From: Alice Harron [mailto:Harron@solarmillennium.com]
Sent: Friday, June 25, 2010 6:06 PM
To: Susan Sanders; Alan Solomon
Cc: sgalati@gb-LLP.com; Elizabeth Ingram; Lindner, Carl; Rick York; Sara Keeler; Lisa DeCarlo; Carolyn Chainey-Davis; Amy Golden; Elizabeth Ingram
Subject: RE: Blythe Follow Up Items - Bio Resources

Attached are the responses.

Surveys have been conducted for temporary construction line, access road (including corridor for gas pipeline, redundant optic cable, SM telecommunication line) and gen-tie.

Alice

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Per the request of Susan Sanders in an email dated June 23, 2010, the following tables provide direct and indirect impacts to vegetation communities, state waters, vegetated swales, and rare plants by project feature (back rock road, facility site, transmission line alignment, temporary construction power/secondary access road, and the shared transmission line/utility corridor). Table 1 provides the direct impacts to vegetation communities, including state waters and vegetated swales, by project features. Table 2 provides indirect impacts to waters of the state by project feature. Table 3 provides indirect impacts to vegetated swales by project features. Table 4 provides direct impacts to rare plants by project feature. Please note that the access road, transmission lines and utilities corridor will not result in indirect impacts to waters of the state or vegetated swales because downstream flows will be maintained via culverts or overland flow.

Table 1. Anticipated Permanent Direct Impacts to Vegetation Communities and Waters of the State in the Project Disturbance Area (in acres) by Project Feature

Vegetation Communities and Other Cover Types	**Black Rock Rd Access**	**Project Plant Facility Site**	**Gen-Tie Alignment**	**Temporary Construction Power**	**Shared Gen-Tie/Utility Corridor**	**Grand Total**
Riparian						
Creosote Bush – Big Galleta Association	-	365.13	4.78	-	0.91	**370.82**
Desert Dry Wash Woodland	10.76	197.08	3.78	-	1.32	**212.94**
Unvegetated Ephemeral Dry Wash	-	8.55	-	-	0.11	**8.66**
Subtotal Riparian	*10.76*	*570.76*	*8.56*	-	*2.34*	***592.42***
Upland						
Sonoran Creosote Scrub Brush	1.40	6268.50	28.65	0.83	65.21	**6364.59**
Stabilized and Partially Stabilized Desert Dunes	-	-	-	-	58.17	**58.17**
Subtotal Upland	*1.40*	*6268.50*	*28.65*	*0.83*	*123.38*	***6422.76***
Other						
Agricultural Land	0.55	0.62	-	3.27	-	**4.44**
Developed	4.69	-	-	-	0.21	**4.90**
Disturbed	0	0	0	0	0	**0**
Subtotal Other	*5.24*	*0.62*	-	*3.27*	*0.21*	***9.34***
Grand Total	**17.29**	**6839.87**	**37.21**	**4.10**	**125.82**	**7024.29**

Table 2. Anticipated Indirect Impacts to Waters of the State in the Project Disturbance Area (in acres) by Project Feature

Form of Jurisdictional Waters of the State	Black Rock Rd Access	Project Plant Facility Site	Gen-Tie Alignment	Temporary Construction Power	Shared Gen-Tie/Utility Corridor	Grand Total
Xeric Riparian Extent	-	137.49	-	-	-	**137.49**
Unvegetated Ephemeral Dry Wash	-	0.33	-	-	-	**0.33**
Grand Total	**0**	**137.83**	**0**	**0**	**0**	**137.83**

Table 3. Anticipated Indirect Impacts to Vegetated Swales within the Project Disturbance Area (in acres) by Project Feature

Hydrologic Feature	Black Rock Rd Access	Project Plant Facility Site	Gen-Tie Alignment	Temporary Construction Power	Shared Gen-Tie/Utility Corridor	Grand Total
Creosote Bush – Big Galleta Association	-	44.60	-	-	-	**44.60**

Table 4. Direct Impacts to Special Status Plant Species within the Project Disturbance Area by Project Feature

Species Common Name	Black Rock Rd Access	Project Plant Facility Site	Gen-Tie Alignment	Temporary Construction Power	Shared Gen-Tie/Utility Corridor	Grand Total
CNPS List 1B and CNPS List 2 Plant Species						
Harwood's milkvetch	225	135	-	-	277	**637**
Las Animas colubrine	-	55	-	-	-	**55**
Harwood's woollystar	-	-	-	-	13	**13**
CNPS List 4 Plant Species						
ribbed cryptantha	-	-	-	-	$1.5x10^6$ 58.17 acres*	**$1.5x10^6$ 58.17 acres***
winged cryptantha	-	-	-	-	-	**0**
Utah milkvine	-	621	-	-	-	**621**
desert unicorn	-	9	-	-	-	**9**

*Ribbed cryptantha is also expressed in terms of area (acres) due to the high abundance of this species in the substation area. Plant counts are estimates, based on subsampling data from within the ribbed cryptantha population (calculated density of 6.2 plants per square meter, or 25,091 plants per acre).

Please note:

The terms staff use have, in some cases, different definitions than in the Applicant's reports. For reference:

> Project Disturbance Area: Area inside and outside the facility fence that will be disturbed by the project. This includes (but is not limited to) disturbance from the power plant facility; associated construction laydown, parking, power lines, and access roads; linears including the gen-tie line; and permanent access roads. It does not include the substation disturbance area.
>
> Proposed Project Study Area: This includes the proposed BSPP Disturbance Area plus additional areas surveyed during 2009 and 2010 but that ultimately will not be disturbed by BSPP, such as the substation disturbance area.
>
> BRSA: The Proposed Project BRSA includes the Project Disturbance Area, Proposed Project Study Area, and all associated buffers. This does include the substation disturbance area and buffers.

Please confirm the acreages below based on these definitions (please show changes in strikeout or contrasting color).

Proposed Project

Biological Resources Table 2
Natural Communities/Cover Types

Vegetation Communities/Cover Type within Biological Resources Study Area[1]	Project Disturbance Area		BRSA
Riparian			
Desert dry wash woodland	213		871
Unvegetated ephemeral dry wash	9		11
Vegetated ephemeral swales (creosote bush-big galleta association)	371		474
Subtotal Riparian	*593*		*1,356*
Upland			
Sonoran creosote bush scrub	6,365		19,391
Stabilized and partially stabilized desert dunes	58		2,663
Subtotal Upland	*6,423*		*22,054*
Other Cover Types			
Agricultural Land	4		1,066
Developed	5		90
Disturbed	0		27
Subtotal Other Cover Types	*9*		*1,183*
Total Acres	**7,025**		**24,593**

[1] The Study Area encompasses the Project Disturbance Area (area inside and outside the facility fence that will be disturbed by the project), the solar facility footprint area inside the facility fence including solar fields and other support structures and facilities, a 1-mile buffer area, and entire transmission line and other linear routes and the substation site footprint and 1-mile buffer area.

Source: (Blythe Solar Power Project Biological Resources Technical Report, Table 3 and Table 17)

Biological Resources Table 5
Summary of Impacts and Mitigation

Biological Resource	Impact/Mitigation*
Sonoran Creosote Bush Scrub & Associated Wildlife	**Direct Impacts**: Permanent loss of 6,365 acres and fragmentation of adjacent wildlife habitat and native plant communities **Indirect Impacts**: Disturbance (noise, lights, dust) to surrounding plant and animal communities; spread of non-native invasive weeds; changes in drainage patterns downslope of Project; erosion and sedimentation of disturbed soils.
Stabilized and Partially Stabilized Dunes	**Direct impacts**: Permanent loss of 103 acres for construction of Colorado River Substation (45 acres) and associated transmission line and access roads (58 acres)*; potential accidental direct impacts to adjacent preserved habitat during construction and operation. **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; fragmentation and degradation of remaining habitat.
Waters of the State/ Sensitive Plant Communities Source: June revised BRTR Tables 17, 4, 5	**Direct Impacts**: Permanent loss of hydrological, geomorphic, and biological functions and values of 593 acres of State waters, including: • 213 acres desert dry wash woodland • 371 acres of vegetated ephemeral streams (creosote bush-big galleta grass association • 9 acres of unvegetated ephemeral dry wash **Indirect Impacts**: Loss of hydrological connectivity downstream of the Project, including: • 138 acres desert dry wash woodland • 45 acres of vegetated ephemeral swales (creosote bush-big galleta grass association • 0.33 acres unvegetated ephemeral wash Other indirect impacts include head-cutting on drainages upslope and erosion/sedimentation downslope;
Desert Tortoise	**Direct Impacts**: Potential take of individuals during operation and construction; permanent loss of 6.958 acres of low to moderate desert tortoise habitat and fragmentation of surrounding habitat. **Indirect Impacts**: Increased risk of predation from ravens, coyotes, feral dogs; disturbance from increased noise and lighting; introduction and spread of weeds; increased road kill hazard.

Biological Resource	Impact/Mitigation*
Mojave Fringe-Toed Lizard	**Direct impacts**: Mortality to individuals during construction of T-line and substation; permanent loss of 58 acres of fringe-toed lizard habitat (dune habitat) for construction associated with transmission line construction; potential accidental direct impacts to adjacent preserved habitat during construction and operation. **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; fragmentation and degradation of remaining habitat; increased road kill hazard from construction and operations traffic; harm from accidental spraying/drift of herbicides and dust suppression chemicals.
Western Burrowing Owl	**Direct Impacts**: Permanent loss of breeding and foraging habitat; potential loss of eggs and young; degradation and fragmentation of remaining adjacent habitat from edge effects; disturbance of nesting and foraging activities for nesting pairs near the plant site and linear facilities (1 active western burrowing owl burrow and habitat for 1 individual detected in Project Disturbance Area during 2009 and 2010 burrowing owl surveys; during 2009 vegetation surveys, an additional burrowing owl was observed within the Project Disturbance Area). **Indirect Impacts**: increased road kill hazard from operations traffic and collision with mirrors; increased predation from ravens; disturbance of nesting activities from operations.
Golden Eagle	**Direct/Indirect Impact**: Loss of foraging habitat; No active golden eagle nests were detected within 10 miles of the Project boundaries during protocol surveys conducted in 2010.
Special-Status Birds & Migratory Birds	**Direct Impacts**: Permanent loss of breeding and foraging habitat, including loss of 6,365 acres of Sonoran creosote bush scrub and 213 acres of desert dry wash woodland; potential loss of eggs and young; disturbance of nesting and foraging activities for populations on and near the plant site and linear facilities; degradation and fragmentation of remaining adjacent habitat from edge effects; hazards from evaporation ponds **Indirect Impacts**: increased road kill hazard from operations traffic and collision with mirrors; increased predation from ravens; disturbance from operations.
Desert Kit Fox & American Badger	**Direct Impacts**: Permanent loss of 7,020 acres of occupied habitat; fragmentation and degradation of remaining habitat, loss of foraging grounds, crushing or entombing of animals during construction; increased risk of road kill hazard from construction traffic **Indirect Impacts**: Disturbance from increased noise and lighting; introduction and spread of weeds; increased risk of

Biological Resource	Impact/Mitigation*
	road kill from operations traffic.
Nelson's Bighorn Sheep	**Direct Impact**: . **Indirect Impact**: .
Couch's spadefoot toad	**Direct Impacts:** . **Indirect Impacts:**.
Special Wildlife Management Areas	**Desert Wildlife Management Areas**: None **Areas of Critical Environmental Concern**: None **Wildlife Habitat Management Areas**: None **Desert Tortoise Critical Habitat**: None **Mitigation**: None proposed.
Las Animas colubrina	**Direct Impacts**: Permanent loss of 55 plants within the Disturbance Area (141 plants in the buffer on drainage upslope of Project); possible additional loss of plants from construction of perimeter channel and bank stabilization on drainages upslope; accidental impacts to plants adjacent to construction **Indirect impacts**: Head-cutting (erosion) of channels upslope containing additional plants; introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; population fragmentation, impacts to pollinators and gene flow; risk of fire
Harwood's milk-vetch***	**Direct Impacts**: Harwood's milk-vetch plants were found throughout the eastern plant site Disturbance Area (total of 637 in the Disturbance Area, 2,281 in the buffer), linear facilities route, and along Black Rock Road; potential accidental direct impacts during construction and operation **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; potential disruption of sand transport systems that maintain habitat below the Project; alteration of drainage patterns; herbicide drift; disruption of photosynthesis and other metabolic processes from dust
Harwood's woollystart	**Direct Impacts**: Harwood's woollystar were found throughout the eastern transmission line route and substation site (total of 13 in the Disturbance Area, 1,287 in the buffer); potential accidental direct impacts during construction and operation **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; potential disruption of sand transport systems that maintain habitat below the Project; alteration of drainage patterns; herbicide drift; disruption of photosynthesis and other metabolic processes from dust
Ribbed Cryptantha	**Project Disturbance Area:** Approximately 1.5 x 10^6 plants within 58 acres.

Biological Resource	Impact/Mitigation*
	Buffer: Approximately 5.8 x 10^7 plants within 2,300 acres.
Winged Cryptantha	**Project Disturbance Area:** 0 **Buffer:** 15
Utah Milkvine	**Project Disturbance Area:** 621 (approx) **Buffer:** 888 (approx)
Desert unicorn	**Project Disturbance Area:** 9 **Buffer:** 17

* Southern California Edison will need to construct a 45-acre substation in order for the power plant to interconnect to the electrical grid. Staff has analyzed the potential impacts resulting from construction of the substation. These impacts of the Colorado Substation, which are considered indirect impacts of the proposed Project, as well as recommended mitigation that would reduce the substation impacts to less than significant, are included in the analysis. However, Southern California Edison would construct the substation and would undertake mitigation for biological resource impact; therefore mitigation calculations do not include acreages from the substation. The California Public Utilities Commission, not the Energy Commission, has jurisdiction and responsibility over Southern California Edison and construction and operation of the substation and can and should adopt mitigation to reduce the substation's impacts to less than significant.

Biological Resources Table 6*
Direct and Indirect Impacts to Waters of the State

Resource	Acres Impacted[1]
State Waters - Direct Impacts	
Desert Dry Wash Woodland	213
Vegetated Ephemeral Swales (creosote bush-big galleta grass association)	371
Unvegetated Desert Dry Wash	9
Total direct impacts to state waters	**593**
State Waters - Indirect Impacts from Changes in Hydrology	
Desert dry Wash Woodland	138
Vegetated Ephemeral Swales (creosote bush-big galleta grass association)	45
Unvegetated Desert Dry Wash	0.3
Total indirect impacts to state waters	**112**

[1]Source: Revised BRTR Tables 4, 5, 17

Reconfigured Alternative

Biological Resources Table 2
Natural Communities/Cover Types

Vegetation Communities/Cover Type within Biological Resources Study Area[2]	Reconfigured Alternative Disturbance Area		BRSA
Riparian			
Desert dry wash woodland	171		871
Unvegetated ephemeral dry wash	5		11
Vegetated ephemeral swales (creosote bush-big galleta association)	237		474
Subtotal Riparian	*413*		*1,356*
Upland			
Sonoran creosote bush scrub	5,135		19,391
Stabilized and partially stabilized desert dunes	*		2,663
Subtotal Upland	*5,135*		*22,054*
Other Cover Types			
Agricultural Land	0		1,066
Developed	0		90
Disturbed	0		27
Subtotal Other Cover Types	*0*		*1,183*
Total Acres	**5,548**		**24,593**

Source: AECOM XXXX (Blythe Solar Power Project Biological Resources Technical Report, Table 3 and Table 17)

* T-line, other linears not included in acreage calcs for alternative

Biological Resources Table 5
Summary of Impacts and Mitigation – Reconfigured Alternative

Biological Resource	Impact/Mitigation*
Sonoran Creosote Bush Scrub & Associated Wildlife	**Direct Impacts**: Permanent loss of 5,135 acres and fragmentation of adjacent wildlife habitat and native plant communities **Indirect Impacts**: Disturbance (noise, lights, dust) to surrounding plant and animal communities; spread of non-native invasive weeds; changes in drainage patterns downslope of Project; erosion and sedimentation of disturbed soils.
Stabilized and Partially Stabilized Dunes	**Direct impacts**: Linears not included in impact calculations for the alternative, but impacts would be expected to be similar to proposed project.

[2] The Study Area encompasses the Project Disturbance Area (area inside and outside the facility fence that will be disturbed by the project), the solar facility footprint area inside the facility fence including solar fields and other support structures and facilities, a 1-mile buffer area, and entire transmission line route and substation site footprint and 1-mile buffer area.

Biological Resource	Impact/Mitigation*
	Indirect impacts: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; fragmentation and degradation of remaining habitat.
Waters of the State/ Sensitive Plant Communities Source: June revised BRTR Tables 6, 7, 17	**Direct Impacts**: Permanent loss of hydrological, geomorphic, and biological functions and values of 413 acres of State waters, including: • 171 acres desert dry wash woodland • 237 acres of vegetated ephemeral streams (creosote bush-big galleta grass association • 5 acres of unvegetated ephemeral dry wash **Indirect Impacts**: Loss of hydrological connectivity downstream of the Project, including: • 71 acres desert dry wash woodland • 40 acres of vegetated ephemeral swales (creosote bush-big galleta grass association • 0.6 acres unvegetated ephemeral wash Other indirect impacts include head-cutting on drainages upslope and erosion/sedimentation downslope;
Desert Tortoise	**Direct Impacts**: Potential take of individuals during operation and construction; permanent loss of 5,548 acres of low to moderate desert tortoise habitat and fragmentation of surrounding habitat. **Indirect Impacts**: Increased risk of predation from ravens, coyotes, feral dogs; disturbance from increased noise and lighting; introduction and spread of weeds; increased road kill hazard.
Mojave Fringe-Toed Lizard	**Direct impacts**: Linears not included in impact calculations for the alternative, but impacts would be expected to be similar to proposed project. **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; fragmentation and degradation of remaining habitat; increased road kill hazard from construction and operations traffic; harm from accidental spraying/drift of herbicides and dust suppression chemicals.
Western Burrowing Owl	**Direct Impacts**: Permanent loss of breeding and foraging habitat; potential loss of eggs and young; degradation and fragmentation of remaining adjacent habitat from edge effects; disturbance of nesting and foraging activities for nesting pairs near the plant site and linear facilities (habitat for 1 individual detected in Reconfigured Alternative Disturbance Area based on 2009 and 2010 burrowing owl surveys. **Indirect Impacts**: increased road kill hazard from operations traffic and collision with mirrors; increased predation from

Biological Resource	Impact/Mitigation*
	ravens; disturbance of nesting activities from operations.
Golden Eagle	**Direct/Indirect Impact**: Loss of foraging habitat; No active golden eagle nests were detected within 10 miles of the Project boundaries during protocol surveys conducted in 2010.
Special-Status Birds & Migratory Birds	**Direct Impacts**: Permanent loss of breeding and foraging habitat, including loss of 5,135 acres of Sonoran creosote bush scrub and 171 acres of desert dry wash woodland; potential loss of eggs and young; disturbance of nesting and foraging activities for populations on and near the plant site and linear facilities; degradation and fragmentation of remaining adjacent habitat from edge effects; hazards from evaporation ponds **Indirect Impacts**: increased road kill hazard from operations traffic and collision with mirrors; increased predation from ravens; disturbance from operations.
Desert Kit Fox & American Badger	**Direct Impacts**: Permanent loss of 5,548 acres of occupied habitat; fragmentation and degradation of remaining habitat, loss of foraging grounds, crushing or entombing of animals during construction; increased risk of road kill hazard from construction traffic **Indirect Impacts**: Disturbance from increased noise and lighting; introduction and spread of weeds; increased risk of road kill from operations traffic.
Nelson's Bighorn Sheep	**Direct Impact**: . **Indirect Impact**: .
Couch's spadefoot toad	**Direct Impacts:**. **Indirect Impacts:** .
Special Wildlife Management Areas	**Desert Wildlife Management Areas**: None **Areas of Critical Environmental Concern**: None **Wildlife Habitat Management Areas**: None **Desert Tortoise Critical Habitat**: None **Mitigation**: None proposed.
Las Animas colubrina	**Direct Impacts**: Permanent loss of 49 plants within the Disturbance Area (147 plants in the buffer on drainage upslope of Project); possible additional loss of plants from construction of perimeter channel and bank stabilization on drainages upslope; accidental impacts to plants adjacent to construction **Indirect impacts**: Head-cutting (erosion) of channels upslope containing additional plants; introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; population fragmentation, impacts to pollinators and gene flow; risk of fire
Harwood's milk-vetch***	**Direct Impacts**: Harwood's milk-vetch plants were found

Biological Resource	Impact/Mitigation*
	throughout the eastern plant site Disturbance Area (total of 290 in the Disturbance Area, 342 in the buffer), linear facilities route, and along Black Rock Road; potential accidental direct impacts during construction and operation **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; potential disruption of sand transport systems that maintain habitat below the Project; alteration of drainage patterns; herbicide drift; disruption of photosynthesis and other metabolic processes from dust
Harwood's woollystar	**Direct Impacts**: Linears not included in impact calculations for the alternative, but impacts would be expected to be similar to proposed project. **Indirect impacts**: Introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; potential disruption of sand transport systems that maintain habitat below the Project; alteration of drainage patterns; herbicide drift; disruption of photosynthesis and other metabolic processes from dust
Ribbed Cryptantha	**Project Disturbance Area:** Linears not included in impact calculations for the alternative, but impacts would be expected to be similar to proposed project. **Buffer:**
Winged Cryptantha	**Project Disturbance Area:** Linears not included in impact calculations for the alternative, but impacts would be expected to be similar to proposed project. **Buffer:**
Utah Milkvine	**Project Disturbance Area:** 677 (approx) **Buffer:** 831 (approx)
Desert unicorn	**Project Disturbance Area:** 21 **Buffer:** 4

* Southern California Edison will need to construct a 45-acre substation in order for the power plant to interconnect to the electrical grid. Staff has analyzed the potential impacts resulting from construction of the substation. These impacts of the Colorado Substation, which are considered indirect impacts of the proposed Project, as well as recommended mitigation that would reduce the substation impacts to less than significant, are included in the analysis. However, Southern California Edison would construct the substation and would undertake mitigation for biological resource impact; therefore mitigation calculations do not include acreages from the substation. The California Public Utilities Commission, not the Energy Commission, has jurisdiction and responsibility over Southern California Edison and construction and operation of the substation and can and should adopt mitigation to reduce the substation's impacts to less than significant.

Biological Resources Table 6* Reconfigured Alternative
Direct and Indirect Impacts to Waters of the State and Recommended Mitigation

Resource	Acres Impacted[1]
State Waters - Direct Impacts	

Resource	Acres Impacted[1]
Desert Dry Wash Woodland	171
Vegetated Ephemeral Swales (creosote bush-big galleta grass association)	237
Unvegetated Desert Dry Wash	5
Total direct impacts to state waters	**413**
State Waters - Indirect Impacts from Changes in Hydrology	
Desert dry Wash Woodland	71
Vegetated Ephemeral Swales (creosote bush-big galleta grass association)	40
Unvegetated Desert Dry Wash	0.6
Total indirect impacts to state waters	**112**

[1]Source: Revised BRTR Tables 6, 7, 17