

Section 3 BIOLOGICAL RESOURCES

3.1 INTRODUCTION

As described in the Petition, the Modified Project configuration and layout reduces overall disturbance when considering total acres disturbed and the intensity of grading and drainage control. Additionally, the Modified Project has been designed to eliminate the Approved Project's 30 foot tall wind fences that contributed to disruption of the sand transport. The disruption of sand was determined to lead to potential downwind sand deflation and additional indirect impacts to MFTL habitat.

The Modified Project will also be constructed in two phases. As shown on Figure 1, Phase 1 will include construction of the generation tie-line, access road, common facilities area, common facilities, temporary construction laydown area, both power blocks including laydown area, and a portion of solar field 2. Phase 2 will include construction of the remainder of the facility. Figures 2, 3 and 4 show biological impacts for the Modified Project. Table 1 below shows the direct and indirect impacts for the Modified Project.

**Table 1
PSEGS Disturbance Area and Impacts**

Feature Group	Feature	Acres		Phase I	Phase II
Project Footprint	Common/CLA Fenced Area	218.0	3,793.5	218.0	0
	Solar Field Fenced Area	3,575.5		624.5	2,951.0
	Access Road (Disturbed Area)	1.0	1.0	0	
	Gen-Tie Corridor (Permitted Section)	81.9	100.8	81.9	0
	Gen-Tie Corridor (Proposed/Revised Section)	18.9		18.9	0
	Indirect Impact (Private Land)	39.7	51.4	0	39.7
	Indirect Impact (SCE 161kV Corridor)	11.7		11.7	0
Total		3,946.7		956.0	2,990.7
Desert Tortoise					
Project Site Fenced Area	Common/CLA - Critical Habitat	103.2	203.2	103.2	0
	Solar Field Area - Critical Habitat	100.0		48.7	51.3

	Common/CLA - Suitable Habitat	114.8	3,590.3		114.8	0
	Solar Field Area - Suitable Habitat	3,475.5			575.8	2,899.7
Access Road	Access Road - Critical Habitat	0.9	1.0		0.9	0
	Access Road - Suitable Habitat	0.1			0.1	0
Gen-Tie Corridor	PSPP Permitted - Critical Habitat	2.7	100.9		2.7	0
	PSPP Permitted - Suitable Habitat	79.3			79.3	0
	Proposed - Critical Habitat	18.1			18.1	0
	Proposed - Suitable Habitat	0.8			0.8	0
Indirect Impacts	Private Land: Suitable Habitat	39.7	51.4		0	39.7
	SCE 161kV Corridor: Critical Habitat	3.7			3.7	0
	SCE 161kV Corridor: Suitable Habitat	8.0			8.0	0
Total		3,946.8			956.1	2,990.7
Mojave Fringe-toed Lizard						
Project Site Fenced Area	Stabilized & Partially Stabilized Desert Dunes	186.8	1,451.5		0	186.8
	Non-Dunes	1,264.7			6.5	1,258.2
Gen-Tie Corridor	Non-Dunes	27.7			27.7	0
Indirect Impacts	Private Land: Non-Dunes	39.7			0	39.7
Total		1,518.9			34.2	1,484.7
Aeolian Sand Corridor (Zones)						
Project Site Fenced Area	Zone II	227.3	1,128.5		0	227.3
	Zone III	901.2			5.3	895.9
Gen-Tie Corridor	Zone III	16.9			16.9	0
Indirect Impacts	Private Land: Zone II	2.9	39.7		0	2.9
	Private Land: Zone III	36.8			0	36.8
Total		1,185.1			22.2	1,162.9
Jurisdictional Waters						
Project Site Fenced Area	Desert Dry Wash Woodland	192.3	353.6		5.1	187.2
	Unvegetated Ephemeral Dry Wash	161.3			4.5	156.8

Gen-Tie Corridor	Desert Dry Wash Woodland	4.6	5.0		4.6	0
	Unvegetated Ephemeral Dry Wash	0.4			0.4	0
Indirect Impacts	Private Land: Unvegetated Ephemeral Dry Wash	0.47	0.54		0	0.47
	SCE 161kV Corridor: Desert Dry Wash Woodland	0.03			0.03	0
	SCE 161kV Corridor: Unvegetated Ephemeral Dry Wash	0.04			0.04	0
Total		359.1			14.7	344.5

Shape files are contained on a CD which will be delivered to the Commission under separate cover.

3.2 MODIFICATIONS TO CONDITIONS OF CERTIFICATION

A global change to all Conditions of Certification to reflect that the California Department of Fish and Game has changed its name to California Department of Fish and Wildlife.

CONDITION OF CERTIFICATION BIO-16

Condition of Certification **BIO-16** is the standard Avian Protection Plan Condition that was included in the Blythe Solar Power Project, the Genesis Solar Energy Project, and the Rice Solar Energy Project. Since those projects were licensed, the agencies have reconsidered the effectiveness of the current wording of **BIO-16**. For the reasons outlined in the Applicant's Testimony in the Hidden Hills Solar Electric Generating System record, PSH does not believe that the PSEGS will result in significant impacts to avian and bat species that should warrant modification of **BIO-16**. However, in order to cooperate with the agencies, PSH has developed and is proposing that **BIO-16** be replaced with the following three Conditions of Certification to address the issues surrounding potential impacts to avian and bat species. This comprehensive suite of measures provides: (1) habitat compensation, (2) migratory bird and raptor enhancement and conservation strategies, and (3) a robust monitoring and adaptive management framework.

AVIAN AND BAT HABITAT COMPENSATION

BIO-A To mitigate for potential avian and bat impacts, the Project owner shall provide compensatory mitigation prior to commercial operation of the first unit for 3,794 acres, adjusted to reflect the final Project footprint. For purposes of this condition, the Project footprint means all lands disturbed in the construction and operation of the PSEGS, including all Project linears, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long-term habitat for avian and bat species. To satisfy this condition, the Project owner shall acquire, protect, and transfer 1 acre of habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. Condition BIO-28 may provide the Project owner with another option for satisfying some or all of the requirements in this condition. In lieu of acquiring lands itself, the Project owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as provided below in section 3.i. of this condition.

The timing of the mitigation shall correspond with commercial operation of the first unit. If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:

1. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition in fee title or in easement shall:

- a. be reasonably biologically comparable to the habitat lost or degraded by the Project footprint to assist in the conservation and enhancement of avian and bat populations in the vicinity of the project and throughout the region;**
- b. be prioritized near larger blocks of lands that are either already protected or planned for protection, such as DWMA's within the Colorado Desert Recovery Unit, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;**
- c. not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;**
- d. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;**

- e. **not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and**
- f. **have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFW, BLM and USFWS, agrees in writing to the acceptability of the land.**

2. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the CPM, CDFW and BLM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for avian and bat species in relation to the criteria listed above. Approval from the CPM and CDFW, in consultation with BLM and USFWS, shall be required for acquisition of all compensatory mitigation parcels.

3. Compensation Lands Acquisition Requirements. The Project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM and CDFW, in consultation with BLM and USFWS, have approved the proposed compensation lands:

a. **Preliminary Report. The Project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM and CDFW. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM and CDFW, in consultation with BLM and the USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.**

b. **Title/Conveyance. The Project owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the CPM and CDFW. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, will require that both types of transfers be completed. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM under terms approved by the CPM and CDFW. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFW in a form**

approved by CDFW. If an approved non-profit holds a conservation easement, CDFW shall be named a third party beneficiary.

c. **Initial Habitat Improvement Fund.** The Project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if it meets the approval of CDFW and the CPM. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

d. **Property Analysis Record.** Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.

e. **Long-term Maintenance and Management Fund.** In accordance with BIO-29 (phasing), the Project owner shall deposit in NFWF's REAT Account a capital long-term maintenance and management fee in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.

The CPM, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

f. **Interest, Principal, and Pooling of Funds.** The Project owner, the CPM and CDFW shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

i. **Interest.** Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and

any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.

ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFW or the approved third-party long-term maintenance of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.

iii. Pooling Long-Term Maintenance and Management Fee Funds. CDFW, or a CPM and CDFW-approved non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for avian and bat species. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and CPM.

g. Other expenses. In addition to the costs listed above, the Project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs, expenses incurred from other state agency reviews, and overhead related to providing compensation lands to CDFW or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.

h. Mitigation Security. The Project owner shall provide financial assurances prior to commercial operation of the first unit to the CPM and CDFW with copies of the document(s) to BLM and the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described in this condition. These funds shall be used solely for implementation of the measures associated with the Project in the event the Project owner fails to comply with the requirements specified in this condition, or shall be returned to the Project owner upon successful compliance with the requirements in this condition. The CPM's or CDFW's use of the security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition. Financial

assurance can be provided to the CPM and CDFW in the form of an irrevocable letter of credit, a pledged savings account or another form of security (“Security”). Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM’s approval in consultation with CDFW, BLM and the USFWS, of the form of the Security. Security shall be in the amount shown in BIO-29, Table 3. The actual costs to comply with this condition will vary depending on the final footprint of the completed Project, and the actual costs of acquiring, improving and managing the compensation lands.

i. NFWF REAT Account. The Project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF’s REAT Account. Initial deposits for this purpose must be made in the same amounts as the security required in section 3.h. above, and may be provided in lieu of security. If this option is used for the acquisition and initial improvement, the Project owner shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual costs are known. If the actual costs for acquisition and administrative costs and fees are less than described in Biological Resources Table 6b, the excess money deposited in the REAT Account shall be returned to the Project owner. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the Project owner.

The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission and CDFW. Such delegation shall be subject to approval by the CPM and CDFW, in consultation with BLM and USFWS, prior to land acquisition, initial protection or maintenance and management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be implemented within 18 months of the Energy Commission’s approval of the third party.

Verification: If the mitigation actions required under this condition are not completed prior to commercial operation of the first unit, the Project owner shall provide the CPM and CDFW with an approved form of Security in accordance with this condition of certification no later than 30 days prior to commercial operation of the first unit. Actual Security shall be provided no later than 7 days prior to commercial operation of the first unit. If Security is provided, the Project owner,

or an approved third party, shall complete and provide written verification to the CPM, CDFW, BLM and USFWS of the compensation lands acquisition and transfer within 18 months after commercial operation of the first unit.

The Project owner may elect to fund the acquisition and initial improvement of funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the Security required in section 3.h. of this condition. Payment of the initial funds for acquisition and initial improvement must be made at least 30 days prior to commercial operation of the first unit.

No fewer than 90 days prior to acquisition of the property, the Project owner shall submit a formal acquisition proposal to the CPM, CDFW, USFWS, and BLM describing the parcels intended for purchase and shall obtain approval from the CPM prior to the acquisition.

No fewer than 30 days after acquisition of the property the Project owner shall deposit the funds required by Section 3e above (long term management and maintenance fee) and provide proof of the deposit to the CPM.

The Project owner, or an approved third party, shall provide the CPM, CDFW, BLM, and USFWS with a management plan for the compensation lands within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan for the compensatory mitigation lands, in consultation with CDFW, BLM and the USFWS.

Within 90 days after completion of all project related ground disturbance, the Project owner shall provide to the CPM, CDFW, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction. This shall be the basis for the final number of acres required to be acquired.

AVIAN ENHANCEMENT AND CONSERVATION MEASURES

BIO-B The Project owner shall implement the following measure to conserve and enhance avian populations in the vicinity of the project and throughout the region:

- (a) Regional Avian Electrocutation Risk and Cable Collision Avoidance Measures. Consistent with the DRECP framework (DRECP 2012), the project owner shall, prior to the commencement of commercial operations at the facility, fund the retrofitting of non-compliant utility poles in the vicinity of the project to APLIC (2006) standards or fund the installation of bird diverters in the vicinity of the Project. A total***

amount of \$300,000 will be provided for these enhancements. The funding shall be provided to an independent third party who will perform the actual retrofitting, pursuant to a Retrofit Plan approved by the CPM.

The Retrofit Plan will develop a tiered approach to minimizing electrocution and collision risk, wherein the first funding is applied to retrofit poles in areas where either mortalities are highest or area use is highest. The second tier of retrofitted poles would be areas of lesser importance. If funds remain available after first and second tier poles have been retrofitted, then the CPM may apply the remaining funds to other avian protection objectives outlined by the DRECP. As an alternative to the Retrofitting Plan and the use of a CPM-approved third party, the total funding can be accomplished by making a payment in the amount of \$300,000 to the National Fish and Wildlife Foundation's Bald and Golden Eagle Protection Act account.

- (b) Additional Migratory Bird Conservation: The Project owner shall, prior to the commencement of commercial operations at the facility, pay \$500,000 to fund the activities of a CPM approved third party that will perform additional bird migratory bird conservation measures. Such measures shall be approved by the CPM and may include, but not be limited to: (i) restoration of degraded habitat with native vegetation; (ii) restoration of agricultural fields to bird habitat; (iii) management of agricultural fields to enhance bird populations; (iv) invasive plant species and artificial food or water source management; (v) control and cleanup of potential avian hazards, such as lead or microtrash; (vi) retrofitting of buildings to minimize collisions; (vii) retrofitting of conductors and above ground cables to minimize collisions; (viii) animal control programs; (ix) support for avian and bat research and/or management efforts conducted by entities approved by the CPM within the Project's mitigation lands or other approved locations; (x) funding efforts to address avian diseases or depredation due to the expansion of predators in response to anthropomorphic subsidies that may adversely affect birds that use the mitigation lands or in other approved locations; and (xi) contribute to the Migratory Bird Conservation Fund managed by the Migratory Bird Conservation Commission.*

Verification: *No later than 30 days prior to beginning of Project ground-disturbing activities, the Project owner shall provide written verification of an approved form of Security in accordance with this condition of certification.*

Actual Security shall be provided no later than 7 days prior to the beginning of Project ground-disturbing activities. Prior to commercial operation, the Project owner shall provide the funding to the independent third party selected by the CPM.

AVIAN AND BAT SURVEYS, MONITORING AND ADAPTIVE MANAGEMENT

BIO-C The Project owner shall perform preconstruction baseline surveys prior to surface disturbance of avian and bat species for use in development of a Bird and Bat Conservation Strategy (BBCS). The Project owner shall prepare a BBCS and submit it to the CPM and BLM for approval and to CDFW and USFWS for review and comment. The BBCS shall provide for the following:

- ***Survey and monitor onsite and offsite avian use and behavior to document species composition on and offsite, compare onsite and offsite rates of avian and bat use, document changes in avian and bat use over time, and evaluate the general behavior of birds in and near the facility.***
- ***Implement an onsite and offsite avian and bat mortality and injury monitoring program to identify the extent of potential avian or bat mortality or injury from collisions with facility structures or from elevated levels of solar flux that may be encountered within the facility airspace, including:***
 - ***assessing levels of collision-related mortality and injury with heliostats, perimeter fences and power tower structures;***
 - ***calculating rates of solar flux-related avian mortality and injury, if any;***
 - ***documenting seasonal, temporal, and weather-related patterns associated with collision- or solar flux-related mortality and injury; and***
 - ***documenting spatial patterns that may be associated with collision- or flux-related mortality and injury..***
 - ***documenting spatial patterns that may be associated with avoidance of the facility.***
- ***Identify conservation measures to minimize impacts and evaluate the effectiveness of those measures***
- ***Implement an adaptive management and decision-making framework for reviewing, characterizing, and responding to quantitative survey and monitoring results.***

Preconstruction Baseline Surveys

The project owner shall perform avian use and behavior surveys of the facility site prior to construction. Surveys of avian use and behavior shall be conducted using standard point count protocols. The objective of the surveys shall be to estimate the spatial and temporal use of the facility and surrounding area by resident and migrating birds and to document the preconstruction avian community.

The preconstruction baseline surveys will include, at least:

- ***Species present, by season, including migration, nesting wintering***
- ***Abundance by unit effort, unit time, or other acceptable metric of abundance, by season***
- ***Use of the project area and that portion of the surrounding area in which indirect effects could occur (species-specific).***

The surveys will be sufficiently robust in design, including but not limited to, sampling schedule, sampling intervals, replicates, spatial layout, seasonal and annual variability, and statistics. All surveys will be project-relevant; data collection that is immaterial to baseline survey objectives and goals will not be included. Preconstruction surveys shall employ the following methods:

Diurnally active and nesting avian surveys will be conducted using accepted, standard point count protocols (e.g., BLM 2009, Ralph et al. 1995, Ralph et al 1993, Smith et al. 1998) to identify seasonal and annual raptor and songbird species composition, rates of use (including nesting), types of use, and changes in use over time. The spatial design will include the entire area of effect, plus control areas, and employ a stratified-random approach to ensure sampling of all biologically relevant factors and project impacts. The first stratum will be biologically relevant features, such as proximity to vegetation types that may affect prey abundance and capture probability. The second stratum will attend to the specific aspects of the power towers and solar field, as well as the interface between the solar field and native habitat. To ensure entire area of effect coverage, a grid will overlay the entire project footprint and extended area of effect around the project disturbance area. Within these three strata, a sufficient number of transects (replicates) will be randomly sited to provide robust statistical results. Ten percent of the area is a suggested level of sampling that would provide sufficient information to answer the study questions as well as provide a basis to assess future sampling during the monitoring phase

(see below). Point count locations would be spaced 500 ft apart along each transect. Each solar field has a radius of approximately one mile. Because the study would extend to indirect-effect areas outside the boundary, this design would result in 10, 1.25 to 1.5-mile-long transects (depending on access outside the project) for the both solar fields combined, five per solar field, with 15 sampling points per transect. Point counts would be 10 minutes long at each point and conducted during the greatest bird activity period – daybreak to approximately three hours past daybreak. Survey points will also include two-hour segments throughout the middle portion of the day (approximately 1000 h to 1600 h, depending on time of year) when diurnal raptors are generally considered most active. The surveys will be conducted weekly during the most intensive spring nesting and migration period (March 1 to May 1), twice monthly during the remainder of spring (May and June) and during fall (September 1 to December 1) and once per month during summer (June 1 to September 1) and winter (December 1 to February 1). Sampling will be rotated so that all points are evaluated equally throughout each sampling period.

Nocturnal sampling will be conducted for nocturnally migrating birds during the spring and fall migration periods to assess the level of migratory activity and need for further nocturnal sampling. Bat acoustic sampling also will be implemented in this baseline stage to identify species present and assess risk potential.

The survey will occur for one year prior to construction. If construction schedules dictate that an entire year of sampling is not possible, then at least one important migratory and activity season will be captured, preferably spring.

Preconstruction surveys shall include collecting data from the spring migratory and activity season.

BBCS Components

The BBCS shall include the following components to be implemented after commercial operation of the Project:

- 1. Preconstruction Baseline survey results. A description and summary of the baseline survey methods and results.*
- 2. Avian and bat use and behavior surveys. Avian and bat use behavior surveys shall be conducted. The program will outline survey methodology and field documentation, the identification of appropriate onsite and offsite survey locations, control sites, and the*

seasonal considerations. Prey abundance surveys will also be conducted to identify the locations and changes in the abundance of prey species. Bat acoustic sampling may be implemented depending on results of the baseline study.

- 3. Golden eagle nest monitoring, including a summary of available information concerning golden eagle nesting activity in the project vicinity shall be prepared and annual pedestrian and/or helicopter surveys of golden eagle nesting sites within a 10-mile radius of the Project site*
- 4. Avian and bat mortality and injury monitoring: An avian and bat injury and mortality monitoring program shall be implemented, including:*
 - (a) Onsite monitoring that will systematically survey representative locations within the facility sufficient to ensure that the estimated coefficient of variation (the standard deviation divided by facility-wide estimates) of facility wide fatality estimates will be less than 25 percent over a reasonable range of potentially low, medium and high impact rates, account for potential spatial bias and allow for the extrapolation of survey results to unsurveyed areas, and the survey interval based on scavenger and searcher efficiency trials and detection rates.*
 - (b) Offsite monitoring, to the extent that access can be reasonably and feasibly obtained by the Project owner, of one or more locations adjacent to the project facilities using the same or comparable methods as implemented for the onsite monitoring to monitor the extent to which avian species potentially injured by collisions or solar flux traverse to and can be detected within adjacent areas.*
 - (c) Low-visibility and high-wind weather event monitoring to document potential weather-related collision risks that may be associated with the power towers at the facility, including foggy, highly overcast, or rainy night-time weather typically associated with an advancing frontal system, and high wind events in which 40 miles per hour winds are sustained for period of greater than 4 hours, including survey frequency, location and methods.*
 - (d) Scavenger and searcher efficiency trials to document the extent to which avian or bat fatalities remain visible over time and can be detected within the project area and to adjust the survey*

timing and survey results to reflect scavenger and searcher efficiency rates.

(e) Statistical methods used to generate facility estimates of potential avian and bat impacts based on the observed number of detections during standardized searches in the monitoring season for which the cause of death can be determined and is determined to have been facility-related.

(f) Field detection and mortality or injury identification, cause attribution, handling and reporting protocols consistent with applicable legal requirements.

5. Survey schedule and period. *All surveys and monitoring studies included in the BBCS shall be conducted for three years following commercial operation and approval of the BBCS by the CPM. At the end of the three-year period, the project owner and the CPM shall meet and confer to determine whether the survey program shall be continued for subsequent periods, up to a maximum of five years. The monitoring program may be modified with the approval of the CPM in response to survey results, identified scavenging efficiency rates, or other factors to increase monitoring accuracy and reliability or in accordance with the adaptive management decision-making framework included in the BBCS.*

6. Adaptive management. *An adaptive management program shall be developed to identify and implement reasonable and feasible measures that would reduce any biologically significant detected levels of avian or bat mortality or injury attributable to project operations and facilities. Any such impact reduction measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) to the level of avian or bat mortality or injury that is specifically and clearly attributable to the Project facilities. The adaptive management program shall include the following element:*

(a) Reasonable measures for characterizing the extent and significance of detected mortality and injuries clearly attributable to the Project facilities.

(b) Measures that the project owner will implement to adaptively respond to detected mortality and injuries attributable to the Project, including passive avian diverter installations along the perimeter or at other locations within the project to avoid site

use, the use of sound, light or other means to discourage site use consistent with applicable legal requirements, onsite prey or habitat control measures consistent with applicable legal requirements, and additional perch and nest proofing of Project facilities.

- (c) A decision-making framework that facilitates concurrent Project owner, CPM, and state and federal wildlife agency review of seasonal and annual survey results, the effectiveness of the adaptive management measures implemented by the Project owner, modification of the surveys in response to the results, if necessary, and the identification of additional mitigation responses that are commensurate with the extent of impacts that may be identified in the monitoring studies.*

Verification: *The BBCS shall be submitted to the CPM for review and approval and to CDFW and USFWS for review and comment no less than 120 days prior to the commercial operation of the first unit. The Project owner shall provide the CPM with copies of any written or electronic transmittal from the USFWS or CDFW related to the BBCS within 30 days of receiving any such transmittal. Survey reports shall be submitted to the CPM after each season and in an annual summary report throughout the course of the three-year study period and as set forth in the approved monitoring study plan. The reports will include all monitoring data required as part of the monitoring program. Each year throughout the minimum three year monitoring period, the Designated Biologist or other qualified biologist that may be identified by the Designated Biologist shall submit an Annual Report to the CPM, CDFW and USFWS by January 31 of each calendar year, summarizing all available bird and bat mortality data (species, date and location collected, evidence of injury and cause of death) collected over the course of the year. The report also shall summarize any additional wildlife mortality or injury documented on the project site during the year, regardless of cause, and assess any adaptive management measure implemented during the prior year as approved by the CPM. After the third year of the monitoring program, the CPM shall meet and confer with the project owner to determine if the study period should be extended based on data quality and sufficiency for analysis or if needed to document efficacy of any adaptive management measures undertaken by the Project owner. The study period may be extended up to five years from the commencement of facility operations. If a carcass of a golden eagle or any state or federally listed threatened or endangered species is found at any time by the monitoring study or Project operations staff, the Project owner, Designated Biologist, or other qualified biologist that may be identified by the*

Designated Biologist shall contact CDFW and USFWS by email, fax or other electronic means within one working day of any such detection.

CONDITION OF CERTIFICATION BIO-17

PSH proposes to modify Condition of Certification **BIO-17** to reflect developments in kit fox and badger avoidance, minimization, and management practices since the original Condition was written, warranting the propose modifications. The proposed modifications are similar to the Condition of Certification in the Commission approved Amendment to the License for the Genesis Solar Energy Project. PSH requests the Commission delete the current Condition of Certification and replace it with the following.

AMERICAN BADGER AND DESERT KIT FOX IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-17 The project owner shall develop and implement an American Badger and Desert Kit Fox Mitigation and Monitoring Plan (plan). The objective of the plan shall be to avoid direct impacts to the American badger and desert kit fox as a result of construction of the power plant and linear facilities, as well as during project operation and decommissioning. The final plan is subject to review and comment by BLM and revision and approval by the CPM, in consultation with CDFW. The final plan shall include, but is not limited to, the following procedures and impact avoidance measures:

- 1. Describe pre-construction survey and clearance field protocol, to determine the number and locations of single or paired kit foxes or badgers on the project site that would need to be passively relocated and the number and locations of desert kit fox or badger burrows or burrow complexes that would need to be collapsed to prevent re-occupancy by the animals.***
- 2. Complete pre-construction den surveys for any new construction activity. Biological Monitors shall perform pre-construction surveys for badgers and kit fox dens in the Project area, including areas within 100 feet of all Project facilities, utility corridors, and access roads. Surveys may be concurrent with desert tortoise surveys. If dens are detected, each den shall be classified as inactive non-natal, inactive natal, potentially active, or definitely active non-natal, or active***

natal den.

3. ***The plan will include details on monitoring requirements, types and methods of passive hazing, and methods and timing of den excavation, including, but not limited to the following:***
 - a. ***Inactive non-natal and inactive natal dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox***
 - b. ***Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. BLM approval may be required prior to release of badgers on public lands.***
 - c. ***Active natal dens. During denning season (American badger – March to August, and desert kit fox – February to June), any active natal dens that are detected in the preconstruction surveys shall have a buffer zone of 300 feet to 500 feet surrounding the den, pending approval from the CPM in consultation with CDFW, and monitoring measures shall be implemented. Discovery of an active natal den that could be impacted by the project shall be reported to the CPM and CDFW within 24-hours of the discovery. A detailed description outlining the types and methods of monitoring must be included in the plan. The den location shall be mapped and submitted along with a report stating the survey results to the CPM and CDFW. The Designated***

Biologist shall monitor the natal den until he or she determines that the pups have dispersed. No disturbance will be allowed for any animal associated with a natal den and any activities that might disturb denning activities shall be prohibited within the buffer zone. Once the pups have dispersed, various passive hazing methods may be used to discourage den reuse. A detailed description of the types of passive hazing to be used must be included in the plan; however, approval must be granted by the CPM, in consultation with CDFW prior to implementation. After verification that the den is unoccupied, it shall then be excavated by hand and backfilled to ensure that, no badgers or kit fox are trapped in the den.

d. Exception for American badger. In the event that passive relocation techniques fail for badgers outside the denning season, or during the denning season individual badgers can be verified to not have a litter, then live-trapping can be employed to safely perform active removal. This approach will be agreed to, in principle, ahead of clearance surveys, and refined for individual situations in discussions with the CPM and CDFW

4. Address other factors and procedures that may affect the success of kit fox and American badger relocation offsite, such as:

a. Qualitative discussion of availability of suitable habitat on off-site surrounding lands within 10 miles of the project boundary, and quantitative evaluation of unoccupied desert kit fox burrows available on surrounding lands within 1 mile of the project boundary (e.g., by inventorying burrow numbers in selected representative sample areas);

b. Estimates of the distances kit foxes would need to travel across the project site and across adjacent lands to safely access suitable habitat (including burrows) off-site;

c. Proposed scheduling of the passive relocation effort;

d. Methods to minimize likelihood that the animals will return to the project site;

- e. *Descriptions of any proposed or potential ground disturbing activities related to kit fox relocation, and locations of those activities (e.g., artificial burrow construction);*
 - f. *A monitoring and reporting plan to evaluate success of the relocation efforts and any subsequent re-occupation of the project site; and*
 - g. *A plan to subsequently relocate any animals that may return to the site (e.g., by digging beneath fences).*
5. *Notify the CPM and CDFW if injured, sick, or dead American badger and desert kit fox are found. If an injured, sick, or dead animal is detected on any area associated with the solar project site or associated linear facilities, the CPM and the Ontario CDFW Office shall be notified immediately by phone. Written follow-up notification via FAX or electronic communication shall be submitted to the CPM and CDFW within 24 hours of the incident and shall include the following information as appropriate:*
- a. *Injured animals. If an American badger or desert kit fox is injured because of any project-related activities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM and CDFW personnel regarding the capture and transport of the animal to CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Following the phone notification, the CPM and CDFW shall determine the final disposition of the injured animal, if it recovers. A written notification of the incident shall be sent to the CPM and CDFW containing, at a minimum, the date, time, location, and circumstances of the incident.*
 - b. *Sick animals. If an American badger or desert kit fox is found sick and incapacitated on any area associated with the solar project site or associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM and CDFW personnel for immediate capture and transport of the animal to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic.*

Following the phone notification, the CPM and CDFW shall determine the final disposition of the sick animal, if it recovers. If the animal dies, a necropsy shall be performed by a CDFW-approved facility to determine the cause of death. The project owner shall pay to have the animal transported and a necropsy performed. A written notification of the incident shall be sent to the CPM and CDFW and contain, at a minimum, the date, time, location, and circumstances of the incident.

c. Fatalities. If an American badger or desert kit fox is killed because of any project-related activities during construction, operation, and decommissioning, or is found dead on the project site or along associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately refrigerate the carcass and notify the CPM and CDFW personnel within 24 hours of the discovery to receive further instructions on the handling of the animal. If the animal is suspected of dying of unknown causes, a necropsy shall be performed by a CDFW-approved facility to determine the cause of death. The project owner shall pay to have the animal transported and a necropsy performed.

6. Additional protection measures to be included in the plan and implemented:

a. All pipes within the project disturbance area must be capped and/or covered every evening or when not in use to prevent desert kit foxes or other animals from accessing the pipes.

b. All water sources shall be covered and secured when not in use to prevent drowning.

c. The project owner shall coordinate with CDFW to identify any additional fence design features to maximize the effectiveness of the fence to exclude kit foxes from the project.

d. Incorporate and implement the CDFW Veterinarian's guidance regarding impact avoidance measures including

measures to prevent disease spread among desert kit foxes.

- e. Include measures to reduce traffic impacts to wildlife if the project owner anticipates night-time construction. The plan must also include a discussion of what information will be provided to all night-time workers, including truck drivers, to educate them about the threats to kit fox, what they need to do to avoid impacts to kit fox, and what to report if they see a live, injured, or dead kit fox.**

Verification: No fewer than 30 days prior to the start of any construction-related ground disturbance activities associated with the new project related facilities, the project owner shall provide the CPM, BLM, and CDFW with a draft American Badger and Desert Kit Fox Mitigation and Monitoring Plan for review and comment.

No fewer than 10 days prior to start of any ground disturbance activities associated with the new project-related facilities, the project owner shall provide an electronic copy of the CPM-approved final plan to the CPM and CDFW and implement the plan.

The project owner shall submit a report to the CPM and CDFW within 30 days of completion of any badger and kit fox surveys. The report shall describe survey methods, results, impact avoidance and minimization measures implemented, and the results of those measures.

No later than 2 days following a phone notification of an injured, sick, or dead American badger or desert kit fox, the project owner shall provide to the CPM and CDFW, via FAX or electronic communication, a written report from the Designated Biologist describing the incident of sickness, injury, or death of an American badger or desert kit fox, when the incident occurred, and who else was notified.

Beginning with the first month after start of construction and continuing every month until construction is completed, the Designated Biologist shall include a summary of events regarding the American badger and desert kit fox in each MCR.

No later than 45 days after initiation of project operation, the Designated Biologist shall provide the CPM a final American Badger and Desert Kit Fox Mitigation and Monitoring Plan that includes: 1) a discussion of all mitigation measures that were

and currently are being implemented; 2) all information about project-related kit fox and badger injuries and/or deaths; 3) all information regarding sick kit fox and badger found within the project site and along related linear facilities; and 4) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the American badger and desert kit fox.

CONDITION OF CERTIFICATION BIO-18

PSH recommends a modification to Item 4 of Condition of Certification **BIO-18** to provide clarification of the burrowing owl mitigation. As written, Item 4 would require potentially extensive surveys to be conducted to identify if a burrowing owl had a territory within 5 miles of an otherwise very adequate compensation parcel. Bird territories are not static for several reasons, including that new birds enter areas and social structures change. It would be unfortunate and costly to burrowing owls and the project owner to reject an otherwise excellent compensation parcel simply because an owl was not found to be nesting within 5 miles in the particular year that the survey was conducted for the potential compensation lands. Instead, PSH suggests a more realistic and biologically relevant change consistent with the wording included in the Genesis Solar Energy Project Final Decision.

4.a. Criteria for Burrowing Owl Mitigation Lands. The terms and Conditions of this acquisition or easement shall be as described in BIO-12 [Desert Tortoise Compensatory Mitigation], with the additional criteria to include: 1) the 39 acres of mitigation land must provide suitable habitat for burrowing owls, and 2) the acquisition lands ***must either currently support burrowing owls or be within dispersal distance from areas occupied by burrowing owls (generally approximately five miles).***

CONDITION OF CERTIFICATION BIO-19

Condition of Certification **BIO-19** refers to diffusers that have now been eliminated by the Modified Project less intensive drainage design. PSH recommends that the following deletions to Part A of the Condition.

2. Special-Status Plant Impact Avoidance and Minimization Measures.

The Project owner shall incorporate all measures for protecting special-status plants in close proximity to the site into the BRMIMP (**BIO-7**). These measures shall include the following elements:

- a. Site Design Modifications: i) Incorporate modifications to site design or construction techniques to minimize direct and indirect impacts to special-status plants along the Project linears to include: limiting the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads to preserve the seed bank, and minor adjustments to the alignment of the roads and pipelines within the constraints of the ROW; ii) ~~modify diffusers on an engineered channel to ensure discharge into existing small channels that were deprived of flows from diversion into engineered channel to minimize impacts downstream and maintain the natural surface drainage patterns and sediment transport critical to wash-dependent special-status plants;~~ iii) These modifications shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP.

Recent large scale rare plant surveys have provided the unprecedented opportunity to gather data in areas that have not been surveyed or have not been surveyed during the proper time of year. These large-scale surveys are finding that some species may be more abundant and widespread than their rank reflects. For example, Abrams' spurge (*Euphorbia abramsiana*) was found to be much more common than originally thought, likely due to undersampling, and consequently its CNDDDB rank has changed from an S1 to an S2S3 and there is an application and justification to reduce that rank even further. Therefore, PSH requests that this Condition be revised to recognize that a species' rank should be carefully analyzed using the most recent, best-available data prior to assigning avoidance and mitigation requirements.

- C.1. Mitigation for CNDDDB Rank 1-*Equivalent* Plants (Critically Imperiled). ***Species that are not federally or state listed but are CNDDDB Rank¹¹ plants first will be evaluated using all available data to determine if they meet the definition of a CNDDDB Rank 1 species (i.e., a Rank 1-equivalent species).*** If late blooming species with a CNDDDB rank ~~Rank 1-equivalent~~ of ¹⁴ ***species*** are detected within the Project Disturbance Area, complete avoidance is mandatory along the linears and within construction laydown areas. The Project owner shall limit the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads, and other construction or design modifications as necessary to achieve avoidance of any Rank 1-***equivalent*** plants detected.

If late-season Rank 1-**equivalent** plants are detected on the solar facility, the Project owner shall avoid all plants around the perimeter¹² of the facility as necessary to achieve 75 percent avoidance of the local population of the affected species. The local population shall be measured by the number of individuals occurring on the Project Site and within the immediate watershed of the Project for wash dependent-species or species of unknown dispersal mechanism, or within the local sand transport corridor for wind dispersed species. Measurement of percent avoidance shall be based on population for perennials and on habitat for annuals (habitat containing the species' micro-habitat preferences, such as "fine silts and moist depressions"). Avoidance within the central portion of the solar facility is not recommended because it would create fragmented conditions that would not sustain persistence of the affected species. For all portions of the local population not avoided, the Project owner shall implement off-site mitigation at a ratio of 3:1

2. Mitigation for CNDDDB Rank 2-**Equivalent** Plants (Imperiled). ***Species that are CNDDDB Rank¹⁴ plants first will be evaluated using all available data to determine if they meet the definition of a CNDDDB Rank 2 species (i.e., a Rank 2-equivalent species). If late-season CNDDDB Rank 2-equivalent species are*** ~~If late-season CNDDDB Rank 2-species~~ are detected within the Project Disturbance Area avoidance is mandatory along the linears and construction laydown areas, ***unless such avoidance would create greater environmental impacts in other resource areas (e.g., cultural resource sites)***. The Project owner shall limit the width of the work area, adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads, and other construction or design modifications as necessary to achieve avoidance of any Rank 2-**equivalent** plants detected¹⁵.

If late-season Rank 2-**equivalent** plants are detected on the solar facility, the Project owner shall implement off-site mitigation, at a ratio of 2:1, for any impacts exceeding 25 percent of the local population. The off-site mitigation may include land acquisition or implementation of a restoration/enhancement program for the species, and shall meet the performance standards described in section D of this Condition. The Project owner must demonstrate, subject to review and approval by the CPM, that the impacts, after mitigation, will not cause a loss of viability for that species. The Project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan). The content of the Plan and

definitions shall be as described above in subsection C.3, below.

3. Mitigation for CNDDDB Rank 3-**Equivalent**¹⁶ Plants (Vulnerable). If CNDDDB Rank 3¹⁶ plants are detected (which constitutes most CNPS List 4 plants), mitigation is not required unless the occurrence has local or regional significance, in which case the plant occurrence shall be treated as a CNDDDB Rank 2 plant **if it meets the definition of a CNDDDB Rank 2 species**; avoidance and mitigation would be as described above under C.2. A plant occurrence would be considered to have local or regional significance if:
 - a. It occurs at the outermost periphery of its range in California;
 - b. It occurs in an atypical habitat, region, or elevation for the taxon that suggests that the occurrence may have genetic significance (e.g., that may increase its ability to survive future threats), or;
 - c. It exhibits any unusual morphology that is not clearly attributable to environmental factors that may indicate a potential new variety or sub-species.

4. Prepare Special-Status Plant Mitigation Plan. If the project will impact any CNDDDB Rank 1-**equivalent** or Rank 2-**equivalent** plants, or Rank 3 plants of local or regional significance **that also meet the definition of a CNDDDB Rank 2 species**, or new taxa, the Project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan). Compensatory mitigation, as described in Section D of this condition, and at a mitigation ratio of 3:1 for Rank 1 plants, and 2:1 for Rank 2 plants and Rank 1 plants of local or regional significance, and new taxa. The Plan shall include, at a minimum, the following components and definitions:
 - a. A description of the occurrences of the affected special-status species, ecological characteristics such as soil, hydrology, and other micro-habitat requirements, ecosystem processes required for maintenance of the species or its habitat, reproduction and dispersal mechanisms, pollinators, local distribution, a description of the extent of the population off-site, the percentage of the local population affected, and a description of how these occurrences would be impacted by the Project, including direct and indirect effects. Occurrences shall be considered impacted if they are within the Project footprint, and if they would be affected by Project-related

hydrologic changes or changes to the local sand transport system.

- b. A description of the avoidance and minimization measures that would achieve complete avoidance of occurrences on the Project linears and construction laydown areas. If avoidance is also required on the solar facility (Rank 1-**equivalent** species), provide a description of the measures that would be implemented to avoid or minimize impacts to occurrences on the solar facility. "Avoidance" shall include protection of the ecosystem processes essential for maintenance of the protected plant occurrence, and protection of the seed bank. Isolated 'islands' of protected plants disconnected by the Project from natural fluvial, aeolian (wind), or other processes essential for maintenance of the species, shall not be considered avoidance.
- c. If off-site mitigation is also required, pursuant to C.1–C.3 above, the Plan shall include a description of the proposed mitigation (acquisition or restoration/enhancement) and demonstrate how the mitigation will meet the performance standards described in Section D of this condition.

For CNDDDB Rank 1-**equivalent** plants that cannot be avoided (i.e., plants located in the central portion of the solar facility), the Plan must demonstrate that the impacts (after mitigation) will not cause a loss of viability for that species. The assessment of viability shall include: i) current literature compilation and review on the affected species, its documented and reported occurrences, range and distribution, habitat, and the ecological conditions needed to support it; ii) consultation with scientists and others with expertise and local knowledge of the species to gather unpublished data and other information to supplement the literature review findings, and (if available) iii) information on species' habitat relationships, demographics, genetics, and risk factors.

Section D: Off-Site Compensatory Mitigation for Special- Status Plants

Where compensatory mitigation is required under the terms of Section C, above, the Project owner shall mitigate Project impacts to special- status plant occurrences with compensatory mitigation. Compensatory mitigation shall consist of acquisition of habitat supporting the target species, or restoration/enhancement of populations of the target species, and shall

meet the performance standards for mitigation described below. In the event that no opportunities for acquisition or restoration/enhancement exist, the Project owner can fund a species distribution study designed to promote the future preservation, protection or recovery of the species. Compensatory mitigation shall be at a ratio of 3:1 for Rank 1-**equivalent** plants, with three acres of habitat acquired or restored/enhanced for every acre of habitat occupied by the special status plant that will be disturbed by the Project Disturbance Area (for example if the area occupied by the special status plant collectively measured is $\frac{1}{4}$ acre then the compensatory mitigation will be $\frac{3}{4}$ of an acre). The mitigation ratio for Rank 2-**equivalent** plants shall be 2:1. So, for the example above, the mitigation ratio would be one-half acre for the Rank 2-**equivalent** plants.

5 c. Initial Protection and Habitat Improvement. The Project owner shall fund activities that the CPM requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. The costs of these activities would use the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at the ratio of 3:1 for Rank 1-**equivalent** plants and 2:1 for Rank 2-**equivalent** plants, but actual costs will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFG or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPM in consultation with CDFG, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFG takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFG or its designee.

CONDITION OF CERTIFICATION BIO-21

PSH recommends that Condition of Certification **BIO-21** be modified as follows to reflect the elimination of engineered channels. Accordingly, the mitigation formerly required for indirect impacts to offsite waters in Item 6 and a corresponding reference in the verification should be deleted.

6. ~~Diffuser Design. The Project owner shall maintain pre-project flow patterns (location and volume of flows) downstream of the Project~~

~~boundaries. Flows shall not be discharged indiscriminately as sheet flow across the entire length of the diffusers, irrespective of the natural surface drainage patterns, but rather shall be designed to discharge into existing natural washes downslope of the Project.~~

Verification: No less than 30 days prior to the start of construction-related ground disturbance activities potentially affecting waters of the state, the Project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM that the above best management practices will be implemented. The Project owner shall also provide a discussion of work in waters of the state in Annual Compliance Reports for the duration of the Project.

No less than 30 days prior to beginning **of** Project ground-disturbing activities for each project phase as described in **BIO-29**, the Project owner shall provide to the CPM design drawings of ~~drainage diffusers depicting how these structures restore~~ **demonstrating how** pre-development drainage patterns (location and volume of flows) to drainages downstream of the Project boundaries **will be unaffected**. At the same time the Project owner shall provide design drawings for temporary and permanent stream crossings.

CONDITION OF CERTIFICATION BIO-29

The Modified Project will also employ a construction phasing plan. PSH recommends the following modifications to the **BIO-29** to reflect the phasing plan as shown on Figure 1 and the reduced impacts resulting from the reduction in footprint and the elimination of indirect impacts by elimination of the wind fences and the large engineered channels.

PROJECT CONSTRUCTION PHASING PLAN

BIO-29 The Project Owner shall provide compensatory mitigation for the total Project Disturbance Area and may provide such mitigation in two phases **as described in Figure X.X in the Supplement to the Petition For Amendment dated February 8, 2013.** ~~for Units 1 and 2 as described in Figures BIO-5 and BIO-6 in the July 19, 2010 Response to Data Request (AECOM 2010u).~~ For purposes of this condition, the Project Disturbance Area means all lands disturbed in the construction and operation of the ~~Palen Project~~ **PSEGS** or its phases, including all linears and ancillary facilities, as well as undeveloped areas inside the Project's boundaries that would no longer provide viable long-term habitat.

The disturbance area for each project Phase and resource type is provided in **BIO-29** Table 1 below. Mitigation is shown in **BIO-29** Table 2, and mitigation security is shown in **BIO-29 Table 3**, below. This table shall be refined prior to the start of each construction phase with the disturbance area adjusted to reflect the final Project footprint for each phase. Prior to initiating each phase of construction the Project owner shall submit the actual construction schedule, a figure depicting the locations of proposed construction and amount of acres to be disturbed. Mitigation acres are calculated based on the compensation requirements for each resource type as described in the above Conditions of Certification – **BIO-12** (Desert Tortoise), **BIO-20** (Mojave Fringe-toed Lizard), **BIO-18** (Western Burrowing Owl), and **BIO-22** (State Waters). Compensatory mitigation for each phase shall be implemented according to the timing required by each condition.

BIO-29 Table 1. Area of Habitat Type Disturbed by Construction Phase (acres)¹

Habitat Type	Reconfigured Alternative 2 Disturbance Area <i>PSEGS</i>		Reconfigured Alternative 3 Disturbance Area	
	Phase 1	Phase 2	Phase 1	Phase 2
MFTL Habitat				
Stabilized & Partially Stabilized Dunes	44 0	112 186.8	59	128
Non-Dunes	637 34.2	711 1258.2	509	845
Indirect Impacts ²	117 0	27 39.7	280	-186
TOTAL	798 34.2	850 1484.7	848	787
DT Habitat				
DT Habitat inside critical habitat	225 177.3	0 51.3	225	0
DT Habitat-outside critical habitat	2115 778.8	1855 2939.4	1969	1933
TOTAL⁴³	2340 956.1	1855 2990.7	2194	1933
WBO Habitat				
Impacts to 4 WBO	4 WBO	0	4 WBO	0
TOTAL	4 WBO	0	4 WBO	0
Jurisdictional Waters (Direct Impact)				
Dry Desert Wash Woodland	202 9.7	6 187.2	193	5

Unvegetated Ephemeral Dry Wash	99 4.9	84 157.3	95	73
Subtotal	304 14.60	87 344.47	287	78
Jurisdictional Waters (Indirect Impact)				
Desert Woodland Drywash	0 0.03	0	0	0
Unvegetated Ephemeral Dry Wash	17 0.04	2 0.47	15	2
Subtotal	17 0.07	2 0.47	15	2
TOTAL WATERS	317 14.67	89 344.94	303	80

1 – Sources: Reconfigured Alternatives 2 and 3 - Solar Millennium 2010/BSE 2013

2 – Indirect impacts are assumed for the private parcel and the 161kV line, even though not part of the disturbance area.

2 – Some indirect impacts in Alternative 3 within Phase 1 become direct impact in Phase 2. The security in Phase 3 is reduced to credit that portion of the security already provided to cover the indirect impacts in Phase 2.

3 – Impacts to desert tortoise critical habitat are assumed to be wholly within the Phase 1 Project Disturbance Area.

43 – Raven Acres subject to the one-time USFWS Regional Raven Management Program fee are equivalent to the total DT Habitat impact acreages.

BIO 29 Table 2. Mitigation by Habitat Type Disturbed by Construction Phase (acres)¹

Habitat Type	Mitigation Ratio	Reconfigured Alternative 2 Disturbance Area PSEGS		Reconfigured Alternative 3 Disturbance Area	
		Phase 1	Phase 2	Phase 1	Phase 2
MFTL Habitat					
Stabilized & Partially Stabilized Dunes	3:1	132 0	336 560	178	385
Non-Dunes	1:1	637 34	711 1258	509	845
Indirect Impacts	0.5:1	59 0	44 20	140	-93
TOTAL		828 34	1061 580	827	1137
DT Habitat					
DT Habitat - inside critical habitat	5:1	1127 887	0 257	1126	0
DT Habitat - outside critical habitat	1:1	2115 779	1855 2939	1969	1933
TOTAL		3242 1665	1855 3196	3095	1933
WBO Habitat					
Impacts to 4 WBO	19.5 acre/WBO	78	0	78	0
TOTAL		78	0	78	0
Jurisdictional Waters (Direct Impact)					
Vegetated (Dry Desert Wash Woodland)	3:1	605 29	18 562	578	15

PALEN SOLAR ELECTRIC GENERATING SYSTEM

SUPPLEMENT NO.1 TO SUPPORT PALEN SOLAR HOLDING LLC'S

PETITION FOR AMENDMENT

Unvegetated Ephemeral Dry Wash	1:1	99 5	84 157	95	73
Subtotal		704 34	99 719	673	88
Jurisdictional Waters (Indirect Impact)					
Vegetated (Dry Desert Wash Woodland)	1.5:1	0	0	0	0
Unvegetated Ephemeral Dry Wash	0.5:1	8 0	1	8	4
Subtotal		8 0	1	8	4
TOTAL WATERS		712 34	100 720	680	89

1 – Sources: Reconfigured Alternatives 2 and 3 – Solar Millennium 2010. **BSE 2013**

2 – Impacts to desert tortoise critical habitat are assumed to be wholly within the Phase 1 Project Disturbance Area.

Table 3 of **BIO-29** should be revised to reflect the most recent REAT cost estimates.