

SOLANO COUNTY PLANNING COMMISSION
SHILOH IV WIND ENERGY PROJECT
USE PERMIT U-10-10
CONDITIONS OF APPROVAL
December 15, 2011 - Revised

1. The project shall be established and operated in substantial conformance with the plans and descriptions submitted with Use Permit Application Number U-10-10, as subsequently revised, and as described and analyzed in the Final Environmental Impact Report (FEIR) certified by Solano County, subject to the terms and conditions imposed on the use permit.
2. This use permit shall be valid for a period of thirty (30) years, ending December 15, 2041, subject to the modification and revocation provisions of condition no's 10 and 11. Prior to expiration of this permit, the Permittee may apply for an extension to the term of this permit. An application for extension must be submitted, in writing, at least six months prior to expiration. An extension of the term of this use permit shall be a discretionary action, and the County may impose additional conditions or restrictions upon the project when granting a permit extension.
3. Non-compliance with any condition of this use permit is sufficient cause for revocation of the permit, in accordance with County procedures, and for payment of bonds to the County. In the event of any violation of the terms and conditions of this permit, the County may pursue all remedies allowed to it by law, regardless of any private agreement that may exist between landowners, leaseholders, or others, apportioning or assigning responsibility amongst themselves for compliance with permit conditions.
4. If the land rights or improvements regulated by this permit are transferred, the County shall be notified in writing within 30 days of such transfer, but the County's consent is not required.
5. The various improvements comprising the project shall be operated under single or unified management and control. The project shall be operated as a single, integrated land use throughout the term of this use permit unless the County amends this permit to allow independent operation of separate portions of the project.
6. The conditions of this use permit, as applicable, shall apply to the following project area parcels:

APN: 0048-060-090, 0048-060-100 (partial), 0048-060-180; and,

APN: 0048-070-340, 0048-070-240; and,

APN: 0090-070-070, 0090-070-310; and,

APN: 0090-090-010, 0090-090-180, 0090-090-220 (partial), 0090-090-230, 0090-090-240, 0090-090-250 (partial), 0090-090-260 (partial), 0090-090-270, 0090-090-280 (partial), 0090-090-290, 0090-090-300, 0090-090-310, 0090-090-350; and,

APN: 0090-100-020 and 0090-100-040.

7. The conditions of this use permit, as applicable, shall also apply to the following adjacent ancillary parcels:

Optional collection line between Shiloh III and Shiloh IV project areas

APN: 0048-050-070, 0048-060-230, 0048-060-240; and,

Collection line between Shiloh IV turbines E1 and A16

APN: 0048-070-200, 0090-070-260, 0090-070-380, and 0090-070-400.

8. Overlapping use permit entitlements:
 - a. The conditions and requirements of this use permit, as it relates to development and operation of the Project wind turbines, warehouse building addition, substation, associated infrastructure, and any other Project improvements on project area Assessor's Parcel Numbers (APN) 0090-090-260 and 0090-090-250 (partial) shall prevail should a conflict occur with the requirements of any prior use permit issued for either of these parcels.
 - b. This use permit supersedes and replaces any prior use permit issued for wind turbine generators for project area Assessor's Parcels 0090-090-180 or 0090-090-240.
 - c. No electrical permit shall be issued for the installation of underground collection lines on the following ancillary Assessor's Parcels until the Permittee has furnished written evidence that the landowners the parcels, or the holder of wind development rights for the parcels, has authorized the installation of the lines: 0048-060-230, 0048-060-240, 0048-070-200, 0090-070-260, 0090-070-380, and 0090-070-400
9. The Project shall not exceed 50 wind turbines.
10. Any substantial change in the permitted operation, facilities, or structures, as determined by the Director of Resource Management, shall require a revision of the use permit. A revision of the permit shall be a discretionary action, and the County may impose additional conditions or restrictions upon the project when granting a permit revision.
11. All local taxes related to wind energy development, including property taxes on improvements related to the project and business license taxes based on electrical energy production, shall be paid when due.
12. Site inspections of the construction and operation of the project may be conducted by the County Department of Resource Management at any time, at the discretion of said Department, in order to assess compliance with project plans and all conditions of the use permit.
13. The County of Solano, its officers and employees shall not be responsible for injuries to property or person arising from the issuance or exercise of this permit or by the negligence or wrongful act of the permittee. The permittee shall defend, indemnify, and hold harmless the County of Solano, its officers, employees, and agents, from any claim, liability, loss, or legal action arising from any such injuries, and shall reimburse the

County for all legal costs and attorney fees related to any claim or litigation based on such injuries.

14. The Permittee shall defend, indemnify, and hold harmless the County of Solano, its officers, employees, and agents, from any claims, actions, or proceedings seeking to attack, set aside, void, or annul, in whole or in part, the County's approval of the Use Permit. The County agrees that it shall cooperate in the defense of any such challenge at Permittee's cost.
15. If the Permittee challenges the approval by the Planning Commission and/or Board of Supervisors of any condition of approval in an action filed in a court of law, which action is brought within the time period provided for by law, the approval of this project by the Planning Commission and/or Board of Supervisors shall be suspended pending dismissal or final resolution of such action.
16. If any condition of approval of this project is invalidated by a court of law, the entire Project shall be reviewed by the Planning Commission and/or Board of Supervisors and substitute conditions may be imposed at the Planning Commission and/or Board of Supervisors.
17. The Project site shall be maintained in a neat and orderly manner and kept free of accumulated junk and debris.
18. The use shall be operated in such a manner as to not constitute a nuisance or be detrimental to health, safety, comfort, or general welfare of the people of the County, or be detrimental to adjacent properties or improvements or to the general welfare of the County.
19. The Permittee shall be responsible for taking reasonable measures as may be required by the County to prevent light, glare, traffic congestion, visual distraction or other impacts which constitute a nuisance to the adjacent properties, persons or property in the surrounding area.
20. The permit shall be considered exercised, pursuant to Section 28-53 (j)(2) of the Solano County Code, upon issuance of Solano County building permits.
21. Following commencement of operation of the Project and on each annual anniversary of said commencement, the Permittee shall submit to the Director of Resource Management a brief status report containing at least the following information: Description and changes to rated capacity of all equipment installed, relevant meteorological data collected, and actual electric power generated to date broken down into appropriate time categories.
22. The Permittee shall notify the County Department of Resource Management of any tower collapse, blade throw, fire, or injury to worker, within 24 hours of any such occurrence.
23. An environmental consultant shall be contracted by the County, at the Permittee's expense, to oversee compliance of the Project's Mitigation Monitoring and Reporting Program.

24. All requirements of the Solano County Building Division shall be met including:
- a. The Permittee shall obtain building permits from the Solano County Building and Safety Division prior to construction, erection, enlargement, altering, repairing, moving, improving, removing, converting, demolishing any building or structure, fence or retaining wall regulated by the Solano County Building Laws. Submit four (4) sets of plans to the Building and Safety Division for plan review and obtain permits prior to beginning any improvements; and
 - b. Except as exempted in Chapter 31 of the Solano County Code, no person shall commence or perform any grading, filling, excavation, or clearing of vegetation for any purpose without having first obtained a grading permit from the Department of Resource Management.
25. Prior to issuance of a building permit, all requirements of the Solano County Environmental Health Services Division shall be met including:
- a. The number of employees shall be clarified by the Permittee and in the event 25 or more people per day on average are planned for any 60 day period, the State of California Department of Public Health, Division of Drinking Water, Betty Graham, shall be contacted at 510 620-3474. Permitting requirements for the drinking water distribution system are regulated by the State of California.
 - b. The Hazardous Materials Section of Environmental Health shall verify if permit requirements are applicable to the Operation and Maintenance Building and staging areas of the project site. Chemical inventories are required when chemicals stored on-site meet or exceed 55 gallons liquid, 200 cubic feet of gas and / or 500 pounds of solid, potentially hazardous materials.
 - c. Chemical toilets shall be provided for construction workers for the duration of construction activities, and the chemical toilets shall be removed upon completion of construction. Chemical toilets shall be used only on a temporary basis.
 - d. An evaluation of the existing site conditions shall be performed under permit from this office by a properly licensed consultant, and shall be included with an on-site sewage disposal system design submittal. The design submittal shall include the proposed wastewater flow calculations, in accordance with Solano County Code, Chapter 6.4 Sewage Disposal Standards. Approved on-site sewage disposal plans are required for issuance of the Building Division, Building Permit. An on-site sewage disposal system application shall be made separate from the Building Division Permit process, and the separate application shall include, permit and applications fees, due and payable to Environmental Health.
26. Mitigation Measure AES-7: Limit Marking and Lighting to FAA Requirements. The Permittee 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 Permittee shall submit an FAA Form 7460-1 for each tower location. Prior to issuance of building permits for each turbine and meteorological tower, the Permittee shall submit the necessary FAA determination to Solano County.

- c. If the Permittee modifies the Project after obtaining the FAA determinations, the Permittee shall submit a new FAA Form 7460-1 for each new or modified turbine and meteorological tower taller than 200 feet. The Permittee shall submit the new FAA determinations to Solano County prior to issuance of building permits for any affected turbines and meteorological towers.
27. Mitigation Measure AES-8: Remove all Project Facilities and Restore the Project Area. The Permittee shall remove all project facilities upon decommissioning. At such time as the Project is decommissioned, the following procedures shall apply:
- a. All facilities shall be removed to a depth of three feet below grade, and unsalvageable material shall be disposed of at authorized sites;
 - b. The soft surface shall be restored to 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;
 - d. Decommissioned roads shall be reclaimed or left in place based on landowner preference.
28. Mitigation Measure AG-4 (and Mitigation Measures AIR-2, HAZ-1A, and HAZ-1B – See COA's 33 - 38, 60 and 61, respectively): Confine Construction Activities to Necessary Work Areas. Prior to commencement of any construction activities, the Permittee 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) [See COA 39], BIO-1B (Restore Disturbed Habitats within Project Area) [See COA 40], BIO-2A (Avoid Impacts to Aquatic Resources [Wetlands, Vernal Pools, Streams, and Other Potential Waters of the U.S.]) [See COA 41], BIO-2B (Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources [Wetlands, Vernal Pools, Streams, and Other Potential Waters of the U.S.]) [See COA 42], and BIO-4 (Habitat Avoidance - California Tiger Salamander) [See COA 44].
29. Mitigation AG-5 (and Mitigation Measures BIO-1A, BIO-1B, GEO-3, HYD 2A, and HYD-2B – See COA's 39, 40, 59, 63 and 64, respectively): Restore and Decompact Temporarily Disturbed Agricultural Areas. The Permittee shall restore all temporarily disturbed agricultural areas to preconstruction conditions to the extent feasible, including decompaction, restoration of natural contours, and revegetation where appropriate.
30. Mitigation AG-6 (and Mitigation Measures HAZ-1A, HAZ-1B, and HAZ-2 – See COA's

60, 61 and 62, respectively): 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 Permittee shall undertake any additional actions required by Solano County to restore the area to preconstruction conditions.

31. Mitigation Measure AIR-1A: BAAQMD Basic Control Measures to Control Construction-Related NO_x Emissions. During construction, the Permittee shall reduce NO_x emissions by implementing the basic control measures to reduce NO_x emissions, including, but not limited to, the following:
 - a. 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.
 - b. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
32. Mitigation Measure AIR-1B: BAAQMD Additional Control Measures to Control Construction-Related NO_x Emissions. During construction, the Permittee shall reduce NO_x emissions by implementing the following basic control measures to reduce NO_x emissions from construction equipment:
 - a. Minimize the idling time of diesel powered construction equipment to two minutes.
 - b. 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.
 - c. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
 - d. Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO_x and PM.
 - e. Require all contractors use equipment that meets ARB's most recent certification standard for off-road heavy-duty diesel engines.
33. Mitigation Measure AIR-2 (Part 1): Fugitive Dust Controls – During Construction. During construction, the Permittee shall reduce fugitive dust emissions by implementing the standard mitigation measures as outlined below:

Fugitive Dust Source	Control Measures
Earthmoving	1. For any earth-moving more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in any direction.
Disturbed surface areas (except completed grading areas)	2a. Apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas that cannot be stabilized, as evidenced by wind-driven dust, must have an application of water at least twice per day to at least 80% of the unstabilized area.
Disturbed surface areas – completed grading areas	2b. Apply chemical stabilizers within five working days of grading completion; OR 2c. Take action 3a or 3c as specified for inactive disturbed surface areas.
Inactive disturbed surface areas	3a. Apply water to at least 80% of all inactive disturbed surface areas on a daily basis when there is evidence of wind-driven fugitive dust, excluding any areas that are inaccessible due to excessive slope or other safety conditions; OR 3b. Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR 3c. Establish a vegetative ground cover within 21 days after active operations have ceased; ground cover must be of sufficient density to expose less than 30% of unstabilized ground within 90 days of planting and at all times thereafter; OR 3d. Use any combination of control actions 3a, 3b, and 3c such that, in total, they apply to all inactive disturbed surface areas.
Unpaved Roads	4a. Water all roads used for any vehicular traffic at least once per every two hours of active operations; OR 4b. Water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph; OR 4c. Apply chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	5a. Apply chemical stabilizers; OR 5b. Apply water to at least 80% of the surface areas of all open storage piles on a daily basis when there is evidence of wind-driven fugitive dust; OR 5c. Install a three-sided enclosure with walls with no more than 50% porosity that extend, at a minimum, to the top of the pile.

Track-out control	6a. Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface and extending for a centerline distance of at least 100 feet and width of at least 20 feet; OR 6b. Pave from the point of intersection with the public paved road surface and extending for a centerline distance of at least 25 feet and a width of at least 20 feet and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
All categories	7. Any other control measures approved by the local air district where necessary.

34. Mitigation Measure AIR-2 (Part 2): Fugitive Dust Controls – During High Wind Conditions. During periods of high wind conditions (i.e., winds exceeding 25 miles per hour [mph]), the Permittee shall reduce fugitive dust emissions from construction activities by implementing the mitigation measures outlined below:

Fugitive Dust Source	Control Measures
Earthmoving	1a. Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	2a. On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR 2b. Apply chemical stabilizers prior to a wind event; OR 2c. Apply water to all unstabilized disturbed areas three times per day; if there is any evidence of wind-driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR 2d. Use any combination of control actions specified above, such that, in total, they apply to all disturbed surface areas.
Unpaved roads	3a. Apply chemical stabilizers prior to a wind event; OR 3b. Apply water twice per hour during active operation.
Open storage piles	4a. Apply water twice per hour; OR 4b. Install temporary coverings.
Paved road track-out	5a. Cover all haul vehicles; OR 5b. Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for operation on both public and private roads.
All categories	6a. Any other control measures approved by the local air district as necessary.

35. Mitigation Measure AIR-2 (Part 3): Fugitive Dust Controls. In addition to the fugitive dust control mitigation measures outlined above, the Permittee shall reduce fugitive dust emissions from construction activities by implementing the following standard mitigation measures recommended by the BAAQMD and YSAQMD:

- a. 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 of the Shiloh IV DEIR (see COAs 33 and 34 above) shall be watered when there is evidence of wind-driven dust.
 - b. Hydroseed or apply nontoxic stabilizers to construction areas that are scheduled to be inactive for more than four consecutive days during all wind conditions.
 - c. 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.
 - d. 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 vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
 - e. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
 - f. 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.
36. Mitigation Measure AIR-2 (Part 4): Fugitive Dust Controls. Since construction-related emissions could exceed the applicable thresholds of significance, as recommended by the local air districts, 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.
37. Mitigation Measure AIR-2 (Part 5): Fugitive Dust Controls. Prior to the commencement of construction activities, the Permittee 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. A description of each active operation that may result in the generation of fugitive dust;
 - b. Identification of all sources of fugitive dust (e.g., earthmoving, storage piles, and vehicular traffic);
 - c. 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;
 - d. 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

- e. 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.
38. Mitigation Measure AIR-2 (Part 6): Fugitive Dust Controls. Upon completion of construction, the Permittee 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 (see COAs 39 and 40 below).
39. Mitigation Measure BIO-1A: Minimize Habitat Disturbance. To minimize temporary disturbance impacts on terrestrial lands the Permittee 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) [See COA 28] 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.
40. Mitigation Measure BIO-1B (and Mitigation Measure AG-4 – see COA 28): Restore Disturbed Habitats within Project Area. After construction, and prior to project operation, restore and revegetate all areas disturbed by construction to pre-construction conditions as follows:
- a. Revegetation shall occur in accordance with Solano Grading Ordinance guidelines, with consideration given to landowner input and/or agreement between the Permittee and landowner, where disturbance occurs.
 - b. Disturbed or graded areas shall be planted with fast-growing and deep-rooted grasses or ground cover, preferably native to the area, 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.
 - c. 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.

- d. 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.
 - e. 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.
41. 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) including Displacement of Waterfowl and Other Water Birds. The Permittee 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) [See COA 44.a] 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 Permittee shall submit a supplemental evaluation that details how the proposed construction activity would avoid potential impacts to the aquatic resource, including BMPs the Permittee 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 Permittee 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) [See COA 42]; or
 - ii. If HDD is not feasible, the Permittee may install overhead lines above aquatic resources, if approved by the County and subject to the following requirements:
 - a) The Permittee 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) (See COA 47] 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 Permittee 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 Permittee 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 Permittee'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 Permittee submits a wetland delineation to the USACE, the Permittee 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 shall be written by a qualified wetland biologist, which shall be submitted to and approved by the USACE, USFWS, and/or CDFG prior to initiating any mitigation activities. The plan 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 Permittee provides Section 1600 notification to the CDFG of the proposed activity affecting aquatic resources, the Permittee shall concurrently provide a copy of the notice to Solano County. In addition, the Permittee will provide the County with a copy of any written determination by CDFG that the activity may commence without an agreement (if any written determination is received within the notification timeframe mandated), or a copy of any final Section 1600 agreement for the proposed activity (if the Permittee enters into an Agreement with DFG), within 5 days of receipt of said determination or agreement.
 - v. If permitting and/or notification under Section 404 of the CWA, or under Section 1600 is necessary, the Permittee shall submit a copy of the permit or agreement 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 (see COA 28).
 - 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 Permittee 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 Permittee may proceed with trenching. If streambeds or streambanks are present, the Permittee shall proceed using HDD in accordance with Mitigation Measure BIO-2B (Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources) [See COA 42].
 - h. The Permittee'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.
42. Mitigation Measure BIO-2B (and Mitigation Measures AG-4, BIO-1A, BIO-1B, HYD-2A and HYD-2B – See COA's 28, 39, 40, 63 and 64, respectively): Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources (Wetlands, Vernal Pools, Streams, and Other Potential Waters of the U.S.) including Displacement of Waterfowl and Other Water Birds. The Permittee 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 Permittee's biologist or a third-party individual who shall work on behalf of Solano County at the expense of the Permittee; 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 aquatic 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 Permittee'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 Permittee.

- e. The Permittee 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.
- f. Prior to HDD activities, the Permittee'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 Permittee 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 Permittee 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 Permittee shall then be allowed to continue HDD activities. If a frac-out occurs, the Permittee shall implement paragraph h, below.
- h. In the event a frac-out is detected, the Permittee 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 Permittee 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 Permittee. 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 paragraph h.iii.a) above:
 - 1) CDFG, if the frac-out is within or may flow into the bank of a stream or wetland.
 - 2) RWQCB/SWRCB, 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 Permittee has obtained approval from CDFG, RWQCB/SWRCB, 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 Permittee shall follow the notification requirements of the agency approvals instead of the notification requirements in paragraph h.iii.b), above.
- d) The Permittee 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 Permittee 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 Permittee has not notified CDFG or RWQCB/SWRCB, 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 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 Permittee shall stop work and not proceed with the boring at that location until the Permittee'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 to Solano County in writing and be stamped by the

Permittee's 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 Permittee and must be approved by Solano County before boring may resume.

43. Mitigation Measure BIO-3: Avoid Impacts to Special-Status Plants. The Permittee shall avoid impacts to special-status plants through implementation of appropriate siting, fencing and, if needed, a species mitigation plan.
- a. The Permittee 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 plants, 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 Permittee 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 Permittee shall install the lines under the botanical resource using the HDD method in accordance with Mitigation Measure BIO-2B (Avoid Impacts from Horizontal Directional Drilling) [See COA 42]. HDD entry and exit pits shall be located at least 100 feet away from the special-status plant populations.
 - b. The Permittee 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) [See COA 28].
 - 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 Permittee 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.
44. 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 Permittee shall implement Mitigation Measure BIO-2A, Avoid Impacts to Aquatic Resources, and BIO-2B, Avoid Impacts from Horizontal Directional Drilling under Aquatic Resources [See COA's 41 and 42, respectively], 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 year's 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 Permittee, 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 Permittee does not obtain a Habitat Conservation Plan (HCP) or Incidental Take Permit for the Project, the Permittee'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 Permittee 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 Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface disturbing activities to previously disturbed areas.
- f. The Permittee 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 Permittee 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 Permittee'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 Permittee'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 Permittee 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 Permittee 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 Permittee 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 Permittee'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 Permittee 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 Permittee 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 Permittee for the Project, to compensate for the permanent and temporary loss of CTS upland habitat from the Project, the Permittee 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 Permittee 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 Permittee) and/or an Incidental Take Permit issued by CDFG for the Project. The purchase shall be made by the Permittee at least five (5) business days prior to the date of initial ground-breaking activities.
45. 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 Permittee'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 Permittee 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 Permittee 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) [See COA 49].
 - b. If active Swainson's hawk nests are found, the Permittee 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 Permittee 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 Permittee 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 Permittee 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 (see COA 46).
46. Mitigation Measure BIO-5B: Habitat Avoidance –Burrowing Owl. The following guidelines adapted from the CDFG Staff Report on Burrowing Owl Mitigation (CDFG 1995) shall be implemented by the Permittee:
- a. Pre-construction 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 burrowing owls shall be conducted by a qualified wildlife biologist within 500 feet of the construction area in areas suitable for burrowing owls.
 - ii. The survey shall conform to the protocol described by the California Burrowing Owl Consortium, which includes up to four surveys on different dates if there are suitable burrows present. The CDFG shall be consulted by the Permittee 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 burrowing owls during construction activities shall be considered adverse disturbance to the owls, as determined by the Permittee's on-site biologist and the Solano County biological monitor.
 - b. The Permittee shall avoid disturbing active 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 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 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 1 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 which can support burrowing owl.
47. Mitigation Measure BIO-7: Design Specifications for Overhead Power Lines. Prior to project operation, the Permittee 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 cross arms 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 (see COA 48) 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 Permittee shall ensure that the section of overhead 230-kV transmission line be installed in conformance with APLIC 2006 suggested practices. The Permittee shall coordinate with PG&E to ensure this measure is implemented.

48. Mitigation Measure BIO-8A: Bird and Bat Mortality Monitoring. The Permittee 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):
 - i. 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 Permittee 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 Permittee 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 Permittee's scavenger removal trials that were conducted prior to the start of post-construction monitoring.
 - d. The Permittee 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 Permittee 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 Permittee

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 Permittee 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 Permittee 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 Permittee shall immediately notify the appropriate agency (CDFG and/or USFWS) by phone. The Permittee 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 Permittee 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.
49. Mitigation Measure BIO-8B: On-site Mitigation. The Permittee shall minimize and avoid potential bird and bat collision risks as follows:
- a. Prior to construction, the Permittee 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 Permittee 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 Permittee 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 Permittee shall use non-lattice meteorological towers in the project area in order to reduce perching habitat for birds.
 - iv. The Permittee 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) [see COA's 45 and 46, respectively] on project construction plans (e.g., grading and improvement plans).
- c. Construction Risk Reduction Measures:
- i. During construction, the Permittee 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) [see COA's 45 and 46, respectively].
 - ii. The Permittee shall avoid creating rock and other debris piles that may provide prey habitat and remove any such piles as soon as possible.
 - iii. The Permittee 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) [see COA's 29, 39 and 40, respectively], compact non-vegetated areas to discourage new rodent burrows.
- d. Project Operation and Management Measures:
- i. The Permittee shall move stored parts and equipment away from wind turbines in order to reduce potential prey habitat.
 - ii. The Permittee shall implement overhead power line design specifications in accordance with Mitigation Measure BIO-7, Design Specifications for Overhead Power Lines (see COA 47).
 - iii. The Permittee shall conduct bird and bat mortality monitoring in accordance with Mitigation Measure BIO-8A (Bird and Bat Mortality Monitoring) (see COA 48). In addition, the Permittee 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 Permittee shall also train project personnel in these procedures.

- iv. The Permittee 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.

50. 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee requests timely approval of the location of the conservation land or easement, and approval is not granted within the two-year period, the Permittee 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 Permittee 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 Permittee'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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 offsite conservation requirements described in sections b and c, above, the Permittee 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 Permittee. In determining which type of nesting enhancements are appropriate for the Project, Solano County may consider measures the Permittee 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 Permittee, and this shall be specified in the sales agreement between the bank operator and the Permittee.
 - 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 Permittee.
- iv. The conservation bank operator shall adequately document and report transactions as specifically provided for in their banking agreement with the appropriate resource agencies.
51. 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 Permittee 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.
52. Mitigation Measure BIO-8E: Minimize Impacts to Swainson's Hawk. The Permittee 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. (see COA 48.c)
 - b. Increased carcass searches shall be provided and reported in accordance with Mitigation Measure BIO-8A.c.iv. (see COA 48.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. (see COA 49.d.iii).
 - d. All off-site compensatory mitigation lands required by Mitigation Measure BIO-8C [see COA 50] (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 (see COA 50) 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 Permittee'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 [see COA 50.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 (*Populus 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 (see COA 48), 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 (see COA 48).
53. 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 Permittee shall avoid construction activities within 50 feet of the windmill and well pump.
54. 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 Permittee shall achieve avoidance by implementing the following measures:
- a. Prior to construction, the Permittee 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 Project*, Solano County, California (ICF International 2011) or other supplemental evaluation. In areas where ground-disturbance will occur for project construction, the Permittee shall provide documentation to the County confirming where surveys were previously completed versus not completed.
 - b. In areas where ground-disturbance will occur, the Permittee 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 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 Permittee'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 Permittee 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 Permittee conducts additional surveys and obtains Solano County approval, the Permittee 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 Permittee conducts a subsequent survey, the Permittee 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 shall not be distributed 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 location of these resources shall be made available only on a need-to-know basis to avoid disturbance, damage, or destruction.
55. MM CUL-2B: Cultural and Paleontological Monitoring and Unanticipated Discovery Procedure. The Permittee 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 (see COA 54) by implementing the following measures:
- a. The Permittee 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 Permittee 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 Permittee'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 Permittee 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 Permittee cannot implement site avoidance through project redesign, the Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee. 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.
56. Mitigation Measure GEO-1A: Conduct a Site-Specific Geotechnical Study. To further reduce potential impacts associated with geological hazards, the Permittee 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 this 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.
57. Mitigation Measure GEO-1B: Design Facilities to Withstand Ground Shaking. To mitigate potential impacts caused by ground shaking and landslides, the Permittee 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.
58. Mitigation Measure GEO-2: Design Facilities to Withstand Expansive Soils and Other Soil Hazards. To reduce the potential impacts caused by expansive soils, soil compaction, and settlement, the Permittee 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 Measure GEO-1A (Conduct a Site-Specific Geotechnical Study) [see COA 58].
59. Mitigation Measure GEO-3 (also Mitigation Measures AIR-2, HYD-2A and HYD-2B – see COA's 33 – 38, 63 and 64, respectively): Implement Erosion Controls. The Permittee shall:
- a. Salvage all topsoil disturbed by project activities for reuse during restoration.

- b. Monitor any disturbed areas each spring for eroding or slump areas and rehabilitate them as necessary, in coordination with Solano County.
60. 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 Permittee 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 would be provided to control accidental spills, that adequate spill response equipment and absorbents would be readily available, and that personnel would be properly trained in how to control and clean up any spills. Regarding these plans, the Permittee shall also ensure the following:
- a. The Permittee 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 Permittee 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.

61. Mitigation Measure HAZ-1B: Waste Management Plan. The Permittee 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 would receive construction wastes that could not be recycled.
 - c. The Permittee 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.
62. Mitigation Measure HAZ-2: Plan for Encountering Contaminated Soil, Groundwater, Natural Gas Wells, and Other Hazards. Prior to construction, the Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee shall immediately contact DOGGR's Sacramento District office to obtain information on the requirements for and approval to perform remedial operations, which the Permittee 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.
63. Mitigation Measure HYD-2A: Storm Water Pollution Prevention Plan. 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 Permittee 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 Permittee 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 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.
64. Mitigation Measure HYD-2B (see also Mitigation Measures AIR-2, BIO-1A, BIO-1B, GEO-3, HAZ-1A, and HAZ-1B – See COA's 33- 38, 39, 40, 59, 60 and 61, respectively): 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 would be required to minimize erosion, storm water discharge, and sedimentation from project construction. These measures would be enforced as conditions of the required Solano County grading permit.
- a. If the County determines that there is no feasible alternative that would maintain the 100 foot setback from an aquatic resources, the Permittee shall adhere to requirements in Mitigation Measure BIO-2A.a. (see COA 41.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.
 - i. 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 Permittee 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 Permittee shall obtain prior written approval from the Director of Resource Management. Approval of such wet weather construction activities would be dependent and conditional upon weather, site and soil conditions, monitoring by the County, and the Permittee's adherence to requirements set by the Department of Resource Management.
 - d. The Permittee shall discontinue grading and other ground disturbing activities during precipitation or when told to do so by the Department of Resource Management.
65. Mitigation Measure LU-1A: Provide Public Road, Property Line, Residential, and Transmission Facility Setback Waivers. To ensure that the Project is consistent with Solano County setback requirements, the Permittee shall comply with the following measures:
- a. Prior to construction of the turbine or meteorological foundation, the Permittee 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%). 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 Permittee shall comply with the alternative minimum setback requirements prescribed in Mitigation Measure SA-1B (see COA 73).
 - 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 Permittee 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 Permittee 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.
66. Mitigation Measure 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).
67. Mitigation Measure 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 Permittee 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.
68. Mitigation Measures NOI-1: Reduce Construction Noise. To reduce noise levels associated with construction of the Shiloh IV Wind Energy Project, the Permittee shall

comply with the following measures:

- a. Equipment Care: Equipment engines shall be covered, and the Permittee 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 Permittee 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 Permittee will respond to construction noise complaints, keep the County apprised of the complaints, and document the resolution of those complaints.
69. Mitigation Measure NOI-2A: Reduce or Avoid Operational Noise. 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 Permittee shall reduce or avoid the Shiloh IV project's potential operational noise impacts through implementation of the following measures:
- a. The Permittee 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 Permittee 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 L_{eq} / 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 Leq) 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 Permittee 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 Permittee 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 Leq) to be exceeded at residences other than residences 3, 7, 11, 13, and 14. In the event the Permittee modifies the final turbine configuration such that it is different than that evaluated in this EIR, the Permittee 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 Permittee 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).
70. Mitigation Measure NOI-2B: Operational Noise Complaint Plan. To reduce and prevent impacts associated with operational noise, the Permittee shall implement the following measures:

- a. Prior to issuance of a building permit for the first wind turbine in the Shiloh IV Wind Energy Project, the Permittee shall submit an Operational Noise Complaint Plan to the Solano County Department of Resource Management Department for approval. The plan shall detail how the Permittee 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 Permittee'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 Permittee 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 Permittee 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 Permittee shall implement one or more of the recommendations specified in the acoustical report (Appendix F) required by b. i. above to achieve conformance with the applicable standards, which may include operational curtailment and/or turbine relocation.

The Permittee 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.

71. 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee shall be required to comply with the following measures prior to the issuance of building permits, the Permittee 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 Permittee 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.
72. Mitigation Measure SA-1A: Wind Turbine Design and Safety Mechanisms. To prevent rotor and tower failure and avoid potential impacts, the Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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.

73. Mitigation Measure SA-1B: Project Turbine Siting. To reduce potential impacts associated with turbine failure, the Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee's expense, subject to approval of the Director of Resource Management.

74. 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.
75. Mitigation Measure SA-2B: Injury and Illness Prevention Plan. Prior to construction, the Permittee shall develop, in accordance with Cal/OSHA regulations, a project-specific Injury and Illness Prevention Plan 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 Permittee shall be responsible for ensuring that all personnel receive adequate training and that new employees receive supervision by trained personnel.
76. Mitigation Measure SA-3: Limit Public Access to the Project Area. The Permittee shall minimize accidents involving the public and impacts on the public by limiting access to the project area. The Permittee 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 Permittee 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 Permittee 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 Permittee 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 high fence.
77. 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 Permittee 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 Permittee 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 Permittee 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 Permittee shall not commence construction activities until the County has approved the plan.
 - e. The Permittee 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 Permittee shall provide the Montezuma Fire Protection District access to its water storage tanks, if needed.
78. Mitigation Measure SA-5B: Comply with Fire Codes 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:
- a. The Permittee 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.
 - b. Prior to construction, the Permittee shall submit project plans to the Montezuma Fire Protection District for review and approval.
 - c. 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.
79. Mitigation Measure TRA-1: Develop a Traffic Control Plan and Transportation Plan for the Project. The Permittee shall develop a Traffic Control Plan to be implemented during construction. Requirements for the Traffic Control Plan are as follows:
- a. The Traffic Control Plan shall be based on the project's final engineering design, 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 land and road closures as well as the hours, routes, and safety and management requirements;
- ii. Describe how the Permittee shall implement the following measures:
 - 1) 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;
 - 2) Scheduling of construction traffic to avoid peak traffic hours;
 - 3) 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);
 - 4) 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;
 - 5) Ensuring access for emergency vehicles at all times;
 - 6) Providing temporary access to businesses, residences, and/or pedestrians during construction;
 - 7) Opening lanes as soon as possible to restore normal traffic patterns;
 - 8) During the design phase, coordination by the Permittee with other utilities service providers to ensure conflicts with other utilities are minimized;
 - 9) 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
 - 10) After construction, restoring the routes to original conditions.
- b. The Permittee 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 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.
80. 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 Permittee 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.
81. Mitigation Measure TRA-3: Minimize Road Damage and Repair Roads. The Permittee shall be responsible for maintaining, repairing, paving, and reconstructing County roads through implementation of the following measures. The Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee; 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.
82. Mitigation Measure TRA-5A: Prohibit Hazards to Air Navigation. To ensure the project does not result in a hazard to air navigation:
- a. The Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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."
83. 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, the Permittee 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.

Notes

COA - Condition of Approval

This permit shall not take effect unless permittee signs in the space below within thirty (30) days after the date of granting hereof.

I agree to conform fully to this use permit and all of the foregoing conditions.

Permittee's Signature	Date	
Permittee's Name (Please Print)		
Address	City	Zip