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08-AFC-5

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**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:)
)
Application for Certification for the)
Imperial Valley Solar Project (formerly)
known as SES Solar Two Project),)
Imperial Valley Solar, LLC)

Docket No. 08-AFC-5

July 21, 2010

Staff's Rebuttal Testimony and Errata

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Staff's Rebuttal Testimony and Errata
Imperial Valley Solar Power Project
July 21, 2010
Biological Resources
Joy Nishida and Rick York

A revision regarding the application of the compensation approach in the cost estimate calculated in Biological Resources Table 5, [Estimated Breakdown of Compensation Costs for Acquired Habitat published in the Supplemental Staff Analysis (SSA), July 7, 2010 on pages C.2-78 and C.2-79] has updated the compensation cost necessary for acquiring habitat. The Renewable Energy Action Team (REAT) Memorandum of Agreement (MOA) subteam, consisting of representatives from the BLM, USFWS, CDFG, and Energy Commission, developed a desert renewable energy biological compensation/mitigation cost table distributed on July 13, 2010, which would replace Biological Resources Table 5 published in the SSA. A Property Analysis Record (PAR) analysis conducted by CDFG estimated \$500 per acre land cost, \$27 per acre initial site work, and \$692 per acre long-term management/maintenance cost for acquisition of land near the proposed Imperial Valley Solar project site. In addition to the Special Status Species Habitat Compensation from staff's proposed Condition of Certification **BIO-10**, the Bighorn Sheep Foraging Habitat Compensation from staff's proposed Condition of Certification **BIO-17** has been added to the table. These costs are considered estimates and the project owner is responsible for the full cost of required mitigation regardless of the estimates. The updated biological compensation/mitigation cost table is attached as **Attachment A** to this rebuttal testimony; the updated Condition of Certification **BIO-10** is attached as **Attachment B**; the updated Condition of Certification **BIO-17** is attached as **Attachment C**; and the updated Condition of Certification **BIO-19** is attached as **Attachment D**.

**Attachment A to
Staff's Rebuttal Testimony and Errata
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Biological Resources Mitigation/Compensation Cost Estimate Table - July 13, 2010^{1 corrected}

	Special Status Species Habitat Compensation (BIO- 10)	Rare Plant Compensation	Bighorn Sheep Foraging Habitat Compensation (BIO- 17)
Number of Acres	6619.9	0	881
Estimated number of parcels to be acquired, at 40 acres per parcel ²	166	0	23
Land cost at \$500/acre ³	\$ 3,309,950.00	\$ -	\$ 440,500.00
Level 1 Environmental Site Assessment at \$3000/parcel	\$ 498,000.00	\$ -	\$ 69,000.00
Appraisal at no less than \$5,000/parcel	\$ 830,000.00	\$ -	\$ 115,000.00
Initial site work - clean-up, restoration or enhancement, at \$27/acre ⁴	\$ 178,737.30	\$ -	\$ 23,787.00
Closing and Escrow Cost at \$5000/parcel ⁵	\$ 830,000.00	\$ -	\$ 115,000.00
Biological survey for determining mitigation value of land (habitat based with species specific augmentation) at \$5000/parcel	\$ 830,000.00	\$ -	\$ 115,000.00
3rd Party Administrative Costs (Land Cost x 10%) ⁶	\$ 330,995.00	\$ -	\$ 44,050.00
Agency cost to accept land donation ⁷ (Land Cost x 15%) x 1.17 (17% of the 15% for overhead)	\$ 580,896.23	\$ -	\$ 77,307.75
SUBTOTAL - Acquisition and Initial Site Work	\$ 7,388,578.53	\$ -	\$ 999,644.75
Long-term Management and Maintenance Fund (LTMM) fee at \$692/acre ⁸	\$ 4,580,970.80	\$ -	\$ 609,652.00
NFWF Fees			
Establish Project Specific Account	\$ 12,000.00		
NFWF Management fee ³ for Acquisition and Enhancement Actions (Subtotal x 3%)	\$ 221,657.36	\$ -	\$ 29,989.34
NFWF Management Fee for LTMM account (LTMM x 1%)	\$ 45,809.71		\$ 6,096.52
Subtotal of NFWF Fees	\$ 279,467.06		\$ 36,085.86
TOTAL Estimated cost for deposit in project specific REAT-NFWF Account	\$ 12,249,016.39	\$ -	\$ 1,645,382.61
GRAND TOTAL	\$ 13,894,399.00		

^[1] All costs are best estimates as of summer 2010. Actual costs will be determined at the time of the transactions and may change the funding needed to implement the required mitigation obligation. Note: regardless of the estimates, the developer is responsible for providing adequate funding to implement the required mitigation.

^[2] For the purposes of determining costs, a parcel is defined at 40 acres, recognizing that some will be larger and some will be smaller, but that 40 acres provides a good estimate for the number of transactions anticipated (based on input from CDD).

^[3] Generalized estimate taking into consideration a likely jump in land costs due to demand, and an 18-24 month window to acquire the land after agency decisions are made. If the agencies, developer, or 3rd party has better, credible information on land costs in the specific area where project-specific mitigation lands are likely to be purchased, that data overrides this general estimate. Note: regardless of the estimates, the developer is responsible for providing adequate funding to implement the required mitigation.

^[4] Based on information from CDFG.

^[5] Two transactions: landowner to 3rd party; 3rd party to agency

^[6] includes staff time to work with agencies and landowners; develop management plan; oversee land transaction; organizational reporting and due diligence; review of acquisition documents; assembling acres to acquire....)

^[7] Includes agency costs to accept the land into the public management system and costs associated with tracking/managing the costs associated with the donation acceptance, including 2 physical inspections; review and approval of the Level 1 ESA assessment; review of all title documents; drafting deed and deed restrictions; issue escrow instructions; mapping the parcels....

^[8] Estimate for purposes of calculating general costs. The actual long term management costs will be determined using a Property Assessment Report (PAR) tailored to the specific acquisition. Includes land management; enforcement and defense of easement or title [short and long term]; monitoring....

Attachment B to
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SPECIAL STATUS SPECIES HABITAT COMPENSATORY MITIGATION

This condition is designed to compensate for project-related impacts to habitat for FTHL, burrowing owl, golden eagle, American badger, and desert kit fox. However, to the extent that any compensation land acquired under this condition satisfies the selection criteria for **BIO-17**, such compensation acreage acquired pursuant to this condition may be used to fulfill all or a portion of **BIO-17**.

BIO-10 To fully mitigate for habitat loss for FTHL, burrowing owl, golden eagle, American badger, and desert kit fox, the project owner shall provide compensatory mitigation acreage of 6,619.9 acres. This figure was calculated as follows: a 1:1 ratio for 6,063.1 acres of impact outside of the FTHL Management Area (MA), and a 6:1 ratio for impacts to 92.6 acres within the FTHL MA. These impact acreages are to be adjusted to reflect the final approved project footprint. For purposes of this condition, the project footprint means all lands disturbed in the construction and operation of the IVS Project, including the offsite transmission line, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long-term habitat for the species mentioned above. To satisfy this condition, the project owner shall acquire, protect and transfer to an approved land manager no fewer than 6,619.9 acres of FTHL, burrowing owl, golden eagle, American badger and desert kit fox habitat lands (adjusted to reflect the final project footprint), and shall also provide funding for the initial improvement and long-term maintenance and management of the acquired lands, and comply with other related requirements in this condition. Costs of these requirements are estimated to be ~~\$9,386,637.37~~ \$11,969,549.33 based on the acquisition of 6,619.9 acres (consult the Biological Resources Mitigation/Compensation Cost Estimate Table-5 for a complete breakdown of estimated costs). This includes an estimated per-acre cost of \$500 for acquisition, a pre-acquisition liability survey at no less than ~~\$2,500~~ \$3,000 per parcel (assuming 40 acres per parcel), appraisal fees at ~~\$3,000~~ \$5,000 per parcel, \$27 per acre for initial habitat improvement, BLM agency internal costs for transfer of land estimated at ~~\$772,011.07~~ \$580,896.23, administrative costs of \$330,995.00 estimated at 10% of land costs. and In addition to these fees, a charge of \$692 per acre for long-term management is anticipated at a cost of \$4,580,970.80. The estimated subtotal for acquisition and long term management of the 6,619.9 acres would be \$11,969,549.33.

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 described in Section 3.i., below. If the project owner elects to use the REAT Account with NFWF, a total of \$279,467.06 in fees will be required by NFWF including the following: a ~~7%~~ 3 percent NFWF fee (totaling ~~\$682,633.38~~ \$221,657.36); a \$12,000 account establishment fee; and a \$45,809.71 account management fee ~~for the land transfer will be added to the costs to comply with this condition.~~ This would bring the total estimated cost of fulfilling this condition to ~~\$10,434,538.75~~ \$12,249,016.39.

The actual costs to comply with this condition will vary depending on the final project footprint, the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a Property Analysis Record (PAR) report. The 6,619.9-acre habitat requirement, and associated funding requirements based on that acreage, will be adjusted up or down if there are changes in the final project footprint.

The requirements for the acquisition, initial improvement, protection and long-term maintenance and management of compensation lands include all of the following:

1. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition shall:
 - a. be within in or near FTHL Management Areas (MAs) in the Colorado Desert, with potential to contribute to FTHL habitat connectivity and build linkages between FTHL MAs, known populations of FTHLs, and/or other preserve lands;
 - b. provide high to moderate quality habitat for FTHL with capacity to regenerate naturally when disturbances are removed, though moderate to good quality habitat is acceptable near protected FTHL habitats;
 - c. be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
 - d. be connected to lands where FTHLs can be reasonably expected to occur currently occupied by FTHL, based on habitat or historic occurrences, ideally with populations that are stable, recovering, or likely to recover;
 - e. ideally contain soils that are stable and not suffering erosional damage;
 - f. 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;
 - g. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
 - h. have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFG, BLM and USFWS, agrees in writing to the acceptability of land without these rights.
2. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for FTHL, burrowing

owl, golden eagle, American badger, and desert kit fox in relation to the criteria listed above, and must be approved by the CPM. The CPM will share the proposal with and consult with CDFG, BLM, and the USFWS before deciding whether to approve or disapprove the proposed acquisition.

3. Compensation Lands Acquisition Requirements. The project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM, in consultation with CDFG, BLM, and the USFWS, has 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. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM, in consultation with CDFG, 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 acquire and 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 in consultation with CDFG. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPM in consultation with CDFG. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFG or another entity approved by the CPM. If an entity other than CDFG holds a conservation easement over the compensation lands, the CPM may require that CDFG or another entity approved by the CPM, in consultation with CDFG, be named a third party beneficiary of the conservation easement. The project owner shall obtain approval of the CPM, in consultation with CDFG, of the terms of any transfer of fee title or conservation easement to the compensation lands.
 - c. Initial Protection and Habitat Improvement. The project owner shall fund activities that the CPM, in consultation with the CDFG, USFWS and BLM, 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 are estimated at \$27 an acre, but 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.

- 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 amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM, in consultation with CDFG, before it can be used to establish funding levels or management activities for the compensation lands.
- e. Long-term Maintenance and Management Funding. The Project owner shall provide money to establish an account with non-wasting capital that will be used to fund the long-term maintenance and management of the compensation lands. The amount of money to be paid will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. The amount of required funding is initially estimated to be \$692 for every acre of compensation lands. If compensation lands will not be identified and a PAR or PAR-like analysis completed within the time period specified for this payment (see the verification section at the end of this condition), the Project owner shall either provide initial payment of \$4,580,970.80 (calculated at \$692 an acre for 6,619.9 acres) or the project owner shall include \$4,580,970.80 to reflect this amount in the security that is provided to the Energy Commission under section 3.h. of this condition. The amount of the required initial payment or security for this item shall be adjusted for any change in the project footprint as described above. If an initial payment is made based on the estimated per-acre costs, the project owner shall deposit additional money as may be needed to provide the full amount of long-term maintenance and management funding indicated by a PAR or PAR-like analysis, once the analysis is completed and approved. If the approved analysis indicates less than \$692 an

acre will be required for long-term maintenance and management, the excess paid will be returned to the project owner. The project owner must obtain the CPM's approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPM will consult with CDFG before deciding whether to approve an entity to hold the project's long-term maintenance and management funds.

The project owner shall ensure that an agreement is in place with the long-term maintenance and management fund holder/manager to ensure the following requirements are met:

- i. Interest. Interest generated from the initial capital long-term maintenance and management fund 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 that is approved by the CPM in consultation with CDFG and is designed to protect or improve the habitat values of the compensation lands.
- ii. Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM, in consultation with CDFG, or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.
- iii. Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar non-wasting funds that it holds from other projects for long-term maintenance and management of compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management funds for this Project must be tracked and reported individually to the CPM and CDFG.
- f. 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 the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFG or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.

- g. Management plan. The project owner shall prepare a Management Plan for the compensation lands in consultation with the entity that will be managing the lands. The Management Plan shall reflect site-specific enhancement measures on the acquired compensation lands. The plan shall be submitted for approval of the CPM, in consultation with CDFG, BLM and USFWS.
- h. Mitigation Security. The project owner shall provide financial assurances to the CPM, with copies of the final document to CDFG, to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing project activities. Financial assurances shall be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved by the CPM in consultation with CDFG. Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with CDFG, of the form of the Security. The CPM may draw on the Security if the CPM determines the project owner has failed to comply with the requirements specified in this condition. The CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the Security to implement measures in this condition may not fully satisfy the project owner's obligations under this condition. The Security shall be returned to the Project owner in whole or in part upon successful completion of the associated requirements in this condition.

Security shall be provided in the amount of ~~\$9,386,637.37~~ \$11,969,549.33 or ~~(\$10,434,538.75)~~ \$12,249,016.39 if the project owner elects to use the REAT Account with NFWF pursuant to paragraph 3.h. of this condition, below). The security is calculated in part, from the items that follow but adjusted as specified below (consult **Biological Resources Mitigation/Compensation Cost Estimate Table-5** for the complete breakdown of estimated costs):

- i. land acquisition costs for compensation land, calculated at \$500/acre = \$3,309,950.00;
- ii. initial protection and habitat improvement activities on the compensation land, calculated at \$27/acre = \$178,732.30;
- iii. long-term maintenance and management on the compensation land calculated at \$692/acre = \$4,580,970.80;

- iv. pre-acquisition liability survey at no less than ~~\$2,500~~ \$3,000 per parcel (assuming 40 acres per parcel) = ~~\$413,743.75~~ \$498,000.00;
- v. appraisal fees at ~~\$3,000~~ \$5,000 per parcel = ~~\$458,908.50~~ \$830,000.00;
- vi. ~~BLM~~ Agency cost to accept land = ~~\$765,415.07~~ \$580,896.23 (if BLM is determine to be most reasonable land manager); and
- vii. NFWF fee = ~~\$657,064.61~~ \$279,467.06 (if NFWF is used for acquisition).
- vii. Third-party administrative costs (estimated at 10% of land value) = \$330,995.00
- ix. Biological survey of compensation lands at \$5,000 per parcel = \$830,000.00
- x. Initial site cleanup = \$178,737.30
- xi. Closing and escrow cost at \$5,000 per parcel = \$830,000.00

The amount of security shall be adjusted for any change in the project footprint as described above. In addition, the amount of Security specified in this section may be reduced in proportion to any of the secured mitigation requirements that the project owner has completed at the time the Security is required to be submitted. For example, if the project owner transfers funds for long-term management of the compensation lands to an entity approved to hold those funds, the Security would not include any amount for long-term maintenance and management of the lands. The project owner will be entitled to partial or complete release of the Security as the secured mitigation requirements are successfully completed.

- i. The project owner may elect to comply with the requirements in this condition for acquisition of compensation lands, initial protection and habitat improvement on the compensation lands, or long-term maintenance and management of the compensation lands by funding, or any combination of these three requirements, by providing funds to implement those measures into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the Project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs (as set forth in the Security section of this condition) of implementing the requirement. If the actual cost of the acquisition, initial protection and habitat improvements, or long-term funding is more than the estimated amount initially paid by the project owner, the project owner

shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, or the long-term funding requirements as established in an approved PAR or PAR-like analysis. If those actual costs or PAR projections are less than the amount initially transferred by the applicant, the remaining balance shall 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. Such delegation shall be subject to approval by the CPM, in consultation with CDFG, BLM and USFWS, prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the Energy Commission's certification of the project.

4. The project owner may choose to satisfy its mitigation obligations identified in this condition by paying an in-lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision, to the extent the in-lieu fee provision is found by the Commission to be in compliance with CEQA and CESA requirements.

Verification: The project owner shall provide the CPM with written notice of intent to start ground disturbance at least 30 days prior to the start of ground-disturbing activities on the project site.

If the mitigation actions required under this condition are not completed at least 30 days prior to the start of ground-disturbing activities, the project owner shall provide the CPM with approved Security at least 30 days prior to the start of project ground-disturbing activities

No later than 12 months after the start of ground-disturbing project activities, the project owner shall submit a formal acquisition proposal to the CPM describing the parcels intended for purchase, and shall obtain approval from the CPM, in consultation with CDFG, BLM and USFWS, prior to the acquisition. If NFWF or another approved third party is handling the acquisition, the project owner shall fully cooperate with the third party to ensure the proposal is submitted within this time period. The project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM, CDFG, BLM and USFWS of such completion, no later than 18 months after the issuance of the Energy Commission Decision. If NFWF or another approved third party is being used for the acquisition, the project owner shall ensure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline.

Draft agreements to delegate land acquisition to CDFG, BLM, or an approved third party and agreements to manage compensation lands shall be submitted to Energy Commission staff for review and approval (in consultation with CDFG) prior to land acquisition. Such agreements shall be mutually approved and executed at least 30 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands have been acquired and recorded in favor of the approved recipient(s). Alternatively, before beginning project ground-disturbing activities, the project owner shall provide Security in accordance with section 3.h of this condition. Within 180 days after the land purchase, as determined by the date on the title, the project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFG, BLM, and USFWS, for the compensation lands and associated funds.

The project owner shall complete and submit to the CPM a PAR or PAR-like analysis no later than 60 days after the CPM approves compensation lands for acquisition. The project owner shall fully fund the required amount for long-term maintenance and management of the compensation lands no later than 30 days after the CPM approves a PAR or PAR-like analysis of the anticipated long-term maintenance and management costs of the compensation lands. Written verification shall be provided to the CPM and CDFG to confirm payment of the long-term maintenance and management funds.

No later than 60 days after the CPM determines what activities are required to provide for initial protection and habitat improvement on the compensation lands, the project owner shall make funding available for those activities and provide written verification to the CPM of what funds are available and how costs will be paid. Initial protection and habitat improvement activities on the compensation lands shall be completed, and written verification provided to the CPM, no later than six months after the CPM's determination of what activities are required on the compensation lands.

The project owner, or an approved third party, shall provide the CPM, CDFG, 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, in consultation with CDFG, BLM and the USFWS, shall approve the management plan after its content is acceptable to the CPM.

Within 90 days after completion of all project related ground disturbance, the project owner shall provide to the CPM, CDFG, 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.

If electing to satisfy the requirements of this condition by utilizing the options created by CDFG pursuant to SBX8 34, the Project owner shall notify the Commission that it would like a determination that the Project's in-lieu fee proposal meets CEQA and CESA requirements.

Attachment C to
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LAKE AND STREAMBED AND PENINSULAR BIGHORN SHEEP FORAGING HABITAT IMPACT MINIMIZATION AND COMPENSATION MEASURES

BIO-17 The project owner is required to compensate for the loss of 881 acres of ephemeral wash foraging habitat for the Peninsular bighorn sheep (PBHS), as well as the functional loss of 48 acres of state jurisdictional waters. Mitigation presented within this proposed Condition of Certification is designed to mitigate for impacts resulting from implementation of Drainage Avoidance #1 Alternative. This alternative substantially reduces impacts to state jurisdictional waters and waters of the U.S. Further review and possible revision of compensation land acreage requirements will be necessary following determination of the final project footprint and impacts. The acquisition of jurisdictional state waters can be included with the FTHL, burrowing owl, golden eagle, American badger, and desert kit fox mitigation lands (**BIO-10**) if they are acquired within 18 months of start of construction. If FTHL habitat mitigation lands are not acquired within 18 months, the project owner shall independently provide 48 acres of off-site desert ephemeral wash habitat.

If all or any portion of the acquired habitat compensation lands from **BIO-10** meets the criteria for bighorn sheep foraging habitat and state waters compensation lands, then the requirements of **BIO-17** are reduced by that amount.

Although the criteria for ephemeral wash foraging habitat and waters of the state habitat are listed separately below, the compensation lands acquired pursuant to this conditions must meet both sets of criteria.

1. Selection Criteria for Compensation Lands: Land selected as compensation for loss of ephemeral wash PBHS foraging habitat must satisfy the following criteria;
 - a. Be within the “Essential Habitat Line” for PBHS, as delineated by the USFWS Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California (USFWS 2000). If sufficient available suitable habitat is not found within the Essential Habitat Line, then habitat immediately adjacent to the Essential Habitat Line must be purchased, and also of equal or higher quality habitat than present within the project site.
 - b. Be comprised of the same or higher quality habitat of demonstrated known utilization by PBHS as forage, and selected in conjunction with input from CDFG and the USFWS.

Land selected as compensation for impacts to state jurisdictional waters must satisfy the following criteria:

- c. Compensation land purchased in Sonoran creosote scrub habitat must include ephemeral washes with at least 48 acres of state jurisdictional waters, mitigated at a 1:1 ratio.
- d. Be characterized by similar soil permeability, hydrological and biological functions as the impacted drainages.
- e. Located in the Colorado Desert.

2. Review and Approval of Compensation Lands Prior to Acquisition: The Project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for FTHL in relation to the criteria listed above, and must be approved by the CPM. The CPM will share the proposal with and consult with CDFG, BLM, and the USFWS before deciding whether to approve or disapprove the proposed acquisition.
3. Compensation Lands Acquisition Requirements: The project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM, in consultation with CDFG, BLM, and the USFWS, has 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. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM, in consultation with CDFG, 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 acquire and 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 in consultation with CDFG. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPM in consultation with CDFG. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFG or another entity approved by the CPM. If an entity other than CDFG holds a conservation easement over the compensation lands, the CPM may require that CDFG or another entity approved by the CPM, in consultation with CDFG, be named a third party beneficiary of the conservation easement. The Project owner shall obtain approval of the CPM, in consultation with CDFG, of the terms of any transfer of fee title or conservation easement to the compensation lands.
 - c. Initial Protection and Habitat Improvement. The project owner shall fund activities that the CPM, in consultation with the CDFG, USFWS and BLM, 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 are estimated at \$27 an acre, but 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.

- 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 amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM, in consultation with CDFG, before it can be used to establish funding levels or management activities for the compensation lands.
- e. Long-term Maintenance and Management Funding. The Project owner shall provide money to establish an account with non-wasting capital that will be used to fund the long-term maintenance and management of the compensation lands. The amount of money to be paid will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. The amount of required funding is initially estimated to be \$692 for every acre of compensation lands. If compensation lands will not be identified and a PAR or PAR-like analysis completed within the time period specified for this payment (see the verification section at the end of this condition), the Project owner shall either provide initial payment of \$609,652 (calculated at \$692 an acre for 881 acres) or the project owner shall include \$609,652 to reflect this amount in the security that is provided to the Energy Commission under section 3.h. of this condition. The amount of the required initial payment or security for this item shall be adjusted for any change in the project footprint as described above. If an initial payment is made based on the estimated per-acre costs, the project owner shall deposit additional money as may be needed to provide the full amount of long-term maintenance and management funding indicated by a PAR or PAR-like analysis, once the analysis is completed and approved. If the approved analysis indicates less than \$692 an acre will be required for long-term maintenance and management, the excess paid will be returned to the project owner. The project owner must obtain the CPM's approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPM will consult with CDFG before deciding whether to approve an entity to hold the project's long-term maintenance and management funds.

The project owner shall ensure that an agreement is in place with the long-term maintenance and management fund holder/manager to ensure the following requirements are met:

- i. Interest. Interest generated from the initial capital long-term maintenance and management fund 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 that is approved by the CPM in consultation with CDFG and is designed to protect or improve the habitat values of the compensation lands.

- ii. Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM, in consultation with CDFG, or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.
 - iii. Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar non-wasting funds that it holds from other projects for long-term maintenance and management of compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management funds for this Project must be tracked and reported individually to the CPM and CDFG.
- f. 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 the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFG or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.
- g. Management Plan. The project owner shall prepare a Management Plan for the compensation lands in consultation with the entity that will be managing the lands. The Management Plan shall reflect site-specific enhancement measures for the drainages on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the drainages and may include enhancement actions such as weed control, fencing to exclude livestock and OHVs, or erosion control. The plan shall be submitted for approval of the CPM, in consultation with CDFG, BLM and USFWS.
- h. Mitigation Security. The project owner shall provide financial assurances to the CPM, with copies of the final document to CDFG, to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing project activities. Financial assurances shall be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved by the CPM in consultation with CDFG. Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with CDFG, of the form of the

Security. The CPM may draw on the Security if the CPM determines the project owner has failed to comply with the requirements specified in this condition. The CPM may use money from the Security solely for implementation of the requirements of this condition, The CPM's use of the Security to implement measures in this condition may not fully satisfy the project owner's obligations under this condition. The Security shall be returned to the Project owner in whole or in part upon successful completion of the associated requirements in this condition.

Security shall be provided in the amount of ~~\$1,297,656.86~~ \$1,609,296.75 or (~~\$1,388,492.84~~ \$1,645,382.61 if the project owner elects to use the REAT Account with NFWF pursuant to paragraph 3.h. of this condition, below). The security is calculated in part, from the items that follow but adjusted as specified below (consult **Biological Resources Mitigation/Compensation Cost Estimate Table-5** for the calculation of estimated costs):

- i. land acquisition costs for compensation land, calculated at \$500/acre x 881 acres = \$440,500;
- ii. initial protection and habitat improvement activities on the compensation land, calculated at \$27/acre x 881 acres = \$23,787;
- iii. long-term maintenance and management on the compensation land calculated at \$692/acre x 881 acres = \$609,652;
- iv. pre-acquisition liability survey at no less than ~~\$2,500~~ \$3,000 per parcel (assuming 40 acres per parcel = 23 parcels): = \$69,000;
(No. of parcels = 881 acres ÷ 40 acres = 22 parcels)
~~22 parcels x \$2500 = \$55,000~~;
- v. appraisal fees at ~~\$3,000~~ \$5,000 per parcel = ~~\$66,000~~ \$115,000;
- vi. Agency BLM cost to accept land calculated at (land cost x 15%) x 1.17 (17% of the 15% for overhead) = \$102,717.86 \$77,307.75; (if BLM is determine to be most reasonable land manager); and
- vii. Closing and escrow cost at \$5,000 per parcel = \$115,000;
- viii. Third party administrative costs (land cost x 10%) = \$44,050;
- ix. Biological survey for determining mitigation value of land at \$5,000 per parcel = \$115,000; and
- x. NFWF fee = \$90,835.98 \$36,085.86 (if NFWF is used for acquisition).

The amount of security shall be adjusted for any change in the project footprint as described above. In addition, the amount of Security specified in this section may be reduced in proportion to any of the secured mitigation requirements that the project owner has completed at the time the Security is required to be submitted. If all or any portion of required habitat compensation lands from **BIO-10** and **BIO-17** meets the criteria set forth for special status compensation lands may be used to fulfill that portion of the obligation for this condition, thus reducing the compensation acreage amount needed to fulfill the needed 881 acres. Also, if the project owner transfers funds for long-term management of the compensation lands to an entity approved to hold those funds, the Security would not include any amount for long-term maintenance and management of the lands. The project owner will be entitled to partial or complete release of the Security as the secured mitigation requirements are successfully completed.

- i. The project owner may elect to comply with the requirements in this condition for acquisition of compensation lands, initial protection and habitat improvement on the compensation lands, or long-term maintenance and management of the compensation lands by funding, or any combination of these three requirements, by providing funds to implement those measures into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the Project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs (as set forth in the Security section of this condition) of implementing the requirement. If the actual cost of the acquisition, initial protection and habitat improvements, or long-term funding is more than the estimated amount initially paid by the project owner, the project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, or the long-term funding requirements as established in an approved PAR or PAR-like analysis. If those actual costs or PAR projections are less than the amount initially transferred by the applicant, the remaining balance shall 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. Such delegation shall be subject to approval by the CPM, in consultation with CDFG, BLM and USFWS, prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the Energy Commission's certification of the project.

4. The project owner may choose to satisfy its mitigation obligations identified in this condition by paying an in lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision, to the extent the in-lieu fee provision is found by the Commission to be in compliance with CEQA and CESA requirements.

5. Notification. The project owner shall notify the CPM and CDFG in writing, at least five days prior to initiation of project activities in jurisdictional areas as noted and at least five days prior to completion of project activities in jurisdictional areas. The project owner shall notify the CPM and CDFG of any change of conditions to the project, the jurisdictional impacts, or the mitigation efforts, if the conditions at the site of a proposed project change in a manner which changes risk to biological resources that may be substantially adversely affected by the proposed project. The notifying report shall be provided to the CPM and CDFG no later than seven days after the change of conditions is identified. As used here, change of condition refers to the process, procedures, and methods of operation of a project; the biological and physical characteristics of a project area; or the laws or regulations pertinent to the project as defined below. A copy of the notifying change of conditions report shall be included in the annual reports.
- Biological Conditions: a change in biological conditions includes, but is not limited to, the following: 1) the presence of biological resources within or adjacent to the project area, whether native or non-native, not previously known to occur in the area; or 2) the presence of biological resources within or adjacent to the project area, whether native or non-native, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.
 - Physical Conditions: a change in physical conditions includes, but is not limited to, the following: 1) a change in the morphology of a river, stream, or lake, such as the lowering of a bed or scouring of a bank, or changes in stream form and configuration caused by storm events; 2) the movement of a river or stream channel to a different location; 3) a reduction of or other change in vegetation on the bed, channel, or bank of a drainage, or 4) changes to the hydrologic regime such as fluctuations in the timing or volume of water flows in a river or stream.
 - Legal Conditions: a change in legal conditions includes, but is not limited to, a change in Regulations, Statutory Law, a Judicial or Court decision, or the listing of a species, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California.
6. Lake and Streambed Impact Minimization and Compensation Measures. The project owner shall provide a copy of Condition of Certification **BIO-17** from the Energy Commission Decision to all contractors, subcontractors, and the Applicant's project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFG personnel or personnel from another agency upon demand. The CPM reserves the right to issue a stop work order or allow CDFG to issue a stop work order after giving notice to the project owner and the CPM, if the CPM in consultation with CDFG, determines that the project owner has breached

any of the terms or conditions or for other reasons, including but not limited to the following:

- The information provided by the applicant regarding streambed alteration is incomplete or inaccurate;
- New information becomes available that was not known to it in preparing the terms and conditions;
- The project or project activities as described in the SAA have changed; or
- The conditions affecting biological resources changed or the CPM or BLM Biologist, in consultation with CDFG or USACE, determines that project activities would result in a substantial adverse effect on the environment.

Should project conditions change and impacts to bed, bank, or channel occur on any of the water ways along the reclaimed water pipeline route, a revised Lake and Streambed Alteration Agreement (LSAA) application must be submitted to the Commission in consultation with CDFG either (1) for a Commission determination that the revised LSAA application complies with CEQA and CESA; or (2) should the project conditions change after a final decision in on the AFC in this proceeding, through an application for amendment to the Commission's final decision issued in this proceeding.

Verification: No later than 12 months after the start of ground-disturbing project activities, the project owner, or a third-party approved by the CPM, in consultation with CDFG and BLM, shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase containing no less than 48 acres of state jurisdictional waters and 881 acres of applicable PBHS foraging habitat, and shall obtain approval from the CPM, in consultation with CDFG, BLM, and USFWS, prior to acquisition.

Draft agreements to delegate land acquisition to CDFG, BLM, or an approved third party and agreements to manage compensation lands shall be submitted to Energy Commission staff for review and approval (in consultation with CDFG) prior to land acquisition. Such agreements shall be mutually approved and executed at least 30 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands have been acquired and recorded in favor of the approved recipient(s). Alternatively, before beginning project ground-disturbing activities, the project owner shall provide Security in accordance with section 3.h of this condition. Within 180 days after the land purchase, as determined by the date on the title, the project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFG, BLM, and USFWS, for the compensation lands and associated funds.

The project owner shall complete and submit to the CPM a PAR or PAR-like analysis no later than 60 days after the CPM approves compensation lands for acquisition. The project owner shall fully fund the required amount for long-term maintenance and management of the compensation lands no later than 30 days after the CPM approves a PAR or PAR-like

analysis of the anticipated long-term maintenance and management costs of the compensation lands. Written verification shall be provided to the CPM and CDFG to confirm payment of the long-term maintenance and management funds.

No later than 60 days after the CPM determines what activities are required to provide for initial protection and habitat improvement on the compensation lands, the project owner shall make funding available for those activities and provide written verification to the CPM of what funds are available and how costs will be paid. Initial protection and habitat improvement activities on the compensation lands shall be completed, and written verification provided to the CPM, no later than six months after the CPM's determination of what activities are required on the compensation lands.

If electing to satisfy the requirements of this condition by utilizing the options created by CDFG pursuant to SBX8 34, the Project owner shall notify the Commission that it would like a determination that the Project's in-lieu fee proposal meets CEQA and CESA requirements.

No fewer than 30 days prior to the start of work potentially affecting jurisdictional state waters, 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 and provide a discussion of work in jurisdictional state waters in Compliance Reports for the duration of the project.

Attachment D to
Staff's Rebuttal Testimony and Errata
Imperial Valley Solar Power Project
July 21, 2010
Biological Resources
Joy Nishida and Rick York

SPECIAL STATUS PLANT IMPACT AVOIDANCE, MINIMIZATION, AND COMPENSATION

BIO-19 This condition contains the following four sections:

- **Section A: Special-Status Plant Impact Avoidance and Minimization Measures** contains the Best Management Practices and other measures designed to avoid accidental impacts to plants occurring outside of the Project Disturbance Area and within 100 feet of the Project Disturbance Area during construction, operation, and closure.
- **Section B: Conduct Late Season Botanical Surveys** describes guidelines for conducting summer-fall 2010 surveys to detect special-status plants that would have been missed during the spring 2010 surveys.
- **Section C: Avoidance Requirements for Special-Status Plants Detected in the Summer/Fall 2010 Surveys** outlines the level of avoidance required for plants detected during the summer-fall surveys, based on the species' rarity and status codes.
- **Section D: Off-Site Compensatory Mitigation for Special-Status Plants** describes performance standards for mitigation for a range of options for compensatory mitigation through acquisition, restoration/enhancement, or a combination of acquisition and restoration/enhancement.

"Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the Project, including the plant site, linear facilities, and areas disturbed by temporary access roads, fence installation, construction work lay-down and staging areas, parking, storage, or by any other activities resulting in disturbance to soil or vegetation.

The Project owner shall implement the following measures in Section A, B, C, and D to avoid, minimize, and compensate for impacts to special-status plant species:

~~**BIO-19** The Project owner shall implement the following measures to avoid, minimize, and mitigate impacts to special-status plant species:~~

Section A: Special Status Plant Avoidance and Minimization Measures

To protect all special status plants¹ located outside of the Project Disturbance Area and within 100 feet of the permitted Project Disturbance Area (including access roads, staging areas, laydown areas, parking and storage areas) from accidental and indirect impacts during construction, operation, and closure, the Project owner shall implement the following measures:

¹ Staff defines special-status plants as described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Natural Resources Agency, Department of Fish and Game, issued November 24, 2009).

1. Designated Botanist. An experienced botanist who meets the qualifications described in Section **B-2** below shall oversee compliance with all special-status plant avoidance, minimization, and compensation measures described in this condition throughout construction, operation, and closure. The Designated Botanist shall oversee and train all other Biological Monitors tasked with conducting botanical survey and monitoring work. During operation of the project, the Designated Biologist shall be responsible for protecting special status plant occurrences within 100 feet of the project boundaries.
2. Special Status Plant Impact Avoidance and Minimization Plan. The project owner shall develop and implement a Special Status Plant Impact Avoidance and Minimization Plan and shall incorporate the Plan into the BRMIMP (**BIO-7**). The Plan shall include the following elements:
 - a. Site Design Modifications: Incorporate site design modifications to minimize impacts to special-status plants along the Project linears: 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 right-of-way (ROW). These modifications shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP;
 - b. Establish Environmentally Sensitive Areas (ESAs). Before construction, the Designated Botanist shall establish ESAs to protect avoided special status plants that occur outside of the Project Disturbance Areas and within 100 feet of Project Disturbance Areas. This includes plant occurrences identified during the spring 2010 surveys and the late season 2010 surveys. The locations of ESAs shall be clearly depicted on construction drawings, which shall also include all avoidance and minimization measures on the margins of the construction plans. The boundaries of the ESAs shall be placed a minimum of 20 feet from the uphill side of the occurrence and 10 feet from the downhill side. Where this is not possible due to construction constraints, other protection measures, such as silt-fencing and signs prohibiting movement of the fencing or sediment controls, may be employed to protect the occurrences, ~~and~~ ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fence under penalty of work stoppages and additional compensatory mitigation. ESAs shall also be ~~permanently marked~~ clearly identified (with signage or other markers) to ensure that avoided plants are not inadvertently harmed during construction, operation, or closure.
 - c. Special-Status Plant Worker Environmental Awareness Program (WEAP). The Plan shall include training components specific to protection of special-status plants, and shall be incorporated into the WEAP described in **BIO-6**;

- d. Herbicide and Soil Stabilizer Drift Control Measures. The Plan shall provide detailed specifications for avoiding herbicide and soil stabilizer drift, and shall include a list of herbicides and soil stabilizers that will be used on the Project with manufacturer's guidance on appropriate use. The Plan shall indicate where the herbicides will be used, and what techniques will be used to avoid chemical drift or residual toxicity to special-status plants, consistent with guidelines provided by the Nature Conservancy's *The Global Invasive Species Team*², the U.S. Environmental Protection Agency, and the Pesticide Action Network Database³. <<http://www.invasive.org/gist/products.html>>
- e. Erosion and Sediment Control Measures. The Plan shall include measures to ensure that erosion and sediment control measures do not inadvertently impact special-status plants (e.g., by using invasive or non-native plants in seed mixes, introducing pest plants through contaminated seed or straw, etc.). These measures shall be incorporated in the Storm Water Pollution Prevention Plan.
- f. Avoid Special-Status Plant Occurrences. Designate spoil areas; equipment, vehicle, and materials storage areas; parking; equipment and vehicle maintenance areas, and; wash areas at least 100 feet from any ESAs.
- g. Monitoring and Reporting Requirements. The Designated Botanist shall conduct weekly monitoring of the ESAs that protect special-status plant occurrences during construction, operation, or and decommissioning activities within 100 feet of the occurrences, and quarterly monitoring ~~for the remainder of construction~~ during operations. The Project owner shall also conduct annual monitoring of the avoided occurrences on-site, and off-site occurrences that are adjacent to the Project, for the life of the Project (see Verification, below).
- h. Seed Collection. ~~Conduct pre-construction collection of seed (or other propagules) of the affected special-status plants within the Project Disturbance Area in the summer-fall season prior to the start of construction and according to the seed collection and storage guidelines contained in (Wall 2009a; Bainbridge 2007). Collection of seed (or other propagules) shall be done by the Rancho Santa Ana Botanic Garden (RSABG) Conservation Program staff or other qualified seed or restoration specialist. The Project owner shall be responsible for all costs associated with seed storage. All seed storage shall occur at RSABG or other qualified seed dealer and at least 40 percent of the collected seed shall remain in long-term storage at RSABG Seed Conservation~~

² Hillmer, J. & D. Liedtke. 2003. Safe herbicide handling: a guide for land stewards and volunteer stewards. Ohio Chapter, The Nature Conservancy, Dublin, OH. 200 pp. Online: <<http://www.invasive.org/gist/products.html>>

³ Pesticide Action Network of North America. Kegley, S.E., Hill, B.R., Orme, S., Choi, A.H., 2010. PAN Pesticide Database, Pesticide Action Network, North America. San Francisco, CA. Online: <<http://www.pesticideinfo.org>>

~~Program, San Diego Natural History Museum, or other qualified seed conservation program, and made available for contingency efforts in the event of on-site or off-site mitigation failure.~~

Section B: Conduct Late-Season Botanical Surveys

The Project owner shall conduct late-summer/fall botanical surveys for late-season special-status plants as described below:

1. Survey Timing. Surveys shall be timed to detect: ~~a) summer annuals triggered to germinate by the warm, tropical summer storms (which may occur any time between June and October), and b) f~~Fall-blooming perennials that respond to the cooler, later season storms that originate in the Pacific northwest (typically beginning in September or October) shall only be required if blooms and seeds are necessary for identification or the species are summer-deciduous and require leaves for identification. The surveys shall not be timed to coincide with the statistical peak bloom period of the target species but shall instead be based on plant phenology and the timing of a significant storm event (i.e., a 10mm or greater rain or multiple storm events of sufficient volume to trigger germination, as measured at or within 1 mile of the Project site). ~~Surveys for summer annuals shall be timed to occur approximately 4 to 7 weeks following a warm, tropical storm. Re-surveys shall occur as many times as necessary to ensure that surveys are conducted during at the appropriate~~ time to capture the characteristics necessary to identify ~~identification period for the target taxa, which may be blooms, fruit, seed characteristics, or vegetative characteristics, depending on the taxon.~~
2. Surveyor Qualifications and Training. Surveys shall be conducted by a qualified botanist knowledgeable in the complex biology of the local flora, and consistent with CDFG protocols (CDFG 2009). The botanical survey crew shall be prepared to mobilize quickly to conduct appropriately timed surveys. Each surveyor shall be equipped with a GPS unit and record a complete tracklog; these data shall be compiled and submitted along with the Summer-Fall Survey Botanical Report (described below). Prior to the start of surveys, all crew members shall, at a minimum, visit reference sites (where available) and/or review herbarium specimens of all BLM Sensitive plants, CNPS List 1B or 2 (Nature Serve rank S1 and S2) or proposed List 1B or 2 taxa, and any new reported or documented taxa, to obtain a search image. Because the potential for ~~range extensions are likely to be found~~ is unknown, the list of potentially occurring special-status plants shall include all special-status taxa known to occur within the Sonoran Desert region in California. The list shall also include taxa with bloom seasons that begin in fall and extend into the early spring as many of these are reported to be easier to detect in fall, following the start of the fall rains.
3. Survey Coverage.
 - a) Survey protocol utilized for the 2010 late spring surveys for the project site could be utilized for summer/fall botanical surveys (see **Methods** section of the URS report titled "Imperial Valley Solar (formerly Solar

Two) (08-AFC-5) Applicant's Submittal of Late Spring Botany Report, URS Project No. 27657106.00804", dated June 11, 2010; or the project owner can do the following:

- b) The survey coverage or intensity shall be in accordance with BLM Survey Protocols (issued July 2009), which specify that intuitive controlled surveys shall only be accomplished by botanists familiar with the habitats and species that may reasonably be expected to occur in the project area. ~~At a minimum, the Applicant shall conduct comprehensive surveys (i.e., 100 percent visual coverage) of the washes, and other lowlands within the Project Disturbance Area to capture the full extent of the washes that will be affected by development in the washes. In the intervening uplands (dry areas), surveys shall be conducted to ensure a 25 percent visual coverage. Other special or unique habitats associated with rare plants shall also be surveyed at 100 percent visual coverage. Transects shall be "intuitive controlled" (per Whiteaker et al. 1998) to ensure a focus on habitat most likely to support rare plants (such as desert washes), rather than on pre-defined, evenly-spaced survey grids. In the one-mile Energy Commission buffer areas (outside the Project Disturbance Area), washes and other habitats strongly associated with rare plants shall also be surveyed comprehensively (i.e., 100 percent visual coverage) if they will be affected by development in the washes, but the intervening uplands or habitat not strongly associated with rare plants may be spot-checked or sampled at approximately 10 percent visual coverage.~~
4. Documenting Occurrences. ~~If a special-status plant is detected, the full extent of the population shall be assessed, both onsite and offsite. Additionally, the extent of the population within one mile of project boundaries shall be assessed at least qualitatively to facilitate an accurate estimation of the proportion of the population affected by the project. For populations that are very dense or very large, the population size may be estimated by simple sampling techniques. When populations are very extensive or locally abundant, the survey must provide some basis for this assertion and roughly map the extent on a topographic map. The number of individuals shall be counted (or sub-sampled and the population size estimated in the event of large populations). The boundaries of all occurrences shall be recorded with hand-held GPS units of one meter or better accuracy and then plotted on aerial photo base maps of a scale similar to that used in the AFC (SES 2008a). All but the smallest populations (e.g., a population occupying less than 100 square feet) shall be recorded as area polygons; small populations may be recorded as point features. All GPS-recorded occurrences shall include: the number of plants, phenology, observed threats (e.g., OHV or invasive exotics), and habitat or community type. The map of occurrences submitted with the progress reports and final botanical report shall be prepared to ensure consistency with mapping protocol and definitions of an occurrences in by CNDDB; i.e., occurrences found within 0.25 miles of another occurrence of the same taxon, and not~~

separated by significant habitat discontinuities, shall be combined into a single 'occurrence'. The project owner shall also submit the raw GPS shape files and metadata, and completed CNDDDB forms for each 'occurrence' (as defined by CNDDDB).

5. Reporting. Raw GPS data, metadata, and CNDDDB field forms shall be provided to the CPM within two weeks of the completion of each survey. If surveys are split into two or more periods (e.g., a late summer survey and a fall survey), then a summary letter shall be submitted following each survey period. ~~Progress Reports shall be submitted during surveys (as described below in verification), and shall include: a) the raw GPS data and metadata; b) a spreadsheet of the data (from the 'dbf' file), and c) a map of the data showing occurrence locations (labeled with their corresponding occurrence number from the GPS files) and Project features on a USGS topographic base map.~~

The Final Summer-Fall Botanical Survey Report shall be prepared consistent with CDFG guidelines (CDFG 2009), and BLM guidelines ~~(Lund pers comm)~~ and shall include the following components:

- a. the BLM designation, NatureServe Global and State Rank of each species or taxon found (or proposed rank, or CNPS List);
- b. the number or percent of the occurrence that will be directly affected, and indirectly affected by changes in drainage patterns or altered geomorphic processes;
- c. the habitat or plant community that supports the occurrence and the total acres of that habitat or community type that occurs in the Project Disturbance Area;
- d. an indication of whether the occurrence has any local or regional significance (e.g., if it exhibits any unusual morphology, occurs at the periphery of its range in California, represents a significant range extension or disjunct occurrence, or occurs in an atypical habitat or substrate);
- e. a completed CNDDDB field form for every occurrence (occurrences of the same species within 0.25 mile or less of each other combined as one occurrence, consistent with CNDDDB methodology), and;
- f. two maps: one that depicts the raw GPS data (as collected in the field) on a topographic base map with Project features; and a second map that follows the CNDDDB protocol for occurrence mapping, ~~which lumps two or more occurrences of the same species within one-quarter mile or less of each other into one occurrence.~~

Section C: Avoidance Requirements ~~Triggers for Implementation of Mitigation for~~ Special-Status Plants Detected in the Summer/Fall 2010 Surveys

The project owner shall apply the following avoidance standards listed below ~~establish criteria that would trigger implementation of additional mitigation measures for impacts to late~~ blooming special status plant species that might be

detected during late summer/fall season special-status plant species (if detected during the surveys required under Section B of this Condition). These Avoidance and/or the mitigation measures, described in Section D below, would reduce impacts to any special-status plant species detected during the late summer/fall plant surveys to less than significant levels. These rankings are based on the internationally accepted Natural Heritage Methodology, available online at: <http://www.natureserve.org/prodServices/heritagemethodology.jsp> Included in this methodology is the NatureServe global and state ranking process (www.natureserve.org/explorer/ranking) which provides an estimate of extinction risk worldwide and in California (Master et al. 2009). Avoidance and Minimization Measures described in Section A of this condition are required for all special-status plants, regardless of NatureServe rank or CNPS List.

1. Mitigation for CNDDDB Rank 1 Plants (Critically Imperiled) – Avoidance Required: Triggers. The following triggers for implementation of mitigation are not intended for use beyond their use in the application of this Condition (Subsection C): If late blooming species with a CNDDDB rank of 1 are detected within the Project Disturbance Area, the project owner shall prepare and implement a Special Status Plant Mitigation Plan (Plan). The goal of the Plan shall be to retain at least 75 percent of the local population of the affected species. Compensatory mitigation, as described in Section D of this condition, and at a mitigation ratio of 3:1, shall be required for the 25 percent or portion that is not avoided. The Plan shall include at a minimum, the following components and definitions:
 - a. A description of the occurrences of the CNDDDB rank 1 species on and off the project site, the percent of the local population affected, and a description of how these occurrences would be impacted by the project, including direct and indirect effects. The local population shall be measured by the number of individuals occurring on the project site and within the local watershed of the project for wash-dependent species or species of unknown dispersal mechanism. Occurrences shall be considered impacted if they are within the project footprint or if they would be affected by project-related hydrologic changes. Level 1 Trigger. BLM requests 100 percent avoidance for BLM Sensitive species (CNPS List 1 species are BLM Sensitive) but BLM's State Botanist will decide the level of avoidance on a case-by-case basis. Any impacts to non-BLM Sensitive species with a NatureServe Global Rank of G1 or G2 will trigger mitigation as described in Section D below.
 - b. A description of the avoidance and minimization measures that would achieve complete avoidance of occurrences on the project linears and construction laydown areas, unless such avoidance would cause disturbance to areas not previously surveyed for biological resources. Level 2 Trigger. Any impact to a CNPS List 2 taxon will trigger mitigation described in Section D below. However, should a CNPS List 3 or 4 taxon be of local or regional significance, as described below in 2b, then the level of protection for the taxon shall be adjusted

- c. A description of how avoidance and minimization measures would be implemented on the project solar facility, with the requirement of retaining at least 75 percent of the local population of this species. Compensatory mitigation, at a ratio of 3:1, and in accordance with the standards and specifications described in Section D of this condition, shall be required for the remaining 25 percent of the local population that is not avoided. Avoidance shall include protection of ecosystem processes essential for maintenance of the protected plant occurrence. Isolated 'islands' of protected plants disconnected by the project from natural fluvial processes shall not be considered to be protected and shall not be credited as contributing to the 75 percent avoidance requirement because such isolated populations are not sustainable.
2. Mitigation for CNDDDB Rank 2 Plants (Imperiled) – Avoidance on Linears
~~Required: Adjustments for Triggers. The levels of protection for a taxon may be adjusted under the following scenarios:~~ If species with a CNDDDB rank of 2 are detected within the Project Disturbance Area, the project owner shall prepare and implement a Special Status Plant Mitigation Plan (Plan). The Plan shall include the following: that describes measures to achieve complete avoidance of occurrences on the project linears and construction laydown areas, unless such avoidance would create greater environmental impacts in other resource areas (e.g., Cultural Resource Sites) or other restrictions (e.g., FAA or other restrictions for placement of transmission poles). The project owner shall provide compensatory mitigation, at a ratio of 2:1, as described below in Section D for impacts to Rank 2 plants that could not be avoided. The content of the Plan and definitions shall be as described above in subsection C.1.
 - a. A description of the occurrences of the CNDDDB rank 2 species on and off the project site, the percent of the local population affected, and how these occurrences would be affected by the project. The local population shall be measured, and the impacts defined, as described above under #1(a). ~~State or Federal-Listed Species. If a state or federal-listed species is detected, the project owner shall immediately notify the CDFG, USFWS, and the CPM, and comply with all measures contained in this condition as well as the terms and conditions of any applicable federal permit, including avoidance and reconfiguration if required.~~
 - b. Avoidance and minimization measures that would achieve complete avoidance of occurrences on the project linear features, unless such avoidance would cause disturbance to areas not previously surveyed for biological resources. ~~Local or Regional Significance. CNPS List 4 (typically assigned a State rank of 3) shall be adjusted to a higher level of protection if the plant occurrence has local or regional significance not captured by the above rankings. According to CDFG protocol (CDFG 2009): "List 3 plants may be analyzed under CEQA §15380 if sufficient information is available to assess potential impacts to such plants. Factors such as regional rarity vs. statewide rarity shall be considered in determining whether cumulative impacts to a List 4 plant are significant even if individual project impacts are not. CNPS List 3 and 4 may be~~

considered regionally significant if, e.g., the occurrence is located at the periphery of the species' range, or exhibits unusual morphology, or occurs in an unusual habitat/substrate."

A plant occurrence of any rank may be assigned a five percent higher level of protection in its ranking if the plant occurrence exhibits one or more of the following features:

- i. occurs at the outermost periphery of its range in California;
 - ii. represents a significant range extension or disjunct occurrence (e.g., is located outside of the 9 quad region centered on the nearest known occurrence);
 - iii. is 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;
 - iv. exhibits any unusual morphology that is not clearly attributable to environmental factors that may indicate a potential new variety or sub-species.
- c. Compensatory mitigation, at a ratio of 2:1, and in accordance with the standards and specifications described in Section D of this condition, shall be required for any portion of the local population that cannot be avoided. Avoidance shall include protection of the ecosystem processes essential for maintenance of the protected plant occurrence as described under #1 (c). New, Un-Described Taxa and Other Occurrences of Questionable Taxonomic Status. BLM will treat new un-described taxa as if they are BLM Sensitive, and requests 100 percent avoidance, but BLM's State Botanist will decide the level of avoidance on a case-by-case basis. Proposed additions to the CNPS Inventory, including any new un-described taxa that are proposed additions to the CNPS Inventory, will be treated as Proposed unless rejected by the CNPS Rare Plant Botanist after the initial literature review and consultation with the network of botanists, representing state and federal agencies, consulting firms, and academic institutions. A description of the peer review process is available at: <http://www.cnps.org/cnps/rareplants/>. Typically, under NatureServe and CNPS ranking protocol, plants with a questionable taxonomy are assigned a lower conservation priority with the caveat that resolution of this uncertainty may result in a status change that may be lower or higher than originally assigned.
- d. Significant Cumulative Effects. The assessment of known threats from over 50 sources are considered and reflected in the CNDDDB threat rank, including renewable energy (see http://www.natureserve.org/publications/ConsStatusAssess_StatusFactor_s.pdf, "Threats").
- e. Ownership/Management Threats. The degree to which a taxon's occurrences are adequately protected and managed is not included in the set of core factors used for NatureServe rankings that pre-date the 2009

revised protocols (Master et al. 2009). The threats to special-status plants with many occurrences on private lands without conservation easements, or on BLM lands managed for multiple uses (outside of a FTHL Management Area) will be captured in the new rankings available in summer 2010.

3. Mitigation for CNDDDB Rank 3 Plants (Vulnerable) – No Onsite Avoidance Required Unless Local or Regional Significance: Basis for Assessing Total Documented Occurrences. The accounting or inventory of the species' total known or documented occurrences shall be based on the following sources: CNDDDB processed and unprocessed data; California Consortium of Herbaria and other herbaria records; BLM records; survey data from other renewable energy projects and other related projects for which survey data is available; and reported occurrences by qualified botanists accompanied by a completed CNDDDB or similar field form (with or without voucher specimens). Data considered unreliable include: range implied in literature but without collection numbers or specific location information and anecdotal reports without documentation or from non-credible sources. Occurrences based on historic (pre-CEQA, or pre-1972) collections that have not since been verified will not be considered unless verified and documented by one of the sources described above. If species with a CNDDDB rank of 3 are detected within the Project Disturbance Area, no onsite avoidance or compensatory mitigation shall be required unless the occurrence shall be treated as a CNDDDB rank 2 plant species. A plant occurrence would be considered to have local or regional significance, in which case, the plant occurrence shall be treated as a CNDDDB 2 ranked plant. 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 subspecies.
4. Pre-Construction Notification for State- or Federal-Listed Species, or BLM Sensitive Species. If a state or federal-listed species or BLM Sensitive species is detected, the project owner shall immediately notify the CDFG, USFWS, BLM, and the CPM.
5. Preservation of the Germplasm of Affected Special Status Plants. For all significant impacts to special status plants, regardless of whether compensatory mitigation is required, mitigation shall include seed collection from the affected special status plants onsite prior to construction to conserve the germplasm and provide a seed source for restoration efforts. The seed shall be collected under the supervision or guidance of a reputable seed storage facility such as the Rancho Santa Ana Botanical Garden Seed Conservation Program, San Diego

Natural History Museum, or the Missouri Botanical Garden. The costs associated with the long-term storage of the seed shall be the responsibility of the project owner. Any efforts to propagate and reintroduce special status plants from seeds in the wild shall be carried out under the direct supervision of specialists such as those listed above and as part of a Habitat Restoration/Enhancement Plant approved by the CPM and made available for contingency efforts in the event of on-site or off-site mitigation failure.

Section D: Mitigation Measures 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 CNDDDB Rank 1 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 CNDDDB Rank 2 plants shall be 2:1. So, for the example above, the mitigation ratio would be one-half acre for the Rank 2 plants.

The project owner shall provide funding for the acquisition and/or restoration/enhancement, initial improvement, and long-term maintenance and management of the acquired or restored lands. The actual costs to comply with this condition will vary depending on the Project Disturbance Area, the actual costs of acquiring compensation habitat, the actual costs of initially improving the habitat, the actual costs of long-term management as determined by a Property Analysis Record (PAR) report, and other transactional costs related to the use of compensatory mitigation.

The project owner shall comply with other related requirements in this condition:

I. Compensatory Mitigation by Acquisition: The requirements for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of special-status plant compensation lands include all of the following:

1. Selection Criteria for Acquisition Lands. The compensation lands selected for acquisition may include any of the following three categories:
 - a. Occupied Habitat, No Habitat Threats: The compensation lands selected for acquisition shall be occupied by the target plant population and shall be characterized by site integrity and habitat quality that are required to support the target species, and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the target special-status plant on the proposed acquisition lands should be viable, stable or increasing (in size and reproduction).

- b. Occupied Habitat, Habitat Threats. Occupied compensation lands characterized by habitat threats may also be acquired as long as the population could be reasonably expected to recover with habitat restoration efforts (e.g., OHV or grazing exclusion, or removal of invasive non-native plants) and is accompanied by a Habitat Enhancement/Restoration Plan as described in Section D.II, below.
 - c. Unoccupied but Adjacent. The project owner may also acquire habitat for which occupancy by the target species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The Project owner shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate, particularly when these restoration efforts will benefit adjacent habitat that is occupied by the target species.
- 2. Review and Approval of Compensation Lands Prior to Acquisition. The project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above, and must be approved by the CPM.
 - 3. Management Plan. The project owner or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan shall be to support and enhance the long-term viability of the target special-status plant occurrences. The Management Plan shall be submitted for review and approval to the CPM.
 - 4. Integrating Special-Status Plant Mitigation with Other Mitigation lands. If all or any portion of the acquired special status species habitat, state jurisdictional waters, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species' or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for special-status plant mitigation.
 - 5. Compensation Lands Acquisition Requirements. The project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM, has approved the proposed compensation lands:

Preliminary Report. The project owner, or an 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. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM. 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.

Title/Conveyance. The project owner shall acquire and 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. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPM. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFG or another entity approved by the CPM. If an entity other than CDFG holds a conservation easement over the compensation lands, the CPM may require that CDFG or another entity approved by the CPM, in consultation with CDFG, be named a third party beneficiary of the conservation easement. The project owner shall obtain approval of the CPM of the terms of any transfer of fee title or conservation easement to the compensation lands.

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 are estimated to be \$27 per acre, using the estimated cost per acre for special status species habitat mitigation as a best available proxy, 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.

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 amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM before it can be used to establish funding levels or management activities for the compensation lands.

Long-term Maintenance and Management Funding. The project owner shall provide money to establish an account with non-wasting capital that will be used to fund long-term maintenance and management of the compensation lands. The amount of money to be paid will be determined through an approved Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands. Until an approved PAR or PAR-like analysis is conducted for the compensation lands, the amount of required funding is

initially estimated to be \$692 for every acre of compensation lands, using as the best available proxy, the estimated cost for special status species habitat compensatory mitigation. If compensatory lands will not be identified and a PAR or PAR-like analysis completed within the time period specified for this payment (see verification section at the end of this condition), the project owner shall either: (i) provide initial payment equal to the amount of \$692 per acre, multiplied by a mitigation ratio of 3:1 (for Rank 1 species) or 2:1 (for Rank 2 species), and multiplied by the number of acres the project owner proposes to acquire for compensatory mitigation; or (ii) provide security to the Energy Commission under subsection (g), "Mitigation Security" below, in an amount equal to \$692 multiplied by the number of acres the project owner proposes to acquire for compensatory mitigation at the established mitigation ratio. The amount of the required initial payment or security for this item shall be adjusted for any change in the Project Disturbance Area as described above. If an initial payment is made based on the estimated per acre costs, the project owner shall deposit additional money as may be needed to provide the full amount of long-term maintenance and management funding indicated by a PAR or PAR-like analysis, once the analysis is completed and approved. If the approved analysis indicates less than \$692 per acquired acre will be required for long-term maintenance and management, the excess paid will be returned to the project owner. The project owner must obtain the CPM's approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPM will consult with CDFG before deciding whether to approve an entity to hold the project's long-term maintenance and management funds.

Interest, Principal, and Pooling of Funds. The Project owner shall ensure that an agreement is in place with the long-term maintenance and management fund (endowment) holder/manager to ensure the following requirements are met:

Interest. Interest generated from the initial capital long-term maintenance and management fund 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 that is approved by the CPM and is designed to protect or improve the habitat values of the compensation lands.

Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.

Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar non-wasting funds that it holds from other projects for long-term maintenance and management of

compensation lands for special-status plants. However, for reporting purposes, the long-term maintenance and management funds for this Project must be tracked and reported individually to the CPM.

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 the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFG or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.

Mitigation Security. The Project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing project activities. Financial assurances shall be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved by the CPM. The amount of the Security shall be \$692 per acre, using the estimated cost per acre for special status species habitat mitigation as a best available proxy, and multiplied by the established mitigation ratio, for every acre of habitat supporting the target special status plant species which is significantly impacted by the project. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report. Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's approval of the form of the Security. The CPM may draw on the Security if the CPM determines the project owner has failed to comply with the requirements specified in this condition. The CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the Security to implement measures in this condition may not fully satisfy the project owner's obligations under this condition, and the project owner remains responsible for satisfying the obligations under this condition if the Security is insufficient. The unused Security shall be returned to the Project owner in whole or in part upon successful completion of the associated requirements in this condition.

II. Compensatory Mitigation by Habitat Enhancement/Restoration: As an alternative or adjunct to land acquisition for compensatory mitigation the project owner may undertake habitat enhancement or restoration for the target special-status plant species. Habitat enhancement or restoration activities must achieve protection at a 3:1 ratio for Rank 1 plants and 2:1 for Rank 2 plants, with improvements applied to three acres, or two acres, respectively, of habitat for every acre special-status plant habitat directly or indirectly 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 improvements would be applied to an area equal to $\frac{3}{4}$ of an acre at a 3:1 ratio, or one-half acre at a 2:1 ratio). Examples of suitable enhancement projects include but are not limited to the following: i) control

unauthorized vehicle use into an occurrence (or pedestrian use if clearly damaging to the species); ii) control of invasive non-native plants that infest or pose an immediate threat to an occurrence; iii) exclude grazing by wild burros or livestock from an occurrence; or iv) restore lost or degraded hydrologic or geomorphic functions critical to the species by restoring previously diverted flows or increasing groundwater availability for dependent species.

If the project owner elects to undertake a habitat enhancement project for mitigation, the project must meet the following performance standards: The proposed enhancement project shall achieve rescue of an off-site occurrence that is currently assessed, based on the NatureServe threat ranking system⁴ with one of the following threat ranks: a) long-term decline >30%; b) an immediate threat that affects >30% of the population, or c) has an overall threat impact that is High to Very High. "Rescue" would be considered successful if it achieves an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").

If the Project owner elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the CPM for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall be \$692 per acre, using the estimated cost per acre for special status species habitat mitigation as a best available proxy, at the ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, for every acre of habitat supporting the target special-status plant species which is directly or indirectly impacted by the project. The amount of the security may be adjusted based on the actual costs of implementing the enhancement, restoration and monitoring. The implementation and monitoring of the enhancement/restoration may be undertaken by an appropriate third party such as NFWF, subject to approval by the CPM. The Habitat Enhancement/Restoration Plan shall include each of the following:

1. Goals and Objectives. Define the goals of the restoration or enhancement project and a measurable course of action developed to achieve those goals. The objective of the proposed habitat enhancement plan shall include restoration of a target special-status plant occurrence that is currently threatened with a long-term decline. The proposed enhancement plan shall achieve an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").

⁴ Master, L., D. Faber-Langendoen, R. Bittman, G. A., Hammerson, B. Heidel, J. Nichols, L. Ramsay, and A. Tomaino. 2009. *NatureServe Conservation Status Assessments: Factors for Assessing Extinction Risk*. NatureServe, Arlington, VA. Online: http://www.natureserve.org/publications/ConsStatusAssess_StatusFactors.pdf, "Threats". See also: Morse, L.E., J.M. Randall, N. Benton, R. Hiebert, and S. Lu. 2004. *An Invasive Species Assessment Protocol: Evaluating Non-Native Plants for Their Impact on Biodiversity*. Version 1. NatureServe, Arlington, Virginia. Online: <http://www.natureserve.org/publications/pubs/invasiveSpecies.pdf>

2. Historical Conditions. Provide a description of the pre-impact or historical conditions (before the site was degraded by weeds or grazing or ORV, etc.), and the desired conditions.
3. Site Characteristics. Describe other site characteristics relevant to the restoration or enhancement project (e.g., composition of native and pest plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species).
4. Ecological Factors. Describe other important ecological factors of the species being protected, restored, or enhanced such as total population, reproduction, distribution, pollinators, etc.
5. Methods. Describe the restoration methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, etc.) and the long-term maintenance required. The implementation phase of the enhancement must be completed within five years.
6. Budget. Provide a detailed budget and time-line, and develop clear, measurable, objective-driven annual success criteria.
7. Monitoring. Develop clear, measurable monitoring methods that can be used to evaluate the effectiveness of the restoration and the benefit to the affected species. The Plan shall include a minimum of five years of quarterly monitoring, and then annual monitoring for the remainder of the enhancement project, and until the performance standards for rescue of a threatened occurrence are met. At a minimum the progress reports shall include: quantitative measurements of the projects progress in meeting the enhancement project success criteria, detailed description of remedial actions taken or proposed, and contact information for the responsible parties.
8. Reporting Program. The Plan shall ensure accountability with a reporting program that includes progress toward goals and success criteria. Include names of responsible parties.
9. Contingency Plan. Describe the contingency plan for failure to meet annual goals.
10. Long-term Protection. Include proof of long-term protection for the restoration site. For private lands this would include conservations easements or other deed restrictions; projects on public lands must be contained in a Flat-Tailed Horned Lizard Management Area, Wildlife Habitat Management Area, or other land use protections that will protect the mitigation site and target species.

III. Compensatory Mitigation by Conducting or Contributing to a Special Status Plant Species Distribution Study: As determined by the CPM, in the event that there are no opportunities for mitigation through acquisition or restoration/enhancement, a Scientific Study of Distribution and Status for the affected special status plant species may be implemented or funded. Information on the distribution, status, or health of known occurrences, ecological requirements, and ownership and management opportunities is very limited for many of the special status species that occur on the project or have potential to occur on the

project, especially the late summer and fall blooming species. Some of these late blooming species are only known from a few viable occurrences in California, and historic occurrences that have not been relocated or surveyed since they were first documented. The objectives of this study would be to better understand the full distribution of the affected species, the degree and immediacy of threats to occurrences, and ownership and management opportunities, with the primary goal of future preservation, protection, or recovery of the affected species within California. Additionally, the study should delineate other areas in the region that should be avoided or protected due to rare plant presence. To further ensure protection, study data shall be published in the state's rare plant database.

At a minimum, the study shall include the following:

1. Occurrence and Life History Review. The Study would include an evaluation of all documented, historical, and reported localities for the affected species and a review of current information on the species life history. This would include a review of the CNDDDB database, records from regional and national herbaria, literature review, consultation with U.C. Riverside, San Diego Natural History Museum, and other educational institutions or natural heritage organizations in California, Arizona, and Nevada, etc.), other biotechnical survey reports from the region, and information from regional botanical experts.
2. Conduct Site Visits to Documented and Reported Localities. Documented and reported occurrences would be evaluated in the field during the appropriate time of the year for each late blooming species. If located, these occurrences would be evaluated for population size (area and quantity), population trend, ecological characteristics, soils, habitat quality, potential threats, degree and immediacy of threats, ownership, and management opportunities. GPS location data would also be collected during these site visits.
3. Survey Surrounding Areas. Areas surrounding the occurrences that contain habitat suitable to support the affected species shall be surveyed to determine the full extent of its range and distribution. If additional populations are found, collect data (GPS and assessment) on these additional populations consistent with III.2 above.
4. Prepare a Status and Distribution Study Report. A report shall be prepared that contains the results of the surveys and assessments. The report shall contain the following components: a) Range and Distribution (including maps and GPS data); b) Abundance and Population Trends; c) Life History; d) Habitat Necessary for Survival; e) Factors affecting Ability to Survive and Reproduce; f) Degree and Immediacy of Threat; g) Ownership and Management Opportunities for Protection or Recovery; h) Sources of Information, and g) Conclusions. The conclusions shall contain the following factors: i) present or threatened modification or destruction of its habitat; ii) competition; iii) disease; iv) or other natural occurrences (such as climate change) or human-related activities. This valuable information will provide a better understanding of the ecological factors driving the distribution of these species, identify opportunities for mitigation, and management opportunities for recovery. All data from this study will be

submitted for incorporation into the CNDDDB system and the study report will be made available to resource agencies, conservation groups, and other interested parties.

The cost to implement or fund the study shall be no greater than the cost for acquisition, enhancement, and long-term management of compensatory mitigation lands based on the specifications and standards for acquisition or restoration/enhancement described under D.I and D.II.

~~Special Status Plant Mitigation Plan. Upon completion of the summer-fall 2010 surveys, (see Section B of this Condition), the project owner shall prepare a Special Status Plant Mitigation Plan. The Plan shall also include the mitigation requirements for any additional special-status plants found during the summer-fall 2010 surveys (see Sections B and C of this Condition) in accordance with the mitigation triggers described above (Section C of this condition) and that meet the performance standards specified below. Avoidance and Minimization Measures described in Section A of this condition are required for all special-status plants, regardless of NatureServe rank or CNPS List.~~

- ~~1. On-Site Avoidance. BLM requests 100 percent avoidance for BLM Sensitive species but BLM's State Botanist will decide the level of avoidance on a case-by-case basis. On-site avoidance shall also be required if the impact to a special-status species with a NatureServe Global Rank of G1 or G2 exceeds 10 percent of the species' known and documented occurrences (see 'Level 1 Trigger', Section C of this Condition). Under this scenario, the Project owner shall be required to avoid a minimum of 75 percent of the total population. For perennial taxa the percent avoidance shall be measured based on the percentage of the total individuals affected; for annuals the percent avoidance shall be measured based on the total area occupied by the occurrence plus any additional habitat deemed essential for maintaining healthy, reproductive populations (BLM CDD 2002). The Project owner shall implement all measures described in Section A of this Condition to protect the avoided occurrence from accidental direct and indirect effects during construction, operation, and closure.~~
- ~~2. Off-Site Compensatory Mitigation. One or more of the following options for mitigation may be used to reduce Level 2 and Level 3 impacts to special-status plants (see Section C of this Condition) to less than significant levels:~~
 - ~~a. Acquire Off-Site Compensatory Land. To fully mitigate for the loss of special-status plants, the Project owner shall provide compensatory mitigation by acquiring, in fee title or conservation easement, lands meeting the specific criteria outlined in **D2b** below, and in an amount equal to the amount of occupied special-status plant habitat disturbed by the final Project footprint. The Project footprint means all lands disturbed in the construction and operation of the Project, including all Project linears.~~
 - ~~b. Criteria for Compensatory Acquisition Lands. If offsite acquisition is selected to meet the mitigation obligations under **BIO-19**, the Project owner shall acquire, in fee title or conservation easement, lands that~~

meet the criteria below. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to a qualified third party, such as a non-governmental organization dedicated to habitat conservation. Additional funds shall be provided for basic long-term stewardship of the conservation easement. At a minimum, long-term management shall consist of the activities described in Land Trust Standards and Practices (Land Trust Alliance 2004, Practice 12A) <http://www.landtrustalliance.org/learning/sp/land-trust-standards-and-practices> for start-up and annual management activities, including preparation of a long-term management and monitoring plan. The amount of the long-term management and maintenance fund shall be based on [PAR](#) or PAR-like analysis. The terms and conditions for acquisition under this condition shall be modeled on those described in **BIO-10**. The acquisition lands must be within California, and must meet one or more of the following additional requirements:

- 1) ~~Occupied with good to excellent site integrity. Contains an occurrence of the target special-status plant. The occurrence may be smaller than the affected occurrence but must be a viable reproducing occurrence, stable or increasing (in size and reproduction), with good or better habitat quality than the affected occurrence, and with a reasonable expectation of long-term sustainability. The amount of land to be acquired shall be equivalent to the total acres of the affected occupied habitat mitigated at a ratio of 3:1 (3 acres acquired for every one acre of occupied habitat affected).~~
- 2) ~~Occupied but with threats to habitat quality and accompanied by an approved restoration plan. The occurrence or the site may contain threats to its integrity as long as the population or the site can be reasonably expected to recover with minor restoration (e.g., barricading OHV, excluding grazing, or minor pest plant removal) and is accompanied by a restoration plan that meets the minimum standards described in **Section D2c Guidelines for the Preparation of Habitat Restoration Plan** below. The amount of land to be acquired shall be equivalent to the total acres of affected occupied habitat mitigated at a ratio of 3:1 (3 acres acquired for every one acre of occupied habitat affected), with the additional expense of preparing and implementing an approved habitat restoration plan, including long-term monitoring. The restoration plan shall be prepared in accordance with all guidelines described below in **Section D2c, Guidelines for the Preparation of Habitat Restoration Plan**.~~
- 3) ~~Unoccupied but adjacent to occupied habitat. The acquired habitat may be unoccupied but it improves the defensibility and long-term sustainability of the occupied habitat by expanding the buffer of protection around the occurrence so as to prevent future development of adjacent habitat and protect its connectivity to undisturbed habitat. Buffer lands may or may not be dominated by the same habitats that~~

~~support the special-status plants but must provide some habitat continuity between the occupied habitat and undisturbed habitats of a high integrity beyond the buffer lands. Habitat integrity, connectivity, defensibility, and potential threats shall also be addressed in the proposal. The amount of land to be acquired shall be equivalent to the total acres of affected occupied habitat mitigated at a ratio of 4:1 (4 acres acquired for every one acre of occupied habitat affected).~~

- ~~4) Unoccupied and not adjacent to occupied habitat. Must contain high-quality habitat that is critical to the maintenance or sustainability of the affected species and represent a potential reserve in the future (for either natural colonization or artificial). Good to high quality within the Colorado Desert near or within the Yuha Desert or West Mesa FTHL Management Areas. Acquired lands may also focus on linkages for species dispersal between major populations and refugia at higher elevations/more mesic habitats to accommodate species migration with future climate change. Habitat integrity, connectivity, defensibility, and potential threats shall also be addressed in the proposal. The amount of land to be acquired shall be equivalent to the total acres of affected occupied habitat mitigated at a ratio of 5:1 (5 acres acquired for every one acre of occupied habitat affected).~~

~~Review and Approval of Compensation Lands Prior to Acquisition. The project owner shall submit a formal acquisition proposal to the CPM and CDFG, describing the parcel intended for purchase. This proposal shall discuss the suitability of the proposed parcel(s) as compensation for project-related impacts to special-status plants in relation to the criteria specified above, and must be approved by the CPM. The CPM will share the proposal with and consult with CDFG, BLM, and the USFWS before deciding whether to approve or disapprove the proposed acquisition.~~

- ~~c. Guidelines for the Preparation of Habitat Restoration Plan. The Project owner shall submit a detailed Habitat Restoration Plan that includes all of the following components and according to the guidelines in [1]) through [10)] below:~~
- ~~1) Define the goals of the restoration project and a measurable course of action developed to achieve those goals. The goals and objectives must meet the following performance standards described below:~~
 - ~~• The proposed habitat restoration project must achieve the rescue of an occurrence on acquired compensation land that is currently assessed with: a long-term decline >30 percent, or; an immediate threat that affects >30 percent of the population, or; has an overall threat impact that is High to Very High (see NatureServe Threat Ranking system, at: http://www.natureserve.org/publications/ConsStatusAssess_StatusFactors.pdf, "Threats").~~

- ~~The proposed restoration must achieve an improvement in the occurrence trend to “stable” or “increasing” status, or downgrading of the overall threat rank to slight or low (from “High” to “Very High”).~~
 - ~~Restoration projects may include one or more of the following types of projects: i) control unauthorized vehicle use into an occurrence (or pedestrian use if clearly damaging to the species); ii) control invasive weeds that infest or pose an immediate threat to an occurrence; iii) exclude grazing by wild burros or livestock from an occurrence; or iv) restore critical lost or degraded hydrologic or geomorphic functions to known special status plant occurrences that have lost historic sheet flow or instream flows, as a result of diverting washes upslope by roads or ditches.~~
- 2) ~~Estimate the pre-impact or historical conditions (before the site was degraded by weeds or grazing or OHV, etc.), and the desired conditions;~~
 - 3) ~~Describe other site characteristics relevant to the restoration or enhancement project (e.g., composition of native and pest plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species;~~
 - 4) ~~Describe other important ecological factors of the species being protected, restored, or enhanced such as total population, reproduction, distribution, pollinators, etc.;~~
 - 5) ~~Describe the restoration methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, etc.) and the long-term maintenance required. The implementation phase of the restoration must be completed within five years;~~
 - 6) ~~Provide a detailed budget and time-line, develop clear, measurable, objective-driven annual success criteria;~~
 - 7) ~~Develop clear, measurable monitoring methods that can be used to evaluate the effectiveness of the restoration and the benefit to the affected species. The Plan shall initially include a minimum of five years of quarterly monitoring and subsequent annual monitoring for the remainder of the life of the Project. At a minimum the progress reports shall include: quantitative measurements of the projects progress in meeting the restoration project success criteria, detailed description of remedial actions taken or proposed, and contact information for the responsible parties.~~
 - 8) ~~Ensure accountability with a reporting program that includes progress toward goals and success criteria. Include names of responsible parties.~~

9) ~~Describe the contingency plan and adaptive management measures for failure to meet annual goals.~~

10) ~~Include proof of the existence of long-term protection for the acquired site.~~

Mitigation Security. ~~The Project owner shall provide financial assurances to the CPM under terms modeled on those specified in **Section 3** of **BIO-10**, to guarantee that an adequate level of funding is available to implement the mitigation measures described above. 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. The CPM'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 in the form of security prior to initiating ground-disturbing project activities. Prior to submittal to the CPM, the security shall be approved by the CPM, in consultation with BLM, to ensure funding. The amount of the security shall be determined according to the mitigation ratios described in **D2b** [1) through 4)], Off-Site Compensatory Mitigation section of this condition. The amount of security shall be adjusted for any change in the Project footprint as described above.~~

~~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), under terms modeled on those in Section A.3(i) in Condition of Certification **BIO-10**.~~

~~The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a qualified land trust or other non-governmental organization supportive of habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM in consultation with BLM prior to land acquisition, restoration, or management activities.~~

Verification: The Special Status Plant Impact Avoidance and Minimization Measures shall be incorporated into the BRMIMP as required under Condition of Certification **BIO-7**.

Raw GPS data, metadata, and CNDDDB field forms shall be submitted to the CPM within two weeks of the completion of each survey. A preliminary summary of results for the late summer/fall botanical surveys shall also be submitted to the CPM and BLM's State Botanist within two weeks following the completion of the surveys. If surveys are split into more than one period, then a summary letter shall be submitted following each survey period. The Final Summer-Fall Botanical Survey Report, GIS shape files, and metadata shall be submitted to the BLM State Botanist and the CPM no less than 30 days prior to the start of ground-disturbing activities. The Final Report shall include a detailed accounting of the acreage of Project impacts to special status plant occurrences.

A draft Conceptual Special Status Plant Mitigation Plan as described in Section C shall be submitted to the BLM State Botanist and the CPM for review and approval no less than 30 days prior to the start of ground-disturbing activities. ~~Progress reports for the late summer~~

~~and fall botanical surveys shall be submitted to the CPM and BLM's State Botanist no later than September 30, 2010 and October 30, 2010, respectively. The Final Summer-Fall Botanical Survey Report, GIS shape files and metadata shall be submitted to the BLM State Botanist and the CPM no less than 30 days prior to the start of ground-disturbing activities.~~

The Project owner shall immediately provide written notification to the CPM, CDFG, USFWS, and BLM if it detects a State- or Federal-Listed Species, or BLM Sensitive Species at any time during its late summer/fall botanical surveys or at any time thereafter through the life of the project, including conclusion of project decommissioning.

No less than 30 days prior to the start of ground-disturbing activities, the project owner shall submit grading plans and construction drawings to the CPM which depicting the location of Environmentally Sensitive Areas and the Avoidance and Minimization Measures contained in Section A of this Condition.

If compensatory mitigation is required, no less than 30 days prior to the start of ground-disturbing activities, the project owner shall submit to the CPM, Security adequate to acquire compensatory mitigation lands and/or undertake habitat enhancement or restoration activities, as described in this condition.

No fewer than 90 days prior to acquisition of compensatory mitigation lands, the project owner shall submit a formal acquisition proposal and draft Management Plan for the proposed lands to the CPM, with copies to CDFG, USFWS, and BLM, describing the parcels intended for purchase and shall obtain approval from the CPM prior to the acquisition. No fewer than 90 days prior to acquisition of compensatory mitigation lands, the project owner shall submit to the CPM and obtain CPM approval of any agreements to delegate land acquisition to an approved third party, or to manage compensation lands; such agreement shall be executed and implemented within 18 months of the Energy Commission's certification of the project.

The Project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM of such completion no later than 18 months after the start of project ground-disturbing activities. If NFWF or another approved third party is being used for the acquisition, the project owner shall ensure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline.

If habitat enhancement is proposed, no later than six months following the start of ground-disturbing activities, the project owner shall obtain CPM approval of the final Habitat Enhancement/Restoration Plan, prepared in accordance with Section D, and submit to the CPM or a third party approved by the CPM Security adequate for long-term implementation and monitoring of the Habitat Enhancement/Restoration Plan.

Enhancement/restoration activities shall be initiated no later than 12 months from the start of construction. The implementation phase of the enhancement project shall be completed within five years of initiation. Until completion of the five-year implementation portion of the enhancement action, a report shall be prepared and submitted as part of the Annual

Compliance Report. This report shall provide, at a minimum: a summary of activities for the preceding year and a summary of activities for the following year; quantitative measurements of the project's progress in meeting the enhancement project success criteria; detailed description of remedial actions taken or proposed; and contact information for the responsible parties.

If a Status and Distribution Study is proposed, the study shall commence no later than six months following the start of ground-disturbing activities. The draft study shall be submitted to the CPM and BLM Botanist for review and approval no more than two years following the start of ground-disturbing activities. The final study shall be submitted no more than 30 months following the start of ground-disturbing activities.

Within 18 months of ground-disturbing activities, the Project owner shall transfer to the CPM or an approved third party the difference between the Security paid and the actual costs of (1) acquiring compensatory mitigation lands, completing initial protection and habitat improvement , and funding the long-term maintenance and management of compensatory mitigation lands; and/or (2) implementing and providing for the long-term protection and monitoring of habitat enhancement or restoration activities.

Implementation of the special status plant impact avoidance and minimization measures shall be reported in the Monthly Compliance Reports prepared by the Designated Botanist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, in consultation with the BLM State Botanist, a written construction termination report identifying how measures have been completed.

The Project owner shall submit a monitoring report every year for the life of the project to monitor effectiveness of protection measures for all avoided special-status plants to the CPM and BLM State Botanist. The monitoring report shall include: dates of worker awareness training sessions and attendees, completed CNDDDB field forms for each avoided occurrence on-site and within 100 feet of the Project boundary off-site, and description of the remedial action, if warranted and planned for the upcoming year. The completed forms shall include an inventory of the special-status plant occurrences and description of the habitat conditions, an indication of population and habitat quality trends.

~~No less than 30 days prior to ground-disturbing activities the Project owner shall submit to the CPM for review and approval, in consultation with the BLM State Botanist, a draft Special-Status Plant Mitigation Plan. If state or federal listed plants are potentially affected, the Project owner shall also submit the Special-Status Plant Mitigation Plan to CDFG and USFWS. The Plan shall contain, at a minimum, a conceptual proposal for compensatory mitigation through acquisition and possible restoration. If avoidance is mandatory (in accordance with Section C-1 and D-1 of this condition) the draft Plan shall include grading plans and other relevant construction drawings clearly depicting the location of the avoided plants.~~

~~The implementation phase of the restoration on acquired lands shall be completed within five years of initiation. During the initial five-year period, quarterly reports shall be submitted to the CPM no more than 30 days after the end of each quarter. After completion of the initial five year period, the Project owner shall submit a monitoring report yearly for the life of the project~~

to monitor effectiveness of restoration measures and description of any planned remedial actions or additional habitat restoration measures to be performed in the upcoming year. This report shall provide, at a minimum: a summary of activities for the preceding year and a summary of activities for the following year; quantitative measurements of the Project's progress in meeting the restoration project success criteria; detailed description of remedial actions taken or proposed; and contact information for the responsible parties.

Within 90 days after completion of Project construction, the Project owner shall provide to the CPM an analysis with the final accounting, based on GIS analysis of post-construction aerial photography, of the amount of special-status plants and their habitat disturbed during Project construction. This shall be the basis for the final number of acres of habitat required for acquisition, as described in Section C.

If the Project owner elects to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account, payment of the initial funds for acquisition and initial improvement must be made at least 30 days prior to the start of ground-disturbing activities. No later than 12 months after the start of ground-disturbing project activities, the project owner, or a third party approved by the CPM, in consultation with CDFG and BLM, shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase and shall obtain approval from the CPM, in consultation with CDFG, BLM, and USFWS, prior to acquisition. The PAR or PAR-like Analysis shall be completed no later than 18 months from the start of ground-disturbing activities, after which the amount will be adjusted. If acquisition is proposed, the Project owner shall submit to the CPM for review and approval, in consultation with the BLM State Botanist, a final Special-Status Plant Mitigation Plan for proposed acquisition lands no later than 18 months from the start of ground-disturbing activities.

Draft agreements to delegate land acquisition to CDFG, BLM, or an approved third party and agreements to manage compensation lands shall be submitted to Energy Commission staff for review and approval (in consultation with CDFG) prior to land acquisition. Such agreements shall be mutually approved and executed at least 30 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands have been acquired and recorded in favor of the approved recipient(s). Alternatively, before beginning project ground-disturbing activities, the project owner shall provide Security in accordance with **Mitigation Security** section **D** of this condition. Within 180 days after the land purchase, as determined by the date on the title, the project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFG, BLM, and USFWS, for the compensation lands and associated funds.

If special status plant are preserved onsite, an annual report shall be prepared that summarizes any protection measures for all avoided special-status plants onsite to the CPM and BLM State Botanist. The monitoring report shall include: dates of worker awareness training sessions and attendees, an inventory of the special-status plant occurrences and description of the habitat conditions, an indication of population and habitat quality trends, and description of the remedial action, if warranted and planned for the upcoming year. Implementation of the special-status plant impact avoidance and minimization measures shall be reported in the Monthly Compliance Reports prepared by the Designated Botanist. Within

~~30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval in consultation with the BLM State Botanist, a written construction termination report identifying how measures have been completed.~~

**Staff's Rebuttal Testimony and Errata
Imperial Valley Solar Power Project
July 21, 2010
Worker Safety & Fire Protection
Rick Tyler and Alvin Greenberg, Ph.D.**

Imperial Valley Solar Project
Worker Safety/Fire Protection
Rick Tyler and Alvin Greenberg Ph.D.

In Supplemental Testimony filed on July 7, 2010 Staff addressed the Applicant's Supplement to the AFC filed on May 6, 2010. Staff received clarifications regarding the Hydrogen generation, storage and handling systems at the proposed facility. Due to the major last minute changes to the description of the system design and the need for clarifications just prior to Staff's filing it was not possible for Staff or the Imperial County Fire Department to develop specific analysis of mitigation needs or specific analysis supporting determination of significant Impacts. In the absence of project specific analysis and as a result of the County's inability to develop specific analysis due to the limited time available, the Imperial County Fire Department requested that we recommend mitigation funding based on the analysis conducted by the San Bernardino County Fire Department for the Calico Facility located in San Bernardino County. The Calico Facility is nearly identical to the Imperial Valley Facility from the standpoint of providing fire protection services. However, the existing fire fighting capabilities in the vicinity of the Imperial Valley Project are even more limited than those in the vicinity of the Calico Facility.

Imperial County fire Department has determined that a new fire station manned by 6 professional firefighters full time with two all terrain fire trucks will be sufficient to provide a reasonable first response to a major incident at the Imperial Valley Facility. The mitigation funding in **WORKER SAFETY- 7** will be used by the fire department to make these improvements, provide for specialized yearly training for hydrogen fire suppression, specialized equipment to identify the location and extent of a fire, specialized training regarding the hydrogen systems utilized at the facility, and increased inspection and consultation at the facility. These funds may also be used to fund mutual aid agreements that may be necessary to provide a sustained response at the facility. Without this mitigation staff contends that the local fire protection resources would suffer unacceptable drawdown or exhaustion in the event of a major incident at the facility leaving the local community without resources and result in a significant impact on public safety.

Imperial Valley Solar
Worker Safety/Fire Protection
Rick Tyler and Alvin Greenberg, Ph.D.
July 21, 2010

Since the publication of the Supplemental Staff Assessment, staff has continued to review the emergency response needs of the proposed solar power plants which would be located in Imperial, San Bernardino, Riverside, and Kern Counties. Staff has also met with and/or spoken with the fire departments of Imperials County, San Bernardino County, Riverside County, and Kern County. Staff now has a much better understanding of the impacts to these rural county fire departments posed by the proposed solar power projects.

Staff has considered the position of the Imperial County Fire Department (ICFD) and all relevant information as well as past experience at existing solar power plants that are similar to but smaller than the proposed Imperial Valley Solar (IVS) project in terms of power generated and size of the solar area. These existing solar power plants use a heat transfer fluid other than then proposed hydrogen gas for the IVS and Calico projects; nevertheless, both heat transfer chemicals (hydrogen and Therminol) are flammable at elevated temperatures and when burning, generate intense heat. Thus, staff believes that comparisons about safety and risk can me made between the existing power plants and the proposed IVS and Calico projects.

Staff reviewed the records of emergency responses of the San Bernardino County Fire Department (SBCFD) to the only three thermal solar power plants in the state. These are the Solar Electric Generating Station (SEGS) 1 & 2 (43.8 MW) in Daggett (operating since 1984), SEGS 3-7 (150 MW) at Kramer Junction (1989), and SEGS 8 & 9 (160 MW) at Harper Dry Lake (1989). Staff offers this background information as a basis to support staff's contention that no matter where the solar plant is located, the local fire department having jurisdiction will have to provide some level of services in five areas of response:

1. Plan reviews, inspections, and permitting
2. Fire response
3. Hazmat spill response
4. Rescue
5. Emergency Medical Services (EMS)

In summary, staff found that including emergency response for fire, rescue, medical and hazardous materials incidents, approximately 30 incidents occurred since 1998 that required the SBCFD (and other fire stations through mutual aid agreements) to respond to the three solar power plant sites. These included fires, fire alarm activations, injuries, medical emergencies, hazardous materials spills, complaints/calls from the public, and false alarms. However, the available records did not include documentation of a major fire at the SEGS 8 facility (80 MW) in January of 1990 that required a large part of the regional resources from four different fire districts including the San Bernardino County, Edwards Air

Force Base, California Department of Forestry (now Cal Fire), and the Kern County fire departments. This fire is the largest incident that has occurred at a solar thermal plant in California and demonstrates the magnitude of fire department resources that can be required to respond to a fire at a large thermal solar facility. The inability to quickly control this event had ramifications for the project's finances and reliability - it took almost two years to bring the SEGS 8 heaters back on-line and supplement the solar field generation – and resulted in a “draw-down” of emergency response resources in the northern part of San Bernardino County. A “draw-down” is when emergency response teams vacate an area to respond to an emergency, thus leaving that area without adequate fire and other emergency response services. This represents a very serious situation where the population and infrastructure is left vulnerable.

The proposed IVS power plant would be located in an area that is currently served by the ICFD and thus all emergency response services to the site would be under the jurisdiction of the ICFD. Even though other fire stations from the El Centro Fire department may also respond, staff believes that the proper jurisdiction is the ICFD and that all emergency services must be coordinated with Imperial County.

The proposed IVS solar power plant is very different from the industrial, commercial, and residential development in the Imperial County desert region. It is also different from the existing solar plants located at Harper Lake and Kramer Junction in San Bernardino County. The IVS solar power plant would be larger in scale than the existing solar power plants (approximately 6,215 acres) and will have a huge amount of highly flammable hydrogen gas as the heat transfer fluid in use at elevated pressure (greater than 5 million standard cubic feet or just over 28,000 pounds of hydrogen gas at ~2760 psi). The amount of highly flammable material stored and used on-site, combined with the potential for escalation of a small fire into a large conflagration enveloping the entire site and perhaps even beyond due to thermal radiation effects from a hydrogen fire, presents an emergency response challenge for the ICFD.

Presently, the ICFD is not able to respond to fire, hazmat, rescue, and EMS emergencies in a timely manner at the IVS power plant. The standard fire department response for a fire or for a hazmat spill includes response of six engines and at least three fire fighters on each engine. To fight a fire inside a structure, the ICFD must adhere to standard operating procedures and Cal-OSHA regulations that require “two in, two out”. Thus, a response of three fire fighters from one station would not allow fire fighters to attack a fire from within a structure or conduct a rescue. Confined space and collapsed trench rescues would also be problematic with only three fire fighters. Therefore, no matter what size the fire or how many workers are initially in need of rescue, the ICFD would dispatch engines from at least three fire stations so that at a minimum, nine firefighters are sent to the scene but the ICFD could eventually dispatch a total of 9 engines. Even if mutual aid was available and an “automatic aid” pact was

in effect, the ICFD would still have to respond to an emergency at the IVS site because it is the Authority Having Jurisdiction.

Additionally, it is very important to note that the IVS power plant will be located in an extremely harsh desert environment. The ability of a fire fighter to perform duties while wearing a turn-out coat, heavy boots, and a respirator (self contained breathing apparatus) is limited under the best of circumstances. If conducting a rescue or fighting a fire that necessitates use of a respirator, the high-temperatures of the desert, often exceed 115° F, severely limits a fire fighter's ability to perform the duties to 15 minutes at a time. This severe time restriction necessitates the mobilization of more fire fighters to respond to the emergency.

Staff has considered the position of the ICFD and all relevant information as well as past experience at existing solar power plants that are similar to the proposed project. The proposed facility would be located in an area that is currently served by the ICFD. The inspection, fire, hazmat, rescue, and EMS needs at the proposed Calico power plant are real and would pose significant added demands on local fire protection services. Staff has determined that the IVS power plant would cause a significant direct and cumulative impact on the local fire department. Staff also noted that the potential exists for a fire to escalate not only within the solar power plant but beyond the power plant into a wild land fire. Even though this is a desert environment, the scrub grasses and native plants are concentrated enough to sustain a wild fire. Thus, a fire at the IVS site would place traffic on the nearby Interstate-8 (I-8) at risk and possibly require more fire equipment and personnel to respond. Note that the site is 6,500 acres, with a 21 mile fence line. The personnel and equipment needed to survey and control this large perimeter to ensure a fire does not spread from the site is considerable.

Regarding potential mitigation, staff is proposing Condition of Certification **WORKER SAFETY- 7** that requires the IVS power plant to either negotiate a mitigation fee agreement with the ICFD or to fund fire department capital improvements and make an annual payment to mitigate the project's individual impacts and its share of a cumulative impact on the fire department.

Alternatively, staff suggests that Calico form and join a solar industry group or association that will provide membership to all solar power plants located within the jurisdiction of the ICFD or even across the greater California desert region to negotiate payment for their project-related shares of capital and operating costs to build and operate new fire protection/response infrastructure for these large, remote industrial facilities. The group could ensure appropriate equipment and personnel as mitigation of project-related impacts on fire protection services on the most cost-effective basis. Staff proposes that the project owner be given this option to form and join a power generation industry association or group so that this association or group could negotiate payment for their project-related shares of ICFD capital and operating costs. The association would be able to

raise funds, negotiate payment for emergency response services with the ICFD, and audit county and district fire department protection/emergency response expenditures to ensure that funds go towards associated emergency response needs. And, most importantly, develop and implement an appropriate fee structure for its members based on project characteristics (e.g., size, technology, chemical usage, or project location relative to emergency response infrastructure) and the re-payment of funds provided by its initial members upon the joining of new members. Staff urges the applicant and the Committee to consider this approach.

Also, staff has developed an Emergency Response Matrix that staff, the fire departments, and project owners may use to assess the level of emergency response need (CEC 2010). This analytical tool has a weighting scheme for the various categories of fire department response and utilizes professional judgment in the assignment of the “score” to the categories. Staff has tested this methodology on existing and planned solar power plants and finds it to be useful but cautions against using it as the sole basis for determining need or for allocating financial responsibility for direct individual or cumulative impacts. Otherwise, staff recommends that the applicant prepare an independent fire needs assessment and a fire risk assessment for the IVS project to better assess impacts on emergency response services in the jurisdictions.

The San Bernardino County Fire Department (SBCFD) has modified this tool to address its own needs and has used it in part to arrive at its estimated allocated costs for a similar project of similar size and use of hydrogen gas, the Calico power plant. The amount of money proposed to mitigate impacts to the SBCFD is based on a thorough review by the SBCFD of its present capabilities and needs. Staff met with representatives of the SBCFD and expert consultants hired by the fire department to develop costs for capital improvements and annual operating and maintenance (O&M) and allocate these costs to new projects proposed for construction in the County. The SBCFD estimates that it needs three additional fire stations and upgrades to three existing fire stations in order to provide adequate service and emergency response to 14 proposed renewable energy projects in the county. Using the analysis prepared by Hoffmann and Associates (CSBFD 2010x), the county determined that a total capital cost of \$12,539,000 would be needed. Using the Emergency Response Matrix and weighting it for the size in MW of each energy project and applying an “allocation factor” of 29% for solar project based upon fire department service calls to various land use categories in 2009, the SBCFD determined that the Calico project should be allocated \$1,800,000 of these costs for capital improvements. As for annual O&M and staffing costs, \$1,700,000 was found by the above method to be the appropriate allocation for the AMS project. Staff has reviewed the cost figures and map of proposed renewable energy facilities and fire stations prepared by San Bernardino County and finds the costs to construct or expand fire stations to be reasonable and consistent with the costs per square foot for building a fire station, for a new fire engine, and for fire fighter salaries and benefits. Staff also agrees with the SBCFD’s allocation of costs to

the Calico project. The methodology used by the SBCFD is, in staff's opinion and experience, the most objective and documented method staff has seen in the past two decades of interacting with fire departments in California.

The IVS and Calico projects are very similar and thus the approach used by the SBCFD can also be used to determine the level of mitigation for the IVS project. Both proposed solar power plants will use hydrogen gas systems that are new to California and the method of hydrogen replenishment to the SunCatchers has very little information on the operating or accident history. Because the IVS project will have 87 hydrogen gas compressors on-site, staff finds that the need for constant inspections by the SBCFD coupled with the need for emergency response and fire control to prevent escalation should a fire occur serve to support the SBCFD allocation.

Furthermore, in conversations with ICFD Assistant Chief Juan Rodello (ref), he conveyed the position of the ICFD that two all-terrain fire trucks, a new fire station located very near the IVS site, and the annual funding of six (6) firefighters (1 Captain, 1 Paramedic, and 4 Engineers) would be needed to mitigate the impacts to the fire department. This will enable an adequate response to emergencies at the IVS site and avoid the massive draw-down of resources in the area as has happened in the past in San Bernardino County.

Staff can also base an approximate determination of mitigation costs, in part, on the Staff Emergency Response Matrix that staff developed to help determine impacts. The staff matrix shows that the proposed IVS project has a "needs" rated score of 4.4, the same as the proposed Calico project. When compared to the existing solar power plant at Kramer Junction (3.95), the existing solar power plant at Harper Lake (2.4), and the proposed Abengoa Mojave Solar project near Harper Lake (3.65), staff contends that the proximity of the IVS project to I-8 coupled with the very large amounts of hydrogen gas operating at elevated pressure, justifiably causes the increased score due to risk of fire and thus serves to support the allocation. Staff furthermore bases its determination, in part, on its professional experience and judgment. Therefore, staff recommends that the IVS project be allocated a one-time amount of \$1,187,000 for capital improvements and \$1,095,000 each year for operations, maintenance, and staffing.

References

CEC 2010 __ - CEC / A. Greenberg (TN ____). Staff Decision Matrix. Submitted to CEC on 7/21/2010.

CSBFD 2010 __ - San Bernardino County Fire Department. SBCFD Estimated Costs Station Construction, Equipment and Staffing. Submitted to CEC on 7/21/2010.

ROC with ICFD Assistant Chief Juan Rodello, July 21, 2010.

Staff's Emergency Response Matrix -- Calico

A. Response Criteria	points	weighting factor	Calico	Imperial Valley	SEGS 4-7	SEGS 8-9	AMS
1. Inspections							
a. minimal need	1						
b. average need	3				3	3	3
c. significant need	5		5	5			
<i>Net --></i>			<i>0.5</i>	<i>0.5</i>	<i>0.3</i>	<i>0.3</i>	<i>0.3</i>
2. Fire							
A. Quantity liquid fuel or hydrogen gas stored		0.20					
a. <1,000 gal or less	1						
b. >1000 and <100,000 gal	2						
c. >100,000 gal or more	5		5	5	5	5	5
<i>Net --></i>			<i>1.00</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>
B. Fire/Explosion off-site consequences		0.30					
a. Limited to site	1					1	
b. Potential for smoke and/or fire and/or minor blast effects	2						
c. Potential for major fire/blast structure damage and/or injuries	5		5	5	5		5
<i>Net --></i>			<i>1.50</i>	<i>1.50</i>	<i>1.50</i>	<i>0.30</i>	<i>1.50</i>
3. HazMat							
A. Proximity to sensitive receptors		0.05					
a. no significant impacts	1		1	1		1	
b. <5 receptors within 1/4 mile	2						2
c. 5-10 receptors within 1/4 mile	3						
d. >10 within 1/4 mile	4						
e. impacts major receptors	5				5		
<i>Net --></i>			<i>0.05</i>	<i>0.05</i>	<i>0.25</i>	<i>0.05</i>	<i>0.10</i>
B. Hazmat response time		0.05					
a. <30 minutes	1						
b. 30 - 60 minutes	3		3	3	3	3	3
c. >60 minutes	5						
<i>Net --></i>			<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>
4. Rescue							
a. <30 minutes	1				1	1	1
b. 30 - 60 minutes	3		3	3			
c. >60 minutes	5						
<i>Net --></i>			<i>0.45</i>	<i>0.45</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>
5. EMS							
EMS response time		0.15					
a. in-house EMT	1						
b. 5 - 10 minute	2						
c. >10 and <15 minutes	3					3	3
d. >15 and <30 minutes	4				4		
e. >30 minute response	5		5	5			
<i>Net --></i>			<i>0.75</i>	<i>0.75</i>	<i>0.60</i>	<i>0.45</i>	<i>0.45</i>
Sum weighting factors			1.00				
			60				