert; high potential of occurring in project area	Forages over desert scrub, grassland, agricultural fields, and oak savannah; nests on ground
White-tailed kite	<i>Elanus leucurus</i>	CSC (FP)	Resident in Tehachapi Mountains; high potential of occurring in project area	Forages over grassland, oak savannah, and sparse chaparral
Mertlin	<i>Falco columbarius</i>	CSC	Winters throughout Tehachapi Mountains and Mojave Desert; high potential of occurring in project area	Forages in grassland; desert scrub, and oak savannah
Prairie falcon	<i>Falco mexicana</i>	CSC	Resident in Tehachapi Mountains and Mojave Desert; high potential of occurring in project area	Forages in grassland; desert scrub, and oak savannah
Mountain plover	<i>Charadrius montanus</i>	FPT; CSC	Winters in Tehachapi Mountains and Mojave Desert; high potential of occurring in project area	Grassland and sparse desert scrub
Burrowing owl	<i>Athene cunicularia</i>	FSS; CSC	Resident in Mojave Desert, may be either resident or winter visitor to Tehachapi Mountains; high potential of occurring in project area	Grassland; oak savannah; open desert scrub
California spotted owl	<i>Strix occidentalis occidentalis</i>	Forest Service Sensitive; CSC	Known to nest in Tehachapi Mountains (N of project area) and Sierra Pelona (south of project area); moderate potential of occurring in wooded upper portions of project area	Pine-oak woodland; white fir woodland; oak savannah
Lewis' woodpecker	<i>Melanerpes lewis</i>	FSS	Resident throughout Tehachapi Mountains; winters in Mojave Desert; high potential of occurring in upper portions of project area	Pine-oak woodland; oak savannah
Red-breasted sapsucker	<i>Sphyrapicus ruber</i>	FSS	Winter visitor or resident to Tehachapi Mountains and Mojave Desert; high potential of occurring in upper portions of project area	Pine-oak woodland; oak savannah; riparian woodland
Olive-sided flycatcher	<i>Contopus borealis</i>	FSS	Breeds in Tehachapi Mountains; moderate to high potential of occurring in upper portions of project area	Coniferous forests; riparian woodland

Table E.3-1. Special-Status Wildlife Species*				
Common Name	Scientific Name	Regulatory Status	Occurrence	Habitat Associations
Loggerhead shrike	<i>Lanius ludovicianus</i>	FSS; CSC	Resident in Antelope Valley and Tehachapi Mountains; high potential of occurring in project area	Desert scrub; open chaparral; oak savannah; grassland
Gray vireo	<i>Vireo vininior</i>	CSC	Summer visitor in Antelope Valley; moderate to high potential of occurring in lower portions of project area	Chaparral; desert scrub; Joshua tree-juniper scrub
California horned lark	<i>Eremophila alpestris actia</i>	CSC	Resident in Tehachapi Mountains and Mojave Desert; high potential of occurring in project area	Grassland; oak savannah; desert scrub
LeConte's thrasher	<i>Toxostoma lecontei</i>	FSS; CSC	Resident in Antelope Valley and Mojave Desert; high potential of occurring in project area	Desert scrub; sparse grassland; Joshua tree-juniper scrub
Yellow warbler	<i>Dendroica petechia brewsteri</i>	CSC	Summer visitor in Tehachapi Mountains and Antelope Valley; high potential of occurring in project area	Willow riparian woodland; weedy grassland near watercourses; oak woodland
Yellow-breasted chat	<i>Icteria virens</i>	CSC	Summer visitor in Tehachapi Mountains; high potential of occurring in upper portions of project area	Willow riparian woodland; cottonwood thickets
Summer tanager	<i>Piranga rubra</i>	CSC	Summer visitor in Antelope Valley; high potential of occurring in upper portions of project area	Cottonwood thickets; willow riparian woodland
Bell's sage sparrow	<i>Amphispiza belli belli</i>	FSS; CSC	Resident in Tehachapi Mountains and Mojave Desert	Sagebrush scrub; Joshua tree-juniper woodland; open chaparral
Lark sparrow	<i>Chondestes grammacus</i>	FSS	Resident in Tehachapi Mountains and Mojave Desert; high potential of occurring in project area	Grassland; desert scrub; Joshua tree-juniper woodland
Black-chinned sparrow	<i>Spizella atrogularis</i>	FSS	Summer visitor to Tehachapi Mountains and Mojave Desert; high potential of occurring in upper portions of project area	Grassland; open chaparral; desert scrub; Joshua tree-juniper woodland
MAMMALS				
Pallid bat	<i>Antrozous pallidus</i>	Forest Service Sensitive; CSC	Ranges throughout Tehachapi Mountains and Antelope Valley; high potential of occurring in project area	Grassland; oak woodland; open chaparral; desert scrub; Joshua tree-juniper woodland
Western big-eared bat	<i>Corynorhinus townsendii</i>	Forest Service Sensitive; CSC	Ranges throughout Tehachapi Mountains and Antelope Valley; high potential of occurring in project area	Riparian corridors and adjacent habitats
Spotted bat	<i>Euderma maculatum</i>	FSS; CSC	Ranges throughout Tehachapi Mountains and Antelope Valley; high potential of occurring in project area	Riparian corridors and adjacent habitats
Western red bat	<i>Lasiurus blossevillii</i>	Forest Service Sensitive	Ranges throughout Tehachapi Mountains and Antelope Valley; high potential of occurring in project area	Riparian corridors and adjacent habitats; oak woodland
Fringed myotis	<i>Myotis thysanodes</i>	FSS	Ranges throughout Tehachapi Mountains and Antelope Valley; high potential of occurring in project area	Riparian corridors and adjacent habitats; oak woodland
Yuma myotis	<i>Myotis yumanensis</i>	FSS	Ranges throughout Tehachapi Mountains and Antelope Valley; high potential of occurring in project area	Typically forages near water and adjacent habitats
Western mastiff bat	<i>Eumops perotis californicus</i>	FSS; CSC	Ranges throughout Tehachapi Mountains and Antelope Valley; high potential of occurring in project area	Desert scrub; grassland; oak savannah
Mohave ground squirrel	<i>Spermophilus mohavensis</i>	ST	Antelope Valley; moderate to high potential of occurring in project area	Desert scrub; Joshua tree-juniper woodland
Tehachapi pocket mouse	<i>Perognathus alticolus inexpectatus</i>	Forest Service Sensitive; CSC	Known from Tehachapi Mountains and San Emigdio Mountains; moderate potential of occurring in Cottonwood Creek watershed	Sagebrush scrub; chaparral; pine forest
Ringtail	<i>Bassariscus astutus</i>	Protected Furbearer	Common, but secretive in scrub and riparian woodland habitats in vicinity of drainages on south slope of Tehachapi Mountains	Chaparral, pine-oak woodland; riparian scrub and riparian woodland
American badger	<i>Taxidea taxus</i>	CSC	Ranges throughout Tehachapi Mountains and Mojave Desert; occurs in project area	Desert scrub; Joshua tree-juniper scrub; grassland; open chaparral; oak woodland
Mountain lion	<i>Felis concolor</i>	CSC	Ranges throughout Tehachapi Mountains and	Desert scrub; Joshua tree-

and control of non-native vegetation and planting of native, locally-occurring vegetation to facilitate native plant growth on disturbed soils and on fallow agricultural land. The Plan also should include planting of food species for butterflies and other native insects.

The creation or restoration of habitat shall be monitored for five years after mitigation site construction to assess progress and identify potential problems with the restoration site. Remedial activities (e.g., additional planting, weeding, or erosion control) shall be taken during the five-year period if necessary to ensure the success of the restoration effort. If the mitigation fails to meet the established performance criteria after the five-year maintenance and monitoring period, monitoring shall extend beyond the five-year period until the criteria are met or unless otherwise noted by the CPUC.

PdV B-1b Facility Siting. Site project-related infrastructure and facilities, including turbine tower pads and access roads, on existing cultivated land, rather than on previously undisturbed land. The project area should be sited on active agricultural land (i.e., row crop or cereal crop land, not grazing land) in order to avoid habitat loss and fragmentation. Active agricultural land would include land currently under cultivation for row crops or cereal crops.

PdV Impact B-2: Invasive and non-native vegetation would be introduced as a result of project-related activities.

Construction and operation of the PdV Wind Energy Project would create long-term conditions favorable to the introduction of invasive, non-native plants, which have limited habitat value to native wildlife. Introduction of non-native plant species would occur primarily during construction, but would also continue to occur during operation and maintenance phases of the proposed project. The introduction of non-native or noxious weeds would be related to the use of vehicles, construction equipment, or earth materials contaminated with non-native plant seed, use of straw bales or wattles that contain seeds of non-native plant species.

Although the magnitude of this impact would vary depending on the existing land use, area of disturbance, and site design, this impact would be considered significant without mitigation. Implementation of Mitigation Measures PdV B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) and PdV B-1b (Facility Siting), and PdV 2a (Implement Weed Control Measures) would reduce PdV Impact B-2 to a less-than-significant (**Class II**) level.

PdV B-2a Implement Weed Control Measures. The Applicant shall implement the following standards to reduce the potential for the spread of invasive or non-native plant species into the project area:

THE APPLICANT SHALL WASH ALL EQUIPMENT AND VEHICLES: Vehicles and all equipment must be washed BEFORE AND AFTER entering the project sites. This includes wheels, undercarriages, bumpers and all parts of the vehicle. In addition, all tools such as chain saws, hand clippers, pruners, etc must also be washed BEFORE AND AFTER entering all project sites. All washing must take place where rinse water is collected and disposed of in either a sanitary sewer or a landfill.

PdV Impact B-3: The project would cause temporary damage or permanent loss of oak trees.

The size and elevational range of the PdV Wind Energy Project area encompasses a variety of native plant communities, including pine-oak woodland and oak savannah. Construction of the wind farm may result in impacts to native oak trees. A comprehensive survey of the project area has not been conducted and it is not possible to determine whether project-related infrastructure would be situated under the dripline of native oak

trees. Repair or widening of existing roads to support construction equipment that occurs under the canopy of oak trees may result in damage to individual trees, limbs, and/or their root systems potentially causing mortality through water stress. Any disturbance to individual oak trees would be considered a significant impact without mitigation. Impacts to oak trees would likely be minimized through implementation of Mitigation Measure PdV B-3 (Restoration of Coast Live Oak Trees) would reduce this impact to a less-than-significant level (**Class II**).

Mitigation Measure for Impact PdV B-3

PdV B-3 Restoration of Coast Live Oak Trees. Construction within the driplines of oak trees, and incidental trimming or damage to trees along the proposed route shall not occur until the trees are evaluated by a qualified arborist, who shall identify appropriate measures to minimize tree loss including the placement of fence around the dripline, padding the truck, and the placement of matting under the existing dripline during construction activities. If construction, trimming, or incidental trimming leads to damage or the removal of any coast live oak, California black walnut and western sycamore they shall be replaced in kind at a 10:1 ratio. Valley oaks shall be replaced in kind at a 15:1 ratio.

Any oak or native tree which must be removed or killed as a result of construction or other project-related activities shall be replaced in kind. The replacement ratios (using rooted plants in liners or direct planting of acorns) for plants which are to be removed shall be as follows: plants less than 5 inches DBH shall be replaced at 3:1; plants from 5 to 12 inches shall be replaced at 5:1; trees from 12 to 24 inches shall be replaced at 10:1; trees from 24 to 36 inches shall be replaced at 15:1; all oaks greater than 36 inches shall be replanted at a ratio of 20:1. The replacement ratio for damaged trees shall be 2:1 for plants with DBH less than 12 inches and a 5:1 ratio for plants with DBH greater than 12 inches. Trees shall be at least 5 years old and capable of surviving without further maintenance. Compliance shall be evaluated 5 years after tree removal. Trees shall be planted at locations acceptable to the landowner or managing agency. All planting locations, procedures, and results shall be evaluated by a qualified arborist. All protection and replacement measures shall be consistent with applicable local jurisdiction requirements. Tree removal shall not be permitted until replacement trees have been planted or transplanting sites are approved.

PdV Impact B-4: The project would result in the loss of foraging habitat for wildlife.

Installation of new turbine tower structures could result in the permanent removal of native and non-native vegetation communities across the project area. Temporary and permanent loss of native vegetation communities that provide foraging habitat for raptor species would be considered a potentially significant impact. The placement of towers, access roads, and routine maintenance may hinder or limit foraging in the project area. In addition, the placement of towers in the project area may result in ongoing mortality to birds from collision with towers, rotors, or electrical lines. Habitat loss and fragmentation directly affect wildlife populations and processes in a variety of ways and magnitudes, depending upon body size and dispersal ability. Populations of small, ground-dwelling species with limited dispersal ability are generally at greater risk of local extirpation from habitat loss and fragmentation than larger animals and birds. Ground-dwelling special-status species listed in Table E.3-1 could be significantly affected by habitat loss and fragmentation. Depending on a number of factors, impacts from construction of the PdV Wind Energy Project to both special-status and common wildlife species would be significant and unavoidable (**Class I**). Implementation of Mitigation Measures PdV B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), PdV B-1b (Facility Siting), and PdV B-4 (Site Configuration), described below, would reduce the severity of habitat loss and fragmentation to the extent possible. Although these mitigation measures would reduce the severity of impacts resulting from loss of foraging habitat, impacts would still be significant and unavoidable.

Mitigation Measures for PdV Impact B-4

PdV B-4 **Site Configuration.** If infrastructure and facilities associated with the PdV Wind Energy Project cannot be situated on cultivated land within the proposed project area, as described in Mitigation Measure PdV B-1b (Facility Siting), then the project proponent shall select qualified Wildlife Biologists that are familiar with the fauna of the project area to review the number and configuration of turbine towers and infrastructure early in the design phase. The review shall include recommendations for clustering towers, roadways, and infrastructure in a way that would minimize habitat loss and fragmentation associated with project construction.

PdV Impact B-5: Construction activities and increased vehicular traffic on access roads would disturb wildlife species.

Direct loss of small mammals, reptiles, and other less mobile species could also occur during the construction of the PdV Wind Energy Project, primarily from the use of construction vehicles. Fossorial species, such as small burrowing animals (lizards, snakes, and small mammals) may be harmed through the crushing of burrows, the loss of refugia from predators, and direct mortality from construction activities. Construction activities and human presence can also alter or disrupt the breeding and foraging habitat for wildlife species.

Deaths related to construction would be incurred primarily by burrow-dwelling animals; eggs and nestlings of bird species with small, well-hidden nests; and species with limited mobility (e.g., lizards, snakes, and small mammals). More mobile species like birds and larger mammals are expected to disperse into adjacent habitat areas during the land clearing and grading phases associated with tower construction.

Construction could also result in an increase in accidental road-killed wildlife due to increased vehicle traffic along the construction corridor. Construction impacts on listed and candidate wildlife species are specifically discussed in the following impact analyses: PdV Impact B-3 (oak trees), PdV Impact B-4 (loss of foraging habitat), PdV Impact B-6 (nesting birds), PdV Impact B-7 (listed or sensitive plant species), PdV Impact B-8 (birds and bats), PdV Impact B-9 (burrowing owls), PdV Impact B-10 (special status amphibians), PdV Impact B-11 (special-status reptiles), and PdV Impact B-12 (special-status rodents). Except where undeveloped wildlife habitats are known to support rare, threatened, or endangered species, or nesting birds, impacts on wildlife from construction would generate potentially adverse but less-than-significant impacts (**Class III**), with no mitigation required.

PdV Impact B-6: Construction activities during the breeding season would result in a potential loss of nesting birds.

Ground-disturbing activity, including preparation of the turbine tower locations, as well as construction and grading of new or improved access roads, has the potential to disturb vegetation utilized by nesting birds. The removal of habitat during the breeding season would likely result in the displacement of breeding birds and the abandonment of active nests. With the exception of a few non-native species, nesting birds are protected under the Migratory Bird Treaty Act. Nesting birds are also offered protection from the CDFG. The proposed PdV Wind Energy Project has the potential to result in impacts to nesting birds if construction occurs during the breeding season. Implementation of Mitigation Measure PdV B-6 (Conduct Pre-construction Surveys and Monitoring for Breeding Birds) would reduce PdV Impact B-6 to a less-than-significant (**Class II**) level.

Mitigation Measure for PdV Impact B-6

PdV B-6 **Conduct Pre-construction Surveys and Monitoring for Breeding Birds.** The project proponent (Power Partners Southwest LLC) shall conduct protocol level surveys for nesting

birds, if construction activities are scheduled to occur during the breeding season for raptors and other migratory birds. Surveys shall be conducted in areas within 500 feet of turbine tower locations, laydown/staging areas, the substation site, and access roads. A qualified biologist shall be designated to conduct pre-construction surveys and monitoring for breeding birds. If breeding birds with active nests are found, a biological monitor shall establish a 500-foot buffer around the nest and no activities will be allowed within the buffer until the young have fledged from the nest or the nest fails. The biological monitor shall conduct regular monitoring of the nest to determine success/failure and to ensure that project activities are not conducted within the 500-foot buffer until the nesting cycle is complete or the nest fails. The biological monitor shall be responsible for documenting the results of the surveys and the ongoing monitoring.

Vegetation

Impact B-7: The project would result in the loss of listed or sensitive plant species.

A review of the project data for the PdV Wind Energy Project did not provide specific information on the presence or absence of sensitive plant species in the project area. However, several sensitive plant species have the potential to occur in the proposed wind farm area. Some of these include pale-yellow layia, Palmer's mariposa lily, Baja navarretia, round leaf fillaree, and Coulters goldfields. If present, impacts to listed plant species (Impact B-7) would be reduced to a less-than-significant level (**Class II**) with the implementation of Mitigation Measure B-7 (Conduct Surveys for Sensitive Plant Species) described below.

Mitigation Measure for Impact B-7

PdV B-7 Conduct Surveys for Sensitive Plant Species. The project proponent shall conduct focused surveys prior to construction during the appropriate floristic period sensitive plant species that within the project site *and* within 100 feet of all surface-disturbing activities.

Populations of sensitive plants shall be flagged and mapped prior to construction. If sensitive plants are located during the focused surveys, then modification of the placement of towers, access roads, laydown areas, and other ground disturbing activities would be implemented in order to avoid the plants. If sensitive plants cannot be avoided, the project proponent shall be responsible for the translocation of plants and/or collection of seeds from existing populations that would be impacted and the planting/seeding of these plants in adjacent suitable portions of the project area that would not be affected by proposed project construction or maintenance activities. Impacts to federally or State listed plant species would not be allowed except through the context of a biological opinion.

Wildlife

Table E.3-1 lists the sensitive species that may occur in the proposed project area. Some of the sensitive birds likely to occur include California condor (*Gymnogyps californianus*), coopers hawk (*Accipiter cooperi*), burrowing owl (*Athene cunicularia*), California horned lark (*Eremphila alpestris actia*), and mountain plover (*Charadrius montanus*). Several species of protected song birds have the potential to nest in riparian habitat located within the proposed project area. These migratory species are summer residents and include the olive sided flycatcher (*Contopus borealis*), yellow warbler (*Dendroica petechia brewsteri*) and yellow-breasted chat (*Icteria virens*).

Sensitive reptiles and amphibians include California red-legged frog (*Rana aurora draytonii*), western Spadefoot toad (*Scaphiopus hammondi*), silver legless lizard (*Anniella pulchra pulchra*), and Tehachapi slender

salamander (*Batrachoseps stebbinsi*). California horned lizard (*Phrynosoma coronatum*) is also likely to be present though out the proposed project area and would be subject to project related disturbance.

Habitat present in the project area is also likely to support a broad diversity of sensitive mammals. Some of these include Tehachapi pocket mouse (*Perognathus alticolus inexpectatus*), Mojave ground squirrel (*Spermophilus mohavensis*), American badger (*Taxidea taxus*), and mountain lion (*Felis concolor*). In addition, the area is known to support several species of sensitive bats. Pallid bat (*Antrozous pallidus*) ranges throughout the Tehachapi Mountains and is expected to occur in the project area. Yuma myotis (*Myotis yumanensis*), western red bat (*Lasiurus blossevillii*), and western big-eared bat (*Corynorhinus townsendii*) are also expected to occur in the region.

PdV Impact B-8: The project would increase bird and bat mortality due to collisions with wind turbine blades.

An unintended consequence of wind farm facility development has been collisions of birds and bats with the rotating blades of the turbines. The impact of wind power facilities on wildlife varies by region and by species. Studies show that wind power facilities in northern California and West Virginia in the United States have killed large number of raptors and bats. For example annual wind farm mortality resulted in the loss of approximately 1,000 raptors and 2,900 bats per year (Thelander et al. 2003; Balow 2005). Studies in other parts of the country show comparatively lower levels of mortality, although most facilities have killed at least some birds and bats (Johnson et al. 2003). Scientists are concerned about the potential cumulative impacts of wind power on species populations if the industry expands as expected (GAO 2005). Because the proposed PdV project is located in an area of high faunal diversity in a regionally-important biogeographic transition zone, it has the potential of resulting in high avian and bat mortality. Species affected could include the federal- and state-listed California condor and other special-status raptor and bat species (see Table E.3-1), in addition to several non-regulated raptor and bat species (e.g., red-tailed hawk, red-shouldered hawk, barn owl, great horned owl, turkey vulture, etc.).

Migratory bird species (especially those that migrate at night), nocturnally-foraging and migrating bat species, and diurnally-foraging raptors appear to be particularly susceptible to collisions with turbines. Bird collisions also escalate during foggy conditions when the turbine blades are not visible. Most of the bat mortality occurs in late summer (between mid-July and late September), although much of this information comes from just a few locations in the eastern United States. There is some evidence to suggest that bats do not use echolocation to navigate when migrating at night and thus collide with rotating turbine blades. Other studies have found that rotating turbine blades may emit ultrasonic frequencies that attract bats or their insect prey (Johnson, 2005; Kunz, 2005). Some researchers have observed that many bird and bat kills occur during the time of year that has the lowest wind production. For example, most bats are killed during the fall migration season on low wind nights (Kunz, 2005). Factors implicated in bird and bat mortality include wind power facility location, turbine density (number and spatial configuration), tower design (tube versus lattice), rotor speed, facility lighting, weather, season, and time of day (GAO, 2005).

Few studies have assessed the efficacy of mitigation measures. Some strategies that once looked promising are now proving ineffective (e.g., painting turbine blades in a striped pattern to make them more visible to birds). Specifically, GAO (2005) found that relatively few studies have examined strategies for reducing the potential impacts of wind power on birds and bats. Many experts have noted that using pre-construction studies on wildlife and their habitats can help identify locations for wind turbines that are less likely to adversely affect birds and bats (GAO 2005). In particular, the impacts of wind power on a regional or “ecosystem” scale is necessary in this location because the proposed site has regional biological importance. Such a scale may span

local governmental jurisdiction. Consequently, it is important to coordinate with USFWS and CDFG on mitigation measures to reduce wildlife mortality early in the planning process.

Impacts to birds and bats due to collisions with turbine blades associated with the PdV Wind Energy Project would be significant and unavoidable (**Class I**). Although this impact is not mitigable to a less-than-significant level, the implementation of Mitigation Measures PdV B-8a (Pre-construction Biological Surveys) and PdV B-8b (Post-construction Biological Monitoring) would minimize bird and bat mortality events due to collisions with wind turbine blades (PdV Impact B-8). Although these mitigation measures would reduce the severity of impacts resulting in bird and bat mortality, impacts would still be significant and unavoidable.

Mitigation Measures for PdV Impact B-8

PdV B-8a **Pre-construction Biological Surveys.** Prior to the siting phase of project development, the project proponent shall hire qualified biologists (e.g., Millikin 2005; Whitford Ltd. 2005) to conduct siting studies using bat and bird acoustic detection and recording surveys in conjunction with wildlife biologists familiar with the proposed region, to determine where to place the wind power facility to minimize wildlife impacts (See Kunz 2005 for pre-construction system designs and survey protocols).

Design measures that have been implemented at existing wind power facilities and which appear to lower avian and bat mortality include: reducing number and wattage of night lighting on towers to a minimum, banning the use of sodium vapor lights, which are proven to attract birds, burying all electrical transmission lines in order to discourage roosting and prevent electrocutions and collisions. One researcher recommended that turning off some turbines on low wind nights in late summer and fall when bats are migrating could be very effective at reducing bat collisions at a facility in West Virginia, although the facility owner stopped the study before the mitigation measure could be evaluated (Balow 2005).

PdV B-8b **Post-construction Biological Monitoring.** Conduct intensive monitoring effort to determine magnitude of bird/bat collision and to test efficacy of pre-construction surveys in siting facility (see Milliken 2005, Whitford Ltd. 2005, and Kunz, 2005 for survey protocols). A qualified wildlife biologist shall be hired full-time to monitor and document bird/bat collisions at the facility in relation to location, weather conditions, time of day, season, and other environmental conditions. This information shall be summarized in an annual report prepared for review and comment by the California Department of Fish and Game or U.S. Fish and Wildlife Service. The report shall develop and implement measures to reduce collisions, then follow-up by monitoring the efficacy of implemented mitigation measures.

PdV Impact B-9: The project would result in the loss of burrowing owls.

Burrowing owl species have a high potential to occur in the proposed PdV Wind Energy Project area. In addition to the potential impacts from collision with the rotating blades of the turbines, this species may be impacted during construction of the proposed project. This ground nesting species is resident to the Mojave Desert and may be either a full time resident or winter visitor to the Tehachapi Mountains. This species occurs in grassland, oak savannah, and open desert scrub, all of which are found in the proposed project area. Nesting raptor species are protected by Section 3503.5 of the Fish and Game Code and raptors and non-game birds are protected by the Migratory Bird Treaty Act. Design of the PdV Wind Energy Project should avoid direct impacts to burrowing owls and reduce secondary impacts to burrowing owls (such as noise and dust) if they are found to occur. Individual owl burrows that could not be avoided during project construction would result in significant impacts without mitigation. However, implementation of Mitigation Measure PdV B-9 (Passively Relocate Individual

Burrowing Owls During the Non-Breeding Season) would reduce PdV Impact B-9 to a less-than-significant (**Class II**) level.

Mitigation Measure for PdV Impact B-9

PdV B-9 Passively Relocate Individual Burrowing Owls during the Non-Breeding Season. The project proponent shall conduct pre-construction surveys for the western burrowing owl. Surveys will be conducted prior to ground disturbance activities in areas that contain habitat for this species. Burrows located outside the project area shall be flagged for avoidance. Un-occupied burrows located within the project area shall be covered to prevent owls from re-occupying the burrows prior to construction. If active owl burrows are discovered within 300 feet of a turbine tower, the owls shall be relocated from the burrows using either active or passive techniques as recommended by the CDFG. Owl relocation, as well as discouragement of owls from returning to the site, shall occur in the following manner:

- During the non-breeding season (September 1 through January 31), burrowing owls occupying the proposed project site shall be evicted by passive relocation. Passive relocation would include the installation of one-way doors on burrow entrance. Any active burrow would be replaced off-site in adjacent habitat with an artificial burrow. Burrows shall be inspected with a fiber optic camera to ensure animals do not remain in the den.
- If construction occurs during the breeding season (February 1 through August 31) and prior to the relocation of the owls, a 300 foot protective buffer shall be maintained around burrows occupied by owls until the young have fledged. Other actions could include passive relocation if it is determined that owls have not begun laying eggs or postponement of construction in the area until the young are fledged and no longer dependent upon the nest burrow.
- Once fledglings are capable of independent survival and adult non-breeding owls have successfully been relocated offsite, potential owl habitat (squirrel burrows) would be collapsed in order to keep the owls from returning.

PdV Impact B-10: The project would result in the loss of special-status amphibian species.

Five sensitive species of amphibians are known to occur on the southern slopes of the Tehachapi Mountains. These species include: Tehachapi slender salamander, Yellow-blotched salamander, Western spadefoot, Foothill yellow-legged frog, and California red-legged frog. Of these species, the Tehachapi slender salamander and the Yellow-blotched salamander have a high potential to occur in the upper Cottonwood Creek watershed. Additionally, habitat conditions in the project area and the historic range of the Western spadefoot indicates this species has a moderate potential to occur in the upper Cottonwood Creek watershed.

Implementation of the proposed PdV Wind Energy Project would have the potential to adversely impact sensitive amphibian species as a result of vegetation removal and vehicle traffic. Habitat removal from construction of the turbine towers and laydown areas may result in the direct mortality of some species through mechanical crushing or habitat degradation. This potential impact would be considered significant without mitigation. Temporary and permanent loss of native vegetation communities that provide habitat for special-status amphibian species in the proposed project area would be reduced to less-than-significant (**Class II**) levels through implementation of Mitigation Measure PdV B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) and PdV B-10 (Conduct Pre-construction Surveys for sensitive Amphibians and Reptiles).

Mitigation Measure for PdV Impact B-10

PdV B-10 Conduct Pre-construction Surveys for Sensitive Amphibians and Reptiles. The project proponent shall contract with a qualified local biologist to conduct pre-construction surveys for sensitive amphibians and reptiles. Surveys for special-status salamanders shall be conducted between March and May. Salamander surveys shall include searching beneath all cover objects (logs, limbs, rocks) in potential habitat areas within the project area and relocating individuals to suitable microhabitat adjacent to project area. Surveys for spadefoot larvae and toads shall be conducted in pooled aquatic habitats, including stock tanks and stock ponds, within 500 feet of the project boundary between December and April. Habitat occupied by toads shall be flagged and avoided during construction. Adult toads shall be moved to suitable habitat if construction activities will impact the pool or depression. Sensitive reptiles shall be moved a minimum of 500 feet off the proposed project area, to suitable habitat.

PdV Impact B-11: The project would result in the loss of special-status reptile species.

Four special-status reptile species are known to occur within or near the proposed PdV Wind Energy Project area. These species include: desert tortoise (low potential of occurrence), California horned lizard (high potential of occurrence in the proposed wind farm area), silvery legless lizard (ranges throughout the project area), and the southern rubber boa (moderate to high potential of occurrence in upper Cottonwood Creek).

Construction of the PdV Wind Energy Project would remove habitat for California coastal horned lizards. These species may be subject to mortality from project-related activities. The proposed PdV project could also result in impacts to silvery legless lizard and Southern rubber boa. There is also a possibility that the proposed PdV project could result in impact to the desert tortoise. Permanent and temporary loss of habitat or mortality to individual species could occur at laydown/staging areas, along access roads, and in other areas that are temporarily disturbed during construction, such as turbine tower locations. Direct losses to these species could occur if present, as a result of project construction. Areas temporarily disturbed by project construction would be restored at the completion of construction. Implementation of Mitigation Measures PdV B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) and PdV B-10 (Conduct Pre-construction Surveys for Sensitive Amphibians and Reptiles) and would be implemented to reduce PdV Impact B-11 to a less-than-significant (**Class II**) level.

PdV Impact B-12: The project would result in loss of special-status rodent species.

Several special-status rodent species, including the Mohave ground squirrel and the Tehachapi pocket mouse, have a moderate to high potential of occurring within the proposed project area for the PdV Wind Energy Project. Permanent loss of habitat for these special-status rodent species would occur from the placement of turbine towers and other project-related infrastructure. Ground-disturbing activities within grassland habitat during construction activities could result in direct impacts to these species if present. Implementation of Mitigation Measure PdV B-12 (Conduct Pre-construction Surveys and Avoid Burrow Areas) would reduce this impact to a less-than-significant (**Class II**) level.

Mitigation Measures for PdV Impact B-12

PdV B-12 Conduct Pre-construction Surveys and Avoid Burrow Areas. The project proponent's Biological Monitor shall conduct pre-construction surveys for sensitive mammals prior to construction in the project area. Surveys shall be conducted at a time of year when sensitive mammals (Tehachapi pocket mouse and Mojave ground squirrel) are likely to be detected. Den

and burrow areas shall be flagged for avoidance. Placement of footings, roads, and laydown areas shall avoid nesting colonies. If Mojave ground squirrel is identified within the project area, construction activities shall be scheduled only during periods when this species is dormant (between November 1 and February 28). The Biological Monitor shall be present during all work in grassland habitat and will work closely with the equipment operators in order to relocate any rodents that are overturned by ground-disturbing activities.

PdV Impact B-13: The project would result in alteration of a streambed or discharge of fill into jurisdictional waters.

Construction of the proposed PdV Wind Energy Project is not expected to result in permanent impacts to jurisdictional waters and wetlands because with the exception of Cottonwood Creek, most of the area appears to support only intermittent or ephemeral drainages. It is expected that construction crews would avoid impacting the bed or banks of any drainages that occur in the wind farm area. However, it is possible that the maintenance of existing access roads, construction of new access and spur roads, and installation or replacement of culverts in and adjacent to the drainages that occur in the project area could result in an alteration of the streambed, discharge of fill into drainages under the jurisdiction of the ACOE. These activities could also result in potential increased sedimentation in the drainages either directly or through runoff. Impacts to jurisdictional waterways if present would be considered significant without mitigation. If impacts to State or federal water waters would occur, the project proponent would comply with the requirements of a Streambed Alteration Agreement and the Clean Water Act. Impacts to jurisdictional waters and wetlands would be considered less than significant with no mitigation required (**Class III**).

PdV Impact B-14: Construction of the project would result in the interference with wildlife movements and wildlife nursery sites.

The large size of the proposed PdV Wind Energy Project area and its proposed siting in a floral and faunal transition zone in relatively undisturbed habitat could significantly affect movements of ground-dwelling animals. In addition to the regional transition zone, Cottonwood Creek is one of the large drainages on the desert slope of the Tehachapi Mountains and provides a physical link between desert and montane plant communities. Siting the facility adjacent to or straddling Cottonwood Creek could significantly degrade the value of this connection for wildlife movement. Project operations, such as plant control, rodent control, and direct mortality to wildlife from vehicle encounters, could significantly impact existing wildlife populations. Implementation of Mitigation Measures PdV B-1b (Facility Siting), PdV B-6 (Conduct Pre-construction Surveys and Monitoring for Breeding Birds), PdV B-8a (Pre-construction Biological Surveys), and PdV B-10 (Conduct Pre-construction Surveys for sensitive Amphibians and Reptiles), which were previously described, as well as PdV B-14a (Pre-construction Wildlife Surveys) and PdV B-14b (Protection of Wildlife during Operational Activities), described below, would reduce PdV Impact B-14 to a less-than-significant level (**Class II**).

Mitigation Measures for PdV Impact B-14

PdV B-14a **Pre-construction Wildlife Surveys.** Prior to initiation of field work, the project proponent shall select a qualified Wildlife Biologist and a Botanist familiar with the project region to prepare a Field Survey Methodology (FSM) for the biological surveys for the PdV Wind Energy Project. The FSM shall clearly define a methodology for evaluating the faunal and floral resources of the area, specifically, plant communities, wildlife movement corridors, and special-status species occurrence. The field surveys shall extend over at least one full year in order to capture seasonal variation. Ground-dwelling wildlife movement corridors shall be identified and evaluated from tracking and night-vision surveys. The surveys shall be

specifically designed to aid in project siting in order to avoid potential impacts to wildlife movements and populations of special-status species. Prior to finalization and implementation, the FSM shall be sent to the CDFG and the USFWS, as well as at least two qualified wildlife experts for review and comment.

Following the surveys, the selected Wildlife Biologist and Botanist shall prepare a report summarizing the results of the field surveys and recommending site design and siting standards that will minimize impacts to wildlife and wildlife movements. These measures shall include adjusting the location of the tower footings, clustering of facility elements, the establishment of adequate setbacks from Cottonwood Creek and its numerous tributaries, seasonal avoidance, pre-construction trapping of small mammals if present, relocation of sensitive species, and biological monitoring. The report recommendations shall be implemented during facility design and construction.

PdV B-14b **Protection of Wildlife during Operational Activities.** The following measures would protect wildlife species during operational activities associated with the PdV Wind Energy Project:

- Rodenticides shall not be used to control rodents anywhere within the proposed project area. These chemicals are non-specific and could poison non-target species. For example, the active ingredients travel up the food chain and concentrate in carnivores, including special-status species that are known from the project area, such as American badgers, ringtails, and mountain lions.
- Mechanical plant control methods shall be used to control vegetation, wherever necessary. Herbicides, if used, shall be limited to areas within a 25-foot radius of turbine towers and other facilities in order to limit potential impacts to rodents and special-status invertebrates, reptiles, special-status plants.
- A qualified wildlife biologist shall conduct a briefing for site personnel, including all contractors and maintenance personnel, on special-status and non-regulated species occurrence in the area and ways to avoid or minimize wildlife mortality.
- Vehicle speeds shall be limited to 20 mph or less within the proposed project area, in order to minimize mortality to wildlife. Roadways shall be unpaved (gravel or dirt) in order to reduce the incidence of snakes and lizards basking on the roadway.

PdV Impact B-15: Permanent loss of habitat and habitat fragmentation would occur as a result of project construction.

The proposed project site for the PdV Wind Energy Project would be located in undisturbed habitat in a regionally important biogeographic transition zone for plants and wildlife. Project construction would result in permanent loss or alteration of hundreds, possibly thousands, of acres of undisturbed habitat, depending on the size and configuration of the tower arrays. The PdV Project Description provided in the project application to Kern County states that “Total project disturbance is not expected to exceed 5 percent of the total project area”, which translates to approximately 314 acres of the 6,275-acre project area. This estimate is assumed to represent the cumulative footprint of the turbine tower footings. The Project Description does not provide a precise configuration for turbine placement, so it is unknown at this time whether the turbines will be spread out over the entire project area or clustered in certain areas. The magnitude of this impact depends on the location and spatial configuration of the turbines and support infrastructure, which could reasonably exceed 314 acres by a significant area. Regardless of the configuration of turbine towers, access roads, buried electrical transmission lines, meteorological towers, light poles, and other infrastructure would additionally be required for project operation and maintenance. These factors would be required in addition to the actual footprint of the turbine tower footings; these project elements also contribute to habitat loss and fragmentation.

Habitat loss and fragmentation directly affect wildlife populations and processes in a variety of ways and magnitudes, depending upon body size and dispersal ability. Depending on a number of factors detailed above, impacts to both special-status and non-regulative wildlife species would be significant and unavoidable (**Class I**) due to construction of the PdV Wind Energy Project. Although PdV Impact B-15 would not be mitigable to a less-than-significant level, implementation of Mitigation Measures PdV B-1b (Facility Siting), PdV B-15a (Site Configuration), and PdV B-15b (Habitat Conservation) would help to lessen the severity of habitat loss and fragmentation, to the extent possible. As described above, PdV Impact B-15 would be significant with the implementation of the following mitigation measures.

Mitigation Measures for PdV Impact B-15

PdV B-15a Site Configuration. If infrastructure and facilities associated with the PdV Wind Energy Project cannot be situated on cultivated land within the proposed project area, as described in Mitigation Measure PdV B-1b (Facility Siting), then the project proponent shall select qualified Wildlife Biologists that are familiar with the fauna of the project area to review the number and configuration of turbine towers and infrastructure early in the design phase. The review shall include recommendations for clustering towers, roadways, and infrastructure in a way that would minimize habitat loss and fragmentation associated with project construction.

PdV B-15b Habitat Conservation. A Conservation Easement or similar instrument of habitat protection shall be employed in order to protect the value of the proposed project region as a floral and faunal transition zone after construction of the PdV Wind Energy Project.

PdV Impact B-16: The project would conflict with policies or ordinances protecting biological resources.

The proposed PdV Wind Energy Project is not expected to conflict with local policies or ordinances protecting biological resources in the project area. Wind generation is an accepted land use in the West Mojave Plan and the implementation of Mitigation Measures would ensure compliance with biological standards identified in the plan. This includes Habitat Conservation Plans (HCPs), Natural Community Conservation Plans (NCCPs), or other approved local, regional, or State HCP. Any conflicts that do arise would be less than significant with no mitigation required (**Class III**).

E.3.4 Cultural Resources

Cultural resources consist of archaeological sites from the prehistoric and historic periods, and buildings, structures, and objects from the historic period. The proposed PdV Wind Energy Project could affect cultural resources as a result of construction of foundations for wind turbines, grading access roads, and excavation of trenches for installation of electrical conduit. Cultural resources could also be affected by construction of an electrical substation and use of an area for a concrete batch plant.

The project area is in unincorporated Kern County and includes southern facing slopes of the Tehachapi Mountains and alluvial fans that slope southward into the Antelope Valley. Land in the project area is between 3,000 and 5,600 feet in elevation and generally lies between Cottonwood Creek to the west and the Tylerhorse Canyon drainage to the east. Numerous small intermittent drainages cross the project area. Pine trees are found at the higher elevations with juniper sage scrub at intermediate elevations. Piñon pine nuts and juniper berries were used as food resources by the prehistoric inhabitants of the area.

E.3.4.1 Affected Environment

Ethnography

At the time of Euro-American contact the northern Tehachapi Mountains where the project area is located was occupied by the Kawaiisu Native American group. The Kawaiisu spoke a language belonging to the Numic branch of the Uto-Aztecan language family while their neighbors to the south, the Kitanemuk and, closer to the coast, the Tatavium and the Gabrielino, spoke languages belonging to the Takic branch of the Uto-Aztecan language family. Takic speaking groups moved into coastal southern California from the Great Basin probably around 3,000 years ago (Moratto 1984:560), while Numic groups that later became the Kawaiisu may have arrived in the northeastern Kern County area more recently, possibly around 1,000 BP (Macko et al. 1993:12). However, Moratto (1984:559) suggests that Numic groups occupied the southern San Joaquin Valley prior to the arrival of the Yokuts, a Penutian speaking group that likely colonized the valley from the north after 1000 BP.

The boundary between the Numic Kawaiisu and the Takic Kitanemuk in AD 1776 may have run along the escarpment north of Comanche Creek and upper Tejon Creek. According to the diary of Francisco Garces, who traveled through the area in 1776, the people in a village on Tejon Creek that was probably Kitanemuk spoke a different language than the people in Cummings Valley, who were probably Kawaiisu. The Kitanemuk appear to have occupied lower elevation canyons in the western foothills of the Tehachapis while the Kawaiisu occupied higher elevations to the northeast, above 3,000 feet (David Earle, personal communication 2001).

The Kawaiisu had winter settlements in Cache Creek Canyon east of the modern town of Tehachapi. In summer and fall they moved westward and occupied Tehachapi Valley, Cummings Valley, Brite Valley, and the Bear Mountain area. In the fall acorns and pinyon nuts were collected at elevations above 4,000 feet (Macko et al. 1993:36).

The Kawaiisu made use of a large number of plant food resources including acorns, pinyon nuts, juniper berries, manzanita, yucca, and grass seeds. Deer were hunted with bow and arrow, but most other smaller game was caught with snares and traps. The Kawaiisu occasionally cooperated with the Yokuts in organizing antelope drives in the San Joaquin Valley. During winter the Kawaiisu depended on stored foods, especially acorns (Zigmond 1986:399-400).

Winter houses were made by covering a willow pole frame with brush and mats made of bark or tule. There were also earth-covered sweat houses and circular brush enclosures used as temporary windbreaks. Granaries elevated two feet off the ground were used to store acorns and seeds. In summer open-sided flat roofed shade houses were used. Twined and coiled baskets, bedrock mortars, and the bow and arrow were important items of technology. Some pottery was used, but was probably obtained through trade with the Owens Valley area (Zigmond 1986:401).

The Kawaiisu, as with most other Numic speaking groups, had an egalitarian social and political organization. There was little organization beyond the family, although some families that lived near each other may have cooperated in food procurement activities. There were “chiefs,” but these were men who were acknowledged by others for their wealth and generosity. The chief sponsored celebrations, but did not serve as war leaders. The position was not inherited. The Takic speaking Kitanemuk, and most other Takic groups, had a more complex social organization: “social ranking and prestige systems were certainly well developed” (Blackburn and Bean 1978:567). They lived in larger village groups with a chief, a ceremonial manager, messengers, and ritual specialists.

Prehistory

The project area is in the Tehachapi Mountains and the northwestern Antelope Valley which comprises a western extension of the Mojave Desert. The archaeological time periods discussed here are those used in the Mojave Desert. Three of the time periods defined for the Mojave Desert area by Warren and Crabtree (1986) are of concern for the project area: the Gypsum Period, the Saratoga Springs Period, and the Late Prehistoric Period.

The *Gypsum Period* (2,000 BC to AD 500) is defined by the use of medium to large stemmed and notched dart points including Elko Eared, Elko Corner-notched, Gypsum Cave, and Humboldt Concave Base points. While the projectile points indicate the continued importance of hunting using dart and atlatl (spear-thrower), manos and metates, indicating processing of hard seeds, became common during this period, and the mortar and pestle, used to process pulpy seeds and nuts, such as mesquite pods and acorns, were introduced during this period. The Gypsum Period in the Mojave Desert was a period of more favorable (wetter) climatic conditions. New technology was used in “broadening economic activities” Warren and Crabtree (1986:189). Trade with coastal and Southwestern areas increased, as did ritual activity, as indicated by the rock art in the Coso Range and the split twig figurines found in caves in the Mojave Desert.

The *Saratoga Springs Period* (AD 500 to 1200) begins with the widespread appearance of arrow points in the Mojave Desert at about AD 500. Use of the bow and arrow likely made hunting of large mammals, such as deer and bighorn sheep, more efficient. The earliest arrow points were Rose Spring points and were essentially smaller versions of the Gypsum Period stemmed and notched dart points. Slightly later in the Saratoga Springs Period, Cottonwood Triangular arrow points appeared. These arrow points lacked stems and notches. Manos and metates, and mortars and pestles continued in use. Non-utilitarian artifacts included slate pendants and incised stones. Large villages appeared in the southern Mojave Desert and in the western Antelope Valley during this period. Based on the presence of numerous marine shell beads in the Oro Grande site near Victorville, it appears that these villages were occupied by middlemen engaged in trade between the coast and the Southwest. The Oro Grande site lacks Rose Spring points. Almost all points are Cottonwood Triangular.

The *Shoshonean Period* or *Late Prehistoric Period* (AD 1200 to Contact) sees the addition of Desert Side Notched arrow points and Owens Valley Brownware pottery in the northern Mojave Desert and the addition of Colorado River Buffware pottery in the southern Mojave Desert. Village sites with burials indicating status differences were occupied in the western Antelope Valley until about AD 1650 (Sutton 1980). An infant burial at LAN-488 had 5000 beads, while other adult and infant burials had few artifacts (Sutton 1980:218). People living in these villages may have been intermediaries in an exchange system where obsidian from the north was traded for shell beads from the coast. Warren and Crabtree (1986:191) suggest that the material culture of the northern Mojave Desert during the Late Prehistoric Period corresponds to the ancestors of the Numic speakers and that the material culture of the southern Mojave Desert and Antelope Valley corresponds to the ancestors of Takic speakers, such as the Serrano and the Kitanemuk. This north-south differentiation among linguistic and ethnic groups may extend back into the Saratoga Springs Period when villages developed in the south, presumably among Takic speakers, and not among Numic speakers to the north. The appearance of villages in the south may indicate the beginning of more complex socio-political organization with status differences seen among the Takic speaking Kitanemuk during the historic period, but not among the Numic speaking Kawaiisu to the north.

It has been suggested that the occurrence of Desert Side Notched arrow points and Owens Valley Brown Ware ceramics in the Tehachapis at the beginning of the Late Prehistoric Period circa 1,000 to 1,200 AD indicates the first appearance of the Numic speakers, such as the ancestors of the Kawaiisu, in the area (Macko et al. 1993:16). However, if Moratto is correct about the southern San Joaquin Valley being occupied by Numic speakers prior to AD 1,000, the ancestors of the Kawaiisu may have been in this area prior to the Late Prehistoric Period and may

be indicated by the use of Rose Spring arrow points during the Saratoga Springs Period. Fowler (1972) suggests that both the proto-Numic language and the later southern Numic language originated in the southern Sierra Nevada foothills. If so, then the ancestors of the Kawaiisu may have been in or near the northern Tehachapis for at least 2,000 years (Zigmond 1986:399). In terms of archaeological time periods, they would have been in the northern Tehachapis during both the Saratoga Springs Period and the Late Prehistoric Period.

One archaeological site near the project area has been investigated. CA-KER-1998 is located near the mouth of Oak Creek Canyon south of Monolith (Sutton and Everson 1992). The site is in juniper sage scrub habitat at an elevation of 4,000 feet. The site was discovered when a 1-meter thick midden was seen exposed in a stream cut. The rest of the site is covered by a sand dune. Only two 1-by 2-meter units were excavated. A hearth was found in one of the units. Four manos were found among the hearth stones. The only ground stone tools consisted of manos and metates. No mortars or pestles were present. Flaked stone artifacts consisted of three projectile points, seven bifaces, three cores, and 433 pieces of debitage. Of the projectile points, one was an obsidian Rose Spring point, one was a Cottonwood Triangular point, and one was an obsidian Desert Side-Notched point. The only non-utilitarian artifact was one *Olivella* bead. Of the animal bones that could be identified, most were from hare (jackrabbit). Burned juniper seeds were recovered. The site's investigators (Sutton and Everson 1992) believe it served as a staging area for communal hare drives in the desert to the east of the site. Juniper seeds were likely collected and consumed while at the site. Based on the projectile points, the site was occupied during both the Saratoga Springs Period and the Late Prehistoric Period. Based on information from the desiccation of Koehn Lake to the northeast in the Fremont Valley, the authors (Sutton and Everson 1992) suggest that the dune that covers the site formed during the early part of the Late Prehistoric Period as conditions became drier. They speculate that people moved out of the Mojave Desert and into the Tehachapis at this time because of the hotter drier conditions.

Records Search Results

Prior to initiating the cultural resources fieldwork, a records search was obtained from the Southern San Joaquin Valley Information Center (SSJVIC) at California State University, Bakersfield. The record searches provided information about previously recorded cultural resources and previous surveys in and within one-quarter mile of the wind farm project area.

Very little archaeological investigation has taken place in and around the wind farm project area. Only one aerial survey and two linear surveys have been conducted in or within a quarter mile of the project area. A part of the aerial survey includes a small portion of the northern part of the project area and one of the linear surveys crossed the project area.

There are seven previously recorded cultural resources in or within one-quarter mile of the project area (Table E.3-2). Two of the seven cultural resources are within the project area. All seven cultural resources are prehistoric archaeological sites located in or near the northern part of the project area where the aerial survey and the northern part of the linear survey took place. Five are bedrock mortar sites and two are lithic scatters.

Trinomial / Primary Record #	Historic/ Prehistoric	Site Type	In Project Area	Date Recorded	Recorded by
CA-KER-1196	Prehistoric	Bedrock Mortars	No, 0.15 mile to East	1978	Robinson, R. W.
CA-KER-1197	Prehistoric	Bedrock Mortars	Yes, Northern portion of project area	1978	Robinson, R. W.

Table E.3-2. Cultural Resources Recorded Within One-Quarter Mile of the PdV Wind Farm Project.

Trinomial / Primary Record #	Historic/ Prehistoric	Site Type	In Project Area	Date Recorded	Recorded by
CA-KER-1198	Prehistoric	Bedrock Mortars	No, 0.2 mile to North	1978	Robinson, R. W.
CA-KER-1199	Prehistoric	Bedrock Mortars	No, 0.05 mile to East	1978	Robinson, R. W.
CA-KER-1200	Prehistoric	Bedrock Mortars	Yes, Northern portion of project area	1978	Robinson, R. W.
CA-KER-1201	Prehistoric	Lithic Scatter	No, 0.03 mile to East	1978	Robinson, R. W.
CA-KER-1616	Prehistoric	Lithic Scatter	No, 0.1 mile to East	1983	McIntyre, M.

E.3.4.2 Impacts and Mitigation Measures

Cultural resources in the PdV Wind Energy project area would likely not be subject to Section 106 because it is likely that federal permits would not be required for this project. In addition, the PdV Wind Energy Project would not impact any historical buildings. Only one building is shown in the project area on the 1965 USGS Tylerhorse Canyon Quad. Inspection of recent air photos indicates that this building no longer exists.

PdV Impact C-1: Archaeological sites would be disturbed as a result of the project.

Prehistoric archaeological sites, consisting of bedrock mortars sites and lithic scatters, are likely in the project area above 4,000 feet. Temporary camps similar to CA-KER-1998 might be found along Cottonwood Creek. Historic archaeological sites could consist of mining sites, abandoned ranch facilities, and farmsteads. Mining sites could occur in the northern part of the project area. Ranch facilities and farmsteads would likely be few in number, but could occur in the southern part of the project area. One such site is likely at the location of the building (no longer extant) shown on the 1965 USGS Tylerhorse Canyon Quad.

Archaeological sites could be impacted by project construction activities including construction of foundations for wind turbines, grading access roads, and excavation of trenches for installation of electrical conduit. Construction of an electrical substation and use of an area for a concrete batch plant could also impact prehistoric archaeological sites.

Field survey would be necessary to identify archaeological sites that could be impacted by project construction activities. Additional archaeological fieldwork (and historical research for historical archaeological sites) would be necessary to determine whether the sites are eligible for the CRHR. If the CEQA lead agency for the project determines that a site is eligible, impacts from construction activities would constitute a significant impact. This impact is potentially significant, but can be mitigated to a less-than-significant level (**Class II**) through the implementation of Mitigation Measures PdV C-1a (Perform Archaeological Survey), PdV C-1b (Avoid Archaeological Sites) and PdV C-1c (Evaluate the CRHR Eligibility of Archaeological Sites which cannot be Avoided).

Mitigation Measures for PdV Impact C-1

PdV C-1a Perform Archaeological Survey. A field survey of all areas where ground-disturbing activities could occur as part of the project would be performed by qualified archaeologists in order to identify archaeological sites that could be impacted by project construction activities.

PdV C-1b **Avoid Archaeological Sites.** Identified archaeological sites would be avoided by all project construction activities. Sites to be avoided would be fenced off as environmentally sensitive areas during construction.

PdV C-1c **Evaluate the CRHR Eligibility of Archaeological Sites that cannot be Avoided.** If an archaeological site cannot be avoided, prior to initiating any construction activities in its vicinity, an archaeological test program would be completed in order to provide information necessary to evaluate the site for eligibility for the CRHR. If evaluated as eligible and the CEQA lead agency determines that the site is eligible, an archaeological data recovery program, consisting of hand excavated units, identification and cataloging of recovered material, and a report, would be completed for the portion of the site that would be impacted as a result of project construction activities.

PdV Impact C-2: Undiscovered cultural resources would be disturbed as a result of the project.

Buried or otherwise obscured cultural resources may be present in the project area. This impact is potentially significant, but can be mitigated to a less-than-significant level (**Class II**) through the implementation of Mitigation Measure PdV C-2 (Conduct Construction Monitoring in the Project Area).

Mitigation Measures for PdV Impact C-2

PdV C-2 **Conduct Construction Monitoring in the Project Area.** All ground-disturbing activities in the project area shall be monitored. Cultural resources discovered during monitoring shall be evaluated to determine if they are eligible for the CRHR. The effects of the project on eligible resources shall be determined and appropriate mitigation measures consisting of avoidance or data recovery would be developed and implemented.

E.3.5 Geology, Soils, and Paleontology

E.3.5.1 Affected Environment

Geologic Conditions

As stated in the Project Description for the PdV Wind Project, the proposed wind project site is located on the southeastern flanks of the Tehachapi Mountains and along the western edge of the Mojave Desert. The Tehachapi Mountains are the southern most extension of the Sierra Nevada and separate the Great Valley on the north from the Mojave Desert on the south. The Tehachapi Mountains have been rotated in a westerly direction, to run approximately east-west, by left-lateral strike-slip movement on the Garlock fault (Norris and Webb, 1976).

The proposed project site is located on a northwest to southeast sloping alluvial fan that is incised by several small desert washes. The site is located predominantly on the Tylerhorse Canyon 7.5-Minute USGS Topographic Quadrangle and the topography slopes south towards Antelope Valley from approximately 5,800 feet to 3,100 feet above mean sea level (msl) (Power Partners Southwest, 2005).

The PdV project site is underlain primarily by Older Alluvium consisting of dissected and slightly consolidated fanglomerate, gravel, sand, silt, and clay deposits comprised mostly of granitic detritus (USGS, 1967). Small amounts of Alluvium, consisting of unconsolidated gravel, sand, and silt, are present within the project site along Cottonwood Creek and Tylerhorse Canyon. The northwestern edge of the site is underlain by Mesozoic granitics consisting of quartz monzonite, hornblende diorite, gabbro, and quartz diorite; and small amounts of

metasedimentary rocks of the Bean Canyon Formation which consist of marble, hornfels, schist, phyllite, and quartzite.

Soils. The PdV Wind Project site is underlain predominantly by two main soil associations, the Ramona and Hanford Associations. Characteristics of these soils associations are described in Table E.3-3, below.

Faults and Seismicity

The PdV Wind Project Site is located in a highly active seismic area, near the intersection of the north-northwest trending San Andreas Fault system and the east-west trending Transverse Ranges fault system. The seismicity of the region is characterized by right-lateral strike-slip faulting on the San Andreas, and related faults, left-lateral strike slip on the Garlock Fault, and by vertical, reverse-slip or left-lateral strike-slip

Soil Name	Description	Hazard of Erosion on Roads and Trails*	Risk of Corrosion	
			Uncoated Steel	Concrete
Ramona	Coarse sandy loam on 2-5 and 5-9 percent slopes; sandy loam on 9-30 percent slopes	Moderate to Severe	Moderate	Moderate
Hanford	Coarse sandy loam and gravelly sandy loam on 2-9 percent slopes	Moderate	Low	Low

* Erosion Hazard: Slight – little or no erosion is likely, Moderate – some erosion is likely and that simple erosion control measures are needed, Severe – significant erosion is expected and that major erosion control measures are needed.

displacement on faults in the Transverse Ranges. Regional faults and earthquakes are shown on Figure 5-2, found in Section C.5 (Geology, Soils, and Paleontology) of the Administrative Draft EIR/EIS for the proposed Project.

The northwestern corner of the proposed PdV Wind Project site is located adjacent to the Garlock Fault, and actually lies within a small portion of the Garlock Fault’s associated CGS mapped Alquist-Priolo zone. The site is also crossed by two smaller dip-slip faults that are not currently identified as active, the Tyler Horse Fault crosses the northeast corner of the site and the Cottonwood Fault crosses at a slight angle through the approximate middle of the site lengthwise. These dip-slip faults are mapped approximately perpendicular to the Garlock fault and may be accommodation faults relieving compressional strain between the San Andreas and Garlock Faults. The Kern County zoning map that includes the PdV Wind Project site (Zoning Map 216) maps several Geologic Hazard (GH) Zones along these faults within the PdV project site.

Groundshaking. The CGS Probabilistic Seismic Hazards Mapping Ground Motion web page indicates that the site may experience peak ground accelerations with a 10 percent probability of exceedance in 50 years ranging from 0.3 to 0.5 g. Additionally, numerous large and small earthquakes have occurred in the Project region (see Figure 5-2, mentioned above). The closest significant earthquake to the project site was the 1952 Kern County M7.3 earthquake, which occurred on the White Wolf fault. This earthquake resulted in 12 deaths and \$60 million in property damage, and was felt as far away as Arizona and Nevada.

E.3.5.2 Impacts and Mitigation Measures

The following section describes the potential impacts of the PdV Wind Energy Project to geological and paleontological resources, as determined by the significance criteria discussed in Section C.5.3 for the proposed Antelope-Pardee 500-kV Transmission Project. This section also provides mitigation measures for any potentially significant impacts, in order to reduce potential impacts to less-than-significant levels. Mitigation

measures are described below, with their correlating impact statements, and include the following: Mitigation Measures PdV G-1 (Protect Against Slope Instability), PdV G-2 (Minimization of Soil Erosion), PdV G-3 (Minimize Project Structures on Fault Trace), PdV G-4 (Geotechnical Investigations for Liquefaction and Slope Instability), PdV G-5 (Reduce Effects of Groundshaking), PdV G-6 (Geotechnical Studies for Corrosive Soils), and PdV G-7 (Conduct Paleontologic Survey).

No unique geologic features or geologic features of unusual scientific value for study or interpretation would be disturbed or otherwise adversely affected by the PdV Wind Energy Project. In addition, no known mineral or energy resources are located within the project site, therefore, construction and operation of the PdV Wind Project would not interfere with access to mineral or energy resources. Although the proposed PdV Wind Energy Project site was formerly used for agriculture, it is not currently used for farming. During operation of the PdV Wind Energy Project, the site may support renewed agricultural uses including grazing, pasture use, and minimal dry land farming. Soil types and classifications present at the proposed site for the PdV Wind Energy Project are discussed above, in Table E.3-3.

Only limited shallow grading for access roads and work areas is anticipated and excavations are limited to foundations. Therefore, substantial alteration of the topography is not anticipated. The PdV Wind Energy Project site is located on a gently sloping alluvial fan, which is not likely to experience landslides.

PdV Impact G-1: Excavation and grading during construction activities could cause slope instability.

The proposed PdV Wind Energy Project site is located on a gently sloping alluvial fan and construction is not likely trigger landslides. However, although unlikely, destabilization of natural or constructed slopes could occur as a result of construction activities due to excavation and/or grading operations and could result in slope instability, resulting in landslides, soil creep, or debris flows. Implementation of Mitigation Measure PdV G-1 (Protect Against Slope Instability) prior to construction ensures that potential impacts would be reduced to less-than-significant levels (**Class II**).

Mitigation Measure for PdV Impact G-1

PdV G-1 **Protect Against Slope Instability.** Appropriate support and protection measures shall be implemented to maintain the stability of excavations and protect surrounding structures and utilities to limit ground deformation. Design-level geotechnical investigations performed by the Applicant shall evaluate subsurface conditions, identify potential hazards, and provide information for development of excavation plans and procedures. Appropriate construction methods and procedures, in accordance with State and Federal health and safety codes, shall be followed to protect the safety of workers and the public during drilling and excavation operations. SCE shall document compliance with this measure prior to the start of construction by submitting a report to the CPUC for review and approval. The report shall document the investigations and detail the specific support and protection measures that will be implemented.

PdV Impact G-2: Erosion could be triggered or accelerated by construction or disturbance of landforms.

Excavation and grading for access roads and pads, the wind turbine tower foundations, the power collection system, and the interconnection and substation facility foundations, could loosen soil and cause excessive erosion. Preparation of and compliance with a Construction SWPPP with erosion and water quality protection measures, and implementation of Mitigation Measure PdV G-2 (Minimization of Soil Erosion) prior to

construction ensures that potential impacts from construction related erosion would be reduced to less-than-significant levels (**Class II**).

PdV G-2 Minimization of Soil Erosion. Soil erosion along the maintenance roads should be minimized through implementation of appropriate best management practices, which may include construction of water bars, grading road surfaces to direct flow away from natural slopes, and consistent maintenance of roads and culverts to maintain appropriate flow paths. Silt fences and straw bales installed during construction shall be removed to restore natural drainage during the cleanup and restoration phase of the project.

Access roads shall be built at right angles to streambeds and washes; culverts or rock crossings shall be used to cross streambeds and washes; construction and maintenance shall not occur within streambeds or washes; and provisions for erosion control using check dams and culverts to prevent alteration to natural drainage patterns and to prevent siltation shall be emplaced.

PdV Impact G-3: PdV Wind Project facilities could be damaged by surface fault rupture.

No mapped active faults cross the site. However, minor sympathetic surface fault rupture could occur on the traces of the Cottonwood and Tyler Horse Faults where they cross the site in the event of a large nearby earthquake on the San Andreas, Garlock, or other regional active faults. Anticipated offset in the event of sympathetic surface rupture on these small dip-slip faults would most likely be on the order of several inches to a foot. However, even these small offsets could cause damage to Wind Project structures. Implementation of Mitigation Measure PdV G-3 (Minimize Project Structures on Fault Trace) reduces impacts from fault rupture to less-than-significant levels (**Class II**).

Mitigation Measure for Impact A-3

PdV G-3 Minimize Project Structures on Fault Trace. Perform a geologic/geotechnical study to confirm location of mapped fault traces crossing the project site. Where feasible, wind turbine towers should be placed outside the area of mapped fault traces.

PdV Impact G-4: Project structures could be damaged by landslides, settlement, lateral spreading, and/or surface cracking resulting seismic events.

Due to the close proximity of the active Garlock Fault there is a high potential for seismically induced landslides, settlement, lateral spreading and/or surface cracking within the proposed PdV project site, which will likely cause damage to proposed project structures. Seismically induced ground failure at the site could include lateral spreading, seismic slope instability, and ground-cracking. Lateral spreading could occur along incised drainages/washes where non-cohesive soils could move out along a free-face. Slope instability and ground-cracking can occur anywhere, but would generally be concentrated on hilltops or very close to the active trace of the Garlock Fault. Due to expected depth of groundwater at greater than 100 feet and the coarse semi-consolidated nature of the sedimentary deposits of the site, liquefaction related phenomena are not expected to occur.

Implementation of Mitigation Measure PdV G-4 (Geotechnical Investigations for Liquefaction and Slope Instability) prior to construction would reduce potentially significant impacts for all potential instances of seismically related ground failure for the project to less-than-significant levels (**Class II**).

Mitigation Measure for PdV Impact G-4

PdV G-4 Geotechnical Investigations for Liquefaction and Slope Instability. Since seismically induced ground failure has the potential to damage or destroy project components, the Applicant shall perform design-level geotechnical investigations specifically to assess the potential for liquefaction, lateral spreading, seismic slope instability, and ground-cracking hazards to affect the approved project and all associated facilities. Where these hazards are found to exist, appropriate engineering design and construction measures shall be incorporated into the project designs. Appropriate measures could include construction of pile foundations, ground improvement of liquefiable zones, installation of flexible bus connections, and incorporation of slack in cables to allow ground deformations without damage to structures.

PdV Impact G-5: Project structures could be damaged by strong groundshaking.

Moderate to strong groundshaking should be expected in the event of an earthquake on the faults in the PdV Wind Energy Project area. While the shaking would be less severe from an earthquake that originates farther from the proposed project site, the effects of shaking could be damaging to project structures. It is likely that the project facilities would be subjected to at least one moderate or larger earthquake occurring close enough to produce strong groundshaking in the project area. Implementation of Mitigation Measure PdV G-5 (Reduce Effects of Groundshaking) prior to construction would reduce potential impacts to less-than-significant levels (**Class II**).

Mitigation Measure for PdV Impact G-5

PdV G-5 Reduce Effects of Groundshaking. The design-level geotechnical investigations performed by the Applicant shall include site-specific seismic analyses to evaluate the peak ground accelerations for design of project components. The Applicant shall follow the Institute of Electrical and Electronics Engineers (IEEE) 693 “Recommended Practices for Seismic Design of Substations” which has specific requirements to mitigate the types of damage that equipment at substations have had in the past. These design guidelines shall be implemented during construction of substation modifications. Substation control buildings shall be designed in accordance with the Uniform Building Code for sites in Seismic Zone 4 with near-field factors.

PdV Impact G-6: Buried tower and substation foundations could be damaged by corrosive soils.

Corrosive subsurface soils may exist in places within the proposed PdV project site. Corrosive soils could have a detrimental effect on concrete and metals. Depending on the degree of corrosivity of subsurface soils, concrete and reinforcing steel in concrete structures and bare-metal structures exposed to these soils could deteriorate, eventually leading to structural failures. Implementation Mitigation Measure PdV G-6 (Geotechnical Studies for Corrosive Soils) prior to construction would reduce potential impacts from corrosive soils to less-than-significant levels (**Class II**).

Mitigation Measure for PdV Impact G-6

PdV G-6 Geotechnical Studies for Corrosive Soils. The design-level geotechnical studies performed by the Applicant shall identify the presence, if any, of potentially detrimental soil chemicals, such as chlorides and sulfates. Appropriate design measures for protection of reinforcement, concrete, and metal-structural components against corrosion shall be utilized, such as use of corrosion-resistant materials and coatings, increased thickness of project components exposed to potentially corrosive conditions, and use of passive and/or active cathodic protection systems.

PdV Impact G-7: Excavation for transmission line structures could damage unique or significant fossils.

A paleontologic records search (Power Partners Southwest, 2005) indicates that no paleontologic resources are present at the site. However, the site is ranked with a sensitivity ranking of “high” due to the presence of other known fossil localities nearby in similar sedimentary units. Implementation of Mitigation Measure PdV G-7 (Conduct Paleontologic Survey) would reduce the potential impacts of project construction on paleontological resources to a less-than-significant levels (**Class II**).

Mitigation Measures for PdV Impact G-7

PdV G-7 Conduct Paleontologic Survey. A certified paleontologist would be retained by the Applicant to supervise monitoring of construction excavations and to produce a mitigation plan for the proposed project. Paleontological monitoring would include inspection of exposed rock units and microscopic examination of matrix to determine if fossils are present. The monitor would have authority to temporarily divert grading away from exposed fossils in order to recover the fossil specimens.

If microfossils are present, the monitor would collect matrix for processing. In order to expedite removal of fossiliferous matrix, the monitor may request heavy machinery to assist in moving large quantities of matrix out of the path of construction to designated stockpile areas. Testing of stockpiles would consist of screen washing small samples to determine if significant fossils are present. Productive tests would result in screen washing of additional matrix from the stockpiles to a maximum of 6,000 pounds per locality to ensure recovery of a scientifically significant sample.

Recovered fossils would be prepared to the point of curation, identified by qualified experts, listed in a database to allow analysis, and deposited in a designated repository. At each fossil locality, field data forms would record the locality, stratigraphic columns would be measured, and appropriate scientific samples submitted for analysis.

The certified paleontologist would prepare monthly progress reports and a final mitigation report to be filed with the client, the lead agency, and the repository.

E.3.6 Public Health and Safety

E.3.6.1 Affected Environment

Public health and safety concerns associated with the PdV Wind Energy Project could involve temporary recreational users, such as hikers along the Pacific Crest National Scenic Trail or OHV riders, and a low number of residents located in the general project vicinity. This section addresses public health and safety issues as related to the PdV Wine Energy Project.

E.3.6.2 Impacts and Measures

Due to the relative seclusion of this proposed site, any corona or gap discharges related to high frequency radio and television interference that may be generated by PdV-related infrastructure and operations would not create a harmful impact from interference with radio, television, or other electronic equipment. In addition, no impact is expected to occur from induced currents or shock hazards to the public due to the PdV Wind Energy Project.

PdV Impact PH-1: Soil or groundwater contamination results due to improper handling and/or storage of hazardous materials during construction activities.

During construction operations, hazardous materials such as vehicle fuels, oils, and other vehicle maintenance fluids would be used and stored in construction staging yards. There is potential for incidents involving release of gasoline, diesel fuel, oil, hydraulic fluid, and lubricants from vehicles or other equipment or the release of paints, solvents, adhesives, or cleaning chemicals from construction activities. Improperly maintained equipment could leak fluids during construction operation and while parked. Spills and leaks of hazardous materials during construction activities could potentially result in soil or groundwater contamination. With the implementation of Mitigation Measures PdV PH-1a (Environmental Training and Monitoring Program), PdV PH-1b (Hazardous Substance Control and Emergency Response Plan), PdV PH-1c (Proper Disposal of Construction Waste), and PdV PH-1d (Emergency Spill Supplies and Equipment), which are described below, PdV Impact PH-1 would be reduced to a less-than-significant (**Class II**) level.

Mitigation Measures for PdV Impact PH-1

PdV PH-1a Environmental Training and Monitoring Program. An environmental training program will be established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper Best Management Practice (BMP) implementation, to all construction and maintenance personnel. The training program will emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances) and will include a review of all site-specific plans, including but not limited to, the project's SWPPP, Erosion Control and Sediment Transport Plan, Health and Safety Plan, Waste Characterization and Management Plan, and Hazardous Substances Control and Emergency Response Plan.

A monitoring program will also be implemented to ensure that the plans are followed throughout the period of construction. Best Management Practices, as identified in the project SWPPP and Erosion Control and Sediment Transport Plan, will also be implemented during the construction of the project to minimize the risk of an accidental release and provide the necessary information for emergency response.

PdV PH-1b Hazardous Substance Control and Emergency Response Plan. The project proponent (Power Partners Southwest LLC) shall prepare a Hazardous Substance Control and Emergency Response Plan, which will include preparations for quick and safe cleanup of accidental spills. This plan will be submitted with the grading permit applications to the appropriate oversight agency based on grading location. It will prescribe hazardous-materials handling procedures for reducing the potential for a spill during construction, and will include an emergency response program to ensure quick and safe cleanup of accidental spills. The plan will identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, will be permitted. These directions and requirements will also be reiterated in the project SWPPP.

PdV PH-1c Proper Disposal of Construction Waste. All construction and demolition waste, including trash and litter, garbage, other solid waste, petroleum products and other potentially hazardous materials, will be removed to a hazardous waste facility permitted or otherwise authorized to treat, store, or dispose of such materials.

PdV PH-1d Emergency Spill Supplies and Equipment. Hazardous material spill kits will be maintained on-site for small spills. This shall include oil-absorbent material, tarps, and storage drums to be used to contain and control any minor releases. Emergency-spill supplies and equipment will be kept adjacent to all areas of work and in staging areas, and will be clearly marked. Detailed

information for responding to accidental spills and for handling any resulting hazardous materials will be provided in the project's Hazardous Substances Control and Emergency Response Plan.

PdV Impact PH-2: The project could encounter known preexisting soil or groundwater contamination.

The proposed PdV Wind Energy Project would include some limited excavation activities. Excavation would be confined to the turbine structure foundations and at the new substation facility where infrastructure would be installed, and along the route of underground power collection lines. Each turbine would be mounted on a freestanding, tubular turbine tower foundation, designed for the specific soil conditions at each turbine site (PPS, 2005). The type of foundation used would depend upon the outcome of the engineering design. It is reasonably foreseeable that in order to install each foundation, some excavation would take place at the immediate turbine site. Where possible, as determined by the engineering design, power collection lines and cables would be installed underground, thus requiring some excavation in the form of trenching along the cable routes. Where project terrain or other factors discourage underground installation, power collection lines and cables would be installed aboveground.

Although excavation is expected to be minimal, there is the potential for excavation-related land disturbance activities to result in the disturbance of known preexisting soil or groundwater contamination. Implementation of Mitigation Measure PdV PH-2a (Conduct a Phase I Environmental Site Assessment) and possibly the implementation of Mitigation Measure PdV PH-2b (Conduct a Phase II Environmental Site Assessment), depending upon the outcome of Mitigation Measure PdV PH-2a, would reduce PdV Impact PH-2 to a less-than-significant (**Class II**) level.

Mitigation Measure for PdV Impact PHS -2

PdV PH-2a Conduct a Phase I Environmental Site Assessment. The project proponent (Power Partners Southwest, LLC) shall perform a Phase I Environmental Site Assessment prior to the onset of any construction activities. During the Phase I ESA, all project-related areas of planned ground disturbance shall be thoroughly examined for the presence of environmental contaminants or hazardous materials. If contaminated areas are located during the Phase I assessment, then a Phase II assessment, as described in Mitigation Measure PdV PH-2b shall be required.

PdV PH-2b Conduct a Phase II Environmental Site Assessment. A Phase II investigation shall be conducted for any sites revealed to be potentially contaminated by the Phase I ESA required by Mitigation Measure PdV PH-2a, prior to commencement of construction activities. The Phase II investigation shall include a review of current status from agency files of known contaminated sites, including identification of the concentration and limits of contamination, type of release, and media affected; and collection of samples for laboratory analysis and quantification of contaminant levels within the proposed excavation and surface disturbance areas in areas of known and potential contamination. The scope of the field investigation shall be developed in accordance with the standard of practice for assessment of appropriate worker protection and material handling and disposal procedures. Soil sampling and laboratory testing shall be conducted at locations within the proposed PdV site where known contaminated areas are within 0.25 miles of project facilities or where contaminated areas are determined to pose a threat to the project based on the results of agency file review. The Phase II shall be conducted prior to the start of construction.

Subsurface investigation shall determine appropriate worker protection and hazardous material handling and disposal procedures appropriate for the subject area. Areas with contaminated soil

and/or groundwater determined to be hazardous waste shall be removed by personnel who have been trained through the OSHA recommended 40-hour safety program (29 CFR 1910.120) with an approved plan for groundwater extractions, soil excavation, control of contaminant releases to the air, and off-site transport or on-site treatment. Results of the agency file review and Phase II investigations shall be reviewed and approved by the Kern County Fire Department, Health Hazardous Materials Division and/or DTSC prior to construction. A copy of the DTSC or Health Hazardous Materials Division approval letter must be provided to the CPUC prior to start of construction.

PdV Impact PH-3: The project could encounter unknown preexisting soil or groundwater contamination.

Despite the implementation of Mitigation Measure PdV PH-2a (Conduct a Phase I Environmental Site Assessment) and possibly Mitigation Measure PdV PH-2b (Conduct a Phase II Environmental Site Assessment), there is still the possibility that unknown preexisting soil or groundwater contamination could be encountered during land disturbance activities associated with the proposed PdV Wind Energy Project. The implementation of Mitigation Measure PdV PH-3 (Observe Exposed Soil) would reduce PdV Impact PH-3 to a less-than-significant (**Class II**) level.

Mitigation Measure for PdV Impact PH-3

PdV PH-3 Observe Exposed Soil. During grading, excavation, or other land disturbance activities associated with the PdV Wind Energy Project, the responsible contractor shall observe the exposed soil for visual evidence of contamination. If visual contamination indicators are observed during construction, the contractor shall stop work until the material is properly characterized and appropriate measures are taken to protect human health and the environment. The contractor shall comply with all local, State, and federal requirements for sampling and testing, as well as any subsequent removal, transport, and disposal of hazardous materials. In the event that evidence of contamination is observed, the contractor shall document the exact location of the contamination and shall immediately notify the CPUC's Environmental Monitor, describing proposed actions. A weekly report listing encounters with contaminated soils and describing actions taken shall be submitted to the CPUC.

PdV Impact PH-4: Release of hazardous materials during operation and maintenance activities.

Some of the operation and maintenance activities required for the PdV Wind Energy Project would be conducted remotely, using electronic equipment such as remote sensing devices, automatic shut-down and start-up programs, and digital performance monitors. However, staff will also be employed to perform manual operation and maintenance activities such as inspection of the turbines and turbine structures, inspection of the substation and transmission facilities, and replacement of any necessary parts or materials associated with the infrastructure. Included in this would be replacement of the 80 gallons of oil contained within each turbine on an as-needed basis (PPS 2005). The oil would be regularly tested, according to a program developed by the turbine manufacturer, in order to determine when replacement is needed. Oil that is collected during maintenance activities would be transferred off-site to an approved waste facility for disposal. During the steps taken to test, collect, and replace oil contained within each of the potentially 300 turbines, there is the potential for the accidental spill or release of hazardous materials (oil, lubricants, and/or other fluids). Implementation of Mitigation Measures PdV PH-4 (Spill Prevention and Compliance) and PdV PH-1d (Emergency Spill Supplies and Equipment) would reduce PdV Impact PH-4 to a less-than-significant (**Class II**) level.

Mitigation Measures for PdV Impact PH-4

PdV PH-4 Spill Prevention and Compliance. The project proponent (Power Partners Southwest LLC) shall develop and implement an up-to-date Spill Prevention, Control, and Countermeasures (SPCC) plan for the proposed PdV Wind Energy Project. The SPCC shall require a training program such as that described in Mitigation Measure PdV PH-1a (Environmental Training and Monitoring Program), as well as proper disposal of all construction and operational waste such as described in Mitigation Measure PdV PH-1c (Proper Disposal of Construction Waste), and maintenance of spill materials such as described in Mitigation Measure PdV PH-1d (Emergency Spill Supplies and Equipment). The project proponent shall document compliance by (a) submitting to the CPUC for review and approval an outline of the proposed Environmental Training and Monitoring Program (ETMP), (b) providing a list of names of all operations personnel who have completed the training program, and (c) providing a copy of the SPCC plans to the CPUC for review and approval at least 60 days before the start of operation.

PdV Impact PH-5: Project operation would cause synchronous pacemakers to revert to an asynchronous mode.

As discussed in Section C.6.1.1, there is a possibility that transmission lines may interfere with cardiac pacemakers. In comparing the two general types of pacemakers, asynchronous and synchronous, the asynchronous pacemaker pulses at a predetermined rate whereas the synchronous pacemaker pulses only when its sensing circuitry determines that pacing is necessary. Interference from transmission line electric field may cause a spurious signal on the pacemaker's sensing circuitry. However, when these pacemakers detect a spurious signal, such as a 60 Hz signal, they are programmed to revert to an asynchronous or fixed pacing mode of operation, returning to synchronous operation within a specified time after the signal is no longer detected. Cardiovascular specialists do not consider prolonged asynchronous pacing a problem, since some pacemakers are designed to operate that way. Periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. So, while transmission line electric fields may interfere with the normal operation of some of the older model pacemakers, the result of the interference is generally not harmful and is of short duration (EPRI, 1985 and 1979). Any impact associated with the PdV Wind Energy Project potentially causing synchronous pacemakers to revert to an asynchronous mode would be less than significant with no mitigation required (**Class III**).

E.3.7 Fire Safety

E.3.7.1 Affected Environment

The PdV Wind Energy Project site of 6,275.1 acres in size would be located predominately within the USGS 7.5-minute series Tylerhorse Canyon topographic quadrangle. Tejon Ranch lies to the west and a recreational racetrack lies 12 miles to the east. Portions of areas to the south were used for farming. The site may continue to support agricultural uses including grazing, pasture use, and minimal dry land farming. There are no known established communities in the vicinity.

E.3.7.2 Impacts and Mitigation Measures

The PdV Wind Energy Project would be required to adhere to all applicable federal, State, and/or local laws, regulations, and/or standards relating to fire hazards. Failure to adhere to these applicable plans could result in potential fire safety hazards to the surrounding community and applicable agencies overseeing fire protection and safety of the area. The project proponent would be required to adhere to all applicable fire safety and control regulations of the California Building Standards Laws during construction and design. Compliance with these

applicable regulations would be confirmed upon receipt of a building permit. Therefore, all activities would adhere to CDF Code, APA, and California Building Standard Laws. Furthermore, the presence of fire protection service providers could be required at the site in the event of an accident or fire emergency. During construction, portions of the access roads leading to the PdV Wind Energy Project site could become temporarily blocked by the construction activities. In addition, short-term fire hazard impacts could result during the construction of the PdV Wind Energy Project. The presence of construction equipment (vehicles, generators, tools, etc.) may increase the likelihood of a wildland fire.

PdV Impact F-1: Construction activities could prevent the proper implementation of fire suppression or fire-fighting activities.

Existing roads provide access throughout the PdV Wind Energy Project site. However, construction activities could limit emergency vehicle access within the area where major roadways are located. If adequate access cannot be maintained within these areas as a result of construction activities, the access restriction could result in disruption of emergency services, which would be a potentially significant impact. PdV Impact F-1 would be reduced to a less-than-significant level through the implementation of Mitigation Measure PdV F-1, which would ensure that emergency vehicle access would not be impacted during construction activities. This impact would be less than significant with mitigation incorporated (**Class II**).

Mitigation Measure for PdV Impact F-1

PdV F-1 Ensure Emergency Response Access. The proponent or applicant for the PdV Wind Energy Project shall coordinate with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services shall be notified of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where roads will be blocked, provision shall be ready at all times to accommodate emergency vehicles, such as immediately stopping work for emergency vehicle passage, short detours, and alternate routes in conjunction with local agencies. Traffic Control Plans shall include details regarding emergency services coordination and procedures, and copies shall be provided to all relevant service providers. Documentation of coordination with service providers shall be provided to the CPUC prior to the start of construction.

PdV Impact F-2: Construction activities could increase fire hazards.

Short-term fire hazard impacts could result during the construction of the PdV Wind Energy Project. The presence of construction equipment (vehicles, generators, tools, etc.) may increase the likelihood of a wildland fire. Overgrown and untended vegetation may be present in or near the construction areas and could be ignited by a spark or heat-related incident due to the operation of construction equipment or construction activities. In addition, the presence of construction personnel increases the potential for wildland fires through the increase of human influenced ignition (use of smoking paraphernalia, flammables, etc.). To ensure that fire hazards are minimized within these areas, implementation of Mitigation Measure PdV F-1 (Ensure Emergency Response Access), described above, would reduce short-term fire hazard impacts during the construction of the PdV Wind Energy Project. Impacts would be less than significant with mitigation incorporated (**Class II**).

PdV Impact F-3: Operational activities could increase fire hazards.

When operational, the PdV Wind Energy Project would not pose a potential fire risk. Regular maintenance of the wind turbines and electrical facilities, including adequate brush clearance of the proposed facilities, would ensure potential operational fire hazards would be less than significant with no mitigation required (**Class III**).

E.3.8 Hydrology and Water Quality

E.3.8.1 Affected Environment

The PdV Wind Energy Project would be located approximately 40 miles southeast of Bakersfield and 20 miles northwest of Edwards Air Force Base. This proposed project would be situated in the Tulare Lake Hydrologic Region, which covers approximately 10.9 million acres in total. This region has 12 separate groundwater basins and seven subbasins of the San Joaquin Valley Groundwater Basin, which crosses north into the San Joaquin River Hydrologic Region (DWR 2003). These groundwater basins underlie approximately 49 percent of the Tulare Lake Hydrologic Region and support some of its major cities, including Fresno and Visalia.

Surface water and groundwater quality and use in Kern County are under the jurisdiction of the County of Kern County Engineering and Survey Service (KCESS), which has the authority to make water available for any beneficial use or uses of lands or inhabitants, provide flood control, and prevent contamination of water, among others. The KCESS also has the authority to maintain and monitor pollutant discharges from the County's storm water management infrastructure for the NPDES program. They are the floodplain manager for unincorporated Kern County and they implement and oversee the National Flood Insurance Program (NFIP). The proposed PdV Wind Energy Project is subject to KCESS authority, specifically with regards to pollutant discharge, stormwater management, and compliance with the NFIP.

Water quality in the proposed project area is also under the jurisdiction of the RWQCB, Tulare Lake Hydrologic Region, which implements water quality regulations under the Federal Clean Water Act (CWA) and the State Porter-Cologne Act. The regulations require compliance with the NPDES program. Furthermore, Kern County requires that "...all construction activity shall be performed in accordance with a Stormwater Pollution Prevention Plan (SWPPP) developed and implemented in compliance with requirements of the Kern County Stormwater Management Program, National Pollutant Discharge Elimination System (NPDES) Permit, and the State's General Permit." (Kern County 2006a).

E.3.8.2 Impacts and Mitigation Measures

There is no existing water delivery system or sewage system secured in the proposed project area. A new well would be installed to support construction activities and long-term operation and maintenance activities. The proposed area is currently undeveloped and is not served by a community sewage system. The project includes installation of a septic system and leach line for the operation and maintenance facility. Any wastewater produced during the construction process would be transported by a certified waste hauler to a nearby wastewater treatment plant (PPS, 2005). The area is predominately undeveloped, having been previously used for grazing purposes, and there is currently no stormwater drainage system in place. As described, the project application includes measures to provide water and treat any generated wastewater from the site. Furthermore, construction of the proposed project would require a NPDES permit, including a SWPPP, and a General Construction Permit from the county, all of which would include additional measures to address stormwater runoff and drainage.

Neither construction nor operation and maintenance of the proposed PdV Wind Energy Project would have the potential to cause the failure of a levee or dam. Therefore, people and/or structures would not be exposed to flooding as a result of the failure of a levee or dam caused by PdV. Additionally, the proposed PdV Wind Energy Project would not be located near the coast and would, therefore, not be subject to any tsunami hazards. Similarly, the proposed PdV Wind Energy Project is not situated near any lakes or reservoirs and therefore would not be subject to a seiche, or wave events that occur as the result of atmospheric or seismic conditions.

The proposed project area is characterized by a gently sloping, high desert landscape, which is not expected to be susceptible to mudflow events.

PdV Impact H-1: Soil erosion and sedimentation would occur from construction activities.

Disturbance of soil during construction could result in soil erosion sedimentation, which could potentially result in sediment deposition and elevated turbidity in local water channels. However, due to its location, waterways in the area of the proposed PdV Wind Energy Project are typically dry during most of the year. Furthermore, given the landscape of the proposed area and the minimal excavation required for installation of wind turbines, soil erosion and sedimentation are not expected to be a significant problem. The project area supports native desert plan communities, and the area is entirely bounded by vacant, undeveloped land characterized by a gradually sloping plateau. Extensive preparation of the land, such as grading, filling, and removal of vegetation, would not be required. Due to past agricultural uses, multiple access roads are already in place and would be used to the extent feasible. The effect of soil erosion and sedimentation from construction activities for the PdV Wind Energy Project would be less than significant with no mitigation required (**Class III**).

PdV Impact H-2: Degradation of surface water or groundwater quality due to spills of potentially harmful materials used during construction.

The southern-most portion of the proposed area for the PdV Wind Energy Project spans the Los Angeles Aqueduct. The western-most portion of the proposed area traverses the Cottonwood Creek flood channel, which remains dry throughout most of the year. There are groundwater resources underlying the proposed project area, as well as in the near vicinity of the proposed area. The project area does not overlie shallow groundwater, as defined by the Kern County General Plan (Kern County 2006b, Figure 14). Groundwater in the Tulare Lake Hydrologic Region, which encompasses most of Kern County as well as all of King County and Tulare County, accounts for approximately 41 percent of the region's total annual supply and 35 percent of all groundwater use in the State. In addition, groundwater use in the Tulare Lake Hydrologic Region represents about 10 percent of California's overall supply for agricultural and urban uses (DWR 2003). Groundwater quality through the basin generally meets State primary MCLs for drinking water, with only local impairments due primarily to agricultural runoff.

Construction activities associated with PdV would mainly include grading of access roads to the site, installation of one concrete and steel pad for each turbine, and erection of poles to support the turbines. Other activities would also occur to commission the turbines and connect them to the power distribution system. Some potentially hazardous materials which may be used during these construction activities include: diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, and other fluids. If any of these materials are accidentally released during construction, they could have a detrimental effect on water quality in the area. However, this risk would be minimized to a less-than-significant level through implementation of Best Management Practices (BMPs) included in the required SWPPP. PdV Impact H-2 would therefore be less than significant with no mitigation required (**Class III**).

PdV Impact H-3: Degradation of surface water or groundwater quality resulting from spills of potentially harmful materials used during operational activities.

Operational activities associated with the PdV Wind Energy Project would largely be completed remotely, as the wind turbines would be monitored continuously by a site control and data acquisition system. The turbines would be shut down automatically in the case of malfunction or high winds. A full-time staff of 10-16 employees would be available to conduct maintenance and to attend to problems should they occur. Each turbine would

contain approximately 80 gallons of oil, which would be tested regularly and transferred off-site for disposal in an approved facility when needed (PPS 2005). During operational activities, the accidental spill of potentially hazardous materials could occur in the case of a failed remote monitoring system, or in the case of human error, particularly when replacing fluids in the turbines. However, because both computerized and manual operation and maintenance activities would be in place, the potential for one to malfunction to the degree that an accidental spill would occur and pollute surrounding waters would be less than significant with no mitigation incorporated (**Class III**).

PdV Impact H-4: Disturbance of existing groundwater resources through project-related excavation activities.

Construction activities for the PdV Wind Energy Project would include only minimal grading and excavation, which would be associated with access roads as well as preparation of the turbine pad sites and other necessary infrastructure sites. In addition, as mentioned above, the Kern County General Plan shows that the proposed project area does not overlie any “shallow” groundwater resources, although extensive groundwater is known to occur throughout the area (Kern County 2006b, Figure 14) Therefore, the disturbance of existing groundwater resources through project-related excavation activities would be less than significant with no mitigation required (**Class III**).

PdV Impact H-5: Increased runoff from the creation of new impervious areas.

The perviousness, or permeability, of a substance refers to the degree to which it allows liquid to pass through it. Impervious surfaces seal the soil surface, eliminating the infiltration of precipitation and natural groundwater recharge. As a result, stormwater washes directly across impervious surfaces, raising flood peaks in the area, which causes erosion of stream channels and increased sediment loads. A small amount of new impervious surfaces would be introduced during construction of the proposed PdV Wind Energy Project. Some new impervious areas, such as construction access roads, laydown areas, and marshalling yards, would be temporary whereas as other new impervious areas, such as concrete and steel turbine pads, and certain collection facilities and transmission facilities, would be permanent. The total area of disturbance associated with PdV would be approximately 314 acres, which is roughly 5 percent of the total project area of 6,275 acres. This project is not expected to alter the existing drainage pattern or significantly increase surface runoff due to new impervious areas. Therefore, this impact would be less than significant with no mitigation required (**Class III**).

PdV Impact H-6: Flood hazards would be created through the placement of permanent, aboveground structures in a flood hazard area, a floodplain or a watercourse.

None of the wind turbines associated with the PdV Wind Energy Project would be situated in a watercourse, or flowing body of water. As described under PdV Impact H-2, above, the southern-most portion of the proposed project area spans the Los Angeles Aqueduct and the western-most portion of the proposed area would traverse the Cottonwood Creek flood channel. Turbines associated with PdV would be constructed within a 100-year Flood Zone south of the Los Angeles Aqueduct and along the Cottonwood Creek channel (Kern County 2006c). According the PdV Wind Energy Project application, approximately ten turbines would be located south of the Los Angeles Aqueduct (PPS 2005, Exhibit 2). It is not possible to determine from the available materials how many turbines would be situated along Cottonwood Creek. Because this project is currently in the application phase and the environmental review process has not yet begun (as of March 2006), only very limited information is available regarding the project description. However, it can be reasonably assumed that any aboveground infrastructure associated with the project would be designed and engineered to withstand any mechanical stresses

that may result from turbine location, such as flooding or erosion of the surrounding area. The placement of turbine towers in Flood Hazard Areas is not expected to cause diversion of flows or increased flood risk for adjacent property. According to FEMA, development is permitted in Flood Hazard Areas, provided that the development complies with local floodplain management ordinances (FEMA 2005). All applicable floodplain management ordinances would be fully complied with, in accordance with FEMA's regulations on development in Flood Hazard Areas. Implementation of the construction standards and approvals required by Mitigation Measure H-6 (Aboveground Structures Shall Be Protected Against Flood and Erosion Damage), described below, would ensure that any potential impacts of the placement of transmission towers in Flood Hazard Areas such as south of the Los Angeles Aqueduct and along Cottonwood Creek would be less than significant. Therefore, PdV Impact H-6 for the PdV Wind Energy Project would be less than significant with mitigation incorporated (**Class II**).

Mitigation Measure for PdV Impact H-6

PdV H-6 Aboveground Structures Shall Be Protected Against Flood and Erosion Damage. Aboveground project features such as turbine towers and substations shall be placed outside the current and reasonably expected future flow path of watercourses, unless an engineering analysis, reviewed and approved by the CPUC and local jurisdiction authority demonstrates that watercourse avoidance is not practicable, and that appropriate measures, such as tower anchoring against stream scour, installation of bank protection, or raising foundation levels, have been taken into account to identify and prevent potential flooding and erosion hazards. The project applicant (Power Partners Southwest, LLC) shall document to the CPUC and local jurisdictions at least 60 days before the start of construction which structures, if any, would potentially be in flow paths and what protective measures are proposed. An assessment of the reasonably expected future flow path of a watercourse would take into account local topography and soils, past known erosion or meanders of a watercourse, and erosion trends exhibited by the stream.

E.3.9 Land Use and Public Recreation

E.3.9.1 Affected Environment

The PdV Wind Energy Project would be located in southeastern Kern County approximately 4.7 miles north of Los Angeles County, 15.7 miles west of State Route 14, and less than 0.2 miles southeast of the Tehachapi Mountains. The project would be constructed on 6,275 acres of private land in an unincorporated portion of Kern County. The nearest community to the project would be the communities of Rosamond and Mojave, located approximately 15 miles east-southeast, and 16.5 miles northeast, respectively.

The PdV project site is characterized by open space, with the predominant land uses being agricultural and recreational activities. The following is a discussion of the existing land uses that would be located within the vicinity of the project.

Agricultural Land Uses

There are a variety of agricultural land classifications found in the vicinity of the PdV Wind Energy Project. The project would be located across Grazing Land, with Nonirrigated Farmland located immediately north and northwest of the project. The nearest designated Farmland² is Prime Farmland, located approximately three miles south of the PdV site. Farmland of Statewide Importance and Unique Farmland are also located approximately 5.9 miles and 6.7 miles southeast of the proposed site, respectively.

² "Farmland" is defined by the DOC as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

The PdV Wind Energy Project would be located across approximately 13 Williamson Act parcels that are designated as either Prime Agricultural Land³ or Non-Prime Agricultural Land.⁴ Williamson Act lands are also located east and south of the site. The majority of Williamson Act lands in the vicinity of the proposed PdV project extend west of the site through the Tehachapi Mountains and Tejon Ranch.

Public Recreational Land Uses

Four recreational facilities are located within ten miles of the proposed site for the PdV Wind Energy Project. The following is a description of these recreational facilities and their location relative to the project site.

- **Pacific Crest National Scenic Trail (PCT).** As stated in Section C.9.1.2 of the Administrative Draft EIR/EIS, the 2,650-mile PCT was designated by Congress in 1968 as one of the first scenic trails in the National Trails System (PCT, 2005). The PdV project would be located across approximately seven miles of the trail as it traverses the southeastern portion of Kern County, southeast of the Tehachapi Mountains.
- **Tejon Ranch Preserve.** The creation of the 100,000-acre Tejon Ranch Preserve has been proposed by the Tejon Ranch Company and the Trust for Public Land (Kelley, 2005). Under an agreement signed by these two organizations, the Trust for Public Land would purchase land within the Tejon Ranch that has been identified for the formation of a preserve. As a part of the preserve, approximately 35 miles of the PCT would be re-routed through a permanent corridor within the backcountry area of the Tejon Ranch; this corridor would be incorporated into the preserve (Tejon Ranch, 2006a).
- **Willow Springs International Motorsports Park.** This 600-acre raceway is located on 75th Street West (off Rosamond Boulevard), approximately 9.5 miles east-southeast of the proposed site. First opened in 1952, the raceway has been designated an official California Point of Historical Interest (Willow Springs, 2006). The raceway attracts motorsports enthusiasts, and hosts weekend events throughout the year in which a number of race car associations participate.
- **Antelope Valley California Poppy State Reserve.** As stated in Section C.9.1.2, the Antelope Valley California Poppy Reserve, a State park, is located 15 miles west of Highway 14, near the City of Lancaster in Los Angeles County, approximately 7.8 miles south of the PdV project. The Poppy Reserve includes over 1,700 acres of protected land. Peak visitation at the Poppy Reserve occurs from March to May of each year (CA State Parks, 2005).

Other Land Uses

Additional land uses are located within 10 miles of the PdV Wind Energy Project. The following are descriptions of these land uses and their locations relative to the project site.

- **Los Angeles Aqueduct.** The PdV project would be located across a portion of the Los Angeles Aqueduct, as it travels through southeastern Kern County, southeast of the Tehachapi Mountains. See Section C.14 (Utilities) for a discussion of the aqueduct.
- **Tejon Ranch.** The 270,000-acre Tejon Ranch is the largest contiguous expanse of land under single ownership (Tejon Ranch, 2006b). The ranch is located to the northeast and adjacent to the proposed PdV project. Historically the ranch has been used primarily for farming and ranching activities. However, the ranch is in the planning stages

³ Land enrolled under a California Land Conservation Act contract that meets any of the following criteria:

- Land that is class I or class II in the NRCS land use capability classification system;
- Land that rates 80 to 100 in the Storie Index Rating system;
- Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the USDA;
- Land planted with fruit or nut-bearing trees, vines, bushes or crops that have a nonbearing period of less than five years and that will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre; and
- Land that has returned from the production of unprocessed agricultural plant production with an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

⁴ Enrolled land that does not meet any of the criteria for classification as Prime Agricultural Land. Most Non-Prime Agricultural Land is used for grazing or non-irrigated crops. However, Non-Prime Agricultural Land may also include other open space uses compatible with agriculture and consistent with local general plans.

for a number of developments, which include the 1,500-acre Tejon Industrial Complex, the master-planned Centennial community, and the Tejon Mountain Village resort community (Tejon Ranch, 2006b). The Tejon Ranch Preserve has also been proposed within the ranch. See above for a discussion of the preserve.

- **Airstrips.** The following airstrips would be located within 10 miles of the PdV site: Skyotee Ranch Airstrip is located approximately 4.8 miles southeast, and Lloyd's Landing Airstrip is located approximately 7.6 miles east of the site.
- **Quarries.** Quarries are located approximately eight miles east of the PdV site. See Section C.5 (Geology, Soils, and Paleontology) for a discussion of mineral resources and potential mining activities at these sites.

Land Uses that are located greater than 10 miles from the PdV Wind Energy Project site include the following:

- **Airports.** Rosamond Skypark is located approximately 13.2 miles east-southeast of the PdV site, and Mojave Airport is located approximately 17.6 miles northeast of the site.
- **Edwards Air Force Base.** Edwards Air Force Base is located approximately 16.4 miles east of the PdV site. The 301,000-acre base extends across Los Angeles, Kern, and San Bernardino Counties, and includes the Air Force Flight Test Center (Global Security, 2006).

Applicable Plans

The PdV Wind Energy Project would be located in unincorporated Kern County, so the Kern County General Plan would be relevant to the project. The following discussion summarizes the county policies that are applicable to the project.

Kern County General Plan. The Kern County General Plan provides long-range guidance to county officials who must make decisions that affect the growth and resources of the unincorporated county jurisdiction (Kern County, 2004). The plan also serves as a guide to the private sector in relating proposed development initiatives to the public plans, objectives, and policies of the county. The following Kern County policies are applicable to the PdV project.

- **Chapter 1.8, Industrial, Policy 3:** The land areas best suited for industrial activity by virtue of their location and other criteria will be protected from residential and other incompatible development.
- **Chapter 1.8, Industrial, Policy 12:** All industrial development equal to or greater than 40 acres in a rural area will require the adoption of a Specific Plan prior to development approval.
- **Chapter 5.4.2, Wind Energy Development, Policy 2:** All wind energy development shall be subject to the development standards of Kern County Zoning Ordinance.

E.3.9.2 Impacts and Mitigation Measures

The PdV Wind Energy Project would not be consistent with the existing zoning of the proposed site, and as such would require an amendment to the Kern County Zoning Ordinance. The proposed site is currently zoned as Exclusive Agriculture (A), Geologic Hazard (GH) combined with "A" zoning, Floodplain (FP) combined with "A" zoning, and Residential Suburban (RS) combined with Platted Lands (PL). To avoid conflicts with the county's zoning ordinance, the proponents of the PdV project have applied for a change of the existing zoning to a Wind Energy (WE) Combining District (PPS, 2005).

The Kern County Board of Supervisors would require a zoning change for the PdV Wind Energy Project site prior to approving the project. The implementation of a zoning change and any subsequent requirements that would be imposed by the county (e.g., approval of a specific plan) would avoid conflicts with applicable land use plans, policies, regulations, or ordinances. With Kern County's approval of the PdV Wind Energy Project and subsequent zoning change, no impacts to plans, policies, regulations, or ordinances would occur. In addition, this approval process ensures consistency of the PdV Wind Energy Project with the Kern County General Plan.

The PdV Wind Energy Project would be located no less than three miles north and 5.9 miles northwest of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. No designated Farmland would be located within or immediately adjacent to the PdV site, and as such, no construction or operational impacts would occur to Farmland. However, the PdV Wind Energy Project would be constructed across Williamson Act parcels. Some of the impact evaluations presented below focus on the agricultural uses that would be located within or immediately adjacent to the proposed PdV site.

In addition to potential agricultural land use impacts, the PdV Wind Energy Project would be located across approximately seven miles of the Pacific Crest National Scenic Trail (PCT). As the Antelope Valley California Poppy State Reserve and the Willow Springs International Motorsports Park are located approximately 7.8 miles south and 9.5 miles east-southeast of the PdV site, respectively, no construction impacts would occur to these recreational resources. The impact analysis below includes discussion of potential construction impacts to the PCT. Additionally, the PdV Wind Energy Project would potentially alter the viewshed of the Antelope Valley California Poppy State Reserve located south of the PdV site. See the Visual Resources discussion in Section E.3.15, below, for an analysis of visual impacts to the Poppy Reserve associated with the PdV Wind Energy Project. No operational impacts would occur to the Willow Springs International Motorsports Park, which is located east-southeast of the PdV site.

PdV Impact LU-1: Construction activities would temporarily disrupt existing residential land uses.

A scattering of rural residences are located within two miles of the PdV Wind Energy Project site. During construction, temporary traffic, noise, and air quality impacts would likely occur to these residences; discussions of these impacts can be found in the Administrative Draft EIR/EIS, in Sections C.2 (Air Quality), C.10 (Noise), and C.13 (Traffic). The PdV Wind Energy Project would involve the construction of between 107 to 300 turbines at the proposed project site. Although construction activities would generate noise levels that may have the potential to temporarily disrupt rural residential land uses, this potential impact would be less than significant with no mitigation required (**Class III**), due to the remote location of the proposed project.

PdV Impact LU-2: Operation would cause long-term disruption of existing residential land uses.

The PdV Wind Energy Project would involve the operation of between 107 to 300 wind turbines that would be a maximum of 400 feet in height (PPS, 2005). The siting of these turbines would permanently alter the existing use of the proposed PdV project area. While existing agricultural and recreational uses would be precluded, no residences are located within the boundaries of the proposed site. As such, the PdV Wind Energy Project would not preclude residential uses. However, operation of the project would permanently alter the viewshed of these residences, which would negatively affect the quality of the residences' current enjoyment of the surrounding community. Analysis of potential impacts related to Socioeconomics and Visual Resources resulting from the PdV Wind Energy Project may be found in Sections E.3.12 and E.3.15, respectively. Overall, permanent disruptions to the use of existing residences would be adverse, but less than significant (**Class III**).

PdV Impact LU-3: Construction activities would conflict with a Williamson Act contract.

The PdV Wind Energy Project would be constructed across 13 Williamson Act parcels classified as Prime Agricultural Land and Non-Prime Agricultural Land. While these Williamson Act parcels are not actively cultivated, they are potentially used for ranching and grazing activities. Construction of the PdV Wind Energy Project would include the equipment, materials, and transportation vehicles associated with erecting between 107

and 300 wind turbines. These activities would temporarily disturb the Williamson Act lands that are located within the PdV project site. A temporary disturbance of these lands would conflict with the associated Williamson Act contracts, creating potentially significant impacts. However, implementation of Mitigation Measure PdV LU-3 (Establish Agreement and Coordinate Construction Activities with Owners of Williamson Act Lands) would reduce PdV Impact LU-3 to a less-than-significant level (**Class II**) by requiring the restoration of disturbed land.

Mitigation Measures for PdV Impact LU-3

PdV LU-3 Establish Agreement and Coordinate Construction Activities with Owners of Williamson Act Lands. Sixty (60) days prior to the start of project construction, the project proponent shall secure a signed agreement with property owners of Williamson Act lands that will be used for construction and operation of the project, access roads, staging areas, and other project-related activities. The purpose of this agreement will be to set forth the use of Williamson Act lands during construction in order to: (1) schedule proposed construction activities at a location and time when damage to agricultural operations would be minimized, and (2) ensure that any areas damaged or disturbed by construction are restored to a condition mutually agreed upon by the landowner and the project proponent.

The project proponent shall coordinate with the agricultural landowners in the affected areas where Williamson Act land will be temporarily disturbed in order to determine when and where construction should occur to minimize damage to agricultural operations. If damage or destruction does occur, the project proponent shall perform restoration activities on the disturbed area in order to return the area to a pre-determined condition or the pre-construction condition, whichever option is agreed upon by the landowner and the proponent. This could include activities such as soil preparation, regrading, and reseeding. This measure applies to agricultural landowners with land that is impacted by the PdV project. The project proponent shall provide proof of the continued use of Williamson Act lands through the submittal of a signed agreement between an individual property owner and the proponent.

PdV Impact LU-4: Operation would conflict with a Williamson Act contract.

The PdV Wind Energy Project would be located on Williamson Act lands that have historically been used for grazing and ranching activities. The siting of between 107 to 300 turbines and other associated structures such as access roads would interfere with these existing agricultural activities. A disruption to the agricultural use of Williamson Act lands resulting from operation of the proposed PdV project would be potentially significant. However, implementation of Mitigation Measure PdV LU-4 (Locate Turbines to Avoid Agricultural Operations) would reduce impacts to a less-than-significant level (**Class II**).

Mitigation Measures for PdV Impact LU-4

PdV LU-4 Locate Turbines to Avoid Agricultural Operations. The project proponent shall coordinate with the agricultural landowners in the affected areas where Williamson Act land will be disturbed in order to determine the locations of project components that will minimize damage to agricultural operations. Per the coordination with affected landowners presented in Mitigation Measure LU-3 (Establish Agreement and Coordinate Construction Activities with Owners of Williamson Act Lands), the project proponent shall site turbines and access roads in locations that minimize impacts to agricultural activities.

PdV Impact LU-5: Construction of the project would preclude the use of established recreation areas.

The PdV Wind Energy Project would preclude the use of the PCT as it traverses through the project site. Construction activities would require the closure of this recreational trail in order to ensure public safety during erection of the turbines. As described in the Affected Environment discussion for this section, the Tejon Ranch Company and the Trust for Public Land have proposed the permanent relocation of approximately 35 miles of the PCT to be located within the proposed Tejon Ranch Preserve. This relocation would include the portion of the PCT that currently travels through the PdV site. A temporary preclusion of the PCT as a result of construction activities associated with the PdV project would create significant impacts to recreational users. However, Mitigation Measure PdV LU-5a (Provide Advanced Notification of Construction) is recommended to require the project proponent to prepare a public notice of temporary trail closure and information on the trail detour. Additionally, Mitigation Measure PdV LU-5b (Coordinate Relocation of Pacific Crest National Scenic Trail Prior to Project Construction), described below, would reduce PdV Impact LU-5 to a less-than-significant level (**Class II**).

Mitigation Measures for PdV Impact LU-5

PdV LU-5a Provide Advanced Notification of Construction. During construction, the project proponent or its construction contractor will provide advance notice, between two and four weeks prior to construction, by mail to all residences located within 300 feet of project construction. The announcement will state specifically where and when construction will occur in the area. If construction delays of more than seven days occur, an additional notice will be made, either in person or by mail. Notices will provide tips on reducing noise intrusion, for example, by closing windows facing the planned construction. The project proponent will also publish a notice of impending construction in local newspapers, stating when and where construction will occur. Prior to construction, copies of all notices will be submitted to Kern County for review and approval.

PdV LU-5b Coordinate Relocation of Pacific Crest National Scenic Trail Prior to Project Construction. Prior to construction of the PdV Wind Energy Project, the project proponent shall coordinate with the Tejon Ranch Company and the Trust for Public Land to verify that the PCT has been relocated away from the PdV site and is currently accessible to recreationists. If the PCT will not be permanently relocated through the Tejon Ranch Preserve prior to construction of the PdV Wind Energy Project, the project proponent shall establish a temporary detour of the trail to avoid hazardous construction areas.

PdV Impact LU-6: The project would contribute to the long-term loss or degradation of recreational facilities.

The PdV Wind Energy Project would be sited across approximately seven miles of the PCT. The project would involve the operation of no less than 107 turbines and as many as 300 turbines that would be potentially 400 feet in height. As such, operation of the PdV project would significantly change the open space and rural character of the existing site to an industrial land use.

Given the current location of the PCT, operation of the PdV project would significantly contribute to the long-term loss and degradation of the trail. The Tejon Ranch Company and the Trust for Public Land have proposed the permanent relocation of approximately 35 miles of the PCT to be located within the proposed Tejon Ranch Preserve. If this relocation were to occur prior to construction of the PdV project, it would avoid any operational impacts to the PCT. However, the Tejon Ranch Preserve has not yet been established, and the future of the proposed PCT relocation is uncertain. While the project proponent could relocate the PCT around the wind

turbines to avoid permanent preclusion of the trail, the PdV Wind Energy Project would change the natural or scenic quality of the PCT, creating significant, unavoidable impacts to recreational users of the trail (**Class I**). No mitigation has been identified that would reduce impacts to a less-than-significant level.

E.3.10 Noise

E.3.10.1 Affected Environment

The proposed PdV Wind Energy Project area is almost entirely undeveloped in a remote area of the South Tehachapi Mountains. The project site includes some limited recreational uses associated with hikers along the Pacific Crest National Scenic Trail (Pacific Crest Trail or PCT), which traverses the site, and by off-road motorists (PPS, 2005). The site is bound on all sides by vacant land (PPS, 2005). Beyond the occasional hiker that would pass through the area, for instance while using the Pacific Crest National Scenic Trail, there are no noise-sensitive receptors in the vicinity of the proposed project site. Other recreational areas in the project vicinity include the Tejon Ranch Preserve, the Willow Springs International Motorsports Park, and the Antelope Valley California Poppy State Reserve. These recreational areas would not be affected by noise generated at the proposed project site. Noise levels at the proposed site may vary significantly depending on the frequency of use of the site by recreational off-road motorists. Noise levels at the site can be expected to be relatively low to moderate, ranging between 45 to 60 dBA Ldn (day- or night-time level of noise).

The Kern County Noise Element identifies goals, policies, and implementation measures that are used to guide development, as related to noise issues. The major purpose of the Noise Element is two-fold: (1) establish reasonable standards for maximum desired noise levels in Kern County and (2) develop an implementation program which could effectively deal with the noise problem (Kern County, 2004). To implement the goals and policies of the Noise Element, Kern County requires proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses (i.e., schools, convalescent and acute care hospitals, parks and recreational areas, and churches) to exterior noise levels in excess of 65 dB Ldn and interior noise levels in excess of 45 dB Ldn (Kern County, 2004). The noise element does not identify any rules or policies that specifically relate to construction noise.

E.3.10.2 Impacts and Mitigation Measures

Construction of the proposed PdV Wind Energy Project would include the use of heavy equipment to build the proposed turbine structures, substation, and other project facilities. It is anticipated that onsite noise levels associated with the construction equipment would range between approximately 70 and 90 dBA. Construction would also cause noise off-site, primarily from commuting workers and from trucks hauling materials to the construction site. The peak noise levels associated with passing trucks and commuting worker vehicles would be approximately 75 dBA at 50 feet.

Based on a noise analysis conducted for a wind farm project in Solano County with similar turbine types, single wind turbine operational noise levels associated with PdV, from 500 feet away from the turbines, is expected to be approximately 48 dBA (Solano County, 2005). Noise from transformers and similar equipment at the proposed substation site can be expected to range between 50 and 60 dBA at a distance of approximately 100 feet.

The proposed PdV Wind Energy Project would not result in excessive exposure of persons to or generation of ground-borne vibration or noise levels. Construction and operations may result in some minor amounts of ground-borne vibration; however, such ground-borne noise or vibration would attenuate rapidly from the source. No impacts related to excessive ground-borne vibration or noise would occur as a result of the project.

PdV Impact N-1: Construction and operation could violate local standards.

Depending on the proposed locations of the wind turbines, substation, and other project facilities, construction and operational noise levels could be more than 65 dBA Ldn at the location of the Pacific Crest Trail. Although the PCT is used by recreational hikers, hikers along the trail would be able to quickly move through the active construction area or past the operating substation and/or wind turbines. Since the trail is not a recreational area where users tend to be confined to a specific area, such as a park, it is anticipated that potential impacts to hikers along the Pacific Crest Trail would occur for only a few minutes as they pass by a noise source. Therefore, impacts would be less than significant and no mitigation would be necessary (**Class III**).

PdV Impact N-2: Substation and wind turbine noise would result in higher ambient noise levels.

Noise levels associated with the proposed wind turbines and substation would likely be approximately 48 dBA at a distance of 500 feet from the Project site and between 50 and 60 dBA at a distance of 100 feet from the Project site. Depending on the orientation of the wind turbines and substation sites relative to the Pacific Crest Trail (PCT), noise levels associated with the project facilities may be audible from the trail. It is reasonably foreseeable that hikers along the PCT would quickly move past the operating turbines and substation, thus avoiding prolonged exposure to operational noise levels of the PdV Wind Energy Project. However, regardless of the intermittent presence of sensitive receptors such as users of the PCT, increased ambient noise levels due to operation of the proposed wind project would be unavoidable. Impacts would therefore be significant and unavoidable (**Class I**).

PdV Impact N-3: Construction activities would result in high levels of noise.

Noise levels associated with onsite construction would range between approximately 70 and 90 dBA and each offsite construction vehicle trip would result in temporary noise levels of up to approximately 75 dBA at 50 feet from the passing vehicle. Depending on the orientation of the wind turbine and substation construction sites relative to the Pacific Crest Trail, construction noise levels may be audible from the trail. However, hikers along the trail would be able to quickly move past the active construction areas, thus avoiding prolonged exposure to project construction noise levels. Based on satellite images, there appear to be no residential or other noise sensitive receptors immediately adjacent to 170th Street or Rosamond Boulevard in the vicinity of the project area that would be disturbed by project traffic noise (Google, 2006). Impacts would be less than significant and no mitigation measures would be required (**Class III**).

E.3.11 Public Services

E.3.11.1 Affected Environment

The PdV Wind Energy Project site, located in a rural Kern County area of the South Tehachapi Mountains, includes the following public services characteristics.

Fire Protection

The Kern County Fire Department staffs 45 full-time fire stations and one seasonal station. The fire department is broken into 6 Battalions for operational management. Each Battalion covers a large geographical area and includes seven to nine fire stations.

Police Protection

The Kern County Sheriff's Department has roughly 1,050 sworn, non-sworn, and civilian employees. The 452 authorized sworn (peace officer) positions are deployed as deputies in the Bakersfield metropolitan patrol, 14 substations, detentions, detectives and other support positions.

Schools

In 2005, Kern County public schools had a total enrollment of 165,817 in a total of 252 public schools. Within the school districts, the following numbers of schools are available:

- Elementary - 148
- Middle/Junior High - 42
- High School - 29
- Alternative/Community Schools - 26
- K through 12 - 3
- Special Education - 4

E.3.11.2 Impacts and Mitigation Measures

It is assumed that the PdV Wind Energy Project would utilize the Kern County construction workforce, which includes approximately 16,095 workers and makes up nearly 7 percent of the county's workforce (U.S. Census 2000). Because such a large construction workforce is available, neither construction nor operation of the PdV Wind Project is expected to result in an increase in the local population, leading to long-term demands to local public services. Similarly, the PdV Wind Energy Project is not expected to result in any long-term hazards that would place increased demands on emergency service providers. Because operation of the PdV Wind Energy Project would require only minimal operational employees, operation of the wind turbines would not generate any additional population that could exceed the capacity of local public service providers. Therefore, the PdV Wind Energy Project would not increase any demands on schools or lower the level of service for fire protection or police protection in the long term. There would be no operational impacts to existing schools, fire, or police department service capabilities.

Project construction activities, however, could temporarily increase the need for fire protection or police services.

PdV Impact PS-1: Construction activities would temporarily increase demands on fire and police protection.

Because of the large available labor pool in Kern County and nearby areas, few construction workers are expected to temporarily relocate to the area and no new workers would be required for operation of the new transmission line and improved substations. However, temporary construction activities would result in an increase for potential fire hazards and could increase the need for police service due to accidents caused by construction personnel or equipment. The presence of construction equipment (vehicles, generators, tools, etc.) may increase the likelihood of a wildland fire. Overgrown and untended vegetation may be present in or near the construction areas and could be ignited by a spark or heat-related incident due to the operation of construction equipment or construction activities. In addition, the presence of construction personnel increases the potential for wildland fires through the increase of human influenced ignition (use of smoking paraphernalia, flammables, etc.). Therefore, construction of the proposed PdV Wind Energy Project could have the potential to result in a temporary increase in police and fire service calls, but would not result in a significant permanent demand on fire or police facilities serving the area that could affect existing capacities of these facilities serving the area. Impacts would be less than significant with no mitigation required (**Class III**).

E.3.12 Socioeconomics

E.3.12.1 Affected Environment

The PdV Wind Energy Project site, located in a rural area of Kern County, may support agricultural uses including grazing, pasture use, and minimal dry land farming, but there are no known established communities in the vicinity. Table E.3-4 outlines the Year 2000 population and housing characteristics for Kern County.

Table E.3-4. Year 2000 Population Characteristics – Kern County			
Location	2000 Population	2000 Housing	2000 Employment
Kern County	661,645	231,564 (22,912 Vacant – 9.9 %)	232,461 (16,095 – 6.9 % in Construction Trades)

Source: U.S. Census, 2000; Census Lookup

E.3.12.2 Impacts and Mitigation Measures

The proposed PdV Wind Energy Project site does not contain any housing units and would not require the removal or relocation of any residential units or business units. Therefore, no persons or housing would be displaced and no replacement housing would be required.

Construction employment for the PdV Wind Energy Project would include skilled or semi-skilled positions including line workers, welders, heavy equipment operators, surveyors, engineers, utility equipment workers, truck drivers, warehouse workers, clerical workers, and laborers. As indicated in Table E.3-4, Year 2000 Population Characteristics – Kern County, Kern County contains a large construction workforce. The maximum construction workforce required for the proposed PdV Wind Energy Project would likely comprise a small percent of the total Kern County construction workforce. Therefore, no workers are expected to relocate to the area permanently for construction and no new workers are required for operation of the project. The PdV Wind Energy Project would not result in any impacts to the existing local employment conditions.

The PdV Wind Energy Project would not require the removal or relocation of any business uses. Impacts on local businesses could result from visual impacts, vehicular or pedestrian access impacts, land use impacts, or health and safety concerns (such as Electric and Magnetic Fields). Where proposed project impacts are less than significant or have been mitigated to less-than-significant levels, any associated property value impacts are unlikely to be significant.

The PdV Wind Energy Project would be owned, operated, and financed by Power Partners Southwest, LLC. Completion of the PdV Wind Energy Project would result in an increase in electricity transfer to Southern California Edison. The PdV Wind Energy Project would not preclude or necessitate the supply or transfer of electricity between SCE and its customers. Therefore, PdV would result in no impacts to the local economy.

PdV Impact SOC-1: Construction activities could cause a decrease in revenues for agricultural landowners.

The PdV Wind Energy Project site contains agricultural lands that would be impacted as a result of construction activities. These lands are not irrigated or designated as Farmland and, consequently, it is unlikely that project activities would substantially interfere with crop production. Although construction activities could interfere with agricultural operations and reduce agricultural revenues, impacts would be less than significant with no mitigation required (**Class III**).

PdV Impact SOC-2: Operational activities would affect public agency revenue.

Local property tax revenues are a function of tax rates charged within the affected jurisdictions. Power Partners Southwest, LLC, property taxes are expected to increase as a result of the proposed PdV Wind Energy Project. The State of California Board of Equalization (BOE) assesses infrastructure facilities annually. Dispersion of property tax revenue is determined at a local level based upon the location of the taxable property. Any increase in property tax revenue as a result of the proposed project would result in a beneficial impact to the local economy as a result of tax revenue spending.

Therefore, the proposed PdV Wind Energy Project would not result in an adverse change in public resource revenue. Furthermore, PdV would not preclude or limit the operations of any public agency or result in a change in revenue to any public agencies. Potential changes to public agency revenues as a result of the PdV Wind Energy Project would be beneficial (**Class IV**).

PdV Impact SOC-3: Operational activities would affect property values near the project site.

The PdV Wind Energy Project would have the potential for property owners near the project area to develop the perception that their homes would diminish in value because of project implementation. However, it is expected that the PdV would not generate effects that would significantly impact property values. A complete analysis regarding the affect of energy projects on property value is available in Section C.12 (Socioeconomics). Impacts on property values result from visual impacts, or health and safety concerns (such as EMF). These issues and potential impacts associated with the PdV Wind Energy Project are analyzed extensively in their own appropriate sections. Where project impacts are less than significant or have been mitigated to less-than-significant levels, then any associated property value impacts would also be less than significant with no mitigation necessary (**Class III**).

E.3.13 Traffic and Transportation

E.3.13.1 Affected Environment

Regional access to the proposed site for the PdV Wind Energy Project is provided by State Route 14 (Antelope Freeway), which is located approximately 15 miles to the east of the project site and has an average annual daily traffic (AADT) rate of approximately 30,000 (Caltrans, 2006). Local access to the project site can be achieved via Rosamond Boulevard, approximately two miles to the south, and 170th Street, which runs through the project site. Rosamond Boulevard and 170th Street are both under the jurisdiction of Kern County and have AADT levels of approximately 1,400 and 130, respectively.

The nearest public airport to the proposed PdV Wind Energy Project site is Tehachapi Municipal Airport, approximately 10 miles to the north of the site (Kern County, 2005). Twenty miles northwest of the site is the western-most boundary of the Edwards Air Force Base (PPS, 2005). There are no railroad facilities in the vicinity of the project site (Kern County, 2005).

E.3.13.2 Impacts and Mitigation Measures

Based on available information, operations of the proposed PdV Wind Energy Project would be limited to scheduled maintenance of the turbines and substation facilities, which would be anticipated to generate negligible amounts of traffic. Therefore, this analysis focuses on the potential impacts would could occur during construction of the proposed PdV Wind Energy Project.

Based on the application materials submitted to Kern County by Power Partners Southwest, LLC, there is not a need for the closure of any public roads or travel lanes during construction activities associated with the project.

Public roads and travel lanes would be used for routine equipment and material haul trips. The loading and unloading of equipment and materials would take place at the supplier locations and at the project site. No project activities would encroach upon a public roadway or otherwise require the closure of a road or travel lane.

It is anticipated that construction of the proposed PdV Wind Energy Project would not restrict access to driveways or otherwise affect access and parking for the adjacent residences, institutions, businesses, and other uses. The proposed PdV Wind Energy Project would not include any trenching or other excavation in public road ROWs that would impede access to adjacent uses. There is no need for the closure of public roads or travel lanes during construction activities associated with the project. Therefore, construction activities would not interfere with emergency response by ambulance, fire, paramedic, and police vehicles. Construction activities would not disrupt bus or transit services. No portion of the proposed PdV Wind Energy Project would encroach on an existing freight or passenger railroad ROW. There would be no impact on local rail operations associated with the construction of the proposed project. The proposed PdV Wind Energy Project would not result in the closure of any public sidewalk or bike paths during construction activities associated with the project. Therefore, construction activities would not disrupt bus or transit services.

Construction activities associated with the proposed PdV Wind Energy Project would not result in the reduction of the local parking space supply. Construction workers would park personal vehicles at the construction lay down yards located at the project site. There would be no impact on parking supplies associated with the construction of the proposed project. Finally, no transportation projects have been identified that would conflict with the proposed PdV Wind Energy Project.

PdV Impact T-1: Construction traffic would result in congestion on area roadways.

Construction of the PdV Wind Energy Project would generate additional traffic on regional and local roadways. Construction worker commute trips, project equipment deliveries, and hauling materials would increase existing traffic volumes in the project area, particularly along Rosamond Boulevard and 170th Street. Workers commuting to construction sites would increase traffic in the project area. It is estimated that the daily project workforce would consist of approximately 100-200 workers over the construction period. Haul truck traffic would include trucks carrying equipment and materials, such as turbines, turbine towers, substation equipment, etc. The exact number of daily trips and truck routes are not known at this point; however, it is estimated that several dozen haul trips per day would be required on public roads. The project is proposed to include an onsite concrete batch plant, which would limit the amount of daily haul trips on public roads required for the project.

The project-related commute traffic and construction truck/equipment activity is expected to be dispersed throughout the day. Traffic volumes in the project area are generally low and could easily accommodate the extra project-related traffic, therefore not creating significant impacts. Impacts related to the construction traffic would be temporary and would be considered less than significant with no mitigation required (**Class III**).

PdV Impact T-2: Construction vehicles and equipment could damage road ROWs.

There is the potential for unexpected damage to occur on features in road ROWs due to the operation of construction vehicles and equipment. Implementation of Mitigation Measure PdV T-2 (Repair Damaged Road ROWs) would reduce PdV Impact T-2 to less-than-significant levels (**Class II**).

Mitigation Measure for Impact PdV T-2

PdV T-2 Repair Damaged Road ROWs. If damage to roads, sidewalks, and/or medians (including irrigation systems for landscaped medians) occurs, the Applicant will coordinate repairs with the affected public agencies to ensure that any impacts are adequately repaired. Roads disturbed by construction activities or construction vehicles shall be properly restored to ensure long-term protection of road surfaces.

PdV Impact T-3: Project structures could affect aviation activities.

There are no public use airports in the immediate vicinity of the PdV Wind Energy Project area. However, the project would include turbines that would be up to 400 feet above the ground surface, which could affect aviation activities. However, pursuant to FAA guidelines, Power Partners Southwest would be required to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager of the FAA Air Traffic Division for review and approval of the project. Adherence to FAA guidelines would insure that operation of the project would not cause a significant impact to aviation activities (**Class III**).

E.3.14 Utilities and Service Systems

E.3.14.1 Affected Environment

The PdV Wind Energy Project site, located in a rural Kern County area, is within the service area of the utility providers identified in Table E.3-5.

Jurisdiction	Utility or Service System Provider*
Kern County	Natural Gas– Southern California Gas Company Electricity– Southern California Edison Water – Kern County Water District; Central Basin Municipal Water District, Wastewater – Kern County Sanitation District Solid Waste Landfills Used – Boron Sanitary Landfill; Arvin Sanitary Landfill; Shafter-Wasco Sanitary Landfill

Table E.3-6 lists the total and remaining capacities of solid waste facilities serving Kern County.

Facility Name	Total Capacity (cubic yards)	Remaining Capacity (cubic yards)	Remaining Capacity (%)	Maximum Throughput (tons/day)
Landfills				
Boron Sanitary Landfill I	1,002,819	208,632	21	200
Arvin Sanitary Landfill	11,464,719	2,246,339	20	800
Shafter-Wasco Sanitary Landfill	11,635,500	7,901,339	68	880

Source: CIWMB, 2005.

E.3.14.2 Impacts and Mitigation Measures

The proposed PdV Wind Energy Project would require a source of water during construction. The project would also generate wastewater during construction. However, relative to the service providers’ existing capacities, the water treatment, wastewater treatment, and solid waste requirements of the PdV Wind Energy Project would be minor. The amount of water required by the PdV Wind Energy Project would be largely dependent on site-specific conditions. It is assumed that where possible, non-potable water would be used for construction purposes.

The PdV Wind Energy Project would not result in impacts to federal, State, and/or local laws, regulations, and/or standards relating to solid waste. Construction of the PdV Wind Energy Project, however, could potentially conflict with State law related to solid waste; these potential impacts are included in the analysis below. In addition, the PdV Wind Energy Project has the potential to conflict with existing utility lines such as water, telecommunications, drainage/sewerage, and other electrical utility lines. However, as required by Section 1, Chapter 3.1 “Protection of Underground Infrastructure,” Article 2 of California Government Code 4216-4216.9,

the project proponent (applicant) is required to contact a regional notification center at least two days prior to excavation of any subsurface installation. This activity would result in Underground Service Alert notifying the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area. Therefore, construction activities associated with the PdV Wind Energy Project would be able to avoid other utilities and would not result in reductions or interruptions of existing utility systems or cause a collocation accident.

PdV Impact U-1: Construction and operational utility and service system demands would change the ability of water utilities and service system facilities to accommodate local demands.

During project construction, water would be required for dust suppression and cleaning of construction equipment. The amount of water required for the PdV Wind Energy Project is unknown at this time. However, water used during project construction would come from a variety of providers, and it is projected that water used during construction would only consume a minimal amount of the annual available supply. Because construction would be temporary and short-term, the quantity of water used for the proposed PdV Wind Energy Project is considered to be relatively minor. Water used during construction would not change the ability of the water suppliers identified in Table E.3-5 to serve Kern County. Once constructed, the PdV Wind Energy Project would require only small amounts of water for washing equipment and other maintenance activities. Therefore, the water demand for construction of the proposed PdV Wind Energy Project would be less than significant to the regional water supply, with no mitigation required (**Class III**).

PdV Impact U-2: Construction and operational utility and service system demands would change the ability of solid waste utilities and service system facilities to accommodate local demands.

The PdV Wind Energy Project would generate waste during construction but not during operation. As identified in Table E.3-6, Kern County is served by a variety of landfills. Due to the number and capacity of landfills serving the project area, capacity for materials generated from construction of the proposed PdV Wind Energy Project is expected to be available. Because the exact amount of both waste material and material recycling is unknown, the total amount of waste requiring landfill disposal is unknown. Construction waste generated by PdV could potentially result in significant impacts to local landfills to serve local demands. To ensure that construction activities would not impact local landfills, Mitigation Measure PdV U-2, as provided below, would require recycling of at least 50 percent of the waste generated. Project operations would not generate solid waste and would therefore not affect existing landfill capacities. Impacts to solid waste facilities could be significant, but could be mitigated to a less-than-significant level (**Class II**).

Mitigation Measures for Impact U-2

PdV U-2 **Recycle Construction Waste.** To comply with the Integrated Waste Management Act of 1989, during construction of the PdV Wind Energy Project, the supervising contractor shall recycle a minimum of 50 percent of the waste generated during construction activities. Following the completion of construction activities, construction contractor shall provide the Power Partners Southwest, LLC, with documentation from the recycling and landfill facilities used to show that the amount of waste recycled was 50 percent or more.

PdV Impact U-3: Construction and operational utility and service system demands would change the ability of stormwater and wastewater utilities and service system facilities to accommodate local demands.

There would be little total change in the amount of runoff resulting from the proposed PdV Wind Energy Project. Wastewater generated during construction would be limited to that generated by construction personnel and would be accommodated by portable toilets brought to staging areas for construction crews. These portable toilets would be emptied into septic tanks or municipal sewage systems. Furthermore, construction related wastewater would be short-term and temporary. Because no operational employees are expected to be needed, operation of the proposed PdV Wind Energy Project substation would not generate wastewater in amounts exceeding the capacity of local facilities. Therefore, generation of wastewater and stormwater as a result of the PdV Wind Energy Project would not result in a significant demand on wastewater facilities serving the area and would not affect existing capacities of wastewater treatment plants serving the area. Impacts would be less than significant with no mitigation required (**Class III**).

PdV Impact U-4: Construction and operational water supply demands would require new or expanded water entitlements or resources.

When water is required, Kern County is served by a variety of sources that should adequately supply the required water. Therefore, short-term and temporary water used during construction would not substantially change the demands of the water suppliers identified in Table E.3-5, and would not require new or expanded water facilities, sources, or entitlements. Once constructed, the proposed project would require only small amounts of water for washing equipment and other maintenance activities. Potable water demands of the PdV Wind Energy Project would have a less-than-significant impact with no mitigation required (**Class III**).

PdV Impact U-5: The amount of waste material recycled during construction activities would not adhere to State standards.

As described in PdV Impact U-2, recycling efforts required by Mitigation Measure PdV U-2 (Recycle Construction Waste), during construction would ensure the PdV Wind Energy Project's compliance with the Integrated Waste Management Act of 1989 and Assembly Bill 939 by requiring recycling of at least 50 percent of waste generated during project construction. With the implementation of Mitigation Measure PdV U-2 (Recycle Construction Waste), as described above, any significant impacts would be reduced to a less-than-significant level (**Class II**).

E.3.15 Visual Resources

E.3.15.1 Affected Environment

The proposed site for the PdV Wind Energy Project is 6,275.1 acres in size, located in a rural Kern County area of the South Tehachapi Mountains. Total project disturbance is not expected to exceed 5 percent of the total project area. The project area is surrounded by undeveloped desert scrub, and there is history of grazing and farming in the area, but the landscape is mostly undeveloped. An on-site analysis of visual resources was not conducted and this visual analysis was prepared using existing available data.

The proposed location for the PdV Wind Energy Project is in a remote, mountainous area of the South Tehachapi Mountains, in Kern County. Tejon Ranch lies to the west and a recreational racetrack lies 12 miles to the east. Portions of areas to the south were used for farming.

Existing scenic vistas in the proposed project area include the Tehachapi Mountain Range and the adjacent Mojave Desert. The only major road from which the proposed project is expected to be visible is Highway 138,

which is located about 10 miles south of the project site. Highway 138 is not a designated State scenic highway. There is one state-designated scenic highway (State Route 14) located 20 miles northeast of the project site. There are also two highways that are eligible, but not yet designated, as scenic highways (Interstate 395 and State Route 58), both located 20 miles northeast of the project area.

There are two structures within the project area and ten structures outside the project boundaries, but within the vicinity. Turbines would be visible from these structures.

The Pacific Crest Trail (PCT) traverses the project area. There is currently a proposal to realign the PCT to bypass the project area and traverse the proposed Tejon Ranch Preserve. If adopted, this would reduce or eliminate scenic impacts to PCT users.

The turbines would be 3-blade, active yaw, up-wind design, placed strategically on the sloping topography in turbine rows. Turbines would be mounted on tubular towers, with modern turbine technology suited for topography and site-specific wind profiles. None of the turbines used for the proposed project would exceed 400 feet at the highest point. Final turbine placement is dependent on the results of environmental analyses, including the results of field investigations, topography, wind capacity, other site-specific details. Because the PdV Wind Energy Project is not located on federally owned land, the Visual Sensitivity/Visual Change methodology is appropriate for this visual analysis.

Visual Sensitivity/Visual Change Methodology

The VS/VC methodology used to analyze the proposed PdV Wind Energy Project included a characterization of the visual sensitivity of existing landscapes and the characteristics of existing visual changes apparent in the landscape based entirely on existing written data, not field investigation. Existing conditions of the landscape and viewing circumstances were assumed, leading to conclusions about the landscapes' overall visual sensitivity that will be substantiated by further detailed environmental analyses prepared by others at a later date.

Visual sensitivity consists of three components: visual quality, viewer concern, and viewer exposure, as described in Section C.15.1.1. Project-induced visual change was assumed, based on experiencing visual conditions and landscape changes at other wind farms, such as those along Interstate 10 near Palm Springs. No computerized visual simulations were prepared for the PdV Wind Energy Project. Following the VS/VC method, the affect visual environment is generally described using the following assumptions.

Assumed Viewpoint 1 – Highway 138 Looking North

Visual Quality: moderate. The predominant visual elements are the horizontal lines of the Mojave Desert valley plains and the horizontal line created by the background Tehachapi Mountains. As described in provided written data, the project area is surrounded by undeveloped desert scrub, with a history of grazing and farming in the area, but the landscape is mostly undeveloped. Therefore, vegetation is expected to be generally low, dry grass and scrub or agricultural fields, providing no vegetative screening potential. Due to historical site use for agricultural purposes, there is an existing on-site network of access roads, and due to the flat desert terrain, it is expected that most of the existing roads do not create visual contrasts.

Viewer Concern: low-to-moderate. Travelers along Highway 138 enjoy the predominantly natural setting with distant, panoramic sightlines from the Mojave Desert to the Antelope Valley in the south, Tehachapi Mountains in the north, and Tejon Ranch to the west. The widely scattered ranches have predominantly horizontal structures (one or two story buildings) and predominantly horizontal windbreaks of low-growing trees and evergreen shrubs.

Viewer Exposure: moderate. Because there is no landscape screening by landforms or vegetation, the proposed PdV Wind Energy Project would be highly visible in the background of views from Highway 138. The duration

of view would be brief-to-moderate, the number of potential viewers would be moderate, and the number of viewers would be moderate.

Overall Visual Sensitivity: moderate. For travelers along Highway 138, based on the above assumptions of moderate visual quality, low-to-moderate viewer concern, and moderate viewer exposure, there would be a moderate overall visual sensitivity of the visual setting and viewing characteristics.

Assumed Viewpoint 2 – Pacific Crest National Scenic Trail

Visual Quality: moderate. The predominant visual elements are the horizontal lines of the Mojave Desert valley plains and the horizontal line created by the background Tehachapi Mountains, as described above.

Viewer Concern: high. Travelers on the PCT are expected to have high concern for the scenic qualities of the landscape, and may expect to see and enjoy predominantly natural settings.

Viewer Exposure: high. Because the PCT traverses the proposed project site, and because the site is 6,275.1-acres in size, PCT travelers would have various angles of view and viewing distances, but all views would be of long duration.

Overall Visual Sensitivity: moderate. For travelers on the Pacific Crest Trail, based on the above assumptions of moderate visual quality, high viewer concern, and high viewer exposure, there would be a high overall visual sensitivity of the visual setting and viewing characteristics.

Table E.3-7 illustrates the general relationship between visual sensitivity and visual change. This table was used primarily as a consistency check between individual visual evaluations. Determinations of visual sensitivity and visual change were based primarily on analyst experience and site-specific circumstances.

Table E.3-7. General Guidance for Review of Visual Impact Significance					
Visual Sensitivity	Visual Change				
	Low	Low to Moderate	Moderate	Moderate to High	High
Low	Not Significant ¹	Not Significant	Adverse but Not Significant ²	Adverse but Not Significant	Adverse but Not Significant
Low to Moderate	Not Significant	Adverse but Not Significant	Adverse but Not Significant	Adverse but Not Significant	Adverse and Potentially Significant ³
Moderate	Adverse but Not Significant ²	Adverse but Not Significant	Adverse but Not Significant	Adverse and Potentially Significant	Adverse and Potentially Significant
Moderate to High	Adverse but Not Significant	Adverse but Not Significant	Adverse and Potentially Significant	Adverse and Potentially Significant	Significant ⁴
High	Adverse but Not Significant	Adverse and Potentially Significant ³	Adverse and Potentially Significant	Significant ⁴	Significant

¹ Not Significant – Impacts may or may not be perceptible but are considered minor in the context of existing landscape characteristics and view opportunity.

² Adverse but Not Significant – Impacts are perceived as negative but do not exceed environmental thresholds.

³ Adverse and Potentially Significant – Impacts are perceived as negative and may exceed environmental thresholds depending on project and site-specific circumstances.

⁴ Significant – Impacts with feasible mitigation may be reduced to levels that are not significant or avoided all together. Without mitigation, significant impacts would exceed environmental thresholds.

E.3.15.2 Impacts and Mitigation Measures

According to the PdV Wind Energy Project application for zone change, as submitted to the Kern County Planning Department, the proposed site was selected for the following reasons: sufficient wind resource to support the project; access to electrical power transmission lines that can transport the wind energy produced by the project to local and regional energy markets; large tracts of open agricultural lands ideal for wind energy development and allowing for continued land uses (such as grazing and rural residential); existing roads provide access throughout the site; and a comprehensive Wind Energy Combining District Ordinance developed by Kern County. Based on this information, it is assumed that the Kern County Ordinance would discuss visual resources, provide direction for landscape protection and development standards, and that this project would be in compliance with that ordinance. The State has a goal of producing electrical power from renewal sources. Therefore, it is assumed that there would be no conflicts with applicable adopted city, county, State, or federal plans, policies, regulations, or standards applicable to the protection of visual resources.

Because of the great viewing distances involved (more than 40 miles) and the predominant atmospheric conditions (blowing dust, smog, and haze), the proposed PdV Wind Energy Project is not visible from the Angeles Crest Highway, which is the only State scenic highway in the vicinity of the proposed Antelope-Pardee Transmission Project. The only State-designated scenic highway close to the wind project is State Route 14, located approximately 20 miles northeast of the project site. The two State-eligible scenic highways (Interstate 395 and State Route 58) are both located approximately 20 miles northeast of the project area. Because of the viewing distances involved and the predominant atmospheric conditions described above, the proposed wind project would not be visible from these State-designated and State-eligible highways.

The following section describes PdV's impacts to visual resources as determined by the significance criteria described below and, if necessary, provides mitigation measures that would serve to reduce potentially significant impacts to less-than-significant levels.

PdV Impact V-1: Project infrastructure would substantially degrade the visual quality of landscape views as seen from nearby travel routes (Highway 138).

The wind turbines would be 3-blade, active yaw, up-wind design, placed strategically on the sloping topography in turbine rows. The project would provide up to 300 MW of wind energy, using between 107 and 300 turbines. The turbines used would provide between 1 MW and 2.8 MW of energy each. Additional access roads would need to be constructed to the project site. The spacing between turbines in a given row would vary based on the size of the turbine (1 MW or 2.8 MW), with a minimum of one turbine per row and a maximum of 45 turbines per row, with a maximum of 26 rows.

Turbines would be mounted on tubular towers, with modern turbine technology suited for topography and site-specific wind profiles. None of the turbines used for the proposed project would exceed 400 feet at the highest point. Final turbine placement is dependent on the results of environmental analyses, including the results of field investigations, topography, wind capacity, other site-specific details. The visual effects of these wind turbines would be pronounced and would create significant changes in the rural agricultural character of the existing landscape, as seen from Highway 138, approximately 10 miles away. Implementation of Mitigation Measure PdV V-1 (Coat Surfaces with Appropriate Colors) would help to reduce PdV Impact V-1. However, this impact would still be significant and unavoidable (**Class I**).

Mitigation Measures for PdV Impact V-1

PdV V-1 Coat Surfaces with Appropriate Colors. For structures that are visible from sensitive viewing locations, the PdV Wind Energy Project Applicant shall apply surface coatings with appropriate colors and finishes to most effectively blend the structures with the visible backdrop landscape. For structures that are visible from more than one sensitive viewing location, if backdrops are substantially different when viewed from different vantage points, the darker color shall be selected, because dark colors tend to blend into landscape backdrops more effectively than lighter colors, which may contrast and produce glare. At locations where a tubular pole and turbine would be silhouetted against the skyline, non-reflective, light-gray colors shall be selected to blend with the sky. The Applicant shall submit a surface coating plan for the tubular steel poles and any other visible structures, demonstrating compliance with this measure, to the authorizing agency for review and approval at least 60 days prior to the start of construction.

PdV Impact V-2: Project infrastructure would substantially degrade the visual quality of landscape views as seen from the Pacific Crest National Scenic Trail.

According to the PdV Wind Energy Project application for zone change, as submitted to the Kern County Planning Department, there is currently a proposal to realign the PCT to bypass the project area and traverse the proposed Tejon Ranch Preserve. If adopted, this would eliminate scenic impacts to PCT users. If not adopted, there are no mitigation measures available that would reduce potential visual impacts to PCT users below the significant, unavoidable (**Class I**) level.

PdV Impact V-3: The PdV Wind Energy Project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

New tubular poles and three-blade wind turbines would have surface finishes that are white and somewhat reflective, based on experiencing visual characteristics of wind farms near Palm Springs. Structures that are up to 400-foot high and the motion of spinning blades would strongly attract viewers' attention. During certain times of day and from certain viewing angles and distances, the new wind turbines would reflect sunlight, create glare, and draw attention.

Referring to Table E.3-7, General Guidance for Review of Visual Impact Significance, the overall visual change to the daytime landscape would be high and in the context of the existing landscape's moderate visual sensitivity as seen from Highway 138, the resulting visual impacts would be adverse and potentially significant. The proposed PdV Wind Energy Project would create new sources of light that would affect nighttime views. There would be nighttime lighting at maintenance and operation buildings, and perhaps a gated, chain link security fence surrounding the entire facility. Referring to Table E.3-7, General Guidance for Review of Visual Impact Significance, the overall visual change to the nighttime landscape would be high and in the context of the existing landscape's moderate visual sensitivity as seen from Highway 138, the resulting visual impacts would be adverse and potentially significant. Even with the use of mitigation measures, when project lights are used at nighttime, there would be a noticeable aura or glow at outdoor-lighted areas. However, implementation of the following mitigation measures would reduce PdV Impact V-3 to a less-than-significant level (**Class II**).

Mitigation Measures for PdV Impact V-3

PdV V-3a Use Magnetic Coils at Entrance Gate. Instead of motion-activated lighting, the Applicant shall install magnetic coils, or other technology, in the entrance road to each transition station to activate low-level, directional lighting at the locked entrance gate.

PdV V-3b Use Only Low-Level, Directional, Shielded Lighting. In order to illuminate equipment areas within the transition stations, the Applicant shall install only low-level, directional, shielded

lighting sufficient to limit spill-over glare and nighttime sky-lighting. The brightness of station lighting shall be kept relatively low.

PdV V-3c Only Perform Maintenance Activities During Daylight Hours. The Applicant shall perform routine maintenance and repair activities only during daylight hours, thus eliminating the need for nighttime lighting of the transition stations.

E.3.16 Impact and Mitigation Summary

The following table includes a summary of the potential impacts and corresponding mitigation measures that have been identified for each environmental issue area, with regards to the PdV Wind Energy Project.

Table E.3-8. Impact and Mitigation Summary: PdV Wind Energy Project		
Impact	Impact Significance	Mitigation Measures
AIR QUALITY		
PdV A-1: Construction emissions would exceed the KCAPCD regional emission thresholds.	Class II or Class I	PdV A-1a – PdV A-1h
PdV A-2: The project would create objectionable odors.	Class III	-
BIOLOGICAL RESOURCES		
PdV B-1: The project would cause temporary or permanent loss of native vegetation communities.	Class II	PdV B-1a – PdV B-1b
PdV B-2: Invasive and non-native vegetation would be introduced as a result of project-related activities.	Class II	PdV B-1a – PdV B-1b PdV B-2
PdV B-3: The project would cause temporary damage or permanent loss of oak trees.	Class III	-
PdV B-4: The project would result in the loss of foraging habitat for wildlife.	Class I	PdV B-1a – PdV B-1b PdV B-4
PdV B-5: Construction activities and increased vehicular traffic on access roads would disturb wildlife species.	Class III	-
PdV B-6: Construction activities during the breeding season would result in a potential loss of nesting birds.	Class II	PdV B-6
PdV B-7: The project would result in the loss of listed or sensitive plant species.	Class II	PdV B-7
PdV B-8: The project would increase bird and bat mortality due to collisions with wind turbine blades.	Class I	PdV B-8a – PdV B-8b*
PdV B-9: The project would result in the loss of burrowing owls.	Class II	PdV B-9
PdV B-10: The project would result in the loss of special-status amphibian species.	Class II	PdV B-1a, PdV B-10
PdV B-11: The project would result in the loss of special-status reptile species.	Class II	PdV B-1a, PdV B-10
PdV B-12: The project would result in loss of special-status rodent species.	Class II	PdV B-12
PdV B-13: The project would result in alteration of a streambed or discharge of fill into jurisdictional waters.	Class III	-
PdV B-14: Construction of the project would result in the interference with wildlife movements and wildlife nursery sites.	Class II	PdV B-1b, PdV B-6, PdV B-8a, PdV B-9, PdV B-14a, PdV B-14b
PdV B-15: Permanent loss of habitat and habitat fragmentation would occur as a result of project construction.	Class I	PdV B-1b PdV B-15a – PdV B-15b
PdV B-16: The project would conflict with policies or ordinances protecting biological resources.	Class III	-
CULTURAL RESOURCES		
PdV C-1: Archaeological sites would be disturbed as a result of the project.	Class II	PdV C-1a – PdV C-1c
PdV C-2: Undiscovered cultural resources would be disturbed as a result of the project.	Class II	PdV C-2

Table E.3-8. Impact and Mitigation Summary: PdV Wind Energy Project		
Impact	Impact Significance	Mitigation Measures
GEOLOGY, SOILS, AND PALEONTOLOGY		
PdV G-1: Excavation and grading during construction activities could cause slope instability.	Class II	PdV G-1
PdV G-2: Erosion could be triggered or accelerated by construction or disturbance of landforms.	Class II	PdV G-2
PdV G-3: PdV Wind Project facilities could be damaged by surface fault rupture.	Class II	PdV G-3
PdV G-4: Project structures could be damaged by landslides, settlement, lateral spreading, and/or surface cracking resulting seismic events.	Class II	PdV G-4
PdV G-5: Project structures could be damaged by strong groundshaking.	Class II	PdV G-5
PdV G-6: Buried tower and substation foundations could be damaged by corrosive soils.	Class II	PdV G-6
PdV G-7: Excavation for transmission line structures could damage unique or significant fossils.	Class II	PdV G-7
PUBLIC HEALTH AND SAFETY		
PdV PH-1: Soil or groundwater contamination results due to improper handling and/or storage of hazardous materials during construction activities.	Class II	PdV PH-1a – PdV PH-1d
PdV PH-2: Project results in encountering known preexisting soil or groundwater contamination.	Class II	PdV PH-2a – PdV PH-2b
PdV PH-3: Project results in encountering unknown preexisting soil or groundwater contamination.	Class II	PdV PH-3
PdV PH-4: Release of hazardous materials during operation and maintenance activities.	Class II	PdV PH-4
PdV Impact PH-6: Project operation would cause synchronous pacemakers to revert to an asynchronous mode.	Class III	-
FIRE SAFETY		
PdV F-1: Construction activities could prevent the proper implementation of fire suppression or fire-fighting activities.	Class II	PdV F-1
PdV F-2: Construction activities could increase fire hazards.	Class III	-
PdV F-3: Operational activities could increase fire hazards.	Class III	-
HYDROLOGY AND WATER QUALITY		
PdV H-1: Soil erosion and sedimentation would occur from construction activities.	Class III	-
PdV H-2: Degradation of surface water or groundwater quality due to spills of potentially harmful materials used during construction.	Class III	-
PdV H-3: Degradation of surface water or groundwater quality resulting from spills of potentially harmful materials used during operational activities.	Class III	-
PdV H-4: Disturbance of existing groundwater resources through project-related excavation activities.	Class III	-
PdV H-5: Increased runoff from the creation of new impervious areas.	Class III	-
PdV H-6: Flood hazards would be created through the placement of permanent, aboveground structures in a flood hazard area, a floodplain or a watercourse.	Class II	PdV H-6
LAND USE AND PUBLIC RECREATION		
PdV LU-1: Construction activities would temporarily disrupt existing residential land uses.	Class II	PdV LU-1a – PdV LU-1c
PdV LU-2: Operation would cause long-term disruption of existing residential land uses.	Class III	-
PdV LU-3: Construction activities would conflict with a Williamson Act contract.	Class II	PdV LU-3
PdV LU-4: Operation would conflict with a Williamson Act contract.	Class II	PdV LU-4
PdV LU-5: Construction of the project would preclude the use of established recreation areas.	Class II	PdV LU-5a – PdV LU-5b

Table E.3-8. Impact and Mitigation Summary: PdV Wind Energy Project		
Impact	Impact Significance	Mitigation Measures
PdV LU-6: The project would contribute to the long-term loss or degradation of recreational facilities.	Class I	-
NOISE		
PdV N-1: Construction and operation could violate local standards.	Class III	-
PdV N-2: Substation and wind turbine noise would result in higher ambient noise levels.	Class I	-
PdV N-3: Construction activities would result in high levels of noise.	Class III	-
PUBLIC SERVICES		
PdV PS-1: Construction activities would temporarily increase demands on fire and police protection.	Class III	-
SOCIOECONOMICS		
PdV SOC-1: Construction activities could cause a decrease in revenues for agricultural landowners.	Class III	-
PdV SOC-2: Operational activities would affect public agency revenue.	Class IV	-
PdV SOC-3: Operational activities would affect property values near the project site.	Class III	-
TRAFFIC AND TRANSPORTATION		
PdV T-1: Construction traffic would result in congestion on area roadways.	Class III	-
PdV T-2: Construction vehicles and equipment could damage road ROWs.	Class II	PdV T-2
PdV T-3: Project structures could affect aviation activities.	Class III	-
UTILITIES		
PdV U-1: Construction and operational utility and service system demands would change the ability of water utilities and service system facilities to accommodate local demands.	Class III	-
PdV U-2: Construction and operational utility and service system demands would change the ability of solid waste utilities and service system facilities to accommodate local demands.	Class II	PdV U-2
PdV U-3: Construction and operational utility and service system demands would change the ability of stormwater and wastewater utilities and service system facilities to accommodate local demands.	Class III	-
PdV U-4: Construction and operational water supply demands would require new or expanded water entitlements or resources.	Class III	-
PdV U-5: The amount of waste material recycled during construction activities would not adhere to State standards.	Class II	PdV U-2
VISUAL RESOURCES		
PdV V-1: Project infrastructure would substantially degrade the visual quality of landscape views as seen from nearby travel routes (Highway 138).	Class I	PdV V-1
PdV V-2: Project infrastructure would substantially degrade the visual quality of landscape views as seen from the Pacific Crest National Scenic Trail.	Class I	-
PdV V-3: The PdV Wind Energy Project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	Class II	PdV V-3a – PdV V-3c

* Although the identified impact would be significant and unavoidable (Class I) regardless of mitigation, implementation of these mitigation measures would help to reduce the severity of the impact.