

Appendix 1 – Description and Analysis from Draft EIR/EIS

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Appendix 1 – Description and Analysis from Draft EIR/EIS

This document includes two parts excerpted from the Draft EIR/EIS:

1. Description of the La Rumorosa Wind Development Project and Jacumba Substation as defined in Section B of the Sunrise Draft EIR/EIS (January, 2008).
2. Impact analysis from each discipline for the La Rumorosa Wind Development Project and Jacumba Substation (Section D in the Sunrise Draft EIR/EIS)

The section numbers shown below are the sections from the Draft EIR/EIS in which each discussion was originally presented.

Description of SCE La Rumorosa Wind Project

B.6.2.1 SCE La Rumorosa Wind

The project evaluated in this EIR/EIS is called “Rumorosa Wind Developers II” and is a 250 MW wind facility located in Mexico close to the San Diego / Imperial County lines. The project would interconnect to a new substation (presumed to be the Jacumba Substation defined in Section B.6.1.4 above) located in southeastern San Diego County that would be interconnected with the existing 500 kV Southwest Powerlink. The developer has indicated that transmission upgrades would be needed to interconnect the project.

It is assumed, based on current technology, that a 250 MW wind facility would be constructed using 125 2-MW turbines. Assuming that turbines of this size generally require between 5 to 17 acres per turbine, this wind facility would require between 625 and 2,125 acres.

No maps are available to illustrate the specific site and configuration of this project, but Figure B-48 illustrates the general area of the La Rumorosa wind resource area. Figure B-49 maps the quality of wind resources available and Figure B-50 includes photographs of the landscape in the La Rumorosa project area.

Background

La Rumorosa is a small town (pop. 1,615) located in the Municipality of Tecate, in Baja California (Mexico Census, 2005). It is located on Kilometer 78 (Milepost 48) of Mexico Highway 2 that joins Mexicali and Tijuana (Mexicali, 2007). La Rumorosa is situated among the Sierra de Juárez Mountains, an extension of the San Diego Mountains. It borders on the Sonoran Desert, which comprises the majority of the northeastern region of Baja California (GobBC, 2007). Figure B-48 illustrates the approximate location of La Rumorosa and its surrounding area, and the location of the La Rumorosa Substation.

A report published by the National Renewable Energy Laboratory (NREL) in 2004 identifies the La Rumorosa region’s wind resource areas by classifications that range between Wind Classes 3 (Fair) and 7 (Superb) for wind power density at 50 meters (W/m^2) and wind speed at 50 m (m/s) (see Figure B-49). (California Energy Commission, 2005) The NREL drew upon the Kenetech Wind-Power (U.S. Wind-Power) data, as well as Vestas Wind Systems A/S which installed several anemometric towers in the area in 2002-2003. After the State of Oaxaca, the La Rumorosa region has the second highest potential for wind energy in Mexico.

According to press releases, two potential wind projects are currently being considered in La Rumorosa. One project is being considered by Unión Fenosa, a Spanish company, which purchased 50% of the Mexican company Zemer Energía, with the goal of completing a wind project in the La Rumorosa region with the capacity of between 500 MW and 1000 MW (BizNews, 2007). Unión Fenosa is considering selling this wind-power to Pacific Gas & Electric (PG&E) and Southern California Edison (SCE) and has also begun the permitting process to gain access to transmission within California (BizNews, 2007). Unión Fenosa already has use permits for the area and for the exportation of energy, according to their president, Pedro López Jiménez. Unión Fenosa is the third largest independent energy producer in Mexico (BizNews, 2007). The second potential wind project is the “La Rumorosa Wind Energy Projects” (RWEP) and is evaluated in this EIR/EIS as an indirect effect of the Proposed Project. The RWEP is being evaluated because of the agreement that was signed between Sempra Generation and SCE in which Sempra Generation has agreed to sell SCE up to 250 MW of power from the La Rumorosa wind power facility under development (Sempra, 2007).

Mexican Environmental Regulations

The Government of Baja California signed the Environmental Protection Law (Ley de Protección al Ambiente) on November 30, 2001 to complement the already existing Federal Environmental Code (Ley General del Equilibrio Ecológico y la Protección al Ambiente) ratified in 1988. Both laws are dedicated to preserving and protecting the environment, and dictate guidelines for the use of natural resources. In addition, the Federal Environmental Code sets out pollution prevention and control methods for the national territory. Both Mexican and international companies and facilities are subject to Mexican environmental law.

Mexican Electric Commission

The Mexican Federal Electricity Commission (Comisión Federal de Electricidad, or CFE) is responsible for siting and constructing transmission lines throughout Mexico and in Baja California. The CFE is subject to regulations designed to preserve both the environmental and historical integrity of the regions traversed by their infrastructure. The CFE is required to identify any possible implications of their work that may be subject to the Federal Environmental Code (Ley General del Equilibrio Ecológico y la Protección al Ambiente), the Law of Sustainable Forest Development (Ley General de Desarrollo Forestal Sustentable), and the Law of Monuments and Archeological, Artistic, and Historic Zones (Ley Federal Sobre Monumentos y Zonas Arqueológicas, Artísticas e Históricas). An Environmental Impact Statement is required by the Secretary of the Environment and Natural Resources (Secretaría del Medio Ambiente y Recursos Naturales) for any proposed siting and construction of transmission lines or substations, and a Justification/Technical Study is necessary to obtain authorization for any change to forested lands resulting from such works. (CFE, 2007)

La Rumorosa Wind Energy Projects (RWEP)

The project evaluated in this EIR/EIS as an indirect effect of the Proposed Project is the “Rumorosa Wind Energy Projects” (RWEP) also located near La Rumorosa, Baja California. On June 30th, 2007, SEMPRÁ, the parent company of SDG&E, entered into an agreement with Cannon Power Corporation of San Diego to develop a wind farm east of the town of La Rumorosa in the municipality of Tecate. La Rumorosa is approximately 70 miles southeast of San Diego, across the U.S./Mexico border. The RWD Project would create up to 1250 MW of power with up to 625 2 MW wind turbines and would be installed along the eastern side of the Sierra de Juárez Mountains (Sempra, 2007).

Figure B-48. Indirect Action: La Rumorosa Wind Project

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Figure B-49. Indirect Action: Border Region Wind Power
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Figure B-50. Indirect Action: Views from La Rumorosa
[CLICK HERE TO VIEW](#)

RWEP Siting

The specific location of the wind farm would be between the town of La Rumorosa and the US/Mexico border. The design of the wind farm has not been disclosed by Sempra, Cannon, or SCE, so in order to evaluate the potential indirect effects of this project, a hypothetical description has been developed. Wind resources within the chosen site have the maximum energy potential within the Baja California region and range between Class 5 and Class 7 wind potential. Wind farms typically require 5 to 17 acres per MW generated (CEC, 2005), therefore it is assumed that this wind facility would require between 6,250 and 21,250 acres of land. However, wind facility “footprints” (including wind turbines, access roads, and other facility buildings) utilize only about 5 percent of the land on which the system is built, resulting in a footprint of 312.5 to 162.5 acres. The land depicted by Sempra as the location for Phase 1 of the RWEP, is approximately 3,520 acres. Sempra has indicated that in the Phase 1 of the RWEP only 130 to 190 MW of wind energy would be generated, and that the exact location of subsequent phases of the La Rumorosa projects have yet to be determined and that Sempra Generation is currently arranging for additional wind resource properties in the vicinity of La Rumorosa. The land that would be occupied by the RWD is generally characterized by rolling to steep foothills. The area is mostly treeless; however, some coniferous forest occurs in the area and is a highly valued resource.

The design of the wind energy project would require initial site testing and monitoring, followed by engineering of an actual wind facility. SEMPRA has said it could begin delivering wind from the first phase of the RWEP to Southern California Edison as early as 2010, and the future three phases of additional 250 MW wind generation farms is expected to be completed by 2013 (Presidential App.) Although Sempra originally believed the RWD Project would not require significant transmission upgrades but rather could link into the existing SWPL transmission line (Rose, 2007), the Supplemental Presidential Application states that since the original Presidential Permit in December of 2007, CAISO has indicated that either the Sunrise Project or other transmission upgrades would be required to deliver energy from the wind energy development in the La Rumorosa area. The RWD Project, placed in Mexico, would be subject to the Mexican Environmental Regulations.

The 250 MW SEMPRA RWD Project would be located within designated Wind Class 4, 5, 6, and 7 areas illustrated on Figure B-50. The property is located in La Rumorosa, Baja California, next to the communal region of Jácume.

Site Testing and Monitoring

Site monitoring and testing that is done before building a wind project involves the collection of sufficient amounts of meteorological data to accurately characterize the wind regime. Meteorological data, such as data on wind speed and direction, wind shear, temperature, and humidity, are typically collected over a period of at least one year. However, some developers may choose to collect data for as long as 3 years to account for anticipated annual weather variations. The collected data is used to support decisions on whether the wind resources at a site are suitable for development and, if so, the appropriate number, type, and location of wind turbines to be incorporated into the facility design.

The collection of meteorological data requires the erection of meteorological towers equipped with weather instruments. These towers can be as high as 165 feet (50 meters). For purposes of the RWD it is assumed that the alternative sites can be adequately characterized with 10 or fewer towers. Meteorological towers are typically metal, lattice-type structures and many are permanently mounted to their own trailers since they are relatively lightweight. As a result, installation of permanent foundations is not required unless the tower will stay in service during operation of the wind facility. Guy wires may

be necessary for meteorological towers in very windy areas. Signal cables used during the site monitoring and testing phase are not likely to be buried, unless the tower will remain in service during operation of the wind facility. Remote tower sites may require the construction of minimum-specification access roads (i.e., two-track). During the site testing and monitoring phase, the towers would be unattended except for periodic visits by maintenance personnel. At the end of this phase, the temporary towers would be removed. For this analysis, it is assumed that meteorological towers will be made permanent (i.e., improvement of access roads, installation of foundations, and undergrounding of cabling) during construction of the wind facility.

Wind Facility Design

Although site monitoring and testing activities have not been fully completed for the proposed RWD sites, for purposes of this analysis it is assumed that the sites are viable as demonstrated by the NREL report drawing upon the Kenetech Wind-Power data and Vestas Wind Systems A/S data (2002-2003) (CEC, 2005). The RWD Project would include the installation of approximately 125 new 2-MW propeller-type turbines, mounted on tubular towers and utilizing a three-blade upwind nacelle orientation. Alternatively, based on wind conditions and topographical constraints, larger turbines could be used and therefore, less turbines would be required. For analysis of this hypothetical project, the RWD Project is assumed to include the following design and operational elements:

- Maximum rotational speed of turbine rotor blades averaging approximately 20 revolutions per minute (rpm) (compared to the historic turbines' faster rotational speed of 36 to 38 rpm). The rotational speed of a 3.6 MW turbine is variable but averages between 8.5 to 15.3 rpm.
- The turbines would be mounted on enclosed tubular towers. The total height of the turbine and tower structures would likely range from 380 to 440 feet depending on the turbine size, elevation, and topography at each tower location. The rotor-diameter would be approximately 300 feet for a 2 MW turbine and up to 340 feet for a 3.6 MW turbine.
- The total distance from blade tip at the 6 o'clock position to the ground surface would be at least 24 meters, or about 80 feet.
- Siting and spacing of wind turbines depends on site-specific conditions that are influenced by terrain and wind conditions. The ultimate location of turbines would be determined after a detailed analysis of the terrain and wind in the La Rumorosa areas. Turbines would likely be located on ridge-tops and in some areas with sufficient upwind space, multiple rows of turbines could be used. The wake of upwind turbines can substantially diminish the velocity and increase the turbulence at downwind turbines. Where the rows are sufficiently spaced, the losses can be minimized. Crosswind spacing is less likely to diminish turbine productivity. This project would space the turbines in rows between 8 to 10 rotor-diameters apart.
- The new turbines would not require any guy wire support.
- Maintenance access to the nacelle¹ will be in the form of ladders inside the towers, accessed from locked doors at the base of the towers.
- The turbine nacelle and rotor design is 3-bladed, with an upwind active yaw² horizontal-axis configuration, which is the predominant design standard in the wind industry today (Small Wind Energy, 2007).

¹ A nacelle is the body, shell, or casing of a propeller-type wind turbine, covering the gearbox, generator, blade hub, and other parts.

- All turbine interconnect systems will be placed underground.

In addition to the turbine structures, the following facilities would also be required:

- A new **switchyard** would need to be constructed as part of the RWD Project at the eastern end of the proposed site, just west of the La Rumorosa Substation.
- **Connection to Transmission Grid.** A new 230 kV transmission line would be required to connect the RWD switchyard to the existing 500 kV SWPL transmission line, assuming a new substation (the Jacumba Substation) would be constructed. It is assumed the new transmission line would follow the existing Tijuana/Mexicali 230 kV ROW west for 20 miles around the town of La Rumorosa until Luis Echeverria Alvarez, adjacent to the *Las Manantiales* ranch. At this point the new 230 kV line would go north, northeast on a new ROW for 8.7 miles to reach the Jacumba Substation at MP I8-35. The new ROW would follow 7 miles north, northeast in Mexico, passing approximately 1.1 miles west of the existing community of Jácume. The new ROW would be cross the U.S./Mexico border and require 1.7 miles in the United States, passing approximately 1000 feet west of the outskirts of the town of Jacumba (see Figure B-48).
- **Jacumba Substation.** Assuming that the RWD wind power is transmitted to the SWPL via a new 230 kV transmission line a new 20 to 25 acres substation would be constructed north of the town of Jacumba. Figure B-48 shows the approximate location of this substation.
- **Operation and maintenance facility.** A new operation and maintenance facility would need to be constructed as part of the RWD Project. Depending on the geographical separation of the groups of wind turbines, multiple facilities could be required. Each operation and maintenance facility is assumed to be approximately 5,000 square feet plus parking.
- **Main access roads** would be required for construction and to access the turbine areas and various RWD facilities. Spur roads off of the main access roads would also be required to allow access to individual or clusters of turbine sites. Approximately 5 to 10 miles of access roads would be needed depending on the turbine siting.

Construction and Grading

Installation of the new wind turbines associated with the RWD Project would require the grading and construction activities described below.

Upon completion, each turbine pad would occupy approximately a 40-foot by 40-foot site (or approximately 1,600 square feet), including a concrete pad and drain rock surround. During the construction period, relatively flat temporary pads would be constructed at each turbine site to provide a base for construction equipment, including the large crane needed to erect the tower and assemble the turbine. Installation of tower foundations would involve excavations to depths up to 40 feet below grade, with the diameters of excavations being roughly the same as the diameter of the tower base, approximately 15 to 20 feet depending on turbine model selected. Approximately 160 cubic yards of concrete, requiring an average of 6,000 gallons of water, would be required for each tower foundation (BLM, 2005). After backfilling of foundation voids, remaining excavated materials would need to be disposed of off-site or redistributed on the site. Contour grading would be conducted at each new turbine pad location as needed to match construction grade with the existing grade. The temporary area of disturbance for new turbines is estimated to be approximately one to three acres per turbine, or approximately 125 to 375 acres (assuming 2 MW turbines) of which 4.5 acres would be permanent disturbance.

² A yaw is the movement of the tower top turbine that allows the turbine to stay into the wind.

Based on the remoteness of the RWD sites, it may be necessary to construct a temporary concrete batch plant on site, especially if haul distances from existing or specially constructed off-site concrete plants are over an hour away (BLM, 2005). Depending on available materials on site, constituents of concrete (aggregate and sand) may also need to be hauled to the on-site batching plant. Electrical power for the batching plant would be provided by a portable diesel engine/generator set (nominally 125-kW capacity). Up to 10 acres would be required for a typical batching plant. This area would need to be cleared of vegetation and some grading might be required to level the site. The soils at the batch plant would be expected to be heavily compacted as a result of plant activities including associated truck traffic (each wind turbine foundation would require about 18 to 20 concrete-hauling truck trips) for a total of up to 2500 trips. The concrete batch plant would also be utilized for other foundations required for the RWD Project, including the switchyard and operation and maintenance facilities.

New access and spur roads would also be constructed to provide construction and maintenance access to each new turbine site. Access and spur roadways that would be needed for construction vehicle access would be cleared of vegetation and graded to a width of approximately 30 to 40 feet for the construction period, and then restored to widths of 16 to 24 feet once the construction period is complete. Depending on subsurface stratigraphy, surface soils may need to be excavated, and gravel and/or sand may need to be imported to establish a sufficiently stable road base. Engineered storm water control may be necessary, and natural drainage patterns are likely to be altered, at least on a local scale. Final grading plans would be developed pursuant to subsequent building permits, and would be required to be approved by the local government and would be subject to local requirements. The length and resultant disturbance resulting from the improvement of existing access roads and construction of new access and spur roads would be dependant upon the final siting of turbine pads within the RWD Project site.

Laydown areas would also be required for equipment and material staging. The construction of equipment laydown areas would involve the removal of vegetation for the purposes of safety, access, and visibility during lifting operations. Although surface soils may not need to be removed, some regrading might be required to create relatively level areas, and rock and/or gravel are expected to be laid down to give these areas all-weather accessibility and to support the weights of construction vehicles and staged equipment. The number and size of laydown areas will be subject to the construction contractor's discretion, but could reasonably be assumed to be at least 1.4 acres per wind turbine for a total of 175 acres.³

Trenching would be required for the installation of turbine and switchyard interconnection systems. A minimum three foot trench depth is assumed, requiring a 20- to 40-foot construction right-of-way depending upon topography and the presence of other physical obstacles. The length and area of disturbance resulting from turbine and switchyard interconnection installation would be dependent upon the final siting of turbine pads.

A switchyard would be located near the eastern end of the RWD Project site, just west of the La Rumorosa Substation. The switchyard site is expected to result in an approximate total disturbance of two to four acres. Depending upon switchyard siting, construction of new permanent access route might also be required.

Site preparation for one or two new operation and maintenance facilities is assumed, equating to an approximate total disturbance of 1.25 to 1.5 acres, including parking areas. Each operation and maintenance

³ This assumes a 250 ft x 250 ft area for each turbine, or 62,500 square feet. (Maiden Wind Farm, 2002)

nance site would include an approximately 5,000-square-foot storage facility. Depending upon facility siting, construction of new permanent access routes might also be required.

For the meteorological towers that would remain in place during the operation of the RWD Project, construction of permanent foundations and access roads, and undergrounding of cable would be required. Each tower site would occupy approximately a 30-foot by 30-foot area (or approximately 900 square feet), including a concrete foundation, drain rock surround, and guy wires. During the construction period, relatively flat temporary pads would be constructed at each meteorological tower location to allow for construction vehicle access, and foundation and tower installation. The total graded area for permanent towers is estimated to be approximately 1/2 acres per tower, of which 0.25 acres would be permanent disturbance. It is most likely that fuel would be stored on site in portable tanks. These tanks are expected to be staged at or near the laydown areas and resupplied throughout the construction period by commercial vendors. The total volume of fuel (primarily diesel fuel) to be present on site is not expected to exceed 1,000 gallons. No major equipment maintenance is expected to be performed on site on construction equipment, other than maintenance of fluid levels.

A new 230 kV transmission line would be placed above ground for an approximate distance of 20 miles along the existing Tijuana/Mexicali 230 kV ROW, and approximately 8.7 miles of new ROW to connect the RWD switchyard to the existing 500 kV SWPL, at which point the new Jacumba Substation would also need to be constructed.

Standard tubular steel pole (TSP) structures standing approximately 100 to 120 feet tall are assumed for the transmission line. TSP structures would be installed approximately every 700 to 1,200 feet depending on site conditions (i.e., terrain, roadways, utilities; etc.) and transmission line alignment, so the 28.7 miles new transmission line would require approximately 150 to 180 new towers. Construction would involve the installation of foundations, erection of TSP structures, and cable pulling, tensioning, and splicing. A large auger would be used to dig foundation holes for each structure that would be 5 to 7 feet in diameter, and 15 to 30 feet deep. A cage of reinforced steel with anchor bolts would be installed and concrete would be placed in the hole. Cranes would most likely be used to erect the pre-assembled structures; helicopters are also an option. Temporary disturbance around each TSP structure site resulting from construction activity would be approximately 100-foot diameter centered on each new tower; permanent disturbance at the TSP structures sites would be limited to the diameter of the foundations. Additional temporary disturbance would occur as a result of construction access roads and cable pulling, tensioning, and splicing sites. Permanent access roads would also be required for the transmission line. The exact number of access roads, both temporary and permanent, and temporary pulling/tensioning/splicing sites required will be a function of terrain; existing buildings, roadways, utilities, etc.; and transmission line alignment.

The new 230/500 kV substation (the Jacumba Substation) for the 500 kV SWPL transmission line interconnect would also result in the permanent disturbance of approximately 20 acres at approximately MP I8-35 of the Interstate 8 Alternative, about one-half miles north of the town of Jacumba, along the existing SWPL, as illustrated in Figure B-48. While the site has an existing dirt road for access, construction of an expanded permanent access route would also be required.

All temporarily disturbed areas, including crane pads, the outside shoulders of all construction access roads, and interconnect and power line rights-of-way would be re-seeded and reclaimed to native vegetation once the construction period is completed.

The final footprint or permanent disturbance of the RWD Project would be 5 to 10 percent of the total acreage of the RWD Project sites, approximately 37.5 to 212.5 acres (BLM, 2005). This area does not

include the permanent disturbance resulting from the required 230 kV transmission line and substation interconnect to the grid, requiring up to an additional 40 acres.

Construction Personnel and Schedule

It is assumed that construction of the RWD Project would occur within three or more phases to accomplish installation of turbines and associated facilities (access roads, interconnections, switchyard, meteorological towers, and operation and maintenance facilities), construction of the 230 kV transmission line and associated substation, and site restoration. Staffing for the construction of the RWD Project would require approximately 50 to 75 people to construct each phase of the project and an additional 50 people per phase to support overall construction activities. Construction would occur following completion of the environmental review process, approval of a Land Use Permit, should any forest be removed according to Mexican Environmental regulations, and obtaining all other necessary permits for construction. Each phase would take approximately nine to 18 months to complete. According to SEMPRA, construction of all phases would occur prior to 2010.

Operations and Maintenance

Upon completion, approximately 6 or fewer full time on-site employees along with a plant manager would operate the project. Maintenance activities include monitoring operations, securing the site, changing fluids on the turbines, replacing worn parts, and repairing broken equipment. Wastes resulting from wind facility maintenance typically include small amounts of gear oil and lubricating oils from yaw motors or transmission and glycol-based coolants from transmissions equipped with forced-flow radiator cooling loops. Most turbine designers construct their turbines in modular fashion. Thus, it is likely that most major overhauls or repairs of turbine components would involve removing the component from the site to a designated off-site repair facility. Because most towers are equipped with lifting devices of sufficient capacity to lower or raise individual drive train components, a crane should not be needed for such component replacements. In general and with the exception of major overhauls and repairs, maintenance and operations is a low-intensity activity that could be shared with other projects in the area. Major overhauls or upgrades (repowering) of wind turbines would require separate permitting and environmental review.

Impact Analysis for SCE La Rumorosa Wind Project

D.2.19.5 Biological Resources - La Rumorosa Wind Project

On June 30th, 2007, SEMPRA, the parent company of SDG&E, entered into an agreement with Cannon Power Corporation of San Diego to develop a wind farm east of the town of La Rumorosa in the municipality of Tecate. La Rumorosa is approximately 70 miles southeast of San Diego, across the U.S./Mexico border. The RWD project would create up to 250 MW of power with up to 125 2 MW wind turbines and would be installed along the eastern side of the Sierra de Juárez Mountains (Sempra, 2007).

The RWD project includes a 230 kV overhead transmission line from La Rumarosa that would connect with a new Jacumba Substation in the U.S. Twenty miles of the transmission line would occur in Mexico in existing ROW, seven miles of transmission line would occur in new ROW in Mexico, and 1.7 miles of new ROW would be required in the U.S (Figure B-48). The Environmental Setting and Environmental Impacts and Mitigation Measures for the Jacumba Substation are provided in Section D.2.19.4.

Environmental Setting – United States

The RWD project would require 1.7 miles of new ROW in the U.S. This ROW would be on private land and is located in the Colorado Desert bioregion (CERES, 2003). The ROW (based on aerial photograph interpretation) consists primarily of desert scrubs, semi-desert chaparral, and Peninsular juniper woodland and scrub.

Overview of Special Habitat Management Areas. The transmission line would not pass through any special habitat management areas.

Designated Critical Habitat. The new ROW is located within QCB designated critical habitat.

Special Status Plant Species. A list of special status plant species with potential to occur in the new ROW is based on published literature, sources readily available on the Internet, California Natural Diversity Database (CNDDDB) records searches, United States Department of Agriculture (USDA) Forest Service records searches (USDA, 2007), State and federal species lists, and habitat field surveys for the SWPL Alternatives (see Section E.1.2.1; the I-8 Alternative occurs nearby). No listed plant species have potential to occur in the new ROW based on the habitat present. The following non-listed, sensitive plant species have moderate to high potential to occur. For more specific information about the special status plant species and their sensitivity status, see Table E.1.2-1.

- Jacumba milk-vetch
- Rock nettle
- Mexican hulsea
- Pygmy lotus
- Hairy stickleaf
- Desert spikemoss
- Parry's tetracoccus
- Tecate tarplant
- Sticky geraea
- Slender-leaved ipomopsis
- Mountain Springs bush lupine
- Creamy blazing star
- Payson's jewel-flower

Special Status Wildlife Species. A list of special status wildlife species with potential to occur in the new ROW is based on published literature, sources readily available on the Internet, California Natural Diversity Database (CNDDDB) records searches, United States Department of Agriculture (USDA) Forest Service records searches (USDA, 2007), State and federal species lists, and habitat field surveys for the SWPL Alternatives (see Section E.1.2.1; the I-8 Alternative occurs nearby).

The listed QCB has high potential to occur in the new ROW because it occurs in designated critical habitat for the species, it is in USFWS Survey Area 1 for the species, and recent QCB observations (1998 and 2000) were made near Jacumba (USFWS, 2006). The listed barefoot banded gecko has moderate potential to occur based on its range and the habitats present. The highly sensitive golden eagle is not known to nest in the vicinity of this project (Bittner, 2007).

The following non-listed, sensitive wildlife species have moderate to high potential to occur. For more specific information about the special status wildlife species and their sensitivity status, see Table E.1.2-2.

- Silvery legless lizard
- Belding's orange-throated whiptail
- Coastal rosy boa
- Red-diamond rattlesnake
- Northwestern San Diego pocket mouse
- Pallid San Diego pocket mouse
- Jacumba little pocket mouse
- San Diego desert woodrat

- San Diego ringneck snake
- Coronado skink
- Coast (San Diego) horned lizard
- Coast patch-nosed snake
- Sharp-shinned hawk
- Cooper's hawk
- Northern harrier
- White-tailed kite
- California horned lark
- Loggerhead shrike
- Dulzura pocket mouse
- Pallid bat
- Western mastiff bat
- Mexican long-tongued bat
- Townsend's big-eared bat
- Western red bat
- Small-footed myotis
- Fringed myotis
- Long-legged myotis
- Pocketed free-tailed bat
- San Diego black-tailed jackrabbit
- American badger
- Ringtail

Environmental Setting – Mexico

The RWD project would be situated near the town of La Rumorosa in the municipality of Tecate, and 27 miles of 230 kV transmission line would travel from the RWD site in existing ROW to the west and then north toward the U.S./Mexico border. As this portion of RWD project is located in Mexico, vegetation was identified by interpretation of the Baja California flora and fauna listing on the official Baja California website. The special status plant and wildlife species with potential to occur (listed below) were determined based on Mexican government records. La Rumorosa is located in the "California" botanical regions, also referred to as the Mediterranean region, but borders on the Central or Sonorensense Desert. The climate of the California region is similar to the Mediterranean, characterized by mild, relatively humid winters, and warm, dry summers. Fog constitutes an important factor that affects the biological development of many of the organism within the region. The primary native vegetation communities are believed to be chaparral and pine forests.

The chaparral is characterized by shrubs that are continuously green, have small, hard leaves that can resist extreme periods of drought. The chaparral nearest the La Rumorosa region is the high elevation chaparral that is present at elevation greater than 800 meters, bordering the pine forests of the Sierra de Juárez.

Pine forest vegetation is found primarily in the high mountains with cold temperatures, primarily in the Sierra de Juárez and the San Pedro Mártir regions. The Sierra de Juárez is the most extensive forest in this region with over 340,000 hectares or forest (approximately 840,000 acres). The predominant species within the forests are the *Pinus jeffreyi*, *P. monophylla*, and the *P. quadrifolia* which occupy a large area in the La Rumorosa region, as well as in the Southeast of the Sierra de Juárez, the Sierra de Calamaiué, and the Sierra de San Borja. Juniper forests, specifically the *Juniperus Californica*, are also present in the La Rumorosa region, and play an important ecological role.

There are many native species that occur only in Baja California due to its geologic history and period of separation from the rest of the continent. A specific study of the endemic species that are threatened or in danger of extinction has never been completed and the only known approximation of such species has resulted from regional and United States samplings.

Overview of Special Habitat Management Areas. The RWD site and existing ROW are not located in a special habitat management area.

Designated Critical Habitat. Critical habitat is a USFWS designation that does not apply to Mexico.

Special Status Plant Species. The list below presents the rare species; endemic species; and species that are threatened, in danger or extinction, or with special status, that have potential to occur at the RWD site and along the Mexican ROW based on Mexican government records (GobBC, 2007).

Scientific Name	Common Name	Status
<i>Abies Concolor</i>	Abeto blanco	Rare
<i>Pinus Jeffreyi</i>	Pino Negro	Special protection
<i>Pinus lambertiana</i>	Pino dulce	Threatened
<i>Pinus monophylla</i>	Pino piñonero	Special protection
<i>Pinus quadrifolia</i>	Pino cuatro hojas	Special protection
<i>Pinus ponderosa</i>	Pino real o blanco	Threatened
<i>Cupressus Montana</i>	Cedro de San Pedro Mártir	Rare
<i>Juniperus californica</i>	Junipero de California	Rare
<i>Cupressus guadalupensis</i>		In danger of extinction
<i>Echinocereus lindsayi</i>		In danger of extinction
<i>Pinus radiata var. cedrocensis</i>		Threatened
<i>Pinus attenuata</i>	Pino costero	Special protection
<i>Calocedrus decurrens</i>	Pino	Threatened
<i>Pinus coulteri</i>	Pino rojo	Special protection
<i>Cupressus forbesii</i>		Rare
<i>Pinus radiata var. binata</i>		In danger of extinction
<i>Pinus edulis</i>	Piñón prieto	Special protection
<i>Pinus muricata</i>	Pino costero	In danger of extinction
<i>Ferocactus johnstonianus</i>		Rare
<i>Ferocactus acanthodes var. acanthodes</i>	Biznaga	In danger of extinction
<i>Ferocactus chrysacanthus</i>		Threatened
<i>Mamillaria setispina</i>		Rare
<i>Lophocereus schottii forma mickleyanus</i>	Cabeza de viejo	Rare
<i>Mamillaria angelensis</i>		Rare
<i>Cochemiea pondii</i>		Rare

Source: Baja California website.

Special Status Wildlife Species. The list below presents wildlife species that have potential to occur at the RWD site and along the Mexican ROW based on Mexican government records. These species may or may not be of special status in Mexico. The Peninsular bighorn sheep, in the U.S., is federally listed endangered and State (California) listed threatened. Additionally, the QCB and barefoot banded gecko may occur in the RWD project area. The QCB is federally listed endangered in the U.S., and the barefoot banded gecko is State (California) listed threatened.

Scientific Name	Common Name
<i>Crotalus viridis</i>	Western rattlesnake
<i>Crotalus enyo</i>	Rattlesnake
<i>Podicepsa auritus</i>	Horned grebe
<i>Podilymbus podiceps</i>	Pied-billed grebe
<i>Phalarocorax penicillatus</i>	Brandt's cormorant
<i>Plegadis chihi</i>	White-faced Ibis
<i>Cathartes aura</i>	Turkey vulture
<i>Cygnus columbianus columbianus</i>	Whistling swan
<i>Anser albifrons</i>	White-fronted goose
<i>Chen caerulescens</i>	Snow goose
<i>Anas cyanoptera</i>	Cinnamon teal
<i>Anas clypeata</i>	Northern shoveler
<i>Mergus Serrator</i>	Red-breasted merganser
<i>Oxyura jamaicensis</i>	Ruddy duck
<i>Pandion haliaetus</i>	Osprey
<i>Circus cyaneus</i>	Northern harrier
<i>Accipiter cooperii</i>	Cooper's hawk
<i>Falco peregrinus</i>	Peregrine falcon
<i>Charadius wilsonia</i>	Wilson's plover
<i>Charadius montanus</i>	Mountain plover
<i>Tringa flavipes</i>	Lesser yellowlegs
<i>Calidris canutus</i>	Red knot
<i>Zenaida asiatica</i>	White-winged dove
<i>Chordeiles acutipennis</i>	Lesser nighthawk
<i>Aeronautes saxatalis</i>	White-throated swift
<i>Selasphorus rufus</i>	Rufous hummingbird

Scientific Name	Common Name
<i>Dendrocopos scalaris</i>	Ladder-backed woodpecker
<i>Tyrannus verticalis</i>	Western kingbird
<i>Contopus sordidulus</i>	Western wood pewee
<i>Pyrocephalus rubinus</i>	Vermilion flycatcher
<i>Tachycineta thalassina</i>	Violet-green swallow
<i>Corvus brachyrhynchus</i>	American crow
<i>Auriparus flaviceps</i>	Verdin
<i>Campylorhynchus brunneicapillus</i>	Cactus wren
<i>Toxostoma cinereum</i>	"Gray" thrasher
<i>Regulus satrapa</i>	Golden-crowned kinglet
<i>Phainopepla nitens</i>	Phainopepla
<i>Vireo bellii</i>	Bell's vireo
<i>Vermivora celata</i>	Orange-crowned warbler
<i>Pheucticus ludovicianus</i>	Rose-breasted grosbeak
<i>Passerina cyanea</i>	Indigo bunting
<i>Spizella atrogularis</i>	Black-chinned sparrow
<i>Passerculus sandwichensis beldingi</i>	Savannah sparrow
<i>Junco hyemalis caniceps</i>	Gray-headed junco
<i>Quiscalus mexicanus</i>	Great-tailed grackle
<i>Icterus parisorum</i>	Scott's oriole
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Odocoileus hemionus</i>	Mule deer
<i>Urocyon cinereoargenteus</i>	Gray fox
<i>Felis concolor</i>	Mountain lion
<i>Ovis canadensis cremnobates</i>	Peninsular bighorn sheep

Source: Western Birds, 1995.

Environmental Impacts and Mitigation Measures

Section B.6.2.1 describes the construction and operational requirements for the RWD Project. Impacts of the Jacumba Substation are addressed in Section D.2.19.4. The impacts described below are for the 1.7 miles of new transmission line located in the United States; for the wind farm siting, construction, and operation; the new 20 miles of transmission line in existing Mexican ROW, as well as seven miles of transmission line in new Mexican ROW.

Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation (Class I for sensitive vegetation communities, vegetation management, and type conversion; Class III for non-sensitive vegetation communities)

United States. Construction of the RWD project would include grading for 1.7 miles of transmission line and access roads. These construction activities would result in temporary and/or permanent losses of native vegetation that include desert scrub, semi-desert chaparral, and Peninsular juniper woodland and scrub, which are all sensitive vegetation communities. Impacts to sensitive vegetation would be significant according to Significance Criterion 2.a, which states the project would have a substantial adverse effect on a riparian habitat or other sensitive natural community by temporarily or permanently removing it during construction, grading, clearing, or other activities. This impact is not mitigable to less than significant levels (Class I) because adequate mitigation land may not be available to compensate for the impact. Implementation of Mitigation Measures B-1a(CA), B-1c(CA), B-1d, B-1e, B-1f, B-1g, B-1h, B-1i, and B-1j is required to, at least in part, compensate for impacts to sensitive vegetation. Impacts to non-sensitive vegetation communities, should they occur, such as disturbed habitat, developed land, or agriculture, would be adverse but less than significant (Class III).

Mexico. Construction of the RWD project would include grading for wind turbine pads, access roads, an underground power line right-of-way for interconnection systems, a switchyard, a new 230 kV transmission line for approximately 20 miles along an existing ROW and approximately seven miles along new ROW, maintenance facilities, and meteorological tower pads. All of these construction activities would result in temporary and/or permanent losses of native vegetation. [As detailed in Section B.6.2.1, Project Description, the final footprint or permanent disturbance of the RWD project would be 5 to 10 percent of the total acreage of the RWD project sites, approximately 37.5 to 212 acres (BLM, 2005), but the wind facility would require between 750 and 2,125 acres of land that could be temporarily disturbed during construction.

As in the U.S, impacts to sensitive vegetation communities would be significant according to Significance Criterion 2.a, which states the project would have a substantial adverse effect on a riparian habitat or other sensitive natural community by temporarily or permanently removing it during construction, grading, clearing, or other activities. This impact is not mitigable to less than significant levels (Class I) because adequate mitigation land may not be available to compensate for the impact. Implementation of Mitigation Measures B-1a(CA), B-1c(CA), B-1d, B-1e, B-1f, B-1g, B-1h, B-1i, and B-1j is required to, at least in part, compensate for impacts to sensitive vegetation. Impacts to non-sensitive vegetation communities, should they occur, such as disturbed habitat, developed land, or agriculture, would be adverse but less than significant (Class III).

Vegetation Management (Loss of Trees) United States and Mexico. No estimates as to how many trees or shrubs would be removed or trimmed as part of vegetation management for this project. However, there are woodland and shrubland communities present (e.g., chaparrals, Peninsular juniper woodland and scrub, and pine forests) that support native trees and shrubs that would likely require

either removal or trimming. The loss or trimming of non-native trees or shrubs would usually be an adverse but less than significant impact (Class III) because they are non-native and they typically do not support special status wildlife species. However, removal or trimming of a non-native tree or shrub that contains an active bird nest would be a violation of the Migratory Bird Treaty Act and a significant impact, but one that is mitigable to less than significant levels (Class II). Prohibitions under the Migratory Bird Treaty Act are also applied to birds in Mexico under international conventions between the U.S. and Mexico.

Likewise, removal or trimming of a native tree or shrub that contains an active bird nest would also be a violation of the Migratory Bird Treaty Act and a significant impact, but one that is mitigable to less than significant levels (Class II). See discussion in Impact B-8 (Construction activities would result in a potential loss of nesting birds [violation of the Migratory Bird Treaty Act]; Section D.2.12) for how construction activities (including tree/shrub removal) would result in a potential loss of nesting birds and violation of the Migratory Bird Treaty Act. The loss of native trees and shrubs would be a significant impact (Class I) for these reasons:

- it can have a substantial adverse effect on candidate, sensitive, or special status species (Significance Criterion 1)
- it can have a substantial adverse effect on riparian habitat or other sensitive natural community (Significance Criterion 2)
- it can have a substantial adverse effect on federally protected water quality or wetlands (Significance Criterion 3)
- it can interfere with wildlife movement or the use of native wildlife nursery sites (Significance Criterion 4)
- it can conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Significance Criterion 5; see discussion in Section D.16).

Additionally, trimming up to 30 percent of a native tree's crown would diminish the tree's value as wildlife habitat and could cause harm to the tree leading to its decline or death. Therefore, native tree trimming would be significant according to Significance Criteria 1, 2, 4, and 5 listed above. The loss and trimming of native trees is considered significant impacts that would not be mitigable to less than significant levels (Class I) because adequate mitigation land required by Mitigation Measure B-1a(CA) for restoration and/or acquisition may not be available. However, Mitigation Measure B-1a(CA) is required to reduce the impacts to the greatest extent possible. The full text of the mitigation measures appears in Appendix 12.

Type Conversion, United States and Mexico. As discussed in Section D.15, the construction and operation of new transmission lines in areas with high fire risk could cause wildfires, and could reduce the effectiveness of fire fighting efforts. Fires cause direct loss of vegetation communities, wildlife habitat, and wildlife species. Although periodic fires are part of the natural ecosystem, fires burning too frequently can have significant long-term ecological effects such as degradation of habitat (temporal loss of habitat and non-native plant species invasion) and loss of special status species. The biodiversity of San Diego County, California and much of northern Baja California, Mexico is uniquely adapted to low rainfall, rugged topography, and wildfires. However, fires have become more frequent with growth in the human population, creating a situation in which vegetation communities (and, therefore, habitats for plant and animal species) are changed dramatically and may not recover. This change in vegetation community is called "type conversion" and can occur to any native vegetation community. When burned too frequently, vegetation communities are often taken over by highly flammable, weedy, non-native plant species that burn even more often and provide minimal habitat value for native plant and

animal species, especially those of special status. For example, the coastal California gnatcatcher is dependent primarily on coastal sage scrub vegetation which, if burned too many times, can convert to non-native grassland or disturbed habitat that would preclude its use by the gnatcatcher. If the project were to cause a fire, or inhibit fighting of fires, and this leads to type conversion of sensitive vegetation communities, the impact would be significant (Class I) according to Significance Criterion 1 (substantial adverse effect through habitat modification on any species identified as candidate, sensitive, or special status) and/or Significance Criterion 2 (substantial adverse effect on a riparian habitat or other sensitive natural community).

Extensive mitigation for fire risk is presented in Section D.15. However, not all fires can be prevented. Although future fires may not cause type conversion in all instances, the impact must be considered significant because of the severity of potential habitat loss. This impact is not mitigable to less than significant levels (Class I). Implementation of the vegetation management program (described above) would reduce the fire risk of the project, although not to a less than significant level.

Mitigation Measures for Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation

- B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.**
- B-1c(CA) Conduct biological monitoring.**
- B-1d Perform protocol surveys. [BIO-APM-1]**
- B-1e Train project personnel. [BIO-APM-2]**
- B-1f Construction and survey activities shall be restricted based on final design engineering drawings. [BIO-APM-4]**
- B-1g Build access roads at right angles to streambeds and washes. [BIO-APM-5]**
- B-1h Comply with all applicable environmental laws and regulations. [BIO-APM-6]**
- B-1i Restrict the construction of access and spur roads. [BIO-APM-3, BIO-APM-17]**
- B-1j Protect and restore vegetation. [BIO-APM-20, BIO-APM-23, BIO-APM-25]**

Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II)

United States. Construction activities associated with the RWD project could result in adverse effects to jurisdictional waters during grading and vegetation removal (which could cause erosion, sedimentation and/or degradation of water quality) required for construction of the transmission line. A formal jurisdictional delineation for the project would be conducted once project-specific features are sited and final engineering is complete. Then, impacts to jurisdictional areas can be clearly defined, and the project proponent can apply for permits from the ACOE, RWQCB, and CDFG. Since a formal delineation has not been conducted, the presence and extent of jurisdictional areas is unknown, and the project could have a significant impact on regulated jurisdictional areas according to Significance Criterion 3.a. which states the project would have a substantial adverse effect on water quality or wetlands as defined by the ACOE and/or CDFG. These impacts would be considered significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1c(CA), B-1d, B-1e, B-1f, B-1g, B-2a(CA), B-2b, and B-2c.

Mexico. Construction activities associated with the RWD project could result in adverse effects to surface water resources that may be regulated by the Mexican government. These surface water resources may consist of desert washes, intermittent streams, or ephemeral streams. Adverse effects

from construction would include erosion, sedimentation, and/or degradation of water quality that could occur during grading and vegetation removal required for construction of wind turbine pads, access roads, excavation of trenches, and other associated facilities. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1c(CA), B-1d, B-1e, B-1f, B-1g, B-2a(CA), B-2b, and B-2c

Mitigation Measures for Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality

B-1c(CA) Conduct biological monitoring.

B-1d Perform protocol surveys. [BIO-APM-1]

B-1e Train project personnel. [BIO-APM-2]

B-1f Construction and survey activities shall be restricted based on final design engineering drawings. [BIO-APM-4]

B-1g Build access roads at right angles to streambeds and washes. [BIO-APM-5]

B-2a(CA) Provide restoration/compensation for affected jurisdictional areas.

B-2b Identify environmentally sensitive times and locations for tree trimming. [BIO-APM-16]

B-2c Avoid sensitive features. [BIO-APM-18]

Impact B-3: Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species (Class II)

United States and Mexico. The RWD project construction activities could introduce invasive, non-native, or noxious plant (weed) species (e.g., seed brought in on the soles of shoes, or on the tires and undercarriages of vehicles) to the project sites and surrounding areas. The inadvertent introduction of non-native plant species is a special concern for sensitive vegetation communities. Non-native plants pose a threat to the natural processes of plant community succession and fire frequency, and can affect the biological diversity and species composition of native plant communities. The survival of some populations of special status species could be adversely affected by the success of an introduced plant species. 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, and use of straw bales or wattles that contain seeds of non-native plant species. Construction of the RWD project would have a substantial adverse effect on riparian or other sensitive vegetation communities if weed species are introduced (Significance Criterion 2.b.), and the impact would be considered significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a(CA), B-1j, B-2a(CA), and B-3a(CA).

Mitigation Measures for Impact B-3: Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species

B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.

B-1j Protect and restore vegetation. [BIO-APM-20, BIO-APM-23, BIO-APM-25]

B-2a(CA) Provide restoration/compensation for affected jurisdictional areas.

B-3a(CA) Prepare and implement a Weed Control Plan.

Impact B-4: Construction activities would create dust that would result in degradation of vegetation (Class II)

United States and Mexico. Construction activities such as grading, excavation, and driving of heavy equipment on unpaved roadways would result in increased levels of blowing dust that may settle on surrounding vegetation. Increased levels of dust on plants can significantly impact plants' photosynthetic capabilities and degrade the overall vegetation community. This would be a significant impact according to Significance Criterion 2.b. (substantial adverse effect on riparian or other sensitive vegetation communities) and Significance Criterion 2.c. (substantial adverse effect on riparian or other sensitive vegetation communities through the spread of fugitive dust) but would be mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-1i that includes regular watering to control fugitive dust and a 15 mile-per-hour speed limit on dirt access roads to reduce dust.

Mitigation Measure for Impact B-4: Construction activities would create dust that would result in degradation of vegetation

B-1i Restrict the construction of access and spur roads. [BIO-APM-3, BIO-APM-17]

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I)

United States and Mexico. Special status plant species impacts could be caused by direct loss of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during construction. Plant surveys were not conducted for the RWD project, but a number of special status plant species (listed at the beginning of Section D.2.19.5) have potential to occur in the United States and Mexico. Because a survey for special status plant species has not been conducted, it is not possible to assess the impacts to them, so impacts to special status plant species would be considered significant and not mitigable to less than significant levels (Class I) according to Significance Criterion 1.a. (any impact to one or more individuals of a species that is federal or State listed as endangered or threatened would be significant) and Significance Criterion 1.b. (any impact that would affect the number or range or regional long-term survival of a sensitive or special status plant species would be significant). Implementation of Mitigation Measures B-1a(CA), B-1c(CA), B-1d, B-1e, B-1f, B-1g, B-1h, B-1i, B-2a(CA), B-2c, B-5a(CA), B-5b, B-5c, and B-5d would minimize the impacts, but not to less than significant levels.

Mitigation Measures for Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants

B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(CA) Conduct biological monitoring.

B-1d Perform protocol surveys. [BIO-APM-1]

B-1e Train project personnel. [BIO-APM-2]

B-1f Construction and survey activities shall be restricted based on final design engineering drawings. [BIO-APM-4]

B-1g Build access roads at right angles to streambeds and washes. [BIO-APM-5]

B-1h Comply with all applicable environmental laws and regulations. [BIO-APM-6]

B-1i Restrict the construction of access and spur roads. [BIO-APM-3, BIO-APM-17]

B-2a(CA) Provide restoration/compensation for affected jurisdictional areas.

B-2c Avoid sensitive features. [BIO-APM-18]

B-5a(CA) Conduct rare plant surveys, and implement appropriate avoidance/minimization/compensation strategies.

B-5b Delineate sensitive plant populations. [BIO-APM-16]

B-5c No collection of plants or wildlife. [BIO-APM-13]

B-5d Salvage sensitive species for replanting or transplanting. [BIO-APM-22]

Impact B-6: Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality (Class III)

United States and Mexico. Direct loss of small mammals, reptiles, and other less mobile species would occur during construction of the RWD project. This section discusses impacts to wildlife in general, particularly non-special status species. Impacts to special status species are described in Impact B-7. Deaths related to construction would be incurred primarily by burrow-dwelling animals; eggs and nestlings of bird species with small, well-hidden nests (impacts to nesting birds is discussed in Impact B-8); and species with limited mobility (lizards, snakes, ground squirrels). More mobile species like birds and larger mammals are expected to disperse into adjacent habitat areas during land clearing and grading. Construction activities and human presence can also alter or disrupt the breeding and foraging behaviors of wildlife. Impact B-6 (Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality) is discussed in greater detail in Section D.2.10.

Except where wildlife habitats are known to support sensitive, rare, threatened, or endangered species or nesting birds (addressed in Impacts B-7, B-7B, B-7J, B-7O, and B-8 below), all of the impacts on general, non-special status wildlife from construction of the RWD project would be adverse but less than significant (Class III). No mitigation is required.

Impact B-7: Construction activities would result in direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I)

United States and Mexico. Construction of the RWD project has the potential to directly affect the QCB, Peninsular bighorn sheep, and barefoot banded gecko (see Impacts B-7B, B-7J, and B-7O below) and has the potential to significantly impact the non-listed, sensitive animal species listed at the beginning of Section D.2.19.5. These impacts would be significant because the project would have a substantial adverse effect on listed and sensitive wildlife species and their habitats according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the Wildlife Agencies).

Most of the non-listed, sensitive species' habitats are sensitive vegetation communities, including those that would be temporarily disturbed or permanently removed by construction of the RWD project. The mitigation for the loss of the sensitive vegetation communities (Mitigation Measure B-1a[CA]) would normally compensate for the potential loss of these sensitive species and their habitats. However, since adequate land required by Mitigation Measure B-1a(CA) may not be available, the impacts to non-listed, sensitive wildlife species would be considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a(CA), B-1c(CA), B-1e, B-1f, B-1i, B-2a(CA), B-2b, B-6a, B-6b, B-6c, B-6d, and B-7a(CA) is required to compensate, at least in part, for impacts to non-listed, sensitive wildlife species and their habitats.

Mitigation Measures for Impact B-7: Construction activities would result in direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife

- B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.**
- B-1c(CA) Conduct biological monitoring.**
- B-1f Construction and survey activities shall be restricted based on final design engineering drawings. [BIO-APM-4]**
- B-1i Restrict the construction of access and spur roads. [BIO-APM-3, BIO-APM-17]**
- B-2a(CA) Provide restoration/compensation for affected jurisdictional areas.**
- B-2b Identify environmentally sensitive times and locations for tree trimming. [BIO-APM-16]**
- B-6a Littering is not allowed. [BIO-APM-7]**
- B-6b Survey areas for brush clearing. [BIO-APM-9]**
- B-6c Protect mammals and reptiles in excavated areas. [BIO-APM-24, BIO-APM-26]**
- B-6d Reduce construction night lighting on sensitive habitats. [BIO-APM-29]**
- B-7a(CA) Cover all steep-walled trenches or excavations used during construction to prevent the entrapment of wildlife (e.g., reptiles and small mammals).**

Impact B-7B: Direct or indirect loss of Peninsular bighorn sheep or direct loss of habitat (Class I)

United States. The Peninsular bighorn sheep (PBS) has potential to occur, although low potential, along the 1.7 miles of new ROW in the United States portion of the RWD project. The southernmost known PBS ewe group in the U.S. occurs north of I-8 in Carrizo Canyon, which includes portions of the Tierra Blanca, In-ko-pah, Coyote, and Jacumba Mountains east of the new transmission line. Historically, a ewe group occurred along the Mexican border, as well, but it has disappeared since the 1980s. The loss was poorly documented but was likely the result of the construction of I-8 in the mid-1960s, railroad activity, livestock grazing, poaching, and fire suppression (USFWS, 2000a).

Mexico. There are more PBS in Mexico than in the U.S (Bighorn Institute, 2007), and the species has higher potential to occur in the RWD project area (wind facility and along the transmission line) than along the 1.7 miles of new ROW in the United States. The most recent surveys estimate the Baja California PBS population at 2,000 to 2,500 (Bighorn Institute, 2007). The Mexican government has established a new conservation program for managing PBS in Mexico (Bighorn Institute, 2007).

The causes of decline of the PBS include habitat loss, degradation, and fragmentation; disease from domestic cattle; insufficient lamb recruitment; and predation coinciding with low population numbers (Center for Biological Diversity, 2003a). Numerous researchers have also expressed concern over the impact of human activity on PBS. Numerous researchers have documented altered PBS behavior in response to anthropogenic disturbance. Even when PBS appear to be tolerant of a particular activity, continued and frequent use can cause them to avoid an area, eventually interfering with use of resources, such as water, mineral licks, lambing or feeding areas, or use of traditional movement routes. In addition, disturbance can result in physiological responses such as elevated heart rate, even when no behavioral response is discernible.

PBS responses to human activity are difficult to predict and depend on the type of activity, season of the activity, elevation of the activity relative to resources, and distance of the activity from resources critical to PBS, among other variables. For instance, ewes with lambs typically are more sensitive to

disturbance, as are PBS that are approached from higher elevations. PBS were found to be more sensitive to disturbance during spring and fall, corresponding with the lambing and rutting seasons, and abandonment of lambing habitat was observed while construction activities were ongoing (USFWS, 2000).

PBS movement also appears to be restricted by the perceived barriers of roadways (such as I-8) that separate ewe groups. Ewe movement between groups is limited, and permanent emigration has not been documented (Rubin, et al., 1998). It is unknown whether transmission line access roads, tower structures, or other project features would be perceived by PBS as barriers as well.

Moist air and rain may cause unstable irregularities in the electrical field around conductors and insulators of transmission lines, which can generate a crackling noise. The effects of this noise on PBS are not known. PBS could avoid the area subjected to the noise. Also, the noise could prevent PBS from hearing approaching predators.

As analyzed in Impact B-1, the impacts to the vegetation communities that are part of PBS habitat itself are significant and not mitigable to less than significant levels (Class I) because suitable PBS replacement habitat may not be available.

Even if enough suitable land is available to mitigate habitat impacts to a less than significant level, human and construction activity in PBS habitat could cause PBS to avoid affected areas and could interfere with the use of resources, traditional movement routes, and/or could cause physiological stress or increased predation. All of the potential effects listed above could adversely affect survival and recovery of the species. These impacts are significant according to the following Significance Criteria: 1.a.) substantial adverse effect through any impact to one or more individuals of a federal or State listed species; 1.f.) substantial adverse effect by any impact that directly or indirectly causes the mortality of special status wildlife species; 4.a.) substantial adverse effect by preventing access to foraging habitat, breeding habitat, water sources, etc.; 4.b.) substantial adverse effect by interfering with connectivity between blocks of habitat or block or interfere with a wildlife corridor; and 4.c.) the substantial adverse effect by fragmenting a species' population. Based on the special status of this species and evidence that shows human activities significantly and adversely affect it, these impacts would be significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a(CA), B-1c (CA), B-2a(CA), and B-7c(CA) is required to, at least in part, compensate for impacts to PBS.

Mitigation Measures for Impact B-7B: Direct or indirect loss of Peninsular bighorn sheep or direct loss of habitat

B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(CA) Conduct biological monitoring.

B-2a(CA) Provide restoration/compensation for affected jurisdictional areas.

B-7c(CA) Minimize impacts to Peninsular bighorn sheep and provide compensation for loss of critical habitat. Mitigation Measure B-7c(CA) is identical to B-7c for the SRPL Proposed Project except that CPUC shall be replaced with "Lead Agencies", and State Parks and/or Wildlife Agencies shall be replaced with "other agencies with jurisdiction over the project".

Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat (Class I)

United States and Mexico. The QCB has high potential to occur in the new ROW in the U.S. because it occurs in designated critical habitat for the species, it is in USFWS Survey Area 1 for the species,

and recent QCB observations (1998 and 2000) were made near Jacumba (USFWS, 2006). Furthermore, the QCB may occur in the project area in Mexico because it is within the species' range, and suitable habitat is present.

Since no protocol surveys for QCB were completed for this project, all potential QCB habitat is assumed to be occupied by the QCB. With the lack of definitive survey data, the RWD project construction must be assumed to have a significant impact on this species according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species). Since adequate land required by Mitigation Measure B-7i(CA) may not be available, the impacts are considered significant and not mitigable to less than significant levels (Class I). However, Mitigation Measures B-1a(CA), B-1c(CA), B-2a(CA), and B-7i(CA) are required to, at least in part, minimize impacts to the QCB.

Mitigation Measures for Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat

B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(CA) Conduct biological monitoring.

B-2a(CA) Provide restoration/compensation for affected jurisdictional areas.

B-7i(CA) Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies.

Impact B-7O: Direct or indirect loss of barefoot banded gecko or direct loss of habitat (Class I)

United States and Mexico. This State listed threatened species is known only from five localities in eastern San Diego County and western Imperial County; it also ranges south into Baja California. The natural history of this gecko is not well known; it is secretive and nocturnal and hides by day in deep crevices. It is active in fairly cool ambient temperatures during periods of increased humidity, typically spring through fall. It hibernates through the winter (CaliforniaHerps.com, 2007).

No surveys were conducted for this species. If surveys were conducted, and the species was not found, the survey result would have to be considered false negative because of the species' highly elusive nature. The barefoot banded gecko is, therefore, assumed to be present in the project area in both the United States and Mexico. Any impact to the barefoot banded gecko or its habitat would be significant according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species) and not mitigable to less than significant levels (Class I) because suitable mitigation land for the gecko may not be available. Implementation of Mitigation Measures B-1a(CA), B-1c(CA), and B-2a(CA) is required to, at least in part, compensate for impacts to this species.

Mitigation Measures for Impact B-7O: Direct or indirect loss of barefoot banded gecko or direct loss of habitat

B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(CA) Conduct biological monitoring.

B-2a(CA) Provide restoration/compensation for affected jurisdictional areas.

Impact B-8: Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act) (Class II)

United States and Mexico. Construction of the RWD project in the U.S. and Mexico would violate the Migratory Bird Treaty act if it resulted in the killing of migratory birds or caused the destruction or abandonment of migratory bird nests and/or eggs (Significance Criterion 1.g). Prohibitions under the Migratory Bird Treaty Act apply to birds in Mexico under international conventions between the U.S. and Mexico. This violation could occur through the removal of vegetation containing bird nests and/or through vehicle and foot traffic or excessive noise associated with construction that cause nest destruction or abandonment of a nest. Violation of the Migratory Bird Treaty Act is a significant impact that is mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1e, B-1f, B-1g, B-1h, B-1i, B-2b, B-2c, B-6b, B-8a(CA), and B-8b.

Mitigation Measures for Impact B-8: Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act)

- B-1e** **Train project personnel.** [BIO-APM-2]
- B-1f** **Construction and survey activities shall be restricted based on final design engineering drawings.** [BIO-APM-4]
- B-1g** **Build access roads at right angles to streambeds and washes.** [BIO-APM-5]
- B-1h** **Comply with all applicable environmental laws and regulations.** [BIO-APM-6]
- B-1i** **Restrict the construction of access and spur roads.** [BIO-APM-3, BIO-APM-17]
- B-2b** **Identify environmentally sensitive times and locations for tree trimming.** [BIO-APM-16]
- B-2c** **Avoid sensitive features.** [BIO-APM-18]
- B-6b** **Survey areas for brush clearing.** [BIO-APM-9]
- B-8a(CA)** **Conduct pre-construction surveys and monitoring for breeding birds.**
- B-8b** **Removal of raptor nests.** [BIO-APM-27]

Impact B-9: Adverse effects to linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II for bat colonies; Class III linkages or wildlife movement corridors; No Impact fish movement)

United States and Mexico. Due to the nature of wind developments, the wind facility would be constructed primarily on ridgelines that do not contain drainages that carry perennial flows. However, surface water resources that may consist of desert washes, intermittent streams, or ephemeral streams could be crossed by access roads, particularly along the transmission line ROWs. These would carry only intermittent flows, however, in response to seasonal rain events that would not support fish and other species that are dependent on permanent water sources. Therefore, the RWD project area would not affect the movement of fish or other species dependent on permanent water sources (No Impact). This is substantiated by the apparent lack of riparian or wetland vegetation present.

Due to the intermittent locations of construction activity in the transmission line ROWs and its temporary nature, wildlife would not be physically prevented from moving around project equipment in the transmission corridor (No Impact). Construction of the wind facility would occur primarily on ridgelines, and wildlife movement is often concentrated more in canyons, so construction of the wind facility would adversely affect some wildlife movement because of the size of the wind facility impact area, but not to a significant level (Class III), and no mitigation is required.

During project operation, the widely spaced towers and turbines would not physically obstruct wildlife movement; wildlife could move under and around the towers and around the turbines. Additionally, the creation of permanent access roads may, in some cases, make wildlife movement through otherwise dense vegetation easier (No Impact). Impacts associated with Peninsular bighorn sheep traditional movement are explained in Impact B-7B above.

Bat nursery⁴ colonies would still be significantly impacted by the project if humans approach an active nursery colony, if entrances to nursery colony sites become blocked, if construction involves blasting or drilling that causes substantial vibration of the earth/rock surrounding an active nursery colony, or if a structure such as a bridge is disturbed by construction. These colonies could be located in rock crevices, caves, or culverts; inside/under bridges; in other man-made structures; and in trees (typically snags or large trees with cavities). The impacts to bat nursery colonies, if disturbed, would be significant according to Significance Criterion 4 which states that the project would impede the use of native wildlife nursery sites. This impact is significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1i, B-1g, B-2c, B-6d, and B-9a. Impact B-14 below addresses bat mortality from collision with turbines.

Mitigation Measures for Impact B-9: Adverse effects to linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites

- B-1g** **Build access roads at right angles to streambeds and washes.** [BIO-APM-5]
- B-1i** **Restrict the construction of access and spur roads.** [BIO-APM-3, BIO-APM-17]
- B-2c** **Avoid sensitive features.** [BIO-APM-18]
- B-6d** **Reduce construction night lighting on sensitive habitats.** [BIO-APM-29]
- B-9a** **Survey for bat nursery colonies.**

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No impact for electrocution; Class I for collision for listed species; Class II for collision for non-sensitive species or daytime migration)

United States. The risk of electrocution is the same for the RWD project transmission line as for the SRPL Proposed Project in Section D.2.14: No Impact.

The primary issue with respect to birds and transmission projects is birds colliding with the transmission towers or lines in migration, especially in spring migration when strong winds and storms are more likely to force the birds to fly at relatively low altitudes. Mortality as a result of collision with the project features would be greatest where the movements of migrating birds are the most concentrated. Bird migration happens all along the east side of San Diego County's mountains but is most concentrated in the canyons and valleys that lead from southeast to northwest, such as Grapevine Canyon and San Felipe Valley (Unitt, 2007). Therefore, this transmission line does not occur in a highly utilized avian flight path.

Even so, since most birds migrate at night, there is no way to know how many birds and what species of birds could actually be impacted by collision with this transmission line. There is no way to know because much of the migration occurs at night when it cannot be seen, and birds that collide with transmission line features and fall to the ground are often taken away by predators/scavengers before morning. Therefore, as with the Proposed Project, it is assumed that some migrating species could be

⁴ A bat nursery colony site is where pregnant female bats assemble (or one bat if it's of a solitary species) to give birth and raise their pups.

federal or State listed or of other special status, and their mortality would be a significant impact that is not mitigable to less than significant levels (Class I) according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed), Significance Criterion 1.f. (directly or indirectly cause the mortality of candidate, sensitive, or special status wildlife), and Significance Criterion 1.g. (killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs). Also, like the Proposed Project, for non-sensitive species or species that migrate during the day, collision would be significant according to Significance Criteria 1.f. and 1.g. but would be mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-10a(CA).

Mexico. The California condor is present in Mexico and has a wingspan of up to nine feet and height (head to foot) of 46 to 55 inches (Palmer, 1988). The wingspan and heights of this bird is not long enough to simultaneously contact two energized phase conductors along the 230 kV line. If the birds were to roost communally, however, there is some potential, although very low, that multiple birds would bridge the gap between two energized conductors and be electrocuted (see Section D.2.14.) Because of its voltage, the RWD project would not present an electrocution risk to birds. Still, Mitigation Measure B-10b is recommended to prevent electrocution risk. The risk of electrocution is the same as for the SRPL Proposed Project in Section D.2.14: No Impact.

Twenty miles of the transmission line in Mexico would occur within the existing Tijuana/Mexicali 230 kV ROW. Therefore, this portion of the transmission line would incrementally increase the potential for birds to collide with transmission lines and towers in the ROW. For non-sensitive species or species that migrate during the day, this impact would be incrementally adverse and less than significant (Class III), and no mitigation is required.

The rest of the transmission line (seven miles) would occur in new ROW. In this new ROW and in the 20 miles of existing ROW, for non-sensitive species or species that migrate during the day, collision would be significant according to Significance Criteria 1.f. and 1.g. but would be mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-10a(CA).

However, since most birds migrate at night, there is no way to know how many birds and what species of birds could actually be impacted by collision with the 27 miles of transmission line. There is no way to know because much of the migration occurs at night when it cannot be seen, and birds that collide with transmission line features and fall to the ground are often taken away by predators/scavengers before morning. Therefore, as with the Proposed Project, it is assumed that some migrating species could be federal or State listed or of other special status, and their mortality would be a significant impact that is not mitigable to less than significant levels (Class I) according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed), Significance Criterion 1.f. (directly or indirectly cause the mortality of candidate, sensitive, or special status wildlife), and Significance Criterion 1.g. (killing of migratory birds or destruction or abandonment of migratory bird nests and/or eggs).

Mitigation Measures for Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species

B-10a(CA) Utilize collision-reducing techniques in installation of transmission lines. There is no known highly utilized avian flight path; therefore, no marking of the overhead lines is required.

B-10b Structures shall be constructed to conform to “Suggested Practices for Raptor Protection on Power Lines.”

Impact B-11: Presence of transmission lines may result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (Class III)

United States and Mexico. Common ravens have been documented to prey on the desert tortoise and the FTHL (Liebezeit et al., 2002; Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003) that do not occur in the RWD project area. The common raven has not been documented to prey on any other listed or sensitive wildlife in the project area in the U.S. (Liebezeit et al., 2002), although the predation may still occur on a limited basis and would be adverse but less than significant (Class III). No mitigation is required. In Mexico, since the RWD project area does not occur within a special habitat management area; the PBS, QCB, and barefoot banded gecko are not documented prey of the raven; and 20 of the 27 miles of transmission line would occur in an existing 230 kV ROW (presenting an incremental increase in the potential for raven nesting), the predation of listed and sensitive species by ravens nesting on the transmission towers would be adverse but less than significant (Class III), and no mitigation is required.

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class I for Peninsular bighorn sheep; Class II for other special-status wildlife and nesting birds; Class III for non-sensitive wildlife and barefoot banded gecko)

United States and Mexico. These types of impacts would occur from maintenance activities: impacts to nesting birds if vegetation is cleared during the breeding season; mortality of special status species from grading, vegetation clearing, or use of access roads; and/or adverse effects to PBS from maintenance activities that cause sheep to avoid affected areas. These impacts would cause disturbance to wildlife and potential wildlife mortality and would be significant impacts according to Significance Criteria 1.a., 1.d., 1.f., 1.g., and 2.b. that include any impacts to one or more listed species (1.a.); disturbance of critical habitat (1.d.); impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species (1.f.); violation of the Migratory Bird Treaty Act (1.g.); and substantial adverse effect on riparian or other sensitive vegetation communities if weed species are introduced (2.b.; this impact would degrade wildlife habitat).

Impacts to non-sensitive wildlife would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1f, B-1h, B-1i, B-2b, B-3a(CA), B-5c, B-6a, B-6b, B-7c(CA), and B-12a(CA).

Maintenance activities would impact nesting birds (violation of Migratory Bird Treaty Act) if vegetation is cleared during the general avian breeding season (February 15 through September 15) or the raptor breeding season (January 1 through September 15). This impact would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12a(CA).

Maintenance activities would cause disturbance to, and possible mortality of, QCB. These impacts would be significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-12c.

Impacts to barefoot banded gecko from maintenance activities would be adverse but less than significant (Class III) because the species are not known to be impacted by noise, and they are unlikely to occur on a maintained access road, tower pad, or other work area. No mitigation is required.

Impacts to PBS (see Section D.2.11, Impact B-7B) from maintenance activities in Mexico could cause PBS to avoid affected areas and could interfere with the use of resources such as escape terrain; water; mineral licks; rutting, lambing, or feeding areas; the use of traditional movement routes, and/or could

cause physiological stress or increased predation. All of these potential effects could adversely affect survival of the species. These impacts are significant and not mitigable to less than significant levels (Class I), although Mitigation Measure B-7c(CA) is required to minimize the impacts.

Mitigation Measures for Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality

- B-1f Construction and survey activities shall be restricted based on final design engineering drawings.** [BIO-APM-4]
- B-1h Comply with all applicable environmental laws and regulations.** [BIO-APM-6]
- B-1i Restrict the construction of access and spur roads.** [BIO-APM-3, BIO-APM-17]
- B-2b Identify environmentally sensitive times and locations for tree trimming.** [BIO-APM-16]
- B-3a(CA) Prepare and implement a Weed Control Plan.**
- B-5c No collection of plants or wildlife.** [BIO-APM-13]
- B-6a Littering is not allowed.** [BIO-APM-7]
- B-6b Survey areas for brush clearing.** [BIO-APM-9]
- B-7c(CA) Minimize impacts to Peninsular bighorn sheep and provide compensation for loss of critical habitat.** This measure shall be tailored so as to be applicable in Mexico and acceptable to Mexican authorities.
- B-12a(CA) Conduct maintenance activities outside the general avian breeding season.**
- B-12c Maintain access roads and clear vegetation in quino checkerspot butterfly habitat.**

Impact B-13: Operation of the RWD project would lead to avian mortality from collision with turbines (Class I)

United States. No wind tower/turbines and associated facilities would be located within the United States as a part of the RWD project.

Mexico. Operation of the RWD project is expected to result in mortality of birds due to collision with wind turbines. Recent studies have shown that taller towers are likely to reduce raptor mortality due to an increase in ground to rotor clearance, especially for red-tailed hawks, golden eagles and American kestrels that utilize spaces closer to the ground for hunting prey. For example, golden eagles have often been observed hunting within three meters of the ground. Also, raptor use has been shown in general to be higher on the prevailing upwind side of ridges, and turbines sited away from the rim edge may contribute to lower raptor fatality rates. Ground disturbance around wind turbines (roads and work pads) increases the vertical/horizontal edge near turbines, which also may increase prey densities and raptor use. Also, ground disturbance that creates rock piles creates habitat for small mammals and reptiles which could then attract raptors to the turbine sites. Small mammals and reptiles may also be likely to burrow near the turbine bases where soil has been disturbed. Rodent control programs have been used in the past at wind project sites; however, recent studies suggest moderate levels (intermittent) of rodent control may increase raptor fatalities, and secondary impacts to terrestrial wildlife from rodent control are a concern. Associated facilities at wind projects include permanent meteorological towers. Studies have shown that guyed meteorological towers may kill more passerines per structure than wind turbines (Contra Costa, 2007).

Avian mortality would be significant according to Significance Criteria 1.f. (impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species) or 1.g. (violation

of the Migratory Bird Treaty Act) and would be significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measure B-13a is required to, at least in part, compensate for impacts to birds from collision with turbines.

Mitigation Measure for Impact B-13: Operation of the RWD project would lead to avian mortality from collision with turbines

B-13a(LR) Implement measures to reduce avian impacts from turbine activities. This mitigation measure includes the following:

- Increase ground to rotor clearance. Turbine tower heights shall be at least 55 meters at sites where will allow that height.
- Wherever feasible, turbines shall not be sited on or immediately adjacent to the upwind sides of ridge crests.
- Turbine construction shall minimize cutting into hill slopes in an attempt to achieve smooth rounded terrain, rather than sudden berms or cuts, to potentially reduce prey abundance.
- Rocks unearthed during the excavation process shall be used during construction of foundations or hauled off site and disposed of properly, and not be left in piles near turbines.
- Discourage small mammals and reptiles from burrowing under or near turbine bases by placing gravel at least 5 feet around each tower foundation.
- The RWD project developer shall not participate in rodent control programs on leased lands and will discourage landowners from using poisoning for rodent control in the vicinity of the project.
- Only un-guyed meteorological towers shall be constructed for the wind project.

A scientifically defensible monitoring program shall be implemented to estimate the avian fatality rates from the new turbines and important covariates such as prey base and avian use. The following shall also be implemented.

- Standardized fatality monitoring and avian use and behavior studies shall be conducted for a minimum of three years.
- A technical advisory committee shall be formed to oversee the program and propose additional mitigation and/or additional monitoring depending on the results of the monitoring program.
- Should additional mitigation be necessary, potential measures may include off-site mitigation.

Impact B-14: Operation of the RWD project would lead to bat mortality from collision with turbines (Class I)

United States. No wind tower/turbines and associated facilities would be located within the United States as a part of the RWD project.

Mexico. Operation of the RWD project is expected to result in some bat mortality from collision with wind turbines. Studies show that bat mortality from collision with wind turbines is highest during the late summer and fall migration season. Based on other studies in the west, some mortality of mostly migratory bats is anticipated. Projected mortality levels are unknown and could be higher or lower based on such factors as regional migratory patterns, patterns of local movements through the project area, and the response of bats to turbines — both individually and collectively (Contra Costa, 2007).

Bat mortality would be significant according to Significance Criteria 1.f. (impacts that directly/indirectly cause the mortality of candidate, sensitive, or special status species) and would not be mitigable to less than significant levels (Class I). Implementation of Mitigation Measure B-14a is required to, at least in part, compensate for impacts to bats from collision with turbines.

Mitigation Measure for Impact B-14: Operation of the RWD project would lead to bat mortality from collision with turbines

B-14a **Implement a scientifically defensible monitoring program to estimate bat fatality rates from new turbines.** The following shall also be implemented.

- Standardized fatality monitoring and bat use and behavior studies shall be conducted for a minimum of three years.
- A technical advisory committee shall be formed to oversee the program and propose additional mitigation and/or additional monitoring depending on the results of the monitoring program.
- Should additional mitigation be necessary, potential measures may include off-site mitigation.

D.3.12.5 Visual Resources - La Rumorosa Wind Project

Environmental Setting

United States. A new 230 kV transmission line would be required to connect the Rumorosa Wind Developers II (RWD) to the existing 500 kV SWPL. It is assumed that this new 230 kV transmission line would end at the Jacumba Substation, and travel south-southwest for approximately 1.7 miles through the mostly arid, sparsely vegetated foothills of the Jacumba Mountains. Views of this transmission line would be available from numerous vantage points, including the town of Jacumba itself because it is located approximately 1,000 feet east of the proposed ROW. Old Highway 80 would be crossed by the ROW approximately 3,000 feet southwest of the town of Jacumba.

Mexico. The RWD project would be located east of the town of La Rumorosa, population 1,615 (Mexico Census, 2005). It would be near the existing CFE La Rumorosa Substation. This region is within the Sierra de Juárez Mountains, and the landscape along this area is rugged, offering partial screening of the wind farm from the town of La Rumorosa. Highway Mexico 2 (toll road) and the original Highway Mexico 2, running between Tijuana and Mexicali, would border the RWD on both the northern and the southern sides. In addition there are several dirt roads leading into La Rumorosa. Views of the mountains from Highway Mexico 2 and from all local roads are unobstructed except by the natural landscape. The mountainous landscape has minimal evidence of built modifications other than the town of La Rumorosa and the existing transmission line. East of the proposed wind farm site is the La Rumorosa Substation. Landform colors are predominantly light tan to dark tan for soils, and darker brown for rocks and crags.

Approximately 20 miles of new 230 kV transmission line would follow the existing ROW and the Highway Mexico 2 ROW around the town of La Rumorosa. While the transmission line would be visible from both the town and the highway, it would be similar to the already existing view of the Tijuana/La Rosita transmission line.

The new 230 kV transmission line would turn north-northeast for approximately 7 miles near Agua Hechicera and would run through primarily natural landscape. There are no towns in or adjacent to this new ROW. However, the ROW would cross several dirt roads and would pass approximately 1.1 miles

east of Jácume, a border town south of Jacumba. The mountainous landscape is predominantly natural appearing with minimal evidence of built modifications, although some landscape has been converted to agricultural use, primarily around Agua Hechicera. Landform colors are predominantly light tan to dark tan for soils, and darker brown for rocks and crags. There is also interspersed pine forest within this region.

Figure B-50 in Section B, Project Description, presents two photographs of the La Rumorosa region.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact V-1: Short-term visibility of construction activities, equipment, and night lighting (Class III for the United States; Class II for Mexico)

United States. There are two viewing opportunities of concern for the RWD transmission line as described above. Construction activities associated with the transmission line would be transient and of relative short duration. As a result, affected viewers would be aware of the temporary nature of the impact and project construction impacts would generally constitute adverse, but less than significant (Class III) visual impacts. Although Impact V-1 for the RWD project transmission component would be less than significant, mitigation is recommended in compliance with NEPA requirements. Mitigation Measures V-1a, V-1b and V-1c are recommended to reduce construction impacts.

Mexico. There are numerous viewing opportunities of concern for the RWD wind project and transmission line as described above. Construction activities for the transmission line component would be transient and of relative short duration. As a result, affected viewers would be aware of the temporary nature of the impact and project construction impacts would generally constitute adverse, but less than significant (Class III) visual impacts. Although Impact V-1 for the RWD project transmission component would be less than significant, mitigation is recommended in compliance with NEPA requirements. Mitigation Measures V-1a, V-1b, and V-1c are recommended to reduce construction impacts. The full text of the mitigation measures appears in Appendix 12.

Construction activities for the wind farm component in La Rumorosa would be more visible and of a longer duration. View durations from vantage points would vary from moderate to extended where the facilities and activities remain in the field of view of travelers for several minutes or miles. Night lighting impacts during construction would occur if lighting at construction and storage yards and staging areas were not appropriately controlled. Mitigation Measures V-1a, V-1b, and V-1c are recommended to reduce construction impacts of the wind farm to less than significant levels (Class II.)

Mitigation Measures for Impact V-1: Short-term visibility of construction activities, equipment, and night lighting

V-1a **Reduce visibility of construction activities and equipment.**

V-1b **Reduce construction night lighting impacts.**

V-1c **Prohibit construction marking of natural features. [APM VR-4]**

Impact V-2: Long-term visibility of land scars and vegetation clearance in arid and semi-arid landscapes (Class II for the United States; Class I for Mexico)

United States. This impact, described in Section D.3.5.1, would occur along the 1.7 mile transmission line segment where it passes through undeveloped arid and semi-arid landscapes. The installation of

new structures and construction of new access roads would cause disturbance of soils and vegetation. This would be a significant impact. Mitigation Measures V-2a through V-2c, V-2e and G-1b would reduce impacts to a less than significant level. (Class II).

Mexico. This impact would occur in the 7 miles of transmission line along new ROW and in the entire wind farm area of the RWD project which passes through undeveloped arid and semi-arid landscapes. The installation of new structures and construction of new access/spur roads would cause disturbance of soils and vegetation as vehicles and equipment access the wind turbine installation areas and equipment and materials are moved. This would be a significant impact. Mitigation Measures V-2a through V-2c, V-2e and G-1b are recommended in order to reduce impacts. However, given the extensive network of permanent access and spur roads that would be required for the RWD primarily along ridge lines and their slopes, even with mitigation, it is likely that Impact V-2 could not be reduced to an insignificant level (Class I).

Mitigation Measures for Impact V-2: Long-term visibility of land scars and vegetation clearance in arid and semi-arid landscapes

- V-2a** **Reduce in-line views of land scars.**
- V-2b** **Reduce visual contrast from unnatural vegetation lines.**
- V-2c** **Reduce color contrast of land scars on non-Forest lands.**
- V-2e** **Minimize vegetation removal.** [APM BIO-23]
- G-1b** **Implement erosion control procedures.** [APM GEO-2]

Operational Impacts

From the La Rumorosa Substation to the Jacumba Substation, the RWD project transmission line would be visible as the route passes through new ROW for 8.7 miles (7 miles in Mexico and 1.7 miles in the United States) and then parallels the existing Tijuana/Mexicali transmission line, and spans Highway Mexico 2. Long-term, operational visual impacts would be experienced by: (a) travelers on local roads leading to Jácume just south of the U.S./Mexico border, (b) recreationists accessing La Rumorosa lands and the Jacumba Mountains; (c) residents of Jácume and La Rumorosa in Mexico and Jacumba in the United States and (d) travelers on Highway Mexico 2.

The RWD wind farm would be very noticeable because the new facilities (wind towers/turbines, meteorological towers, switchyard, substation, and operation and maintenance facilities) would be new industrial features within open space and rural density areas.

Impact V-LR3: Long-term visibility of RWD turbines and associated facilities from Highway Mexico 2, nearby residences and public roads (No Impact for the United States; Class I for Mexico)

United States. No wind tower/turbines and associated facilities would be located within the United States as a part of the RWD project.

Mexico. The La Rumorosa wind farm of the RWD project could be viewed from Highway Mexico 2 (both the toll section and the free section). The RWD wind farm is located east of the existing La Rumorosa Substation. Future development of the wind farm would introduce industrial structures that would also be visible from Highway Mexico 2, greatly intensifying the industrialization of the area. Given the inability of mitigation to reduce this visual impact to a less than significant level, Impact

V-LR3 is considered to be a significant and unavoidable impact (Class I). Mitigation Measures are presented below to reduce the impact, although not to a less than significant level.

Mitigation Measures for Impact V-LR3: Long-term visibility of RWD project turbines and associated facilities from Highway Mexico 2

- V-3a** **Reduce visual contrast of towers (second bullet of mitigation only applies).**
- V-3b** **Use non-specular design to reduce conductor visibility and visual contrast.** [APM VR-2]
- V-3c** **Coordinate with affected property owners on structure siting.** [APM VR-5]

Impact V-LR4: Increased industrial character, view blockage, and skylining associated with new 230 kV transmission line along the 8.7 miles of new ROW and along existing ROW (Class I for the United States; Class III for Mexico)

United States. The existing view to the west of the town of Jacumba, United States is predominantly natural, mountainous settings. Approximately 1.7 miles of the new 230 kV transmission line connecting the La Rumorosa wind farm with the existing SWPL 500 kV transmission line would pass within 1,000 feet of the western edge of the town of Jacumba. There are no structures similar to the transmission line in this area (the existing 500 kV SWPL is approximately 2,000 feet north of town and minimally visible from the town). The transmission line would be a prominent feature in the landscape. The transmission line would also exhibit considerable industrial character. The resulting structural visual contrast (for form and line) would be moderate-to-strong. The overall level of change would be moderate-to-high.

The complex structural forms and vertical to diagonal lines would not repeat the basic elements of the existing natural features in the landscape (flat to rolling landforms and horizontal to curvilinear line). Therefore, the resulting visual impact would be significant (Class I). Mitigation Measures V-3a, V-3b and V-3c are recommended, although implementation of these measures would not reduce the impact to less than significant.

Mexico. The 7 miles of new 230 kV transmission line would be located perpendicular to the existing Tijuana/Mexicali 230 kV line. Portions of the new 230 kV transmission line connecting the La Rumorosa wind farm with the existing SWPL 500 kV transmission line would pass within 1.1 miles from the town of Jácume. Because this area has relatively level terrain (at Jácume) and open, unobstructed sightlines, the transmission line would like be visible. The transmission line would also exhibit considerable industrial character. The resulting structural visual contrast (for form and line) would be moderate-to-strong. The overall level of change would be moderate-to-high.

The complex structural forms and vertical to diagonal lines would not repeat the basic elements of the existing natural features in the landscape (flat to rolling landforms and horizontal to curvilinear line). Therefore, the resulting visual impact would be significant (Class I). Mitigation Measures V-3a, V-3b and V-3c are recommended, although implementation of these measures would not reduce the impact to less than significant.

The 20 miles of new 230 kV transmission line along the existing Tijuana/Mexicali ROW would introduce a prominent industrial feature. Because of the existing ROW and transmission line, the impact while adverse would not be significant (Class III). However, to ensure that viewers are not unnecessarily impacted, in compliance with NEPA, Mitigation Measures V-3a, V-3b, and V-3c are recommended, but are not required because the impact is less than significant without mitigation. Please see the explanation of mitigation for less than significant impacts in Section D.1.4.1.

Mitigation Measures for Impact V-LR5: Increased industrial character, view blockage, and skylining associated with new 230 kV transmission line in existing ROW

- V-3a** **Reduce visual contrast of towers (second bullet of mitigation only applies).**
- V-3b** **Use non-specular design to reduce conductor visibility and visual contrast.** [APM VR-2]
- V-3c** **Coordinate with affected property owners on structure siting.** [APM VR-5]

D.4.12.5 Land Use - La Rumorosa Wind Project

Environmental Setting

United States. A new 230 kV transmission line would be required to connect the Rumorosa Wind Developers II (RWD) to the existing 500 kV SWPL. The 1.7 miles of new 230 kV transmission line would be sited on private land. Surrounding land uses for this line include rural residential, Old Highway 80, the San Diego/Arizona railroad and the town of Jacumba. The new 230 kV transmission line would enter into the proposed Jacumba Substation. There are no residences within 1,000 feet of the transmission line.

Mexico. The RWD wind farm would be located approximately 1.4 miles east of the town of La Rumorosa, in the municipality of Tecate, Baja California. The wind farm would be bordered on the east by the La Rumorosa Substation. Surrounding land uses for the RWD include Highway Mexico 2, the La Rumorosa Substation, and the town of La Rumorosa, population 1615.

Approximately 20 miles of new 230 kV transmission line would be constructed in the existing Tijuana/Mexicali ROW. Land uses within this ROW are the existing 230 kV transmission line, and Highway Mexico 2.

Approximately 7 miles of new 230 kV transmission line would be built on new ROW going north, north east of Luis Echevarria Alvarez until reaching the U.S./Mexico border. Land uses within and adjacent to the new ROW include rural residential, local roadways, Highway Mexico 2, and some agriculture use. There is also grazing land within this new ROW, especially near the town of Jácume approximately 1.1 mile east of the proposed new ROW at the U.S./Mexican border.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact L-1: Construction would temporarily disturb land uses at or near the wind farm and transmission line (Class III)

United States. The 1.7 miles of transmission line would run from the Jacumba Substation (See Section E.5) to the U.S./Mexico border. Sensitive land uses within the RWD properties and surrounding areas include rural residences, as the outskirts of the town of Jacumba are approximately 1000 feet away . Other land uses that could potentially be impacted by construction activities include public roadways.

Residential Land Uses. For residences greater than 1,000 feet from the RWD transmission line facilities, including access roads, construction-related impacts would be considered adverse but not significant due to their distance from the project (Class III).

Construction of the RWD project would create noise and dust as a result of heavy construction equipment on temporary and permanent access roads, moving building materials to and from construction staging areas. This would result in temporary disturbances, including those rural residential and limited public and commercial facilities detailed above. Mitigation measures to reduce noise and air quality impacts are presented in Sections D.8 and D.11, respectively, but these measures would not eliminate the disturbance. While this disturbance would be short-term and temporary at any one location, it would be significant if construction is not carefully managed and residents kept informed. Thus, Mitigation Measure L-1a is recommended to ensure that construction-related land use impacts would not be significant (Class II).

Mexico. The RWD wind farm, 20 miles of new 230 kV line on existing ROW, and the 7 miles of new 230 kV line on new ROW would run from the U.S./Mexico border, to the existing Jacumba Substation. Sensitive land uses within the RWD properties and surrounding areas include rural residences, as the town of Jácume is approximately 1 mile away, and the new transmission line would pass adjacent to the town of La Rumorosa. Other land uses that could potentially be impacted by construction activities include public roadways and the *Las Manatiales* Ranch.

Residential Land Uses. Construction-related impacts would be considered adverse but not significant due to their distance from the project (Class III) as detailed in the U.S. section.

Mitigation Measures for Impact L-1: Construction would temporarily disturb the land uses it traverses or adjacent land uses

L-1a Prepare Construction Notification Plan.

Operational Impacts

Impact L-2: Presence of a project component would divide an established community or disrupt land uses at or near the alignment (No Impact)

United States and Mexico. The 1.7 miles of transmission line in the United States would run from the Jacumba Substation (See Section D.12.4) to the U.S./Mexico border. Sensitive land uses along the ROW include rural residences, as the outskirts of the town of Jacumba are approximately 1,000 feet away. The RWD wind farm, 20 miles of new 230 kV line on existing ROW, and the 7 miles of new 230 kV line on new ROW would run from the U.S./Mexico border, to the existing Jacumba Substation. Sensitive land uses within the RWD properties and surrounding areas include rural residences, as the town of Jácume is approximately 1 mile away, and the new transmission line would pass adjacent to the town of La Rumorosa.

The proposed route would not physically divide these established uses but would traverse between and border them. The transmission facilities would not constitute a physical division of an established community. The proposed route would circumvent land uses and not bisect them. In addition, the transmission line would not establish a permanent barrier or obstacle between uses such that a perceived physical division would occur. While wind towers and lines would be present, travel or connections within the community would not be impeded so as to create a divide. As such, no land use impacts relating to the division of an established community would occur within the RWD project (No Impact), and no mitigation would be required.

Residential Land Uses. From an operational perspective, presence of the RWD transmission line facilities would not disrupt actual use of residential properties or structures. Access to all uses would be fully restored once construction was complete. The RWD project would not remove any residences or

cause the nature or condition of any use to change. Thus, no land use-related operational impacts would occur (No Impact).

D.5.12.5 Wilderness and Recreation - La Rumorosa Wind Project

Environmental Setting

United States. A new 230 kV transmission line would be required to connect the “Rumorosa Wind Developers II” (RWD) to the existing 500 kV SWPL, at the Jacumba Substation. The 1.7 miles of new 230 kV transmission line would be sited on private land. There are no State or Federal wilderness areas or wilderness study areas within or adjacent to the proposed ROW. The nearest wilderness area is the southern tip of the ABDSP, approximately 0.7 miles north of the Jacumba Substation. In addition there are no designated recreation areas within or adjacent to the new ROW as it is located entirely on private land. Therefore, wilderness and recreation impacts to the U.S. will not be further discussed.

Mexico. The RWD wind farm and related facilities would be located approximately 1.4 miles east of the town of La Rumorosa, in the municipality of Tecate. It would include 20 miles of new 230 kV line following the existing Tijuana/Mexicali transmission line, and approximately 7 miles of 230 kV transmission line on new ROW up to the U.S./Mexico border. While this region is primarily natural and has a very low population density, there are no Mexican Federal wilderness areas, wilderness study areas, and nor official recreation areas. However, the area of La Rumorosa, adjacent to the proposed wind farm facilities, is visited frequently, especially during the summer months, for ecotourism and by national tourists primarily from Mexicali.

Environmental Impacts and Mitigation Measures

Impacts WR-4 and WR-4B related to wilderness areas would not occur because there are no designated wilderness areas along the transmission line route or in the La Rumorosa area.

Construction Impacts

Impact WR-1: Construction activities would temporarily reduce access and visitation to recreation or wilderness areas (Class II)

Construction of the RWD wind farm in Mexico would involve the use of local roads for construction vehicle access given the limited roadways in the area. Widening of these roadways would probably be necessary to accommodate construction vehicle sizes and necessary turnarounds. While there is no officially designated wilderness or recreation area, the town of La Rumorosa does receive a large number of tourists, especially during the summer months (Tecate Government, 2007). The location of construction equipment along roadways may temporarily preclude or constrain access to this region.

The noise, dust, and presence of heavy equipment associated with project construction may temporarily reduce visitation to the La Rumorosa area. Recreationists may cancel or schedule their visits to avoid construction periods thereby resulting in temporarily reduced visitation. Similarly, visitor use of the areas to be traversed or bordered by the transmission line and wind farm could be affected. Construction-related disturbances to recreational resources would result in significant impacts. Mitigation Measures WR-1a and WR-1c are required to reduce impacts to less than significant (Class II).

Mitigation Measures for Impact WR-1: Construction activities would temporarily reduce access and visitation to recreation or wilderness areas

WR-LR1a Coordinate construction schedule and activities with the authorized officer for the recreation area. No less than 60 days prior to construction, the applicant shall coordinate construction activities and the project construction schedule with the authorized officer for the recreation areas in the La Rumorosa region of Tecate, Baja California. The applicant shall schedule construction activities to avoid heavy recreational use periods in coordination with and at the discretion of the authorized officer. The applicant shall locate construction equipment to avoid temporary preclusion of recreation areas in accordance with the recommendation of the authorized officer. The applicant shall document its coordination efforts with the authorized officer and make this documentation available to the authorized officer for this region at least 30 days prior to construction.

WR-LR1c Coordinate with local agencies to identify alternative recreation areas. The applicant shall coordinate with the authorized officer for the applicable federal, State, or local parks and recreational facilities in the La Rumorosa region of Tecate, Baja California at least 60 days before construction in order to identify alternative recreation facilities that may be used by the public during construction. The applicant shall post a public notice at recreation facilities that are to be closed or where access would be limited during project construction. The applicant shall document its coordination efforts with the parks and recreation departments and make this documentation available to the authorized officer for this region 30 days prior to construction.

Operational Impacts

Impact WR-2: Presence of a transmission line or substation would change the character of a recreation area, diminishing its recreational value (Class III)

The RWD project would be located approximately 1.4 miles east of the town of La Rumorosa, in the municipality of Tecate. The 7 miles of 230 kV transmission line on new ROW would traverse primarily natural area. However, this region is not designated as wilderness or recreation area by the Mexican government so impacts to recreational areas would be less than significant (Class III.)

Impact WR-2LR: Presence of the wind towers/turbines and associated facilities would change the character of a recreation area, diminishing its recreational value (Class I)

The RWD project would be located approximately 1.4 miles east of the town of La Rumorosa, in the municipality of Tecate. The RWD wind farm footprint would be approximately 80 to 160 acres of land that was previously primarily natural in appearance. While this region receives a large amount of national tourists, especially during the summer months, it is not officially designated as a recreation area by the Mexican government. (Tecate Government, 2007)

The turbines would be visible at locations within the Sierra Juárez Mountains. Views of the wind tower/turbines from these recreational areas would be from distance of approximately one to ten miles or greater. Since these recreational areas are valued for their solitude and expansive scenic setting, presence of wind turbines would be contrary to the expectations of many recreationists in these areas.

With the exception of the existing La Rumorosa Substation and the existing 230 kV transmission line, the RWD project would not be collocated with industrial type structures, and would therefore introduce new structurally complex, industrial type features to a predominantly natural landscape. As described in

Section D.3, Visual Resources, long-term, operational visual impacts would be experienced by viewers within and outside of the area. Additionally, the noise from the wind turbines would substantially elevate the ambient noise levels by more than 5 dBA within 500 feet of the edge of the wind turbine project area in the natural areas along the project sites (Contra Costa County, 2007). Refer to Section D.8.12.5 for additional information on RWD project noise impacts.

From an operational perspective, the nature or condition of this area would permanently change. While implementation of mitigation measures could reduce the impact of the wind turbines, transmission lines and structures on recreational areas, this impact cannot be mitigated to a less than significant level (Class I). Nevertheless, Mitigation Measures V-3a will be implemented to reduce impacts.

Impact WR-2LR: Presence of the wind towers/turbines and associated facilities would change the character of a recreation area, diminishing its recreational value (Class I)

V-3a Reduce visual contrast of towers and conductors (second bullet of mitigation only applies).

Impact WR-3: Presence of a transmission line would permanently preclude recreational activities (No Impact)

Mexico. The RWD project would be located approximately 1.4 miles east of the town of La Rumorosa, in the municipality of Tecate. The majority of the transmission line (20 miles) would be on existing ROW. The 7 miles of 230 kV transmission line on new ROW would traverse primarily natural area; however, this region is not designated as wilderness or recreation area by the Mexican government (No Impact).

Impact WR-3LR: Presence of wind tower/turbines and associated facilities would permanently preclude recreational activities (Class III)

Mexico. The RWD project would be located approximately 1.4 miles east of the town of La Rumorosa, in the municipality of Tecate. While the RWD wind farm is sited on approximately 750 to 2125 acres, the actual wind farm footprint would be approximately 37.5 to 212.5 acres of land. This region receives a large amount of national tourists, especially during the summer months; however, it is not officially designated as wilderness or recreation area by the Mexican government. (Tecate Government, 2007) While the nature of this area would permanently change, it would still be available for recreational activities that were associated with the town of La Rumorosa, or its outskirts and thus the impacts while adverse would not be significant (Class III).

D.6.12.5 Agriculture - La Rumorosa Wind Project

Environmental Setting

United States. A new 230 kV transmission line would be required to connect the “Rumorosa Wind Developers II” (RWD) to the existing 500 kV SWPL, about 10 miles to the north of the existing Tijuana/La Rosita 230 kV Transmission line. The 1.7 miles of new 230 kV transmission line would be sited in the United States on private land. No DOC Farmlands, Active Agricultural Operations, or Williamson Act lands would be traversed by or be adjacent to transmission line, and thus, no Agricultural Resources exist within this transmission line ROW. The closest agriculture land is located northeast of the town of Jacumba approximately 1 mile from the Jacumba Substation.

Mexico. The RWD project would be located east of the town of La Rumorosa, in the municipality of Tecate. It would include 20 miles of new 230 kV line following the existing Tijuana/Mexicali transmis-

sion line, and approximately 7 miles of 230 kV transmission line on new ROW up to the U.S./Mexico border. There is very little agriculture in and around La Rumorosa due to its rocky soil and limited water resources. Some agriculture exists adjacent to the existing 230 kV Tijuana/Mexicali ROW in Luis Echeverria Alvarez, where the RWD transmission line would turn north-northeast until reaching the U.S./Mexico border. The ROW would be adjacent to approximately 0.5 miles of agriculture; however the existing Tijuana/Mexicali transmission line is separated from the 0.5 miles of agriculture by Highway Mexico 2. Cattle ranching occurs in Jácume across the border from the town of Jacumba.

Environmental Impacts and Mitigation Measures

Since the RWD project facilities would be located within lands void of DOC designation and Williamson Act lands, Impacts AG-2 (Operation would permanently convert DOC Farmland to non-agricultural) and AG-4 (Operation would permanently convert Williamson Act lands to non-agricultural use) would not occur for this project. The full text for individual mitigation measures for all resource topics is provided in Appendix 12.

Construction Impacts

Impact AG-1: Construction activities would temporarily interfere with Active Agricultural Operations (Class III for the United States; Class II for Mexico)

United States. A new 230 kV transmission line would be required to connect the RWD to the existing 500 kV SWPL (about 10 miles to the north of the existing Tijuana/La Rosita 230 kV Transmission line). The 1.7 miles of new 230 kV transmission line would be sited on private land designated as rural lands that may grazing lands. If the land is used for grazing purposes, the impacts would be adverse but less than significant (Class III) and no mitigation is required.

Mexico. Active agricultural operation (grazing operations in the region of Jácume) would potentially be impacted by construction activities when the 230 kV line is built. These construction activities would temporarily interfere with agricultural operations by impeding access to certain fields or obstructing farm vehicles, which could result in the temporary reduction of access to grazing lands, which would be a significant impact without mitigation. Near Luis Echeverria Alvarez there are also active agriculture lands; however, they are separated from the existing Tijuana/Mexicali transmission line ROW by a four-lane highway, impacts would be adverse but less than significant (Class II).

In the region of Jácume, Mitigation Measures AG-1a, AG-1d, AG-3e, L-1d, L-1e, L-1f, would reduce impacts to the grazing land to a less than significant level (Class II).

Mitigation Measures for Impact AG-1: Construction activities would temporarily interfere with Active Agricultural Operations

- AG-1a** **Avoid interference with agricultural operations.**
- AG-1d** **Compensate farmers for lost crops along ROW.** [APM LU-1]
- AG-3e** **Install project facilities along borders.** [APM LU-7]
- L-1d** **Provide advance notice and appoint public affairs officer.** [APM LU-3]
- L-1e** **Notify property owners and provide access.** [APM LU-4]
- L-1f** **Flag ROW boundary and environmentally sensitive areas.** [APM LU-6]

Operational Impacts

No impacts to agriculture from operation of the La Rumorosa Wind Project were identified for either the United States or the Mexico portions of the project.

D.7.16.5 Cultural Resources - La Rumorosa Wind Project

Environmental Setting

United States - Cultural Resources. The “Rumorosa Wind Developers II” (RWD) is located in the San Diego Mountains, whose prehistoric sites most frequently include bedrock milling features, and historic sites typically indicate ranching and mining activities; and the inland valleys, a transition zone between the mountains and coast with prehistoric sites bearing appropriate transitional evidence such as bedrock milling, lithic artifact scatters, and temporary camps and habitations, while historic sites contain evidence of settlement and ranching throughout the Mexican and American periods.

Sites exhibiting a broad range of past human activity have been identified within the nearby Interstate 8 Alternative. These include, but are not limited to, prehistoric artifact scatters, trails, temporary camps, habitation sites, quarries, and isolates, and historic roads, highways, railroads, refuse scatters, quarries, and walls. To date, SWCA and AE archaeologists have completed intensive cultural resources survey for 6.24 percent of the 1.7-mile RWD transmission line located in the United States on behalf of the CPUC and BLM. There are eight known cultural resources located within 150 feet of the proposed centerline. Of the eight resources, two are recommended NRHP-eligible, one of which is also recommended eligible for CRHR, see details below.

- The RWD transmission line crosses the San Diego & Arizona Eastern Railroad, which, as a whole, has been recommended NRHP-eligible under Criteria A, C, and D by SWCA. Features and portions of this railroad outside the RWD transmission line alignment have been determined not eligible in the past; however, it is likely that other portions of this historically significant railroad remain NRHP and CRHR eligible.
- The RWD transmission line is partially located within the historical Old Highway 80. This former intercontinental highway once called the “Broadway of America” has been designated as a County of San Diego “Historic Route” and has been nominated as a “State Historic Route.” A 33-mile portion of the Old Highway 80 route has been recommended eligible for NRHP and CRHR under Criteria A and C, with specific contributing and non-contributing elements (Lortie, 2000).
- The remaining six cultural resources have not been evaluated and are potentially eligible for NRHP/CRHR listing.

Mexico - Cultural Resources. The RWD project would be located east of the town of La Rumorosa, in the Sierra de Juárez Mountains. The Baja California government website provides a general cultural history of the region (GobBC, 2007). The Baja California peninsula is believed to have been inhabited as early as 10,000 -12,000 BC (Gamble et al., 2006). Like the United States Jacumba region, the La Rumorosa region is one of transition between the Sierra de Juárez and the Desierto del Colorado, or the Colorado Desert. Ethnographically, the La Rumorosa region was occupied by the Kumeyaay (often spelled Kumiai in Mexico). The lifeways of the Kumeyaay inhabitants at the time of European contact are presented in detail in Appendix 9A.

The official website of Baja California Secretary of Tourism highlights the Museum of Archeology at El Vallecito, located approximately 3 miles northeast from the town of La Rumorosa. This archaeoastronomy site hosts prehistoric petroglyphs and pictographs, as well as lithic and ceramic artifacts.

This elaborate site with evidence of multiple activities is indicative of the prehistoric occupation and culture of the region.

Environmental Impacts and Mitigation Measures

Construction Impacts

There are eight known cultural resources located within the RWD transmission line area (see Table Ap.9B-43 in Appendix 9B). There is also the potential to encounter undiscovered cultural resources during project construction. Two of the resources are potentially eligible for the NRHP and CRHR. Because known cultural resources that are potentially eligible for the NRHP or CRHR exist within areas of proposed direct impact, as well as the potential for encountering undiscovered cultural resources, the following impacts could occur during project site testing, construction, or operation.

Impact C-1: Construction of the project would cause an adverse change to known historic properties (Class II for the United States, No Available Data for Mexico)

United States. There are eight known cultural resources located within 150 feet of the 1.7 miles RWD project area. There is also the potential to encounter undiscovered cultural resources during project construction. Because known cultural resources that are potentially eligible for the NRHP or CRHR exist within areas of proposed direct impact, as well as the potential for encountering undiscovered cultural resources, the following impacts could occur during project construction or operation. As discussed in Section D.7.5.1, adverse construction impacts would be mitigated to a level less than significant by implementing Mitigation Measures C-1a, C-1b, C-1c, C-1d, C-1e, and C-1f (Class II).

Mexico. The RWD wind farm and transmission line is located in Baja California, Mexico. No archaeological survey was performed for the area; however, the rich archaeological heritage of the area has been documented on both sides of the border. As such it is probable that known historic properties exist in this region and site survey is recommended before beginning construction of the RWD project. As discussed in Section D.7.5, should cultural resources be located during site survey or during project construction, adverse construction impacts would be mitigated to a level less than significant (Class II) by implementing Mitigation Measures C-1a, C-1b, C-1c, C-1d, C-1e, and C-1f. For the full text of the mitigation measures, please see Appendix 12.

Mitigation Measures for Impact C-1: Construction of the project would cause an adverse change to known historic properties

- C-1a** **Inventory and evaluate cultural resources in Final APE.**
- C-1b** **Avoid and protect potentially significant resources.**
- C-1c** **Develop and implement Historic Properties Treatment Plan.**
- C-1d** **Conduct data recovery to reduce adverse effects.**
- C-1e** **Monitor construction at known ESAs.**
- C-1f** **Train construction personnel.**

Impact C-2: Construction of the project would cause an adverse change to sites known to contain human remains (No Impact for the United States; No Available Data for Mexico)

United States. The RWD transmission site is not known to contain Native American human remains (Impact C-2); however, it is possible that additional prehistoric archaeological sites identified during

pre-construction surveys or discovered during the course of construction could contain human remains. Any adverse effect to human remains is considered significant (Class I).

Mexico. The designation Native American does not exist in Mexico; however, there are many indigenous nations (*naciones o pueblos indígenas*) and persons of indigenous descent within Mexico and within Baja California specifically. As such, Impact C-2 (Construction of the project could cause an adverse change to sites known to contain Native American human remains) will be considered for Mexico as well.

The RWD wind farm and transmission line are located in Baja California, Mexico. No archaeological records search or survey was performed for the area. However, there are known prehistoric sites in the vicinity of La Rumorosa including an archaeoastronomy site with pictographs and petroglyphs (El Vallecito). According to the Baja California Secretary of Tourism, the Archeological Museum at El Vallecito is located 3 miles northwest of La Rumorosa. The La Rumorosa area was ethnographically occupied by the Kumeyaay and related families of Kumeyaay still reside on both sides of the international border. As such there is potential that known human remains exist at the RWD wind farm site. Should human remains be discovered, work in the area of the discovery should be halted in that area and directed away from the discovery, but Mexican laws that may require specific actions are not known. It is assumed that cultural resources studies for the portion of the RWD project within Mexico would be coordinated with the Mexicali office of the *Instituto Nacional de Historia y Antropología* (INAH) to ensure compliance with Mexican law.

Mitigation Measures C-1b, C-1c, C-1d, C-1e, C-1f, C-2a, and C-2b would partially compensate for impacts to human remains and would outline procedures for the treatment of unanticipated discoveries during construction and Mexican laws regarding such matter should be consulted. However, should human remains be discovered, the impacts would still be considered significant (Class I).

Mitigation Measures for Impact C-2: Construction of the project would cause an adverse change to sites known to contain human remains

- C-1b** **Avoid and protect potentially significant resources.**
- C-1c** **Develop and implement Historic Properties Treatment Plan.**
- C-1d** **Conduct data recovery to reduce adverse effects.**
- C-1e** **Monitor construction at known ESAs.**
- C-1f** **Train construction personnel.**
- C-2a** **Properly treat human remains.**

Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains (Class I or II)

United States and Mexico. Types of subsurface features that could be encountered along the RWD project include prehistoric resources such as buried living surfaces, refuse deposits, hearths, burials, and cremations. Historical resources that could be unearthed during project construction include refuse pits and privies. Buried archaeological resources may be encountered during vegetation removal at tower and pull site locations, grading of access roads, or excavation associated with tower construction. Impacts to most unknown significant prehistoric and historic archaeological sites would be mitigated to a level that is less than significant (Class II) by implementing Mitigation Measures C-1c, C-1d, C-1f,

C-2a and C-3a. However, effects related to Native American human remains would be significant (Class I) even with mitigation.

Mitigation Measures for Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains

- C-1c** **Develop and implement Historic Properties Treatment Plan.**
- C-1d** **Conduct data recovery to reduce adverse effects.**
- C-1f** **Train construction personnel.**
- C-2a** **Properly treat human remains.**
- C-3a** **Monitor construction in areas of high sensitivity for buried resources.**

Impact C-4: Construction of the project would cause an adverse change to Traditional Cultural Properties (Class I or II for the United States; No Available Data for Mexico)

United States. To date, no TCPs have been identified within the RWD project area in the U.S. However, the Sacred Lands File search conducted for the alternatives noted that lands sacred to Native Americans are present in the vicinity of Jacumba, in undisclosed locations. The BLM, as the Federal Lead Agency under NEPA and Section 106 of the NHPA has initiated government-to-government consultation with appropriate Native American groups and notification to other public groups regarding project effects on traditional cultural values. That consultation will determine whether there are TCPs that could be affected within this segment. Though impacts to TCPs are often significant (Class I), mitigation, as defined by NEPA (in King, 2003), can include “minimizing impacts by limiting the degree or magnitude of the action...,” rectifying or reducing the impact, and/or “compensating for the impact by replacing or providing substitute resources or environments,” which when properly coordinated Native Americans or other Traditional Groups can reduce the impact to less than significant (Class II). Implementation of Mitigation Measure C-4a (Complete consultation with Native Americans and other Traditional Groups) could potentially reduce impacts to TCPs to a level that is less than significant (Class II); however, in some cases impacts may remain significant (Class I).

Mexico. Similar efforts shall be made for the RWD project area in Mexico. TCPs have been recorded by cultural resources practitioners in northern Baja (e.g., Gamble et al., 2006); however, it is unknown if any have been recorded in the vicinity of the RWD project area.

Mitigation Measure for Impact C-4: Construction of the project could cause an adverse change to Traditional Cultural Properties

- C-4a** **Complete consultation with Native American and other Traditional Groups.**

Operational Impacts

Impact C-5: Project operation and maintenance would cause an adverse change to known historic properties (Class II for the United States; No Available Data for Mexico)

United States. Direct and indirect impacts may occur to historic properties within and in the vicinity of the project area during operation and long-term presence of the project. There are two linear historical resources (Old Highway 80 and the San Diego & Arizona Eastern Railroad) recommended eligible for NRHP, and six other known resources that may be register eligible located within the RWD transmission line site region that are potentially subject to long-term and operational impacts. Direct impacts could result from maintenance or repair activities, while increased erosion and access could result in indirect

project impacts. These impacts are potentially significant, but can be mitigated to a level that is less than significant (Class II) by implementing site protection measures and monitoring procedures, as detailed in Mitigation Measure C-5a (Protect and monitor NRHP and/or CRHR-eligible properties), as well as implementation of Mitigation Measure C-4a (Complete consultation with Native Americans and other Traditional Groups).

Mexico. The RWD wind farm and transmission line are located in Baja California, Mexico. No archaeological survey was performed for the area; however, based on the known site density to the north of the border as well as the site at El Vallecito, it is likely that prehistoric and historic period resources are present. Because it is probable that historic properties exist in this region, site survey is recommended before beginning construction of the RWD project. Direct and indirect impacts may occur to known historic properties within and in the vicinity of the project area during operation and long-term presence of the project. These impacts are potentially significant, but can be mitigated to a level that is less than significant (Class II) by implementing site protection measures and monitoring procedures, as detailed in Mitigation Measure C-5a (Protect and monitor NRHP and/or CRHR-eligible properties), as well as implementation of Mitigation Measure C-4a (Complete consultation with Native Americans and other Traditional Groups).

Mitigation Measures for Impact C-5: Project operation and maintenance would cause an adverse change to known historic properties

- C-1b** **Avoid and protect potentially significant resources.**
- C-1c** **Develop and implement Historic Properties Treatment Plan.**
- C-2a** **Properly treat human remains.**
- C-4a** **Complete consultation with Native American and other Traditional Groups.**
- C-5a** **Protect and monitor NRHP- and/or CRHR-eligible properties.**

Impact C-6: Long-term presence of the project would cause an adverse change to known historic architectural (built environment) resources (Class II)

United States. The presence of the transmission line may result in indirect visual impacts to historic architectural resources. Indirect visual impacts to potentially NRHP and/or CRHR-eligible built environment resources such as the Old Highway 80 and the San Diego & Arizona Eastern Railroad located near the project should be avoided or minimized, where feasible. If the resource cannot be avoided, then screening this or other built environment resources from the project could minimize the visual impact. These impacts are potentially significant, but can be mitigated to a level that is less than significant (Class II) by implementing Mitigation Measure C-6a, which would reduce visual intrusions to historic built environment properties.

Mexico. The presence of the wind turbines may result in indirect visual impacts to historic architectural resources. One such structure is the “Casa de Piedra” or stone house, built 40 to 50 years ago. While the stone house is not officially recognized by the Mexican government as an architectural resource, it is recognized on the Tecate government website as a source of tourism (Tecate Government, 2007). If the resource cannot be avoided, then screening this or other built environment resources from the project could minimize the visual impact. Similar resources are likely present and may also be subject to visual impacts. These impacts are potentially significant, but can be mitigated to a level that is less than significant (Class II) by implementing Mitigation Measure C-6a, which would reduce visual intrusions to historic built environment properties.

Mitigation Measure for Impact C-6: Long-term presence of the project would cause an adverse change to known historic architectural (built environment) resources

C-6a Reduce adverse visual intrusions to historic built environment properties.

D.7.35.5 Paleontological Resources - La Rumorosa Wind Project

Environmental Setting

United States; Paleontology. With regard to paleontological resources, the area in the vicinity of the Jacumba Substation site, from where the La Rumorosa transmission line begins, is underlain by the following geologic units:

- **Quaternary alluvium.** Quaternary alluvium consists of partly dissected, mostly unconsolidated, poorly sorted sand, silt, clay, and gravel located at the margins of canyons and within valley floors. “Younger” alluvium is Holocene (10,000 years ago to Recent) in age and “Older alluvium” is Pleistocene (1.8 million years ago to 10,000 years ago) in age. Fossil localities in older alluvium deposits throughout southern California have yielded terrestrial vertebrates such as mammoths, mastodons, ground sloths, dire wolves, short-faced bears, saber-toothed cats, horses, camels, and bison (Scott, 2006). Younger alluvium is determined to have a low potential for paleontological resources but is often underlain by older alluvium, which is determined to have a high potential for paleontological resources.
- **Alverson Volcanics.** Alverson Volcanics include an upper unit of volcanic flows and a lower unit consisting of a sequence of conglomerates, sandstones, and mudstones interbedded with lava flows. The sedimentary deposits within this geologic unit have yielded fossilized algae, pollen, petrified wood, mollusks, and one occurrence of a vertebrate bone fragment. The Alverson Volcanics are assigned a moderate paleontological resource potential.
- **Metasedimentary rocks.** Metasedimentary rocks in the central part of San Diego County are referred to as Julian Schist, which is composed of quartz-mica schist and quartzite, with minor amounts of marble and amphibolite. These rocks have been intruded and deformed by plutonic rocks associated with the Peninsular Ranges Batholith. The age of these metasedimentary rocks is not definite; however, microfossils indicate that they are much older than Triassic in age. No fossils have been discovered in this unit within San Diego County; however, correlative units in Riverside and Orange County have yielded marine mollusks. Metasedimentary rocks in San Diego County are determined to have a marginal potential for paleontological resources.

Museum paleontological collection records maintained by SDNHM indicate that no previously recorded fossil localities exist within this project or a half-mile radius; however, the geologic sediments underlying the project area are determined to have a paleontological resource potential ranging from low to moderate.

Mexico; Paleontology. With regard to paleontological resources, the area in the vicinity of the RWD site is underlain primarily by igneous and metamorphic rock representative of the following eras:

- **Paleozoic Era.** The Paleozoic era is represented by few sprinklings of metamorphic rock throughout the entire state of Baja California. These rocks are igneous and metamorphic. The two oldest findings have been in the northwest region of Baja California, and correspond to an olistolith located in between Tecate and the Guadalupe Valley.

- **Mesozoic Era.** The most significant event in this era was the development of volcanic-plutonic granite. During this era a large part of the Sierra mountains were formed, along with many metamorphic rocks. Less frequently, sedimentary rocks such as shale and sandstone were found in the regions near to the coast.
- **Cenozoic Era.** The rocks that were formed during this era are found through the state of Baja California and are primarily sedimentary and igneous rocks. This era was relatively calm, punctuated by occasional volcanic eruptions of a mixed composition. During this era, the peninsula moved northward.

Environmental Impacts and Mitigation Measures

Impact PAL-1: Construction of the project would destroy or disturb significant paleontological resources (Class II)

United States and Mexico. There is potential that unknown paleontological resources exist in the area that could be adversely affected by ground disturbance associated with construction activities. Any such impact would be considered significant, but would be reduced to a less than significant level (Class II) with implementation of Mitigation Measures PAL-1a through PAL-1e.

Mitigation Measures for Impact PAL-1: Construction of the project would destroy or disturb significant paleontological resources

- PAL-1a** Inventory and evaluate paleontological resources in the Final APE
- PAL-1b** Develop Paleontological Monitoring and Mitigation Plan.
- PAL-1c** Monitor construction for paleontology.
- PAL-1d** Conduct paleontological data recovery.
- PAL-1e** Train construction personnel.

D.8.12.5 Noise - La Rumorosa Wind Project

Environmental Setting

United States. The noise setting for the 1.7 miles of transmission line is presented below. A new 230 kV transmission line would be required to connect the “Rumorosa Wind Developers II” (RWD) to the existing 500 kV SWPL via the Jacumba Substation (about 10 miles north of the existing Tijuana/Mexicali 230 kV transmission line).

- **Ambient Noise Levels.** The 1.7 miles of new 230 kV transmission line would also be located on primarily private property in the San Diego County. Low noise levels under 50 dBA generally occur on these lands that are mostly open space. Noise levels are occasionally elevated due to aircraft caused by the NAF El Centro Desert Range and the Jacumba Airport. Cars traveling along Interstate 8 and Old Highway 80 also cause elevated noise levels.
- **Noise-Sensitive Receptors.** No residences or otherwise noise-sensitive receptors are located within 1,000 feet of the new ROW site, which is in a rural and natural setting. However, the outskirts of the town of Jacumba is located a little over 1,000 feet from the new ROW.

Mexico. The noise setting for the new wind farm and new transmission line is presented below. A new 230 kV transmission line would be required to connect the RWD to the existing 500 kV SWPL via the Jacumba Substation (about 1.5 miles north of the U.S./Mexico border). This new 230 kV transmission

line would follow the existing Tijuana/Mexicali ROW for 20 miles before turning north, northeast until reaching the U.S./Mexico border.

- **Ambient Noise Levels.** Generally low noise levels are expected to occur in the RWD area as the La Rumorosa region is rural. Rural areas or unpopulated lands are the quietest. Unpopulated natural areas are expected to be as low as 35 to 50 dBA, and ambient levels tend to be below 50 dBA in open areas. Near Highway Mexico 2 and the town of La Rumorosa noise levels are expected to be higher, between 60 and 70 dBA. Audible corona noise occurs along the existing Tijuana/Mexicali 230 kV transmission line.
- **Noise-Sensitive Receptors.** Noise-sensitive receptors within the RWD area include the town of La Rumorosa, limited rural residences, and open space/recreational users within the La Rumorosa region. Along the transmission line route, there are noise sensitive receptors near the town of Luis Echeverria Alvarez, where the transmission route turns north, northeast until reaching the U.S./Mexico border. The nearest noise-sensitive receptors would be the recreational open space around La Rumorosa. The setting is otherwise rural and natural without noise-sensitive uses.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact N-1: Construction noise would substantially disturb sensitive receptors and violate local rules, standards, and/or ordinances (Class III for the United States; Class I for Mexico)

United States. Construction of the RWD transmission line would substantially increase ambient noise levels through use of heavy machinery. However, this construction noise impact would be temporary, and there are no residences within 1,000 feet of the transmission line route. Therefore, this impact would be less than significant (Class III), and no mitigation is required.

Mexico. Article 16 of the Mexican national rules for the prevention and control of environmental contamination originating by the emission of noise (*Reglamento para la prevención y el control de la contaminación ambiental originada por la emisión de ruido*, or RPCCAR) states that any public or private construction cannot violate the maximum level of noise emission established by the rules. If construction will be beyond the permitted noise level, the responsible party must submit the following information to the Secretary of Health and Assistance (*Secretaría de Salubridad y Asistencia*) fifteen days before the start date: Location and duration of the project; Number and types of noise emitting sources; Location of the noise sources during the duration of the project; and Hours of operation of the noise sources (RPCCAR, 1976).

Article 29 states that maximum allowable noise levels for vehicles are 79 dBA for vehicles weighing up to 3,000 kg, 81 dBA for vehicles weighing up to 10,000 kg, and 84 dBA for vehicles weighing more than 10,000 kg (RPCCAR, 1976).

Mexican law also regulates maximum permissible worker exposure to noise and vibration (*Relativo a las condiciones de seguridad e higiene en los centros de trabajo donde se genere ruido*) based on the international norm from the International Standards Organization (ISO-1999-1975) (Union, 2003).

Construction of the RWD project would substantially increase ambient noise levels in the vicinity of the wind farm, transmission line, and construction access routes. This construction noise impact would be temporary. Construction noise would adversely affect nearby residences to the transmission line and recreational users of the open space areas around the town of La Rumorosa. Mitigation would need to

be implemented including notification to residences and sensitive receptors, such as Mitigation Measures L-1a (Prepare construction notification plan) and N-1a (Implement Best Management Practices for construction noise). The measures would reduce the impact to the extent feasible, but the substantial noise increase from construction would be significant and unavoidable for nearby sensitive receptors (Class I).

Mitigation Measures for Impact N-1: Construction noise would substantially disturb sensitive receptors and violate local rules, standards, and/or ordinances

L-1a Prepare Construction Notification Plan.

N-1a Implement best management practices for construction noise.

Impact N-2: Construction activity would temporarily cause groundborne vibration (Class II)

United States and Mexico. Vibration levels from construction equipment and activities might be perceptible to receptors in the immediate vicinity of the construction sites due to the rocky terrain. Rock drilling and blasting would cause perceptible vibration in the immediate vicinity of construction sites. Perceptible vibration could be experienced by residents or workers inside structures within 50 feet of trucks traveling over uneven surfaces. The likelihood of a nuisance or annoyance occurring and the impact of potential physical damage to existing structures would be significant. With advance notification (Mitigation Measure L-1a) and a blasting plan that restores structures damaged by blasting, as in Mitigation Measure N-2a, the impacts from construction-related groundborne vibration would be adverse but not excessive, and this impact would be reduced to a less than significant level (Class II).

Mitigation Measures for Impact N-2: Construction activity would temporarily cause groundborne vibration

L-1a Prepare Construction Notification Plan.

N-2a Avoid blasting where damage to structures could occur.

Operational Impacts

Impact N-3: Permanent noise levels would increase due to corona noise from operation of the transmission lines and noise from other project components (Class III)

United States. The proposed 230 kV transmission line would cause a permanent noise increase due to the corona effect. Audible power line noise would be generated from corona discharge, which is usually experienced as a random crackling or hissing sound. Corona noise from high voltage lines is at its greatest during wet weather or near inconsistencies or cuts in the metal surface of the line itself. The precise location of highest possible corona noise cannot be known until after commencing operation. This is because conductor surface defects, damage, and inconsistencies influence corona noise.

Noise-sensitive receptors are located further than 500 feet to the ROW edge. For these locations, the increase caused by corona noise would be less than 5 dBA and compliant with the local standards. As such, the impact is considered adverse but less than significant (Class III).

Mexico. The transmission line would begin at the U.S./Mexico border just northwest of the town of Jácume. For the majority of the 7 miles of transmission line located in new ROW, noise-sensitive receptors are located further than 500 feet to the ROW edge. For these locations, the increase caused by corona noise would be less than 5 dBA.

Residential land uses are located in close proximity of the new 230 kV transmission line on the existing Tijuana/Mexicali ROW; however, this area is directly adjacent to the existing 230 kV transmission line. Given the ambient noise levels associated with the existing Tijuana/Mexicali transmission line corona noise, the contribution of the substation corona noise is anticipated to be adverse but less than significant (Class III).

Mexico, Wind Turbine Noise. Noise would be created by the new wind turbine generators due to the rotation of the blades and operation of the generator. As sound spreads out from a noise source, the underlying physics of sound propagation determines that the sound will reduce by 6 dB for each doubling of distance away from the source. In arrangements of new wind turbines where a string of multiple turbines may be parallel with the lot line, a steady sound pressure level of 65 dBA is met at a distance of 170 feet from the property line (Contra Costa County, 2007).

In Mexico, noise regulations for fixed sources are 68 dBA from six in the morning to ten at night, and 65 dBA from ten at night until six in the morning (RPCCAR, 1976). As there are no noise sensitive receptors within 170 feet from the RWD wind farm facilities, the sound pressure from the wind farm operations would be less than 65 dBA. Therefore, the wind turbine operation noise would be a less than significant impact (Class III). Noise from maintenance activities is discussed under Impact N-4.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels (Class III for the United States; Class I for Mexico)

United States. Inspection and maintenance including insulator washing and access road repair would involve occasional helicopter, truck, or earthmoving equipment activity along the transmission line ROW. This infrequent activity would not violate any local noise standards or cause a substantial increase in noise. This impact would be less than significant (Class III).

Mexico. Maintenance activities associated with the RWD project towers/turbines and associated facilities would include primarily ground-level inspections and occasional helicopter use for repairs. Ground level inspections would involve vehicle travel to the turbine sites. As presented in the description for the RWD project, it is anticipated that maintenance access to the nacelle will be in the form of ladders inside the towers. Helicopters might be used for repairs involving heavy equipment. These maintenance activities would cause occasional noise. During this activity, light-duty helicopters would generate noise levels of under 80 dBA at 200 feet, and crew trucks would cause levels of approximately 75 dBA at 50 feet. Access road repair may also involve occasionally increased noise from sources like a water truck or earthmoving equipment. These maintenance activities would periodically cause a substantial increase in existing noise levels at noise-sensitive residences and recreational uses along the transmission line route, resulting in a noise impact that would be significant and unavoidable (Class I).

D.9.12.5 Transportation and Traffic - La Rumorosa Wind Project

Transportation and Traffic Setting for the RWD Project

United States. A new 230 kV transmission line would be required to connect the “Rumorosa Wind Developers II” (RWD) to the existing 500 kV SWPL (about 10 miles to the north of the existing Tijuana/La Rosita 230 kV Transmission line). The 1.7 miles of new 230 kV transmission line would be sited on primarily private land in San Diego County. Table D.9-22 lists the roads that potentially could be impacted by the RWD project. In addition, the transmission line would cross the San Diego and Arizona Eastern Railroad tracks, which parallel Old Highway 80 in this area. For many smaller or lightly traveled

roads, the counties do not collect traffic data. As such, traffic data is unavailable for the roads traversed by and near the 1.7 miles of transmission line in the United States.

Table D.9-22. Public Roadways along the RWD Project, U.S. Portion

Roadway	Jurisdiction	Classification	Existing Lanes	Traffic Volumes	
				Year	ADT
Old Highway 80	San Diego County	Rural LC	2	ND	—
Border Creek Road	San Diego County	None	2	ND	—
Desert Rose Ranch Road	San Diego County	None	2	ND	—
North Railroad Street	San Diego County	None	2	ND	—

Mexico. The wind turbines and associated transmission lines would be sited in La Rumorosa, Baja California. While the exact siting of the RWD project towers/turbines and associated facilities is not known, it is assumed that the local roadway network would be used for access to construction areas and the transportation of equipment and materials. Table D.9-23 lists the roads that potentially could be impacted by the RWD project. In addition to the two state highways, there are local unpaved roads that would be potentially affected by the project at the site of the wind turbine, and three local, unpaved roads that would be traversed by the new 230 kV transmission line on new ROW north of Luis Echeverria Alvarez, until reaching the U.S./Mexico border. One of the local unpaved roads is a prominent road connecting Luis Echeverria Alvarez, Jácume, and La Rumorosa.

Table D.9-23. Public Roadways along the RWD Project, Mexico Portion

Roadway	Classification	Existing Lanes	Traffic Volumes	
			Year	ADT
Highway Mexico 2 (toll)	Highway	4	NA	NA
Highway Mexico 2 (free)	Highway	4	NA	NA

NA = Not Available

Transportation and Traffic Impacts for the RWD project

As the areas where the RWD wind farm and transmission line will be built are very rural and not adjacent to local roads, Impact T-7: Construction would result in the short-term elimination of parking spaces, and Impact T-10: Underground construction could restrict access to properties and businesses, would not occur. Note that the text of a mitigation measure is written out the first time it appears in the Transportation and Traffic section. Thereafter, only the mitigation measure number and title are provided. The full text of all mitigation measures, including those for transportation and traffic impacts, is provided in Appendix 12 as well.

Impact T-1: Construction would cause temporary road and lane closures that would temporarily disrupt traffic flow (Class II)

United States. Construction of the RWD transmission line could result in roadway closures at locations where the construction activities, especially transmission line stringing, cross the ROWs of public streets and highways. The RWD transmission line would require transmission line stringing over Old Highway 80 and potentially over North Railroad Street. In addition, delivery of large equipment and materials via truck would also require temporary closures. Specific encroachment permits would be required for the project. However, road closures would be a significant impact.

To reduce impacts to a less than significant level (Class II), Mitigation Measure T-1a would be required. Together, encroachment permit and these mitigation requirements will ensure that impacts are less than significant.

Mexico. Construction of the wind tower/turbines and associated facilities could result in roadway closures at locations where the delivery of construction materials would require lane closures on public streets and highways. This would be a significant impact. These roadways would be used for equipment, material, and work crew transport to the construction sites. To ensure that impacts are less than significant (Class II), Mitigation Measure T-1a, requiring the development of Detour Plans for any potential long-term lane closures, would be implemented.

Mitigation Measure for Impact T-1: Construction would cause temporary road and lane closures that would temporarily disrupt traffic flow

T-1a Restrict lane closures.

Impact T-2: Construction would temporarily disrupt the operation of emergency service providers (Class II)

United States and Mexico. Construction activity associated with the RWD project could interfere with emergency response by ambulance, fire, paramedic and police vehicles if roadways are blocked, lanes are closed or access to residences and businesses is restricted. Roadway segments that would be most impacted would be two-lane roadways (e.g., Old Highway 80) that provide one lane of travel per direction. Additionally, there is a possibility that emergency services would be needed at a location where access is temporarily blocked by the construction zone. Disruption of emergency service providers would be a significant impact without mitigation. Mitigation Measure T-2a, which requires advance coordination with emergency service providers in order to develop alternative routes and adjust service areas and destinations as necessary to maintain emergency service coverage and response times, would mitigate this impact to a less than significant level since emergency service providers would be aware of any potential delays, lane closures, and/or roadway closures prior to construction activities and would be able to maintain emergency service coverage (Class II).

Mitigation Measure for Impact T-2: Construction would temporarily disrupt the operation of emergency service providers

T-2a Coordinate with Emergency Service Providers. [T-APM-4a]

Impact T-3: Construction would temporarily disrupt bus transit services (Class II)

United States and Mexico. Local bus service, as well as local school bus routes could potentially be impacted by the RWD project. Construction activities would potentially cause transit and school bus schedule delays if roadways need to be shut down for prolonged length of time, resulting in a significant impact. Implementation of Mitigation Measure T-3a, which requires consultation with the transit systems and affected school districts at least one month prior to construction to coordinate construction activities, would mitigate this impact to a less than significant level because prior consultation with the bus and transit services would allow alternative routes and stops to be planned eliminating delays from construction (Class II).

Mitigation Measure for Impact T-3: Construction would temporarily disrupt bus transit services

T-3a Consult with bus and transit services. [T-APM-5a]

Impact T-4: Construction would temporarily disrupt pedestrian and/or bicycle movement and safety (Class III for the United States; Class II for Mexico)

United States. As the transmission line in the United States is primarily through private property, it is unlikely that pedestrian and bicycle movement would be affected by construction activities. Therefore this impact would be less than significant (Class III) and no mitigation is required.

Mexico. Pedestrian and bicycle movement would be affected by construction activities if pedestrians and bicyclists are unable to pass through the construction zone or if established pedestrian and bicycle routes are blocked. This would be a significant impact (Class II). Mitigation Measures T-4a and WR-1b would reduce this impact to less than significant. These measures would ensure that safe alternative routes are designed either through or around the construction zone, facilitating safe passage.

Mitigation Measures for Impact T-4: Construction would temporarily disrupt pedestrian and/or bicycle movement and safety

T-4a Ensure pedestrian and bicycle movement and safety.

Impact T-5: Construction vehicles and equipment would potentially cause physical damage to roads in the project area (Class II)

United States and Mexico. Unexpected damage to roadways may occur from construction activities, construction vehicles, and transport of equipment along the roadways that would be used for construction of the RWD project. Construction traffic or equipment movement would be considered a significant impact if there is an increase in the wear on roadways, resulting in noticeable deterioration of roadway surfaces or other features in the road ROW (Class II). Mitigation Measure T-5a would require implementation of physical road improvements such as construction/modification of roadways and repaving roadways, thereby reducing this impact to less than significant.

Mitigation Measure for Impact T-5: Construction vehicles and equipment would potentially cause physical damage to roads in the project area

T-5a Repair damaged roads.

Impact T-6: Construction activities would cause a temporary disruption to rail traffic or operations (Class II for the United States; No Impact for Mexico)

United States. Overhead construction activities along the RWD project transmission line would potentially interfere with rail traffic because construction of the transmission line could require crossing the San Diego and Imperial Valley Railroad as well as the Union Pacific Railroad ROWs. This would be a significant impact (Class II). Mitigation Measure T-6a would require the applicant to obtain permits to enter the railroad ROWs. By complying with the railroad company permit requirements, the impact of the RWD project transmission line on rail traffic operations would be less than significant.

Mexico. The location of the RWD project towers/turbines and associated facilities in Baja California is not serviced or traversed by rail operations (No Impact.)

Mitigation Measure for Impact T-6: Construction activities would cause a temporary disruption to rail traffic or operations

T-6a Obtain railroad right-of-way permit. [T-APM-8a]

Impact T-8: Construction would conflict with planned transportation projects (No Impact for the United States, No Available Data for Mexico)

United States. The RWD project would not have impacts related to the conflict with planned transportation projects because there are no known planned transportation projects in the area.

Mexico. There is no available data for any future transportation projects in the region of RWD project. Should there be any transportation projects, the public agencies having jurisdiction over Highway Mexico 2 or any local La Rumorosa roads would be notified of the project, and an encroachment permit or other such agreement must be obtained for each location where the project would interface with a roadway or other transportation facility. Public agencies that are responsible for the roadways in Tecate are the Department of Municipal Transportation (*Departamento de Transportes Municipales*), the Committee of Transportation (*Comité de Transportes*), among others. Complying with local permits and agreements would ensure appropriate coordination between the applicant and the affected agencies. It is presumed that impacts would be less than significant, and no mitigation measures would be required, because coordination with appropriate agencies would address any issues prior to construction reducing any potential impacts. However, there are no available data as to any planned transportation projects on the Mexico side of the border.

Impact T-9: Construction would generate additional traffic on the regional and local roadways (Class II)

United States and Mexico. Construction activities may result in a temporary increase of traffic on the regional and local roadways from construction worker commute trips, project equipment deliveries, and hauling materials to the project area. Impacts to the regional and local traffic would be significant if they lower the LOS (Class II). However, implementation of Mitigation Measure T-9a would reduce impacts to less than significant because a Construction Transportation Management Plan would be prepared which would include measures for alternative routes as well as limiting road and lane closures to off peak hours. With the implementation of Mitigation Measure T-9a traffic congestion would be reduced. It is not expected that construction generated additional traffic will decrease the LOS on roadways within the construction zone.

Mitigation Measure for Impact T-9: Construction would generate additional traffic on the regional and local roadways

T-9a Prepare Construction Transportation Management Plan.

Operational Impacts

United States. Operation and maintenance of the transmission line is not expected to generate additional traffic on roadways or cause traffic delays or lane closures; therefore, the RWD project would have no operational impacts on traffic.

Mexico. RWD Project operations would have a less than significant impact on traffic, circulation, and/or the level of service on roadways. Project operations would not cause emergency access restrictions, affect parking capacity, or increase roadway hazards. Additionally, air traffic patterns would not be affected by the placement of new structures or power lines because there are no known airports or landing strips within 5 miles of the RWD project site. Therefore there would be no operational impacts on traffic.

D.10.12.5 Public Health and Safety - La Rumorosa Wind Project

Environmental Setting

United States. A new 230 kV transmission line would be required to connect the “Rumorosa Wind Developers II” (RWD) to the existing 500 kV SWPL (about 10 miles to the north of the existing Tijuana/La Rosita 230 kV Transmission line). The 1.7 miles of new 230 kV transmission line would be sited on primarily private land in the San Diego County, approximately 1000 feet west of the outskirts of the town of Jacumba. Review of the EDR database survey (EDR, 2006a) indicates that, other than two leaking fuel tanks in the town of Jacumba, there are no environmentally contaminated sites in the area.

Mexico. The RWD wind turbines and associated transmission lines would be sited in La Rumorosa, Baja California. No specific contaminated sites are known in this region. Research on general contamination in the Baja California region, and specifically in Tecate was conducted using the Tecate and Baja California websites, and the U.S.EPA documentation. General water contamination is known to occur in La Rumorosa, especially during the summer months when the population of La Rumorosa almost doubles with tourists from neighboring Mexicali. The infrastructure at La Rumorosa is unequipped to handle this surge of people (Tecate Government, 2007). In addition, general environmental problems have been documented all along the U.S./Mexico border. These problems include: illegal dumping, agricultural drainage, airborne dust and pesticide exposure, inadequate water supplies, insufficient or nonexistent waste facilities and degradation of natural resources and ecosystems (EPA, 2007). Oftentimes, rural communities such as La Rumorosa or Jácume are at a greater risk as they may not have adequate water supply or waste treatment (EPA, 2007).

Environmental Impacts and Mitigation Measures

The RWD project would not traverse any lands currently or historically used for military purposes; therefore, Impact P-4: Areas used by the military may contain unexploded ordinance (UXO) and could explode and injure workers during construction would not occur.

Construction Impacts

Impact P 1: Improper handling and/or storage of hazardous materials during construction could cause soil or groundwater contamination (Class II)

United States. Hazardous materials such as vehicle fuels and oils and paints would be used and stored during excavation and grading of the transmission line structures and facilities (see Table D.10-7), resulting in a potential for environmental contamination due to improper handling and/or storage of hazardous materials, a significant impact. Implementation of Mitigation Measures P-1a (Implement Environmental Monitoring Program), P-1b (Maintain emergency spill supplies and equipment), P-1g (Properly store and dispose of generated waste), H-2b (No storage of fuels and hazardous materials near sensitive water resources), and H-2c (Proper disposal and clean-up of hazardous materials) would reduce the significant environmental impacts to less than significant (Class II).

Mexico. In addition to the construction hazards described above, helicopters may be used to support construction activities in areas where access is limited or where there are environmental constraints to accessing the construction area with standard construction vehicles and equipment. All helicopter construction and maintenance activities would be based at a fly yard. Refueling activities for the helicopters

could potentially result in soil contamination from improper handling and storage of helicopter fuel at the staging areas or during refueling, a potentially significant impact.

Ground disturbance for the RWD project and associated facilities would consist primarily of excavation for the following facilities: tower/turbine structures, meteorological towers, switchyard, underground interconnection systems between the tower/turbines and switchyard, transmission line, and operation and maintenance facilities. Grading of new access/spur roads would also be required.

Soil or groundwater contamination resulting from the improper handling and/or storage of hazardous materials is generally considered to be mitigable to less than significant levels. Mitigation recommended herein includes: (1) The prohibition of storage of fuels and hazardous materials within 200 feet of groundwater supply wells and within 400 feet of community or municipal wells; (2) prohibition of disposal of hazardous materials onto the ground, underlying groundwater, and any surface water; (3) removal of potentially hazardous materials to a hazardous waste facility permitted or otherwise authorized to treat, store, or dispose of such materials; and (4) in the event of a release of hazardous materials to the ground, the release will be promptly cleaned up in accordance with applicable regulations. Mitigation Measures P-1a, P-1b, and P-1g are also recommended. With the implementation of the recommended mitigation, Impact P-1 could be reduced to an insignificant level (Class II).

Mitigation Measures for Impact P 1: Improper handling and/or storage of hazardous materials during construction could cause soil or groundwater contamination

- P-1a** **Implement Environmental Monitoring Program.**
- P-1b** **Maintain emergency spill supplies and equipment.**
- P-1g** **Proper storage and disposal of generated waste. [HS-APM-10]**
- H-2b** **No storage of fuels and hazardous materials near sensitive water resources. [WQ-APM-9]**
- H-2c** **Proper disposal and clean-up of hazardous materials. [WQ-APM-13]**

Impact P-2: Residual pesticides and/or herbicides could be encountered during grading or excavation in agricultural areas (No Impact for the United States, Class II for Mexico)

United States. As discussed under Section D.6.19, Agriculture, the RWD project would not traverse any agricultural lands in the United States; therefore, no residual pesticides and/or herbicides would be encountered during construction.

Mexico. Residual pesticide and herbicide contamination of the soil and/or groundwater may exist along the portion of the RWD transmission route that passes north of agriculture near Luis Echeverria Alvarez. This portion of the transmission route would traverse the existing Tijuana/Mexicali ROW and thus the likelihood of there being residual pesticide or herbicide contamination is low. Still there are potential health hazards to construction workers and the public due to exposure to pesticide or herbicide contaminated soil and/or groundwater. The impact would be significant as pesticide and herbicide contamination is not always readily apparent by visual or olfactory indicators. Mitigation Measure P-2a (Test for residual pesticides/herbicides), P-2b (Stop work if contamination is detected.), P-2c (Cordon off contaminated areas.), and P-2d (Notify regulatory agencies.) is required to reduce this impact to less than significant (Class II).

Mitigation Measure for Impact P-2: Residual Pesticides and/or Herbicides could be encountered during grading or excavation in agricultural areas

- P-2a** Test for residual pesticides/herbicides in agricultural areas.
- P-2b** Stop work if contamination is detected. [HS-APM-15]
- P-2c** Cordon off contaminated areas. [HS-APM-16]
- P-2d** Notification of regulatory agencies. [HS-APM-17]

Impact P-3: Previously unknown soil and/or groundwater contamination could be encountered during excavation or grading (Class II for the United States, No Available Data for Mexico)

United States and Mexico. Although unanticipated contamination along the RWD project is unlikely due to the undeveloped nature and open space use of the surrounding areas, there is a slight potential for unknown contamination to have occurred along and near area roads due to illegal dumping which results in a potential to encounter contamination where the RWD project crosses these roads.

Impacts associated with previously unknown soil and/or groundwater contamination are generally considered to be mitigable to less than significant levels. Mitigation recommended herein includes: (1) If during excavation soil or groundwater contamination is suspected (e.g., unusual soil discoloration or strong odor), the contractor or subcontractor shall immediately stop work and notify the General Contractor's assigned Health & Safety Officer and/or the applicants Field Environmental Representative; (2) preliminary samples of the soil, groundwater, or material shall be taken by a trained individual and the samples shall be sent to a California Certified Laboratory (in the U.S.) or to an appropriate facility (in Mexico) for characterization; and (3) if contamination is found above regulatory limits, the regulatory agency (e.g., RWQCB or CUPA) responsible for responding to and for providing environmental oversight of the region shall be notified in accordance with State or local regulations. Mitigation Measure P-3a, P-2b, P-2c, and P-2d are recommended. Incorporation of these measures would reduce the impact to an insignificant level (Class II).

Mitigation Measures for Impact P-3: Previously unknown soil and/or groundwater contamination could be encountered during excavation or grading

- P-3a** Appoint individuals with correct training for sampling, data review, and regulatory coordination.
- P-2b** Stop work if contamination is detected. [HS-APM-15]
- P-2c** Cordon off contaminated areas. [HS-APM-16]
- P-2d** Notification of regulatory agencies. [HS-APM-17]

Impact P-7: Excavation or grading could result in mobilization of existing soil or groundwater contamination from known sites (Class II for the United States, No Available Data for Mexico)

United States. Excavation or grading along the RWD transmission line could result in mobilization of soil contamination from the leaking fuel tanks near the town of Jacumba. Mitigation includes investigation of known contaminated sites prior to construction and disposal of hazardous waste in accordance with federal, State, and local regulations. Mitigation Measure P-6b is also recommended. With the implementation of the noted measures, Impact P-6 would be reduced to an insignificant level (Class II).

Mexico. Contamination along the RWD project wind farm and transmission line could have occurred. Although the transmission line on new ROW traverses primarily undeveloped nature and open space areas, the wind farm and the transmission line on existing ROW are situated west of the La Rumorosa Substation and traverse south of the town of La Rumorosa and there is a potential for contamination to have occurred along and near area roads due to illegal dumping which results in a potential to encounter contamination.

Should contaminated sites be encountered, Mitigation Measure P-7a includes investigation of known contaminated sites prior to construction and disposal of hazardous waste in accordance with federal, Municipality, and local regulations. With the implementation of the noted measures, Impact P-6 could be reduced to an insignificant level (Class II).

Mitigation Measures for Impact P-7: Excavation or grading could result in mobilization of existing soil or groundwater contamination from known sites

P-7a Evaluate contaminated sites.

P-7b Investigate contaminated sites. [HS-APM-5]

Operational Impacts

The wind turbines would tie into the SWPL transmission line via the Jacumba Substation, which would require construction of an overhead transmission line. Impact PS-1 (Transmission line operation causes radio and television interference), Impact PS-2 (Transmission line operation causes induced currents and shock hazards in joint use corridors), Impact PS-3 (Electric fields can affect cardiac pacemakers), PS-4 (Project Structures would be affected by wind and earthquakes) and Impact PS-5 (Transmission or substation facilities can suffer an outage from terrorism or wildfire) are addressed in Section D.10.20.

Impact P-5: Soil or groundwater contamination could result from accidental spill or release of hazardous materials during operation and maintenance (Class II)

United States and Mexico. Soil or groundwater contamination could result from accidental spill or release of hazardous materials during operation of maintenance of the transmission line facilities, wind tower/turbines, and other associated facilities. This impact would be significant without mitigation. However, implementation of mitigation measures listed below would reduce impacts to soil and groundwater to a less than significant level (Class II).

Mitigation Measures for Impact P-5: Soil or groundwater contamination could result from accidental spill or release of hazardous materials during operation and maintenance

P-1c Personnel trained in proper use and safety procedures for the chemicals used. [HS-APM-1]

P-1e Preparation of environmental safety plans including spill prevention and response plan. [HS-APM-3]

P-1g Proper storage and disposal of generated waste. [HS-APM-10]

D.11.12.5 Air Quality - La Rumorosa Wind Project

Environmental Setting

United States. The air quality setting for the 1.7 miles of transmission line within the “Rumorosa Wind Developers II” (RWD) project is similar to that of the Anza-Borrego Link, which is described in Sec-

tion D.11.2.2. This portion of the transmission line would be within San Diego County, administered by the SDAPCD until it reaches the U.S./Mexico Border.

Mexico. Most urban areas along the U.S./Mexico border do not meet the U.S. EPA air quality standards in ozone, carbon monoxide, and particulate matter. The contaminants in this border region come from a variety of sources such as open air burning (trash, residential heating, and brick ovens) dirt roads, energy plants, industrial sites, and transportation activities (U.S.EPA, 2003). In addition, La Rumorosa is approximately 6 miles from the La Rumorosa Substation and 20 miles from major power plants in the Mexicali area.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

United States. The RWD project would generate dust and exhaust emissions from construction activity and crews operating off-road equipment and on-road mobile sources at separate locations. General construction, structure foundation excavation, structure delivery and setup, and fugitive dust from travel along the ROW could each occur simultaneously on any given day of construction.

Construction emissions would vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. The total amount of construction, the duration of construction, and the intensity of construction activity could have a substantial effect upon the amount of construction emissions, the concentrations, and the resulting impacts occurring at any one time. As exact construction scenarios are unavailable at this level of analysis, no emission forecasts are provided for the expected construction scenarios; however, it should be noted that the RWD project has only 1.7 miles of transmission line within the United States.

The construction equipment and emissions from motor vehicles used to mobilize the workforce and materials for construction would result in temporary significant ozone and particulate matter impacts. Excavation activities would also release emissions as a result of construction vehicle operations. Further, particulate matter would be released into the air in the form of fugitive dust. Mitigation measures to reduce construction equipment impacts include Mitigation Measures AQ-1a through AQ-1g including preparation and implementation of a Dust Control Plan, minimize transport of mud and dust onto paved surfaces, encourage employee carpooling, and minimize idling time. While the recommended mitigation measures would reduce construction impacts, the construction-phase emissions would be significant and unavoidable (Class I).

Mexico. The RWD project in Mexico would generate similar types of emissions as from the U.S. project construction components. However, it should be noted that within Mexico, there would be a 27-mile transmission line, as well as the actual wind farm construction, and as such construction would be longer in duration and more intensive in nature. Mitigation measures to reduce construction equipment impacts include Mitigation Measures AQ-1a through AQ-1g including preparation and implementation of a Dust Control Plan, minimize transport of mud and dust onto paved surfaces, encourage employee carpooling, and minimize idling time. While the recommended mitigation measures would reduce construction impacts, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a Suppress dust at all work or staging areas and on public roads.**
- AQ-1b Use low-emission construction equipment.**
- AQ-1c Comply with Imperial County dust control requirements. [AQ-APM-1]**
- AQ-1d Implement dust reduction measures. [AQ-APM-2]**
- AQ-1e Prevent transport of mud and dust. [AQ-APM-3]**
- AQ-1f Encourage carpooling. [AQ-APM-4]**
- AQ-1g Minimize vehicle idling. [AQ-APM-5]**

Operational Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

United States and Mexico. Dust and exhaust emissions generated during operation, maintenance, and inspection activities of the RWD project would be generated by new vehicle trips to patrol and repair the transmission line and wind farm. A minor increase in dust and exhaust emissions from the mobile sources would occur when compared to the existing conditions. The incremental increase of emissions that would be caused by vehicular traffic for inspection and maintenance activities would be less than the thresholds for operation significance in Table D.11-8. Direct emissions from vehicular traffic for maintenance activities would cause an adverse but less than significant impact, and mitigation measures are not required (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class IV)

United States and Mexico. The RWD project and associated transmission line would facilitate decreased operation of other existing power plants delivering energy to San Diego County, which could lead to reduced emissions from fossil fuel-fired power plants. Demand for electricity would not change as a result of the RWD project, and power generated in response to the demand would occur regardless of whether the renewable project moves forward. The RWD project and associated transmission line would enable reductions of CO₂ and other pollutant emissions that would otherwise occur from fossil fuel-fired power plants. The RWD project would generate electricity without burning any carbon-based fuel and would thus generate essentially no greenhouse gases per megawatt-hour of output. Reduced emissions from fossil fuel-fired power plants would be a beneficial impact of the RWD project (Class IV).

D. 12.12.5 Water Resources - La Rumorosa Wind Project

Environmental Setting

United States. A new 230 kV transmission line would be required to connect the “Rumorosa Wind Developers II” (RWD) to the existing 500 kV SWPL (about 10 miles to the north of the existing Tijuana/La Rosita 230 kV Transmission line). The 1.7 miles of new 230 kV transmission line would be sited on primarily private land in the San Diego County, approximately 1000 feet west of the outskirts of the Town of Jacumba. This region is situated on the Coyote Wells Valley Groundwater Basin. The Coyote Wells Valley groundwater basin is an EPA-designated Sole Source Aquifer. This means the aquifer supplies more than 50% of a community’s drinking water. Any project which is financially

assisted by federal grants or federal loan guarantees, and which has the potential to contaminate a sole source aquifer, should be modified to reduce or eliminate the risk (EPA, 2007).

The Coyote Wells Groundwater Basin, located near the international border with Mexico in the western Yuha Desert west of Imperial Valley, is in unconsolidated sediment up to 650 feet thick. Water bearing zones are mostly 100 to 300 feet below ground surface. Unconfined shallow groundwater exists in parts of the basin, but the quality of the water is poor. Natural fluoride levels in some wells are as high as 3.5 mg/L (California Department of Water Resources, 2007).

Mexico. The RWD wind turbines and associated transmission lines would be sited in La Rumorosa, Baja California. La Rumorosa is situated in the northern region of the municipality of Tecate, which has a low hydrologic potential. The rivers of this region, the “Calabazas,” “Agua Grande,” “San Pablo,” “El Cuartel,” and “Agua Azul” run only during the rainy season. La Rumorosa borders two hydrological regions. The first is over the water basin “Arroyo Agua Dulce–Santa Clara” (GobBC, 2007). This underground basin is bordered on the east side by the Sierra de Juárez Mountains and on the west by the Sierra Cucapah. These conditions create areas where drainage is poor and lagoons are formed as none of the rivers in this region can reach the Gulf of California. It is considered a closed basin. The use of this water is primarily for agriculture and ranching as well as domestic use. (GobBC, 2007).

La Rumorosa also borders the Colorado River region. The Colorado River, which has its origin in the United States, crosses approximately 55 miles within Baja California. This river does not always run within this region. Both the Hardy and Nuevo rivers are caused by agricultural runoff from the Mexicali region, in addition to runoff of the Colorado River. They are primarily used for irrigation. (GobBC, 2007)

Baja California does not have permanent aquifers. The hydrologic system is very reduced, with a high level of evaporation, and adverse geologic conditions (GobBC, 2007). The majority of the geological formations allow rain to flow freely due to the steep contours of this area. As such, very few of the aquifers get recharged and according to the geologic hydrologic conditions of the State of Baja California, water for the entire territory is in danger of depletion. The Tecate region currently imports some of its water from the United States, and receives the rest from underground aquifers. (Tecate Government, 2007)

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation (Class II)

United States and Mexico. Construction of the wind tower/turbines, access/spur roads, switchyard, substation, and operation and maintenance facilities and the transmission lines would require excavation and grading. In addition, construction of the underground interconnections from the tower/turbines to the switchyard would require trench excavation and grading. Ground disturbing activities which lead to this impact would be extensive, particularly in areas where existing roads are not sufficient for access. Disturbance of soil during construction could result in soil erosion and lowered water quality through increased turbidity and sediment deposition into local streams. Rivers in the La Rumorosa region do not run year round, however there transmission line would cross regional rivers near the *Rancho Las Manantiales* in the Luis Echeverria Alvarez region.

Degradation of water quality due to erosion and sedimentation would be mitigable to less than significant levels (Class II). Mitigation includes preparation of a Storm Water Pollution Prevention Plan (H-1a), placement of structures and roadways shall avoid watercourses to the extent feasible (H-1d), establishment of exclusion zones along waterways (H-1e), installation of sedimentation control measures (H-1f), and construction of waterway crossings during low flow periods (H-1g). The full text of all mitigation measures is in Appendix 12.

Mitigation Measure for Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation

- H-1a** **Prepare Substation Grading and Drainage Plan; construct during the dry season.**
- H-1d** **Avoid watercourses to the maximum extent possible. [WQ-APM-2]**
- H-1e** **Identify and mark sensitive areas for avoidance. [WQ-APM-3]**
- H-1f** **Develop and implement construction Best Management Practices. [WQ-APM-4]**
- H-1g** **Stream crossings at low flow periods. [WQ-APM-5]**

Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials (Class III for the United States; Class II for Mexico)

United States. Accidental spills or disposal of potentially harmful materials used during construction could wash into and pollute surface waters or groundwater. Materials that could potentially contaminate the construction area or spill or leak include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Because of the limited waterways and depth to groundwater in the RWD project area, degradation of water quality through the spill of potentially harmful materials is adverse but insignificant (Class III) and no mitigation is required.

Mexico. Accidental spills or disposal of potentially harmful materials used during construction could wash into and pollute surface waters or groundwater. Materials that could potentially contaminate the construction area or spill or leak include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids.

Although there are limited waterways and many of the waterways do not run during the dry season, degradation of water quality could still occur as the rivers do not follow a well established path. In addition, the depth to groundwater in the RWD project area is unknown (No Data Available). Mitigation Measures H-1c (Minimize construction and maintenance disturbance to riparian areas), H-1d (Avoid watercourses to the maximum extent possible), and H-1i (Construction routes to avoid and minimize disturbance to stream channels) would situate construction activities away from streams where possible. Mitigation Measures H-2a (Groundwater testing and treatment before disposal), H-2b (No storage of fuels and hazardous materials near sensitive water resources), and H-2c (Proper disposal and clean-up of hazardous materials) address the issue of water quality contamination through material spills by ensuring that excavated groundwater (if contaminated) not be returned to the natural system, proper storage and handling of hazardous materials, and proper materials disposal and clean-up during construction. These impacts would be less than significant (Class II) with implementation of the measures listed below.

Mitigation Measures for Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials

- H-1c** **Minimize construction and maintenance disturbance to riparian areas. [WQ-APM-1]**
- H-1d** **Avoid watercourses to the maximum extent possible. [WQ-APM-2]**

- H-1i Construction routes to avoid and minimize disturbance to stream channels.** [WQ-APM-15]
- H-2a Groundwater testing and treatment before disposal.** [WQ-APM-8]
- H-2b No storage of fuels and hazardous materials near sensitive water resources.** [WQ-APM-9]
- H-2c Proper disposal and clean-up of hazardous materials.** [WQ-APM-13]

Impact H-3: Excavation could degrade groundwater quality in areas of shallow groundwater (Class II)

United States. The RWD project areas would be located in the Coyote Wells Valley Groundwater Basin. Since the depth to groundwater in this basin generally exceeds 50 feet, which is below the maximum depth of tower construction, there is little possibility of encountering and degrading groundwater during construction. However, unconfined shallow groundwater exists in parts of the basin. In these regions, degradation of groundwater quality would be a significant impact. Mitigation would reduce impacts to less than significant. (Class II) Recommended mitigation includes: (1) minimize disturbance to watercourses, (2) avoid placement of structures within watercourses, (3) storage of fuels and hazardous materials will be prohibited within 200 feet of groundwater supply wells and within 400 feet of community or municipal wells, (4) no disposal of hazardous materials into the ground or underlying groundwater, (5) secure a General Permit for Storm Water Discharges Associated with Construction Activity (NPDES permit), and (6) prepare and implement a Stormwater Pollution Prevention Plan.

Mexico. The RWD project areas would be located in the “Arroyo Agua Dulce–Santa Clara” water basin. Depth to groundwater in this basin is unknown; however, this underground basin is bordered on the east side by the Sierra de Juárez Mountains and on the west by the Sierra Cucapah. These conditions create areas where drainage is poor and lagoons are formed as none of the rivers in this region can reach the Gulf of California. Such conditions may also create a shallow depth to groundwater which would lead to the possibility of encountering and degrading groundwater during construction. Degradation of groundwater, if encountered, would be a significant impact without mitigation. Mitigation listed below would reduce impacts to less than significant. (Class II)

Mitigation Measures for Impact H-3: Excavation could degrade groundwater quality in areas of shallow groundwater

- H-1c Minimize construction and maintenance disturbance to riparian areas.** [WQ-APM-1]
- H-1d Avoid watercourses to the maximum extent possible.** [WQ-APM-2]
- H-2b No storage of fuels and hazardous materials near sensitive water resources.** [WQ-APM-9]
- H-2c Proper disposal and clean-up of hazardous materials.** [WQ-APM-13]
- H-1h Compliance with NPDES regulations.** [WQ-APM-14] (For the United States only)

Impact H-4: Groundwater dewatering for project construction could deplete local water supplies (Class II)

United States. The RWD project areas would be located in the Coyote Wells Valley Groundwater Basin. Because the depth to groundwater in this basin generally exceeds 50 feet, which is below the maximum depth of tower construction, there is little possibility of encountering and degrading groundwater during construction. However, unconfined shallow groundwater exists in parts of the basin. Dewatering for tower construction in shallow parts of the basin could result in a local and temporary

drawdown of groundwater levels which could temporarily reduce the yield of nearby water supply wells, resulting in a significant impact, mitigable to less than significant level (Class II) with implementation of Mitigation Measure H-4a, which requires identification of wells and provision of alternate water supplies during the period of depletion.

Mexico. The RWD project areas would be located in the “Arroyo Agua Dulce–Santa Clara” water basin. Depth to groundwater in this basin is unknown; however, this underground basin is bordered on the east side by the Sierra de Juárez Mountains and on the west by the Sierra Cucapah. These conditions create areas where drainage is poor and lagoons are formed as none of the rivers in this region can reach the Gulf of California. Such conditions may also create a shallow depth to groundwater. Dewatering for tower or wind farm construction in shallow parts of the basin could result in a local and temporary drawdown of groundwater levels which could temporarily reduce the yield of nearby water supply wells, resulting in a significant impact mitigable to a less than significant level (Class II) with implementation of Mitigation Measure H-4a, which requires identification of wells and provision of alternate water supplies during the period of depletion.

Mitigation Measure for Impact H-4: Groundwater dewatering for project construction could deplete local water supplies

H-4a **Avoid using source water and provide alternative sources where avoidance is not possible.**
[WQ-APM-6]

Operational Impacts

Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class III)

United States and Mexico. Construction of the switchyard, substation, operation and maintenance facilities, tower foundations, underground interconnections, transmission line, and access/spur roads could result in additional runoff through creation of impervious areas and compaction of soils. Impervious areas and compacted soils generally have higher runoff coefficients than natural areas, and increased flood peaks are a common occurrence in developed areas. In the case of the RWD project, there may be small local increases in runoff by this process, but the total area affected would be very small in comparison to the total watershed. Further, this area is very sparsely developed, and any small increase in runoff would not have an appreciable impact. Impact H-5 is less than significant (Class III) and no mitigation is required.

Impact H-6: Transmission towers or other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion (Class II for the United States, No Available Data for Mexico)

United States and Mexico. Encroachment of project tower/turbine structures or associated facilities into a flow path or floodplain could result in flooding of or erosion damage to the encroaching structure, diversion of flows and increased flood risk for adjacent property, or increased erosion on adjacent property. This impact is likely to occur only where other permanent project features are constructed in or closely adjacent to a watercourse. The new transmission line crosses Boundary Creek in the United States, and several unnamed creeks near *Rancho Las Manantiales*, Luis Echeverria Alvarez in Tecate. Placement of wind towers in watercourses is unlikely because wind tower/turbines would be sited along hill tops and ridges where optimum wind conditions exist. However, project access roads could traverse a flow path or floodplain.

Impacts to water resources from flooding or erosion caused by locating RWD project structures or associated facilities in a floodplain or watercourse would be significant without mitigation. Implementation of Mitigation Measures presented below would reduce this impact to less than significant levels (Class II).

Mitigation Measure for Impact H-6: Transmission towers other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion

- H-1i Construction routes to avoid and minimize disturbance to stream channels.** [WQ-APM-15]
- H-6a Scour protection to include bank erosion and effects to adjacent property.**
- H-8a Bury power line below 100-year scour depth.**

Impact H-7: Accidental releases of contaminants from project facilities could degrade water quality (Class II)

United States and Mexico. Oil and other contaminants could be used to maintain the transmission lines, wind towers/turbines and associated facilities and the equipment used for maintenance. These contaminants would likely be stored at the Jacumba Substation and would be subject to the regulation of the facility. During their use or storage, oil or other contaminants could be released accidentally and contaminate local surface water or groundwater. Contamination of groundwater in the area is unlikely given the depth to groundwater in the RWD project area. Further, unless the operation and maintenance facilities or substation are located near waterways, the potential to degrade surface water is nominal.

Degradation of water quality from the accidental release of contaminants would be a significant impact without mitigation. Implementation of Mitigation Measure H-7a would reduce this impact to less than significant (Class II).

Mitigation Measure for Impact H-7: Accidental releases of contaminants from project facilities could degrade water quality

- H-7a Develop Hazardous Substance Control and Emergency Response Plan for project operation.**

Impact H-8: Underground portions of the power line could be exposed during flow events causing damage to the line or to adjacent property (No Impact for the United States; Class II for Mexico)

United States. There would be no underground portions of the transmission line within the RWD project situated in the United States and therefore no potential damage from stream scour.

Mexico. During flow events stream channel beds can become scoured to the point where objects buried beneath them could be exposed. The depth of scour is generally greater with larger magnitude flood events. The RWD project would include the undergrounding of power line interconnections between the wind turbines and the switchyard. While there are limited waterways in the project area, the burying of an interconnection under a waterway may be required. Exposure of the buried power line could result in damage to the line or in damage to adjacent property as the exposed line exacerbates the potential for local scour. At places where the buried power line interconnections cross below stream beds, the burial depth should be great enough to protect against scour.

The potential for underground portions of the RWD project to be subject to damage from scour is considered to be mitigable to less than significant levels (Class II). Available mitigation includes Mitigation Measures H-6a and H-8a, both requiring that the power lines be buried below the 100-year scour depth.

Mitigation Measure for Impact H-8: Underground portions of the power line could be exposed during flow events causing damage to the line or to adjacent property

H-6a Scour protection to include avoidance of bank erosion and effects to adjacent property.

H-8a Bury power line below 100-year scour depth.

D.13.12.5 Geology, Mineral Resources, and Soils - La Rumorosa Wind Project

Environmental Setting

United States

Geology. The 1.7-mile transmission alignment between the U.S./Mexico border and the Jacumba Substation crosses hills and valley of the Jacumba Mountain and is primarily underlain by Quaternary alluvium (Qal) and mixed granitic and metamorphic rocks (gr-m). A general description of the characteristic of these units is presented in Section E.1.13 in Table E.1.13-1.

Slope Stability. This 1.7-mile alignment traverses near and across gently sloping alluvial fans and valley floor, and moderately sloping hillside terrain. Although a large portion of the alignment cross moderately sloping hills and valleys, these areas are underlain primarily by granitic and metamorphic units which are not typically prone to landslides. However, excavation and grading for the project could potentially trigger rock-falls or shallow soil slides.

Soils. The RWD transmission line alignment in the United States traverses at least two soil associations; the Indio-Gilman-Coachella (s992) and the Sheephead-Rock Outcrop-Bancas association (s1016). Hazard of erosion for these soils for off-road/off-trail ranges from slight to moderate and for on-road/on-trail ranges from slight to severe. Shrink/swell (expansive) potential of the soils associations along this alignment varies from low to moderate. Corrosive potential of soils along the alignment ranges from moderate to high for uncoated steel and from low to moderate for concrete. No soils with desert pavement are mapped at this site. The basic characteristics of these soil associations are presented in Table D.13-2. Other similar soils may also be encountered along the alignment.

Mineral Resources. There are no known active mineral resource sites or BLM claims along the alignment. The alignment does cross one closed BLM placer mining claim. Therefore, there would be no impacts related to accessibility of mineral resources.

Seismicity. The transmission alignment does not cross nor is in close proximity to any active faults and is therefore not likely to be damaged by fault rupture. The site may experience moderate groundshaking from earthquakes on nearby significant active faults, i.e., the Elsinore, or Laguna Salada located east of the alignment. Estimated PGAs along the alignment range from 0.1 g to 0.4g, with the higher PGAs in areas underlain by alluvial deposits. Portions of the site alignment are underlain by Quaternary alluvium and would likely be susceptible to liquefaction-related phenomena in areas underlain by saturated sandy deposits. The alignment crosses numerous hills, valleys, and plateaus across the Jacumba Mountains, and although most of this portion of the alignment is underlain by igneous and metamorphic bedrock, earthquake triggered rock falls and shallow landslides could occur.

Mexico

Regional Physiography. The principal mountain system in Baja California traverses the state longitudinally, beginning with the Sierra de Juárez in the north and continuing in the South as the Sierra de San Pedro Mártir, at which point this mountain chain divides into many smaller peaks until reaching South Baja California. This formation has given rise to a variety of topography, valleys, peaks, grasslands, etc. These mountains are a continuation of the San Diego Mountain chain and as such display similar physiography as those discussed in Section D.13.1.1 (GobBC, 2007)

Geology. The Baja California peninsula underwent geologic conditions and tectonic movement that gave rise to the geologic structure and physical orientation, primarily seen in the mountain ranges along the length of the state. These mountain chains have a massive granite base (batholith,) most evident in the North and hidden in the South of the state under large amounts of volcanic materials. (GobBC, 2007)

Slope Stability. The RWD wind farm and transmission line (both on the existing Tijuana/Mexicali ROW and on a new ROW) traverses hills, mesas, and valleys of the Sierra de Juárez Mountains. Although this crosses moderately sloping hills and valleys, these areas are underlain primarily by granitic and volcanic units which are not typically prone to landslides. However, excavation and grading for the project could potentially trigger rock-falls or shallow soil slides. (GobBC, 2007)

Soils. A summary of the significant characteristics (description, erosion hazard, expansive potential, and corrosion potential) of the major soil associations traversed by the RWD wind farm and transmission line are shown below. This data was taken from the official Baja California website.

- **Regosol.** This soil is characterized by not having distinct soil layers. It has a general clear tone and is found in beaches and dunes, and on mountain sides. It is often accompanied by litosols and rock formation. It has varied fertility and often rocky.
- **Litosol.** This soil is distinguished by having a depth of less than 10 centimeters. It is found on mountains and steep slopes. It can be sandy or more clay like and can be susceptible to erosion, depending on the topography of the region.
- **Fluvisol.** This soil is distinguished by being formed by water borne particles. It is a poorly developed soil and is found in all areas of Baja California that are near lakes or mountains. It frequently has alternating layers of sand, clay, or pebbles.

Most of the soil associations underlying the region are primarily formed in material weathered from the underlying granitic and metamorphic rocks. Hazard of erosion for these soils was unavailable.

Mineral Resources. General mineral resources in the region of the RWD wind farm and transmission line are possible granite and quartz deposits within the Sierra de Juárez region. However, as the facilities will be located near an existing town and along an already existing ROW, there is little to no potential for the project to be impacted by geothermal resources (GobBC, 2007).

Seismicity

Fault Rupture. The RWD wind farm and transmission line crosses no active faults (SCEDC, 2006).

Groundshaking. No significant active faults capable of producing large earthquakes are located in the immediate vicinity of the RWD wind farm and transmission line; therefore strong groundshaking is not expected. However, moderate to strong groundshaking could be caused near the transmission line by a large earthquake on nearby significant active faults, i.e., the Imperial, Elsinore, or Laguna Salada

faults. The peak horizontal accelerations for this region are similar to the extension of the transmission line within the United States

Liquefaction. Potential for liquefaction along this alignment is primarily isolated to areas near creeks and washes underlain by young alluvial and lacustrine deposits which could liquefy during an earthquake if perched groundwater were present. Potential for liquefaction in other areas underlain by alluvium and lacustrine deposits near the eastern end of the alignment is generally low due to anticipated depths of groundwater of greater than 100 feet.

Earthquake-Induced Landslides. The RWD wind farm and transmission line is surrounded by numerous hills, valleys, and plateaus across the Sierra de Juárez Mountains, and although most of this portion of the transmission line is underlain by igneous and metamorphic bedrock, earthquake triggered rock falls and shallow landslides could occur.

Environmental Impacts and Mitigation Measures

Construction Impacts

No impacts associated with this project would occur to desert pavement as there is no desert pavement within the Jacumba and La Rumorosa regions (Impact G-2). No impacts associated with this project would occur from construction activities interfering with access to known mineral resources (Impact G-7).

Impact G-1: Erosion would be triggered or accelerated due to construction activities (Class II for the United States, No Available Data for Mexico)

United States and Mexico. Excavation and grading for wind tower foundations, trenching for underground power, transmission lines, access/spur roads, switchyard, substation, and operation and maintenance facilities would loosen soil and accelerate erosion. While no data is available for the severity of the soil erosion hazard in the La Rumorosa area in Mexico, along the U.S./Mexico border it can be assumed that the soil erosion hazard would be similar to the parcel within the United States. Should this occur, it would be a significant impact.

Available mitigation includes limiting grading of existing roads in areas with sensitive soils; using of Best Management Practices (BMPs) such as sand bags and road bars, to control water erosion; and limiting construction traffic to minimize erosion. In addition, a Stormwater Pollution Prevention Plan (SWPPP) that would limit erosion from the construction site would be required in accordance with the Clean Water Act. Implementation of such measures would result in a less than significant impact (Class II). The full text of the mitigation measures can be found in Appendix 12.

Mitigation Measures for Impact G-1: Erosion would be triggered or accelerated due to construction activities

G-1a Limit modification of access roads. [GEO-APM-1]

G-1d Restore surfaces for erosion control and revegetation. [GEO-APM-6]

Impact G-6: Project would expose people or structures to potential substantial adverse effects as a result of slope instability created during excavation and/or grading (Class II)

United States and Mexico. Destabilization of natural or constructed slopes would potentially occur as a result of construction activities due to excavation and/or grading operations. Construction consisting of

grading and excavation within the hillsides forming the RWD project area would potentially cause slope instability, triggering rock-falls or landslides. Slope instability including landslides, earth flows, and debris flows has the potential to undermine foundations, cause distortion and distress to overlying structures, and displace or destroy project components. This would be a significant impact.

The potential for excavation or grading to cause slope instability is mitigable to less than significant levels (Class II). Available mitigation includes avoiding placing structures in unstable areas, and removing or stabilizing boulders upslope of structures thus reducing the threat of possible slope failures or rock falls. Mitigation Measure G-3b, G-6a, and G-6b are recommended.

Mitigation Measures for Impact G-6: Project would expose people or structures to potential substantial adverse effects as a result of slope instability created during excavation and/or grading

G-3b **Avoid structure placement in high shrink/swell areas.** [GEO-APM-3]

G-6a **Conduct geotechnical surveys for landslides and protect against slope instability.**

G-6b **Place structures in stable areas.** [GEO-APM-4]

Operational Impacts

Impact G-5 (Transmission line and tower structures could be damaged by surface fault rupture at crossings of active faults) would not occur because the RWD project does not cross any known active faults.

Impact G-3: Project would expose people or structures to potential substantial adverse effects as a result of problematic soils (Class II for the United States; No Available Data for Mexico)

United States and Mexico. Soils near the RWD project sites in the United States have moderate to high potential for corrosion to uncoated steel and a low to moderate potential for corrosion to concrete. Expansion potential for the soils varies from low to moderate. Corrosive and expansive subsurface soils may exist in places along the proposed route which would potentially damage project structures. Collapse of project structures would potentially result in power outages, damage to nearby roads or structures, and injury or death to nearby people. This would be a significant impact. No data is available for the potential of the soils comprising the RWD project sites in Mexico for corrosion to uncoated steel and for corrosion to concrete, however along the U.S./Mexico border, it can be assumed that the corrosion and expansion potential would be similar to that within the United States.

The potential for project structures to be damaged by problematic soils is mitigable to less than significant levels (Class II) through application of standard design and construction practices and implementation of mitigation. Mitigation includes application of standard design and construction practices, and reducing the adverse affects of problematic soils by avoiding placement of structures in areas of high shrink/swell potential, to the extent feasible. Mitigation Measure G-3a is also recommended.

Mitigation Measures for Impact G-3: Project would expose people or structures to potential substantial adverse effects as a result of problematic soils G-3a Conduct geotechnical studies for soils to assess characteristics and aid in appropriate foundation design

G-3b **Avoid structure placement in high shrink/swell areas.** [GEO-APM-3]

Impact G-4: Project would expose people or structures to potential substantial adverse effects as a result of seismically induced groundshaking and/or ground failure (Class II and III)

United States and Mexico. The RWD project area would experience moderate groundshaking in the event of a large earthquake on major faults in the region. Seismically induced groundshaking would potentially damage project structures. Collapse of project structures would potentially result in power outages, damage to nearby roads or structures, and injury or death to nearby people. This would be a significant impact. However, appropriate transmission line design accounting for lateral wind loads would likely exceed any creditable seismic loading from moderate groundshaking, thus minimizing potential damage to structures from groundshaking related to earthquakes on faults in the region of the RWD project. This would result in a less than significant impact (Class III). Appropriate turbine design accounting for lateral wind loads would likely exceed any creditable seismic loading from moderate groundshaking, thus minimizing potential damage to turbine structures from groundshaking related to earthquakes on faults in the region of the RWD project. This would result in a less than significant impact (Class III).

Moderate groundshaking would potentially result in seismically induced ground failures, including liquefaction and slope failures along the RWD project. Seismically induced slope failures such as landslides and rockfalls would potentially occur along the moderate to steep slopes that comprise the RWD project area. This would result in damage to project structures. Collapse of project structures would potentially result in power outages, damage to nearby roads or structures, and injury or death to nearby people. This would be a potentially significant impact.

The potential for project structures to be damaged by seismically induced groundshaking and/or ground failure is mitigable to less than significant levels (Class II). Mitigation includes placement of structures in geologically stable areas and avoidance of fault lines where feasible. Mitigation Measures G-4a, G-4b, G-5a, and G-6a are also recommended.

Mitigation measures for Impact G-4: Project would expose people or structures to potential substantial adverse effects as a result of seismically induced groundshaking and/or ground failure

- G-4a Reduce effects of groundshaking.**
- G-4b Conduct geotechnical investigations for liquefaction.**
- G-5a Minimize project structures within active fault zones.**
- G-6a Conduct geotechnical surveys for landslides and protect against slope instability.**

Impact G-7: Project would expose people or structures to potential substantial adverse effects as a result of landslides, earthflows, debris flows, and/or rockfall (Class II)

United States and Mexico. Slope instability including landslides, earth flows, debris flows, and rock fall has the potential to undermine foundations, cause distortion and distress to overlying structures, and displace or destroy associated project components. Given the moderate to steep slopes that comprise the RWD project area, slope instability presents a significant impact.

The potential for project structures to be damaged by landslides, earthflows, debris flows, and/or rock fall is mitigable to less than significant levels (Class II). Mitigation includes ensuring that project structures are located outside of areas with unstable slopes and that boulders are removed from slopes or stabilized. Mitigation Measure G-3b and G-6a are recommended.

Mitigation Measure for Impact G-7: Project would expose people or structures to potential substantial adverse effects as a result of landslides, earthflows, debris flows, and/or rockfall

G-3b Avoid structure placement in high shrink/swell areas. GEO-APM-3]

G-6a Conduct geotechnical surveys for landslides and protect against slope instability.

D.14.12.5 Socioeconomics, Services, and Utilities - La Rumorosa Wind Project

Environmental Setting

United States. The “Rumorosa Wind Developers II” (RWD) project would be connected to the Jacumba Substation MP I8-35, and would follow 1.7 miles of transmission line approximately 1000 feet west of the town of Jacumba in the San Diego County. It is located primarily on private land.

Jurisdictions along this route include Department of Homeland Security (Border Patrol), Caltrans, Union Pacific Railroad, San Diego County Water Authority

(SDCWA), and the County of San Diego. Demographics, housing, and public services’ and utilities providers’ information would be the same as the Proposed Project in the San Diego Counties, which is described in Section D.14.2.

Table D.14-13. Demographic Characteristics – RWD Project (Mexico)

Location	2005 Estimated Population	2005 Estimated Housing Units	2005 Estimated Employed
Tecate	91,034	22,003	Labor Force: 27,078 persons Construction Occupations: 7.3% Unemployed: 295 persons
La Rumorosa	1615	465	

Source: Mexico Census, 2005.

The RWD project would parallel, cross, or be adjacent to the following existing utilities and facilities:

- SDG&E Southwest Powerlink (SWPL) Imperial Valley–Miguel 500 kV transmission line (MP I8-0 to MP I8-35.7) (separated by an average of 400 feet)

Mexico. The RWD wind farm and transmission line would be situated near the town of La Rumorosa in the municipality of Tecate. The wind farm and approximately 7 miles of transmission line would be sited on new ROW; however, the bulk of the transmission line, 20 miles, would follow the existing ROW of the Tijuana/Mexicali 230 kV transmission line.

Jurisdictions along the RWD project include the city of La Rumorosa, the municipality of Tecate, and the state of Baja California.

Demographics and Housing. The municipality of Tecate consists of 5 incorporated cities and a number of unincorporated communities. It has approximately 91,000 people, and a population density of roughly 60 people per square mile, although in actuality 75% of the population of Tecate lives in the capital city of Tecate. (Tecate Government, 2007) Table D.14-13 identifies the Demographic Characteristics of the La Rumorosa region.

Public Services and Utilities. The Department of Fire and Civil Safety is located in the city of Tecate and is the primary law enforcement agency in the municipality of Tecate. This Department has five divisions, Administrative Department, the Technical Department, Department of Operations, and the

Department of Civil Protection. The town of La Rumorosa has three schools, the Secundaria Técnica Rafael Ramírez, the primary school Benito Juárez, and the primary school Dr. Aubanel Vallejo.

The existing utility providers in the La Rumorosa region are the Comisión Federal de Electricidad (CFE). The electricity for this region comes primarily from the two La Rosita power plants and travels along the existing 230 kV Tijuana/Mexicali transmission line. The La Rumorosa Substation is located approximately 6 miles to the east of La Rumorosa.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact S-1: Project construction and/or transmission line presence would cause a change in revenue for businesses, tribes, or governments (Class III or IV)

United States

Revenue from Business Operations. A few business uses occur along the RWD transmission line route, especially near the town of Jacumba, but the project would not require the removal or relocation of any business uses. Impacts on local businesses could result from degradation of views, views of construction equipment and activity, vehicular or pedestrian access restrictions, land use, air quality, and noise effects, or health and safety concerns (such as EMF). These issues are analyzed in this document in Sections D.3 (Visual Resources), D.4 (Land Use), D.8 (Noise), D.9 (Traffic/Transportation), and D.10 (Public Health and Safety). Where impacts for these issue areas are found to be less than significant or have been mitigated to less than significant levels, any associated loss of local business revenue impacts would not be significant. In addition, because these impacts would be short-term construction impacts and no removal of businesses would be required, these impacts would not result in significant revenue impacts (Class III). Therefore, no additional mitigation measures are recommended outside of those presented in Sections D.3 (Visual Resources), D.9 (Traffic/Transportation), D.4 (Land Use), and D.10 (Public Health and Safety) to mitigate potential impacts that could result in a substantial change to local business revenues.

Economic Benefit. Employment of construction personnel would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services. Personnel for construction would be drawn from local populations in San Diego County, creating new temporary and permanent employment in this county. A limited number of construction personnel would require temporary housing, likely in local hotels, and would purchase food, beverages, and other commodities, which would provide economic benefit to the local economy (Class IV).

Mexico

Revenue from Business Operations. Business uses occur along the RWD transmission line route, especially around the towns of La Rumorosa, Agua Hechicera, and Jácume, but the project would not require the removal or relocation of any business uses. Impacts on local businesses would be similar to those in the U.S. region described above (Class III).

Economic Benefit. Employment of construction personnel would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services. Personnel for construction would be most likely drawn from local populations in San Diego County. A limited number of construction personnel would require temporary housing, likely in local hotels, and would

purchase food, beverages, and other commodities, which would provide economic benefit to the local economy (Class IV).

Impact S-2: Construction would disrupt the existing utility systems or cause a co-location accident (Class II)

United States and Mexico. Construction of the RWD project transmission line and related infrastructure has the potential to disrupt existing utilities during excavation, as a result of potential accidents. Therefore, there would be potential for service interruptions of these utilities during construction of the RWD project.

Installation of the transmission line would occur presumably with the Jacumba Substation which would be in service. Therefore, there would be potential for Jacumba Substation service interruptions. Electrical systems are designed with redundant means to provide service. If it is necessary to take a particular circuit out of service, SDG&E would first ensure that a redundant feed is available.

In Mexico, a 20-mile transmission line would be built within the Tijuana/Mexicali transmission line ROW. As such there is the potential to disrupt existing utilities during excavation, as a result of potential accidents.

The potential for construction to disrupt the existing utility systems is considered to be mitigable to less than significant levels (Class II). Implementation of Mitigation Measures S-2a through S-2c would reduce this impact to less than significant. The full text of the mitigation measures can be found in Appendix 12.

Mitigation Measures for Impact S-2: Construction would disrupt the existing utility systems or cause a co-location accident

- S-2a** **Notify public of utility service interruption.**
- S-2b** **Protect underground utilities.**
- S-2c** **Coordinate with utility providers.** [PSU-APM-1, PSU-APM-2]

Impact S-3: Project construction and operation would increase the need for public services and facilities (Class II or III for the United States; No Available Data for Mexico)

United States

Water. Water would be required during construction of the RWD project for dust abatement and cleaning construction equipment. The amount of water required depends on the length of access roads used, weather conditions, road surface conditions, and other site-specific conditions. Dust suppression efforts would occur on each day that grading activities take place and on unpaved access roads. Water consumption for this purpose would also vary depending on the implementation of the air quality Mitigation Measure AQ-1a (Implement Fugitive Dust Control Plan) that specifies the use of soil binders on unpaved roads, staging areas, and parking areas, which would substantially minimize water use. Non-potable water would be used for dust control when available. Water would also be needed to make the concrete used during project construction. Comparatively small amounts of potable water would be needed for sanitary and drinking purposes.

Once constructed, the RWD project would require small amounts of water for maintenance activities. Water use during project construction would be a small fraction of the total water supply for the juris-

dictions affected by the RWD project and would not change the ability of the water suppliers identified previously in serving the project area demands

Solid Waste. A percentage of excavation would be clean and dry, and would be spread along the construction ROW. Under this project there would be no structure removal. The closest landfills near the RWD project include the (CIWMB, 2007):

- Allied Imperial Landfill (104 East Robinson Road) that allows a maximum permitted throughput of 1,135 tons/day and has a remaining capacity of 2,105,500 cubic yards
- Imperial Solid Waste Site (1705 West Worthington Road) that allows a maximum permitted throughput of 207 tons/day and has a remaining capacity of 183,871 cubic yards
- Las Pulgas Landfill (Camp Pendleton) that allows a maximum permitted throughput of 270 tons/day and has a remaining capacity of 9,150,000 cubic yards
- Ramona Landfill (20630 Pamo Road) that allows a maximum of 295 tons/day and has a remaining capacity of 690,000 cubic yards
- Sycamore Sanitary Landfill (8514 Mast Boulevard) that allows a maximum of 3,965 tons/day and has a remaining capacity of 47,388,428 cubic yards. The Sycamore Sanitary Landfill accepts asbestos, contaminated soil, mixed municipal waste, sludge (biosolids), agricultural, dead animals, tires, shreds, and wood waste (including treated wood).

Due to the number and capacity of landfills serving the RWD area, capacity for materials generated from construction would be available. Because the exact amount of material recycling is unknown, the total amount of waste requiring landfill disposal is unknown. Recycling activities would greatly reduce the quantity of construction-related materials transported to local landfills.

As the waste generated by construction would occur over an extended period and would be dispersed among the various landfills serving the project area, the daily waste exported off site would be a fraction of the maximum daily throughput for any of the landfills listed above and the landfills have adequate remaining capacity. The Sycamore Sanitary Landfill would accept any contaminated soil, if encountered (Section D.10, Public Health and Safety, discusses impacts in the event that contaminated soil is encountered). Construction waste generated by the RWD project would not substantially affect the remaining capacities of local landfills to serve local demands (Class III). Although impacts to solid waste facilities would not be significant (Class III) and no mitigation measure is required, to further reduce adverse effects of the cumulative volume of waste, Mitigation Measure S-3a is recommended for implementation to ensure that maximum recycling activities would occur.

Public Services. Neither construction nor operation of the RWD project is expected to result in a direct increase in the local population, leading to long-term demands to local public services (see also Section H [Growth-Inducing Effects] for a complete discussion of population impacts). The RWD project is not expected to result in any long-term requirements that would place a permanent increased demand on emergency service providers that would result in new or expanded facilities. The temporary addition of construction personnel would not substantially increase any demands on schools or hospitals or lower the level of service for fire protection or police protection in the long-term.

However, as described in Section D.15 (Fire and Fuels Management), temporary construction activities would result in an increase in potential fire hazards and could increase temporary demands for fire protection services. Available mitigation includes coordinating construction schedules, lane closures, and other activities with installation of the RWD project with emergency and police services to ensure that

disruption to response times and access is minimized. Preparation of a project-specific Fire Prevention and Response Plan (FPRP), which would be reviewed by pertinent regulatory authorities, is also recommended.

Mexico

Water. Water required during construction of the RWD project in Mexico would be approximately 2.5-acre-foot. Once constructed, the RWD project would require small amounts of water for maintenance activities. Water use during RWD project construction would be a small fraction of the total water supply for the entire Tecate jurisdiction. However, the Tecate Municipality is already under water strain. As such, the applicant would be subject to any rules and regulations concerning water usage within the region.

Solid Waste. A percentage of excavation would be clean and dry, and would be spread along the construction ROW. Under this project there would be no structure removal. Although a landfill does exist in La Rumorosa, it has limited space and limited contamination treatment. The closest viable landfills near the RWD project include those in the city of Tecate and in the city of Mexicali, and the waste generated would be subject to the rules and regulations according to the Department of Public Cleanliness (Departamento de Aseo Público) for each city (Mexicali Government, 2007; Tecate Government, 2007). Exact data as to the capacity of these landfills is unknown, as this information is not published on the municipal websites. The exact amount of material recycling is also unknown, and therefore the total amount of waste requiring landfill disposal is unknown. Recycling activities would, however, greatly reduce the quantity of construction-related materials transported to local landfills.

Public Services. Neither construction nor operation of the RWD project in Mexico is expected to result in a direct increase in the local population, leading to long-term demands to local public services as described above in the U.S. section. There would be no impacts to public services.

Mitigation Measures for Impact S-3: Project construction would increase the need for public services and facilities

AQ-1a **Implement Fugitive Dust Control Plan.**

S-3a **Recycle construction waste.**

S-3d **Coordinate construction schedule with emergency services. [PSU-APM-3]**

Operational Impacts

Impact S-4: Property tax revenues and/or fees from project presence would substantially benefit public agencies (Class IV)

United States. Local property tax revenues are a function of tax rates charged within the affected jurisdictions. Property taxes for the project sites are expected to increase as a result of the RWD 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 RWD project would result in a beneficial impact to the local economy as a result of tax revenue spending.

Therefore, the RWD project would not result in an adverse change in public resource revenue. Furthermore, the project 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 RWD project are considered a beneficial (Class IV) impact.

Mexico. Local property tax revenues and regulations within Mexico are unknown at this time. Therefore any changes to property taxes for the RWD project are also unknown. However, any increase in property tax revenue as a result of the RWD project would result in a beneficial impact to the local economy as a result of tax revenue spending (Class IV).

Furthermore, the project 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 RWD project are considered a beneficial impact; however, there is no specific data available at this time.

Impact S-5: Presence of the project would decrease property values (Class III)

United States. The RWD project would include a 1.7-mile transmission line to connect the project to the Jacumba Substation and on to the existing SWPL transmission line. During the public scoping process for the proposed SRPL project, the public expressed a great deal of interest and concern regarding the potential impacts of transmission line projects on property values. As such, the discussion of Impact S-5 under the Imperial Valley Link (see Section D.14.5.1) addresses in detail the issues associated with the potential for impacts on property values and industrial facilities such as transmission lines in an effort to provide the reader with detailed background information based on extensive literature review and the property value issues of past similar projects.

The data that would be required to conduct a detailed analysis of the RWD project impacts to property values are unavailable as they would be based on future property values. The conclusions of the studies discussed in Section D.14.5 state that overhead transmission lines can, in some instances, reduce the value of nearby properties. However, as discussed in Section D.14.5, incremental effects on property values that may result from overhead transmission lines would be very small, would diminish over time, and would be very difficult to quantify. Based on the studies discussed under Impact S-5 in Section D.14.5, it is likely that the RWD project would not generate effects that would significantly impact property values.

Mexico. The RWD project would include a wind farm east of the town of La Rumorosa, 20 miles of transmission line along the existing Tijuana/Mexicali ROW, and approximately 7 miles of transmission line along a new ROW. The data that would be required to conduct a detailed analysis of the RWD project impacts to property values in Mexico are unavailable as they would be based on future property values and on current property values in the region which are unknown. The conclusions of the studies discussed in Section D.14.5 state that overhead transmission lines can, in some instances, reduce the value of nearby properties. However, as discussed in Section D.14.5, incremental effects on property values that may result from overhead transmission lines would be very small, would diminish over time, and would be very difficult to quantify. Based on the studies discussed under Impact S-5 in Section D.14.5, it is likely that the RWD project would not generate effects that would significantly impact property values. Impacts resulting from the presence of wind towers/turbines would be expected to be similar.

D.15.14.5 Fire and Fuels Management - La Rumorosa Wind Project

Environmental Setting

United States. The “Rumorosa Wind Developers II” (RWD) project would be connected to the Jacumba Substation MP I8-35, and would follow 1.7 miles of transmission line approximately 1,000 feet west of

the town of Jacumba in San Diego County. This falls entirely into the Boulevard Fireshed (AFS-1) as detailed in Section 15.1.1.

The Boulevard Fireshed assessment area is 72,838 acres in total, and it encompasses the southeastern-most corner of San Diego County and contains the easternmost portion of the I-8 alternative route. The fireshed contains the towns of Jacumba, Manzanita, and Boulevard which are all federally designated communities at risk of wildfire. Located in the fireshed are the Jacumba Mountains and the In-Ko-Pah Mountains, which is a BLM Area of Critical Environmental Concern. The wilderness areas in the southernmost portion of ABDSP are also within the fireshed boundary. The elevation ranges from 1,640 feet on the desert floor to 3,880 feet in Boulevard to 4,647 feet on Mt. Tule in the In-Ko-Pah Mountains. This fireshed has an average annual rainfall range between 8 and 14 inches per year. Consequently, much of the area is dominated by sparse, semi-arid vegetation which is often interspersed with granitic boulder outcroppings.

Mexico. The RWD wind farm and transmission line would be situated near the town of La Rumorosa in the municipality of Tecate. The Sierra Juárez mountain chain on which the RWD wind farm will be located is a continuation of the Jacumba mountain chain and has a similar physical aspect. Although the Boulevard Fireshed assessment area ends at the U.S./Mexico border, it can be assumed that the wilderness areas are similar and that the threats of fire would be similar as well.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact F-1: Construction and/or maintenance activities would significantly increase the probability of a wildfire (Class II)

United States and Mexico. Construction activities associated the wind turbines, access roads, and switching station would occur within and immediately outside of the Boulevard Fireshed in San Diego County, and would include but not be limited to, use of heavy equipment for vegetation removal and grading and excavation for placing underground conduit or steel poles. The use of construction equipment such as earth movers, generators, vehicles, or chainsaws along with the personnel required to construct the facilities introduces the potential for a variety of wildfire ignition sources to surrounding vegetation fuels or combustible materials associated with project construction. Construction-related ignitions have the potential to escape initial attack containment and become catastrophic fires. Because the sites have heavy fire fuels, steep topography, and exposure to high winds including Santa Ana winds, they have a high burn probability and a high potential for an ignition to escape. Due to the extremely high fire risk in this area, this impact would be considered significant. However, implementation of Mitigation Measures F-1a through F-1e would reduce this impact to a less than significant level (Class II). Mitigation Measures F-1a, Develop and implement a Construction Fire Plan, and F-1b, Finalize and implement SDG&E 2006 Draft Fire Plan for Electric Standard Practice, would reduce the number of project-related ignitions in this fireshed by requiring personnel training, fire risk management oversight, and open communications with fire agencies. These measures would also reduce the potential impact to communities and natural resources by prohibiting project construction and maintenance activities during Red Flag Warning events, as issued by the National Weather Service, which would eliminate work during extreme fire weather and have the effect of reducing the potential acres burned and the number of homes at risk. Combined with Mitigation Measure F-1e, described below, this measure would reduce the risk of homes sustaining damage in a project construction- or maintenance-related fire.

Mitigation Measures for Impact F-1: Construction and/or maintenance activities would significantly increase the probability of a wildfire

- F-1a** **Develop and implement a Construction Fire Prevention Plan.**
- F-1b** **Finalize and implement SDG&E 2006 Draft Fire Plan for Electric Standard Practice.**
- F-1c** **Ensure coordination for emergency fire suppression.**
- F-1d** **Remove hazards from the work area.**
- F-1e** **Contribute to defensible space grants fund.**

Operational Impacts

Impact F-2: Presence of the overhead transmission line would increase the probability of a wildfire (Class I)

United States and Mexico. The presence of the overhead transmission line would create an ongoing source of potential wildfire ignitions for the life of the project. Line faults can be caused by such unpredictable events as conductor contact by floating debris, gun shots, and helicopter collisions; these events are rare but would be unavoidable.

A fire started in the transmission corridor could burn into the nearby town of La Rumorosa, potentially putting hundreds of homes at risk if a fire were to burn during extreme weather conditions. The potential losses would be unacceptably high. Impact F-2 is considered a significant impact because certain ignition sources are unavoidable. Due to the potential for unavoidable ignitions related to the presence of the overhead transmission line to occur during extreme fire weather, the presence of the project would significantly increase the likelihood of a catastrophic wildfire (Class I). The risk of ignitions and the risk of damage from a project-related ignition can be reduced, though not to a level that is less than significant, through implementation of adequate line clearances and by aiding in the creation of defensible space around homes at the WUI.

Mitigation Measure F-2a, Establish and maintain adequate line clearances, would reduce the risk of vegetation contact with conductors.

Mitigation Measures for Impact F-2: Presence of the overhead transmission line would increase the probability of a wildfire

- F-2a** **Establish and maintain adequate line clearances.**
- F-1e** **Contribute to defensible space grants fund.**

Impact F-3: Presence of the overhead transmission line would reduce the effectiveness of firefighting (Class III)

United States and Mexico. The transmission line associated with the La Rumorosa wind project would not create a significant obstacle to firefighting and wildfire containment due to its short length. A significant conflict with wildfire containment is defined as no less than a 1.5-mile segment of very high conflict index values, and although modeling is not carried out for this project, it would not create indefensible islands between transmission lines, and it would be located through rugged terrain that would not be otherwise defensible. This impact is considered less than significant (Class III). No mitigation is required.

Impact F-4: Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread (Class II)

United States and Mexico. Project activities create the potential for the introduction and spread of non-native, invasive plants. Non-native plants are often spread by human and vehicle vectors in areas of large-scale soil disturbance and importation. These actions along with the opening of the vegetation canopy through the clearing of trees and shrubs involved with the construction and maintenance of the wind facilities will contribute to the introduction and proliferation of non-native, invasive plants. Certain invasive plants, like cheatgrass, medusa head, and Saharan mustard, can contribute to changes in wild-fire frequency, timing and spread. The introduction of non-native plants in the project area would exacerbate wildfire risks in the project area.

The introduction of non-native plants with an increased ignition potential and rate of wildfire spread is considered a significant impact (Class II) that can be mitigated by following the prevention and management protocol outlined in Mitigation Measure B-3a, Prepare and Implement a Weed Control Plan. This measure also requires that proper actions are taken to prevent the introduction of invasive plants through materials and equipment used for the construction and maintenance of the wind facilities.

Mitigation Measure for Impact F-4: Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread (Class II)

B-3a Prepare and implement a Weed Control Plan.

Description of Jacumba Substation

B.6.1.4 Jacumba Substation

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Only one of these projects, "Rumorosa Wind Developers II", is currently described in an Advice Letter⁵ Number 2143-A filed by SCE at the CPUC on July 27, 2007; this potential future project is considered to be unlikely to occur unless Sunrise is approved. Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5.

⁵ An Advice Letter is filed with the CPUC to define contents and terms of utility contracts.

Figure B-47. Connected Actions: Jacumba Substation
[CLICK HERE TO VIEW](#)

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Impact Analysis for Jacumba Substation

D.2.19.4 Jacumba Substation – Biological Resources

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located approximately 0.5 miles northwest of the town of Jacumba, adjacent to the existing SWPL transmission line. Figure B-47 illustrates the approximate location and size of the substation area. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

The Jacumba Substation site is located in the Colorado Desert bioregion (CERES, 2003). The substation would occur along the Interstate 8 Alternative, at about MP I8-35 on private land. The substation site (based on review of aerial photography) consists of a grassland community that is sensitive. Grassland communities are described in Section D.2.1.2.2.

Overview of Special Habitat Management Areas. The Jacumba Substation does not occur within a special habitat management area.

Designated Critical Habitat. The Jacumba Substation occurs within designated critical habitat for the QCB, and the substation site may support a USFWS reference population of the QCB.

Special Status Plant Species. A list of special status plant species with potential to occur at the Jacumba Substation site is based on published literature, sources readily available on the Internet, California Natural Diversity Database (CNDDDB) records searches, United States Department of Agriculture (USDA) Forest Service records searches (USDA, 2007), State and federal species lists, and habitat field surveys for the SWPL Alternatives (see Section E.1.2.1; the I-8 Alternative occurs nearby). No listed plant species have potential to occur at the Jacumba Substation site. The following non-listed, sensitive plant species have moderate to high potential to occur. For more specific information about the special status plant species and their sensitivity status, see Table E.1.2-1.

- Jacumba milk-vetch
- Tecate tarplant

Special Status Wildlife Species. The listed QCB is expected to be found on the Jacumba Substation site because the site is located at/near a USFWS QCB reference population for the species. The highly sensitive golden eagle is not known to nest in the vicinity of this site (Bittner, 2007).

A list of special status wildlife species with potential to occur at the Jacumba Substation site is based on published literature, sources readily available on the Internet, California Natural Diversity Database (CNDDDB) records searches, United States Department of Agriculture (USDA) Forest Service records searches (USDA, 2007), State and federal species lists, and habitat field surveys for the SWPL Alternatives (see Section E.1.2.1; the I-8 Alternative occurs nearby). The following non-listed, sensitive wildlife species have moderate to high potential to. For more specific information about the special status wildlife species and their sensitivity status, see Table E.1.2-2.

- Silvery legless lizard
- Belding's orange-throated whiptail
- Coastal rosy boa
- Red-diamond rattlesnake
- San Diego ringneck snake
- Coast (San Diego) horned lizard
- Coast patch-nosed snake
- Northern harrier
- White-tailed kite
- California horned lark
- Loggerhead shrike
- Northwestern San Diego pocket mouse
- Pallid San Diego pocket mouse
- Jacumba little pocket mouse
- Pallid bat
- Western mastiff bat
- San Diego black-tailed jackrabbit
- American badger

Environmental Impacts and Mitigation Measures

Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation (Class I for sensitive vegetation; No Impact vegetation management and type conversion)

Construction of the Jacumba Substation would cause permanent displacement of an estimated 20 to 25 acres of sensitive grassland vegetation with a substation facility. Impacts to sensitive vegetation would be significant according to Significance Criterion 2.a, which states the project would have a substantial adverse effect on a riparian habitat or other sensitive natural community by temporarily or permanently removing it during construction, grading, clearing, or other activities. This impact is not mitigable to less than significant levels (Class I) because adequate mitigation land may not be available to compensate for the impact. Implementation of Mitigation Measures B-1a(CA), B-1c(CA), B-1d, B-1e, B-1f, B-1g, B-1h, B-1i, and B-1j is required to, at least in part, compensate for impacts to sensitive vegetation. The full text of the mitigation measures appears in Appendix 12.

Vegetation Management (Loss of Trees). The Jacumba Substation (considered here without transmission lines) would be constructed in a grassland, and no vegetation would need to be removed or trimmed to maintain proper clearance between vegetation and transmission lines (No Impact).

Type Conversion. As discussed in Section D.15, the construction and operation of new transmission lines, as well as the geothermal project itself, could cause wildfires, and could reduce the effectiveness of fire fighting efforts. Fires cause direct loss of vegetation communities, wildlife habitat, and wildlife species. The Jacumba Substation is located at the western edge of the desert ecosystem, in an area where some fires have historically occurred. Fire in the desert ecosystem also creates risk of type conversion, because desert habitat does not quickly recover from damage. While periodic fires are part of the natural ecosystem, fires burning too frequently can have significant long-term ecological effects such as degradation of habitat (temporal loss of habitat and non-native plant species invasion) and loss

of special status species. If the project were to cause a fire or inhibit fighting of fires, and this leads to type conversion of sensitive vegetation communities, the impact would be significant (Class I) according to Significance Criterion 1 (substantial adverse effect through habitat modification on any species identified as candidate, sensitive, or special status) and/or Significance Criterion 2 (substantial adverse effect on a riparian habitat or other sensitive natural community). Extensive mitigation for fire risk is presented in Section D.15. However, not all fires can be prevented. Although future fires may not cause type conversion in all instances, the impact must be considered significant because of the severity of potential habitat loss. This impact is not mitigable to less than significant levels (Class I). Implementation of the vegetation management program (described above) would reduce the fire risk of the project, although not to a less than significant level.

Mitigation Measures for Impact B-1: Construction activities would result in temporary and permanent losses of native vegetation

- B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.**
- B-1c(CA) Conduct biological monitoring.**
- B-1d Perform protocol surveys. [BIO-APM-1]**
- B-1e Train project personnel. [BIO-APM-2]**
- B-1f Construction and survey activities shall be restricted based on final design engineering drawings. [BIO-APM-4]**
- B-1g Build access roads at right angles to streambeds and washes. [BIO-APM-5]**
- B-1h Comply with all applicable environmental laws and regulations. [BIO-APM-6]**
- B-1i Restrict the construction of access and spur roads. [BIO-APM-3, BIO-APM-17]**
- B-1j Protect and restore vegetation. [BIO-APM-20, BIO-APM-23, BIO-APM-25]**

Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II)

It is expected that direct and/or indirect impacts to jurisdictional waters (i.e., non-wetland areas regulated by the ACOE and RWQCB and/or CDFG) could occur from construction of the Jacumba Substation. Based on the vegetation community present, jurisdictional wetlands are not anticipated to occur, but impacts to jurisdictional non-wetland waters could occur if drainages are present. A formal jurisdictional delineation for the project would be conducted once project-specific features are sited and final engineering is complete. Then, impacts to jurisdictional areas can be clearly defined, and the project proponent can apply for permits from the ACOE, RWQCB, and CDFG. Since a formal delineation has not been conducted, the presence and extent of jurisdictional areas is unknown, and the project could have a significant impact on regulated jurisdictional areas according to Significance Criterion 3.a. which states the project would have a substantial adverse effect on water quality or wetlands as defined by the ACOE and/or CDFG. These impacts would be considered significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1c(CA), B-1d, B-1e, B-1f, B-1g, B-2a(CA), B-2b, and B-2c.

Mitigation Measures for Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality

- B-1c(CA) Conduct biological monitoring.**

- B-1d** Perform protocol surveys. [BIO-APM-1]
- B-1e** Train project personnel. [BIO-APM-2]
- B-1f** Construction and survey activities shall be restricted based on final design engineering drawings. [BIO-APM-4]
- B-1g** Build access roads at right angles to streambeds and washes. [BIO-APM-5]
- B-2a(CA)** Provide restoration/compensation for affected jurisdictional areas.
- B-2b** Identify environmentally sensitive times and locations for tree trimming. [BIO-APM-16]
- B-2c** Avoid sensitive features. [BIO-APM-18]

Impact B-3: Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species (Class II)

Construction activities could introduce invasive, non-native, or noxious plant (weed) species (e.g., seed brought in on the soles of shoes, or on the tires and undercarriages of vehicles) to the surrounding areas. The inadvertent introduction of non-native plant species is a special concern for sensitive vegetation communities. Non-native plants pose a threat to the natural processes of plant community succession and fire frequency, and can affect the biological diversity and species composition of native plant communities. The survival of some populations of special status species could be adversely affected by the success of an introduced plant species. 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, and use of straw bales or wattles that contain seeds of non-native plant species. Construction of the Jacumba Substation would have a substantial adverse effect on riparian or other sensitive vegetation communities if weed species are introduced (Significance Criterion 2.b.), and the impact would be considered significant but mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1a(CA), B-1j, B-2a(CA), and B-3a(CA).

Mitigation Measures for Impact B-3: Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species

- B-1a(CA)** Provide restoration/compensation for affected sensitive vegetation communities.
- B-1j** Protect and restore vegetation. [BIO-APM-20, BIO-APM-23, BIO-APM-25]
- B-2a(CA)** Provide restoration/compensation for affected jurisdictional areas.
- B-3a(CA)** Prepare and implement a Weed Control Plan.

Impact B-4: Construction activities would create dust that would result in degradation of vegetation (Class II)

Construction activities such as grading, excavation, and driving of heavy equipment on unpaved roadways would result in increased levels of blowing dust that may settle on surrounding vegetation. Increased levels of dust on plants can significantly impact plants' photosynthetic capabilities and degrade the overall vegetation community. This would be a significant impact according to Significance Criterion 2.b. (substantial adverse effect on riparian or other sensitive vegetation communities) and Significance Criterion 2.c. (substantial adverse effect on riparian or other sensitive vegetation communities through the spread of fugitive dust) but would be mitigable to less than significant levels (Class II) with implementation of Mitigation Measure B-1i that includes regular watering to control fugitive dust and a 15 mile-per-hour speed limit on dirt access roads to reduce dust.

Mitigation Measure for Impact B-4: Construction activities would create dust that would result in degradation of vegetation

B-1i Restrict the construction of access and spur roads. [BIO-APM-3, BIO-APM-17]

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I)

Listed or sensitive (special status) plant species impacts could be caused by direct loss of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during construction. Two non-listed, special status plant species have moderate to high potential to occur: Jacumba milk-vetch and Tecate tarplant (see Table E.1.2-1).

Because a survey for special status plant surveys has not been conducted, it is not possible to assess the impacts to them, so impacts to special status plant species would be considered significant and not mitigable to less than significant levels (Class I) according to Significance Criterion 1.a. (any impact to one or more individuals of a species that is federal or State listed as endangered or threatened would be significant) and Significance Criterion 1.b. (any impact that would affect the number or range or regional long-term survival of a sensitive or special status plant species would be significant). Implementation of Mitigation Measures B-1a(CA), B-1c(CA), B-2a(CA), B-1d, B-1e, B-1f, B-1g, B-1h, B-1i, B-2c, B-5a(CA), B-5b, B-5c, and B-5d would minimize the impacts, but not to less than significant levels.

Mitigation Measures for Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants

B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.

B-1c(CA) Conduct biological monitoring.

B-1d Perform protocol surveys. [BIO-APM-1]

B-1e Train project personnel. [BIO-APM-2]

B-1f Construction and survey activities shall be restricted based on final design engineering drawings. [BIO-APM-4]

B-1g Build access roads at right angles to streambeds and washes. [BIO-APM-5]

B-1h Comply with all applicable environmental laws and regulations. [BIO-APM-6]

B-1i Restrict the construction of access and spur roads. [BIO-APM-3, BIO-APM-17]

B-2a(CA) Provide restoration/compensation for affected jurisdictional areas.

B-2c Avoid sensitive features. [BIO-APM-18]

B-5a(CA) Conduct rare plant surveys, and implement appropriate avoidance/minimization/compensation strategies.

B-5b Delineate sensitive plant populations. [BIO-APM-16]

B-5c No collection of plants or wildlife. [BIO-APM-13]

B-5d Salvage sensitive species for replanting or transplanting. [BIO-APM-22]

Impact B-6: Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality (Class III)

Direct loss of small mammals, reptiles, and other less mobile species would occur during construction of the Jacumba Substation. This section discusses impacts to wildlife in general, particularly non-special

status species. Impacts to special status species are described in Impact B-7. Deaths related to construction would be incurred primarily by burrow-dwelling animals; eggs and nestlings of bird species with small, well-hidden nests (impacts to nesting birds is discussed in Impact B-8); and species with limited mobility (lizards, snakes, ground squirrels). More mobile species like birds and larger mammals are expected to disperse into adjacent habitat areas during land clearing and grading. Construction activities and human presence can also alter or disrupt the breeding and foraging behaviors of wildlife. Impact B-6 (Construction activities, including the use of access roads, would result in disturbance to wildlife and result in wildlife mortality) is discussed in greater detail in Section D.2.10.

Except where wildlife habitats are known to support sensitive, rare, threatened, or endangered species or nesting birds (addressed in Impacts B-7, B-7J, and B-8), all of the impacts on general, non-special status wildlife from construction of the Jacumba Substation would be adverse but less than significant (Class III). No mitigation is required.

Impact B-7: Construction activities would result in direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I)

Construction of the Jacumba Substation would directly affect a population of the QCB (see Impact B-7J below) and has the potential to significantly impact the non-listed, sensitive animal species listed at the beginning of Section D.2.19.4. These impacts would be significant because the project would have a substantial adverse effect on listed and sensitive wildlife species and their habitats according to Significance Criterion 1 (substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the Wildlife Agencies).

Most of the non-listed, sensitive species' habitats include grasslands. The mitigation for the loss of the sensitive vegetation communities (Mitigation Measure B-1a[CA]) would normally compensate for the potential loss of these sensitive species and their habitats. However, since adequate land required by Mitigation Measure B-1a(CA) may not be available, the impacts to non-listed, sensitive wildlife species would be considered significant and not mitigable to less than significant levels (Class I). Implementation of Mitigation Measures B-1a(CA), B-1c(CA), B-1e, B-1f, B-1i, B-2a(CA), B-2b, B-6a, B-6b, B-6c, B-6d, and B-7a(CA) is required to compensate, at least in part, for impacts to non-listed, sensitive wildlife species and their habitats.

Mitigation Measures for Impact B-7: Construction activities would result in direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife

- B-1a(CA) Provide restoration/compensation for affected sensitive vegetation communities.**
- B-1c(CA) Conduct biological monitoring.**
- B-1e Train project personnel. [BIO-APM-2]**
- B-1f Construction and survey activities shall be restricted based on final design engineering drawings. [BIO-APM-4]**
- B-1i Restrict the construction of access and spur roads. [BIO-APM-3, BIO-APM-17]**
- B-2a(CA) Provide restoration/compensation for affected jurisdictional areas.**
- B-2b Identify environmentally sensitive times and locations for tree trimming. [BIO-APM-16]**
- B-6a Littering is not allowed. [BIO-APM-7]**
- B-6b Survey areas for brush clearing. [BIO-APM-9]**

- B-6c** **Protect mammals and reptiles in excavated areas.** [BIO-APM-24, BIO-APM-26]
- B-6d** **Reduce construction night lighting on sensitive habitats.** [BIO-APM-29]
- B-7a(CA)** **Cover all steep-walled trenches or excavations used during construction to prevent the entrapment of wildlife (e.g., reptiles and small mammals).**

Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat (Class I)

Recent QCB observations (1998 and 2000) were made near Jacumba within and directly adjacent to the Jacumba Substation (USFWS, 2006); the Jacumba Substation occurs USFWS Survey Area 1 for the species; and the site supports suitable habitat for the QCB.

Since no protocol surveys for QCB were completed for this site, all of the habitat is assumed to be occupied by QCB. With the lack of definitive survey data, the substation construction must be assumed to have a significant impact on this species according to Significance Criterion 1.a. (impact one or more individuals of a species that is federal or State listed as endangered or threatened). Since adequate land required by Mitigation Measure B-7i (CA) may not be available, the impacts are considered significant and not mitigable to less than significant levels (Class I). However, Mitigation Measures B-1a(CA), B-1c(CA), B-2a(CA), and B-7i(CA) are required to, at least in part, minimize impacts to the QCB.

Mitigation Measures for Impact B-7J: Direct or indirect loss of quino checkerspot butterfly or direct loss of habitat

- B-1a(CA)** **Provide restoration/compensation for affected sensitive vegetation communities.**
- B-1c(CA)** **Conduct biological monitoring.**
- B-2a(CA)** **Provide restoration/compensation for affected jurisdictional areas.**
- B-7i(CA)** **Conduct quino checkerspot butterfly surveys and implement appropriate avoidance/minimization/compensation strategies.** Mitigation Measure B-7i(CA) is identical to B-7i for the SRPL Proposed Project except that CPUC shall be replaced with “Lead Agencies”, and State Parks and/or Wildlife Agencies shall be replaced with “other agencies with jurisdiction over the project”. Additionally, for the Jacumba Substation, impacts to QCB designated critical habitat shall be mitigated with QCB designated critical habitat.

Impact B-8: Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act) (Class II)

Construction of the Jacumba Substation would violate the Migratory Bird Treaty act if it resulted in the killing of migratory birds or caused the destruction or abandonment of migratory bird nests and/or eggs (Significance Criterion 1.g). This could occur through the removal of vegetation containing bird nests and/or through vehicle and foot traffic or excessive noise associated with construction that cause nest destruction or abandonment of a nest. Violation of the Migratory Bird Treaty Act is a significant impact that is mitigable to less than significant levels (Class II) with implementation of Mitigation Measures B-1e, B-1f, B-1g, B-1h, B-1i, B-2b, B-2c, B-6b, B-8a(CA), and B-8b.

Mitigation Measures for Impact B-8: Construction activities would result in a potential loss of nesting birds (violation of the Migratory Bird Treaty Act)

- B-1e** **Train project personnel.** [BIO-APM-2]
- B-1f** **Construction and survey activities shall be restricted based on final design engineering drawings.** [BIO-APM-4]

- B-1g** Build access roads at right angles to streambeds and washes. [BIO-APM-5]
- B-1h** Comply with all applicable environmental laws and regulations. [BIO-APM-6]
- B-1i** Restrict the construction of access and spur roads. [BIO-APM-3, BIO-APM-17]
- B-2b** Identify environmentally sensitive times and locations for tree trimming. [BIO-APM-16]
- B-2c** Avoid sensitive features. [BIO-APM-18]
- B-6b** Survey areas for brush clearing. [BIO-APM-9]
- B-8a(CA)** Conduct pre-construction surveys and monitoring for breeding birds.
- B-8b** Removal of raptor nests. [BIO-APM-27]

Impact B-9: Construction or operational activities would adversely affect linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class III linkages and wildlife movement corridors; No Impact fish movement and bat colonies)

The Jacumba Substation site would carry only intermittent flows in response to seasonal rain events that would not support fish and other species that are dependent on permanent water sources. Furthermore, based on the vegetation and topography, it is unlikely that there are rock crevices, caves, or other potential features present to support bat nursery colonies (No Impact).

Because the substation facility would be completely fenced, wildlife would generally not be able to move through it and would have to traverse around it, but there would be no restrictions to that movement, and the presence of the substation would not be expected to reduce populations within or adjacent to it below self-sustaining levels. Therefore, impacts to wildlife movement would be considered adverse but less than significant (Class III). No mitigation is required.

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No Impact)

The risk of electrocution, is the same for this option as for the SRPL Proposed Project in Section D.2.14: No Impact. Impacts to raptors and other avian species from collisions with substation facilities have not been historical issues at SDG&E substations throughout San Diego County (Pandion Systems, Inc. 2006). Therefore, no impacts avian species from collision are expected for this substation (No Impact).

Impact B-11: Presence of transmission lines may result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (No Impact)

The Jacumba Substation would not introduce new towers, and is unlikely to provide nesting sites for ravens, so increase in predation of these species by ravens that nest on transmission towers is expected to occur (No Impact).

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class II)

Maintenance of the Jacumba Substation site is anticipated to include minor inspection of the site once per week (1-2 personnel) and major inspections once per year (for one week, with 20 personnel) as described for substation maintenance for the SRPL Proposed Project. Maintenance activities, particularly driving on dirt access roads to reach the substation, would result in disturbance to wildlife or wildlife mortality, and these impacts are significant according to Significance Criterion 1.f. (impacts that directly/indirectly cause

the mortality of candidate, sensitive, or special status species) but mitigable to less than significant levels with implementation of Mitigation Measures B-6a and B-12d.

Mitigation Measures for Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality

B-6a **Littering is not allowed.** [BIO-APM-7]

B-12d **Protect wildlife.**

D.3.12.4 Jacumba Substation – Visual Resources

In its testimony during the CPUC’s Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

Jacumba 500/230 kV Substation. The mesa landscape supports a low diversity of vegetation, composed primarily of short grass and shrubs. The existing SWPL transmission line is sited adjacent to the proposed new Jacumba Substation. This is an industrial feature located south of the ABDSP boundary and within San Diego County. A distant view of the new substation (from approximately one mile) would be available from Old Highway 80 and from Boundary Creek Road.

The Jacumba Substation would be a 230/500 kV substation and would be located on private land, along the existing SWPL line northwest of the City of Jacumba. The site would be located on open, flat mesa scrub land. The existing visual quality of the site is moderate with the flat, valley floor exhibiting rather moderate degrees of visual variety, vegetative patterns, and appeal. The existing SWPL transmission lines that pass through the site appear as discordant alterations but they are subordinate to the vast horizontal desert/mountainous expanse. While much of the landscape is predominantly natural in appearance, there have been considerable modifications associated with the residential development of the town of Jacumba. Nearby residents and travelers on Desert Rose Ranch Road, and smaller roads anticipate panoramic views across the hilly and mesa landscape, punctuated by the discordant features of the SWPL transmission line and views of the town of Jacumba.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact V-1: Short-term visibility of construction activities, equipment, and night lighting (Class II)

Substation, Construction and Storage Yards, and Fly Yards. Construction impacts on visual resources would result from the presence and visual intrusion of construction vehicles, equipment, materials, and work force at Jacumba Substation, construction and storage yards, and fly yards. Construction impacts on visual resources would also result from the temporary use of night lighting if night lighting is not appropriately controlled at these construction sites. Construction equipment and activities would be seen by various viewers in close proximity to the construction sites including rural residents near the town of Jacumba as well as travelers and recreationists on highways, local roads (e.g., Desert Rose Ranch Road), and access roads and local roads. Construction impacts at these sites could be lengthy and the resulting visual impacts would be significant but mitigable (Class II). Mitigation Measures V-1a through V-1c are required to reduce the impacts to levels that would be less than significant.

Mitigation Measures for Impact V-1: Short-term visibility of construction activities, equipment, and night lighting

V-1a Reduce visibility of construction activities and equipment.

V-1b Reduce construction night lighting impacts.

V-1c Prohibit construction marking of natural features. [APM VR-4]

Impact V-2: Long-term visibility of land scars and vegetation clearance in arid and semi-arid landscapes (Class II)

Land scarring from use of staging areas and construction yards, construction of new access and spur roads, and activities adjacent to the construction site of the Jacumba Substation and along the ROW can be long-lasting (several years) in arid and semi-arid environments where vegetation recruitment and growth are slow. In-line views of linear land scars or newly bladed roads are particularly problematic and introduce adverse visual change and contrast by causing unnatural vegetative lines and soil color contrast from newly exposed soils. Vegetation clearance could occur in conjunction with project construction or during the life of the project if vegetation is cleared as part of ongoing ROW maintenance or if a changed vegetation structure is maintained within the right of way.

Long-term land scarring and vegetation clearance impacts would constitute significant visual impacts that would be mitigated to levels that are less than significant (Class II) with effective implementation of Mitigation Measures V-2a (Reduce in-line views of land scars), V-2b (Reduce visual contrast from unnatural vegetation lines), V-2c (Reduce color contrast), V-2e (Minimize vegetation removal), and G-1b (Implement erosion control procedures).

Mitigation Measures for Impact V-2: Long-term visibility of land scars and vegetation clearance in arid and semi-arid landscapes

V-2a Reduce in-line views of land scars.

V-2b Reduce visual contrast from unnatural vegetation lines.

V-2c Reduce color contrast of land scars on non-Forest lands.

V-2e Minimize vegetation removal. [APM BIO-23]

G-1b Implement erosion control procedures. [APM GEO-2]

Operational Impacts

The Jacumba 500 kV/230 kV Substation would be located on private land northwest of the town of Jacumba, just south of ABDSP. Long-term, operational visual impacts would be experienced by: (a) travelers on the Desert Rose Ranch Road and other local roads; (b) recreationists accessing BLM lands south of the lower ABDSP via numerous BLM 4WD access roads and other local access roads; and (c) residents in the town of Jacumba.

Impact V-NW4: Increased structure contrast, industrial character, view blockage, and skylining associated with substation development (Class I)

Although the Jacumba substation would be located adjacent to the existing SWPL, the substation would be a 20- to 25-acre facility and would introduce a prominent industrial feature. Any introduction of industrial character to the predominantly natural appearing existing landscape at the substation location or blockage of views to higher quality landscape features (valley floor, rocky ridges, distant mountains, or sky) would be perceived as an adverse visual change. The resulting viewer concern would be high.

The substation would be visible in the middle distance from the adjacent residences and roads. While the number of viewers would be low, the duration of view would be extended. In addition, the substation would be highly visible at night in this rural setting. Combining the equally weighted moderate visual quality, high viewer concern, and moderate-to-high viewer exposure results in an overall moderate-to-high visual sensitivity of the visual setting and viewing characteristics.

Therefore, while implementation of the mitigation measures V-3a, V-3b, V-3c and V-21a would minimize the visual impact of the Jacumba substation, this impact cannot be mitigated to an insignificant level and the impact would remain significant (Class I).

Mitigation Measures for Impact V-NW4: Increased structure contrast, industrial character, view blockage, and skylining associated with substation development

- V-3a** **Reduce visual contrast of towers (second bullet of mitigation only applies).**
- V-3b** **Use non-specular design to reduce conductor visibility and visual contrast.** [APM VR-2]
- V-3c** **Coordinate with affected property owners on structure siting.** [APM VR-5]
- V-21a** **Reduce night lighting impacts.**

D.4.12.4 Jacumba Substation – Land Use

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed

to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

Jacumba 500/230 kV Substation. Assuming approval and construction of the Proposed SRPL Project, the Jacumba 500/230 kV Substation is likely to be built partly on the existing Southwest Powerlink utility corridor, approximately one-half mile northwest of the town of Jacumba. Jurisdictions within or near the substation site include BLM and the County of San Diego. Land uses within or near to substation include predominantly open space (vacant, private land), Forage Crops, small town (Jacumba), public roadways, and, San Diego and Arizona Eastern Railroad. Old Highway 80 passes through the town of Jacumba.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact L-1: Construction would temporarily disturb land uses at or near the alignment (Class III)

The Jacumba Substation would be sited through predominantly open space, private land, northwest of the town of Jacumba where there are residences. Uses that would be temporarily impacted by construction of the substation include public facilities, primarily roads. Construction of the Jacumba Substation would temporarily disturb this rural area as a result of heavy construction equipment on temporary and permanent access roads and moving building materials to the substation and/or sites and returning to construction staging areas. Mitigation measures to reduce noise and air quality impacts are presented in Sections D.8 (Noise) and D.11 (Air Quality) respectively.

No residences would be located within 1,000 feet of the substation construction. The closest residences would be in the town of Jacumba approximately 0.5 miles southeast of the substation and in the proposed development site, Ketchum Ranch, approximately 1 mi. to the east of the substation. For those residences greater than 1,000 feet from the substation, construction-related impacts would be considered adverse but not significant due to their distance from the project (Class III). No mitigation would be required. However, if this connected action is proposed, implementation of measures similar to the types listed below are recommended to further reduce land use impacts or in the event that residences are built near the transmission corridor or substation site prior to the project's environmental permitting.

Mitigation Measures for Impact L-1: Construction would temporarily disturb the land uses at or near the alignment

L-1a Prepare Construction Notification Plan.

Operational Impacts

The Jacumba Substation would not traverse or adjoin private land used for recreation. Refer to Sections E.5, Wilderness and Recreation, for a discussion of operational impacts to the region.

No residences are located within 1,000 feet of the substation, and no other uses would be impacted. Thus, no operational impacts would occur (No Impact), and no mitigation would be required. In the event that residences are built near the transmission corridor or substation site prior to the project's environmental permitting, the Jacumba Substation would not disrupt actual use of residential properties or structures. Access to all uses would be fully restored once construction of the substation is complete. The substation would not remove any residences along the proposed route or cause any residential use to change. For these reasons, no land use-related operational impacts would occur (No Impact), and no mitigation would be required.

D.5.12.4 Jacumba Substation – Wilderness and Recreation

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

There are no State or Federal wilderness areas or wilderness study areas within or adjacent to the Jacumba 500/230 kV Substation as it is located on private land designated as rural lands (1 du/80 acres). The nearest wilderness area is the southern tip of the ABDSP, approximately 0.7 miles north of the substation. In addition there are no recreation areas within or adjacent to the Jacumba Substation as it would be located on private land.

Environmental Impacts and Mitigation Measures

There are no wilderness areas or WSAs that would be affected by the substation site. The substation is located on private land that would not interfere with any trails or public recreation areas that would be used for recreational purposes.

As such, Impact WR-1 (Construction activities would temporarily reduce access and visitation to recreation or wilderness areas) and Impact WR-2 (Presence of a transmission line or substation would permanently change the character of a recreation area, diminishing its recreational value) would not occur.

D.6.12.4 Jacumba Substation - Agriculture

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 (Section B) illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

There are no DOC Farmlands, Active Agricultural Operations or Williamson Act lands that would be traversed by or adjacent to the substation site. Thus, no Agricultural Resources would be traversed by or adjacent to this Project.

Environmental Impacts and Mitigation Measures

No Agricultural Resources would be impacted by the new Jacumba Substation. Therefore, construction and operation of the new Jacumba Substation line would not create impacts that would temporarily or permanently impact Agricultural Resource (No Impact), and no mitigation would be required.

D.7.16.4 Jacumba Substation – Cultural Resources

Environmental Setting

The Jacumba Substation is located in the San Diego Mountains, whose prehistoric sites most frequently include bedrock milling features, and historic sites typically indicate ranching and mining activities; and the inland valleys, a transition zone between the mountains and coast with prehistoric sites bearing appropriate transitional evidence such as bedrock milling, lithic artifact scatters, and temporary camps and habitations, while historic sites contain evidence of settlement and ranching throughout the Mexican and American periods.

SWCA conducted a cultural resources records search for 100 percent of the Jacumba Substation and a 0.5-mile radius around the substation. No survey was conducted for this indirect effect of Sunrise Powerlink; however, a portion of the substation area has been surveyed for the SRPL project. Two previously recorded cultural resources, a lithic scatter CA-SDI-7951 and a historical refuse scatter (and CA-SDI-7030), are recorded within the Jacumba Substation and are subject to potential impacts (see Table Ap.9B-42 in Appendix 9B).

Environmental Impacts and Mitigation Measures

Construction Impacts

Two cultural resources that are potentially eligible for the NRHP listing have been identified within the Jacumba Substation. There is also the potential to encounter undiscovered cultural resources during survey or project construction. Both of the resources within the Jacumba Substation are potentially eligible for NRHP listing. Because known cultural resources that are potentially eligible for the NRHP or CRHR exist within areas of proposed direct impact, as well as the potential for encountering undiscovered cultural resources, the following impacts could occur during project construction or operation.

Impact C-1: Construction of the project would cause an adverse change to known historic properties (Class II)

Two prehistoric cultural resources that are potentially eligible for listing on the NRHP or CRHR are located within Jacumba Substation. There is also the potential to encounter undiscovered cultural resources during survey or project construction. Adverse construction impacts would be mitigated to a level less than significant (Class II) by implementing Mitigation Measures C-1a, C-1b, C-1c, C-1d, C-1e, and C-1f. For the full text of the mitigation measures, please see Appendix 12.

Mitigation Measures for Impact C-1: Construction of the project would cause an adverse change to known historic properties

- C-1a** **Inventory and evaluate cultural resources in Final APE.**
- C-1b** **Avoid and protect potentially significant resources.**
- C-1c** **Develop and implement Historic Properties Treatment Plan.**
- C-1d** **Conduct data recovery to reduce adverse effects.**
- C-1e** **Monitor construction at known ESAs.**
- C-1f** **Train construction personnel.**

Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains (Class I or II)

Types of subsurface features that could be encountered at the Jacumba Substation include prehistoric resources such as buried living surfaces, artifact deposits, hearths, burials, and cremations. Historical resources that could be unearthed during project construction include refuse pits, privies, and structural foundations. Buried archaeological resources may be encountered during vegetation removal at tower and pull site locations, grading of access roads, or excavation associated with construction or undergrounding of power lines. Impacts to most unknown significant prehistoric and historic archaeological sites would be mitigated to a level that is less than significant (Class II) by implementing Mitigation Measures C-1c, C-1d, C-1f, C-2a and C-3a. However, effects related to Native American human remains would be significant (Class I) even with mitigation.

Mitigation Measures for Impact C-3: Construction of the project would cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains

- C-1c Develop and implement Historic Properties Treatment Plan.**
- C-1d Conduct data recovery to reduce adverse effects.**
- C-1f Train construction personnel.**
- C-2a Properly treat human remains.**
- C-3a Monitor construction in areas of high sensitivity for buried resources.**

Impact C-4: Construction of the project would cause an adverse change to Traditional Cultural Properties (Class I or II)

To date, no TCPs have been identified that would be directly impacted by the Jacumba Substation. However, Native American consultation has indicated that there are prehistoric rock art sites, springs, and sacred mountains in the vicinity of this alternative. Additionally, the Sacred Lands File search conducted for the alternatives noted that lands sacred to Native Americans are present in the vicinity of the alternatives, in undisclosed locations. The BLM, as the Federal Lead Agency under NEPA and Section 106 of the NHPA, has initiated government-to-government consultation with appropriate Native American groups and notification to other public groups regarding project effects on traditional cultural values. That consultation will determine whether there are TCPs that could be affected within this segment. BLM consultation with Viejas Tribal Government has indicated that Viejas has concerns about cultural resources in its vicinity, but as of August 28, 2007, no areas of specific concern have been identified, nor have these concerns indicated that the Jacumba Substation has the potential to impact TCPs. Though impacts to TCPs are often Class I, mitigation, as defined by NEPA (in King, 2003), can include “minimizing impacts by limiting the degree or magnitude of the action...,” rectifying or reducing the impact, and/or “compensating for the impact by replacing or providing substitute resources or environments,” which when properly coordinated with Native Americans or other Traditional Groups can potentially reduce the impact to Class II. Implementation of Mitigation Measure C-4a (Complete consultation with Native Americans and other Traditional Groups) could potentially reduce impacts to TCPs to a level that is less than significant (Class II), but in some cases impacts may remain significant (Class I).

Mitigation Measure for Impact C-4: Construction of the project would cause an adverse change to Traditional Cultural Properties

- C-4a Complete consultation with Native American and other Traditional Groups.**

Operational Impacts

Impact C-5: Project operation and maintenance would cause an adverse change to known historic properties (Class I or II)

Direct and indirect impacts would occur to historic properties within and in the vicinity of the project area during operation and long-term presence of the project. There are two known resources that may be NRHP eligible located within the Jacumba Substation that are potentially subject to long-term and operational impacts. Direct impacts to these resources or other newly identified resources could result from maintenance or repair activities, while increased erosion could result as an indirect project impact. These impacts would be significant, but can be mitigated to a level that is less than significant (Class II) by implementing site protection measures and monitoring procedures, as detailed in Mitigation Measure C-5a (Protect and monitor NRHP and/or CRHR-eligible properties), as well as implementation of Miti-

gation Measures C-2a (Properly treat human remains) and C-4a (Complete consultation with Native Americans and other Traditional Groups). Impacts to human remains would remain significant (Class I).

Mitigation Measures for Impact C-5: Project operation and maintenance would cause an adverse change to known historic properties

- C-1b** **Avoid and protect potentially significant resources.**
- C-1c** **Develop and implement Historic Properties Treatment Plan.**
- C-2a** **Properly treat human remains.**
- C-4a** **Complete consultation with Native American and other Traditional Groups.**
- C-5a** **Protect and monitor NRHP- and/or CRHR-eligible properties.**

D.7.35.4 Jacumba Substation – Paleontological Resources

In its testimony during the CPUC’s Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL would be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

The Jacumba Substation (MP I8-35) is underlain by the following geologic units:

- **Quaternary alluvium.** Quaternary alluvium consists of partly dissected, mostly unconsolidated, poorly sorted sand, silt, clay, and gravel located at the margins of canyons and within valley floors. “Younger” alluvium is Holocene (10,000 years ago to Recent) in age and “Older alluvium” is Pleistocene (1.8 million years ago to 10,000 years ago) in age. Fossil localities in older alluvium deposits throughout southern California have yielded terrestrial vertebrates such as mammoths, mastodons, ground sloths, dire wolves, short-faced bears, saber-toothed cats, horses, camels, and bison (Scott, 2006). Younger alluvium is determined to have a low potential for paleontological resources but is often underlain by older alluvium, which is determined to have a high potential for paleontological resources.
- **Alverson Volcanics.** Alverson Volcanics include an upper unit of volcanic flows and a lower unit consisting of a sequence of conglomerates, sandstones, and mudstones interbedded with lava flows. The sedimentary deposits within this geologic unit have yielded fossilized algae, pollen, petrified wood,

mollusks, and one occurrence of a vertebrate bone fragment. The Alverson Volcanics are assigned a moderate paleontological resource potential.

- **Metasedimentary rocks.** Metasedimentary rocks in the central part of San Diego County are referred to as Julian Schist, which is composed of quartz-mica schist and quartzite, with minor amounts of marble and amphibolite. These rocks have been intruded and deformed by plutonic rocks associated with the Peninsular Ranges Batholith. The age of these metasedimentary rocks is not definite; however, microfossils indicate that they are much older than Triassic in age. No fossils have been discovered in this unit within San Diego County; however, correlative units in Riverside and Orange County have yielded marine mollusks. Metasedimentary rocks in San Diego County are determined to have a marginal potential for paleontological resources.

Museum paleontological collections records maintained by SDNHM indicate that no previously recorded fossil localities exist within this alternative or a half-mile radius; however, the geologic sediments underlying the project area are determined to have a paleontological resource potential ranging from zero to high.

Environmental Impacts and Mitigation Measures

The potential to discover paleontological resources during construction of the Jacumba Substation ranges from zero to high. The Jacumba Substation, located on and around MP I-8 35 has moderate to low paleontological sensitivity. Paleontologically sensitive areas could be impacted by construction-related ground disturbances such as the building or improvement of access roads, borehole drilling, trenching, excavating and grading. Areas along the substation determined to be paleontologically sensitive based on geologic mapping and museum collection records are shown in Table D.7-26.

Table D.7-26. Paleontological Sensitivity – Jacumba Substation

Mileposts	Rock Units	Sensitivity	Fossil Localities
34.3-34.9	Alverson volcanics	Moderate	—
34.9-35.2	Alluvium	Low	—
35.2-38	Metasedimentary Rocks	Marginal	—

Impact PAL-1: Construction of the project would destroy or disturb significant paleontological resources (Class II)

Construction of this substation and associated access roads would require excavation, grading, and vegetation removal in paleontologically sensitive geologic units. Without mitigation, the fossils contained in sensitive geologic units, as well as the paleontological data they could provide if properly salvaged and documented, would be adversely impacted (destroyed), rendering them permanently unavailable for future scientific research.

Mitigation Measure for Impact PAL-1: Construction of the project would destroy or disturb significant paleontological resources

Implementation of the following mitigation measures would reduce project effects to a level of less than significant (Class II). For the full text of the mitigation measures, please see Appendix 12.

- PAL-1a Inventory and evaluate paleontological resources in the Final APE.**
- PAL-1b Develop Paleontological Monitoring and Treatment Plan.**
- PAL-1c Monitor construction for paleontology.**
- PAL-1d Conduct paleontological data recovery.**

PAL-1e Train construction personnel.**D.8.12.4 Jacumba Substation - Noise**

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47, in Section B, Project Description, illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

The Jacumba Substation would be located in unincorporated San Diego County, where noise is regulated by San Diego County Code of Regulatory Ordinances (Section D.8.3.3).

Ambient Noise Levels. The Jacumba Substation would be located on private property in San Diego County. Low noise levels under 50 dBA generally occur on these lands that are mostly open space. Noise levels are occasionally elevated due to aircraft caused by the NAF El Centro Desert Range and the Jacumba Airport. Cars traveling along Interstate 8 and Old Highway 80 also cause elevated noise levels.

Noise-Sensitive Receptors. No residences or otherwise sensitive receptors are located within 1,000 feet of the Jacumba Substation site, which is in a rural and natural setting.

Environmental Impacts and Mitigation Measures

Construction of the substation would cause noise from grading and access road construction along with other construction activities similar to those of transmission line construction. Noise from access road traffic would also occur, although not within 1,000 feet of a residence. Because no nearby noise-sensitive receptors would be affected, construction noise (Impact N-1, Class III) would not cause any impact. Similarly, a groundborne vibration impact (Impact N-2) would not occur.

Operational noise would not cause any local ordinance to be violated or any notable change in existing noise levels. Noise from operating the new substation (Impact N-3, Class III) and noise from maintenance activities (Impact N-4, Class III) would not adversely affect any noise-sensitive receptors. As the

Jacumba Substation would be located next to the existing SWPL transmission line, there would not be a significant increase in corona noise about the existing level (Impact N-3).

D.9.12.4 Jacumba Substation – Transportation and Traffic

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

The Jacumba 500/230 kV Substation would be located southwest of the Desert Rose Ranch Road, and west of local and private roads running north-south connecting the Desert Rose Ranch Road with the town of Jacumba. Boundary Creek Road borders the town of Jacumba to the north.

Environmental Impacts and Mitigation Measures

All construction activities and associated equipment would be adjacent to the existing SWPL ROW. The road nearest to the proposed site is the access road for the SWPL transmission line. Approximately 0.10 miles from the Jacumba Substation is a private road that could be used to reach the SWPL access road. As the construction would occur adjacent to the access road only, there would be no impacts to road closures (Impact T-1), emergency service providers (Impact T-2), bus transit routes (Impact T-3), pedestrian movement (Impact T-4), road damage (Impact T-5), elimination of parking spaces (Impact T-7), and restricted access to properties (Impact T-10). Modifications to the Jacumba Substation would not effect rail traffic (Impact T-6) or generate additional traffic on the regional roadways (Impact T-9). There are no known transportation projects that would conflict with the construction of the Jacumba Substation (Impact T-8). Therefore, no mitigation is required.

D.10.12.4 Jacumba Substation – Public Health and Safety

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink

Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

The Jacumba Substation site would be located on a relatively flat undeveloped mesa within the Jacumba Mountains, northwest of the town on Jacumba. Review of the EDR database survey (EDR, 2006a) indicates that, other than two leaking fuel tanks in the town of Jacumba, approximately 0.5 miles away from the proposed Jacumba Substation site, there are no other environmentally contaminated sites.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact P-2 (Residual pesticides and/or herbicides could be encountered during grading or excavation in agricultural areas) would not occur, because there is no agricultural land within the existing SWPL transmission line corridor.

Impact P-1: Improper handling and/or storage of hazardous materials during construction could cause soil or groundwater contamination (Class II)

During construction operations, hazardous materials such as vehicle fuels, oils, and other vehicle maintenance fluids would be used and stored in construction staging yards. A list of hazardous materials typically used for transmission line and substation construction that are expected to be used during project construction is presented in Table D.10-7. Gasoline, diesel fuel, oil, hydraulic fluid, lubricants paints, solvents, adhesives, and cleaning chemicals used in construction activities, equipment, and vehicles can be released during construction. Spills and leaks of hazardous materials during construction activities could result in soil or groundwater contamination. Mitigation Measure P-1c, P-1d, P-1e, P-1f, and P-1g would be included as part of the project in order to reduce the likelihood of spills with training and plans for appropriate storage and disposal of hazardous materials. Additionally, Mitigation Measures P-1a and P-1b could be applied to reduce the significant environmental impacts of hazardous material spills should they still occur to less than significant (Class II).

Mitigation Measure for Impact P-1: Improper handling and/or storage of hazardous materials during construction could cause soil or groundwater contamination

P-1a Implement Environmental Monitoring Program.

P-1b Maintain emergency spill supplies and equipment.

- P-1c** Personnel trained in proper use and safety procedures for the chemicals used. [HS-APM-1]
- P-1d** Personnel trained in refueling of vehicles. [HS-APM-2]
- P-1e** Preparation of environmental safety plans including spill prevention and response plan. [HS-APM-3]
- P-1f** Applicant's and/or General Contractor environmental/health and safety personnel. [HS-APM-8]
- P-1g** Proper storage and disposal of generated waste. [HS-APM-10]

Impact P-3: Unanticipated preexisting soil and/or groundwater contamination could be encountered during excavation or grading (Class II)

Review of the EDR database survey (EDR, 2006a) indicates that, other than two leaking fuel tanks in the town of Jacumba, approximately 0.5 miles away from the proposed Jacumba Substation site, there are no other environmentally contaminated sites. However, there is a potential for unknown contamination to have occurred along and near roads close to the site due to illegal dumping which results in potential to encounter contamination where the Jacumba Substation site is close to these roads. The potential to encounter unknown environmental contamination is a significant impact. Mitigation Measures P-2b, P-2c, and P-2d (APMs HS-APM-15, -16, and -17) would be incorporated into the project in order to reduce the significance of this impact by stopping work if suspected contamination is identified, suspected areas of contamination would be cordoned off and appropriate health and safety measures taken, sampling and testing of suspected material would be conducted, and if contamination is found to be greater than regulatory limits the appropriate agency (RWQCB and/or CUPA) shall be notified. However, these measures do not specify how or who will determine if regulatory limits are exceeded, and if laboratory data is not properly interpreted environmentally contaminated soil or groundwater could be improperly handled and disposed of resulting in additional environmental contamination or exposure of workers to contaminated materials, a significant impact. In addition no requirements for documentation of these incidents are included, including reporting locations of, sampling results, and actions taken for potentially contaminated sites to the CPUC and BLM. Therefore, Mitigation Measures P-3a and P-3b are required to ensure that laboratory data is properly interpreted by trained personnel regarding contamination levels for reporting to the appropriate regulatory agency and documentation that these measures are properly implemented, reducing the impact from encountering unknown contamination to less than significant (Class II).

Mitigation Measure for Impact P-3: Unanticipated preexisting soil and/or groundwater contamination could be encountered during excavation or grading

- P-2b** Stop work if contamination is detected. [HS-APM-15]
- P-2c** Cordon off contaminated areas. [HS-APM-16]
- P-2d** Notification of regulatory agencies. [HS-APM-17]
- P-3a** Appoint individuals with correct training for sampling, data review, and regulatory coordination.
- P-3b** Documentation of compliance with measures for encountering unknown contamination.

Operational Impacts

Impact P-5: Soil or groundwater contamination could result from accidental spill or release of hazardous materials during operation and maintenance (Class II)

Soil or groundwater contamination could result from accidental spill or release of hazardous materials at the substation during facility operations. This could result in exposure of the facility, maintenance workers, and the public to hazardous materials; and could result in contamination to soil and/or groundwater. Mineral oil would be used in the new transformers, switches, circuit breakers, capacitors, and other new electrical equipment. Mineral oil is considered a hazardous material under federal regulations (CWA Section 311), and mineral oil storage or use in aboveground storage containers in levels exceeding 660 gallons in a single oil storage tank or greater than 1,320 gallons in one or multiple containers at a site is regulated under Title 40, CFR, 112–“the SPCC rule” which is part of the federal CWA. The new Jacumba Substation will require new Hazardous Material Business Plans, including a Hazardous Communication Plan, Spill Response Plan, Temporary Storage and Disposal facility permit, and SPCC Plan for the facility.

Mitigation Measure P-1c, P-1e, and P-1g would be implemented as a part of the operation of the Jacumba Substation. These measures would reduce the likelihood of spills and would reduce any significant impacts of spills, but they would not completely prevent spills from occurring. However, in the event a spill were to occur, these mitigation measures would reduce the potential for contamination from such a spill and exposure of workers or the public to hazardous materials by ensuring that any spilled material and any resulting surficial contaminated soil would be quickly and correctly cleaned up and disposed of, resulting in limited to no exposure of hazardous materials to the environment and workers, a less than significant impact (Class II)

Mitigation Measure for Impact P-5: Soil or groundwater contamination could result from accidental spill or release of hazardous materials during operation and maintenance

- P-1c Personnel trained in proper use and safety procedures for the chemicals used. [HS-APM-1]**
- P-1e Preparation of environmental safety plans including spill prevention and response plan. [HS-APM-3]**
- P-1g Proper storage and disposal of generated waste. [HS-APM-10]**

D.11.12.4 Jacumba Substation – Air Quality

In its testimony during the CPUC’s Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed

to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 in Section B illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

The dry mountainous area in the area of by the Jacumba Substation (approximately 0.5 miles northwest of the town of Jacumba) is similar to that of the Anza-Borrego Link, which is described in Section D.11.2.2.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I)

Construction activities for the Jacumba Substation would involve many of the same types of construction equipment that would be associated with construction of the transmission line, and the resulting air quality impacts would be similar to those shown in Table D.11-15. Please see Table D.11-15 for the maximum emissions expected from all activities related to construction of this substation.

Construction of the Jacumba Substation would cause emissions over the thresholds by itself; the air quality impact would be significant. Mitigation Measures AQ-1a through AQ-1g would reduce this impact, but exhaust emissions would exceed the significance thresholds. As such, the construction-phase emissions would be significant and unavoidable (Class I).

Mitigation Measures for Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants

- AQ-1a Suppress dust at all work or staging areas and on public roads.**
- AQ-1b Use low-emission construction equipment.**
- AQ-1c Comply with Imperial County dust control requirements. [AQ-APM-1]**
- AQ-1d Implement dust reduction measures. [AQ-APM-2]**
- AQ-1e Prevent transport of mud and dust. [AQ-APM-3]**
- AQ-1f Encourage carpooling. [AQ-APM-4]**
- AQ-1g Minimize vehicle idling. [AQ-APM-5]**

Operation Impacts

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)

Operation of the Jacumba Substation would cause minor vehicular traffic for maintenance and inspections, and the substation would not be permanently staffed. Direct emissions from occasional vehicular traffic to the substation would cause an adverse but less than significant impact (Class III).

D.12.12.4 Jacumba Substation – Water Resources

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

This substation will be situated on the Coyote Wells Valley Groundwater Basin. The Coyote Wells Valley groundwater basin is an EPA-designated Sole Source Aquifer. This means the aquifer supplies more than 50% of a community's drinking water. Any project which is financially assisted by federal grants or federal loan guarantees, and which has the potential to contaminate a sole source aquifer, should be modified to reduce or eliminate the risk (U.S.EPA, 2007.)

The Coyote Wells Groundwater Basin, located near the international border with Mexico in the western Yuha Desert west of Imperial Valley, is in unconsolidated sediment up to 650 feet thick. Water bearing zones are mostly 100 to 300 feet below ground surface. Unconfined shallow groundwater exists in parts of the basin, but the quality of the water is poor. Natural fluoride levels in some wells are as high as 3.5 mg/L (California Department of Water Resources, 2007).

Construction Impacts

Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation (Class II)

The Jacumba Substation will be approximately 20 acres in size and require substantial local grading. The substation site has no identified water resources; it is located approximately 1.0 mile from the Carrizo Creek. Construction-related erosion and sedimentation at this substation could be substantial during a rainfall event. Impacts to water quality would be significant without mitigation. Implementation of Mitigation Measure H-1a would reduce this impact to a less than significant level (Class II.) The full text of all mitigation measures is in Appendix 12.

Mitigation Measure for Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation

H-1a Prepare Substation Grading and Drainage Plan; construct during the dry season.

Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials (Class II)

Although there are no watercourses at the site, downstream watercourses, specifically the Carrizo Creek, could be degraded through spills of contaminants such as oil, grease and gasoline from construction activities, resulting in a significant impact without mitigation. With implementation of Mitigation Measures H-1h, H-2a, H-2b, and H-2c, Impact H-2 is less than significant (Class II).

Mitigation measures for Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials

H-1h Compliance with NPDES regulations. [WQ-APM-14]

H-2a Groundwater testing and treatment before disposal. [WQ-APM-8]

H-2b No storage of fuels and hazardous materials near sensitive water resources. [WQ-APM-9]

H-2c Proper disposal and clean-up of hazardous materials. [WQ-APM-13]

Impact H-3: Excavation could degrade groundwater quality in areas of shallow groundwater (Class II)

Excavation for the substation foundation in shallow groundwater could contaminate groundwater through accidental material spills. The depth to groundwater in the Coyote Wells Groundwater Basin is generally 100 to 300 feet below ground surface, below depth of excavation. However, some unconfined shallow groundwater exists in parts of the basin. Should groundwater be encountered, implementation of Mitigation Measures H-1d, H-2b, H-2c, and H-1h would reduce impacts to groundwater quality to less than significant (Class II).

Mitigation Measures for Impact H-3: Excavation could degrade groundwater quality in areas of shallow groundwater

H-1d Avoid watercourses to the maximum extent possible. [WQ-APM-2]

H-2b No storage of fuels and hazardous materials near sensitive water resources. [WQ-APM-9]

H-2c Proper disposal and clean-up of hazardous materials. [WQ-APM-13]

H-1h Compliance with NPDES regulations. [WQ-APM-14]

Impact H-4: Groundwater dewatering for project construction could deplete local water supplies (Class II and III)

Dewatering for substation construction in the Coyote Wells Groundwater Basin could result in a local and temporary drawdown of groundwater levels which could temporarily reduce the yield of nearby water supply wells; however it is less likely to occur due to the depth of the groundwater basin. Should this occur, Mitigation Measure H-4a would require identification of such wells and provision of alternate water supplies during the period of depletion, thereby decreasing this impact to a less than signifi-

cant level. It is possible that excavation for the substation, especially near drainageways, would encounter local subsurface water. Dewatering could result in a local drawdown of water levels that could temporarily affect the water supply to local vegetation. This impact would be temporary and localized, should not have any long-term adverse effect (Class III), and no mitigation is required.

Mitigation Measure for Impact H-4: Groundwater dewatering for project construction could deplete local water supplies

H-4a Avoid using source water and provide alternative sources where avoidance is not possible. [WQ-APM-6]

Operational Impacts

Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class II)

The substation would have a building pad of approximately 20 acres which would have a higher runoff coefficient than the existing ground, resulting in increased local peak flow rates, volumes and runoff frequency. This impact would be local and in the drainage ways immediately downstream of the substation. Effects would diminish to negligible in the downstream direction as overall watershed size increases.

Local increases in runoff could be substantial, resulting in local offsite erosion which would occur in the area immediately downstream of the substation. Impact H-5 would be significant without mitigation; however, Mitigation Measure H-5a would reduce this impact to less than significant (Class II.)

Mitigation Measure for Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream

H-5a Install substation runoff control.

Impact H-7: Accidental releases of contaminants from project facilities could degrade water quality (Class II)

Oil and other contaminants from new electrical equipment at the substation could be released accidentally and contaminate local surface water or downstream groundwater. No spill would enter directly into surface water, although a large spill could travel downstream into the Carrizo Creek, resulting in a significant impact without mitigation. Mitigation Measure H-2c will mitigate this impact by requiring clean-up of spills and proper storage and disposal of contaminants. Additionally, Mitigation Measure H-7a requires development of a Hazardous Substance Control and Emergency Response Plan for project operation. Implementation of these mitigation measures would reduce impacts to water quality to less than significant levels (Class II.)

Mitigation Measure for Impact H-7: Accidental releases of contaminants from project facilities could degrade water quality

H-2c Proper disposal and clean-up of hazardous materials. [WQ-APM-13]

H-7a Develop Hazardous Substance Control and Emergency Response Plan for project operation.

D.13.12.4 Jacumba Substation – Geology and Minerals

In its testimony during the CPUC’s Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL will be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges from the SWPL. Figure B-47 illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

Regional Physiography: The general physiographic setting of the Jacumba Substation is the same as the Peninsular Ranges Region of the Proposed Project ROW and is discussed in Section D.13.1.1.

Geology: The Jacumba Substation sits on a mesa. The SWPL ROW crosses the Jacumba Mountains, and numerous unnamed hills and mesas dissected by small intervening drainages. The Jacumba Substation crosses a couple of geologic units along its length. Descriptions of the geologic materials crossed by the substation route are summarized in Table D.13-15 including type of unit, age, a general physical description of the unit, and estimated excavation characteristics of the geologic unit.

Table D.13-15. Summary of Geologic Units along the Jacumba Substation

Unit Symbol	Geologic Unit	Age	Description/Comment	Excavation Characteristics ¹
Qal	Alluvium	Holocene	Unconsolidated stream, river, and alluvial fan deposits consisting of primarily sand, silt, clay, and gravel.	Easy
gr-m	Granitic and metamorphic rocks	Pre-Cenozoic	Mixed granitic and metamorphic rocks consisting of migmatites, schist, and quartz diorite. Also includes mixed hybrid rock consisting of Julian Schist and Stonewall Granodiorite.	Difficult

The Jacumba Substation would sit on MP I8-35 of the Interstate 8 Alternative ROW, and the approximate locations of these units within the Substation are listed below.

- Alluvium (Qal): MPs I8-32.3 to I8-34.3, I8-35.0 to I8-35.3
- Mixed granitic and metamorphic rocks (gr-m): MPs I8-35.3 to I8-38.0

Slope Stability

The Jacumba Substation traverses hills, mesas, and valleys of the Jacumba, In-Ko-Pah, and Laguna Mountains. Although this crosses moderately sloping hills and valleys, these areas are underlain primarily by granitic and volcanic units which are not prone to landslides. However, excavation and grading for the project would potentially trigger rock-falls or shallow soil slides.

Soils

A summary of the significant characteristics (description, erosion hazard, expansive potential, and corrosion potential) of the major soil associations along MP I-8-35 on which the Jacumba Substation would site is presented in Table D.13-2. General characteristics and locations of these soil units along the alternative ROW are discussed below based on approximate milepost locations. The substation occurs on and around MP I-8 35, corresponding to s1016.

Most of the soil associations underlying the center and western end of the alignment, s1010, s1013 through s1016 are primarily formed in material weathered from the underlying granitic and metamorphic rocks. Hazard of erosion for these soils for off-road/off-trail ranges from slight to very severe and for on-road/on-trail ranges from slight to severe, and shrink/swell (expansive) potential varies from low to high. Corrosive potential of these soils ranges from moderate to high for uncoated steel and from low to high for concrete.

Mineral Resources

General mineral resources in the region near the Jacumba Substation are the same as for the Proposed Project (See Section E.1.13 for specifics for the Interstate 8 Alternative MP I-8-35). Additionally, GIS data from the USGS Mineral Resource Data System (MRDS) for Imperial and San Diego Counties was reviewed for mine or quarries within 1000 feet of the alternative alignment (USGS, 2006a). No oil, gas, or geothermal fields are located in the vicinity of the SWPL alternative alignments which includes MP I-8-35, on which the Jacumba Substation is sited (DOGGR, 2007). Therefore, there is little to no potential for the project to impact petroleum or geothermal resources.

Seismicity

Fault Rupture. This Jacumba Substation crosses no active faults.

Groundshaking. No significant active faults capable of producing large earthquakes are located in the immediate vicinity of the substation; therefore strong groundshaking is not expected. However, moderate to strong groundshaking could be caused near the substation by a large earthquake on nearby significant active faults, i.e., the Imperial, Elsinore, or Laguna Salada faults. The peak horizontal accelerations for the I-8 Alternative are presented in Table D.13-16 and those that are pertinent to the siting of the Jacumba Substation are presented below.

Table D.13-16. Approximate Peak Ground Accelerations – Jacumba Substation

Approximate Interstate 8 Alternative (I8) Milepost	Total Length of Segments (miles)	Peak Ground Acceleration
31.3-32.5, 35.2-50.9, 51.0-52.0, 52.1-82.0, 83.1-83.6, and 84.9-92.8	56.2	0.1–0.2g
23.5-29.0 and 34.1-35.0	6.4	0.2–0.3g
22.1-22.6, 23-23.4, 29.0-31.3, 32.5-34.1, 35.0-35.2, 50.9-51.0, 52.0-52.1, 82.0-83.1, and 83.6-84.9	7.6	0.3–0.4g

Liquefaction. Potential for liquefaction along this alignment is primarily isolated to areas near creeks and washes underlain by young alluvial and lacustrine deposits which could liquefy during an earthquake if perched groundwater were present. Potential for liquefaction in other areas underlain by alluvium and lacustrine deposits near the eastern end of the alignment is generally low due to anticipated depths of groundwater of greater than 100 feet.

Earthquake-Induced Landslides. The Jacumba Substation is surrounded by numerous hills, valleys, and plateaus across the Jacumba and In-Ko-Pah Mountains, and although most of this portion of the substation is underlain by igneous and metamorphic bedrock, earthquake triggered rock falls and shallow landslides could occur.

Earthquake-Induced Landslides. The Jacumba Substation site is located on a flat to gently sloping plateau. Slopes beyond the edge of the plateau are moderately sloping and primarily underlain by granitic bedrock. The underlying Julian Schist may be prone to earthquake triggered landsliding on the nearby slopes and the moderately sloping hills underlain by igneous bedrock could be susceptible to earthquake triggered rock falls and shallow landslides.

No desert pavement is mapped at this site and thus Impact G-2 (Unique geologic features would be damaged due to construction activities) is not expected to occur at the Jacumba Substation site. No known active mineral resource sites or BLM claims are located along this alignment, therefore there are no impacts related to Impact G-9 (Construction activities would interfere with access to known mineral resources)

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact G-1: Erosion would be triggered or accelerated due to construction activities (Class III)

Excavation and grading for substation facilities and access roads would loosen soil and trigger or accelerate erosion. Soils along route have an erosion hazard for off-road/off-trail ranges from slight to very severe and for on-road/on-trail ranges from slight to severe. Mitigation Measures G-1a, G-1b, G-1c, and G-1d reduce the amount of erosion that would result from construction by limiting construction traffic and grading of existing roads in areas with sensitive soils, planning construction to minimize new ground disturbance, using of Best Management Practices (BMPs) such as sand bags and road bars, to control water erosion. In addition, a Stormwater Pollution Prevention Plan (SWPPP) that would limit erosion from the construction site would be required in accordance with the Clean Water Act. This would result in a less than significant impact (Class III). The full text of the mitigation measures can be found in Appendix 12.

Mitigation Measures for Impact G-1: Erosion would be triggered or accelerated due to construction activities (Class III)

- G-1a** **Limit modification of access roads.** [GEO-APM-1]
- G-1b** **Implement erosion control procedures.** [GEO-APM-2]
- G-1c** **Avoid new disturbance, erosion, and degradation.** [GEO-APM-5]
- G-1d** **Restore surfaces for erosion control and revegetation.** [GEO-APM-6]

Impact G-6: Project would expose people or structures to potential substantial adverse effects as a result of slope instability created during excavation and/or grading (Class II)

Destabilization of natural or constructed slopes could occur as a result of construction activities due to excavation and/or grading operations for the Jacumba Substation if construction were to result in oversteepened slopes underlain by Julian Schist. Slope instability including landslides, rock falls, earth flows, and debris flows has the potential to undermine foundations, cause distortion and distress to overlying structures, and displace or destroy project components. Mitigation Measure G-6b would partially reduce impacts related to slope instability by avoiding placing structures in unstable areas and removing or stabilizing boulders upslope of structures thus reducing the threat of possible slope failures or rockfalls. However, the Jacumba Substation would still result in significant impacts if unidentified unstable slopes or areas of potentially unstable slopes were disturbed or undercut by construction activities resulting in slope failures. Slope failures could cause damage to the environment, to project or other nearby structures, and could cause injury or death to workers and/or the public, a significant impact. To ensure that slope instability impacts would be reduced to less than significant (Class II), implementation of Mitigation Measure G-6a is required to delineate potential areas of unstable slopes near and within work areas and minimize the potential from construction triggered slope failures by avoidance or implementation of slope stabilizing design measures.

Mitigation Measure for Impact G-6: Project would expose people or structures to potential substantial adverse effects as a result of slope instability created during excavation and/or grading

- G-6a** **Conduct geotechnical surveys for landslides and protect against slope instability.**
- G-6b** **Place structures in stable areas.** [GEO-APM-4]

Operational Impacts

There would be no impacts associated with this alternative on project structures due to ground shaking or seismically induced liquefaction (Impact G-4), fault rupture (Impact G-5), or due to landslides, earthflows, debris flows and/or rock fall during project operation (Impact G-7).

Impact G-3: Project would expose people or structures to potential substantial adverse effects as a result of problematic soils (Class II)

Soils at the Jacumba Substation site have a moderate to high potential to corrosion for both uncoated steel and concrete. Expansion potential for the soils varies from low to moderate. Corrosive and expansive subsurface soils may exist in places at the substation site which would potentially damage project structures. Therefore there would be a significant impact. Application of standard design and construction practices and implementation of Mitigation Measure G-3b would partially reduce the adverse affects of problematic soils by avoiding placement of structures in areas of high shrink/swell potential, to the extent feasible. However, actual locations of high shrink/swell (expansive) soils and the

presence, absence, and location of corrosive soils needs to be determined to fully reduce the potential for adverse effects of problematic soils to less than significant. Unidentified expansive and corrosive soils could damage project structures and facilities potentially resulting in collapse. Collapse of project structures would potentially result in power outages, damage to nearby roads or structures, and injury or death to nearby people. Therefore there would be a significant impact. Accordingly, implementation of Mitigation Measure G-3a (Conduct geotechnical studies for soils to assess characteristics and aid in appropriate foundation design) would ensure that impacts associated with problematic soils are reduced to less than significant levels (Class II).

Mitigation Measure for Impact G-3: Project would expose people or structures to potential substantial adverse effects as a result of problematic soils

G-3a Conduct geotechnical studies for soils to assess characteristics and aid in appropriate foundation design.

G-3b Avoid structure placement in high shrink/swell areas. [GEO-APM-3]

Impact G-4: Project would expose people or structures to potential substantial adverse effects as a result of seismically induced groundshaking and/or ground failure (Class II)

Minor groundshaking would potentially result in seismically induced slope failures such as landslides and rockfalls at the Jacumba Substation site in areas along and adjacent to moderate slopes. This would potentially result in damage to project structures. Collapse of project structures would potentially result in power outages, damage to nearby roads or structures, and injury or death to people. Therefore, there would be a significant impact. To ensure that impacts associated with seismically induced ground failures from strong groundshaking would be reduced to less than significant levels (Class II), implementation of Mitigation Measure G-6a is required prior to final project design to ensure that people or structures are not exposed to hazards associated with seismic groundshaking.

Mitigation Measure for Impact G-4: Project would expose people or structures to potential substantial adverse effects as a result of seismically induced groundshaking and/or ground failure

G-6a Conduct geotechnical surveys for landslides and protect against slope instability.

D.14.12.4 Jacumba Substation – Socioeconomics and Utilities

In its testimony during the CPUC's Phase 1 hearings on the need and economics of the Proposed Project, SDG&E staff stated that a new 230/500 kV substation would be required to allow future wind generation projects to transmit generated power via the existing 500 kV Southwest Powerlink (SWPL) transmission line. The SWPL currently has limited available capacity, but if the Sunrise Powerlink Project is approved and constructed, some electricity currently carried by the SWPL would be transmitted via Sunrise, making more capacity available on the SWPL. There are a number of possible new wind generation projects near the Jacumba area (about 5 miles west of the San Diego/Imperial County line), some in San Diego County (Crestwood wind area) and some in Mexico (La Rumorosa wind area). Therefore, the impacts of this substation are evaluated as part of the Proposed Project.

This 230/500 kV substation would allow incoming transmission lines at 230 kV from wind farms in either the Crestwood or La Rumorosa areas. The power would be transformed to 500 kV in order to allow it to be transmitted via the SWPL to the Miguel Substation in San Diego. The substation is assumed to occupy about 20 acres, and while its location has not been defined by SDG&E, for the purposes of this EIR/EIS it is assumed to be located just east of the point where the Interstate 8 Alternative diverges

from the SWPL. Figure B-47 illustrates the approximate location and size of the substation area. The impacts of this substation are also evaluated as a part of the wind component of the Non-Wires In-Area Renewable Generation Alternative, as defined and analyzed in Section E.5. Approval of the SRPL would not result in automatic approval of the Jacumba Substation discussed below, and the project would require applications by SDG&E, and compliance with CEQA and NEPA.

Environmental Setting

Jacumba 500/230 kV Substation. The socioeconomic setting for the Jacumba Substation is identical to that of the Interstate 8 Alternative MP I8-35 (see Section E.1.14).

The Jacumba Substation would be adjacent to the following existing utilities and facilities:

- SDG&E Southwest Powerlink (SWPL) Imperial Valley–Miguel 500 kV transmission line (MP I8-0 to MP I8-35.7) (separated by an average of 400 feet).

Because of its location, water could be obtained from either the IID in Imperial County and SDCWA in San Diego County.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact S-1: Project construction and/or transmission line presence would cause a change in revenue for businesses, tribes, or governments (Class III for revenue, Class IV for economic benefits)

Revenue from Business Operations. There are no businesses near the proposed Jacumba Substation, MP I8-35 as it would reside on private, vacant land. Impacts on local businesses set in the town of Jacumba would result from degradation of views, views of construction equipment and activity, vehicular or pedestrian access restrictions, land use, air quality, and noise effects, or health and safety concerns (such as EMF). However, as the Jacumba Substation is approximately 0.5 miles away from the town and situated on a mesa, these impacts are less likely to occur and are analyzed in this document in Sections D.3 (Visual Resources), D.4 (Land Use), D.8 (Noise), D.9 (Transportation and Traffic), and D.10 (Public Health and Safety), and D.11 (Air Quality). Where impacts for these issue areas are found to be less than significant or have been mitigated to less than significant levels, any associated loss of local business revenue impacts would not be significant. In addition, because these impacts would be short-term construction impacts and no removal of businesses would be required, these impacts would not result in significant revenue impacts (Class III). Therefore, no additional mitigation measures are recommended outside of those presented in Sections D.3 (Visual Resources), D.9 (Transportation and Traffic), D.4 (Land Use), and D.10 (Public Health and Safety) to mitigate potential impacts that would result in a substantial change to local business revenues.

Economic Benefit. Alternatively, employment of construction personnel would be beneficial to local businesses and the regional economy in Jacumba through increased expenditure of wages for goods and services. Personnel for construction would be drawn from local populations in San Diego Counties, creating new temporary and permanent employment in these counties. A limited number of construction personnel would require temporary housing, likely in local hotels, and would purchase food, beverages, and other commodities, which would provide economic benefit to the local economy (Class IV).

Impact S-2: Construction would disrupt the existing utility systems or cause a co-location accident (Class III)

The new Jacumba Substation would be located adjacent to the existing SWPL transmission line in a sparsely developed area on private, vacant land. Construction of new access roads would be minimal, because the existing access roads to the transmission line would likely be used.

Under Section 1, Chapter 3.1, "Protection of Underground Infrastructure," Article 2 of California Government Code §§4216-4216.9, SDG&E would be required to contact a regional notification center at least two days prior to excavation of any subsurface installation. This action would cause Underground Service Alert to notify 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. The location of all underground electric, water, gas, cable or telecommunications lines within the vicinity of the substation site would be marked. Notification and marking the locations of existing utilities would allow construction activities to avoid existing lines and would thereby minimize the potential for a co-location accident and impacts would be less than significant (Class III). No mitigation would be required; however, implementation of the measure below would be recommended to further reduce this impact. The full text of the mitigation measures can be found in Appendix 12.

Mitigation Measures for Impact S-2: Construction would disrupt the existing utility systems or cause a co-location accident

S-2c Coordinate with utility providers. [PSU-APM-1, PSU-APM-2]

Impact S-3: Project construction and operation would increase the need for public services and facilities (Class II for emergency services, Class III)

Water. Water would be required during project construction for dust abatement and cleaning construction equipment. Based on water usage estimates for the Proposed Project, grading and site work for the substation would require an estimated 600,000 gallons/day of water, landscape would use 190,000 gallons/day, and concrete for the substation construction would use an estimated 10,000 gallons/day of water (see Table B-9); however, considerably less grading and earthwork would be needed at the Jacumba Substation site than at the Central East Substation site so water usage would likely be reduced. Existing access roads for SWPL would likely be used for the Jacumba Substation, although new spur roads to the substation site may be required. The amount of water required would depend on weather conditions, road surface conditions, and other site-specific conditions. Dust suppression efforts would occur on each day that grading activities take place and when construction vehicles use unpaved access roads.

Similar to the Proposed Project, water use during project construction would be a comparatively small fraction of the total water supply for the jurisdictions affected and would not change the ability of the water suppliers to serve the project area demands. (See Section D.14.1 for specific data on water availability for the IID and SDCWA.) Reclaimed water would also be available. There are 22 recycled water facilities within SDCWA's territory. The applicant would have to contract with providers to obtain reclaimed water where it is available, and its use would reduce the amount of potable water needed from local water districts along the route. In the event that water suppliers are not able to supply the full amount of water required during construction in the summer months, alternative means of procuring water and/or reducing water usage would be available and the project would not be expected to significantly impact water suppliers (Class III). For example, the use of soil binders (see Mitigation Measure AQ-1a) and reclaimed water would reduce water usage, and nearby districts have available

water to serve the Proposed Project if necessary. No mitigation measure is required; however, implementation of Mitigation Measure S-3b (Use Reclaimed Water), would further reduce impacts on local and regional water supplies by encouraging use of reclaimed water where possible.

Solid Waste. Substation construction would generate waste largely in the form of soil from earthwork and grading. The quantity of waste would be similar to the Proposed Project, but will depend on the amount of earthwork and grading required at the time of construction. A percentage of excavate would be clean and dry and would be spread along the ROW. Under this alternative there would be no structure removal. The closest landfills along the length of the route would be (CIWMB, 2007):

- Allied Imperial Landfill (104 East Robinson Road) that allows a maximum permitted throughput of 1,135 tons/day and has a remaining capacity of 2,105,500 cubic yards;
- Imperial Solid Waste Site (1705 West Worthington Road) that allows a maximum permitted throughput of 207 tons/day and has a remaining capacity of 183,871 cubic yards;
- Las Pulgas Landfill (Camp Pendleton) that allows a maximum permitted throughput of 270 tons/day and has a remaining capacity of 9,150,000 cubic yards;
- Otay Landfill (1700 Maxwell Road, Chula Vista) that allows a maximum of 5,830 tons/day and has a remaining capacity of 33,070,879 cubic yards;
- Ramona Landfill (20630 Pamo Road) that allows a maximum of 295 tons/day and has a remaining capacity of 690,000 cubic yards; and
- Sycamore Sanitary Landfill (8514 Mast Boulevard) that allows a maximum of 3,965 tons/day and has a remaining capacity of 47,388,428 cubic yards. The Sycamore Sanitary Landfill accepts asbestos, contaminated soil, mixed municipal waste, sludge (biosolids), agricultural, dead animals, tires, shreds, and wood waste (including treated wood).

Due to the number and capacity of landfills serving the area, capacity for materials generated from construction would be available. Because the exact amount of material recycling is unknown, the total amount of waste requiring landfill disposal is unknown. Recycling activities would greatly reduce the quantity of construction-related materials transported to local landfills.

Since the waste generated by construction would occur over an extended period and would be dispersed among the various landfills serving the project route, the daily waste exported off site would be a fraction of the maximum daily throughput for any of the landfills listed above and the landfills have adequate remaining capacity. The Sycamore Sanitary Landfill would accept any contaminated soil, if encountered. Therefore, construction waste generated by the Jacumba Substation would not substantially affect the remaining capacities of local landfills to serve local demands (Class III). Although impacts to solid waste facilities would not be significant (Class III) and no mitigation measure is required, to further reduce adverse effects of the cumulative volume of waste, Mitigation Measure S-3a (Recycle Construction Waste) would be recommended for implementation to ensure that maximum recycling activities would occur.

Public Services. Construction of the Jacumba Substation would not result in a direct increase in the local population, or lead to long-term demands to local public services. Nor would the substation construction result in any long-term requirements that would place a permanent increased demand on emergency service providers that would result in new or expanded facilities. Therefore, the temporary addition of construction personnel would not substantially increase any demands on schools or hospitals or

lower the level of service for fire protection, police protection, or emergency services in the long-term and it would not require the construction or expansion of facilities or services (Class III).

Any increase in potential fire hazards resulting from construction would increase temporary demands for fire protection services and is discussed in Section D.15 (Fire and Fuels Management) and is not discussed here.

Mitigation Measures for Impact S-3: Project construction and operation would increase the need for public services and facilities

AQ-1a Implement Fugitive Dust Control Plan.

S-3a Recycle construction waste.

S-3b Use reclaimed water.

Operational Impacts

Increased demands on emergency services would occur if operation of the projects would increase the risk of wildland fires. Fire risk related to operation of transmission lines is discussed in Section D.15 (Fire and Fuels Management) and is not addressed in this section.

Impact S-3: Project construction and operation would increase the need for public services and facilities (Class III)

During operation and maintenance, insulator washing, which would periodically occur, would require water (SRPL has an estimated use of 300 gallons of water per structure). It is assumed that SDG&E would provide its own water and it would be trucked to the substation structure; however, compared to water usage during project construction and the overall supply of the county water, water for washing would be minor and impacts on existing resources and suppliers would be less than significant (Class III). No mitigation would be required.

Impact S-4: Property tax revenues and/or fees from project presence would substantially benefit public agencies (Class IV)

Local property tax revenues are a function of tax rates levied within the affected jurisdictions. SDG&E's property taxes would increase as a result of the Jacumba Substation. The State of California Board of Equalization (BOE) assesses infrastructure facilities annually. Dispersion of property tax revenue is determined based upon the location of the taxable property. Any increase in property tax revenue as a result of the project would be a beneficial impact to the local economy. The substation would not result in an adverse change in public resource revenue. Furthermore, the Jacumba Substation would not preclude or limit the operations of any public agency or result in a change in revenue to any public agencies. Increases to public agency revenues as a result of the new Jacumba Substation are considered a beneficial (Class IV) impact. Therefore, no mitigation measures are required.

Impact S-5: Presence of the project would decrease property values (Class III)

The Jacumba Substation would be constructed adjacent to the existing SWPL 500 kV corridor. Incremental effects on property values that may result from the changes within the corridor resulting from this project would be very small, would diminish over time, and would be very difficult to quantify. Please see the discussion of Impact S-5 under the Imperial Valley Link (see Section D.14.5) which addresses in detail the issues associated with the potential for impacts on property values. Implementation of mitigation measures in the Visual Resources section (Section D.3), would help to reduce

the visual impacts of the Jacumba Substation. It should also be noted that landowners of the private property on which the substation will be built will be compensated by the applicant for use of that property.

D.15.14.4 Jacumba Substation – Fire and Fuels Management

Environmental Setting

The Jacumba Substation would be located entirely in the Boulevard Fireshed, described in Section E.1.15. The dominant vegetation type in this fireshed is extremely sparse desert chaparral. The sparse vegetation limits the spread of wildfires started in this area. As a result, the wildfire history indicates that only small portions of the region have burned in wildfire events over the last 50 years. However, cheatgrass and Sahara mustard have started to invade the fireshed; these fire-adapted weeds can quickly spread, altering the plant community and contributing to type-conversion. Exotic grass-dominated landscapes are prone to ignite more easily and spread fires more rapidly than desert vegetation; however, the Boulevard Fireshed is not a high-risk fireshed based on fire history and fuels present.

Environmental Impacts and Mitigation Measures

Construction Impacts

Impact F-1: Construction and/or maintenance activities would significantly increase the probability of a wildfire (Class III)

Construction activities associated with the Jacumba Substation in the Boulevard Fireshed would include but not be limited to, use of heavy equipment for vegetation removal and grading and excavation for placing underground conduit or steel poles. The use of construction equipment such as earth movers, generators, vehicles, or chainsaws along with the personnel required to construct the facilities introduces the potential for a variety of wildfire ignition sources to surrounding vegetation fuels or combustible materials associated with project construction. Transmission line maintenance activities would include the periodic use of vehicles and presence of personnel for line inspections, and could also include the use of heavy equipment for conductor repairs or replacement. These activities would be far less intensive than construction activities; however, they would recur periodically over the life of the project, supplying an ongoing source of ignitions for 50 years or more. Construction- and maintenance-related ignitions have the potential to escape initial attack containment and become larger fires; however, the extent and intensity of a wildfire in this fireshed would be limited by the sparse desert chaparral fuels.

Construction activities could ignite a wildfire and result in impacts to nearby communities and natural resources. Due to the predominantly low fire risk in this area, this impact would be considered less than significant (Class III). No mitigation is required.

Operational Impacts

Impact F-2: Presence of the overhead transmission line would increase the probability of a wildfire (No Impact)

The Jacumba Substation does not have a transmission component, and its presence would not increase the probability of a wildfire (No Impact).

Impact F-3: Presence of the overhead transmission line would reduce the effectiveness of firefighting (No Impact)

The Jacumba Substation would have no impact on firefighting effectiveness because it is not a linear element, and does not present a physical obstruction to firefighting activities (No Impact).

Impact F-4: Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread (Class II)

Project activities create the potential for the introduction and spread of non-native, invasive plants. Non-native plants are often spread by human and vehicle vectors in areas of large-scale soil disturbance and importation. These actions associated with the construction and maintenance of the Jacumba Substation will contribute to the introduction and proliferation of non-native, invasive plants. Certain invasive plants, like cheatgrass, medusa head, and Saharan mustard, can contribute to changes in wildfire frequency, timing and spread. The introduction of non-native plants in the project area would exacerbate wildfire risks in the project area.

The introduction of non-native plants with an increased ignition potential and rate of wildfire spread is considered a significant impact (Class II) that can be mitigated by following the prevention and management protocol outlined in Mitigation Measure B-3a, Prepare and Implement a Weed Control Plan. This measure also requires that proper actions are taken to prevent the introduction of invasive plants through materials and equipment used for the construction and maintenance of the Jacumba Substation.

Mitigation Measure for Impact F-4: Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread

B-3a Prepare and implement a Weed Control Plan.