CEQA FINDINGS OF FACT

and

STATEMENT OF OVERRIDING CONSIDERATIONS

OF THE COUNTY OF SOLANO PLANNING COMMISSION

for the

SHILOH IV WIND ENERGY PROJECT

December 15, 2011

Attachment 1

1. OVERVIEW AND INTRODUCTION

These Findings and Statement of Overriding Considerations are made with respect to the **"Project Approvals"** (as defined below) for the Shiloh IV Wind Plant Project (the **"Project"** or **"Shiloh IV Project"**) and state the findings of the Planning Commission (the **"Commission"**) of the County of Solano (the **"County"**) relating to the potentially significant environmental effects of the Project to be developed in accordance with the Project Approvals. The following Findings, Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Program (**"MMRP"**) ARE HEREBY ADOPTED BY THE Commission of the County as required by the California Environmental Quality Act (**"CEQA"**), Public Resources Code Section 21081, 21081.5 and 21081.6, and Title 14, California Code of Regulations (the **"CEQA Guidelines"**) sections 15091 through 15093, for the Shiloh IV Project.

Pursuant to Public Resources Code Section 21081 and CEQA Guidelines section 15091, no public agency shall approve or carry out a project where an Environmental Impact Report (**"EIR"**) has been certified, which identifies one or more significant impacts on the environment that would occur if the project is approved or carried out, unless the public agency makes one or more findings for each of those significant impacts, accompanied by a brief explanation of the rationale of each finding. The possible findings, which must be supported by substantial evidence in the record, are:

1. Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant impact on the environment

2. Changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.

3. Specific economic, legal, social, technological or other considerations, make infeasible the mitigation measures or project alternatives identified in the EIR.

For those significant impacts that cannot be mitigated to below a level of significance, the public agency is required to find that the specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant impacts on the environment.

2. PROJECT DESCRIPTION

The Project analyzed in the EIR is fully described in Chapter 3 of the August 23, 2011 Draft EIR for the Shiloh IV Project. The Project includes up to 50 wind turbines, and will require construction of new pads and access roads, a power collection system, a new substation with interconnection lines, three permanent meteorological towers, a

temporary laydown area, and a new warehouse with office space at the existing enXco Operations and Maintenance ("O&M") facility.

Shiloh Wind Partners, LLC is the project applicant and developer for the Shiloh IV Project.

3. PROJECT APPROVALS

All of the following actions are referred to collectively as the **"Project Approvals"**. The Project Approvals constitute the **"Project"** for purposes of CEQA and CEQA Guidelines section 15378 and these determinations of the Commission.

1. Conditional Use Permit for all Project components;

2. Building permits from the County Building Division for substation, turbine foundations and installation, and O&M building addition;

3. Grading permits for roads, pads, substation, and all activities outside public rights-of-way; and

4. Encroachment permits (including engineered plans and approval of those plans) for access road entrances within public rights-of-way and widening of any roads.

4. PROJECT OBJECTIVES

The Applicant's objective is to develop a commercially viable wind energy facility that will deliver renewable energy to the PG&E/California Independent System Operator (CAISO) power grid to meet the State's Renewable Portfolio standard goals and help reduce greenhouse gas emissions pursuant to AB 32 and the County's General Plan.

- Meet regional energy needs in an efficient and environmentally sound manner, as provided in the Energy Resources and Conservation section of the Solano County General Plan Resources Chapter, which encourages utilization of renewable energy resources.
- Promote the long-term economic viability of agricultural uses in the Montezuma Hills, including grazing and dry-land farming.
- Assist California in meeting its target for the generation of renewable energy in the state under the state's 33 percent Renewable Portfolio Standard (RPS) Program.
- Utilize the wind resource area in the Montezuma Hills region of Solano County fully, thereby concentrating wind turbines in appropriate locations.
- Offset the need for additional electricity generated from fossil fuels (which emit more air pollutants than wind-generated electricity) and therefore assist the state in meeting its air quality goals and reducing greenhouse gases.

- Develop a wind project that would produce 100 MW of electricity.
- Result in an economically feasible wind energy project that would qualify for commercially available financing.

5. RECORD OF PROCEEDINGS

For purposes of CEQA and these Findings, the Record of Proceedings for the Project consists at a minimum of the following documents:

- The Notice of Preparation (**"NOP"**) and all other public notices issued by the County in conjunction with the Project;

- The Shiloh IV Project Draft EIR (August 23, 2011) and Final EIR (November 30, 2011) and all documents cited or referred to therein;

- All comments submitted by agencies or members of the public during the 45-day public comment period in the Draft EIR;

- All comments and correspondence submitted to the County with respect to the Project, in addition to timely comments on the Draft EIR;

- The MMRP for the Project;

- All findings and resolutions adopted by County decision makers in connection with the Project, and all documents cited or referred to therein;

- All reports, studies, memoranda, staff reports, maps, exhibits, illustrations, diagrams or other planning materials relating to the Project prepared by the County or by consultants to the County, the Applicant, or responsible or trustee agencies and submitted to the County, the Applicant, or responsible or trustee agencies and submitted to the County, with respect to the County's compliance with the requirements of CEQA and with respect to the County's actions on the Project;

- All documents submitted to the County by other public agencies or members of the public in connection with the Project, up through the close of the public hearing on September 15, 2011;

- Minutes, as available, of all public meetings and public hearings held by the County in connection with the Project;

- Any documentary or other evidence submitted to the County at such information sessions, public meetings, and public hearings;

- Matters of common knowledge to the County, including, but not limited to those cited above; and

- Any other materials required to be in the record of proceedings by Public Resources Code section 21167.6, subdivision (e).

The custodian of the documents comprising the record of proceedings is the County Department of Resource Management, Planning Services Division, whose office is located at 675 Texas Street, Suite 5500, Fairfield, CA 94533.

The Commission has relied on all of the documents listed above in reaching its decision on the Shiloh IV Project.

6. PROCEDURAL HISTORY

The County released an NOP of an EIR for the Project on March 30, 2011.

The County held a public scoping meeting for the Project on April 20, 2011 to invite input on the scope of issues to be considered in the Draft EIR.

Point Impact Analysis, LLC prepared a Draft EIR entitled "Shiloh IV Wind Energy Project Draft Environmental Impact Report" under the direction of the County Department of Resource Management. The Draft EIR consists of two volumes: Volume 1, consisting of Chapters 1 through 23, and Volume 2, consisting of Appendices A through J2. The Draft EIR addressed the issues raised in the scoping meeting, in response to the NOP and during the Feasibility Analyses, among others. The Draft EIR is dated August 23, 2011.

Solano County issued a combined Notice of Completion, Availability, and Public Hearing for the Draft EIR for the Shiloh IV Wind Energy Project on August 23, 2011. The Draft EIR was distributed through the State Clearinghouse (SCH No. 2011032062) and was also sent directly to selected agencies, interested individuals, public locations (e.g., libraries), and others. The 45-day public comment period for the Draft EIR was from August 25, 2011 to October 11, 2011. The Commission held a public hearing on September 15, 2011 to receive comments on the Draft EIR.

Copies of the Draft EIR and Final EIR, including appendices, studies, documents and reports referenced in the Draft and final EIRs are available for public review at the Department of Resource Management, 675 Texas Street, Suite 5500, Fairfield, California. An additional copy of each can be reviewed at the Fairfield Civic Center Library, 1150 Kentucky Street, Fairfield, California; Suisun City Library, 601 Pintail Drive, Suisun City, California; and the Rio Vista Library, 44 South Second Street, Rio Vista. A copy can also be viewed online until 30 days after final action on the Project at the following website: www.solanocounty.com.

The Final EIR, dated November 30, 2011, was released and distributed to public agencies and other commenters on the Draft EIR, and for public review, on December 1, 2011, more than 10 days in advance of the scheduled date of certification. It consists of a description of additional information received since preparation of the draft EIR, an errata and revisions section showing changes and corrections to various sections of the EIR, including changes to various mitigation measures, comments and responses to comments on the DEIR, and a revised MMRP.

The Commission held a public hearing on December 15, 2011 to consider the Draft and Final EIR and Project Approvals.

7. FINDINGS OF FACT

A. IMPACTS DECLARED TO BE LESS THAN SIGNIFICANT (NO MITIGATION REQUIRED).

The Commission agrees with the characterization of the Final EIR with respect to all impacts identified as “less than significant” or as having “no impact”, and finds that those impacts have been described accurately and are of less than significant or have no impact as so described in the Final EIR. This finding applies to the following numbered impacts:

Impact AES-2: Alteration of Views for Collinsville, Rio Vista, Pittsburg, and Antioch

Rationale for Finding: Due to topography, distance, and the effect of existing turbines, there will be a less-than-significant impact to viewers in these communities. No mitigation is required.

Impact AES-3: Degradation of the Views from Residences in the Shiloh IV Wind Project Area and Along Local Roads as a Result of the Substation

Rationale for Finding: Views of the interconnection line or substation will not be visible from Highways 12 or 113. The substation would be slightly visible for drivers along Montezuma Hills Road. However, drivers along Montezuma Hills Road have a low expectation for scenic views, and views along the road will be of short duration. The combination of low expectation for scenic views, short duration of view, and low use volume will result in less than significant visual impacts. No mitigation is required.

Impact AES-4: Impact on Scenic Vistas from State Route 12, State Route 113, and Grizzly Island Road

Rationale for Finding: Due to the presence of existing turbines, the project turbines will not change characteristic views along SR 12, SR 113, or Grizzly Island Road so

noticeably that it will be difficult to see other scenic components of the landscape. Views will be shorter in duration than residential views considered in Impact AES-5. Visual impacts will be less than significant, and no mitigation is required.

Impact AES-6: Alteration of Anticipated Views and Character of the Landscape for Visitors to Recreation Facilities and Tourist Destinations including the Western Railway Museum and Suisun Marsh

Rationale for Finding:

Western Railway Museum: Changes to the aesthetics of the rural landscape character associated with dry-land farming, as viewed from the museum or vintage railroad cars, will not be significant. Visual sensitivity of the viewpoints are moderate to low because of the short view duration, presence of existing wind turbines, and low to moderate expectation of scenic view. Farming activities would also continue. Therefore, the impact is considered less than significant, and no mitigation is required.

Suisun Marsh: Proposed project turbines would not interfere with visitors' views of the Suisun marsh landscape and would be in the background distance zone from most marsh viewpoints, making the visual impacts less than significant. No mitigation is required.

Impact AG-1: Potential Conflict with Williamson Act Contracts in the Project Area

Rationale for Finding: The Project will help preserve continued use of the area for dry-land farming and deter large-scale conversion of agricultural land in the Project area into residential subdivisions or other non-compatible land uses. The Project will not cause significant conflicts with Williamson Act Contracts in the Project Area, and no mitigation is required.

Impact AG-2: Permanent Conversion of Lands to Non-Agricultural Use in the Project Area

Rationale for Finding: The project will occupy approximately 37 acres of agricultural land in the project area. It will replace approximately 21 acres used for the existing enXco V wind facilities, resulting in a net permanent conversion of approximately 16 additional acres of agricultural lands within the Shiloh V project area. The incremental conversion of approximately 16 acres of agricultural land to non-agricultural uses represents 0.5 percent of the 3,012-acre project area, and 0.005 percent of Solano County's estimated 2010 agricultural lands (346,948 acres). Agricultural and grazing activities would continue throughout 99.5 percent the project area during project operation. Given the small percentage of land that the Project would convert to non-agricultural uses and the fact these lands are not Prime Farmland, Farmland of

Statewide Importance, or Unique Farmland, Impact AG-2 is considered less than significant, and no mitigation is required for this impact.

Impact AG-3: Temporary Disturbance of Agricultural Lands during Construction

Rationale for Finding: Construction of the Project will result in the temporary disturbance of approximately 292 acres of agricultural land, including 4.5 acres of temporary disturbance from the optional collection line. The Project's temporary agricultural disturbance will exceed the Project's permanent agricultural conversion since the Applicant must initially prepare and construct the Project's access roads, turbine pads, and other areas large enough to support large equipment used to deliver infrastructure, excavate turbine and meteorological tower foundations, and assemble and install the Project's infrastructure. The Applicant will restore a maximum of approximately 254 acres of the disturbed lands, representing approximately 87 percent of the temporarily disturbed areas, to pre-construction conditions, enabling landowners to resume agricultural activities. Given the limited area of disturbance and that the fact that the area is not Prime Farmland, Farmland of Statewide Importance, or Unique Farmland, this impact is considered less than significant. No mitigation is required.

Impact AIR-3: Long-Term Emissions from Operations and Maintenance

Rationale for Finding: Operation of the Project turbines and operation and maintenance of the transmission line and substation will not significantly impact air quality by generating significant emissions of criteria pollutants or fugitive dust because of the limited nature of maintenance and operations activities. In light of the net benefit and because any operation emissions are well below BAAQMD's and YSAQMD's thresholds of significant, the Project's operations emissions of criteria pollutants will result in a less than significant impact. No mitigation is required.

Impact AIR-4: Expose sensitive receptors to Diesel Particulate Matter

Rationale for Finding: DPM, which is classified as a carcinogenic TAC by ARB, is the primary pollutant of concern with regard to health risks to sensitive receptors. The BAAQMD has determined that construction activities occurring at distances of greater than 1,000 feet from a sensitive receptor likely do not pose a significant health risk. There are scattered rural residencies within the project area, which may be located within 1,000 feet of construction, and some project features, such as access roads, will be located within 1,000 feet of residences. Because construction may occur within 1,000 feet of sensitive receptors, a screening-level health risk assessment (HRA) was performed to ascertain whether increased cancer risks to residential receptors would exceed the BAAQMD's significance thresholds. The HRA results demonstrate that the BAAQMD's thresholds will not be exceeded at the nearest maximum exposed individual (MEI) receptor location, which is defined as a residential receptor located 723 feet from

multiple turbine construction sites, the minimum setback distance required by General Plan and County policies. This impact is less than significant. No mitigation measures are required.

Impact GHG-1: Greenhouse Gas Emissions

Rationale for Finding: The proposed Project will result in greenhouse gas emissions during construction and operation. According to the ICF International Air Quality Study and the EIR consultant adjustments, construction of the Project would result in approximately 2,960 MT of CO_2e emissions. The total annual operational emissions of the proposed project will be approximately 154 MT of CO_2e, well below the BAAQMD significance threshold of 1,100 MT of CO_2e per year. The Project will result in a net greenhouse gas benefit because operation of the Project will displace greenhouse gas emissions from power generation. The project will support the County's General Plan policies regarding climate change and could help achieve the objective of reducing long-term greenhouse gas emissions by facilitating renewable energy generation within the County. Accordingly, the project's GHG emissions will result in no impact, and no mitigation is required.

Impact HYD-3: Increased Rate of Storm Water Runoff from Permanently Disturbed Surfaces

Rationale for Finding: The Project will include construction of impervious areas in the form of turbine foundations, transformers, crane pads, the substation, meteorological towers, and new O&M building addition and will compact pads and access roads resulting in increased runoff. This could potentially accelerate erosion and sedimentation rates. However, these areas represent a small percentage of the total Project area, and will be located along ridgelines and away from low-lying areas such as streams and wetlands. Significant changes to existing stormwater runoff rates are not anticipated, and this impact is considered less than significant. No mitigation is required.

Impact HYD-4: Water Use

Rationale for Finding: Local domestic water will be trucked from an off-site metered hydrant during Project construction. The estimated water usage for the Project is approximately 8.1 to 11.9 million gallons of water over the five-month period of construction. The Project will not result in an increase in the total number of enXco employees at the O&M site, since the maintenance for the project turbines will be less labor intensive than maintenance for the enXco V turbines they replace. The cumulative water use at the O&M facility for the 25 enXco employees that have been working and will continue to work at the site will be equivalent to the water consumption of 2.5 homes. This impact is considered less than significant, and no mitigation is required.

Impact HYD-5: Impeded or Redirected Flood Flows.

Rationale for Finding: The Project will result in placement of permanent project features within a 100-year floodplain. The Applicant will be required by the grading and development permits to comply with Solano County Flood Damage Prevention Ordinance (Chapter 12.2 of the County Code), which is based on Federal Emergency Management Agency requirements. Compliance with this requirement will minimize risks associated flooding. The impact is considered less than significant; no mitigation is required.

Impact LU-2: Physically Divide a Piece of Property or Established Community

Rationale for Finding: There are several rural residences in and adjacent to the Project area, but the Project will not be located near enough to a community to physically divide it or any property. There is no impact under this criterion, and no mitigation is required.

Impact LU-3: Induce Substantial Population Growth in an Area, Either Directly or Indirectly and/or Displace Substantial Numbers of Existing Housing or Numbers of People

Rationale for Finding: The Project will create approximately 80 to 300 short-term jobs for construction workers during the construction phase. Local construction contractors and suppliers will be used to the extent possible. These local employees would live near the Project or in nearby cities and metropolitan areas and would commute to work. Operation of the Project will require approximately six people, some of whom may replace employees associated with the existing enXco V project that will be decommissioned. It is expected that these employees and their families also either already live near the Project or live in nearby cities and metropolitan areas and will commute to work at the existing enXco Operations and Maintenance Building. Therefore, the Project will not have a significant effect on population in Solano County and will not require development of new housing or impact existing housing. This impact is less than significant, and mitigation is not required.

Impact PSU-2: Public Utilities

Rationale for Finding: During construction, an appropriate contractor would provide portable restrooms for use by the construction crews, in accordance with Division of Environmental Health requirements. During operation, the six full-time staff members would use the existing sanitary facilities in the enXco Operation and Maintenance (O&M) facility that is currently shared by Shiloh II, Shiloh III and the remainder of enXco V personnel, and if necessary, the Applicant will expand or design a new sewage system in conformance with state and local regulations. Because of the temporary nature of construction, the Project is not expected to have a significant impact on the

landfill's permitted capacity to accommodate the Project's solid waste disposal needs. The Project will not damage or disrupt on-site wells supplying domestic water, and will not require a new water assessment because it will result in a water demand increase below the 10 percent significance threshold for triggering a new water assessment under section 10912 of the California Water Code. During the Project's operating phase the existing facilities at the enXco operations and maintenance (O&M) building will be used. The Applicant would construct a new substation that would have a less than significant negative impact on electric utilities. Construction and operation of the proposed Project would have no impact or a less than significant impact on solid waste disposal needs, and water, sewage, and energy services. No mitigation is required.

Impact PSU-5: Navigational System Interference

Rationale for Finding: The Shiloh IV Wind Energy Project will be located more than nine miles from the VOR station at Travis AFB and would not interfere with the operation of the VOR system. There is no impact, and mitigation is not required.

Impact REC-1: Impacts on the Quality of Recreational Experience

Rationale for Finding: The Project will be unlikely to affect the recreational experience of individuals at the Western Railway Museum and historic railroad, the Suisun Marsh, and the Delta.

Western Railway Museum

Tourists riding the train would pass about a half mile west of the westernmost portion of the Project boundary, would not be likely to notice increases in noise and dust during construction and would probably not notice construction activities. In the unlikely event of an impact, it will be short-term and temporary and will not significantly reduce the quality of the recreational experience. During operation, the project will be visible from the train in the background, behind the Shiloh I project, and one turbine will be within one mile of the train. Because there are over 20 Shiloh I turbines within a mile of the railroad, the addition of one turbine will not significantly alter the visual character of the existing landscape or detract from the recreational experience.

Suisun Marsh

Though a small portion of the project area borders the Suisun Marsh (Secondary Management Area), the nearest potential turbine site will be over 1,000 feet away from the project border. Waterfowl hunters and other individuals using the Suisun Marsh for recreational purposes would likely be at an even greater distance from the nearest turbine and would be unlikely to be bothered by construction. Though the proposed Project will impact birds, there is no evidence that waterfowl would be impacted significantly. Since the proposed project would have a less than significant impact on

waterfowl and water bird populations and behaviors, it would have a less than significant impact on duck hunting.

Sacramento-San Joaquin River Delta

The nearest project boundary is less than one mile north of the Secondary Zone of the Delta, approximately two miles north of the Primary Zone of the Delta, and just over two miles north of the Sacramento River, the nearest part of the Delta suitable for recreation. Recreational users of the river would be able to see project turbines (see Chapter 5, Aesthetic/Visual Resources for more discussion of visual impacts) but would not experience any other impacts from project construction or operation.

Overall, the Project will not result in significant impacts on these recreational uses, and no mitigation is required.

Impact REC-2: The Shiloh IV Wind Energy Project Could Conflict with Future Plans for a Regional Park near the Western Railway Museum

Rationale for Finding: The Park and Recreation Chapter of the General Plan anticipates the development of a regional County park near the Western Railway Museum, south of SR 12 and east of Shiloh Road. The exact location is not specified; however, there are already existing wind facilities (Shiloh I and Shiloh II) located between the Shiloh IV Wind Energy Project and the area near the museum. Therefore, the Project will not conflict with future plans for the park, and no mitigation is required.

Impact SA-4: Impacts from Shadow Flicker

Rationale for Finding: The Project will introduce turbines into the project area that may cast flickering shadows onto adjacent parcels. Given the current absence of any public complaints about shadow flicker caused by currently operating wind turbines in the Montezuma Hills, Solano County has not adopted, nor formally debated, an official threshold of significance for shadow flicker. A study performed by the Applicant shows that of the 24 residences within and adjacent to the project area, 20 would experience some level of shadow flicker impacts. Accounting for the reductive effects of cloud cover on the occurrence of shadow flicker, the expected impacts on nearby residence will be less than significant. No mitigation is required.

Impact TRA-4: Operations-Related Traffic

Rationale for Finding: Operation of the Project will only require approximately six full time staff who will work at the existing enXco Operations and Maintenance (O&M) building. The Applicant anticipates that no more than 25 workers will be needed to serve the Shiloh II project, the remaining portions of the enXco V project, the Shiloh III project, and the proposed project when it is complete, the same amount that have been

commuting to these facilities. Additionally, the Project could require periodic deliveries by large trucks and use of heavy equipment for maintenance once operational. In the long term, project-related trips from operation would replace existing employee and maintenance trips associated with the enXco V project. The impact of operations-related traffic is considered less than significant, and no mitigation is required.

Impact TRA-6: Potential Travis Air Force Base ASR-11 Radar Reduction in Probability of Detection

Rationale for Finding:

In December 2009, the Applicant, together with two other wind developers, entered into a Cooperative Research and Development Agreement (CRADA) with representatives of the 60th Air Mobility Wing (AMW) at Travis AFB, the Air Mobility Command (AMC), the AFFSA, the Idaho National Laboratory, and the United States Transportation Command (USTRANSCOM) to assess the impact of the three then-pending wind projects on air traffic operations over the Montezuma Hills. The results of this assessment concluded that an average degradation of five percent Pd across the entire Montezuma Hills would pose an insignificant operational impact and would not impact air traffic safety (USTRANSCOM 2010). Travis AFB has preliminarily reviewed the Project and indicated that the Project, in combination with other existing, approved, and foreseeable projects in the Montezuma Hills, would not reduce the minimum average Pd over the Montezuma Hills by more than five percent (Col. Vechery 2011). This preliminary review, however, was based on modeling performed by Westslope Consulting in April 2011; Westslope has since updated its modeling to reflect the current project layout. The updated modeling resulted in a lower predicted drop in Pd than the original modeling performed for the project by Westslope and reviewed by Travis AFB. This impact is less than significant, and no mitigation is required.

B. IMPACTS DETERMINED TO BE LESS THAN SIGNIFICANT WITH IMPLEMENTATION OF MITIGATION MEASURES AND IMPACTS THAT REMAIN SIGNIFICANT AFTER IMPLEMENTATION OF MITIGATION MEASURES.

The Final EIR identifies the following significant environmental impacts associated with the Project and Mitigation Measures adopted to reduce these significant impacts to a less than significant level. To the extent that Mitigation Measures will not mitigate or avoid all significant impacts, it is hereby determined that any remaining significant unavoidable adverse impacts are acceptable for the reasons specified in the Statement of Overriding Consideration, below. Except as expressly otherwise stated in certain cases below, all Mitigation Measures proposed in the Final EIR shall be implemented.

(a) MMRP. Except as expressly otherwise stated in certain cases below, the MMRP will apply to all Mitigation Measures adopted with respect to the Project pursuant to all of the Project Approvals and will be implemented.

(b) Project Approvals Incorporate the Mitigation Measures and the MMRP. The Mitigation Measures and MMRP have been incorporated into the Project Approvals and have thus become part of and limitations upon the entitlement conferred by the Project Approvals and are enforceable by the County.

(c) Impacts Summarized. The descriptions of the impacts in these findings are summary statements. Mitigation Measures are numbered to correspond to listings in the Draft EIR and Final EIR. Reference should be had to the Draft EIR and Final EIR for a more complete description.

Impact AES-1: Degradation of Views from Birds Landing

Mitigation Measure(s): No feasible Mitigation Measures are available.

Implementation: No feasible Mitigation Measures are available.

Finding: Specific economic, legal, social, technological or other considerations make infeasible the mitigation or project alternatives identified in the EIR. The Commission finds that the design of the Project reduces the potential adverse visual impacts resulting from the Project to the greatest extent possible.

Rationale for Finding: The new turbines would have a significant impact on the visual elements of the existing views from the community of Birds Landing. The perception of the visual impact would vary from resident to resident. Mitigation of the visual impact of the turbines is not feasible because of the need for aviation safety and because the proposed turbine size and height are necessary to achieve the objectives of the project. Thus, the aesthetic/visual impacts on local communities would be significant and unavoidable. These significant and unavoidable impacts are overridden by the economic, legal, and social considerations detailed in Part 10.

Impact AES-5: Degradation of the Visual Character of the Landscape from Public (County) Roads and Dispersed Rural Residences

Mitigation Measure(s): No feasible Mitigation Measures are available.

Implementation: No feasible Mitigation Measures are available.

Finding: Specific economic, legal, social, technological or other considerations make infeasible the mitigation or project alternatives identified in the EIR. The Commission

finds that the design of the Project reduces the potential adverse visual impacts resulting from the Project to the greatest extent possible.

Rationale for Finding: There are five residences within the project area and four residences within 1,000 feet of the project area. The proposed turbines will change the natural character of the landscape by adding a view visually dominant feature to the gently rolling, nearly uniform natural landscape features. The visual impact of the turbines decreases as their distance from the road increases. While the project will replace existing older enXco V turbines with only 50 new turbines, the proposed turbines are significantly taller and would be visible from a greater distance. The project would significantly impact dispersed rural, residential viewers and alter the visual character of the dispersed rural, residential setting. No reasonable mitigation measure addresses this impact and it will remain significant and unavoidable. This significant and unavoidable impact is overridden by the economic, legal, and social considerations detailed in Part 10.

Impact AES-7: Additional Light and Glare

Mitigation Measure AES-7: Limit Marking and Lighting to FAA Requirements

The Applicant shall:

a. Only install marking and lighting on turbines in accordance with FAA requirements; the turbines shall not be lighted for other reasons. Strobe lighting shall be prohibited unless specifically required by FAA and no other alternative is available.

b. Obtain a No Hazard Determination from the FAA for each turbine or meteorological tower that would be installed as part of the Project, as required in Mitigation Measure TRA-5: Notifications and Revised Turbine Siting. The Applicant shall submit an FAA Form 7460-1 for each tower location. Prior to issuance of building permits for each turbine and meteorological tower, the Applicant shall submit the necessary FAA determination to Solano County.

c. If the Applicant modifies the Project after obtaining the FAA determinations, the Applicant shall submit a new FAA Form 7460-1 for each new or modified turbine and meteorological tower taller than 200 feet. The Applicant shall submit the new FAA determinations to Solano County prior to issuance of building permits for any affected turbines and meteorological towers.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Lighting installed on the turbines pursuant to FAA regulations will contribute to light pollution in the area; however, this will not be a significant impact because only a portion of the turbines will be required to be lit. Additionally, Mitigation Measure AES-7 will limit the Project's impact on aesthetics due to introduction of a new restricted source of light. With the implementation of this mitigation measure, this impact will be reduced to less than significant.

Impact AES-8: Decommissioning of the Shiloh IV Wind Energy Project Facilities Could Cause Aesthetic/Visual Resource Impacts

Mitigation Measure AES-8: Remove all Project Facilities and Restore the Project Area

The Applicant shall remove all Project facilities upon decommissioning. Specifically, at such time as the Project is decommissioned, the following procedures shall apply:

a. All facilities shall be removed to a depth of 3 feet below grade, and unsalvageable material shall be disposed of at authorized sites;
b. The soft surface shall be restored as close as reasonably possible to its original condition;
c. Reclamation procedures shall be based on site-specific requirements and shall include regrading and revegetation of all disturbed areas;
e. Decommissioned roads shall be reclaimed or left in place based on landowner preference.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Commercial wind turbines typically have a 20- to 30-year design life span and require maintenance to remain cost-effective. Other Project elements are expected to have a service life of 45 years or longer. Equipment that has reached the end of its useful life could be abandoned, resulting in long-term aesthetic impacts. This impact is potentially significant; however, with the implementation of Mitigation Measure AES-7, this impact will be reduced to a less-than-significant level.

Impact AG-4: Temporary Impacts on Agricultural Lands Adjacent to Construction Areas

Mitigation Measures: AIR-2, HAZ-1A, and HAZ-1B.

Mitigation Measure AG-4: Confine Construction Activities to Necessary Work Areas.

Prior to commencement of any construction activities, the Applicant shall fence or flag the construction area boundaries to limit the construction footprint, avoid intrusion into adjacent agricultural areas, and reduce other potential impacts (e.g., dust, spills, invasives) to adjacent agricultural operations. The construction boundary fencing or flagging shall be in addition to, and distinguished apart from, any other exclusionary fencing or flagging required for the protection of sensitive resources pursuant to mitigation measures BIO-1A (Minimize Habitat Disturbance), BIO-1B (Restore Disturbed Habitats within Project Area), BIO-2A (Avoid Impacts to Aquatic Resources [Wetlands, Vernal Pools, Streams, and Other Potential Waters of the U.S.]), BIO-2B (Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources [Wetlands, Vernal Pools, Streams, and Other Potential Waters of the U.S.]), and BIO-4 (Habitat Avoidance - California Tiger Salamander).

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Implementation of mitigation measure AG-4 will confine construction equipment to necessary work areas, thereby reducing the impact of construction on adjacent agricultural lands. Implementation of the dust control and spill prevention protocols discussed in EIR Chapters 7 and 12 will reduce potential impacts on adjacent properties during construction such as release of potential air borne contaminants in the form of dust, accidental discharges of hazardous materials, and introduction of non-native species or noxious weeds. Given that impacts will be largely confined to the Project area and that temporary impacts will be short-term in duration, the implementation of Mitigation Measures AG-4, AIR-2, HAZ-1A, and HAZ-1B cause this impact to be reduced to less than significant.

Impact AG-5: Soil Erosion, Soil Loss, and Decrease in Soil Productivity

Mitigation Measures: BIO-1A, BIO-1B, GEO-3, HYD-2A, and HYD-2B.

Mitigation Measure AG-5: Restore and decompact temporarily disturbed agricultural areas.

The Applicant shall restore all temporarily disturbed agricultural areas to preconstruction conditions to the extent feasible, including decompaction, restoration of natural contours, and revegetation where appropriate.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Ground-disturbing construction activities in the Project area will result in the loss of soils and impacts on soils that will reduce productivity and affect agricultural and grazing operations. This impact is considered potentially significant; however, mitigation measures Mitigation Measures AG-5, BIO-1A, BIO-1B, GEO-3, HYD-2A and HYD-2B will reduce this impact to less than significant.

Impact AG-6: Impediments to the Resumption of Agricultural Use

Mitigation Measures: HAZ-1A, HAZ-1B, HAZ-2.

Mitigation Measure AG-6: Restore Disturbed Areas to Previous Conditions after Decommissioning.

To ensure resumption of full agricultural use after decommissioning, Solano County shall, at its discretion, compare the project area after decommissioning with the baseline conditions established in this Draft EIR, and, based on this assessment, the Applicant shall undertake any additional actions required by Solano County to restore the area to preconstruction conditions.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Project activities could result in spills, loss of topsoil, compaction issues, and other potential construction, operation, and maintenance

activity impacts that could damage affected lands and impede resumption of agriculture or grazing on those lands after decommissioning. Mitigation Measures AG-6, HAZ-1A, HAZ-1B, and HAZ-2 will reduce this impact to a level that is less than significant.

Impact AIR-1: Short-term Increase in Emissions of Criteria Pollutants from Construction Equipment and Vehicles

Mitigation Measure AIR-1A: BAAQMD Basic Control Measures to Control Construction-Related NO_x Emissions

During construction, the applicant shall reduce NO_x emissions by implementing the basic control measures to reduce NO_x emissions.

- Idling times shall be minimized by shutting off equipment it is not in use or by reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure 13 CCR 2485). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacture's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

Mitigation Measure AIR-1B: BAAQMD Additional Control Measures to Control Construction-Related NO_x Emissions

During construction, the applicant shall reduce NO_x emissions by implementing the basic control measures to reduce NO_x emissions from construction equipment.

- Minimize the idling time of diesel powered construction equipment to two minutes. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO_X reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
- Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.
- Require all contractors use equipment that meets ARB's most recent certification standard for off-road heavy-duty diesel engines.

Implementation: These Mitigation Measures will be included as conditions of use permit approval for the Project.

Finding: This impact will remain significant during the period of construction even with mitigation. The Commission finds that the design of the Project reduces the potential adverse impacts resulting from the Project to the greatest extent possible. These significant and unavoidable impacts are overridden by the economic, legal, and social considerations detailed in Part 10.

Rationale for Finding: Construction will take approximately 9 months to complete. Air pollutant emissions will be generated during various activities associated with these construction activities. Although the overall Project area will be approximately 3,012 acres, the total area to be disturbed during construction will be approximately 292 acres. It is anticipated that only about a maximum of 31 acres will be disturbed on any given day. Even with implementation of mitigation measures, NO_x levels will still exceed significance thresholds. Therefore, this impact will remain significant during construction, even with mitigation.

Impact AIR-2: Temporary Increase in Dust

Mitigation Measure BIO-1

Mitigation Measure AIR-2: Fugitive Dust Controls

a. During construction, the applicant shall reduce fugitive dust emissions by implementing the standard mitigation measures outlined in Table 7.4-3 of the Draft EIR.

b. During periods of high wind conditions (i.e., winds exceeding 25 miles per hour [mph]), the Applicant shall reduce fugitive dust emissions from construction activities by implementing the mitigation measures outlined in Table 7.4-4 of the Draft EIR.

In addition to the mitigation measures outlined in Tables 7.4-3 and 7.4-4 of the DEIR, the Applicant shall reduce fugitive dust emissions from construction activities by implementing the following standard mitigation measures recommended by the BAAQMD and YSAQMD:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) and construction sites not controlled with one of the methods outlined in Table 7.4-3 or Table 7.4-4 shall be watered when there is evidence of wind-driven dust.
- Hydroseed or apply nontoxic stabilizers to construction areas that are scheduled

to be inactive for more than four consecutive days during all wind conditions.

- Haul trucks transporting soil, sand, or other loose material off-site shall be covered or haul trucks shall maintain at least two feet of freeboard during all wind conditions.
- All visible mud or dirt track-out onto paved access roads, parking areas, staging areas, and adjacent public roads shall be cleaned using wet power street sweepers or vacuum trucks at least once per day. The use of dry power sweeping is prohibited
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used. A publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The local air district's phone number will also be visible to ensure compliance with applicable regulations.

Since construction-related emissions could exceed the applicable thresholds of significance, the following additional construction mitigation measures (recommended by the local air districts) shall be implemented:

- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

Prior to the commencement of construction activities, the Applicant shall prepare a Construction Fugitive Dust Control Plan and submit it to the County for approval.

This plan shall describe how to minimize fugitive dust generated by construction activities and shall include the following:

- A description of each active operation that may result in the generation of fugitive dust;
- Identification of all sources of fugitive dust (e.g., earthmoving, storage piles, and vehicular traffic);
- A description of the control measures to be applied to each of the sources of dust emissions identified above. The description will be sufficiently detailed to demonstrate that the applicable best available control measure(s) will be utilized and/or installed during all periods of active operations;
- In the event that there are special technical circumstances (e.g., non-economic), including safety, which prevent the use of at least one of the required mitigation

measures for any of the sources identified, a justification statement will be provided to explain the reason(s) why the required control measures cannot be implemented; and

- A process for addressing complaints received by sensitive receptors (either directly or through the County) due to dust and alternative strategies to resolve such complaints, such as increased watering and implementation of additional dust control measures.

Upon completion of construction, the applicant shall restore and stabilize all areas that will only be temporarily disturbed (i.e., areas that will not be covered with surface structures such as buildings and pavement and or gravel) according to Mitigation Measures BIO-1A and -1B.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: This impact will remain significant during the period of construction even with mitigation. The Commission finds that the design of the Project reduces the potential adverse impacts resulting from the Project to the greatest extent possible. This significant and unavoidable impacts is overridden by the economic, legal, and social consideration detailed in Part 10.

Rationale for Finding: During Project construction, on-site earthmoving activities and vehicle travel on local/access roads will generate fugitive dust. The Project will generate a maximum daily emissions rate of approximately 554.07 lbs/day (uncontrolled) of fugitive dust. This is a significant impact and mitigation is required. It is estimated that watering all exposed soil twice daily will effectively reduce approximately 53 percent of dust emissions. Even with a watering program and other dust control mitigation measures, it is anticipated that dust emissions from Project construction activities will exceed YSAQMD's significance thresholds for total PM_{10} and remain a significant impact. These significant and unavoidable impacts are overridden by the economic, legal and social considerations detailed in Part 10.

Impact BIO-1: Impacts to Terrestrial Habitat

Mitigation Measure AG-4

Mitigation Measure BIO-1A: Minimize Habitat Disturbance

To minimize temporary disturbance impacts on terrestrial lands the Applicant shall comply with the following:

a. Minimize disturbance to habitats and vegetation during site preparation and construction. The clearing of all vegetation, grading, and other soil disturbance shall

be restricted to those areas required for construction and, to the extent feasible, shall occur in areas with little or no vegetation. This mitigation is in addition to Mitigation Measure AG-4 (Confine construction activities to necessary work areas) requiring fencing or flagging of the construction area boundaries to limit the construction footprint, avoid intrusion into adjacent agricultural areas, and reduce other potential impacts (e.g., dust, spills, spread of invasive species) to adjacent agricultural operations.

b. Assign a qualified biologist as an on-site point of contact for the Solano County biological monitor (or other County designee). The County monitor shall be allowed access to the site during the construction and post-restoration period to ensure compliance with County policies and procedures and shall have the authority to halt construction activities in consultation with the assigned point of contact.

Mitigation Measure BIO-1B: Restore Disturbed Habitats within Project Area.

a. After construction, and prior to project operation, restore and revegetate all areas disturbed by construction to pre-construction conditions as follows:

    i. Revegetation shall occur in accordance with Solano Grading Ordinance guidelines, with consideration given to landowner input and/or agreement between the Applicant and landowner, where disturbance occurs.

    ii. Disturbed or graded areas shall be planted with native, fast-growing and deep-rooted grasses or ground cover, unless the area is actively used for farming and re-seeding would conflict with agricultural activities. Invasive pest species, as listed by Cal-IPC, shall not be used (http://www.cal-ipc.org/). A qualified biologist shall have oversight of species selected.

    iii. Revegetated areas shall be monitored until revegetation has been completed and successful ground cover has been established in accordance with the requirements of the Solano County Grading Ordinance.

    iv. If required by the County, previously vegetated areas and inactive portions of the construction site shall be seeded and watered until vegetation is grown, unless the area is actively used for farming and re-seeding would conflict with agricultural activities.

    v. Any trees with active or suspected raptor or other special-status avian species nests shall not be removed. Other trees without nests that cannot be avoided and are removed shall be replaced with native tree species of similar size and structure, unless otherwise requested by the landowner in writing and approved

by the County. Replacement trees shall be watered and maintained as necessary to ensure 90% survival rate after 5 years.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: These mitigation measures will ensure restoration of habitat temporarily disturbed during construction and will reduce potential temporary impacts to habitat and wildlife. With mitigation, the Project will result in the incremental loss of 15.7 acres of land, less than one percent of the project area. As the Project will affect a small amount of the available habitat in the project area and will not significantly affect local populations of common wildlife species during construction, the Project's potential terrestrial habitat impacts are considered less than significant.

Impact BIO-2: Impacts to Aquatic Resources (Wetlands, Ponds, Vernal Pools, Streams, and other Potential Waters of the U.S. and/or State)

Mitigation Measures: BIO-1A, AG-4, HYD-2A, HYD-2B

Mitigation Measure BIO-2A: Avoid Impacts to Aquatic Resources (Wetlands, Ponds, Vernal Pools, Streams, and Other Potential Waters of the U.S. and/or the State).

The Applicant shall avoid impacts to aquatic resources through implementation of appropriate siting measures, County verification, employee education, and use of HDD as follows:

a. Locate all construction activities and all project components at least 250 feet from ponds and vernal pools pursuant to Mitigation Measure BIO-4 a. (Habitat Avoidance – California Tiger Salamander and Special-Status Invertebrate Species) and at least 100 feet from all other aquatic resources where feasible.

b. If, as determined by Solano County, it is not feasible to maintain the aquatic resource setbacks required by paragraph a. above, the County may allow encroachment within the setback depending on-site-specific factors, subject to advance review and approval of the following, unless otherwise determined unnecessary by the County:

    i. The Applicant shall submit a supplemental evaluation that details how the proposed construction activity would avoid potential impacts to the aquatic

resource, including BMPs the Applicant would implement to avoid impacting the aquatic resource.

ii. Advance consultation with USFWS and/or CDFG, as may be determined necessary by the County.

c. If it is not feasible to avoid placement of lines for the power collection system across an aquatic resource, as determined by the County, the Applicant shall install the lines:

i. Under the aquatic resource using the HDD method in accordance with Mitigation Measure BIO-2B (Avoid Impacts from Horizontal Directional Drilling); or

ii. If HDD is not feasible, the Applicant may install overhead lines above aquatic resources, if approved by the County and subject to the following requirements:

a.) The Applicant shall provide advance notice and sufficient justification that overheading is necessary, as determined by the County;

b.) Overhead lines shall comply with the design elements listed in Mitigation Measure BIO-7 (Direct Mortality of Raptors, Other Avian Species, and Bats) and all work activities and facilities associated with the overhead line (e.g., poles) shall be set back 250 feet from boundaries of ponds and vernal pools and 100 feet from the boundaries of all other aquatic resources.

d. If the Applicant modifies the project configuration or proposes to widen the existing enXco V access road in subarea D such that construction activities would involve placement of fill material or equipment within or adjacent to an aquatic resource, then the Applicant shall do the following:

i. Conduct a wetland delineation for the affected aquatic resources and submit the report to Solano County. The delineation shall be conducted by a qualified wetland biologist and be subject to verification by the Solano County biological monitor and County determination of adequacy. The Applicant's qualified wetland biologist shall be a person with at least an undergraduate degree in biology, ecology, or related field, with USACE training and a minimum of three years of professional experience in the region or working under the direct supervision of a wetland biologist with USACE training and at least six years of field experience in the region. The wetland delineation shall be conducted in accordance with the most recent USACE and CDFG wetland delineation protocols, including the USACE 1987 Wetland Delineation Manual and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region.

ii. If the Applicant submits a wetland delineation to the USACE, the Applicant shall concurrently submit a copy to Solano County and, in addition, a copy of any USACE determination of jurisdiction within five days of said determination.

iii. Prepare a habitat mitigation and monitoring plan and submit it to Solano County for review by its biological monitor and County determination of adequacy. The habitat mitigation and monitoring plan, written by a qualified wetland biologist, shall outline restoration and conservation activities, locations, monitoring and reporting requirements, and criteria to measure mitigation success. The County may consult with the USACE, USFWS, or CDFG about the adequacy of the plan.

iv. If the Applicant provides Section 1600 notification to the CDFG of the proposed activity affecting aquatic resources, the Applicant shall concurrently provide a copy of the notice to Solano County. In addition, the Applicant shall provide the County with a copy of any written determination by CDFG that the activity may commence without an agreement or a copy of any final Section 1600 agreement for the proposed activity, as may be applicable, within 5 days of receipt of said determination or agreement.

v. If permitting under Section 404 of the Clean Water Act is necessary, the Applicant shall submit a copy of the permit to Solano County within 5 days of receipt.

vi. Compensate for permanent impacts on aquatic resources by identifying lands that provide for wetlands restoration, creation, or preservation of wetlands at a 1:1 ratio or another ratio approved by the appropriate jurisdictional agency, whichever is higher.

vii. Restore temporarily impacted aquatic resources to pre-construction condition and monitor during and after disturbance for a minimum of three years.

e. Identify aquatic resources and their corresponding setback required by paragraph a. above (i.e., 100- or 250-foot setback) on all project construction drawings and plans (e.g., grading and improvement plans).

f. Prior to any construction activity, assign a qualified biologist to fence or flag the location of aquatic resources and their corresponding setback required by paragraph a. above (i.e., 100 or 250 foot setback). Fencing or flagging shall be in addition to, and distinguished apart from, any required construction boundary fencing or flagging pursuant to mitigation measure AG-4.

g. Prior to trenching across dry valleys that are mapped by the USGS as seasonal streams but were not observed during 2011 field studies prepared for the project EIR to contain any obvious signs of streambeds or streambanks, the Applicant shall assign a qualified biologist to verify that streambeds or streambanks are, in fact, not present. If there are no well-defined channels with distinguishable bed and bank showing evidence of having contained flowing water indicated by the deposit of rock, sand, gravel or soil present, the Applicant may proceed with trenching. If streambeds or streambanks are present, the Applicant shall proceed using HDD in accordance with Mitigation Measure BIO-2B (Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources).

h. The Applicant's qualified wetland biologist shall hold a tailgate environmental training program with construction personnel. Training shall be conducted prior to commencement of construction, to inform construction personnel of the aquatic resources in the project area. The training program shall include information about the locations and extent of these aquatic resources, methods of resource avoidance, permit conditions, and possible fines for violations of permit conditions and state or federal environmental laws. The training program shall be recorded and subsequently shown to any construction personnel who are not able to attend the initial training program prior to their participation in any construction activity.

Mitigation Measure BIO-2B: Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources (Wetlands, Vernal Pools, Streams, and Other Potential Waters of the U.S.).

The Applicant shall comply with the following mitigation measures to minimize the potential effects of HDD:

a. To the extent practicable, HDD drilling shall occur only during the dry season (i.e., typically April through October).

    i. Should it be necessary to conduct HDD operations outside the dry season, the operations shall be monitored by a qualified environmental monitor (i.e., a biologist having previous HDD monitoring experience), who shall:

        a) Either be the Applicant's biologist or a third-party individual who shall work on behalf of Solano County at the expense of the Applicant; and

        b) Have knowledge of the environmental sensitivities of the project area, an understanding of the design process and construction practices and shall understand the conditions of the site and provide feedback to the construction

staff regarding environmental sensitivities, regulatory concerns, and physical limitations of the field conditions.

ii. The environmental monitor, as required in paragraph a.i., above, shall visually inspect the aquatic resource and surrounding area for evidence of drilling fluids surfacing from the operation. The environmental monitor shall monitor the drilling fluid circulation at the HDD site and be aware of the status of the operation.

b. HDD under ponds and vernal pools that provide CTS habitat is prohibited. The Applicant shall ensure HDD bore entry and exit pits are located at least 250 feet from ponds and vernal pools that provide CTS habitat and 100 feet from all other aquatic resources.

c. The Applicant shall obtain a boring permit from the Solano County Environmental Health Division under Solano County Code Chapter 13.10 prior to initiating any HDD of which the depth of the HDD is greater than or equal to 15 feet below ground surface or if groundwater is anticipated to be encountered at any depth. The Applicant shall also obtain an encroachment permit from Solano County Public Works Engineering prior to initiating any HDD within or below any County road right-of-way. Said permit applications shall be accompanied by site plans presented to scale on aerial and topographical maps and which illustrate at a minimum the locations of all borings used for geologic review as may be required in paragraph d, below, entrance and exit HDD boring locations, setbacks from sensitive areas, water supply wells, septic systems, buildings, and existing utilities, public roads and right-of-way, private access roads, and existing reference points (structures, turbines, etc…).

d. The Applicant shall provide recommendations from a California-licensed certified engineering geologist or professional engineer, who shall review the drilling plans, site specific geologic and other conditions and factors, and determine whether the boring depth, drilling pressure, and boring and setback locations are appropriate to avoid and minimize potential impacts to aquatics resources from frac-outs. The evaluation shall be presented in writing and stamped by a California-licensed certified engineering geologist or professional engineer along with the boring permit application, where required, to the Solano County Environmental Health Division for review and approval prior to issuance of a boring permit. If such permit is not required per paragraph c, above, then the evaluation together with the site plans required in paragraph c, above, shall be submitted to the Solano County Planning Division for review and approval prior to the start of HDD activities at the aquatic resources location. The Applicant's evaluation may, at the sole discretion of Solano County, be subject to peer review by a third party qualified professional expert hired by the County at the expense of the applicant.

e. The Applicant shall prepare a Frac-Out Avoidance and Contingency Plan that describes the procedures required to reduce the potential for discharges, the response equipment (e.g. vacuum truck) including containment and clean-up supplies (e.g., straw bales, sedimentation fences, etc.) to be kept on-site, the measures to be implemented in the event of a frac-out, including the notification requirements listed in paragraph h.iii below, and restoration requirements. The Frac-Out Avoidance and Contingency Plan shall be submitted to the Solano County Department of Resource Management for review and approval prior to commencement of HDD activities at aquatic resource locations. The Frac-Out Avoidance and Contingency Plan shall be kept on-site at drilling locations during HDD activities. Prior to HDD activities, the Applicant's biologist shall conduct on-site briefings for all HDD workers to ensure all field personnel understand the location of aquatic resources and their responsibility for timely reporting of frac-outs.

f. Prior to HDD activities, the Applicant's biologist shall conduct on-site briefings for all HDD workers to ensure all field personnel understand the location of aquatic resources and their responsibility for timely reporting of frac-outs.

g. If the Applicant suspects a potential drilling fluid leak (frac-out) that is not yet observed at the surface (e.g., loss of drilling mud in the pit but no frac-out at the surface), the Applicant shall cease HDD activities immediately and the HDD contractor shall implement measures to reduce the potential for a frac-out (e.g., increase the density of the drilling mud or reduce the pressure of the drill). The Applicant shall then be allowed to continue HDD activities. If a frac-out occurs, the Applicant shall implement paragraph h, below.

h. In the event a frac-out is detected, the Applicant shall implement the following measures to reduce or minimize effects on the affected aquatic resource:

    i. All work shall stop until the frac-out has been contained and cleaned up.

    ii. The frac-out area shall be isolated with straw bales, sand bags, or silt fencing to surround and contain the drilling mud and clean-up shall be performed using a vacuum truck, where appropriate, supported by construction workers on foot using hand tools, as necessary (mechanized equipment shall not be used to scoop or scrape up frac-out materials to prevent impacting the wetland or streambanks)

    iii. If the frac-out has occurred where it flows or may flow into an aquatic resource, the Applicant shall notify:

        a) The Solano County Department of Resource Management by telephone and email within 24 hours of the frac-out. This notification shall provide the date

and time, location, and depth of the bore and the drill head pressure at the time of the frac-out, estimated quantity (gallons) of release, the extent and type of biological habitat affected, and the containment and clean-up measures implemented by the Applicant. The frac-out shall be documented via photographs, description, and illustration on a scaled topographic site plan illustrating the sensitive habitat location, extent of frac-out and location of all borings. All mitigation work shall also be documented with photographs, site plans and description of mitigation work conducted.

b) The following agencies in writing (email acceptable) within 24 hours, providing the information in BIO-2B.j.iii.a) above:

   1) CDFG, if the frac-out is within or may flow into the bank of a stream or wetland.

   2) RWQCB, if the frac-out is within jurisdictional waters of the U.S. or waters of the State.

   3) USACOE, if the frac-out is within potentially jurisdictional waters of the U.S.

c) If the Applicant has obtained approval from CDFG, RWQCB, and/or USACOE for its HDD activities under Section 1600 of the Fish and Game Code, the Porter-Cologne Water Quality Control Act, or Section 401 or 404 of the Clean Water Act, if applicable, the Applicant shall follow the notification requirements of the agency approvals instead of the notification requirements in paragraph iii.b), above.

d) The Applicant shall provide Solano County with a copy of all written notifications to and any agreements, orders, or permits issued by, jurisdictional agencies concerning HDD activities and frac-outs.

iv. If the frac-out occurs outside an aquatic resource but within an aquatic resource setback, the Applicant shall:

a) If the frac-out is 50 feet or less from an aquatic resource, requires agency notification, or releases more than 42 gallons, notify the Solano County Department of Resource Management, providing the information per paragraph h.iii.a), above. If the Applicant has not notified CDFG or RWQCB, the County's biological monitor shall determine if additional agency notification shall be required-per paragraph h.iii.b) above.

b) If the frac-out is more than 50 feet from the aquatic resource, the notification may include only the date, location, volume, and size of the affected area.

v. If a frac-out occurs and is considered to have negatively impacted the associated aquatic resource, based on consultation with the Solano County biological monitor, an appropriate restoration plan for that aquatic resource shall be designed as outlined in the Frac-Out Avoidance and Contingency Plan as described in paragraph e above and appropriately implemented.

i. If frac-outs occur during boring at one location and the frac-outs release a combined total of more than 42 gallons, the Applicant shall stop work and not proceed with the boring at that location until the Applicant's California-licensed certified engineering geologist or professional engineer has reviewed the drilling plans and determined whether changes in the boring depth, drilling pressure, or location are appropriate. The review shall be presented in writing and be stamped by a California-licensed certified engineering geologist or professional engineer. Said review may, at the sole discretion of Solano County, be subject to peer review by a third party qualified professional expert hired by the County at the expense of the applicant and must be approved by Solano County before boring may resume.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The Applicant has designed the project to avoid sensitive biological resources to the extent possible by locating almost all Project components at least 250 feet from ponds and vernal pools and 100 feet from all other potential aquatic resources. The two general exceptions to this are the Project's proposed access road entrances and power collection system lines, which in some cases are located adjacent to or must cross under aquatic resources in or adjacent to the project area. In such cases, the Applicant proposes to employ Horizontal Directional Drilling (HDD) with bore hole locations setback at least 250 feet from ponds and vernal pools and 100 feet from all other aquatic resources, or where that is not feasible, to place collector lines above ground on poles also outside the 100 foot setback, subject to County approval.

Construction activities that encroach upon sensitive aquatic resources would have the potential to result in the net loss of wetland area or wetland habitat value, either through direct or indirect impacts to wetland vegetation, degradation of water quality; interruption of wildlife access, use, and dispersal in wetlands areas; and loss of wetlands function and value due to changes in hydrology. Construction and operations-related spills, worker errors, and soil erosion deposited within or near wetlands, ponds, vernal pools, streams, and other potential waters of the U.S. and/or state could reduce water quality

during rainfall events. Impacting wildlife that use these resources would constitute a direct, temporary impact of the project. Potential indirect impacts to aquatic resources include the introduction of non-native, invasive species, dust, and vehicle emissions. These impacts will be potentially significant, but mitigable.

Implementing HDD construction methods where stream and wetland crossings are necessary will prevent potential impacts to aquatic resources. Properly implemented, HDD is less intrusive than traditional open-cut trenching and serves to minimize erosion and loss of vegetation that would otherwise occur during a surface crossing. A direct, temporary impact could occur, however, if a “frac-out,” or the inadvertent release of drilling mud lubricants into adjacent surroundings, occurred.

Impacts to aquatic resources are potentially significant. Mitigation Measures BIO-2A and BIO-2B require the Applicant to avoid these areas where feasible and implement HDD in a responsible manner. If a frac-out occurs, the Applicant would be required to notify CDFG, RWQCB, USACE, and Solano County and implement other measures pursuant to Mitigation Measure BIO-2B. Implementation of these mitigation measures will reduce potential impacts to a level that is less than significant by minimizing disturbance of aquatic resources impacted by the Project.

Impact BIO-3: Potential Impacts to Special-Status Plants

Mitigation Measure BIO-3: Avoid Impacts to Special-Status Plants. The Applicant shall avoid impacts to special-status plants through implementation of appropriate siting, fencing and, if needed, a species mitigation plan.

a. The Applicant shall locate all construction activities and project components at least 100 feet from all special-status plants.

    i. If, as determined by Solano County, it is not feasible to maintain a 100-foot setback from special-status plans, the County may allow encroachment within the setback depending on site-specific factors, subject to advance review and approval of the following, unless otherwise determined unnecessary by the County:

        a) A qualified botanist (a person with at least an undergraduate degree in botany, plant ecology, or a related field, with a minimum of 3 years’ professional field experience conducting botanical surveys within the region or working under the direct supervision of a professional botanist with at least 6 years of field experience conducting botanical surveys in the region) has installed a fence that completely surrounds the special-status plant population (or , if appropriate, the border of the plant population within 100 feet of construction activities).

b) The Applicant confines work areas to the minimum necessary to complete the work.

ii. If, as determined by Solano County, it is not feasible to avoid placement of lines for the power collection system across special-status plant population, the Applicant shall install the lines:

a) Under the botanical resource using the HDD method in accordance with Mitigation Measure BIO-2B (Avoid Impacts from Horizontal Directional Drilling). HDD entry and exit pits shall be located at least 100 feet away from the special-status plant populations.

b) The Applicant shall identify special-status plant populations and corresponding 100-foot setback from these populations on all project construction drawings (e.g., grading and improvement plans).

c) Prior to construction activities, assign a qualified botanist to flag the location of special-status plant populations and the corresponding 100-foot special-status plant setback. This flagging shall be in addition to, and distinguished apart from, any required construction boundary fencing or flagging required by Mitigation Measure AG-4 (Confine Construction To Necessary Work Areas).

d) Prior to construction activities within 250 feet of special status plant populations, a qualified botanist shall hold tailgate environmental training sessions with construction personnel to inform them of the special-status plants in the Project Area. These training sessions shall include information about the locations of these plants, resource avoidance, permit conditions, and possible fines for violations of state or federal environmental laws. The training program shall be recorded and subsequently shown to any construction personnel who are not able to attend the initial training program prior to their participation in any construction activity within 250 feet of special-status plant populations.

e) If construction activities require or otherwise take pappose tarplant or heartscale, then the Applicant shall have a qualified botanist experienced in the development and implementation of native plant restoration, mitigation, and management plans develop and submit to Solano County and CDFG for approval a salvage and recovery plan prior to the start of construction activities.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: There are two special-status plants in project subarea A: Gairdner's yampah and pappose tarplant, as well as two special status plants in the vicinity of the optional collection line easement to Shiloh III locations, heartscale and pappose tarplant. The Applicant has located all proposed project activities and components more than 800 feet from the occurrence of Gairdner's yampah and approximately 200 feet from the occurrence of heartscale, but has located a proposed access road within 25 feet and a collection line within 10 feet of the occurrence of pappose tarplant in Project subarea A, and the optional collection line within 20 feet of the occurrence of pappose tarplant.

Gairdner's yampah is a CRPR List 4 species, indicating a limited distribution and does not represent a unique or rare population. Impacts to this species would be considered adverse, but not significant; however, Mitigation Measure BIO-2, Avoid Impacts to Special-status Plants, would promote avoidance of this plant population to the extent possible. The pappose tarplant is a CRPR 1B.2 (rare, threatened, or endangered) species, and the location of a project access road within 25 feet and a collector line within 10 feet of a pappose tarplant population could lead to significant impacts through trampling, fuel spills, grading, and other project activities. Any impacts to heartscale, a CRPR 1B.2 species (rare, threatened, or endangered) would be considered significant.

Through the use of fencing, setbacks, identification and flagging of special status plant populations, onsite training sessions for construction personnel, and if necessary, implementation of a salvage and recovery program for pappose tarplant, these mitigation measures reduce the impact on special status plants to a level that is less than significant.

Impact BIO-4: Temporary and Permanent Impacts on Special-status Crustaceans, Amphibians, and Reptiles

Mitigation Measure BIO-4: Habitat Avoidance —California Tiger Salamander and Special-Status Invertebrate Species. To avoid or reduce potential impacts on ponds and associated habitat for special-status CTS and special-status invertebrates, the Applicant shall implement Mitigation Measure BIO-2A, Avoid Impacts to Aquatic Resources, and BIO-2B, Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources, and implement the following measures:

a. All Project components shall be constructed and all construction-related activities shall be conducted a minimum of 250 feet from ponds and vernal pools that provide breeding habitat for CTS.

b. A qualified CTS biologist (a person having three years experience in conducting surveys for CTS and habitat within the project region, or under the direct supervision of a biologist with at least six years of field experience in the region), as hired by the Applicant, shall identify and flag any CTS habitat areas to be avoided. Exclusion flagging and signs that can be easily read from at least 20 feet away shall be placed 250 feet outside the perimeters of potential CTS aquatic habitat to indicate clearly where areas must be avoided by construction activities

c. If the Applicant does not obtain a Habitat Conservation Plan (HCP) or Incidental Take Permit for the Project, the Applicant's qualified CTS biologist shall conduct preconstruction CTS surveys before initiating any project construction, maintenance, and decommissioning activity with the potential to disturb surface soils within 1.24 miles of potential CTS breeding habitat (ponds and vernal pools) as follows:

    i. Preconstruction surveys shall occur no more than two weeks prior to initiating activities with the potential to disturb surface soils. The intent of the survey shall be to identify the potential for CTS to occur in suitable habitat (ponds, vernal pools, and upland areas within 1.24 miles of the ponds and vernal pools) that may be present within or near proposed disturbance areas. If the preconstruction survey does not identify suitable CTS habitat (e.g., due to absence of conditions suitable for larva in the ponds, less than average annual rainfall amounts, etc.), no further surveys shall be required.

        a) Suitable upland CTS habitat shall be defined as the presence of two or more small mammal burrows greater than 1 inch in diameter within a 10-foot-diameter area (i.e., the presence of a single isolated gopher hole would not be considered habitat).

        b) If the preconstruction survey is conducted in an area, no subsequent surveys shall be required in the areas surveyed unless there is a six-month delay in construction activity.

    ii. If the Applicant has obtained an HCP and/or Incidental Take Permit, no pre-construction surveys shall be needed, unless required by the HCP or permit.

d. A qualified biological monitor (a person with at least an undergraduate degree in biology, wildlife ecology, or a related field, with a minimum of 3 years' professional experience within the region or working under the direct supervision of a

professional wildlife biologist with at least 6 years of field experience in the region), shall be on-site during project construction, maintenance, and decommissioning activities that disturb surface soils in order to provide clearance for all work activities in potential CTS habitat (ponds, vernal pools, and upland areas within 1.24 miles of ponds and vernal pools).

e. Project related vehicle traffic shall be restricted to established roads, staging areas, and parking areas. To the extent possible, the Applicant shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface disturbing activities to previously disturbed areas.

f. The Applicant shall conduct all project construction, maintenance, and decommissioning activities that disturb surface soils within 1.24 miles of ponds and vernal pools during the dry season (typically April 15 through October 15). Such surface disturbing activities include but are not limited to clearing, grading, trenching, and ripping or tilling associated with site reclamation and restoration work.

    i. If, as determined by Solano County, in consultation with the USFWS and CDFG, it is not feasible to avoid surface disturbing activities outside the dry season, the County may approve an extension for work to occur past the dry season (i.e., in the rainy season), provided the Applicant implements the following measures:

        a) CTS exclusion fencing is installed around active work sites within 1.24 miles of ponds and vernal pools. Exclusion fencing shall not be required around paved and graveled areas and adjacent to well-traveled roads.

        b) Project activities terminate 30 minutes before sunset and do not resume until 30 minutes after sunrise.

        c) All steep walled holes or trenches that are one foot deep or greater and within 1.24 miles of potential CTS aquatic habitat shall have at least one escape ramp constructed of earthen fill or wooden planks, be completely covered prior to sunset of each workday using boards or metal plates that are placed flush to the ground, and be inspected by a the qualified CTS biologist or qualified biological monitor prior to start of daily construction activities .

g. To prevent inadvertent entrapment of CTS during construction of the Project construction, maintenance, and decommissioning:

    i. All construction pipes, culverts, conduits, and other similar structures stored on-site overnight shall be capped prior to storage or inspected by the Applicant's

qualified CTS biologist or qualified biological monitor before the structure is buried.

ii. All trenches one foot deep or greater shall be completely covered using plywood or other appropriate materials or backfilled at the close of each working day. The Applicant's qualified CTS biologist or qualified biological monitor shall thoroughly inspect all trenches for trapped CTS before they are filled.

h. Conduct a worker-training program that provide workers with information on their responsibilities with regard to the CTS, an overview of the appearance of the species and its habitat, and a description of the measures being taken to reduce the potential effects on the species during project construction. The Applicant shall conduct the worker-training program prior to the start of any construction, maintenance, or decommissioning activity that would disturb surface soils and shall ensure all personnel working on-site receive the training, including construction contractors and personnel that will operate and maintain project facilities. The training program shall be recorded and subsequently shown to any project personnel who are not able to attend the initial training program.

i. Unless otherwise required pursuant to a Habitat Conservation Plan and/or Incidental Take Permit obtained by the Applicant for the Project, if CTS (alive or dead) is encountered (i.e., observed, killed, or otherwise taken) at any location within the Shiloh project area during the project lifetime:

i. All surface disturbing activities and vehicular traffic on private, Project access roads within potential CTS habitat affected by the encounter shall immediately cease. Potential CTS habitat affected by the encounter shall consist of all ponds or vernal pools within 1.24 miles of the encounter and all upland habitat within 1.24 miles of these ponds.

ii. The Applicant shall notify Solano County, CDFG, and the USFWS immediately by telephone and by letter within one working day.

iii. Work within affected areas shall not commence or resume, as applicable, until Solano County, in consultation with the USFWS and the CDFG, determines when and where work can begin or re-commence, as applicable.

iv. Project personnel shall not move the CTS encountered unless instructed to do so by the USFWS and CDFG.

v. If instructed to move the CTS by the USFWS and CDFG, a USFWS-approved and permitted biologist (i.e., has a Section 10(a)(1)(A) handler's permit for CTS)

shall carefully relocate the CTS by hand to a suitable, nearby active burrow system (e.g., a nearby active Botta pocket gopher or California ground squirrel burrow) that is located outside the area where the animal could be injured or killed by project activities.

vi. The rescued CTS shall be monitored by the Applicant's qualified CTS biologist until it enters the burrow.

j. To eliminate the attraction of CTS predators, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in animal-proof containers and removed from the project area at the end of each working week.

k. The Applicant shall prohibit project personnel from bringing their dog, cat, or other pet that could harm CTS into the project area.

l. Best Management Practices (BMPs; required as part of the project SWPPP) shall be implemented to prevent sediment from entering suitable aquatic CTS habitat (vernal pool) at the project site, including but not limited to, silt fencing, sterile hay bales and temporary sediment disposal. Tightly woven fiber netting or other effective erosion control material shall be used to control erosion at the Project. The Applicant shall avoid the use of plastic mono-filament netting in sediment control measures that could pose an entrapment hazard to CTS.

m. Unless otherwise required pursuant to a Habitat Conservation Plan and/or Incidental Take Permit obtained by the Applicant for the Project, to compensate for the permanent and temporary loss of CTS upland habitat from the Project, the Applicant shall provide off-site preservation of suitable CTS habitat with a confirmed and viable population of CTS. For impacts located within 1.24 miles of suitable aquatic habitat for CTS, the Applicant will purchase conservation credits at ratios of 1.1:1 for temporary annual grassland disturbance impacts, 0.1:1 for permanent agricultural land disturbance impacts, and 3:1 for permanent grassland disturbance impacts. The credits shall be purchased from an off-site USFWS- and CDFG-approved conservation bank. The number of conservation credits to be purchased will be assessed after consultation with Solano County and the USFWS and CDFG, pending 1) the final placement of Project infrastructure and actual suitable habitat acreage removed and 2) if applicable, USFWS approval of the Shiloh IV Habitat Conservation Plan (HCP) for CTS (currently in preparation by the Applicant) and/or an Incidental Take Permit issued by CDFG for the Project. The purchase shall be made by the Applicant at least five (5) business days prior to the date of initial ground-breaking activities.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The 5 seasonal ponds within the Shiloh IV project area, as well as the 27 ponds and 2 vernal pools outside of but within 1.24 miles of the project boundary and the optional collection line, are potential habitat for vernal pool tadpole shrimp. These ponds and vernal pools have inconsistent hydrology and are considered low quality potential habitat for special-status invertebrate species. Indirect impacts would include Project construction-related dust or accidental spills of hazardous materials possibly smothering invertebrates or introducing contaminants into the vernal pools or seasonal ponds. Mitigation Measure BIO-4 requires the Applicant to locate project activities at least 250 feet away from ponds and vernal pools. In addition, Solano County would require the Applicant to implement Mitigation Measures AIR-2 (Fugitive Dust Controls), HAZ-1A (Proper Use and Storage of Materials), and HAZ-1B (Waste Management Plan) to reduce potential impacts from dust emissions and accidental spills of hazardous materials. With implementation of these measures, potential impacts to special-status invertebrate species would be less than significant.

While the project area contains potential habitat for the northwestern pond turtle and giant garter snake, the nearest record of northwestern pond turtle occurrence is over four miles from suitable habitat within the project area. Further, the project area lies outside the current known range of the giant garter snake. The Project is unlikely to impact special-status reptile species.

Although it contains potential habitat for the California red-legged frog, the project area lies outside the known range of this species and is therefore unlikely to result in significant impacts. The project area also contains potential habitat for the CTS. Due to the confirmed presence of CTS in the Project vicinity, the Applicant is assuming presence of CTS in the project area and has commenced consultation with the USFWS and CDFG regarding authorization for the unlikely chance take of CTS does occur, including preparation of a federal Habitat Conservation Plan. Although CTS may travel long distances between breeding ponds and their upland refugia, individuals typically remain close to their associated breeding ponds.

Since salamanders use small mammal burrows and soil crevices for shelter and aestivation outside of their breeding season, CTS in terrestrial habitat may become entombed under soil, crushed or damaged by equipment or personnel, thereby resulting in harm or mortality to individuals. Adverse effects would be partially minimized by preconstruction surveys, educating construction personnel about the presence of CTS,

their habitat, species identification, regulatory laws including the federal and state Endangered Species Act, avoidance measures, and requiring an approved biologist to be present to monitor project activities within or adjacent to suitable habitat. Implementation of Mitigation Measure BIO-4 will reduce impacts to the CTS to levels that are less than significant.

Impact BIO-5: Temporary Impacts on Nesting Birds

Mitigation Measure BIO-5A: Avoidance of Avian Nests. If construction activities are scheduled to occur during the breeding season (February 1 through August 31), the Applicant's qualified wildlife biologist shall conduct pre-construction surveys of all potential suitable nesting habitat within 0.25 miles of active construction areas, including trees, shrubs, grasslands and wetland vegetation. The qualified wildlife biologist shall determine the timing of pre-construction surveys based on the time of year and habitats that are present, and shall conduct the surveys no more than 30 days prior to construction.

a. If active raptor or owl nests are found, the Applicant shall maintain a 500-foot no-disturbance setback zone around active nests during the breeding season or until it is determined that young have fledged. The Applicant shall also maintain a 500-foot no-disturbance setback zone around the historic golden eagle nest in accordance with Mitigation Measure BIO-8B (On-site Mitigation).

b. If active Swainson's hawk nests are found, the Applicant shall maintain a no-disturbance buffer zone around the active nests during the breeding season or until it is determined that the young have fledged. The no-disturbance buffer zone from active Swainson's hawk nests shall be 0.25 miles, or as may otherwise be determined by the County, in consultation with the USFWS and CDFG as appropriate.

c. If active nests for other special-status bird species are found, the Applicant shall maintain a 250-foot no-disturbance setback zone around active nests during the breeding season or until it is determined that young have fledged.

d. The Applicant shall identify the location of all active raptor, owl, and other special-status bird nests and the appropriate corresponding nest setback area (e.g., 250 feet, 500 feet, or 0.25 miles) on all project construction plans (e.g., grading and improvement plans).

e. Prior to construction, assign a qualified biologist to fence or flag all active nest setback areas.

f. If pre-construction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation shall be required.

   i. Trees and shrubs that have been determined to be unoccupied by special-status birds or that are located more than 500 feet from active nests (and 0.25 miles from active Swainson's hawk nests) may be removed, unless otherwise restricted.

   ii. If the active nest(s) is found in an area where ground disturbance is to occur, the Applicant shall avoid the area by delaying nearby ground disturbance until the birds have fledged, or shall reroute the project component to avoid the area.

g. If construction is scheduled to occur during the non-nesting season, then no nesting bird surveys shall be required before the start of construction activity, except for provisions for surveys for western burrowing owls outside the nesting season (September 1 – January 31), as specified in Mitigation Measure BIO-5b.

Mitigation Measure BIO-5B: Habitat Avoidance – Western Burrowing Owl. The following guidelines adapted from the CDFG Staff Report on Burrowing Owl Mitigation (CDFG 1995) shall be implemented by the Applicant:

a. Pre-construction western burrowing owl surveys shall be conducted in all areas that may provide suitable nesting habitat according to CDFG (1995) guidelines.

   i. No more than 30 days before construction, a habitat survey including documentation of burrows and western burrowing owls shall be conducted by a qualified wildlife biologist within 500 feet of the construction area in areas suitable for western burrowing owls.

   ii. The survey shall conform to the protocol described by the California Burrowing Owl Consortium, including up to four surveys on different dates if there are suitable burrows present. The CDFG shall be consulted by the Applicant prior to survey initiation to ensure the most current pre-construction survey methodologies are utilized.

   iii. The CDFG defines impacts as disturbance within approximately 160 feet of occupied burrows during the non-breeding season of September 1 through January 31, or within approximately 250 feet during the breeding season of February 1 through August 31. Even when these buffer distances are maintained, the alteration of breeding and behavioral patterns of western burrowing owls during construction activities shall be considered adverse disturbance to the owls, as determined by the Applicant's on-site biologist and the Solano County biological monitor.

b. The Applicant shall avoid disturbing active western burrowing owl nests and occupied nesting burrows and shall implement standard CDFG mitigation guidelines.

c. If, as determined by the Solano County biological monitor, construction activities will not adversely affect occupied burrows or disrupt breeding behavior, construction may proceed without any restriction or mitigation measures for western burrowing owls.

d. If, as determined by the Solano County biological monitor, in consultation with CDFG, construction could adversely affect occupied burrows during the September 1 through January 31 non-breeding season, the subject owls may be passively relocated from the occupied burrow(s) using one-way doors, according to CDFG guidelines, using the following measures:

    i. There shall be at least two unoccupied burrows suitable for western burrowing owl within 300 feet of the occupied burrow before one-way doors are installed in the occupied burrow.

    ii. The unoccupied burrows shall also be located at least 160 feet from construction activities and can be natural burrows or artificial burrows constructed according to current design specifications.

    iii. If artificial burrows are created, these burrows shall be in place at least one week before one-way doors are installed on the currently occupied burrows.

    iv. One-way doors must be in place for a minimum of 48 hours to ensure that owls have left the burrow before the burrow is excavated.

    v. Mitigation for the loss of occupied habitat, as determined by the Solano County Department of Resource Management, based on the recommendations of the Solano County biological monitor, shall be provided by preservation of 6.5 acres of suitable foraging and nesting habitat contiguous with occupied burrow sites per breeding pair or single bird. Suitable preservation habitat is defined as those natural and disturbed vegetated areas (e.g. grasslands, scrublands, and tree and shrub areas with less than 30% ground cover) that have existing natural and artificial ground burrows that can support western burrowing owl.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Project construction activities would produce worker, vehicle, and equipment noise and vibrations that could disturb the breeding behavior and/or active nests of birds that are known or have the potential to nest in the project area, potentially leading to nest abandonment and reproductive failure. The Applicant has designed the project to reduce and avoid nesting habitats where feasible, however, impacts to nesting birds are considered a potentially significant impact.

The majority of Shiloh IV project construction activities and disturbance would occur in agricultural lands that are routinely disturbed by dry-land farming and livestock grazing operations. This ongoing disturbance to the landscape from agricultural operations generally discourages ground nesting birds from becoming established and eliminates burrows made by ground squirrels and other animals that could provide habitat for the special-status western burrowing owl. Therefore, project construction activities in agricultural lands are unlikely to affect ground-nesting bird species.

The Shiloh IV project area contains 69 acres of annual grasslands that could provide suitable nesting habitat for most common bird species as well as special-status ground nesting species. The Applicant has designed the project to reduce and avoid potential impacts to grassland nesting habitat by locating Project turbines, access roads, collector lines, etc. outside of grassland areas to the extent feasible. As described under Impact BIO-1, grassland disturbance is currently limited to less than one acre of temporary disturbance associated with collection line trenching.

Trees and tree groves in and near the project area provide suitable nesting habitat for many common and special-status species, particularly raptors and owls, including golden eagle and Swainson's hawk. However, according to the 2007 raptor nesting survey performed throughout the Montezuma Hills region (including a five-mile buffer) , the Project area contained only common raptor and owl species. The 2007 nesting survey also observed 33 special status bird nests, none of which were located in the Project area.

The Applicant has designed the Project to avoid potential impacts to tree nesting habitat, and Mitigation Measure Bio 5A, Avoid Bird Nests, requires the Applicant to perform pre-construction nesting bird surveys to avoid potential impacts to nesting birds and establish appropriate setback zones to avoid potential impacts to nesting birds in these locations. With the exception of proposed project components found in table 8.4-2 (Revised) of the DEIR, the Applicant has also located all construction activities at least 420 feet from aquatic resource habitats, which could provide suitable nesting habitat for ground-nesting birds, waterbirds, and waterfowl. Implementation of Mitigation

Measures BIO-5A and BIO-5B will reduce temporary impacts to nesting birds to levels that are less than significant.

Impact BIO-6: Displacement of Waterfowl and Other Water Birds Using the Project Area or Moving to and from the Suisun Marsh

Mitigation Measures: BIO-2A, BIO-2B

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The turbines installed as part of the Project will reduce the open air space available for birds moving to and from the extensive marshlands east and south of the Project. Recent studies have found that most impacts to waterfowl and other water birds have occurred within 100 to 200 meters of the wind turbines. A portion of the western boundary of the Shiloh IV project area, while separated by Collinsville Road, is adjacent to the Suisun Marsh Secondary Management Area; however, the Applicant is proposing a reduced turbine setback along Collinsville road of a minimum of 723 feet. The Project, therefore, is not expected to substantially alter bird flight patterns within the Montezuma Hills study area.

Surveys conducted in the area indicated that migrating waterfowl fly mainly over the Sacramento River rather than the Montezuma Hills. In addition, waterfowl passing through on long migrations are shown to migrate at elevations generally higher than 1,000 feet, avoiding the turbines by several hundred feet. Therefore, the Project is not expected to result in a substantial alteration of bird flight patterns within the Montezuma Hills study area.

While waterfowl numbers have been declining in the Suisun Marsh area, the decline in waterfowl usage appears to be related to other factors, including a significant drop in the global and national populations of waterfowl over the past 50 years (a decline that long predates the erection of wind turbines) and the decline in attractiveness of the Suisun Marsh as a habitat in relation to other nearby habitats

With the implementation of previously described aquatic resource avoidance measures (BIO-2A and BIO-2B), the Project is unlikely to significantly impact bird usage of aquatic resources or wetland habitats within the Project area or the Suisun Marsh, or bird migration from the Project area to and from the Suisun Marsh. These potential impacts will be less than significant, and no additional mitigation measures are required.

Impact BIO-7: Impacts on Raptors, Other Avian Species, and Bats from Overhead Wires

Mitigation Measure BIO-7: Design Specifications for Overhead Power Lines. Prior to project operation, the Applicant shall implement the following design elements for the limited overhead power lines:

a. For any power collection system utility lines that are installed overhead at limited wetland and stream crossings where the use of HDD is infeasible and as approved by Solano County, as applicable:

   i. Avian safe practices, as outlined in Suggested Practices for Avian Protection on Power Lines (APLIC 2006) shall be employed during construction;

   ii. All jumper wires shall be insulated (5-kV minimum rating and preferably 10-kV to 15-kV);

   iii. All exposed terminals at the substation (e.g., pot heads, lightning arresters, and transformer bushings) shall be covered by wildlife boots or other insulating materials;

   iv. Non-conductive materials (e.g., fiberglass and wood) shall be used instead of the straight, aluminum-type combination arms on riser poles;

   v. Energized wires shall be placed a safe distance apart: 60 inches for cross arm configuration, 55 inches for armless configuration; the distance between grounded hardware and any energized phase conductor shall be a minimum of 60 inches apart;

   vi. No cut-outs or riser poles shall be used;

   vii. Jumper leads shall be oriented in a vertical configuration to discourage bird perching;

   viii. Perch and nest discouragers shall be installed on crossarms and on top of poles;

   ix. Phase conductors shall be suspended on pole top and cross arms;

   x. Bonding of pole top devices mounted on non-conductive arms shall be done with insulated wire;

   xi. A minimum conductor wire size of 4/0 shall be used to increase the visibility of the wire;

xii. Except for angle poles of overhead lines, none of the installed facilities shall require, or otherwise involve, the use of guy wires. All turbines and permanent meteorological towers shall be free standing;

xiii. Post-construction monitoring activities consistent with those detailed in Mitigation Measure BIO-8A shall be conducted for any overhead lines not owned by PG&E and regulated by the CPUC. If post-construction monitoring indicates that any such new installed overhead lines are having significant impacts on raptor species, bird diverters shall be installed to the extent required by Solano County, based on consultation with CDFG and USFWS.

b. The Applicant shall ensure that the section of overhead 230-kV transmission line be installed in conformance with APLIC 2006 suggested practices. The Applicant shall coordinate with PG&E to ensure this measure is implemented.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The impact on birds from power lines will be extremely low for the Project, given that utility lines will primarily be installed underground, the Project area is not located in a major avian migration corridor, and standard design measures that reduce potential impacts by power lines will be employed. Although impacts on raptors from these overhead lines are expected to be minor given the limited extent of overhead lines for the Project, any impacts on golden eagles or raptors would be significant. Mitigation Measure BIO-8 will reduce these impacts to a level that is less than significant.

Impact BIO-8: Direct Mortality of Raptors, Other Avian Species, and Bats

Mitigation Measure BIO-8A: Bird and Bat Mortality Monitoring
The Applicant shall conduct annual monitoring of bird and bat mortality in the project area, as follows:

a. Qualified ornithologists shall conduct annual bird and bat mortality monitoring throughout the project area including where any new overhead transmission lines have been installed to determine avian and bat mortality rates and the causes of mortality associated with the project installations.

b. The monitor shall collect sufficient information to allow evaluation of turbine design characteristics and location effects that contribute to mortality. The species, number, location and distance of dead birds relative to turbine location, availability of raptor prey species, and cause of bird and bat mortalities shall be noted. All results shall be provided to the Wildlife Response and Reporting System database, as maintained by the Altamont Infrastructure Company (AIC), 6185 Industrial Way, Livermore, CA, 94550, or other repository approved by Solano County.

c. Monitoring shall follow standardized guidelines outlined by California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (CEC and CDFG 2007) and, as required by the County, shall be conducted for three years following the first delivery of power and include, but not be limited to, the following unless otherwise determined appropriate by the Solano County Avian Technical Advisory Committee (TAC):

    h. Search radius shall be 100 meters to account for terrain and turbine height;

    ii. Searcher efficiency trials shall be conducted for four seasons and be sufficient to analyze for changes in vegetative covers.

    iii. A minimum of approximately 50 percent of the Project's wind turbines shall be surveyed each year of required monitoring.

    iv. Carcass searches for birds and bats shall occur weekly. In addition, the Applicant shall conduct daily carcass searches for a subset of the Project's turbines (minimum ten percent) for one week during each season of the first year of post-construction monitoring (i.e., one week each during the spring, summer, fall and winter for a total of four weeks) instead of the normal weekly searches during those weeks. The Applicant shall include the results of these intensive survey periods in its first annual report to the TAC in order to allow the TAC to compare and/or validate the results of the Applicant's scavenger removal trials that were conducted prior to the start of post-construction monitoring.

d. The Applicant shall contribute and participate in the efforts of the Solano County Avian TAC to develop mitigation measures to lessen potential impacts on raptors as a result of wind turbine generator operation. The TAC is an advisory committee to the County, composed of biologists from the CDFG, the USFWS, Solano County,

representatives from local wind facility developers, a local landowner/farmer, a conservation organization and or golden eagle expert, and others. The Applicant shall prepare and submit annual reports from monitoring efforts to the USFWS, CDFG, Solano County and the Solano County Avian TAC within 90 days after the end of each calendar year, unless additional time has been justified by the Applicant and is acceptable to the Solano County Department of Resource Management. Data collected during the monitoring program shall be submitted to the Biogeographic Information and Observation System Program, in accordance with California Energy Commission Guidelines.

e. If a carcass with a band is found in the project area, the Applicant shall promptly report the banding information to the USFWS Bird Banding Laboratory and shall coordinate with the Laboratory to include any information provided by the USFWS and pertinent to avian mortality at the project site, if any, in the annual monitoring reports.

f. After three years of post-construction monitoring data have been obtained, the County will review the data and, in consultation with the USFWS and the CDFG, determine which, if any, specific turbines generate disproportionately high levels of avian mortalities (based on evidence of statistically significant higher levels of mortality relative to other turbines). If specific turbines are found to result in disproportionately high avian mortalities, the Applicant shall consult with the County to evaluate any feasible measures that can be implemented at the discretion of the County to reduce or avoid mortalities at those specific turbines.

g. If unauthorized take of a federal or state threatened or endangered avian or bat species occurs during project operation, the Applicant shall immediately notify the appropriate agency (CDFG and/or USFWS) by phone. The Applicant shall then submit a written finding to the appropriate agency and the County within two calendar days that describes the date, time, location, species and, if possible, cause of unauthorized take. The Applicant shall notify the County within three calendar days of the receipt of any USFWS and/or CDFG required or recommended actions resulting from the unauthorized take, including whether an incidental take permit and/or additional requirements is deemed necessary by either agency.

Mitigation Measure BIO-8B: On-site Mitigation

The Applicant shall minimize and avoid potential bird and bat collision risks as follows:

a. Prior to construction, the Applicant shall have a qualified biologist or ornithologist prepare and submit to the Solano County Department of Resource Management an Avian and Bat Mitigation Plan (ABMP). The ABMP shall describe the specific pre-construction siting and design, construction risk reduction, and operations and

monitoring measures the Applicant will implement to avoid or minimize effects on birds and bats, as enumerated in sections b. thru d. below.

b. Pre-Construction Siting and Design Measures:

   i. Final planned turbine locations shall avoid features of the landscape known to attract birds and bats, such as ridgelines, areas with high concentrations of aquatic resources, and other areas that provide habitat for prey species such as insects and small mammals, to the extent feasible.

   ii. The Applicant shall re-use as many existing enXco V access roads as possible in order to minimize disturbance and avoid unnecessary vegetation/habitat removal.

   iii. The Applicant shall use non-lattice meteorological towers in the project area in order to reduce perching habitat for birds.

   iv. The Applicant shall conduct pre-construction nesting surveys and identify the location of all active nests and active nest setback zones as required by Mitigation Measure BIO-5A (Avoid Avian Nests) and Mitigation Measure BIO-5B (Habitat Avoidance – Western Burrowing Owl) on project construction plans (e.g., grading and improvement plans).

c. Construction Risk Reduction Measures:

   i. During construction, the Applicant shall implement appropriate nest setbacks (e.g., 250 feet, 500 feet, or 0.25 miles) per Mitigation Measure BIO-5A (Avoid Avian Nests) and Mitigation Measure BIO-5B (Habitat Avoidance – Western Burrowing Owl).

   ii. The Applicant shall avoid creating rock and other debris piles that may provide prey habitat and remove any such piles as soon as possible.

   iii. The Applicant shall feather road edges and replace topsoil level with the road to allow cultivation to resume as close as possible to the roadbed.

   iv. Where it is not feasible to re-vegetate areas in accordance with Mitigation Measures AG-5 (Restore and Decompact Temporarily Disturbed Agricultural Areas), BIO-1A and BIO-1B (Minimize Temporary Disturbance and Restore Disturbed Habitats within Project Area),compact non-vegetated areas to discourage new rodent burrows.

d. Project Operation and Management Measures:

i. The Applicant shall move stored parts and equipment away from wind turbines in order to reduce potential prey habitat.

ii. The Applicant shall implement overhead power line design specifications in accordance with Mitigation Measure BIO-7, Design Specifications for Overhead Power Lines.

iii. The Applicant shall conduct bird and bat mortality monitoring in accordance with Mitigation Measure BIO-8A (Bird and Bat Morality Monitoring). In addition, the Applicant shall prepare and post a data sheet in the Project's Operations and Maintenance facility that describes how project personnel can recognize an injured or dead bat and bird and the procedures project personnel shall take in the event an injured or dead bat and bird are discovered on-site, including whom to notify and what actions shall be taken. Bird/bat injuries and fatalities, and the responses thereto, shall be reported at least once annually to the Wildlife Response and Reporting System database, as maintained by the Altamont Infrastructure Company (AIC), 6185 Industrial Way, Livermore, CA 94550, or other repository approved by Solano County. The Applicant shall also train project personnel in these procedures.

iv. The Applicant shall capture and transport injured wildlife found on-site to a state-licensed facility for care and treatment such as, but not limited to, the Lindsay Wildlife Museum or the Suisun Wildlife Rehabilitation Center.

Mitigation Measure BIO-8C: Off-site Mitigation and Replacement of Disturbed Aerial Habitat

The Project would result in the permanent loss of up to 84 acres of aerial habitat. Additionally, fragmentation of the aerial habitat could negatively impact common and special-status avian and bat species. Thus, the impacts due to loss of aerial habitat within and outside the project area are considered significant.

To compensate for permanent loss of aerial habitat and for ongoing impacts on avian and bat species, the Applicant shall acquire replacement mitigation habitat off-site at a ratio of 1:1 acreage compensation calculated from the total rotor swept area representing aerial habitat within the completed project. These lands will consist of any combination of non-native grassland, grazing land, mixed grain or cropland (excluding orchard or vineyard land), or open oak woodland. The off-site habitat mitigation area would be preserved in perpetuity.

The Applicant shall provide off-site mitigation by acquiring and preserving up to 84 acres of land, based on total rotor swept area for the 50 proposed Project wind turbines,

suitable for impacted avian and bat species. The total number of mitigation acres required shall be determined based on the final mix of the two turbine models ultimately selected for the project. If fewer turbines are installed, the amount of required acreage shall be proportionately reduced. Off-site conservation land shall be preserved in fee title and/or easement in accordance with the following:

a. Prior to the issuance of the first building permit or grading permit for the Project, whichever occurs first, the Applicant shall establish an irrevocable letter of credit in favor of the County of Solano from a reputable bank with a branch in the United States, or a bond as approved by the County, in an amount approved by the County to ensure compliance with the conservation land or easement provisions described in paragraphs b–d below. The letter of credit or bond shall not be required if at least one of the measures described in paragraphs b. through d. below has been fulfilled to the satisfaction of the County prior to issuance of the first grading or building permit, whichever occurs first.

b. Off-site conservation land or easement: Within two years following the first delivery of power, the Applicant shall purchase and record up to 84 acres of off-site conservation land in fee-title and/or easement for open space suitable as breeding and foraging habitat for raptors impacted by the Project, such as the golden eagle and red-tailed hawk, as follows:

    i. The County, in consultation with USFWS and the CDFG, shall approve the location of the conservation land or easement, which approval shall not be unreasonably withheld.

    ii. If the Applicant requests timely approval of the location of the conservation land or easement, and approval is not granted within the two-year period, the Applicant shall purchase and record the land or easement within a reasonable time after the County gives its approval and shall be deemed to have complied with this two-year requirement. The conservation land or easement shall meet the following requirements:

        a) The conserved area shall be up to 84 acres in size, equivalent to the total rotor swept area for the 50 proposed Project turbines, and shall be located on land in Solano County providing habitat similar to the project area but shall be outside the wind resource area.

        b) The conserved land or easement site shall be dominated by natural vegetation, agricultural uses or a combination of both. The primary purpose of this land or easement will be to provide conservation lands for raptor species that could be impacted by the Project.

c) The conserved lands shall provide breeding opportunities in an effort to offset raptor mortality associated with operation of the Project. The main species anticipated to be impacted by the Project are raptor species such as red-tailed hawk and American kestrel, although the easement could also provide habitat for other classes of birds such as ground-nesting songbirds. Types of habitat enhancement measures on the easement will be weighted according to the relative abundance of birds impacted by the Project, the species-specific needs of those species, and the type and quality of habitat that may already exist on the conserved land. A number of management measures and enhancements shall be provided (if such features are not already present) to provide suitable foraging and nesting habitat on the easement.

d) The conservation easement shall be recorded, shall run with the land in perpetuity, and shall list and prohibit activities inconsistent with the purpose of supporting avian foraging and breeding opportunities. If the land is acquired in fee-title and conveyed to a land trust or similar entity, an irrevocable deed restriction shall be recorded on the property to ensure that the property permanently remains in conservation regardless of ownership and contains the same restrictions as a conservation easement.

iii. The Applicant shall establish a non-wasting funding mechanism to fund the maintenance, management and monitoring of the conserved area. Estimated costs shall be established using a PAR-type analysis. The analysis and funding mechanism shall require approval by the County, in consultation with the resource agencies, prior to recordation of the conservation easement. Management activities or restrictions in the conservation easement shall include:

a) Provisions for suitable foraging habitat by maintaining or enhancing natural areas, particularly grasslands and seasonal wetlands, or by maintaining compatible agricultural crops and practices. Suitable crop types for foraging raptors include those with low-lying vegetation such as alfalfa and other hays, and various row and grain crops. Unsuitable crop types that would be restricted in the easement shall include those that do not provide sufficient accessibility or have low prey densities, such as orchards and vineyards.

b) Maintaining or enhancing nesting opportunities by protecting trees or planting trees that are suitable for raptor nesting, including native valley oaks and cottonwood trees. The installation of artificial nesting structures would be acceptable only in combination with the planting and maintenance of live trees.

iv. Within three years following the first delivery of power, the Applicant's qualified wildlife biologist shall undertake breeding habitat enhancement measures, as

determined in consultation with Solano County, on the conserved property, which shall include the following:

a) Prior to recording the conservation easement, the Applicant shall submit to Solano County an open space and habitat management plan for the conserved area, which shall be prepared by a qualified wildlife biologist. Approval of this plan by Solano County, in consultation with the resource agencies, shall be required prior to recordation of the easement.

b) Types of enhancement measures on the easement, if required by Solano County, will be weighted according to the relative abundance of birds impacted by the Project and the species-specific needs of those species but could include the placement of nesting substrate for golden eagles, red-tailed hawks, and American kestrels (nesting boxes, trees, perches, and/or other features). The use of artificial nesting structures would be acceptable only in combination with the planting and maintenance of live trees. In determining which type of nesting enhancements are appropriate for the Project, Solano County may consider measures the Applicant has committed to implement as part of a federal Habitat Conservation Plan or other document (e.g., Avian and Bat Protection Plan) that the USFWS has reviewed and determined in writing to provide an appropriate management approach for avoiding and minimizing impacts to birds.

c) A number of management measures and enhancements shall be provided (if such features are not already present) to provide suitable foraging and nesting habitat on the easement.

d) Prior to recording the conservation easement or conveying the Project in fee simple, the Applicant shall designate, for Solano County's approval, a public agency or non-profit entity, or a designated representative, to manage the conserved area.

v. The Applicant shall be responsible for all mitigation costs including habitat enhancements (if required by Solano County), preparation and implementation of the open space management plan, and long-term management of the conservation area.

c. In-lieu fee: As an alternate to the off-site conservation easement requirements described in section b, above, the Applicant may contribute an in-lieu fee to the Solano Land Trust or other conservation entity approved by Solano County in consultation with CDFG (hereinafter "Trust") in an amount and according to the terms as approved by Solano County in consultation with the CDFG for the establishment of up to 84 acres of permanent conservation land or easement in

Solano County to replace lost aerial habitat. This fee shall be used by the Trust for the sole purpose of purchasing, recording, enhancing, maintaining and preserving the conserved land in fee-title or easement that provides protected breeding and foraging habitat for the raptors and other avian species impacted by the Project. The requirements for the in-lieu fee alternative shall include the following:

i. The amount of the in-lieu fee shall require approval by the County, in consultation with the CDFG, which approval shall not be unreasonably withheld and shall be based on the Trust's costs for the following:

   a) Acquisition of up to 84 acres of conservation land in fee-title and/or easement for open space and habitat suitable as breeding and foraging for raptors such as the golden eagle, red-tailed hawk and other guilds of birds impacted by the Project; and

   b) Reasonable administrative and other overhead costs by the Trust to acquire the land and/or easement; and

   c) The development, approval, and implementation of the required habitat enhancement and management plan, as required by Solano County in consultation with the CDFG; and

   d) The perpetual maintenance, management, and monitoring of the conserved land and habitat, based on a PAR-type analysis.

ii. The Applicant shall furnish the entire in-lieu fee, as approved by Solano County, to the Trust, and a receipt to this effect shall be provided to Solano County within two years following the first delivery of power.

iii. The requirements for the conserved land shall be based on a written Agreement between the Trust and Solano County, shall be binding on the Trust and shall include the following:

   a) The size of conservation land and/or easement shall be up to 84 acres in size, and shall be located within Solano County but outside the wind resource area. The location shall require County approval in consultation with the CDFG, which approval shall not be unreasonably withheld, prior to acquisition.

   b) The conserved land shall provide habitat similar to the project area, dominated by natural vegetation, agricultural uses, or a combination of both. The land shall also provide, to the maximum extent feasible, foraging and breeding opportunities for the species most affected by the Project, including raptors such as the golden eagle, red-tailed hawk and American kestrel.

Habitat for other species such as ground-nesting songbirds is also appropriate.

c) The land and/or easement shall be held, maintained, and protected in perpetuity for the conservation purposes prescribed in this mitigation measure. If the land is acquired in fee-title, an irrevocable deed restriction shall be recorded on the property to ensure that the property permanently remains in conservation regardless of ownership.

d) The deed restriction or conservation easement shall be recorded, shall run with the land in perpetuity, and shall list and prohibit activities inconsistent with the purpose of supporting raptor and other avian foraging and breeding opportunities.

e) Required enhancements, maintenance, management, and monitoring of the easement shall be in accordance with the habitat enhancement and management plan as prepared by the Trust and approved by Solano County in accordance with paragraph iv, below.

f) The conservation land and/or easement shall be purchased, and the deed restriction or easement shall be recorded, within 2 years following the first delivery of power, and the documentation to this effect shall be furnished to Solano County.

g) The in-lieu fee furnished by the Applicant shall be held in an interest-bearing or other appropriate investment account until expended for purposes of the land and/or easement acquisition, recordation, maintenance, monitoring and other measures under the terms of the Agreement.

h) All in-lieu fees furnished by the Applicant shall be used exclusively for the conservation land or easement associated with the Project only.

iv. The Trust shall prepare and submit to Solano County an open space and habitat management plan for the conserved area, which shall be prepared by a qualified wildlife biologist. Approval of this plan by Solano County, in consultation with the CDFG, shall be required prior to implementation. The open space and habitat management plan shall include the following:

a) Foraging and breeding habitat protection and maintenance measures, as well as land management measures, including restrictions in the conserved area.

b) Provisions for suitable foraging habitat by maintaining or enhancing natural areas, particularly grasslands and seasonal wetlands; or by maintaining

compatible agricultural crops and practices. Suitable crop types for foraging raptors include those with low-lying vegetation such as alfalfa and other hays, and various row and grain crops. Unsuitable crop types that would be restricted in the easement shall include those that do not provide sufficient accessibility or have low prey densities, such as orchards and vineyards.

c) Management measures that include, but are not be limited to, maintenance and protection of trees suitable for raptor nesting, including valley oaks and other native trees, appropriate grazing management practices, vegetation management, and establishment of land use restrictions and activities that may be inconsistent with the purposes of the conserved area.

d) Any required enhancements in the conservation easement will be weighted according to the relative abundance of birds impacted by the Project and the species-specific needs of those species and the type and quality of habitat that may already exist on the conserved land. At a minimum, the placement of nesting substrate for golden eagles, red-tailed hawks and American kestrels (nesting boxes, trees, perches, and/or other natural features) will be necessary, unless such habitat already exists, as determined by Solano County. The use of artificial nesting structures would be acceptable only in combination with the planting and maintenance of live trees. In determining which type of nesting enhancements are appropriate for the Project, Solano County may consider measures the Applicant has committed to implement as part of a federal Habitat Conservation Plan or other document (e.g., Avian and Bat Protection Plan) that the USFWS has reviewed and determined in writing to provide an appropriate management approach for avoiding and minimizing impacts to birds.

e) Habitat enhancements (if required by Solano County) shall be fully undertaken by the Trust within one year following the acquisition of the conservation land or easement by the Trust.

d. Mitigation bank credits: As an alternate to the off site conservation requirements described in sections b and c, above, the Applicant may purchase Swainson's hawk or other mitigation credits approved by Solano County, in consultation with CDFG for the benefit of the species of raptors impacted by the Project, equivalent to a total of up to 84 acres, based on total rotor swept area for the 50 project turbines, of established conservation land from a conservation bank with appropriate raptor habitat in Solano County, as approved by Solano County in consultation with the CDFG. The purchase of conservation easement credits shall comply with the following:

i. Full purchase of all required credits shall be completed within two years following the first delivery of power, and a receipt to this effect shall be furnished to Solano County.

ii. The credits shall be equivalent to the protection of up to 84 acres of similar habitat as the project area, dominated by natural vegetation, agricultural lands or a combination of both. The conserved land shall further provide, to the maximum extent feasible, foraging and breeding opportunities for the avian species most affected by the Project, including red-tailed hawk and American kestrel. Habitat for other species such as ground-nesting songbirds is also appropriate.

iii. Purchase of the credits shall include costs for the design, installation and perpetual maintenance of nesting enhancements on the conservation bank property (if nesting opportunities are not already present), as required by the County in consultation with the CDFG, and in coordination with the conservation bank operator. The nesting enhancement requirements shall include the following:

a) The enhancements to the conservation bank will be weighted according to the relative abundance of birds impacted by the Project and the species-specific needs of those species but shall include, at a minimum, the placement of nesting substrate for golden eagles, red-tailed hawks and American kestrels (nesting boxes, trees, perches, and/or other natural features), as determined by the County. The use of artificial nesting structures would be acceptable only in combination with the planting of live trees. All nesting enhancement measures shall be specified in the sales Agreement between the bank operator and the Applicant. In determining which type of nesting enhancements are appropriate for the Project, Solano County may consider measures the Applicant has committed to implement as part of a federal Habitat Conservation Plan or other document (e.g., Avian and Bat Protection Plan) that the USFWS has reviewed and determined in writing to provide an appropriate management approach for avoiding and minimizing impacts to birds.

b) The quantity of nesting enhancements shall be proportionate to the area of the required off site conservation easement.

c) Nesting enhancements, if required by Solano County, shall be completed by the bank operator within one year of the purchase of mitigation credits by the Applicant, and this shall be specified in the sales agreement between the bank operator and the Applicant.

d) The bank operator shall be responsible for notifying Solano County upon completion of nesting enhancements, which shall be specified in the sales agreement between the bank operator and the Applicant.

iv. The conservation bank operator shall adequately document and report transactions as specifically provided for in their banking agreement with the appropriate resource agencies.

Mitigation Measure BIO-8D: Reimbursement
Upon the first delivery of power, and by the annual anniversary date of this event for each of three consecutive years thereafter, the Applicant shall furnish to the County a project review and monitoring fee, equivalent to two weeks annually of senior planner staff time at the hourly rate for direct staff services according to Solano County Department of Resource Management fee schedule in effect at the time each deposit is required. This planner shall monitor the implementation of the mitigation measures and other conditions of approval required for the Project.

Mitigation Measure BIO-8E: Minimize Impacts to Swainson's Hawk. The Applicant shall minimize potential impacts to Swainson's hawk associated with operation of the Project as follows:

a. A minimum of approximately 50 percent of the Project's wind turbines shall be surveyed each year of required monitoring in accordance with Mitigation Measure BIO-8A.c.

b. Increased carcass searches shall be provided and reported in accordance with Mitigation Measure BIO-8A.c.iv.

c. During Project operations, the training of personnel, establishment of procedures, and actions taken regarding the recording and reporting of injured or dead Swainson's hawks discovered on-site by Project personnel shall comply with the requirements of Mitigation Measure BIO-8B.d.iii.

d. All off-site compensatory mitigation lands required by Mitigation Measure BIO-8C (i.e., up to 84 acres of land, based on the total rotor swept area for 50 proposed turbines), shall be CDFG-certified for mitigating impacts to Swainson's hawk.

e. All off-site compensatory mitigation lands required by Mitigation Measure BIO-8C shall include current or future breeding opportunities (suitable nesting trees) for Swainson's hawk. If the site does not already contain a sufficient number of suitable nesting trees or other breeding opportunities for Swainson's Hawk, as determined by Solano County after reviewing an assessment of these breeding

opportunities by Applicant's biologist, enhancements shall be required in addition to any enhancements required pursuant to Mitigation Measure BIO-8C b.ii.c), b.iv., c.iv.d, and d.iii, and shall be subject to the following requirements, which shall be specified in the purchase documents for the conservation easement, in-lieu fee, or mitigation bank credits as applicable:

i. The number and size of trees to be planted, if necessary, shall be determined by Solano County, which may consult with CDFG, and in coordination with the operator of the conserved land, based on the specific conditions of the conserved land, but shall be sufficient to promote additional Swainson's hawk breeding activity, if such activity has not already been promoted from previous enhancement efforts.

ii. The composition of trees shall consist of a mix of species known to be preferred by Swainson's hawk for use as nest trees, including but not limited to valley oaks (*Quercus lobata*), Fremont's cottonwood (*Poplus fremontii*), willows (*Salix spp.)*, sycamores (*Platanus spp.)*, and walnut (*Juglans spp.)*. This mix shall ensure that nest trees will be available in the short-term (e.g., 5-10 years for cottonwoods and willows) and long term (e.g., valley oak and sycamores).

iii. Nest trees, if necessary, shall be planted as close as possible to the highest quality available foraging habitat available at the conserved land.

iv. Nest tree locations shall be spaced in a manner that maximizes the number of potential nest sites to the greatest extent feasible given the specific conditions of the conserved land.

v. Nest trees shall be planted within one year of the purchase of the conserved easement, in-lieu fee, or mitigation bank credits as applicable. Irrigation and fencing to protect from deer and other herbivores may be needed for the first two years to ensure maximum tree survival. The extent of irrigation and protective fencing necessary to ensure survival of the plantings shall be determined by the operator of the conserved land based on site specific conditions and previous requirements, if applicable.

vi. Nest trees shall be inspected and monitored at least once a year by the operator of the conserved land for a period of three years following planting. The plantings shall be considered successful if 67 percent of the trees survive at the end of three years. The results of monitoring, including a description of any breeding activities observed by the operator of the conserved land in the nest trees, shall

be reported annually by the operator to the regulating agencies (i.e., USFWS, DFG, etc.) and Solano County.

f. For any period the required nest tree monitoring in paragraph e. vi., above, occurs during the post-construction monitoring required by Mitigation Measure BIO-8A, the results of the nest tree monitoring, including a description of any breeding activities observed by the operator of the conserved land in the nest trees, shall additionally be included in the annual avian/bat monitoring report required by Mitigation Measure BIO-8A.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project's impacts on the direct mortality of raptors and other special-status birds will remain significant even after Implementation of MM BIO-8A through MM BIO-8E. The impacts to bat species will be less than significant with implementation of the above mitigation. The Commission finds that the design of the Project reduces the impacts resulting from the Project to the greatest extent possible. This significant and unavoidable impact is overridden by the economic, legal, and social consideration detailed in Part 10.

Rationale for Finding: Based on the worst-case scenario, involving the use of the larger of the two turbine models for the entire project, which has a rotor swept area of 73,126 square feet, the project will result in the permanent loss of up to 84 acres of aerial habitat. The proposed Project will replace approximately 255 older, smaller wind turbines, of which approximately 240 are currently operational, with 50 newer, larger wind turbines. Although the newer, larger turbines are expected to reduce avian mortality, Project operation will nonetheless result in direct mortality to raptors, other avian species, and bats from collision with turbines and could cause significant adverse effects to special-status species from potential population reductions and loss of aerial habitat. Project operation could also interfere with the movement of special-status birds and raptors would therefore result in a potentially significant impact.

More than 90 percent of the Project's estimated avian mortalities are predicted to be common, non-raptor species (e.g., night-migrating songbirds, resident songbirds). However, these fatalities are not likely to significantly impact local and regional population levels of common species. In addition, because of the low number of fatalities recorded at neighboring wind facilities, impacts on game birds are likely to be so small as to be not biologically significant.

Post-construction monitoring in the Montezuma Hills region appears to indicate that most bats impacted in the Montezuma Hills come from populations that are geographically and numerically very large, suggesting that the fatalities are diluted with

respect to local populations. Additionally, those species that have been killed are fairly common, including the listed western red bat. There is no data to support the determination that estimated project mortality rates will pose a significant threat to local or regional bat populations. Thus, it has been determined that the Shiloh IV project's individual impacts on the local bat population will be less than significant with Mitigation Measure BIO-8A and BIO-8B.

Even with implementation of the above Mitigation Measures, the Project could still result in direct mortalities to raptors and other special-status birds and will therefore result in a significant and unavoidable impact from the direct morality of raptors and other special-status birds. These significant and unavoidable impacts are overridden by the economic, legal, and social considerations detailed in Part 10. The impacts of the project to bat species will be less than significant with the implementation of the above mitigation.

Impact CUL-1: Impacts on Known Cultural Resources

Mitigation Measure CUL-1: Avoid Known Cultural Resource. The cultural resource survey revealed one cultural resource within the project area of impact, a historic and currently operational windmill and well pump. In order to protect the structural integrity and maintain the present function of the windmill and well pump, the Applicant shall avoid construction activities within 50 feet of the windmill and well pump.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: By avoiding disturbance to the resource, implementation of Mitigation Measure CUL-1 will reduce the Project's potential impact to levels that are less than significant.

Impact CUL-2: Impacts on Unknown Cultural Resources, Paleontological Resources, and Human Remains

Mitigation Measure CUL-2A: Supplemental Evaluation and Cultural Surveys. To address potential impacts on cultural, archaeological, and paleontological resources in areas that the cultural resources inventory did not previously cover and where ground disturbance will occur, the Applicant shall achieve avoidance by implementing the following measures:

a. Prior to construction, the Applicant shall identify all areas, if any, where project components are proposed that were not covered during the pedestrian surveys conducted for the *Cultural Resources Inventory Report for the Proposed Shiloh IV Wind Project*, Solano County, California (ICF International 2011) or other supplemental evaluation. In areas where ground-disturbance will occur for project construction, the Applicant shall provide documentation to the County confirming where surveys were previously completed versus not completed.

b. In areas where ground-disturbance will occur, the Applicant shall consult and contract with a qualified archaeologist to conduct a supplemental evaluation of known cultural resources occurring within the locations not covered during the pedestrian surveys conducted for the *Cultural Resources Inventory Report for the Proposed Shiloh IV Wind Project*, Solano County, California (ICF International 2011), including any areas not covered due to subsequent project revisions. These areas include, but are not limited to, access roads, collection system routes, transmission line route, turbine locations, and any other areas where ground disturbance would occur that the pedestrian surveys did not cover.

c. As determined by the Applicant's qualified archaeologist, supplemental evaluation of prehistoric and historic archaeological sites could include, but is not limited to archival research to establish the site's place in local history and events; intensive surveys of the revised area of impact to locate artifacts and features; and subsurface testing consisting of shovel-excavated test units in areas with less than 100% ground surface visibility.

d. Prior to approval of the grading permit for an area requiring supplemental evaluation, the Applicant shall prepare a complete supplemental evaluation that is consistent with State Office of Historic Preservation Criteria and submit it to Solano County. The supplemental evaluation shall include recommendations of significance to the SHRC for the site(s). Commencement of ground disturbance shall not occur unless authorized by the County.

e. Except in areas where the Applicant conducts additional surveys and obtains Solano County approval, the Applicant shall not conduct ground-disturbing activities in areas not previously surveyed for cultural resources, as evaluated in the pedestrian surveys conducted for the *Cultural Resources Inventory Report for the Proposed Shiloh IV Wind Project*, Solano County, California (ICF International 2011). In any area where the Applicant conducts a subsequent survey, the Applicant shall submit it to Solano County for review and approval and shall not commence ground-disturbing activities there until Solano County has given authorization to do so.

f. Identify the locations of known cultural resources on construction plans and drawings (which the Applicant shall not distribute beyond project personnel for the reasons described below), place a protective barrier around known cultural deposits,

and educate construction personnel on avoidance measures. Cultural resources are easily disturbed, damaged, or destroyed and are a nonrenewable resource. Additionally, some cultural resources may be at risk of looting. Therefore, information pertaining to the exact location of an archaeological site is exempt from the California Public Records Act. The Applicant shall make the location of these resources available only on a need-to-know basis to avoid disturbance, damage, or destruction.

Mitigation Measure CUL-2B: Cultural and Paleontological Monitoring and Unanticipated Discovery Procedure. The Applicant shall minimize impacts on cultural and paleontological resources in project evaluated during the-pedestrian surveys for the *Cultural Resources Inventory Report for the Proposed Shiloh IV Wind Project,* Solano County, California (ICF International 2011) and any subsequent surveys performed in compliance with Mitigation Measure CUL-2A by implementing the following measures:

a. The Applicant shall post notices (signs) on and/or at all project construction trailers and portable lavatories, identifying the potential for cultural and paleontological resource discovery and the required notification procedures in the event of a find. Such notices shall be subject to County approval.

b. The Applicant shall retain a qualified archaeologist for training of construction personnel and periodic construction monitoring, as described further, below, in addition to “on call” consultation on potential finds either by telephone or in the field.

   i. The archaeologist shall have the following qualifications:

      a) Working knowledge of the project area;

      b) Ability to identify the range of cultural resources known to exist in the vicinity of the project;

      c) Ability to recognize paleontological resources; and

      d) Approval of Solano County prior to commencement of construction activities.

   ii. Prior to construction, the qualified archaeologist shall:

      a) Train all construction personnel that would be engaged in ground disturbing construction activities about the potential for archaeological resource discovery and appropriate procedures for notification of a find. Training may be conducted in person, by video, or using another method approved by the County.

b) Train the Applicant's biological monitor to enable him or her to recognize a potential find, determine if it has potential archaeological, historical, or paleontological value, and isolate it for review by the qualified archaeologist.

c. The archaeological or archaeologist-trained biological monitor shall have the authority to temporarily stop construction activities to inspect areas where ground-disturbance has revealed potential cultural or paleontological resources. The Applicant shall suspend construction activities until the qualified archaeologist has inspected the discovery and determined required or recommended treatment for the resource(s), including but not limited to the following:

i. **Evaluation and Avoidance (Cultural Resources).** The evaluation of unanticipated discovery of potentially significant cultural resources may require a subsurface testing and evaluation program for cultural resources. Resources determined to be significant or potentially significant shall be flagged and avoided. If necessary, the Project shall be redesigned to avoid impacts on cultural resources.

ii. **Recovery and Documentation (Cultural Resources).** If the Applicant cannot implement site avoidance through project redesign, the Applicant shall implement a data recovery program to mitigate impacts. Appropriate treatment of significant or potentially significant cultural resource(s) includes excavation and removal of the resource(s) and curation in an appropriate facility under the direction of a qualified archaeologist and in consultation with Native Americans who are culturally affiliated with the area.

iii. **Evaluation and Avoidance (Paleontological Resources).** If potential paleontological resources are encountered during construction, the qualified monitor shall suspend all construction activities in the vicinity of the potential resource to examine the resource and determine the proper method to avoid adverse effects on the resource. If necessary, a qualified paleontological monitor shall be consulted to assist the cultural monitor through all phases of evaluation, avoidance, recovery, and documentation, as necessary. At the monitor's discretion, the area in the vicinity of the potential resource may be flagged for avoidance. If necessary, the Project shall be redesigned to avoid impacts on paleontological resources.

iv. **Recovery and Documentation (Paleontological Resources).** If site avoidance cannot be implemented through project redesign, the Applicant shall implement a data recovery program to mitigate impacts. Appropriate recovery of the potential resource may include removal from the site by plaster jacketing, taking a sample of the potentially fossiliferous formation, or, if necessary, excavation. Recovered

specimens that are determined to be important paleontological resources shall be prepared to the point of curation, including the washing of sediments to recover small invertebrates or vertebrates, and stabilized to mitigate impacts. In the event that recovered specimens are determined to be important paleontological resources, the Applicant shall prepare and execute a written repository agreement with an established, accredited museum repository, and all important paleontological specimens shall be curated.

v. **Unanticipated Human Remains Discovery.** If human remains are discovered, work in the vicinity must stop until the County coroner can determine whether the remains are those of a Native American. If they are those of a Native American, the coroner must contact the NAHC. The NAHC will identify the person(s) it believes to be the "Most Likely Descendant" of the deceased Native American. The Most Likely Descendant would be responsible for recommending the disposition and treatment of the remains. The Most Likely Descendant may make recommendations to the Applicant and the County for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

d. For each of the unanticipated discovery scenarios described above, the Applicant shall immediately notify the Solano County Resource Management Department. Solano County will work with the qualified archaeologist, who shall work at the expense of the Applicant. The County shall determine whether the discovered resource can be avoided and, if impacts have not occurred, whether work can continue. If it is determined that the resource has been impacted and an assessment of its significance is required, work shall not resume until permission is received from Solano County.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The Applicant prepared a cultural resources inventory for the original Project layout, which included a records search and literature review, consultation with Native American tribes, consultation with historic societies, and a cultural field survey. The Applicant has made changes to the project area and may make additional changes during micro-siting and final design that would result in disturbance outside the surveyed area. Ground-disturbing activities in locations that the field survey did not cover could affect unknown cultural resources directly or indirectly. Mitigation Measure CUL-2A addresses this significant impact by requiring the Applicant

to conduct supplemental cultural surveys prior to construction of any land not previously surveyed that would be within the project area of impact.

In the areas that were covered by the field survey, there is still potential to impact unknown cultural and paleontological resources. This impact is considered significant and mitigation is required (Mitigation Measure CUL-2B).

Previously unidentified burial sites containing human remains, including unmarked burials, may be unearthed during construction. This impact is considered significant, and mitigation is required (Mitigation Measure CUL-2B). HDD construction methods may also result in encounters with buried cultural or paleontological resources.

With the implementation of Mitigation Measures CUL-2A and CUL-2B, impacts under this criterion will be reduced to levels that are less than significant.

Impact GEO-1: Ground Shaking and Landslides

Mitigation Measure GEO-1A: Conduct a Site-Specific Geotechnical Study. To further reduce potential impacts associated with geological hazards, the Applicant shall:

a. Conduct a geotechnical study to evaluate soil conditions and geologic hazards in the project area. The geotechnical study shall be signed by a California-registered geologist and approved by Solano County, and it shall identify the following:

    i. Location of fault traces and potential for surface rupture;

    ii. Potential for seismically induced ground shaking, liquefaction, landslides, differential settlement, and mudflows and specific locations to be avoided where practicable;

    iii. Stability of existing cut-and-fill slopes;

    iv. Collapsible or expansive soils;

    v. Foundation material type;

    vi. Location of abandoned and active production wells to be avoided during construction;

    vii. Potential for wind erosion, water erosion, sedimentation, and flooding; and

    viii. Location and description of unprotected drainage that could be impacted by the proposed development.

b. Design the Project based on the results of this study, to:

   i. Follow safety and building codes and other design requirements, as indicated by the site-specific geotechnical review, including the California Building Code;

   ii. Use existing roads to the greatest extent feasible to minimize increased erosion;

   iii. Design fill slopes for an adequate factor of safety, considering material type and compaction, identified during the site-specific geotechnical study;

   iv. Cut slopes with a slope ratio compatible with the known geologic conditions or be stabilized by a buttressed fill;

   v. Avoid locating roads and structures near landslide and mudflow areas. Where avoidance of landslide areas is not feasible, relatively flat cut-and-fill slopes would be constructed (2:1 horizontal to vertical, or 26 percent or flatter). Roads would be constructed with slope buttressing consisting of excavation of the unstable materials, installation of subdrains, and reconstruction of the slopes to the designed grades using the excavated materials in properly compacted fills. Stabilization of soil, where required for tower foundations, shall use the same methods.

   vi. Utilize setback requirements from surrounding uses, including roads or utilities and/or diversion walls to mitigate impacts from mudflow-prone areas.

   vii. Avoid locating turbine locations, transmission lines, and associated structures astride faults, lineaments, or unstable areas; and

   viii. Depending on the findings of the site-specific geotechnical study, remove and replace shrink-swell soils with a non-expansive or non-collapsible soil, or use appropriate foundation or construction design to accommodate for the shrink/swell nature of the soils with input from the County.

Mitigation GEO-1B: Design Facilities to Withstand Ground Shaking. To mitigate potential impacts caused by ground shaking and landslides, the Applicant shall design project facilities to withstand substantial fault movement consistent with findings of the geotechnical report required per RS.1-50 of the General Plan for wind turbine development projects. The geotechnical report shall include consideration of facility placement and design with respect to ground shaking and landslides.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The project area is subject to typical ground accelerations of up to 0.4g. A significant earthquake along any of the faults in the vicinity of the Project could induce ground shaking that may cause injury or damage to people (including workers) or structures. Ground shaking could also lead to other localized geologic hazards such as landslides, liquefaction, and settlement. This impact is considered potentially significant, but implementation of Mitigation Measures GEO-1A and GEO-1B will reduce this impact to less than significant levels.

Impact GEO-2: Expansive Soils and Soil Settlement

Mitigation GEO-2: Design Facilities to Withstand Expansive Soils and Other Soils Hazards. To reduce potential impacts caused by expansive soils, soil compaction, and soil settlement the Applicant shall design permanent aboveground facilities to withstand changes in soil density and include consideration of facility placement and design with respect to soil shrinking and swelling potential identified in the site-specific geotechnical report required by Mitigation GEO-1A (Conduct a Site-Specific Geotechnical Study).

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Project soils consist of clay soil types that generally have slow permeability and a medium to high water capacity and, as such, are potentially expansive. Without proper engineering, buildings and structures will be susceptible to damage from shrinking and swelling soils. In addition, heavy equipment used during construction could contribute to soil compaction and project facilities could result in settlement after installation. The potential for settlement would be exacerbated by siting of project features on soils backfilled or restored as part of the enXco V project decommissioning. This impact is considered potentially significant. Implementing Mitigation Measure GEO-2 will reduce this impact to less than significant levels by requiring the Applicant to design its facilities to withstand soil hazards, and by reducing or avoiding potential impacts associated with siting project features on recently re-compacted, reclaimed, or restored enXco V lands.

Impact GEO-3: Loss of Soil from Erosion

Mitigation Measures: HYD-2A, HYD-2B, AIR-2.

Mitigation GEO-3: Implement Soil Erosion Controls. The Applicant shall:

a. Salvage all topsoil disturbed by project activities for reuse during restoration; and

b. Monitor any disturbed areas each spring for eroding or slump areas and rehabilitate them as necessary, in coordination with Solano County.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Soils types in the Project area are highly susceptible to water erosion and are moderately susceptible to wind erosion. Construction activities will destabilize the soil surface and increase the potential for soil erosion. The potential for soil loss and erosion may be greater in areas recently reclaimed by the enXco V project decommissioning. This impact is considered potentially significant, and mitigation is required; however, with the implementation of the erosion controls in Mitigation Measures GEO-3, AIR-2, HYD-2A, and HYD-2B, this impact will be reduced to a less-than-significant level.

Impact HAZ-1: Potential Hazardous Materials Spills.

Mitigation Measure HAZ-1A: Proper Use and Storage of Materials. Hazardous material inventories shall be required if chemicals stored on-site meet or exceed 55 gallons liquid, 200 cubic feet of gas and/or 500 pounds of solid, potentially hazardous materials. Hazardous material inventories shall be provided to and evaluated by the Department of Resource Management's Environmental Health Division. In accordance with the California Health and Safety Code and California Code of Regulations, the Applicant shall prepare, submit to the appropriate agency, and implement a Hazardous Materials Emergency Response Plan (Business Plan) and a Spill Prevention, Control, and Countermeasure (SPCC) Plan to avoid spills and minimize impacts in the event of a spill. The purpose of these plans is to ensure that adequate containment will be provided to control accidental spills, that adequate spill response equipment and absorbents will be readily available, and that personnel will be properly trained in how to control and clean up any spills.

The Applicant shall also ensure the following regarding these plans:

a. The Applicant shall include as part of the Hazardous Materials Emergency Response Plan (Business Plan) a discussion of best practices to be used for

hazardous materials management, including handling and storage procedures for all hazardous materials used on-site, spill prevention procedures, access and egress routes, procedures for fires involving hazardous materials, and notification procedures.

b. The Applicant shall store and handle all paint, solvents, and any other hazardous materials in the manner specified by the manufacturer and in accordance with federal regulations and nationally and internationally recognized codes and standards. Small spray cans of carburetor fluid and other hazardous materials should be stored in an enclosed area in the enXco Operations and Maintenance facility. A material safety data sheet shall also be stored with each material.

c. The plans shall be provided to all employees, including contractors, working on the Project, and one copy shall be available on-site at all times.

d. All employees shall be properly trained in the use and handling of these materials.

e. Should a spill of hazardous material occur, the Solano County Department of Resource Management shall have jurisdiction over response and cleanup operations.

f. The plans shall be certified by a professional engineer.

g. The plans shall be submitted to the Solano County Department of Resource Management at least 30 days prior to construction.

Mitigation Measure HAZ-1B: Waste Management Plan. The Applicant shall prepare and implement a Waste Management Plan (Plan) in accordance with, and shall otherwise comply with, the following:

a. The plan shall describe the storage, transportation, and handling of wastes, and emphasize the recycling of construction wastes where possible.

b. The plan shall identify the specific landfills that will receive construction wastes that could not be recycled.

c. The Applicant shall manage construction wastes in accordance with the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901, et seq. and RCRA's implementing regulations at 40 CFR 260, et seq.) and other applicable state and local regulations.

d. The plan shall be submitted to the Solano County Department of Resource Management at least 30 days prior to construction. Commencement of construction shall not occur unless authorized by the County.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: While the Project is not likely to require treatment, disposal, or transport of significant quantities of hazardous materials, it will require the use of potentially hazardous materials. Improper handling and accidental spills could expose workers or the public to hazardous materials, and impacts could be significant. The State Water Resources Control Board (SWRCB) requires the applicant to prepare a SWPPP per Construction General Permit Order 2009-0009-DWQ, which will help reduce the risk and impacts resulting from accidental release of hazardous materials. To further minimize the potential for accidental releases of hazardous materials and provide mechanisms to address any spills that occur, the Applicant will be required to implement Mitigation Measures HAZ-1A and HAZ-1B, thus reducing potential impacts to less than significant levels.

Impact HAZ-2: Encountering Hazardous Materials/Waste during Construction

Mitigation Measure HAZ-2: Plan for Encountering Contaminated Soil, Groundwater, Natural Gas Wells, and Other Hazards. Prior to construction, the Applicant shall prepare, submit to the Solano County Department of Resource Management, and implement a written plan in accordance with the following:

a. The plan shall specify proper handling, reporting, and disposal procedures to ensure proper protocols are followed in the event that hazardous materials are encountered unexpectedly during construction.

b. The plan shall address the potential for unearthing or exposing buried hazardous materials or contamination or shallow contaminated groundwater during construction activities, likely within six feet of the surface.

c. The plan shall detail the steps that the Applicant or its contractor shall take to prevent the migration of contaminated soils or other materials off-site and the remedial action that will be undertaken.

d. The plan shall be subject to review and approval by the Solano County Department of Resource Management prior to construction.

e. The Applicant shall provide worker awareness training based on the plan prior to construction.

f. At a minimum, construction crews shall stop work and notify the Department of Resource Management, and appropriate federal and state agencies, immediately after encountering any hazards.

g. The Applicant shall review applicable maps of abandoned natural gas well locations prior to construction to ensure that no ground-disturbing activities will be conducted and no structures will be built over or in proximity to an abandoned well location.

h. If any wells are inadvertently uncovered or damaged during excavation or grading, the Applicant shall immediately contact DOGGR's Sacramento District office to obtain information on the requirements for and approval to perform remedial operations, which the Applicant will perform upon DOGGR approval.

i. A licensed waste disposal contractor shall remove the hazardous materials, once identified, from the site, according to federal, state, and local requirements.

Implementation: Mitigation Measure HAZ-2 will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Grading, trenching, and other ground-disturbance activities could potentially encounter materials, which could expose the public, construction crews, workers, or wildlife to hazardous materials, especially due to the presence of abandoned natural gas wells in the surrounding area. This potential could cause significant impacts. These impacts will be reduced to a level that is less than significant through implementation of Mitigation Measure HAZ-2.

Impact HYD-1: Impacts on Wetlands, Streams, and Waters of the United States

Mitigation Measures: BIO-2A, BIO-2B.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Construction activities including grading, paving, and general construction activities and project operations could result in sedimentation or the release of contaminants that could disturb the plants, animals, soils, and hydrologic patterns of these sensitive areas and result in potentially significant impacts. Potentially significant impacts on wetlands and waters of the United States will be reduced through implementation of mitigation measures BIO-2A and BIO-2B. Mitigation Measure BIO-2A (Avoid Impacts to Aquatic Resources) will require that all temporary and permanent construction activities will be located 100 feet away from aquatic resources to the extent feasible and, if the county determines that avoidance is not feasible, require the Applicant to obtain any necessary permits from USACE, the RWQCB, or CDFG. Mitigation Measure BIO-2B (Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources) will require a variety of restrictions on the use of HDD near streams and wetlands. The implementation of these mitigation measures will reduce impacts to wetlands, streams, and waters of the United States to less than significant levels.

Impact HYD-2: Water Quality Degradation

Mitigation Measures: AIR-2, BIO-1A, BIO-1B, GEO-3, HAZ-1A, HAZ-1B.

Mitigation HYD-2A: Storm Water Pollution Prevention Plan (SWPPP). The Construction General Permit requires preparation of a SWPPP by a certified contractor and submittal to the Regional Water Quality Control Board, which enforces the provisions of the general permit.

a. The Applicant shall submit a copy of the SWPPP to the Solano County Public Works Engineering (Public Works) and provide copies of notices and annual reports submitted to the RWQCB under the provisions of General Permit Orders 2009-0009-DWQ.

b. The Applicant shall include erosion and sedimentation control BMPs in SWPPP to protect the water quality of aquatic resources in and near the project area, including Lucol Hollow, Clank Hollow, and Hopkins Ravine. The SWPPP shall include the following measures:

   i. Erosion control BMPs such as scheduling, preservation of existing vegetation, hydraulic mulch, hydroseeding, soil binders, straw mulch, geotextiles and mats, wood mulching, earth dikes and drainage swales, velocity dissipation devices, slope drains, streambank stabilization, and polyacrylamide;

ii. Sedimentation control BMPs such as silt fences, sediment basins, sediment traps, check dams, fiber rolls, gravel bag berms, sand bag barriers, straw bale barriers, and chemical treatment; and

iii. Cover and berm loose stockpiled construction materials that are not actively being used.

Mitigation HYD-2B: Storm Water Discharge and Sedimentation Control Due to the project-specific characteristics, including hilly terrain, possible construction during the rainy season and potential construction within the 100-foot buffer from aquatic resources, the following additional measures will be required to minimize erosion, storm water discharge, and sedimentation from project construction. These measures will be enforced as conditions of the required Solano County grading permit.

a. If the County determines that there is no feasible alternative that will maintain the 100 foot setback from an aquatic resources, the Applicant shall adhere to requirements in Mitigation Measure BIO-2A.a. and shall implement the following additional measures to reduce sedimentation and contamination of aquatic resources:

   i. Confine construction activity for access road entrances from Birds Landing Road such that the activity does not disturb the opposite side of road where Lucol Hollow is located.

   ii. Locate equipment that is not in use more than 250 feet of aquatic resources.

b. Site and conduct all vehicle fueling and scheduled equipment maintenance at the designated equipment laydown area to prevent spills of fuel or other hazardous materials from affecting aquatic resources. Where vehicle maintenance (excluding fueling) cannot be avoided in areas outside those previously specified, the Applicant shall perform these maintenance activities as least 250 feet from all aquatic resources, on an impermeable bladder or tarp specified for such maintenance activities.

c. If construction activities occur during the restrictive Solano County rainy season between October 15th and April 15th, the Applicant shall obtain prior written approval from the Director of Resource Management. Approval of such wet weather construction activities will be dependent and conditional upon weather, site and soil conditions, monitoring by the County, and the Applicant's adherence to requirements set by the Department of Resource Management.

d. The Applicant shall discontinue grading and other ground disturbing activities during precipitation or when told to do so by the Department of Resource Management.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Construction, operation, and maintenance associated with the proposed Project could increase erosion, sedimentation, and result in accidental spills of hazardous materials that could degrade water quality. By implementing AIR-2, BIO-1A, BIO-1B, GEO-3, HAZ-1A, HAZ-1B, the Project will be consistent with the CVRWQCB and SFBRWQCB Basin Plans and will minimize potential impacts to nearby and downstream surface water quality from erosion and sedimentation, to nearby and downstream groundwater quality from potential hazards, and to beneficial uses of water bodies within either basin. To further reduce impacts, the Applicant will develop and implement a SWPPP, a REAP, and will comply with NALs and NELs required by the Construction General Permit under California state law. The SWPPP will include erosion, sediment, and good housekeeping BMPs and monitoring and reporting requirements consistent with the Project's classification as a Risk Level 2 project under the Order 2009-009-DWQ. Mitigation Measure HYD-2B, Storm Water Discharge and Sedimentation Control, will require the Applicant to implement additional erosion and sedimentation control measures to potential significant impacts to water quality associated with construction within the 100-foot buffer from aquatic resources. As a result of these mitigation measures, the Project will have a less than significant impact on water quality generally.

Impact LU-1: Conflicts with Applicable Land Use Plans and Policies

Mitigation LU-1A: Provide Public Road, Property Line, Residential, and Transmission Facility Setback Waivers. To ensure that the Project is consistent with all applicable Solano County setback requirements, the Applicant shall comply with the following measures:

a. Prior to construction of the turbine or meteorological foundation, the Applicant shall furnish the Solano County Department of Resource Management with the final planned location and elevations of turbines and meteorological towers and the adjacent public roads, railroads, property lines, residences, and above ground electrical transmission facilities to review conformance with Solano County's setback requirements.

b. Wind turbines and meteorological towers shall be located as follows:

   i. Three times (3x) the total turbine height, 1,245 feet for 415-foot turbines and 1,146 feet for 382-foot turbines, from property lines and residences, and from public roads, railroads, and above ground electrical transmission facilities, as measured to their right-of-way or easement, as applicable, unless a reduced setback is otherwise allowed by the General Plan;

   ii. At least one turbine blade length plus 10 feet from any other structure on the property; and,

   iii. Meteorological towers shall be setback a minimum of 1.25 times (1.25x) the maximum height of the tower (i.e., the height of the tower plus 25 percent). from property lines and residences, and from public roads, railroads, and above ground electrical transmission facilities as measured to their right-of-way or easement, as applicable.

c. Where a reduced turbine setback is allowed as prescribed in paragraph b.i., above, the Applicant shall comply with the alternative minimum setback requirements prescribed in Mitigation Measure SA-1B.

d. Where a turbine setback of less than three times the total turbine height from an adjacent property line, other than a public road, is proposed, prior to construction the Applicant shall submit to the Department of Resource Management evidence of the following:

   i. That the minimum setback distance equivalent to one turbine blade length plus five feet (unless otherwise required by California Building Code) is provided for interior property lines within the project area;

   ii. That the minimum setback distance equivalent to one turbine blade length plus 20 feet is provided for exterior property lines defining the project boundary; and

   iii. That overall setback is adequate to avoid hazards to the adjacent landowner, as determined by the County.

e. Prior to construction of the turbine foundation at locations where a reduced setback is proposed, the Applicant shall furnish to the Department of Resource Management a written waiver(s) from the affected adjacent property owners consenting to the turbine(s) being installed with a reduced setback on the abutting property. In the case of a reduced public road setback, the adjacent property owner is the owner of property on the opposite side of the road. The waiver shall be subject to County

approval, be irrevocable, and recorded with the Solano County Recorder prior to installation of the affecting turbine.

Mitigation LU-1B: Parking Compliance. Provisions for parking associated with the existing and proposed O&M buildings shall conform to the County's Zoning Regulations Section 28-55 (Parking Requirements).

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The Project will be installed entirely on private land leased under long-term agreements from eight private landowners, most of whom currently use their property for wheat farming or sheep grazing. Five of these landowners also currently lease their lands in the project area for the use of wind energy turbines and/or substations. Existing agricultural and residential land use will continue in the Project area. Therefore, the Project will not change the existing or planned land use of properties in or adjacent to the Project.

The land is zoned A-160, and commercial wind energy development is allowable in zone A-160, following issuance of a use permit from Solano County. Therefore, the Project is compatible with the Zoning Ordinance.

The Applicant has sited all turbine locations in compliance with the Solano County General Plan and the County's Zoning Regulations. The Applicant has sited the three meteorological towers a minimum of 5 feet from all interior property lines and a minimum of 315 feet, or 1.25 times the total tower height, from all exterior property lines in compliance with the County setback requirements that have been applied to previous wind projects.

Potential reduced turbine and meteorological tower setbacks from interior and exterior property lines are considered potentially significant impacts. Mitigation Measure LU-1A, Provide Public Road, Property Line, Residential, and Transmission Facility Setback Waivers, requires the Applicant to secure and furnish setback waivers to Solano County prior to installation of any turbine or meteorological tower proposed for a reduced setback from an interior or exterior property line. The Applicant must also provide evidence to the County that all turbines and meteorological towers meet or exceed the alternative minimum setbacks required by the County.

The Applicant has sited 35 turbine locations more than 1,245 feet, or 3 times the total maximum turbine height, from public county roads in compliance with General Plan

setback requirements, and is currently proposing alternative minimum setbacks for 15 proposed locations along roads adjacent to and within the project area. As required by the General Plan, the Applicant must secure and furnish setback waivers from all property owners affected by the proposed reduced setbacks from public roads to be allowed the reduced setbacks.

The applicant is proposing a reduced setback along the above-referenced public road locations, equivalent to a minimum 723 feet. The maximum blade throw distance for the REpower MM 92 turbine with 153-foot long blades is 602 feet. The Applicant added a safety factor of 20 percent to the calculated blade throw distance to develop its proposed alternative minimum setback of 723 feet for the Project, which is consistent with County requirements for previous wind projects. Accordingly, the Applicant is proposing an alternative minimum setback from county roads as may be necessary, depending on final turbine micro-siting, of 723 feet.

Given the proximity of turbines to the road, the risk of rotor and tower failure is a potentially significant impact. Mitigation Measure LU-1A, Provide Public Road, Property Line, Residential, and Transmission Facility Setback Waivers, requires the Applicant to secure and furnish setback waivers to Solano County prior to installation of any turbine setback less than 1,245 feet from a county public road. The Applicant must also provide evidence to the County that all turbines are set back a minimum of 723 feet from public roads.

To comply with county requirements on setbacks from transmission lines, Mitigation Measure LU-1A requires the Applicant to secure and furnish reduced setback waivers to Solano County for the final locations of turbines prior to installation of any turbine setback less than 1,245 feet from an electric transmission line. The applicant must also provide evidence to the County that all turbines are setback a minimum of 723 feet from electric transmission lines.

The potential for micro-siting of final turbine and meteorological locations to result in new reduced minimum setbacks that conflict with General Plan and zoning requirements is considered a potentially significant impact. Mitigation Measure LU-1A ensures the County will verify that the final project layout complies with all setback requirements of the General Plan and zoning standards prior to installation of any turbine or meteorological tower.

The Applicant has not confirmed the number of existing or proposed parking spaces at the O&M facility, but the site is more than adequate in size to accommodate all parking facilities required by the County. Mitigation Measure LU-1B, Parking Compliance, mandates project conformance to the parking requirements as provided in Section 28-55 of the County's Zoning Regulations.

The Applicant has submitted FAA Form 7460-1 to the FAA for each of the 3 meteorological and 50 potential turbine locations currently proposed. Regardless of when the FAA completes its review of the turbine locations, however, a Determination of No Hazard to Air Navigation from the FAA is required to ensure the Project has no adverse effects on aeronautical operations (see Mitigation Measure TRA-5).

Impact LU-4: Inhibit Future Land Use of the Project Area

Mitigation LU-4: Guarantee Bond or Corporate Surety. To ensure that future land uses in the Project area are not inhibited after the Project is decommissioned, the Applicant shall:

a. Set aside decommissioning funds in the form of a surety bond or other bond acceptable to the County as a specific project budget item;

b. Execute the surety bond or other county-accepted bond on behalf of the Project in favor of the County, with an independent administrator of such funds, to cover all decommissioning costs in an amount approved by the County; and

c. Maintain the bond for the life of the Project and through any transfer of ownership.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The Project is assumed to have a useful life of 30 years. After the useful life of the Project, if the affected area were not decommissioned and properly restored, the County might be burdened with an area for which it could not properly induce local or regional planning efforts. This impact is considered to be potentially significant, but will be mitigated to a level that is less than significant by implementation of Mitigation Measure LU-4.

Impact NOI-1: Short-term Increase in Noise Levels during Construction

Mitigation Measure NOI-1: Reduce Construction Noise. To reduce noise levels associated with construction of the Shiloh IV project, the Applicant shall comply with the following measures:

a. Equipment Care: Equipment engines shall be covered, and the Applicant shall ensure that mufflers are in good working condition. This measure can reduce equipment noise by 5 to 10 dBA (EPA 1971).

b. Restricted Work Hours: Work hours shall be restricted for all noise generating construction activities from 7:00 a.m. to 7:00 p.m. Monday through Friday, and from 8:00 a.m. to 6:00 p.m. on Saturdays and Sundays.

c. Equipment Location: All stationary equipment such as compressors and welding machines shall be shielded and located away from noise receptors to the extent practicable.

d. Pneumatic Tools: Pneumatic tools to be used within 1,500 feet of a residence shall have an exhaust muffler on the compressed air exhaust. This shall be included in the construction specifications.

e. Prior to issuance of any grading permit or building permit, whichever occurs first, for the Project, the Applicant shall prepare a Construction Noise Complaint Plan and submit it to the Solano County Department of Resource Management for approval. The Construction Noise Complaint Plan shall detail how the Applicant will respond to construction noise complaints, keep the County apprised of the complaints, and document the resolution of those complaints.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Site preparation and construction activities will temporarily increase noise levels at residences in and around the Shiloh IV Wind Energy Project Area. This impact is considered significant, but will be mitigated to a level that is less than significant by implementation of Mitigation Measure NOI-1.

Impact NOI-2: Long-term Increase in Noise during Operation of the Shiloh IV Project

Mitigation Measure NOI-2A: Reduce or Avoid Operational Noise Impacts. Based on the proposed turbine configuration evaluated in Figure 15.2-1 of the Draft EIR, noise generated by Shiloh IV project turbines is predicted to exceed applicable exterior Solano County standards for wind turbine generators (50 dBA CNEL or equivalent steady-state 44 dBA L_{eq}) at residences 3, 7, 11, 13, and 14. The Applicant shall reduce or avoid the Shiloh IV project's potential operational noise impacts through implementation of the following measures:

a. The Applicant shall implement one or more of the following actions, enumerated as subparagraphs i. thru iii, to comply with County noise standards:

i. Relocate and/or employ noise restricted operating modes at turbines as necessary such that the Project would not exceed applicable exterior noise levels at all affected residences. Prior to starting any construction activity at any affecting turbine or otherwise as noted, the Applicant shall:

   a) Submit to the County for review and approval additional technical noise data demonstrating that the proposed turbine relocations and/or noise restricted modes would enable the Shiloh IV project to meet applicable County exterior noise standards of 44 dBA Leq / 50 dBA CNEL; and

   b) If noise restricted modes are employed, submit to the County written manufacturer's documentation that Project turbines can operate in noise-restricted modes assumed in the additional technical noise data required above.

ii. Prior to obtaining a building permit for the affecting wind turbine or otherwise as noted, submit to the County for review and approval additional attenuation analyses demonstrating, based on terrain effects, nighttime wind speed, or other considerations, that the proposed configuration would not exceed applicable County standards (50 dBA CNEL or equivalent steady-state 44 dBA L_{eq}) at any residences.

iii. Prior to beginning construction of the foundations for the affecting turbine(s), provide the County with a written waiver from the property owner, which shall: 1) be subject to County approval and shall specify that the property owner consents to allowing construction of one or more turbines that would place their residence in exceedance of exterior noise limits (with full disclosure of the estimated levels at the residence) and waives their right to any noise mitigation by the wind energy operator after the turbine(s) become operational; and 2) be recorded with the Solano County Recorder, be binding on the property as long as the turbines are in operation, and shall be irrevocable.

b. Prior to obtaining a building permit for the affecting wind turbine(s), provide the County with a plan that is subject to County approval for committing to operational limitations or adjustments (e.g., partial "feathering" of the turbine blades) during nighttime hours or other provisions that would be implemented based upon noise complaints from nearby residents. Such limitations would provide a basis for reducing the CNEL penalty imposed for nighttime noise. The plan would not be implemented unless field measurements by the Applicant verify that noise from nearby turbines substantially influences noise levels at the residence and exceeds the 50 dBA CNEL (or equivalent steady A-weighted 44 dBA) criterion and the County has reviewed and approved these measures.

c. If the Applicant modifies the turbine configuration subsequent to what has been evaluated in this EIR (i.e., locates turbines closer to or additional turbines within 4,000 feet of a residence), there is potential for the 50 dBA CNEL noise criteria (or the equivalent steady-state 44 dBA L_{eq}) to be exceeded at residences other than residences 3, 7, 11, 13, and 14. In the event the Applicant modifies the final turbine configuration such that it is different than that evaluated in this EIR, the Applicant shall, prior to obtaining a building permit for any potential affecting wind turbine(s):

    i. Conduct a supplemental noise analysis and provide an acoustical report to the County that evaluates predicted noise levels under the modified configuration relative to applicable noise criteria; and

    ii. If noise levels at any residences are predicted to exceed applicable criteria, the Applicant shall implement either measure a.i, a.ii, or a.iii above (i.e., relocate or employ noise-restricted mode at affecting turbines, conduct additional attenuation analyses to demonstrate noise levels would not be exceeded, or obtain a waiver from the landowner).

Mitigation Measure NOI-2B: Operational Noise Complaint Plan. To reduce and prevent impacts associated with construction and operational noise, the Applicant shall implement the following measures:

a. Prior to issuance of a building permit for the first wind turbine in the Shiloh IV project, the Applicant shall submit an Operational Noise Complaint Plan to the Solano County Department of Resource Management for approval. The plan shall detail how the Applicant will respond to operational noise complaints, keep the county apprised of the complaints, and document the resolution of those complaints. The Construction and Operational Noise Compliant Plans may be consolidated into a single plan that addresses both construction and operation.

b. Upon receipt of a reasonable complaint alleging that noise from the operation of the turbines is causing noise levels at the exterior of a residence to exceed the 50 dBA CNEL or 44 dBA steady noise level, except where a noise waiver has been recorded on the affected property:

    i. The Solano County Department of Resource Management shall commission, at the Applicant's expense, a qualified acoustical firm to conduct a site-specific study to verify whether noise levels routinely exceed the 50 dBA CNEL criterion at the residence and whether these levels can be attributed, at least in part, to the operation of specific Shiloh IV turbines. All findings shall be consolidated into a single report. The acoustical firm shall be authorized to require that the Applicant cease operation of the specified turbines at such times as may be

necessary for a period not to exceed 10 days to verify that the noise levels at the residence would be noticeably reduced (3 dB decrease in sound levels) by modifications to or restrictions on the operation of the specified Shiloh IV turbines. Upon verification of the complaint, the qualified firm shall identify the circumstances and measures that could be undertaken to ensure conformance with the 50 dBA CNEL (or 44 dBA equivalent) standard.

ii. For 30 days after the receipt of the verification of the complaint and mitigation recommendations, the Applicant shall attempt in good faith to negotiate a resolution of this matter with the party making the allegation and shall report any such resolution to the Solano County Department of Resource Management in a timely manner.

iii. If a resolution of the complaint is not achieved within 30 days, and as determined by the Solano County Department of Resource Management, the Applicant shall implement one or more of the recommendations specified in the acoustical report required by b. i. above to achieve conformance with the applicable standards, which may include operational curtailment and/or turbine relocation.

The Applicant and the County would not be responsible for responding to turbine-related noise complaints affecting a property where the property owner, at the time of project construction, recorded on the property an irrevocable noise waiver, allowing exterior noise from turbines in excess of Solano County's noise thresholds.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The Shiloh IV Wind Energy Project will cause a long-term increase in exterior noise levels at up to five residences in exceedance of Solano County’s noise criteria during operation of the wind turbines. The Applicant will be required to achieve reductions between 1.2 and 3.8 dBA in order to meet Solano County noise criteria standards. The Applicant may achieve these reductions through turbine relocation and/or employing a noise-reducing turbine operating mode. In some instances, however, it may not be feasible to reduce noise levels at impacted residences through turbine relocation or noise restricted operating modes due to siting and operational constraints. In these instances, the Applicant will need to conduct further analysis demonstrating attainment of the standard or obtain a noise waiver from the affected landowner. Although obtaining a waiver would not physically reduce the sound levels generated by Shiloh IV project turbines at the affected residence, it would indicate that the affected landowner does not perceive the sound generated by project

turbines as “unwanted”, i.e., noise, and effectively render the County’s noise standard non-applicable to the affected residence, thereby reducing the significance of the project’s increases in noise at these residences.

Residences that may be affected by the Shiloh IV WTGs are not expected to experience interior noise levels in excess of 35 dBA, which is Solano County General Plan’s maximum allowable, and no additional mitigation is required to meet the maximum allowable interior limit.

While this impact is considered potentially significant, implementation of mitigation measures NOI-2A, requiring the Applicant to reduce or avoid operational noise impacts and NOI-2B, requiring the applicant to prepare an operational noise complaint plan, will reduce the impact to less-than-significant levels.

Impact PSU-1: Public Services

Mitigation Measure(s): HAZ-1A, SA-2B, SA-5.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Although up to 300 construction contractors will be employed during project construction, it is expected that construction-phase workers will either already live near the Project or in nearby cities and metropolitan areas. This temporary increase in persons working in Solano County would not have a noticeable impact on population, and there would be no increase in the population of school-age children in the project area..

During operations, a maximum of 6 employees will provide maintenance and security for the Project. This small number of workers will not increase the demand for emergency response services above the existing baseline conditions. Construction and operation of the Project also would not affect the ability of educational personnel to maintain acceptable service ratios or other performance objectives.

Construction and operation in the project area could increase the demand on the Montezuma Fire Protection District and Rio Vista Fire Department. Given the dry, grassy environment, the Montezuma Hills area has a high risk for grass fires. Therefore, the construction of the Project has the potential to impact the capacity of fire personnel to maintain acceptable service ratios, response times, or other performance objectives. To minimize the potential for grass fires, the Project will be required to

develop and implement a Grass Fire Control Plan, as described under Mitigation Measure SA-5.

Public access to the wind turbines will be restricted to avoid potential safety hazards, so there will be no significant impact on the capacity of the police to maintain acceptable service ratios, response times, or other performance objectives. To minimize the potential for grass fires and their impact, the Project would be required to develop and implement a Grass Fire Control Plan subject to review and approval by the fire protection district, as described under Mitigation Measure SA-5. The fire protection district will also review project plans to ensure that the access roads will be adequate for maintaining acceptable service and response times and providing access to fire water tanks as needed.

The potential influx of up to 300 people engaged in major construction activities could temporarily increase the risk of accidents and the potential burden to emergency medical services in the project area. Restricting access to only properly trained personnel would reduce the likelihood of accidents and thus the need for emergency medical care. In addition, Mitigation Measure SA-2B would require training, planning, and protocols to reduce the risk of injuries to workers, and Mitigation Measure HAZ-1A would require the Applicant to implement a Hazardous Materials Emergency Response Plan (Business Plan) and Spill Prevention, Control, and Countermeasure (SPCC) to minimize the likelihood and potential impacts of accidents related to hazardous materials. The implementation of these measures will reduce potential impacts to emergency service to less than significant.

Over all, impacts on public services are expected to be less than significant, with the exception of fire and emergency service impacts, as noted above. The implementation of Mitigation Measures HAZ-1A, SA-2B and SA-5 will reduce these impacts to less than significant.

Impact PSU-3: Interference with Microwave Transmissions

Mitigation Measure PSU-3: Notification and Siting

In order to reduce potential impacts on microwave transmissions and radio frequency facilities, the following shall apply to the Applicant prior to construction:

a. Conduct a revised study and prepare a report on the effect upon nearby FCC licensed microwave and fixed station radio frequency facilities due to the construction of the Project. The report shall describe the results of the study and analysis to determine the locations of FCC microwave and fixed station radio frequency facilities that may be adversely impacted as a result of the construction of wind turbines in the project area.

i. The revised study and report shall be prepared by a qualified professional telecommunications and technology design firm with experience evaluating impacts on microwave transmissions and radio frequency facilities.
ii. The report shall be based on the final siting plan of the project's turbines and shall describe impact zones and recommendations concerning individual wind turbine siting to avoid impacts.

iii. The study shall also evaluate the effect of proposed turbines on radio communication at Sandy Beach Park.

iv. If specific turbines are found to adversely impact FCC microwave facilities, the turbines shall be re-sited to avoid impacts.

v. If turbines are found to substantially degrade fixed station radio frequency facilities or radio communication at Sandy Beach Park, they shall be re-sited to ensure interference is reduced to acceptable levels. Alternatively, the Applicant shall upgrade or relocate affected radio transmitter equipment to ensure interference is reduced to acceptable levels.

vi. All report results shall be submitted to Solano County at least 30 days prior to construction, and are subject to review and approval by the County.

b. No turbine or meteorological tower shall be installed in any location along the major axis of an existing microwave communications link. Wind turbines and meteorological towers shall be sited outside of microwave paths to avoid potential conflict with microwave communication signals.

i. The Applicant shall confirm the geographic coordinates and heights of the microwave antennas through a land survey to confirm that all turbine locations would conform to the applicable provisions of the California Building Code with respect to WCFZ.

ii. Turbines may require an adjustment in location depending upon the results of the land survey. Prior to construction, the Applicant shall submit a report by a licensed engineer based on the revised turbine locations to the County verifying that no turbines would be located within an existing microwave path.

iii. No turbine or meteorological tower shall be installed in any location where its proximity with other fixed broadcast, retransmission or reception antenna for radio, television, internet service, wireless phone, or other communications systems would produce EMI with the signal transmission or reception of such facilities.

c. The Applicant shall be required to comply with the following measures prior to the issuance of building permits, the Applicant shall:

   i. Provide notification of proposed locations and heights of turbine and meteorological towers to all owners of frequency-based communication stations, towers, and microwave station owners as recorded by the FCC, television and radio station owners, and owners of any other unrecorded but physically observed cellular, PCS, or other mobile communications service antennas within two miles of the Project.

   ii. Notify all land mobile licensees identified in the microwave study by letter and describe the specific turbine locations and the estimated project impact.

   iii. Inspect the site to identify any undocumented communications towers or antennas, including microwave and cellular.

   iv. Resolve any anomalies identified by receiving equipment modifications or installation of satellite dishes in appropriate cases. Additional options for resolution include installation of a higher-gain outside antenna to increase the strength of the direct wave.

d. In the event that a complaint is received regarding microwave or land mobile pathway interference, the Applicant shall appropriately and satisfactorily resolve receiver interference through coordination with owners of frequency-based communication stations and towers and is responsible for any remediation necessary to restore the affected communication signal at a minimum to pre-turbine or meteorological tower installed levels. Possible actions include installation of high-performance antennas at nearby microwave sites, if required.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Wind turbine towers could interfere with existing microwave communication paths that traverse the Project site. Although the wind turbine blades have been designed to allow some transmission of frequency-based communication, the potential communication pathway interference is a significant impact. Implementation of Mitigation Measure PSU-3 will reduce potentially permanent, localized impacts on microwave communication to levels that are less than significant.

Impact PSU-4: Interference with Television or Radio Reception

Mitigation Measure: PSU-3

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Wind turbine towers could interfere with existing television or radio signals that traverse the Project site. Significant disruption of land mobile services is not expected. A moderate impact on over-the-air television signals may occur in the project area, but it is expected to affect relatively few receivers and a limited number of television stations. This disruption should dissipate for locations up to two-to-three miles away from a turbine. Any anomalies should be resolved by receiver equipment modifications or installation of satellite dishes, in extreme cases. Implementation of mitigation measure PSU-3 will reduce the impact of project turbines on television and radio reception to less-than-significant levels.

Impact SA-1: Blade or Blade Fragment Throw and Tower Failure

Mitigation Measure SA-1A: Wind Turbine Design and Safety Mechanisms. To prevent rotor and tower failure and avoid potential impacts, the Applicant shall incorporate the following measures into the project design:

a. Turbines shall conform to international standards for wind turbine generating systems, including IEC 61400-1: Wind Turbine Generator Systems – Part I: Design Requirements (2005) and shall be certified according to these requirements, to assure that the static, dynamic, and defined life fatigue stresses of the blade would not be exceeded under the combined load expected in the Shiloh IV Wind Project Area.

b. The Applicant shall adhere to state and local building codes during turbine installation on the foundations, which would also minimize the risk of rotor and tower failure.

c. To prevent safety hazards due to over-speed, the Applicant shall install a comprehensive protection system on each turbine to prevent excess rotor speed and turbine and tower failures, such as rotor speed controlled by a redundant pitch control system and a backup disk brake system.

d. To prevent safety hazards due to tower failure, the Applicant shall:

   i. Design the turbine towers and foundation to withstand wind speed of 100 miles per hour at the standard height of 30 feet;

   ii. Engineer the turbines according to California Building Code Earthquake Standards; and

   iii. Ensure that all installed equipment shall meet the standards of NEMA, ANSI, and Cal-OSHA.

e. To prevent safety hazards due to electrical failure, electrical systems and the substation shall:

   i. Be designed by California-registered electrical engineers; and

   ii. Meet the latest editions of national electrical safety codes and other national standards, including NEMA, ANSI, and Cal-OSHA standards and the California Electrical Code.

f. The Applicant shall provide the County with manufacturer's specifications for the wind turbines, specifying that all turbines are equipped with a braking system, blade pitch control, and/or other mechanism for rotor control and shall have both manual and automatic over-speed controls.

Mitigation Measure SA-1B: Project Turbine Siting. To reduce potential impacts associated with turbine failure, the Applicant shall site turbines and meteorological towers an appropriate distance from public roads, railroads, transmission facilities, property lines, and residences to protect the public should a turbine or meteorological tower fail as follows:

a. Where a turbine setback of less than three times the total turbine height from a residence is proposed, prior to construction the Applicant shall submit to the Department of Resource Management evidence that the affected turbines meet or exceed the minimum setback requirement of 1.2 times the maximum turbine blade throw distance as recommended by the hazards analysis report (KPFF 2011).

b. Where a turbine setback of less than three times the total turbine height from a public road is proposed, prior to construction the Applicant shall submit to the Department of Resource Management evidence that the affected turbines meet or exceed the minimum setback requirement of 1.2 times the maximum turbine blade throw distance recommended by the hazards analysis report (KKPF 2011) and approved by the Public Works Engineering Division. Such evidence shall include,

but not be limited to, certification of the elevation of the turbine base and adjacent road.

c. Where a turbine setback of less than three times the total turbine height from an above-ground electrical transmission facility or railroad is proposed, prior to construction the Applicant shall submit to the Department of Resource Management evidence that the affected turbines meet or exceed the minimum setback requirement of 1.2 times the maximum turbine blade throw distance as recommended by the hazards analysis report (KPFF 2011). Alternatively, a lesser setback may be allowed by the Department of Resource Management, based on the written consent of the landowner and/or the asset owner.

d. Should an alternative turbine be used that is not adequately assessed in the hazards analysis report (KPFF 2011), as determined by the County, any required setback that is a function of maximum blade throw distance shall be established based on the recommendations of a qualified professional engineer for the turbine model and location, at the Applicant's expense, subject to approval of the Director of Resource Management.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The County's General Plan requires a setback of 1,000 feet or three times (3x) the maximum height of the turbine, whichever is greater, from residences, public roads, and property lines. The setbacks for the Shiloh IV Wind Energy Project would be 1,245-feet. Turbines not meeting this requirement will require a setback waiver. Implementation of Mitigation Measures SA-1A and SA-1B will reduce safety impacts related to blade throw and turbine failure for these turbines to less than significant levels.

International Electrotechnical Commission (IEC) certification requirements, coupled with annual inspections and turbine safety features assure that risks associated with blade throw during operation of the Project will be low. With the implementation of the engineering and design methods and safety mechanisms described in Mitigation Measure SA-1A, potential impacts on public safety due to rotor or turbine failure will be less than significant.

The risk of blade fragmentation to public safety and infrastructure is insignificant. While a fragment could potentially be thrown farther than a full blade, the probability of blade

fragmentation occurring is less than 0.03 percent per turbine per and the risk of a fragment actually striking transmission lines located more than 678 feet away from a turbine is another 2 percent, reducing the probably of damage to less than five in a million.

Tower failure would present a potential hazard only to people and vehicles within the 490-foot hazard zone and, equally important, would be very unlikely. Mitigation Measures SA-1A and SA-1B reduce safety impacts from tower failure through wind turbine design and siting.

The Applicant has sited the three meteorological towers at a minimum distance of 315 feet, or 1.25 times the proposed tower height, from all public roads, residences, and transmission lines, in compliance with the County's setback requirements. The Applicant has additionally provided the same minimum setback to all property lines. Therefore, even in the event that a meteorological tower falls towards a County road, with the minimum proposed setback, it would not cause a significant safety hazard to the public, and no mitigation will be required.

Impact SA-2: Electrical Shock and Accidents

Mitigation Measure SA-2A: Install Grounding and Shut-off Mechanisms on Project Facilities. To protect workers from electrical shock and other work-related accidents the following measures shall be implemented:

a. Grounding shall be designed and implemented to the standards of the Institute of Electrical and Electronics Engineers.

b. All turbines and utility lines shall be equipped with automatic and manual-disconnect mechanisms.

c. Two circuit breakers that can be both manually and automatically operated shall be provided between each turbine and the connection to the electrical grid.

d. The electrical systems and substations shall be designed by California-registered electrical engineers and shall meet the latest editions of the national electrical safety codes and other national standards, including NEMA, ANSI, and Cal-OSHA standards and the California Electrical Code.

e. These mechanisms shall be installed and tested before interconnection.

Mitigation Measure SA-2B: Injury and Illness Prevention Program. Prior to construction, the Applicant shall develop, in accordance with Cal/OSHA regulations, a project-specific Injury and Illness Prevention Program for implementation during

construction and operation, which specifies responsibilities and procedures to protect employees and reduce losses resulting from injuries and illness. The Injury and Illness Prevention Program shall be available at the project site. The Applicant shall be responsible for ensuring that all personnel receive adequate training and that new employees receive supervision by trained personnel.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Personnel working on the Project are at risk of electrical shock from electrical equipment and injury from work-related accidents that may occur during construction and operation. The implementation of the mitigation measures SA-2A and SA-2B will reduce the impacts to levels that are less than significant.

Impact SA-3: Accidents Involving the General Public (Other Than Turbine Failure)

Mitigation Measure SA-3: Limit Public Access to the Project Area. The Applicant shall minimize accidents involving the public and impacts on the public by limiting access to the project area. The Applicant shall limit access to the project area by:

a. Installing locking gates where new access roads constructed within the project area connects to existing public access roads. To further limit access from public roads the Applicant shall:

    i. Only provide keys to authorized personnel and landowners, thereby preventing access by the public;

    ii. Post and maintain no-trespassing signs at the entrance gates; and

    iii. Post and maintain signs at the entrance gates noting the existence of high-voltage and underground cable on the site and warning people of electrocution hazards;

b. Installing locks on the turbine towers and the substation, and the Applicant shall:

    i. Only provide keys to authorized personnel, thereby preventing access by the public;

    ii. Install a sign with high-voltage warning at the substation;

c. Ensuring that all facilities in a. and b. above are maintained, locked, and/or otherwise secured at all times to discourage unauthorized access;

d. In addition to existing agricultural fencing that is already in place, installing additional fencing as requested by the landowner and agreed to in landowner agreements, which will further inhibit public access;

e. Providing training for project personnel to monitor for unauthorized individuals and activities during construction activities and throughout operation and to report such observations to the project superintendent on duty;

f. During operation of the Project, long-term staff shall conduct periodic surveillance of the project area to identify access or signs of access (e.g., vandalism) by unauthorized individuals and shall report such incidents to the project superintendent on duty. The Applicant shall rectify such incidents (e.g., installing additional locks or increasing intervals of surveillance) and, as necessary, work with Solano County and local enforcement agencies in doing so; and

g. Ensuring that all tower-climbing apparatus and blade tips of the wind turbines shall be no closer than fifteen feet from ground level unless enclosed by a 6-foot fence.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Although there would be potential for incidental or intentional entry onto the project site and subsequent risk to human safety, with the implementation of Mitigation Measure SA-3, impacts would be reduced to levels that are less than significant.

Impact SA-5: Impacts from Wildfires

Mitigation Measure SA-5A: Wind Project Grass Fire Control Plan. To minimize the potential for grass fires, the following shall be required:

a. Prior to commencing construction, the Applicant shall develop and implement a Grass Fire Control Plan for use during construction and operation. The Grass Fire Control Plan shall include notification procedures and emergency fire precautions.

b. During project construction, the Applicant shall comply with the following:

i. All internal combustion engines, stationary and mobile, shall be equipped with spark arresters;

ii. Spark arresters shall be in good working order;

iii. Light trucks and cars with factory-installed (type) mufflers, in good condition, may be used on roads where the roadway is cleared of vegetation;

iv. No smoking signs and fire rules shall be posted on the project bulletin board at the contractor's field office and in areas visible to employees during the fire season; and

v. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.

c. During project operation, the Applicant shall comply with the following:

i. Warning signs for high-voltage equipment shall be posted;

ii. Brush and other dried vegetation around pad-mount transformers and riser poles shall be cleared annually;

iii. Employees shall be trained in using extinguishers and communicating with the Montezuma Fire Protection District; and

iv. Accommodate inspections by the Montezuma Fire Protection District.

d. The Grass Fire Control Plan shall be submitted to the County for approval. The Applicant shall not commence construction activities until the County has approved the plan.

e. The Applicant shall provide a copy of the Grass Fire Control Plan, along with maps of the Shiloh IV Wind Energy Project Area and roads, to the Montezuma Fire Protection District for their approval.

f. The Applicant shall provide the Montezuma Fire Protection District access to its water storage tanks, if needed.

Mitigation Measure SA-5B: Comply with Fire Code Requirements for Access Roads. In order to provide safe access for fire apparatus in the event of fire, and reduce potential fire impacts to a less than significant level, the Applicant shall design and construct access roads within the project boundaries in compliance with applicable Fire Code standards as determined by the Montezuma Fire Protection District. Prior to

construction, the Applicant shall submit project plans to the Montezuma Fire Protection District for review and approval. No grading permit shall be issued until such time as the County has received written approval of the Project, including access road plans, from the Fire District.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Construction activities associated with the Project in vegetated areas may create a temporary increase in the risk of wildfires. Access roads throughout the Project area will reduce fire hazards because they act as firebreaks. Additionally, the roads will enable firefighting equipment access to the property that would not otherwise be available. With the implementation of Mitigation Measure SA-5, impacts due to wildfire will be reduced to less-than-significant levels.

Impact SA-6: Safety Impacts Related to Accidentally Damaging or Uncovering Gas Storage Wells in the Project Area

Mitigation Measure: HAZ-2.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: If a natural gas storage well is uncovered or damaged during construction, remedial operations may be required. According to the current proposed layout, the closest turbine to an existing natural gas well would be more than 7000 feet from a well. This distance would exceed California Building Code requirements. Additionally, with the implementation of Mitigation Measure HAZ-2, which requires that that Applicant prepare a plan for encountering contaminated soil, groundwater, natural gas wells, and other hazards, impacts on worker safety will be reduced to levels that are less than significant.

Impact TRA-1: Temporary Increase in Traffic during Construction

Mitigation Measure TRA-1: Develop a Traffic Control Plan and Transportation Plan for the Project. The Applicant shall develop a Traffic Control Plan and Transportation Plan for the Project as follows:

a. The Traffic Control Plan shall be based on the Project's final engineering design, be prepared by a registered professional engineer, and be submitted for review and approval to the Solano County Public Works Engineering Division (for affected county roads) and to Caltrans (for affected state highways) at least 45 days prior to construction. The Traffic Control Plan shall:

   i. Describe the location, schedule, and safety procedures for lane and road closures as well as the hours, routes, and safety and management requirements;

   ii. Describe how the Applicant shall implement the following measures:

      a) Traffic safety measures, such as warning signs on approaches to areas with construction activity (i.e., "Construction Traffic Ahead" or equivalent) to prevent hazards to motorists, bicyclists, and pedestrians;

      b) Scheduling of construction traffic to avoid peak traffic hours;

      c) Procedures for coordination with local jurisdictions to notify residents of alternate traffic routes and provide other notifications, as required by Solano County or other transportation agencies (e.g., Caltrans);

      d) Best Management Practices to reduce traffic impacts (e.g., identifying parking areas to be located in approved work areas) and to minimize trips on local roads. For example, construction equipment would be delivered directly to the construction location rather than to the staging area and carpooling would be promoted;

      e) Ensuring access for emergency vehicles at all times;

      f) Providing temporary access to businesses, residences, and/or pedestrians during construction;

      g) Opening lanes as soon as possible to restore normal traffic patterns;

      h) During the design phase, coordination by the Applicant with other utilities service providers to ensure conflicts with other utilities are minimized;

      i) Designing and constructing new roads to accommodate traffic and minimize the potential for accidents, in accordance with all applicable Caltrans and

Solano County specifications, including appropriate slopes, sufficient turning radii, and appropriate roadway depth; and

j) After construction, restoring the routes to original conditions;

b. The Applicant shall also develop, provide to Solano County Public Works, Engineering Division, and adhere to a Transportation Plan that addresses the following issues:

i. Describe the location, schedule, and safety procedures for lane and road closures as well as the hours, routes, and safety and management requirements;

ii. Transport of all equipment to the site;

iii. Transport of all equipment during equipment removal;

iv. Transport of all building materials;

v. Circulation, itemizing how many of each vehicle type shall use which roads;

vi. Security Bonding;

vii. Vehicular traffic types and amounts necessary;

viii. Extra-legal loads;

ix. Signage;

x. Road Maintenance; and

xi. Obtaining required grading, transportation, and encroachment permits from Solano County and Caltrans.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The Project will result in temporary and short-term increases in local traffic due to construction-related workforce traffic, heavy equipment delivery, and material deliveries. To reduce impacts from construction-related traffic, the Applicant will be required to prepare a Traffic Control Plan and a Transportation Plan to manage

temporary increases in traffic on the regional and local roadway system and to restore the roadway system to its original condition. With the implementation of Mitigation Measure TRA-1, which requires the preparation and implementation of a Traffic Control Plan, temporary increases in traffic on freeways and roads used for the Project will be reduced to a less-than-significant level.

Impact TRA-2: Temporary Disruptions to Traffic Flow during Construction

Mitigation Measure TRA-2: Minimize Lane Closures and Provide Alternative Access for the Project. To minimize impacts on traffic caused by temporary lane closures, if required, the Applicant shall:

a. Implement the procedures identified in the Traffic Control Plan to provide alternate access to residents/businesses and emergency vehicles and reopen roads as soon as possible;

b. Obtain advance approval from Solano County Public Works of any lane closure;

c. Allow lane closures only during workdays (no overnight lane closures shall be allowed) and limit them to the minimum amount of time needed to complete necessary activities, with consecutive daily closure of no more than two weeks for any road, thereby preventing impacts to adjacent land uses; and

d. Provide at least one access lane or alternate access at all times.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The Project could result in short-term lane closures (one to two weeks in duration) and temporary disruptions to traffic flow if it is necessary to widen or improve existing roads to accommodate equipment during construction. To reduce impacts from potential temporary disruptions to traffic flow during construction, the Applicant will be required to minimize lane closures and provide alternative access to the Project at all times. With the implementation of Mitigation Measure TRA-2, which requires at least one access lane or alternate access at all times and lane closures to be short-term (from 1 to 2 weeks), this impact will be reduced to levels that are less than significant.

Impact TRA-3: Damage to Existing Roads Due to Construction, Maintenance, and

Operation

Mitigation Measure TRA-3: Minimize Road Damage and Repair Roads. The Applicant shall be responsible for maintaining, repairing, paving, and reconstructing County roads through implementation of the following measures. The Applicant shall:

a. Use regulation-sized vehicles, except for specific construction equipment, which may haul oversized loads;

b. Obtain local hauling permits from appropriate agencies prior to construction and adhere to any conditions in these permits;

c. Be responsible for any damage to roads incurred as a result of the project;

   i. The Applicant shall repair damage to roads as a result of the project construction consistent with the most recent update to the *Solano County Road Improvement Standards and Land Development Requirements*, currently dated February 28, 2006, except that repairs to damaged paved sections may be made with 5 inches of asphalt concrete at the discretion of the County, while repairs to damaged gravel sections of road shall replace the preexisting depth of aggregate base but be not less than 12 inches in depth;

   ii. Repairs to roads shall include but are not limited to overlays and full depth reconstruction to the satisfaction of Solano County, as solely determined by the Solano County Department of Public Works Engineering;

   iii. The Applicant shall pay fair share costs of an area wide overlay of the County roads impacted by the Project, as solely determined by Solano County.

d. Apply for, secure, and abide by the conditions of an encroachment permit for any and all work within the County right-of-way, which may further define and qualify the road repair requirements of the County;

e. Apply for, secure, and abide by the conditions of a grading permit for any and all work within project limits, or construction associated with the Shiloh IV wind farm;

f. Enter into a secured agreement with Solano County to ensure that any existing County roads impacted by the Project will be repaired and improved to accommodate the increased traffic from the construction, repair, replacement and long term operation of the turbines. All required repairs and improvements will be completed to the satisfaction of Solano County. The same shall be required for any road damage or modification associated with the decommissioning of wind energy project;

g. Post a security bond to cover the costs of road maintenance during construction. The Applicant shall repair any damage to roads and restore roads to condition in effect prior to commencement of construction or per requirements of the state (for state roads) and Solano County (for county roads), as applicable, the latter of which shall be as solely determined by the Solano County Department of Public Works Engineering. Should the Applicant not perform such repairs to county roads to Solano County's satisfaction, the County reserves the right to perform the repair work at the cost of the Applicant; and

h. Remove or reduce new access roads installed for initial project construction to the minimum width necessary for maintenance and/or emergency access, and the disturbed areas shall be restored by the facility owner to the original preconstruction condition, as determined by Solano County. The same shall also be required for any access roads installed for the repair, replacement or decommissioning of a wind energy project.

Implementation: This Mitigation Measure will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: Project construction-related trips could damage existing roads used to access the Project through increased use and/or use by heavy equipment. The Project could also track dust, soils, and other materials from graded construction sites onto public roads.

This impact is considered potentially significant. To minimize impacts to existing roads during Project construction, the Applicant would be required to minimize use of over-sized vehicles and restore damaged roads to pre-construction condition. By implementing Mitigation Measure TRA-3, damage to existing public roads and access roads installed for initial Project construction will be reduced to a less-than-significant level.

Impact TRA-5: Potential Impacts on Air Navigation

Mitigation Measure TRA-5A: Prohibit Hazards to Air Navigation. To ensure the project does not result in a hazard to air navigation:

a. The Applicant shall submit to the Solano County DRM:

i. Evidence that Form 7460-1, Notice of Proposed Construction or Alteration, requesting that the FAA issue a Determination of No Hazard to Air Navigation for each of the Project's turbines and meteorological towers, has been filed with the FAA. The Applicant shall submit evidence to the Solano County DRM that Form 7460-1 has been filed with the FAA, including the outcome of all notifications and any conditions required by the FAA, prior to the installation of the Project's wind turbines and meteorological towers.

ii. Evidence that Form 7460-2, Notice of Actual Construction or Alteration, has been filed with the FAA. The Applicant shall submit evidence to the Solano County DRM that Form 7460-2 has been filed with the FAA prior to the issuance of any final certification of occupancy for the project by the County.

b. Should a significant revision occur to the height and/or location of a wind turbine or meteorological tower, subsequent to receipt of a No-Hazard determination for the affected wind turbine or meteorological tower, the Applicant shall be required to re-notify the FAA, as determined by the Solano County DRM. A significant revision to the height and/or location of a wind turbine or meteorological tower shall be defined as a change in location that:

i. Is 100 or more feet in any horizontal direction from the structure's original location, as identified on submitted Form 7460-1;

ii. Results in a vertical height increase of one foot or more, as compared to the structure's original overall height as identified on submitted Form 7460-1.

c. The Applicant shall comply with all conditions set forth in all FAA Determinations of No Hazard issued in connection with the project. No wind turbine or meteorological tower shall be installed without prior receipt of and submission to the Solano County DRM of an FAA "Determination of No Hazard to Air Navigation."

Mitigation Measure TRA-5B: Prohibit Penetration of Travis AFB Outer Horizontal Surface. To ensure that the Project does not penetrate the Travis Air Force Base outer horizontal surface:

a. The Applicant shall submit documentation to the Solano County Department of Resource Management demonstrating that the total height of project turbines and meteorological towers located within the Travis Air Force Base outer horizontal surface, as measured with the turbine blade tip in the 12 o'clock position, is less than 562 feet above mean sea level.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid the identified significant impact on the environment to a level that is less than significant.

Rationale for Finding: The potential for the proposed Project to impact aviation patterns and/or result in a hazard to air navigation is primarily dependent on the height of the proposed structures and the proximity of the proposed structures to an airport, compatibility zone, or other protected surface. In June 2011, the Applicant submitted FAA Form 7460-1 to the FAA for each of the currently proposed wind turbine and meteorological tower locations. However, the FAA has not yet issued any determinations on whether the proposed turbines and meteorological towers would represent a potential hazard to air navigation. The Applicant may be required to re-notify the FAA of its planned construction activities if the current project layout is modified.

The potential impacts associated with aviation navigation and safety as a result of the turbine and met tower heights, particularly in the absence of an FAA determination of no hazard for the Project, are considered potentially significant. Mitigation Measure TRA-5A requires the Applicant to submit all required notification forms to the FAA as well as evidence of submission to Solano County.

The Applicant's aviation expert, JDA Aviation Technology Solutions (JDA), reviewed the City of Rio Vista's comments and the proposed project layout and determined that the Project would not result in the placement of any turbines within Rio Vista Airport's conical surface area, horizontal surface area, or any airport compatibility zones. However, the Solano County ALUC Airport Land Use Compatibility Review Procedures apply to any proposal for construction taller than 200 feet above ground level at the site, regardless of its location in the County. The Project was, therefore, subject to ALUC review and determination that the Project is consistent with Rio Vista Airport LUCP. On October 27, 2011, the Solano County ALUC reviewed the project and adopted a resolution determining its consistency with the Travis AFB and Rio Vista Airport Land Use Compatibility Plans, subject to three conditions which are addressed in mitigation measures TRA-5A or otherwise addressed by existing Solano County procedures.

The Shiloh IV project is located approximately eight statute miles (seven nautical miles) southeast of Travis AFB itself. However, the northwestern portion of the project area lies within the Travis AFB area of influence, land use compatibility zone C, and outer horizontal surface area. The Travis AFB LUCP prohibits hazards to flight from being placed within land use compatibility zone C and also generally requires that the height

of objects in the vicinity of Travis AFB be restricted so that they do not penetrate an imaginary protected airspace surface. The Applicant is proposing turbines with a hub height of 230-feet (70 meters) and a total height of 382 feet (116.5 meters) at locations within the Travis AFB outer horizontal surface in order to avoid penetrating this protected airspace. The Project, as noted above, was subject to ALUC review and determined consistent with the Travis AFB LUCP.

Mitigation Measure TRA-5A, Prohibit Hazards to Air Navigation, requires the Applicant to submit evidence demonstrating that the Project will not result in an a hazard to air navigation, and Mitigation Measure TRA-5B, Prohibit Penetration of Travis AFB Outer Horizontal Surface, requires the Applicant to submit evidence demonstrating that the Project will not penetrate Travis AFB's outer horizontal surfaces. Implementation of these mitigation measures will reduce this impact to less-than-significant levels.

8. CUMULATIVE IMPACTS

Aesthetics

Mitigation Measure(s): AES-7, AES-8.

Implementation: These Mitigation Measure will be included in conditions of approval for the Project.

Finding: The Shiloh IV Wind Energy Project will contribute to significant and unavoidable cumulative impacts to visual resources. Even with implementation of mitigation measures, these impacts will be significant and unavoidable. The Commission finds that the design of the Project reduces the potential adverse impacts resulting from the Project to the greatest extent possible, and the impacts are overridden by the economic, social and legal considerations detailed in Paragraph 10.

Rationale for Finding: Wind energy development has significantly altered the agricultural character of the Montezuma Hills region since 1987, when Solano County first designated it as a wind resource area, and over 800 turbines have been constructed. The turbines dominate formerly open views of rolling grassland and draw the attention of sensitive viewer groups. Sensitive viewer groups include residents in the vicinity of the wind resource area, motorists driving along local roads, motorists driving along County Scenic Roadways SR 12 and SR 113, and visitors to the area, including visitors to the Western Railway Museum, the Suisun Marsh, and the Sandy Beach Park.

The approved and proposed projects in the Montezuma Hills will contribute to the cumulative impact on visual resources. Completion of the Solano Wind Phase 3, Shiloh III, and Montezuma II projects, all currently or soon-to-be under construction, would

introduce new dominant structures into views and would further detract from the rural, agricultural character of the area. The Shiloh IV project would introduce large turbine models, replacing 255 of the KCV 56-100 turbines now in the area, and the Zephyr and PG&E Projects, if approved, would add additional turbines to the area.

Although they conform to the Solano County setback, siting, and design standards, the visibility of projects throughout the Montezuma Hills has a significant impact on aesthetic/visual resources in the area. The cumulative impact consists of continuous, landscape-defining views for residents and travelers in the majority of the 42,972-acre region. The proposed project would contribute to and extend the cumulative visual impact of wind development in the Montezuma Hills are by adding turbines in areas where they were not located previously, particularly near Birds Landing and along Collinsville Road.

Portions of the Shiloh IV and Montezuma II project turbines blades would be visible at a greater distance than the existing turbines and would contribute to existing cumulative impacts from the more remote viewpoints where the existing enXco V turbines are not now visible. Portions of both the Montezuma II and Shiloh IV projects represent in-fill development, given that both project areas are nearly surrounded by existing wind turbines. However, the Shiloh IV project introduces large, modern turbines near the community of Birds Landing and along rural roads and therefore expands the visual extent of the existing wind development to the west. By filling in areas along rural roads, particularly Collinsville Road, the project will contribute to the significant aesthetic impact experienced while driving through the Montezuma Hills.

Viewers traveling County Scenic Roadways SR 12 and SR 113 have significant foreground and background views of Shiloh I, Shiloh II, High Winds, and Montezuma I projects, the Montezuma II and Shiloh III projects, and the Zephyr and PG&E projects, if approved, would add additional turbines to existing views. Turbines to the south of SR 12 dominate the landscape, and the existing cumulative impacts are significant and unavoidable. As shown in Figure 21.2-1, some portions of the Shiloh IV project turbine blades would be visible in occasional background views along SR 12 and SR 113, but at such a distance that the contribution to the cumulative impact would not be substantial.

Rio Vista currently experiences background views of Shiloh II project turbines, and the Shiloh III project, which is currently under construction, will site turbines one mile away from Rio Vista residences, adding to these visual impacts. The topography surrounding the Rio Vista obscures many views of wind projects in the Montezuma Hills, and the Shiloh IV project would not substantially contribute to the cumulative visual impacts from Rio Vista.

Wind projects are also visible across the San Joaquin River in Antioch and Pittsburg. Antioch has identified views of the river to the north, with Montezuma Hills in the

background, as an important view corridor. Shiloh I, Solano Wind Phase 1 and 2, the High Winds, Montezuma II, and Shiloh III turbines are currently visible in the distance, and the PG&E and Zephyr turbines would also be visible if constructed. The existing turbines do not detract from foreground views of the San Joaquin River, but are a clearly visible grouping of turbines in the background. The proposed Project would add to these impacts, but the cumulative impact would not be significant.

Lighting installed on the Shiloh IV turbines would contribute to the light pollution in the area as a result of the installation of lighting on nearby turbines; however, this would not be a significant impact because not all the turbines will be required to be lit and the majority of the visual impact is a result of the size and proximity of the turbines to the viewer. Additionally, Mitigation Measure AES-7, Limit Marking and Lighting to FAA Requirements, will limit the Project's impact on aesthetics due to introducing a new source of light. Other wind energy facilities in the project area are subject to the same FAA lighting requirements; because only some of the turbines around the perimeter of these projects would require lighting and because this lighting would be required only at night, the cumulative impact on aesthetic resources due to lighting requirements would be less than significant.

Mitigation of visual impacts is not feasible, and the cumulative effects are unavoidable significant impacts on visual resources. These significant and unavoidable impacts are overridden by the economic, legal, and social considerations detailed in Part 10.

Agricultural Resources

Mitigation Measure(s): AG-4, AIR-2, HAZ-1A, HAZ-1B, AG-5, BIO-1A, BIO-1B, BIO-3, GEO-3, HYD-2A, HYD-2B, AG-6, HAZ-2

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to cumulative impacts on agriculture through the conversion of agricultural lands to non-agricultural uses.

Rationale for Finding: Solano County has found that wind resource energy development is compatible with the essential agricultural nature of the Montezuma Hills. The Project will permanently remove approximately 37 acres of agricultural lands and result in the incremental, permanent conversion of approximately 16 acres of agricultural lands to non-agricultural uses, or about 0.5 percent of the project area. Agricultural and grazing uses will continue in areas not permanently disturbed by the Project. The other projects in the Montezuma Hills have similar long-term impacts on agriculture, and the Project will not result in a considerable contribution to cumulative impacts on agriculture through the conversion of agricultural lands to non-agricultural uses. Much of the land in the Montezuma Hills is already disturbed by ongoing

agricultural practices and the small amount of vegetation cover permanently lost to these facilities, including the Shiloh IV project, will not result in significant cumulative agricultural impacts in the area.

The Project will temporarily disturb approximately 278 acres of agricultural lands in the project area, and decommissioning the enXco V project could result in an additional 19.6 acres of disturbance. The combined temporary impacts will be approximately 10 percent of the project area and would occur in only one growing season. No other wind projects are expected to be in construction in 2012

The Shiloh IV project will replace the existing enXco V turbines on 13 of the 22 parcels in the project area. All of the 22 parcels that compose the project site are subject to Williamson Act contracts, and 13 of these Williamson Act parcels currently have enXco V wind energy facilities. The County has determined that wind energy projects are compatible with Williamson Act lands, and the project will not have cumulative impacts from the conversion of Williamson Act lands to non-agricultural uses. In addition, there are no forest lands, woodlands, or timberlands in the Project area, so there will be no cumulative impact on those resources.

Most of the Montezuma Zephyr and PG&E projects would be within the Montezuma Hills agricultural region and, if approved, would result in a similar small percentage of permanent and temporary conversion of agricultural land in the County. Given the small size of the impacts to agricultural land from recent wind development in the area, the additional cumulative impacts to agriculture will not be significant.

Air Quality

Mitigation Measure(s): AIR-1A, AIR-1B, AIR-2, BIO-1.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to cumulative impacts on agriculture through the conversion of agricultural lands to non-agricultural uses.

Rationale for Finding: Construction of the Shiloh IV Wind Energy Project will result in fugitive dust and particulate emissions that exceed the Yolo-Solano Air Quality Management District significant threshold for PM_{10} even with implementation of mitigation measures. The impacts of the Project on air quality, while significant, will be short-term and limited to the construction phase. Operation of the Shiloh IV Wind Energy Project and the other wind energy facilities in Solano County will reduce the County's dependence on fossil fuels, reduce regional and statewide emissions of ozone precursors and other criteria pollutants, and will have a beneficial cumulative effect on long-term regional air quality.

Construction of the Zephyr project and the Shiloh IV project is unlikely to occur concurrently, but if it were to occur, it could result in additional temporary emissions from construction equipment and grading and additional temporary water requirements. The Zephyr project would be within BAAQMD. Although construction emissions of NO_x and other pollutants would contribute to existing pollutant levels, the cumulative impacts will be temporary and comparable to the cumulative air quality impacts of the construction of previous wind projects in the Montezuma Hills. Moreover, the approved wind projects in the area produce long-term air quality benefits that help reduce the short-term emissions of the construction of additional projects.

Biological Resources

Mitigation Measures: BIO-1A, BIO-1B, AG-4, BIO-2A, BIO-2B, HYD-2A, HYD-2B, BIO-3, BIO-4, BIO-5A, BIO-5B, BIO-7, BIO-8A, BIO-8B, BIO-8C, BIO-8D.

Implementation: These Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Shiloh IV Wind Energy Project will contribute to significant and unavoidable cumulative biological impacts to bats, raptors, and other special status birds. Even with implementation of mitigation measures, these impacts will be significant and unavoidable. The Commission finds that the design of the Project reduces the potential adverse impacts resulting from the Project to the greatest extent possible, and the impacts are overridden by the economic, social and legal considerations detailed in Paragraph 10.

Rationale for Finding:

Habitat Impacts

The temporary disturbance of approximately 278 acres of habitat for the project is not a significant impact. More than 99 percent of the disturbance would be agricultural lands and the implementation of Mitigation Measure BIO-1A, Minimize Habitat Disturbance, and BIO-1B, Restore Disturbed Habitats, reduces the impact to a less than significant level. The potential for cumulative, temporary disturbance impacts associated with concurrent Zephyr project construction is considered less than significant since it is highly improbable that the construction schedules for Shiloh IV and Montezuma Zehpyr would overlap, and Zephyr would likely be subject to requirements similar to that of mitigation measures BIO-1A and BIO-1B.

The Project will result in the permanent, incremental habitat loss of approximately 16.0 acres, which comprises approximately 0.5 percent of the total project area. When combined with the permanent habitat loss impacts of the High Winds (105 acres), Shiloh I (84 acres), Shiloh III (50 acres), Shiloh III (42 acres), Solano Wind Phase 1 and

2 (22 acres), Solano Wind Phase 3 (95 acres), Montezuma I (26 acres) and Montezuma II (37 acres), the total cumulative permanent habitat loss in the Montezuma Hill region with the Shiloh IV project would be approximately 477 acres, more than 99 percent of which is assumed to be agricultural lands. Thus, the total area of permanently displaced potential habitat, including the Shiloh IV project, would constitute approximately 1.1 percent of the land within the 42,972-acre Montezuma Hills agricultural region, as identified by the General Plan. Mitigation Measures BIO-1A, Minimize Habitat Disturbance, and BIO-1B, Restore Disturbed Habitats within Project Area, require the Applicant to minimize habitat loss and restore disturbed lands to pre-construction conditions. Much of the land in the Montezuma Hills is already disturbed by ongoing agricultural practices, and the small amount of vegetation cover permanently lost to the wind facilities, including the Shiloh IV project, would not result in significant cumulative impacts from habitat loss, habitat fragmentation, or non special-status wildlife injuries and mortality.

The Montezuma Zephyr project, if approved, would result in additional loss of habitat in the area and could potentially result in loss of non-agricultural habitat. The environmental analysis of the Zephyr project would evaluate the site-specific habitat impacts from the project and identify mitigation, if significant habitat loss occurred. The cumulative loss of agricultural habitat from addition of up to 43 turbines to the 530 turbines considered under this cumulative development scenario would not result in significant, cumulative permanent habitat loss impacts within the Montezuma Hills agricultural region.

Water Bodies

Project construction and installation could result in the temporary and permanent loss of aquatic resources including wetland habitats and Waters of the U.S. and/or State within and adjacent to the project area. Implementation of proposed mitigation measures BIO-2a, Avoid Impacts to Aquatic Resources, and BIO-2B, Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources, will reduce these impacts to less than significant levels.

The existing projects in the Montezuma Hills adhere to similar mitigation designed to avoid impacts on wetlands and Waters of the U.S. The approved and foreseeable projects in the area are subject to the same regulations and permitting requirements as the proposed Project and are required to adopt similar mitigation. If future projects are unable to avoid impacts, additional permit requirements would include reducing or minimizing the impacts to less than significant. Given these requirements, the combined effect of past, present, and reasonably foreseeable projects will not result in significant cumulative impacts on wetlands or Waters of the U.S and/or State, within the Montezuma Hills region.

Vegetation and Special Status Plant Species

Project development will result in both temporary and permanent loss of vegetation within the project area. As discussed above under habitat loss, the proposed Project in conjunction with other projects considered in the EIR's cumulative analysis would disturb less than 1.1 percent of the overall Montezuma Hills agricultural region and would constitute a less than significant impact on vegetation.

The project area contains three special-status plant species (Garnder's yampah, pappose tarplant, and heartscale), however, Mitigation Measure BIO-3, Avoid Impacts to Special-Status Plants) requires the Applicant to reduce, avoid, and/or regenerate lost plant specimens, reducing the project's impacts on special-status plants to less than significance. The other wind energy projects considered in the EIR have been or are likely to be subject to similar avoidance and minimization measures and cumulative impacts to special status plants are considered to be less than significant.

Non-Avian Sensitive Wildlife Species

Four special-status invertebrate and amphibian species, including the California Tiger Salamander (CTS), have the potential to occur in the project area; however, the Project is not expected to result in direct or indirect impacts to these species or their potential habitat. The Applicant is assuming presence of CTS in the project area and has begun consultation with the USFWS and CDFG regarding authorization for potential take of CTS, including preparation of a federal Habitat Conservation Plan and a mitigation plan in accordance with state take permit requirements. Implementation of Mitigation Measures BIO-2A, Avoid Impacts to Aquatic Resources, BIO-2B, Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources, and BIO-4, Habitat Avoidance – California Tiger Salamander, will reduce the Project's potential direct and indirect cumulative impacts on non-avian sensitive wildlife species and their habitat to less than significant levels. The Zephyr project would be subject to similar or more restrictive mitigation requirements than the Shiloh IV project and therefore the potential for cumulative construction-related impacts to non-avian sensitive wildlife species is considered less than significant.

Birds and Bats

Birds and bats using or migrating through the Montezuma Hills region would be subject to cumulative impacts from the existing, approved (all under construction in 2011), planned, and foreseeable commercial wind energy facilities listed in Table 21.1-1 (Revised) of the FEIR. The Project could result in approximately 33 raptor and 374 total avian fatalities (including raptors) per year, based on regional, weighted average mortality rates derived from monitoring at the nearby High Winds, Shiloh I, Shiloh II, and Solano Wind Phase 1 and 2 projects. Though the project-related raptor mortality would not be expected to impact common raptor species significantly, due to the abundance of these species' local or regional populations, the Project could impact raptor species with

small local populations and low reproductive rates. The implementation of mitigation will not reduce project-related raptor mortalities to a less than significant level.

With the addition of the Shiloh IV Project to the Montezuma Hills, turbines in the area would result in an estimated 345 raptor and 3,800 total avian fatalities (including raptors) per year. Since the Project-specific impact will be significant, and since raptors and other special-status species in the area would be subject to cumulative impacts, the Project would contribute to a cumulatively significant impact to raptors and other special-status birds.

Mitigation measures BIO-8A, BIO-8B, and BIO-8C require the Applicant to conduct three years of post-construction bird and bat mortality monitoring in the project area, provide on-site pre-construction siting and design, construction risk and reduction, and operation and management measures, and provide off-site mitigation to replace up to 84 acres of aerial habitat that the project would disturb. These measures will reduce the Project's incremental contribution to potential avian mortality, but impacts to special-status birds and raptors will remain significant and unavoidable at both the Project and cumulative level. No additional mitigation is feasible for cumulative impacts to special-status birds and raptors.

The proposed project will not contribute to significant cumulative impacts on other bird species in the Montezuma Hills region. Mortality monitoring data from surrounding wind farms (Kerlinger et al. 2006; Kerlinger et al. 2009; Burleson Consulting 2010) indicates that impacts on waterfowl, water birds, game birds, and passerine birds are less than significant and not cumulatively considerable.

The proposed project could result approximately 9.6 western red bat and 309 total bat fatalities (including western red bat) per year, based on regional, weighted average bat mortality rates derived from monitoring at the nearby High Winds, Shiloh I, Shiloh II, and Solano Wind Phase 1 and 2 projects. This project mortality rate is considered less than significant on a local and regional level given the global populations of potentially impacted species.

The existing, approved (under construction in 2011), and planned Shiloh IV project are expected to result in approximately 1,025 MW of wind energy power production, resulting in approximately 102 western red bats and 3,168 total bats per year. Considering that these are all common bat species that probably come from populations that number in the hundreds of thousands or even tens of millions in the case of some species, these numbers may not be biologically significant at the regional level. However, due to a lack of data on bat usage in the wind resource area in the Montezuma Hills, these impacts are likely to be cumulatively significant for local populations and are unavoidable. Mitigation Measures BIO-8A and BIO-8B require the Applicant to conduct three years of bird and bat mortality monitoring and provide on-site pre-construction siting and design, construction risk and reduction, and operation and

management measures. These measures will reduce the Project's cumulative contribution to potential bat mortality, but the impact will remain cumulatively significant and, since no additional mitigation is feasible for impacts to bats, unavoidable.

While it is reasonable to assume that the PG&E Collinsville and Montezuma Zephyr projects would result in additional bird and bat mortality that would contribute to cumulative bird and bat impacts in the Montezuma Hills, the Applicants for these projects have not provided the site-specific studies necessary to quantify this contribution, nor have they identified any mitigation suitable for these potential impacts. If these analyses show new or substantially more severe impacts for the foreseeable projects because of differences in surrounding habitat, the PG&E and Zephyr projects may be subject to additional mitigation measures as a result of their site specific analyses. However, after mitigation, the potential additional turbines would not change substantially the severity of the Shiloh IV project's contribution to this impact.

Cultural Resources

Mitigation Measures: CUL-1, CUL-2A, CUL-2B.

Implementation: Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to significant cumulative impacts to cultural resources.

Rationale for Finding: In the Shiloh IV Wind Energy Project Area, there are 10 architectural historical resources that may be eligible for listing in the California Registry of Historic Resources, and one cultural resource, a windmill and well pump, that, while likely not eligible for listing, is considered significant in this report because it is still functioning. With the proposed mitigation and siting of project components away from cultural resources, the Project will have no impact on known cultural resources identified within the project area and will not contribute to any cumulative impacts on cultural resources.

Project construction will involve ground disturbance and has the potential to uncover or damage unknown subsurface resources. Other projects constructed in the area would have a similar potential to impact unknown subsurface resources. However, these potential impacts would be less than significant due to mitigation requiring applicants to survey areas of project impact for cultural resources and to adhere to protocols to protect resources in the event of an accidental discovery, and due to the low sensitivity of the region and lack of significant finds. Although the addition of the Shiloh IV project and the construction of other foreseeable projects in the area have the potential to impact subsurface resources, these impacts will be site-specific and would not accumulate.

Geologic Resources

Mitigation Measures: GEO-1A, GEO-1B, GEO-2, GEO-3, HYD-2A, HYD-2B, AIR-2.

Implementation: Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to significant cumulative impacts to geologic resources.

Rationale for Finding: Geologic hazards such as seismicity, landslides, and erosion and other geologic and soil hazards at the site will be mitigated by implementing standard design measures, which will reduce impacts to less-than-significant levels. Geologic and soils hazards are site-specific and, with suitable design, there will be no impacts from these hazards from the Shiloh IV Wind Energy Project. Therefore, the Project will not contribute to cumulative impacts related to these resources.

Greenhouse Gases

Mitigation Measures: None.

Implementation: No mitigation measures are required.

Finding: The Project will not contribute to cumulative impacts related to greenhouse gases.

Rationale for Finding: The Shiloh IV Wind Energy Project will result in greenhouse gas emissions during construction and operation. According to proposed construction schedules for the Shiloh IV Project and other proposed projects, construction of the Shiloh IV Project is not anticipated to overlap with any other wind development construction activity in the area. Although Shiloh IV would contribute to temporary cumulative impacts to greenhouse gas emissions, no significance threshold applies for greenhouse gas emissions from construction, so the impact would be less than significant. Emissions from operation of the Project would be below the BAAQMD significance threshold for operation and less than significant.

In addition, operation of the Project will more than offset project-related emissions by displacing power generation and greenhouse gas emissions from fossil fuels, thus leading to a beneficial impact. The Project would also result in a net reduction of greenhouse gases when compared to the greenhouse gas emissions the existing enXco V facility already displaces. Additionally, the Project and the other wind energy projects in the Montezuma Hills, including reasonably foreseeable projects, would not conflict with and, in fact, would support the County's General Plan policies regarding climate change. Specifically, operation of the Project could help achieve the Climate

Action Plan's objective of reducing total greenhouse gas emissions in the County to 20 percent below 1990 levels by 2020, and it will realize the General Plan's policy to protect and facilitate renewable energy generation within the County. The Project will therefore not contribute to cumulative impacts related to greenhouse gases and will, in fact, help reduce these impacts.

Hazardous Materials

Mitigation Measures: HAZ-1A, HAZ-1B, HAZ-2.

Implementation: Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to significant cumulative impacts to hazardous materials.

Rationale for Finding: The Shiloh IV Wind Energy Project is not likely to require treatment, disposal, or transport of significant quantities of hazardous materials. To minimize the likelihood of accidental release of hazardous materials, the Applicant would prepare and implement a Hazardous Materials Emergency Response Plan; a Spill Prevention, Countermeasures, and Control Plan, a Storm Water Pollution Prevention Plan, and a Waste Management Plan. Any impacts of accidental releases of hazardous materials will be contained on site and would not combine with the impacts of other projects in the area.

The wind projects considered in the EIR would be subject to the same regulations as the Project, and would be required to develop similar plans to address accidental release of hazardous materials. Because the mitigation required of the Project and the cumulative projects would substantially reduce the likelihood of impacts due to the release of hazardous materials and because, in general, wind energy facilities do not require the use and storage of significant quantities of hazardous materials, there will be no cumulative impact under this criterion.

Hydrology and Water Quality

Mitigation Measures: HBIO-2A, BIO-2B, HYD-2A, HYD-2B, AIR-2, BIO-1A, BIO-1B, GEO-3, HAZ-1A, HAZ-1B.

Implementation: Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to significant cumulative impacts to hydrology and water quality.

Rationale for Finding: The locations of the Shiloh IV Wind Energy Project turbines will be in compliance with required setbacks from wetlands, streams, vernal pools, and ponds or, in the case of exceptions, would be approved by the appropriate agencies. In addition, the Applicant will site infrastructure away from sensitive habitats to the extent feasible. The Applicant will mitigate any potentially adverse impacts on water quality by implementing the Storm Water Pollution Prevention Plan erosion control measures and would obtain any necessary permits from USACE, RWQCB, and CDFG. Although the Project will add approximately 37.0 acres of compacted and impervious surfaces, this area is approximately 1.2 percent of the project area and would not represent a significant impact on the hydrologic flows in the project area.

Additionally, operation of the Shiloh IV Wind Energy Project will not significantly increase surface water runoff or decrease drainage water quality in the Project area. Other existing, planned, and future foreseeable project, including the decommissioning of the enXco V wind energy project, would likely have similar impacts on hydrology and water quality and similar mitigation. Small impacts to hydrology and water quality from several different projects within the Montezuma Hills could accumulate to result in a significant cumulative impact, but the implementation of similar mitigation at the other projects would reduce to cumulative impacts on water quality in the wind resource area to less than significance.

The Shiloh IV Wind Energy Project will not contribute to cumulative impacts from water consumption during operation. Although the Shiloh IV Wind Energy Project will not increase the operational water demand at the enXco O&M building, other new wind projects in the Montezuma Hills would contribute to cumulative impacts from water use. The cumulative operational demand of the existing and proposed projects on local groundwater sources in the Montezuma Hills would be approximately 6,830 gallons per day, equivalent to the water demand of approximately 15 houses. The PG&E Collinsville and Montezuma Zephyr projects can be expected to have similar water demands and would not result in a substantial new impact. The cumulative impact of operational water use will be less than significant.

Land Use and Population

Mitigation Measures: LU-1, LU-1B, LU-4.

Implementation: Mitigation Measures will be included in conditions of approval of the Project.

Finding: The Project will not contribute to significant cumulative impacts to land use and population.

Rationale for Finding: The Applicant will construct and operate the proposed project in accordance with all Solano County General Plan and County Code requirements, as

well as Solano County ALUC requirements. The Applicant will comply with setback requirements; Mitigation Measure LU-1 requires the Applicant to obtain and submit to the County waivers for reduced setbacks, avoiding potential impacts to adjacent uses. In addition, the Project will continue wind energy development on the 57 percent of the project area currently used for the enXco v project. The Project therefore, will not conflict with existing land uses and land use requirements.

The projects considered in this cumulative impact analysis are or would be subject to substantially the same requirements as the Shiloh IV project. The High Winds project mitigated potential land use conflicts, and no impacts on adjacent residences were identified for Shiloh I, Shiloh II, Shiloh III (under construction in 2011), Solano Wind Phase 1, 2, and 3 (under construction in 2011), or the Montezuma I or II projects (under construction in 2011). Similarly, the PG&E and Zephyr projects would be able to avoid or mitigate potential conflicts with residential uses. Thus, with the application of county setback criteria, there are no anticipated cumulative adverse impacts on land uses.

The Project will require six permanent workers who would commute to the site from outside the area, but the total number of workers at the enXco O&M site would not increase substantially. Approximately 15 workers on average operate each of the other currently operating wind farms. The combined workers at all of the wind energy projects in the Montezuma Hills region would represent a small portion of the population and housing base in Solano County and would not have a cumulative impact on population or housing in the region.

Noise

Mitigation Measures: NOI-1, NOI-2A, NOI-2B.

Implementation: Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to significant cumulative impacts to noise.

Rationale for Finding: There are five residences within the project area and another 11 residences within 2,180 feet of the project boundary that are considered sensitive receptors. Construction activities within 1,260 feet would cause noise above Solano County's 50 dBA noise criteria. The implementation of Mitigation Measure NOI-1, Reduce Construction Noise, would reduce this impact to a less-than-significant level. The other wind energy projects considered in this analysis do not have the potential to result in construction noise impacts that would combine with the Shiloh IV project. The PG&E and Zephyr projects, if approved, would be located approximately one mile south and one mile west, respectively, of the Shiloh IV project and would therefore not result in cumulative construction noise impacts. Decommissioning of the portion of the enXco V project within the Shiloh IV project area would start and finish before the Applicant

commences with construction of the Shiloh IV project and, therefore, would not have the potential to result in cumulative noise impacts.

As proposed, the Shiloh IV project would cause a long-term increase in exterior noise levels at five residences that exceed Solano County's noise criteria (50 CNEL or 44 dBA steady noise level) during operation of the wind turbines. The implementation of mitigation measures, however, will reduce this level to less than significant. Mitigation Measure NOI-2A, Reduce Operational Noise, requires the Applicant to either demonstrate to the County prior to construction that noise would not exceed Solano County noise criteria, obtain waivers from potentially effected residences, or relocate the wind turbines; Mitigation Measure NOI-2B, Operational Noise Complaint Plan, requires the Applicant to establish mechanisms for filing and responding to noise complaints. With mitigation, the Applicant will substantially lessen noise impacts; therefore, the Project would not contribute to a significant cumulative noise impacts in the Montezuma Hills.

Public Services and Utilities

Mitigation Measure(s): HAZ-1A, SA-2B, SA-5, PSU-3.

Implementation: Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to significant cumulative impacts to public services and utilities.

Rationale for Finding: The proposed Shiloh IV Wind Energy Project could put additional demands on public services during construction and operations, but it would mitigate the potential impacts by developing and implementing an Injury and Illness Prevention Plan, a Hazardous Materials Emergency Response Plan, and a Grass Fire Control Plan, and by coordinating with emergency services about project activities. All wind facility projects include provisions for fire protection and locked gates, which would reduce the potential impacts on firefighting and police services. Implementation of these mitigation and design measures will avoid any significant cumulative impacts on public services.

The proposed and existing wind farms would place few demands on public utilities such as water, sewer, solid waste disposal, and electrical services. Based on the fact that water use estimates for the concurrent construction of three comparably-sized wind projects in the summer of 2011 did not exceed significance thresholds, the county anticipates that the impact of water use from highly unlikely concurrent construction of the Shiloh IV and Zephyr projects in the summer of 2012 would be less than significant. Therefore, there will be no cumulative impacts on public utilities.

The Shiloh IV Wind Energy Project will avoid impacts on communication lines, microwave antenna, and television and radio by implementing mitigation requiring the Applicant to notify owners and operators of this equipment, complete studies prior to construction to show that turbines would not interfere with these paths, and establish a mechanism to resolve any issues with affected owners or operators. Each project has proposed or implemented mitigation for television and other communication interference. Therefore, no significant cumulative impacts on communications are expected.

Recreation

Mitigation Measure(s): None

Implementation: None required

Finding: The Project will not contribute to significant cumulative impacts to recreation.

Rationale for Finding: The Shiloh IV Wind Energy Project area is over five miles from Sandy Beach County Park and Belden's Landing and will not have any significant impacts on the park uses or users. The western edge of the Project boundary will be located approximately three miles southeast of the Western Railway Museum, near which a County park is ultimately planned, although the exact location has not been specified. A tourist train operated by the Western Railway runs from the museum south along the historic Sacramento Northern Railway as far as Shiloh Road, about a half mile west of the nearest project boundary and within a mile of the nears project turbine. The presence of an additional turbine within a mile of the railway would be a less than significant impact and would cumulatively contribute to degradation of the view from the railroad. The contribution to cumulative impacts will not be substantial given that there are already 20 Shiloh I turbines within a mile of the railroad. The Project will not impact recreation in the wind resource area and therefore would not substantially contribute to a cumulative impact under this criterion.

Safety

Mitigation Measure(s): SA-1A, SA-1B, SA-2A, SA-2B, SA-3, SA-5A, SA-5B, HAZ-2.

Implementation: Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to significant cumulative impacts to safety.

Rationale for Finding: To lessen the potential for safety hazards due to blade throw, tower failure, wildfire, or electrical shock, the Applicant will be required to develop both a Grass Fire Control Plan and Injury and Illness Prevention Plan, and adhere to

equipment safety design standards. In addition, mitigation requiring the Applicant to limit public access to the project area and to install grounding and shut-off mechanisms on project facilities would reduce the risk of electrical shock and other accidents. It is anticipated that other projects would require similar measures. Because safety measures have been or will be adopted for all the local wind plants, there are no anticipated cumulative adverse effects from accidents.

The proposed Project will, along with other existing, approved (under construction in 2011), and foreseeable wind turbines in the Montezuma Hills, contribute to cumulative impacts from shadow flicker to nearby residents. Given the lack of strong evidence of health impacts and the absence of public input regarding shadow flicker, the County has not adopted a significance threshold for this impact. Landowners have not complained about shadow flicker from existing turbines, and furthermore, many of the affected landowners are participants in one or more wind projects and have agreed to the presence of the turbines. Although the project would contribute to the cumulative impact of shadow flicker on residences in and near the project area, this impact would be less than significant.

Transportation

Mitigation Measure(s): TRA-1, TRA-2, TRA-3, TRA-5A, TRA-5B.

Implementation: Mitigation Measures will be included in conditions of approval for the Project.

Finding: The Project will not contribute to significant cumulative impacts to transportation.

Rationale for Finding: Project impacts on vehicle traffic will occur only during construction, and these potential impacts would be mitigated through implementation of a traffic control plan that would include notification requirements, carpooling, coordination with local jurisdictions, and road repair. Construction traffic associated with decommissioning of the enXco V project could combine with construction traffic from the Shiloh IV projects to result in cumulative road damage impacts.

Peak construction periods and trip rates for the Shiloh IV project (six to nine months starting in spring 2012) are not expected to overlap given the proposed construction schedules for the Shiloh III project, Solano Wind, or the Montezuma II project. Overlap with the construction of the Zephyr or PG&E projects is also very unlikely. Each project would be subject to traffic control measures similar to that required by for this Project, which will mitigate cumulative impacts to traffic to less than significance. Operations and maintenance workers for the Project will be minimal. When considered in conjunction with commute traffic from existing wind farms, the cumulative impact on traffic and transportation will not be significant.

Consistency with Travis Air Force Base Radar Operations

The Project is located approximately eight miles southeast of the Travis Air Force Base (AFB) military airport; however, the northwestern portion of the project area lies within the Travis AFB area of influence, land use compatibility zone C, and outer horizontal surface area. The project will contribute to the cumulative effect on the Travis AFB radar system, but this cumulative impact will be less than significant.

The drop in the probability of detection (Pd) at the air traffic controller display associated with four other wind projects previously assessed (Montezuma I, Shiloh III, Solano Wind Phase 3 and Montezuma II projects) is expected to be 3.9 percent below 4,000 feet mean sea level (MSL) and 3.5 percent below 10,000 feet MSL. The additional drop in the Pd associated with implementation of the Project and the reasonably foreseeable PG&E Collinsville project would be 0.7 percent below 4,000 feet MSL and 0.9 percent below 10,000 feet MSL, resulting in a cumulative predicted drop in Pd of 4.6 percent below 4,000 feet MSL and 4.4 percent below 10,000 feet MSL. This predicted drop in Pd is less than the five percent standard established by the OWG and therefore will not be a significant cumulative impact.

Construction of the Montezuma Zephyr project would contribute to potential cumulative impacts to the ATC radar at Travis AFB. The County will review the impacts of the Zephyr project on Travis AFB radar operations as part of its detailed environmental review of that project's impacts and will consider the potential for the project to exceed the 5 percent drop in Pd established by CRADA as a significance threshold. The County will only approve the Zephyr project if it concludes that it would not result in a significant impact related to air traffic operations, as this would be in conflict with the mission of Travis AFB. As a result, there is no potential for the Shiloh IV project to have a significant cumulative impact on Travis AFB radar operations.

Short Term vs. Long Term Environmental Impacts

Construction of the Shiloh IV Wind Energy Project would have numerous short-term impacts such as increased traffic, noise, dust or erosion, and significant, unavoidable impacts on aesthetics, air quality, and biology. Operation of the Project would have long-term impacts on aesthetic and biological resources. However, after mitigation, most of the short-term and long-term impacts of the Shiloh IV Wind Energy Project evaluated were shown to be less than significant. Additionally, the Shiloh IV Wind Energy Project was also shown to have long-term benefits to air quality and greenhouse gases.

The Shiloh IV Wind Energy Project is expected to have a service life of 30 years. The aesthetic impacts will be permanent for that period of time. The impacts are considered significant and unavoidable for local residents and travelers on local roads due to the size and location of the turbines near these viewpoints. Some turbines along local

roads would have smaller blades to mitigate visual impacts, but further mitigation is not feasible because wind turbines must be located on ridgelines in order to produce electricity efficiently. The individual perception of visual impacts is subjective; some viewers may find the turbines to be visually intrusive. Due to the size and location of the turbines, this impact would be substantial. Therefore, this would be a long-term adverse impact.

Biological resource impacts of the Shiloh IV Wind Energy Project will include adverse effects on the nesting, foraging, and flight paths of resident and migratory bird species and avian and bat mortality due to collisions with the turbines. While this impact would be mitigated in the short-term (through avoidance of potential nesting sites and forage areas such as streams), it is expected that over the long-term, wildlife use of the area will be altered. For raptor species with small populations, such as the local American kestrel, red-tailed hawk, Swainson's hawk, and golden eagle, the cumulative impacts of the Project may be significant and long term because the populations will have difficulty recovering due to their small numbers. Therefore, the proposed project's contribution to cumulative impacts on raptors would be significant. Additionally, due to a lack of data on bat usage in the wind resource area, there could be significant long-term and significant cumulative impacts on local bat populations.

The Shiloh IV Wind Energy Project will have short-term significant adverse effects on air quality due to operation of construction equipment and ground disturbance. However, the Shiloh IV Wind Energy Project will have long-term benefits for air quality and greenhouse gases because it will displace air pollutant and greenhouse gas emissions from other power generation facilities that would otherwise be required to meet consumer demand.

Development of wind resources will reduce agricultural productivity over a limited portion of the wind farm due to the construction of access roads and tower pads. In the long-term, however, the presence of wind turbines will deter other types of development that could create much larger reductions in available agricultural land.

Growth Inducing Impacts

A project could result in growth-inducing impacts if the project removes barriers to growth, requires an increase in employment, or provides resources that lead to secondary growth. The development of power infrastructure is a response to increased market demand and the California Renewable Portfolio Standards (RPS). The Shiloh IV Wind Energy Project will provide electricity for the regional grid infrastructure that would be sold to customers throughout the region served by that grid and therefore would not induce growth in a particular location. Additionally, the availability of electricity generated by renewable energy sources will assist public utilities in achieving the RPS goals. The Shiloh IV Wind Energy Project will not interfere with the region's exclusive agriculture zoning designation or require the extension or improvement of other public

services in the area, such as sewer and water supply, so the existing barriers to development would remain unchanged.

Construction of the Shiloh IV Wind Energy Project will require a short-term increase in personnel of approximately 80 to 300 people. The regional employment base in the Bay Area and adjoining areas will supply personnel. Long-term employment will be limited to up to six people. Therefore, the Shiloh IV Wind Energy Project will not result in significant increases in population or employment growth within the county.

The Shiloh IV Wind Energy Project will install new private access roads to the properties leased from local landowners and will provide additional income to those property owners. These improvements will support local agricultural activity. However, no other development would be anticipated because of these benefits because the area is zoned and planned for agricultural use, and installation of the wind turbines would tend to preclude other development from occurring.

Unavoidable and Irreversible Impacts

Unavoidable impacts are those impacts that could not be significantly alleviated by the recommended mitigation measures. Of the alternatives discussed in Chapter 19, only the “No Project Alternative” would avoid significant unmitigated impacts on aesthetics, biological resources, and air quality. The Shiloh IV Wind Energy Project will alter the anticipated views of the landscape for nearby communities as well as significantly alter the visual appearance of the landscape when viewed from local roads and from dispersed rural residential viewpoints. The other alternatives considered, with the exception of the “No Project Alternative,” would also result in similar impacts on visual resources. Therefore, this significant impact is considered unavoidable.

The Shiloh IV Wind Energy Project will have short-term significant adverse effects on air quality due to operation of construction equipment and site disturbance. Construction related emissions would exceed applicable thresholds for PM_{10} and $NO_{x.}$ Only the “No Project Alternative” would avoid impacts on air quality. Thus, this impact is considered unavoidable.

The Shiloh IV Wind Energy Project will result in significant impacts and contribute to cumulative significant impacts on raptors and golden eagles. Mitigation required for the Project will not reduce the number of raptor and golden eagle strikes to zero as required under the Migratory Bird Treaty Act and Federal Bald and Golden Eagle Protection Act, which prohibit incidental “take.” This will result in a significant and unavoidable impact on these species. Only the “No Project Alternative” would avoid impacts on raptors and golden eagles.

The Shiloh IV Wind Energy Project will also result in the take of up to approximately 300 bats per year and will contribute to the cumulative take of approximately 3,000 bats per

year associated with wind energy generation in the Montezuma Hills. Mitigation, including monitoring and reporting, will not reduce the number of bats killed. Considering that these are all common bat species that probably come from global populations that number in the hundreds of thousands or even tens of millions in the case of some species, these numbers are not likely to be biologically significant at the regional level. However, due to a lack of data on bat usage in the wind resource area, these impacts could be locally significant. Therefore, the proposed Project may result in significant and unavoidable cumulative impacts on local bat populations.

Irreversible impacts are those impacts that cannot be made to return to existing or similar conditions. Ultimately, none of the unavoidable impacts of the Shiloh IV Wind Energy Project are irreversible. The impacts on air quality will be temporary and would cease once construction is complete. For aesthetic impacts, the dismantling procedures outlined in Mitigation Measure AES-7 would be implemented at the close of the Shiloh IV Wind Energy Project (decommissioning) so that the turbines and all aboveground equipment would be removed, and the visual character of project area would return to its previous state. Similarly, with the removal of the wind generating equipment, avian mortality associated with the Project will cease, and species population levels would fluctuate in response to other factors.

9. Alternatives

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) evaluate a reasonable range of feasible alternatives to a project that could potentially avoid or reduce a project's significant impacts and still achieve most of the basic objectives of the project.

The Applicant's overarching objective is to develop a commercially viable wind energy facility that would deliver renewable energy to the PG&E/California Independent System Operator (CAISO) power grid to meet the State's Renewable Portfolio standard goals and help reduce greenhouse gas emissions pursuant to AB 32 and the County's General Plan. The Applicant has identified the following specific objectives for the Shiloh IV project:

- Meet regional energy needs in an efficient and environmentally sound manner, as provided in the Energy Resources and Conservation section of the Solano County General Plan Resources Chapter, which encourages utilization of renewable energy resources.
- Promote the long-term economic viability of agricultural uses in the Montezuma Hills, including grazing and dry land farming.
- Assist California in meeting its target for the generation of renewable energy in the state under the state's 33 percent Renewable Portfolio Standard (RPS) Program.

- Fully utilize the wind resource area in the Montezuma Hills region of Solano County, thereby concentrating wind turbines in appropriate locations.
- Offset the need for additional electricity generated from fossil fuels (which emit more air pollutants than wind-generated electricity) and therefore assist the state in meeting its air quality goals and reducing greenhouse gases.
- Develop a wind project that would produce 100 MW of electricity.
- Result in an economically feasible wind energy project that would support commercially available financing.

The proposed Project will produce up to 307 million kilowatt hours (kWhrs) of electricity per year, based on a 35 percent capacity factor, as projected by the Applicant, more than seven times the average generation reported to the County for the enXco V turbines in the project area (Solano County 2009). This electricity will displace carbon-fueled generation, resulting in a net reduction of 2.2 to 3.4 million metric tons of carbon dioxide equivalent (CO_2 e) emissions over its 30-year lifetime and would help California meet its greenhouse gas emissions reductions goals enacted under Assembly Bill 32 (AB 32). The project will also result in an overall reduction of other criteria pollutants, including oxides of nitrogen, volatile organic compounds, sulfur dioxide, and particulates, emitted from the displaced carbon-fueled generation.

In order to select alternatives that would reduce or avoid significant environmental impacts, it is necessary to identify the significant impacts of the Project. The proposed Project will result in the following impacts, which would be significant even after implementation of all feasible mitigation measures:

> **Impacts AES-1 and AES-5:** Many of the proposed Project's turbines would be in the foreground distance zone and would affect the landscape visible from Collinsville Road, Birds Landing Road, Montezuma Hills Road, Shiloh Road, Olsen Road, and dispersed rural residential viewpoints. Even given conformance with the Solano County setback, siting and design standards, the Project would significantly alter the visual appearance of the landscape in these areas when viewed in the foreground distance zone from dispersed rural residential viewpoints. Views of the turbines would similarly and significantly impact residents of the community of Birds Landing.
>
> **Impact AIR-1:** Diesel- and gasoline-fueled construction equipment and on-road vehicles used during construction would result in significant impacts to air quality from generation of NO_x emissions in excess of the Bay Area Air Quality Management District (BAAQMD) significance threshold.
>
> **Impact AIR-2:** On-site earthmoving activities and vehicle travel on local roads and access roads would generate fugitive dust during construction that would

contribute to existing violations of the PM_{10} standard. Even with application of feasible mitigation measures, fugitive dust emissions from project construction would exceed the Yolo Solano Air Quality Control District (YSAQMD) significant threshold of 80 lb/day for PM_{10}.

Impact BIO-8: The Project could significantly reduce the number of and/or interfere with the movements of special-status birds and raptors even with mitigation

Alternatives Eliminated From Consideration

CEQA requires that all alternatives considered be described, but it does not require a full analysis of alternatives that are infeasible, that do not meet the Project objectives, or that do not potentially reduce environmental impacts. Alternatives considered but eliminated from further consideration for these reasons are addressed below.

Off-Site Alternative

The Applicant could develop the Project at an alternative site at another wind resource area and still provide renewable energy to the CAISO grid and consumer market in California. The CEC has identified five primary wind energy regions in California: Solano, Altamont, San Gorgonio, Tehachapi, and Pacheco. Only two of these regions are located in northern California: Solano and Altamont (CEC 2005). Additional development is already being planned in the four other resource areas. If the Applicant were to develop the Project at another wind resource area, it would potentially displace another project planned in that area and leave the Montezuma Hills area underdeveloped. Of the 3,012 acres in the proposed project area in the Montezuma Hills, 1,278 acres currently have no wind turbines, and 1,734 acres have obsolete wind turbines with low capacity factors and low energy production. The proposed project area is in the middle of a highly productive wind resource area, surrounding on three sides by modern producing wind projects. One of the objectives of the proposed project is to “fully utilize the wind resource area in the Montezuma Hills region of Solano County, thereby concentrating wind turbines in appropriate locations.” An off-site alternative would not achieve this objective.

If California is to achieve the current 33 percent Renewable Portfolio Standard goal, the state needs to develop viable wind energy projects in all resource areas. Leaving the project area underdeveloped would be inconsistent with the long-term goals of AB 32.

Other Types of Renewable Energy Projects in the Montezuma Hills

In addition to wind energy, the Applicant could potentially develop other renewable energy sources to provide energy to the consumer market in northern California,

including solar, geothermal, and biomass energy. However, the resources used to power these types of renewable energy are not generally abundant in the project area. Projects powered by solar energy would require high annual solar incidence; geothermal projects would require concentrated levels of heat from the earth; biomass projects would require the availability of biomass feedstock such as corn and sugarcane.

None of these energy sources is as readily available as wind energy in the project area. The flow of cool air from the San Francisco Bay through the Carquinez Strait creates strong, sustained winds throughout the year. For this reason, Solano County considers the area as superior for wind energy development. Other types of renewable energy projects would be less feasible given the resources available in the Montezuma Hills region, and they would not meet the project objectives.

Non-Renewable Energy Projects

Alternative energy sources such as coal, oil, and natural gas are available and meet increased demands for energy in California. However, these resources are not renewable energy. Their development would not meet the project's objective to deliver renewable energy to the PG&E/CAISO power grid to help meet California's 33 percent RPS goals and help meet the intent of AB 32 to reduce California's greenhouse gas emissions to 1990 levels by 2020.

Additionally, non-renewable generation sources such as coal, oil, and natural gas would likely result in increased pollutant emissions. Coal and oil emit relatively large amounts of particulate matter, sulfur dioxide, carbon monoxide, hydrocarbons, and non-criteria pollutants. Furthermore, the burning of coal is a major contributor to acid rain, which is an international ecological and economic problem. It is unlikely that the utilities in northern California would be able to burn coal or oil in order to generate electricity. The use of these fuels would not allow either existing power plants to operate within their air permit conditions or new plants to obtain air permits for use of these fuels because of the non-attainment status of the Bay Area and Sacramento Valley Air Basins.

Natural gas provides a cleaner burning alternative to oil and coal. When designed adequately, a natural gas plant produces a reduced amount of sulfur dioxide, nitrogen oxide, and particulate matter emissions. Additionally, extracting energy from natural gas is more efficient than extracting energy from other fuels because the absence of impurities in the fuel makes it clean burning and eliminates the need for energy-consuming auxiliary equipment. However, while natural gas facilities generally emit fewer pollutants than coal or oil, they typically emit more pollutants than wind energy generation facilities. A natural gas facility would result in greater emissions of

particulate matter, sulfur dioxide, carbon monoxide, hydrocarbons, and non-criteria pollutants during start-up and normal operations, compared to a wind facility.

Because non-renewable energy projects would likely result in greater impacts on air quality and because they would not meet the project objectives, non-renewable alternatives were not carried forward for analysis.

Alternative Wind Turbine Models

The Applicant originally considered other wind turbine models. While there may be some differences between alternative turbine models, impacts on aesthetics, air quality, and biological resources would be similar for the proposed turbine model and these alternative turbine models considered. Use of these alternative turbine models would not reduce potentially significant impacts to less than significant levels.

Some projects in California have installed an alternative design option: vertical axis wind turbines (VAWT). The VAWT arrangement has the gearbox and generator located at ground level and can generate energy from wind blowing in any direction, saving the costs of towers and the equipment that turns the rotor into the wind. The VAWT design is inherently less efficient than the design of horizontal axis wind turbines (HAWT); however, because as one blade catches the wind and turns the rotor, the opposite blade produces drag and loss of power. Furthermore, wind speeds are lower and more turbulent at ground level than they are at the height of the rotors for the proposed turbines, resulting in less power output and more stress on the machinery. Poor performance has caused developers in the Altamont Pass to remove previously installed VAWTs and replace them with HAWTs.

In addition, there are no reliable VAWT suppliers available today for large commercial wind facilities. No known, reputable manufacturers currently have the capability to produce the quantity and electrical generation capacity of turbines needed for the Project or to guarantee and warranty the equipment.

The turbine type considered for the Project is a three-blade HAWT mounted on a tubular pole. Development of the wind industry to date has found that this technology is the most cost-effective method of generating electricity from wind resources. The VAWT would not fully meet the primary objectives of the Project, which are to harness the wind energy at the Montezuma Hills in an efficient manner and to promote the long-term economic viability of the agricultural users in the Montezuma Hills.

Alternatives Evaluated

No-Project Alternative

Under the No Project Alternative, the Project would not be constructed and the significant and unavoidable impacts on aesthetic/visual resources, air quality, and biological resources would be avoided and the significant and mitigated impacts to aesthetics/visual resource, air quality, biology, cultural resources, geology, hydrology, land use, noise, public services, and safety would not occur. .

There are two possibilities for the project area under the No-Project Alternative. The enXco V turbines could be decommissioned and removed, as is currently planned, before the enXco V use permits expire in 2014 and 2015. Alternatively, Solano County could grant an extension to the use permits, allowing enXco to continue to operate the turbines in the project area.

No-Project Alternative 1: enXco V Removed

If the Project was not constructed and the enXco V turbines were removed, the project area would return to exclusively agricultural use. The Applicant, who also owns the enXco V would decommission the project, removing the turbines and foundations to three feet below the ground surface and reclaiming the pads, access roads, and restoring the land to previous conditions.

The No Project Alternative, however, would have none of the benefits of the proposed Project. The Applicant would not be able to generate up to approximately 307 million kilowatt hours (kWhr) of electricity per year from the wind in the area, leaving the wind resource area in the Montezuma Hills region underused. Utilities would not be able to obtain this additional energy for their Renewable Portfolio Standard (RPS) goals, and the state of California would have to obtain the reduction in 79,490 to 115,275 metric tons of greenhouse gas emissions per year from other sources. The No-Project Alternative would significantly reduce the potential for the project area's wind resources to help achieve the AB 32 goals, adopted to address the long-term environmental impacts of climate change.

No Project Alternative 2: enXco V Operations Continue

If the No Project Alternative resulted in the enXco V turbines remaining on the site under an extension of the enXco V use permits from Solano County, significant short term and long term environmental impacts would be avoided. All of the short-term impacts associated with the decommissioning of the enXco V turbines and the construction of the proposed Project in the project area would not occur. The continued operation of the enXco V project would also avoid the impact on aesthetic/visual resources from viewpoints along State Route 12, in Birds Landing, and in Pittsburg and Antioch because the existing KCS 56-100 turbines are not as tall as the proposed turbines and would not be as visible at these distance points. However, the greater

number of enXco turbines and their proximity to roads would continue to have significant aesthetic/visual impacts on the views from the rural residences and county roads in the project area.

If enXco V turbines remained in operation in the project area, the Project's significant impacts on biological resources would be avoided. The existing impacts from the enXco V turbines would continue. The No Project Alternative would also avoid the noise impacts from the operation of the proposed Project and the potential land use and safety impacts of large turbines that would require landowner waivers. The noise levels would continue at 47 to 73 dBA levels described for the existing environment in Chapter 15, Noise. The alternative would avoid potential safety and fire risks and potential interference with communications systems associated with the proposed Project.

The No Project Alternative, however, would have none of the benefits of the proposed Project. The enXco V turbines in the project area would continue to produce almost 42 million kilowatt hours (kWhr) per year until the turbines would be decommissioned in 2014, but the Applicant would not be able to increase this amount of electricity generated in the area to approximately 307 million kWhr per year. Utilities would not be able to obtain this additional energy for their RPS goals, and the state of California would have to obtain the reduction in 64,766 to 115,275 metric tons of greenhouse gas emissions per year from other sources. Operation of enXco V under the No Project would result in an underdevelopment of the wind resource area. The No-Project Alternative would significantly reduce the potential for the project area's wind resources to help achieve the AB 32 goals, adopted to address the long-term environmental impacts of climate change.

Off-site Alternative – Cordelia Hills Wind Resource Area

The wind resource area in the Cordelia Hills region is the only area, other than the Montezuma Hills region, that Solano County has designated as suitable for wind development, and is considered an alternative project location for the Project. The Solano County General Plan, however, places restrictions in the Cordelia Hills region associated with setback requirements based on visual concerns associated with residential neighborhoods, areas planned for residential development, and I-80 and I-680 corridors, as required in Chapter 4 (Resources) of the General Plan. Further, Chapter 11 of the General Plan places additional restrictions associated with the Tri-City and County Cooperative Plan for Agriculture and Open Space Preservation (Solano County Planning Services 2008).

The Cordelia Hills region was evaluated for wind project development; however, because of the constraints from an environmental and visual impact on residents and travelers, the area would likely result in environmental impacts greater than or equal to

those of the Project. Development of this area would cause greater impacts on residents in the Cordelia Hills, where there are a greater number of sensitive receptors, than the project area. Development of a wind farm in the Cordelia Hills would also have similar impacts on raptor species because the area has a similar ecological and biological profile as the proposed project area. Impacts on air quality from emissions of criteria pollutants during construction would be the same as those impacts caused by construction of the proposed Project. Finally, the land use in the Cordelia Hills region does not promote agricultural uses, which are compatible with wind turbine development, resulting in a less efficient use of land.

Reduced Project/Alternative Layout Alternative

The final alternative to the Project evaluated is reducing the number of turbines. A Reduced Project Alternative would involve construction of only half of the planned wind turbines and approximately two-thirds the planned length of access road, resulting in reductions of approximately 12 acres of permanent impacts and 110 acres of temporary impacts.

Although the Reduced Project Alternative would reduce the visual impact on travelers along county roads, residents in Birds Landing, and rural residents, it would not reduce the Project's overall impact on visual impacts to a less than significant level. Similarly, while the Reduced Project Alternative would lessen the magnitude of impact on raptors because there would be fewer turbines to potentially be encountered, it would not reduce the impacts to less than significant levels.

Reducing the number of turbines to be installed would decrease short-term impacts on air quality for NO_x because less operation of on and off road equipment would occur. The emissions would likely to be reduced to below a level of significance.

Fewer turbines would substantially reduce the Project's power generation capacity (approximately 50% of capacity). Therefore, this alternative would not achieve the Project objective of producing 100 MW of electricity or fully utilizing the wind resource area. The Reduced Project Alternative would limit the Project's contribution to California's RPS goals and its GHG emission reduction goals and would not have as great a benefit to long-term air quality through generation of renewable energy.

Environmentally Superior Alternative

An EIR must identify the environmentally superior alternative to the project. No-Project Alternative 1: enXco V Removed would be environmentally superior to the project on the basis of the minimization or avoidance of physical environmental impacts. Section 15126.6(e)(2) of the State CEQA Guidelines states that if the no project alternative is

found to be environmentally superior, “the EIR shall also identify an environmentally superior alternative among the other alternatives.”

Following the No-Project Alternative 1: enXco V Removed, the Reduced Project/Alternative Layout Alternative is the next environmentally superior alternative given the eliminated project components and the reduced areas of land development.

This Alternative would provide clean energy, but would not achieve the Project objective of producing 100 MW of electricity or fully utilizing the wind resource area. The Reduced Project Alternative would limit the Project’s contribution to California’s RPS goals and its GHG emission reduction goals and would not have as great a benefit to long-term air quality through generation of renewable energy.

Due to the reduction of impacts to air quality, aesthetics, and biological resources achieved by the Reduced Project/Alternative Layout Alternative, it is considered the environmentally superior alternative. The Reduced Project/Alternative Layout Alternative does reduces the level of significant and unavoidable impacts in some resources areas; although this alternative would still contain impacts that would remain unavoidable even after all feasible mitigation measures have been incorporated. Reduced Project/Alternative Layout Alternative has fewer and less severe significant impacts compared to other Alternatives while still meeting most of the project objectives.

10. STATEMENT OF OVERRIDING CONSIDERATIONS

The Commission has balanced the benefits of the Shiloh IV Project against its significant and unavoidable impacts in determining whether to approve the Project, and has determined that the benefits of the Project outweigh its unavoidable adverse environmental impacts. This determination is based on the Final EIR and other information in the record. Notwithstanding the imposition of the Mitigation Measures as set forth above, certain impacts of the Project have not been reduced to a level of insignificance or eliminated by changes in the Project. Based on the above recitals and findings, the entire record, oral and written testimony, and other evidence received at the public hearings on the Project, the Commission finds that there is substantial evidence that the Project will bring substantial benefits to the County, including economic, legal, social, technological, or other benefits that outweigh the significant effects on the environment that cannot be mitigated to a less than significant level.

This Project will further the goals of the California Renewable Portfolio Standard (“RPS”) and other similar renewable programs in the state. The legislation enacting RPS requires sellers of electricity to purchase 33 percent of their electricity from renewable sources, such as wind, by 2020. This Project will generate wind power and assist the State in meeting its legislated mandate.

The Project carefully coordinates the planning process to minimize environmental impacts from the construction and operation of the Project. For example, to mitigate the potential impacts to sensitive habitats, the Applicant has complied with all siting constraints and setback requirements, and avoided wetlands within the Project.

The benefits of the Project include offsetting the need for electricity generated from fossil fuel by supplying renewable energy, and helping the State further reduce greenhouse gases, among other benefits as more specifically detailed below. Any one of these overriding considerations is sufficient to support the Commission's determinations herein.

1. Approval of the Project will aid the County in meeting energy needs in an efficient and environmentally sound manner, as provided in the County General Plan, which encourages utilization of renewable energy resources.

2. The Project will help realize the full potential of the wind resource on the lands under lease.

3. The Project will help the State meet its legislated Renewable Energy Portfolio Standards for the generation of renewable energy in the state, which require investor-owned utilities to purchase 33 percent of their power from renewable sources by the year 2020.

4. The Project will make full utilization of the county's Montezuma Hills WRA, thereby concentrating wind turbines in appropriate locations,

5. The Project will promote the long-term economic viability of agricultural uses in the Montezuma Hills.

6. The Project will offset the need for electricity generated from fossil fuels and thereby assist the State in meeting its air quality goals and reducing greenhouse gases.

7. The Project will provide new full-time jobs during construction of the Project.

8. The Project will provide economic benefits to the County and its residents by increased spending in the community as a result of construction and development related work.

9. The Project will also increase spending on goods and services in the community by Project operators.

10. The Project would displace carbon-fueled generation, resulting in a net reduction of between 2.2 and 3.4 million metric tons of carbon dioxide equivalent (CO2 e) emissions over its 30-year lifetime and would help California meet its greenhouse gas emissions reductions goals enacted under Assembly Bill 32 (AB 32).

11. The proposed Project would produce up to approximately 307 million kilowatt hours (kWhrs) of electricity per year, an amount equal to almost 30 percent of the County's residential electricity demand in 2009.

12. The Project will help California meet its greenhouse gas emissions reduction goal enacted under AB 32.

In light of the foregoing economic, social, recreational and planning benefits to the County, pursuant to CEQA Guidelines Section 15093, the Commission finds and determines that these considerable benefits of the Project outweigh the unavoidable adverse effects and the "adverse environmental effects" that cannot be mitigated to a level of environmental insignificance, are deemed "acceptable".

11. INCORPORATION BY REFERENCE.

The Final EIR is hereby incorporated into these Findings in its entirety. Without limitation, this incorporation is intended to elaborate on the scope and nature of Mitigation Measures, the basis for determining the significance of impacts, the comparative analysis of alternatives, and the reasons for approving the Project in spite of the potential for associated significant and unavoidable adverse impacts.

12. RECIRCULATION NOT REQUIRED

No new or substantial changes to the Draft EIR were proposed as a result of the public comment process. The Final EIR responds to comments and makes only minor technical changes, clarifications, or additions to the Draft EIR. The minor changes, clarifications and additions to the Draft EIR do not identify any new significant impacts or a substantial increase in the severity of any economic impacts.

13. SUMMARY

1. Based on the foregoing Findings, and on the information contained in the record, the Commission has made one or more of the following findings with respect to each one of the significant effects of the Shiloh IV Project:

(a) Changes or alterations have been required in, or incorporated into, the Project, which mitigate or avoid the significant effects on the environment.

(b) Such changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.

(c) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the Mitigation Measures or alternatives identified in the environmental impact report.

2. Based on the foregoing Findings and the information contained in the record, it is determined that:

(a) All significant effects on the environment due to the Shiloh IV Project have been eliminated or substantially lessened where feasible.

(b) Any remaining significant effects on the environment found to be unavoidable are acceptable due to the factors described in the Statement of Overriding Considerations in Section 10 above.

14. CERTIFICATION FINDINGS

The Commission hereby certifies that

(a) The final EIR has been completed in compliance with CEQA;

(b) The final EIR was presented to the decision making body of the lead agency and that the decision-making body reviewed and considered the information contained in the final EIR prior to approving the Project; and

(c) The final EIR reflects the lead agency's independent judgment and analysis.