



TETRA TECH EC, INC.

<b>DOCKET</b> <b>09-AFC-8</b>
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DATE	<u>JUN 18 2010</u>
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June 18, 2010

California Energy Commission  
Docket No. 09-AFC-8  
1516 9<sup>th</sup> St.  
Sacramento, CA 95814

**Genesis Solar Energy Project - Docket Number 09-AFC-8**

Docket Clerk:

Enclosed for filing with this letter is one hard copy and one electronic copy of the ***Supplemental Information for the Genesis Solar Energy Project***, dated June 18, 2010.

Sincerely,

A handwritten signature in black ink that reads 'Tricia Bernhardt'.

Tricia Bernhardt  
Project Manager/Tetra Tech EC

cc: Mike Monasmith /CEC Project Manager





BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA  
1516 NINTH STREET, SACRAMENTO, CA 95814  
1-800-822-6228 – [WWW.ENERGY.CA.GOV](http://WWW.ENERGY.CA.GOV)

APPLICATION FOR CERTIFICATION FOR THE  
**GENESIS SOLAR ENERGY PROJECT**

Docket No. 09-AFC-8

**PROOF OF SERVICE**  
(Revised 6/7/10)

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I, Tricia Bernhardt, declare that on June 18, 2010, I served and filed copies of the **Supplemental Information for the Genesis Solar Energy Project** dated June 18, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [[http://www.energy.ca.gov/sitingcases/genesis\\_solar](http://www.energy.ca.gov/sitingcases/genesis_solar)].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

*(Check all that Apply)*

FOR SERVICE TO ALL OTHER PARTIES:

sent electronically to all email addresses on the Proof of Service list;

by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

**AND**

FOR FILING WITH THE ENERGY COMMISSION:

sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

**OR**

depositing in the mail an original and 12 paper copies, as follows:

**CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 09-AFC-8  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

I declare under penalty of perjury that the foregoing is true and correct.

Original Signed By:



Tricia Bernhardt

# Supplemental Information Genesis Solar Energy Project June 18, 2010

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## 1.0 Introduction

Two documents were recently docketed with the California Energy Commission (CEC) containing additional information about the Project and the Colorado River Substation to which the Genesis Solar Energy Project (GSEP) would connect:

***Reasonably Foreseeable Development Scenario, Southern California Edison Colorado River Substation, Genesis Solar Energy Project,  
Dated May 19<sup>th</sup>, 2010***

***Minor Changes to the Genesis Solar Energy Project Description;  
6-pole Extension of Transmission Line  
Inclusion of Distribution and Telecommunications Line  
Removal of “Toe” Area from Plant Facility,  
Dated May 21<sup>st</sup>, 2010***

The Revised Staff Assessment (RSA) for the GESP was published on June 11<sup>th</sup>, 2010. The information in this document provides supplemental information to the above documents and to the RSA.

## 2.0 Secondary Access Road/Spur Road

CEC staff and the Riverside County Fire Department have had recent discussions regarding the need for a secondary access to the GESP for fire safety reasons. Several ideas for this access have been proposed. At this time, the Condition of Certification Worker Safety-6 in the RSA, states the following:

**WORKER SAFETY-6** The project owner shall:

- a. Provide a second access gate for emergency personnel to enter the site. This secondary access gate shall be at least one-quarter mile from the main gate and shall be accessed via a gravel road off the main road near the facility fence line.
- b. Provide a “spur” road that starts at a gate in the I-10 right-of-way not closer than ½ mile west of the Wiley Wells Road interchange with I-10 and which connects to the main access road approximately ½ mile to the north. The “spur” road shall be at a minimum an all-weather gravel road, at least 24 feet wide, and with

culverts to direct flow under the road at any wash the road may cross.

- c. Maintain the main access road and the “spur” road and provide a plan for implementation.

Plans for the secondary access gate, the method of gate operation, gravel road, “spur” road, and to maintain the roads shall be submitted to the Riverside County Fire Department for review and comment and to the CPM for review and approval.

Therefore, the secondary access/spur road will be located ½ mile west of Wiley’s Well Road interchange and will run in a north/south direction adjacent to the generation-tie line for the project. **(See Figure 1)** This area was already surveyed for biological and cultural resources because it is within the same corridor as the proposed generation tie (gen-tie) line for the GESP.

This location for the secondary access road represents the least additional impact to biological and cultural resources while satisfying the requirements of an alternative emergency access point from I-10. Because the gen-tie line was already planned for this area, there would already be a narrow access road associated with the transmission line. This access road will be upgraded to meet the requirements of the Riverside County Fire Department and become the secondary access road.

The secondary access road will be designed to the standards required by the Riverside County Fire Department and will be a 24-foot width, all-weather gravel road. There will be an emergency gate directly off of I-10, but no additional shoulder or pull-off area along I-10 will be constructed. The emergency gate will be locked and the Riverside County Fire Department will have a key.

## 2.1 Cultural Resources

Class III Cultural resource surveys were conducted at this secondary access road location in 2009. A confidential report titled ***Revised Draft Class II and Class III Cultural Resources Inventories for the Proposed Genesis Solar Energy Project, Riverside County, California***, dated October 2009 was produced by Tetra Tech. According to the lead archeologist on the job, there are no cultural resource sites in this location. (Personal communication with Jenna Farrell, TTEC).

## 2.2 Biological Resources

**Table 1** below describes the temporary and permanent acreage impacts to vegetation communities along the secondary access road. However, this

disturbance was already accounted for in the linear corridor analysis in the Application for Certification (AFC) as a part of the gen-tie line. (See Table 3.2-2, Acres of Temporary and Permanent Disturbance in the AFC, dated August 30, 2009.)

**Table 1**

<b>Vegetation Communities Affected by the Secondary Access Road</b>	<b>Total Temporary Impact Acreage</b>	<b>Total Permanent Impact Acreage</b>	<b>Total Impact Acreage<sup>1</sup></b>
<b>Sonoran Creosote Bush Scrub</b>	1.72	0.82	2.54
<b>Stabilized and Partially Stabilized Sand Dunes</b>	0.00	0.00	0.00
<b>Playa and Sand Drifts Over Playa</b>	0.00	0.00	0.00
<b>Desert Dry Wash Woodland</b>	0.00	0.00	0.00
<b>Chenopod Scrub</b>	0.00	0.00	0.00
<b>Total Acres</b>	<b>1.72</b>	<b>0.82</b>	<b>2.54</b>

<sup>1</sup> Acreage calculations are based on a 24ft-wide permanent access road with an additional 50ft for temporary impacts.

**Figure 2** shows the biological resources near the secondary access road as seen during the 2009 and 2010 biology surveys.

**Table 2**, attached to the end of this document, shows the direct impacts to waters of the U.S. An additional **.09 acres** designated as state waters will be impacted by the creation of the secondary access road.

### **3.0 Distribution/Telecommunications Line**

The GESP will need temporary power and communication during construction at the facility footprint. The project will need to tap into electrical power from an existing Southern California Edison (SCE) distribution line near the Wiley's Well Rest Stop.

This new distribution/telecommunications line will follow the proposed Genesis linear corridor and access road up to the plant facility. This installation could either be above or below ground based on site conditions and availability of material. The type of material is likely to be single wood poles. Once the construction phase of the project is complete, these lines will likely be left in place to serve the onsite facilities such as offices, warehouse, and a control room. The development of the distribution line will follow the current SCE's standards, guidelines and procedures for installation of electrical distribution power lines.

The distribution/telecommunications line will be built adjacent to the final gen-tie line. **Table 3** below shows the assumptions for the distribution line and the disturbance acres.

**Table 3**  
**Distribution Line Disturbance Area**

Linear Distance 6.5 miles distance of access road  
Pole Spacing 250' from SCE  
Number of Poles 138  
Number of Spur Roads 138

<b>Permanent Disturbance</b>			
Feature	Qty	Disturbance Assumption	Disturbance (acres)
Wood Pole Pads	138	3' X 3'	0.03
Spur Roads	138	30' X 14'	1.33
Radius from access road to spur road	138	20' radius	1.27
		<b>Total</b>	<b>2.63</b>
<b>Temporary Disturbance</b>			
Pole Pad Construction Area	57	25' X 25' (see Note)	0.58
		<b>Total</b>	<b>0.58</b>

Note: Less portion of the spur road that is coincident with the 25' X 25' pole pad construction area. Less pole pad permanent Disturbance (3' X 3')

### 3.1 Redundant Telecommunications Line

A secondary redundant telecommunications system may be required by SCE. If the project does need a secondary telecommunications system, it will be one of two scenarios: a wireless microwave system or an underground line in an already disturbed area such as the access road under or adjacent to the gen-tie line.

**Figure 3** shows the location of a potential secondary telecommunications line following the linear corridor. No impact acreage was calculated for this line, since the disturbance has already been accounted for in the disturbance of the gen-tie line and associated access/maintenance road. A buried telecommunication line is typically a single cable 1 inch in size or smaller, and is very easily installed no more than a couple of feet deep in the ground using a “ditch-witch” type piece of machinery.

**Appendix A** contains a more detailed description of the potential redundant telecommunications line.

## 4.0 Removal of “Toe” and Changes to State Waters Impacts

During a CEC workshop for the Genesis Solar Energy Project at the Bureau of Land Management (BLM) office in Palm Springs, California on May 5th, 2010, the idea of not using the “toe” of the Genesis plant facility was discussed. **(See Figure 4)** The proposal to remove the toe as part of the active plant facility would minimize or negate some potential environmental impacts, primarily due to the presence of sand dunes and habitat for the Mojave fringe-toed lizard. Additionally, the toe area has several drainage washes running through it. Genesis Solar, LLC agreed to remove the solar troughs and other plant facilities from the toe area, and to reconfigure the plant design to accommodate the change.

The toe removal reduces 41.4 acres of potential disturbance in sensitive habitat. Of that number, 27.2 acres are identified as sand dunes, with 14.2 acres as creosote bush scrub. The CEC, BLM and staff from U.S. Fish and Wildlife Service, and the California Department of Fish and Game consider this a positive project contribution to avoiding, reducing and minimizing impacts.

**Table 2**, attached to the end of this document, shows the reduction in impacts to state waters by removing the toe from the project. As a result of not using the toe, **21 acres** of state waters are not being impacted.

## 5.0 Colorado River Substation Expansion

A 230 kV expansion of the already-permitted but not yet constructed Colorado River Substation (CRS) is needed to accommodate additional solar projects in the area, including the GESP. The expansion will consist of approximately 45 additional acres adjacent to the original footprint of the CRS. **Figure 5** shows the location of the CRS and the expansion area.

The CRS expansion is a Southern California Edison (SCE) project that SCE would permit, construct, own and operate to serve several projects in the area. However, because the proposed expansion of the CRS is a reasonably foreseeable development scenario, a description of the expansion and any associated potential environmental impacts will be addressed in the NEPA and CEQA-equivalent documents being prepared by the BLM and the CEC for the Genesis project. Mitigation for any impacts associated with the CRS expansion area would be the responsibility of SCE under the permits SCE will be obtaining in order to construct the substation.



## 5.1 Cultural Resources

A cultural resource record search and survey of the expansion area was conducted by SCE's consultant, ASM Affiliates (ASM), in March 2010 \*.

ASM conducted a literature review at the Eastern Information Center University of California Riverside for the CRS expansion project area. This review identified six previously conducted cultural resource field surveys (three are within the CRS) and 21 previously recorded prehistoric and historic archaeological sites within one mile of the CRS expansion. No previously recorded sites were identified within the CRS expansion area.

In addition, ASM conducted an intensive pedestrian cultural resources survey (Class III Survey, as defined in BLM Manual 8100 Guidance) for the CRS expansion area from March 23-25, 2010. This field survey and previous field surveys (identified in the literature review) included the Area of Potential Effects (APE) for the proposed CRS expansion. The literature review and intensive survey were conducted for a study area of 429 acres (new additional surveys account for 226 acres) of the CRS. See **Figure 6** for the location of the cultural resource field surveys conducted.

ASM submitted a ***Draft Cultural Resources Inventory of the Proposed Colorado River Substation Expansion Project Riverside County, California*** report to the BLM in June 2010. The draft report was reviewed by a qualified archeologist working for Tetra Tech, a consultant to Genesis Solar, LLC.

No cultural resource sites or isolates were identified within or near the APE of the expansion area.

*\*ASM Affiliates conducted this study for SCE and the Bureau of Land Management (BLM) Palm Spring Field Office in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 and 4331-4335), the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470 et seq.), and the requirements set forth in Protection of Historic Properties (36 CFR 800), implementing regulations of the NHPA. This level of examination and study further satisfies the project review requirements of the California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code § 21000 et seq.), and was conducted pursuant to the Guidelines for Implementation of the California Environmental Quality Act (California Code of Regulations, Title 14, § 15000 et seq.).*

## 5.2 Biological Resources

In spring 2010, AECOM conducted, on behalf of Solar Millennium comprehensive surveys for biological resources of the proposed CRS. The survey area included a 241 acre area that was surveyed using 30-ft wide belt transects (100 percent coverage) plus zone-of-influence transects out to one mile from this area. The 100 percent coverage area encompassed the location of the 500kV area already permitted by the CPUC, the proposed 230kV expansion area, and the additional

six poles for the gen-tie line for Genesis. The following is a summary of the biological resources observed during those surveys as related to the CRS 230kV expansion area (expansion area; approximately 45 acres). **Figures 7 and 8** show the results of the wildlife and plant surveys conducted in the area.

### **Vegetation Communities**

The expansion area will be located entirely within Stabilized and Partially-Stabilized Sand Dunes (see Holland 1986). This vegetation community is BLM Sensitive per the Northern and Eastern Colorado Management (NECO) Plan (BLM and CDFG 2002) and requires compensation at a ratio of 3:1 (three acres to every one acre disturbed). The expansion will result in 45 acres of permanent disturbance to Stabilized and Partially-Stabilized Sand Dunes.

### **Special-status Plants**

Two special-status plant species are present within the expansion area: Harwood's woollystar (*Eriastrum harwoodii*, CNPS 1B.2) and Ribbed cryptantha (*Cryptantha costata*, CNPS 4.3). Both species would be directly and indirectly impacted by development of the expansion area.

### **Desert Tortoise**

No desert tortoise sign was observed within the expansion area; however, two Class 4 burrows and three bone fragments were found within the one mile survey buffer area. One burrow was 0.76-mi to the southwest of the expansion area, and the other was 0.50-mi to the northeast of the expansion area. Class 4 burrows are defined as "deteriorated condition, possibly tortoise". One bone fragment was mineralized; all three were just less than one mile from the expansion area. The presence of Class 4 burrows and bone fragments indicate tortoises are likely in the vicinity of the expansion area; however, the expansion area will be located in Stabilized and Partially-Stabilized Sand Dunes, and sand dunes are not considered desert tortoise habitat.

### **Mojave Fringe-toed Lizard**

Multiple Mojave fringe-toed lizards were observed within the expansion area. Because the expansion area will be located within Stabilized and Partially-Stabilized Sand Dunes, which is considered Mojave fringe-toed lizard habitat, there will likely be direct and indirect impacts to this species.

### **Western Burrowing Owl**

No burrowing owls or their sign were observed along the expansion area; however, live birds and their sign were observed east of the gen-tie at the edge of the Stabilized and Partially-Stabilized Sand Dunes. An active burrow with birds was observed approximately 0.70-mi from the expansion area. Although no sign was observed within the expansion area, survey results indicate that burrowing owl are present in the vicinity of the expansion area.

### **Other Special-status Wildlife**

Swainson's hawk was observed within the expansion area and loggerhead shrike, Cooper's hawk, ferruginous hawk, and a kit fox complex were observed within one mile of the expansion area. None of the birds were observed nesting.

### **Jurisdictional Waters**

No federal or state jurisdictional waters are present within the expansion area.

## **6.0 Six Pole Transmission Line Extension**

The six pole transmission line extension is adjacent to the CRS expansion area on the west side.

As described in the AFC and subsequent documents, the GESP gen-tie would start at the Genesis power plant site and go approximately 7 miles to the southeast until it reaches the existing Blythe Energy Transmission Line Project (BETP). From that point, the Genesis gen-tie would be strung eastward along existing BETP poles until the point where it leaves the BETP to enter into the CRS. Because the BETP runs immediately to the south of the proposed CRS location, Genesis had always assumed the gen-tie would go directly from the BETP poles into the south side of the CRS in a single span. However, SCE recently provided Genesis with a substation design that now requires the gen-tie, after it leaves the existing BETP poles, to come up around the western side of the substation and enter from the north. This will require Genesis to add up to six additional gen-tie poles before entering the CRS.

### **6.1 Cultural Resources**

A cultural resource record search and survey of the area where the six pole transmission line extension will be needed was conducted by SCE's consultant, ASM, in March 2010 \*. **Figure 9** shows the location of the six pole transmission line extension over the areas that were surveyed for cultural resources.

ASM conducted a literature review at the Eastern Information Center University of California Riverside for the CRS expansion project area. This review identified six previously conducted cultural resource field surveys (three are within the CRS) and 21 previously recorded prehistoric and historic archaeological sites within one mile of the 6 pole extension. No previously recorded sites were identified within the six pole extension area.

In addition, ASM conducted an intensive pedestrian cultural resources survey (Class III Survey, as defined in BLM Manual 8100 Guidance) for the six pole extension area from March 23-25, 2010. This field survey and previous field surveys (identified in the literature review) included the APE for the proposed

CRS expansion and the transmission line extension. The literature review and intensive survey were conducted for a study area of 429 acres (new additional surveys account for 226 acres) of the CRS.

ASM submitted a ***Draft Cultural Resources Inventory of the Proposed Colorado River Substation Expansion Project Riverside County, California*** report to the BLM in June 2010. The draft report was reviewed by a qualified archeologist working for Tetra Tech, a consultant to Genesis Solar, LLC.

The review of the documents resulted in the identification of two historic archaeological sites and one isolate *near* the APE of the six pole transmission line extension.

- Historic resource ARG-2 (ASM temporary site designation number) can be characterized as a light artifact scatter of two historic glass bottles and one historic metal can (c.1942-1943). This site does not appear to contain artifacts that would directly associate it with the Desert Training Center/California-Arizona Maneuver Area.
- Historic resource P33-17325 is characterized as a historic refuse associated with the World War II Patton Desert Training Center era.
- The isolate ARG I-4 (ASM temporary isolate designation number) is a single prehistoric buff ware ceramic shard.

No other cultural resource sites or isolates were identified within or near the APE of the six pole extension area. A programmatic agreement will ensure the protection of historic properties. Given the small size of the historic resources, slight modification of two pole locations would result in complete avoidance.

## **6.2 Biological Resources**

In spring 2010, AECOM, on behalf of Solar Millennium, conducted comprehensive surveys for biological resources of the proposed Colorado River Substation (CRS). **Figures 7 and 8** display the results of the wildlife and vegetation surveys of the area. The survey area included a 241 acre area that was surveyed using 30-ft wide belt transects (100 percent coverage) plus zone-of-influence transects out to one mile from this area. The 100 percent coverage area encompassed the location of the additional six poles for the generation tie-line (gen-tie) for Genesis. The following is a summary of the biological resources observed during those surveys as related to the six additional poles needed to connect the gen-tie line to the CRS.

### **Vegetation Communities**

The gen-tie will be located entirely within Stabilized and Partially-Stabilized Sand Dunes (see Holland 1986). This vegetation community is BLM Sensitive per the Northern and Eastern Colorado Management (NECO) Plan (BLM and CDFG 2002) and requires compensation at a ratio of 3:1 (three acres to every one acre

disturbed). The development of the gen-tie will result in 5.36 acres of temporary disturbance and 1.19 acres of permanent disturbance, for a total disturbance of 6.54 acres.

### **Special-status Plants**

Two special-status plant species are present along the gen-tie route: Harwood's woollystar (*Eriastrum harwoodii*, CNPS 1B.2) and Ribbed cryptantha (*Cryptantha costata*, CNPS 4.3). Both species would likely be directly and indirectly impacted by development of the gen-tie. These species will be avoided where feasible and impacts will be mitigated pursuant to Condition of Certification BIO-19 (CEC 2010).

### **Desert Tortoise**

No desert tortoises or sign were observed within the gen-tie area; however, two Class 4 desert tortoise burrows and three bone fragments were found within the one mile survey buffer area. One burrow was 0.67-mi to the southwest of the closest pole of the gen-tie, and the other was 0.56-mi to the northeast of the closest pole of the gen-tie. Class 4 burrows are defined as "deteriorated condition, possibly tortoise". One bone fragment was mineralized; all three were just under a mile from the closest gen-tie pole. The presence of Class 4 burrows and bone fragments indicate tortoises are likely in the vicinity of the gen-tie; however, the gen-tie will be located in Stabilized and Partially-Stabilized Sand Dunes, and sand dunes are not considered desert tortoise habitat. Potential direct and indirect impacts to desert tortoise will be mitigated pursuant to Conditions of Certification BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11, BIO-12, BIO-13, and BIO-14 (CEC 2010).

### **Mojave Fringe-toed Lizard**

Multiple Mojave fringe-toed lizards were observed within the gen-tie area. The gen-tie will be located within Stabilized and Partially-Stabilized Sand Dunes which is considered Mojave fringe-toed lizard habitat. Direct and indirect impacts to this species will be mitigated pursuant to Conditions of Certification BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-14, and BIO-20 (CEC 2010).

### **Western Burrowing Owl**

No burrowing owls or their sign were observed along the gen-tie route; however, live birds and their sign were observed east of the gen-tie at the edge of the Stabilized and Partially-Stabilized Sand Dunes. An active burrow with birds was observed approximately 0.92-mi from the closest gen-tie pole. Although no sign was observed along the gen-tie route, surveys results indicate that burrowing owl are present in the vicinity of the gen-tie. Any direct and indirect impacts to burrowing owl will be mitigated pursuant to Conditions of Certification BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-14, and BIO-18 (CEC 2010).

### **Other Special-status Wildlife**

Other special-status wildlife species observed along the gen-tie route were Swainson's hawk, loggerhead shrike, and Cooper's hawk; ferruginous hawk and a kit fox complex was observed east of the gen-tie route. None of the birds were observed nesting. All of these species were observed in spring 2009 and Spring 2010 surveys of the Genesis Plant Site and Linear Facilities (see Tetra Tech and Karl 2009, 2010) except Cooper's hawk. Cooper's hawk is a California Fish and Game Watch List species specific to nesting birds. This species is a year-round resident of the area but is not known to breed in the area (Curtis et al. 2006). Any direct and indirect impacts to special-status species will be mitigated pursuant to Conditions of Certification BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-15, BIO-16, and BIO-17.

### **Jurisdictional Waters**

No federal or state jurisdictional waters are present along the gen-tie route.

## **7.0 References**

- AECOM 2010c- AECOM/ W. Graham (tn: 56625). Palen Solar Energy Project – Preliminary Spring Survey Results for Desert Tortoise, Rare Plants and Jurisdictional Waters, dated 5/7/10.
- ASM, Draft Cultural Resources Inventory of the Proposed Colorado River Substation Expansion Project Riverside County, California inventory report to the Bureau of Land Management (BLM) in June 2010.
- BLM (Bureau of Land Management) and CDFG (California Department of Fish and Game). 2002. Final Environmental Impact Statement. Proposed Northern & Eastern Colorado Desert Coordinated Management Plan (NECO). Bureau of Land Management, California Desert, Riverside, CA.
- California Energy Commission (CEC). 2010. Revised Staff Assessment, Genesis Solar Energy Project. Docket Number 09-AFC-8. June 11, 2010.
- Curtis, Odette E., R. N. Rosenfield and J. Bielefeldt. 2006. Cooper's Hawk (*Accipiter cooperii*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America. Online:  
<http://bna.birds.cornell.edu/bna/species/075doi:10.2173/bna.75>
- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. The Resources Agency. California Department of Fish and Game. 156 pp.
- Personal Communication between Tricia Bernhardt and Jenna Farrell, Tetra Tech, June 11, 2010, regarding cultural resource sites within or near the proposed secondary access road.

Tetra Tech EC, Inc. and A. Karl. 2009. Biological Resource Technical Report; Genesis Solar Energy Project, Riverside County, CA. August.

Tetra Tech EC, Inc. and A. Karl. 2010. Fall 2009 and Spring 2010 Biological Resource Technical Report; Genesis Solar Energy Project, Riverside County, CA. June.

## Table 2



Washes and Microphyll Vegetation Directly Affected by Project Facilities. Updated June 16, 2010 to Reflect Removal of Plant Site "Toe" and Addition of Spur Road

Map ID	Location*	Average Bed Width (ft)	Average Bank Height (in.)	Delineated Length (ft)	Temporary Impact (acres)	Permanent Impact (acres)	Impact Area (acres)**	No. of Trees > 4" in Diameter Associated with Washes)	No. of Directly Impacted Trees	Directly Impacted Microphyll Vegetation Areas (acres)	Notes
1	Plant Site	10	6	909	n/a	0.21	0.21	0	0	0.07	Verified by field survey; Acreages of microphyll vegetation areas calculated using GIS
2	Plant Site	5	6	3886	n/a	0.45	0.45	0	0	0.00	Verified by field survey
3	Plant Site	3	6	2879	n/a	0.20	0.20	0	0	0.00	Verified by field survey
4	Plant Site	18	6	5388	n/a	2.23	2.23	0	0	0.00	Verified by field survey; Old road
5	Plant Site	7	6	214	n/a	0.03	0.03	0	0	0.00	Verified by field survey
6	Plant Site	8	6	451	n/a	0.08	0.08	0	0	0.00	Verified by field survey
7-10	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Plant Site 'Toe' removed -No longer affected by development. Based on aerial; Acreages calculated using GIS; Contains field verified washes 7-10
11	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Plant Site 'toe' removed - no long affected by development. Verified by field survey
12	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No Longer in Project Area; Verified by field survey
13	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No Longer in Project Area; Verified by field survey
14-19	T-line	7 (average for washes 14-19)	11	1474	0.00	0.00	0.00	IW (1)	0	0.00	Based on aerial; Acreages calculated using GIS; Contains field verified washes 14-19
	Gas Line				0.42	0.00	0.42		0	0.00	
	Access Road				1.48	0.44	1.92		0	0.00	
20	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No Longer in Project Area; Verified by field survey
21	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No Longer in Project Area; Verified by field survey
22	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No Longer in Project Area; Verified by field survey
23	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No Longer in Project Area; Verified by field survey
24-26	T-line	52 (average for washes 24-26)	13	12971	0.47	0.00	0.47	PV (832)	22	0.47	Based on aerial; Acreages calculated using GIS; Contains field verified washes 24-26; Tree count based on aerial
	Gas Line				1.64	0.00	1.64		67	1.64	
	Access Road				10.10	3.05	13.16		181	13.16	
	Spur Road				0.06	0.03	0.09		0	0.00	
27	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No Longer in Project Area; Verified by field survey

Washes and Microphyll Vegetation Directly Affected by Project Facilities. Updated June 16, 2010 to Reflect Removal of Plant Site "Toe" and Addition of Spur Road

Map ID	Location*	Average Bed Width (ft)	Average Bank Height (in.)	Delineated Length (ft)	Temporary Impact (acres)	Permanent Impact (acres)	Impact Area (acres)**	No. of Trees > 4" in Diameter Associated with Washes	No. of Directly Impacted Trees	Directly Impacted Microphyll Vegetation Areas (acres)	Notes
28	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No Longer in Project Area; Verified by field survey
29	No Longer in Project Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No Longer in Project Area; Verified by field survey
30	T-line	5 (average of several washes)	--	1507	0.06	36.26	36.32	0	0	0.00	Based on aerial, no field verification; Acreages calculated using GIS; Man-made borrow pit
	Gas Line				0.64	0.00	0.64		0	0.00	
	Access Road				2.52	0.77	3.29		0	0.00	
31	Transmission Line	297	--	862	0.06	0.00	0.06	HM (50)	5	0.06	Based on aerial, no field verification; Acreages calculated using GIS; tree count based on aerial - species determination based on data from biological resource survey data
	Access Road				0.47	0.13	0.59		17	0.59	
	Gas Line				0.00	0.00	0.00		0	0.00	
61-63	Plant Site	1.5 - 2.5	--	1,902	0.00	3.500	3.50	IW (2)	2	0.00	Washes 61-63 are treated as one area of connected small drainages; acreages calculated using GIS; based on February 2010 CDFG field survey
64-66	Plant Site	1.5 - 2.5	--	1,910	0.00	4.200	4.200	IW (1)	1	0.00	Washes 64-66 are treated as one area of connected small drainages; acreages calculated using GIS; based on February 2010 CDFG field survey
67	Plant Site	1.50	--	1,082	0.00	0.040	0.040	0	0	0.00	Based on February 2010 CDFG field survey
68	Plant Site	1.50	--	478	0.00	0.020	0.020	0	0	0.00	Based on February 2010 CDFG field survey
69	Plant Site	2 - 2.5	--	458	0.00	0.030	0.030	0	0	0.00	Based on February 2010 CDFG field survey
70	Plant Site	2	--	141	0.00	0.006	0.006	0	0	0.00	Based on February 2010 CDFG field survey
71	Plant Site	1	--	204	0.00	0.004	0.004	0	0	0.00	Based on February 2010 CDFG field survey
<b>Total</b>					<b>17.92</b>	<b>51.67</b>	<b>69.59</b>	<b>886</b>	<b>295</b>	<b>15.99</b>	

\* Includes washes within 500 ft. survey buffer area

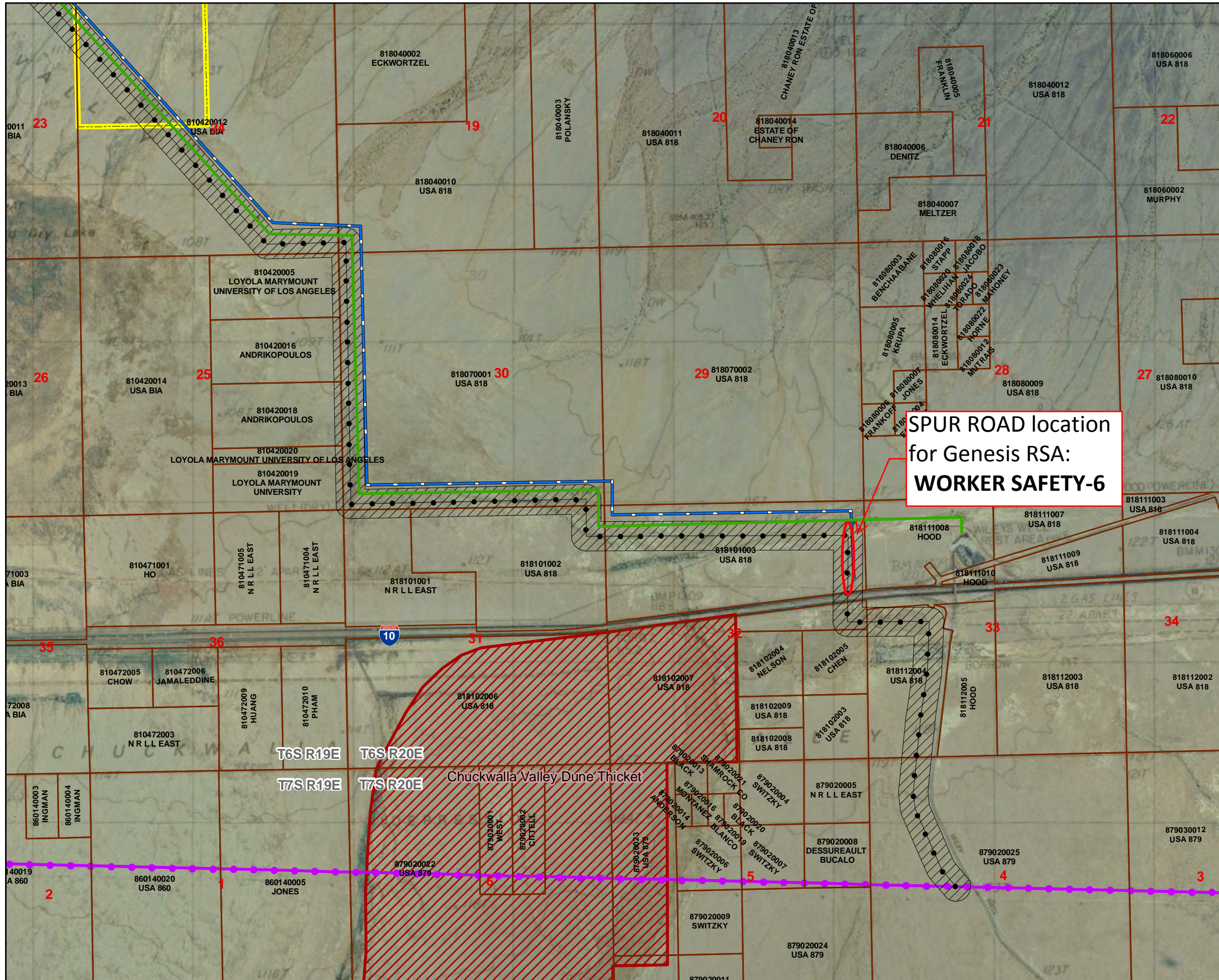
\*\* Transmission line impact calculations include stub roads

IW - Ironwood

PV - Palo Verde

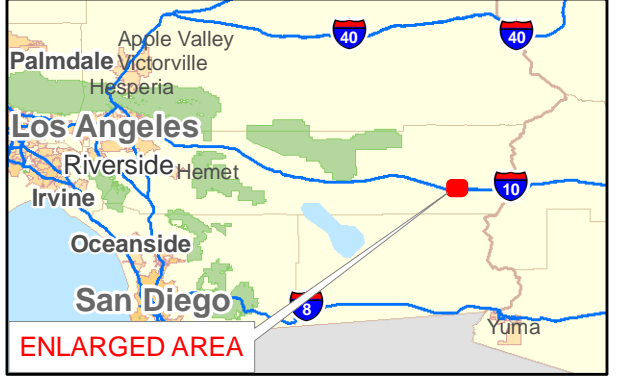
HM - Honey Mesquite

**Figure 1**



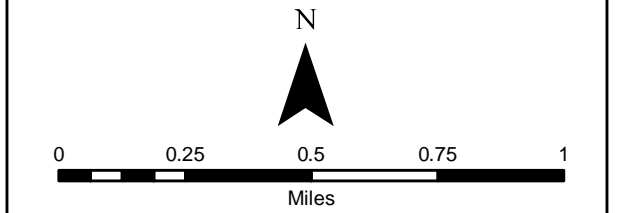
**SPUR ROAD location  
 for Genesis RSA:  
 WORKER SAFETY-6**

**GENESIS SOLAR, LLC**  
**GENESIS SOLAR ENERGY PROJECT**  
**RIVERSIDE COUNTY,**  
**CALIFORNIA**



**Legend**

- Proposed Access Road
- Proposed Gas Line
- Proposed Interconnect
- Blythe Energy Project Transmission Line
- Project Site
- Proposed Transmission Interconnection 300' Buffer
- APN Lines
- Area of Critical Environmental Concern

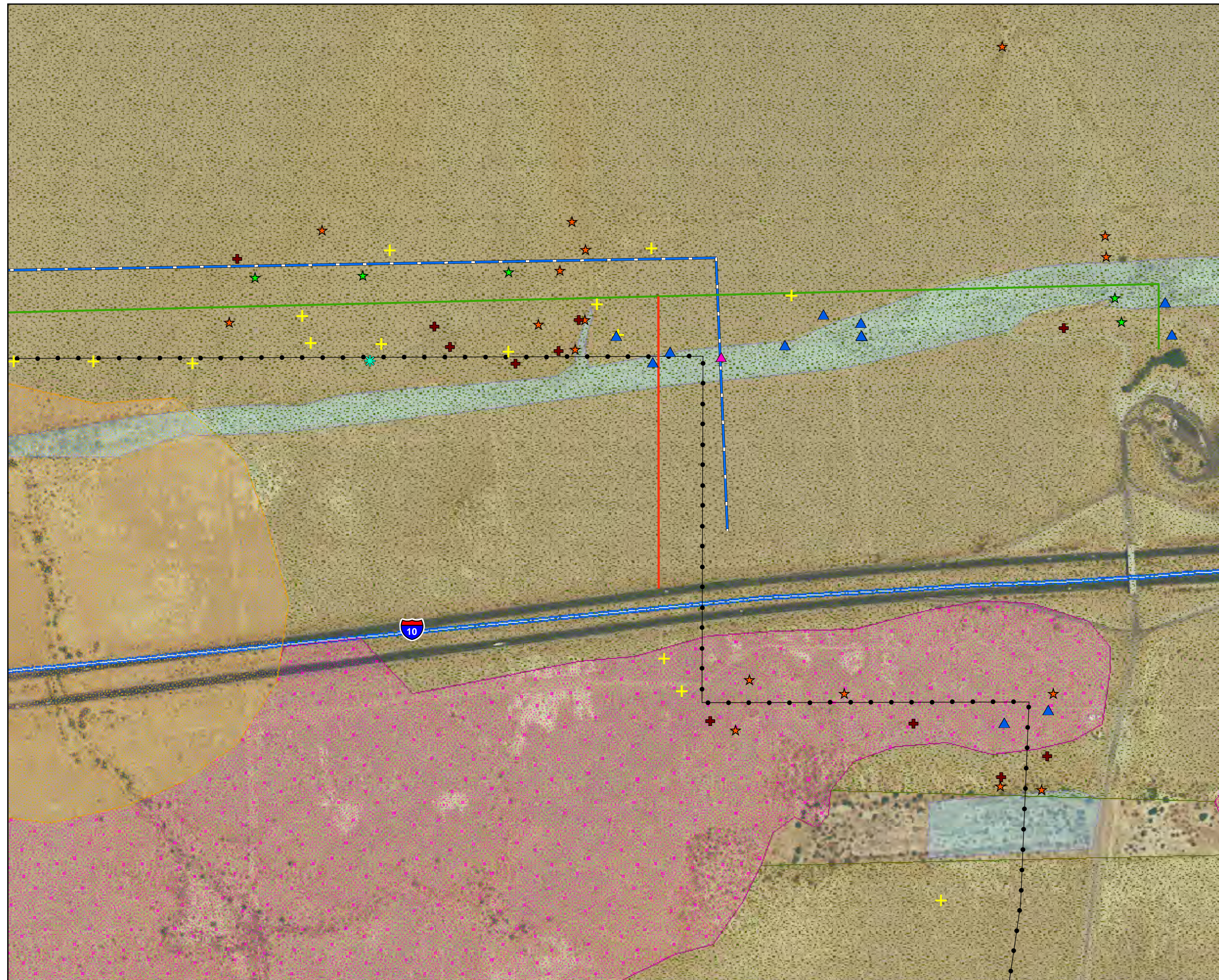


Notes:  
 (a) UTM Zone 11, NAD 1983 Projection.  
 (b) Source data: ESRI, BLM, Riverside County, TTEC

**PROPOSED LINEAR ROUTE  
 LAND OWNERSHIP**

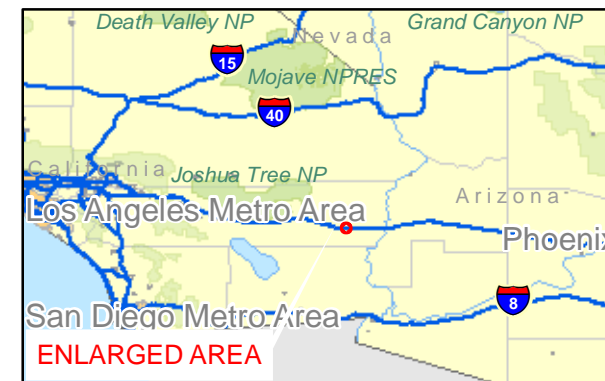
**TETRA TECH EC, INC.**

## Figure 2



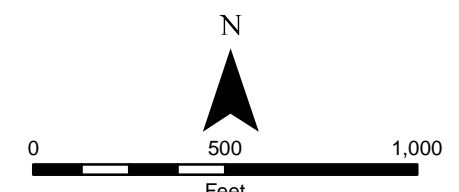
# Genesis Solar, LLC

**GENESIS SOLAR ENERGY PROJECT  
 RIVERSIDE COUNTY,  
 CALIFORNIA**



### Legend

- Ferruginous Hawk
- Mojave Fringe-toed Lizard
- Ribbed Cryptantha Population (>2 Individuals)
- Ribbed Cryptantha Individual
- Harwood's Milkvetch Individual
- Harwood's Milkvetch Population (>2 Individuals)
- Desert Unicorn Plant
- Spur Road
- Proposed Access Road (6.1 Miles)
- Proposed Gas Line (5.9 Miles)
- Proposed Transmission Interconnect (7.5 Miles)
- Chenopod Scrub
- Sonoran Creosote Bush Scrub
- Dry Desert Wash Woodland
- Playa and Sand Drifts over Playa
- Stabilized and Partly-Stabilized Sand Dune
- Wash Area

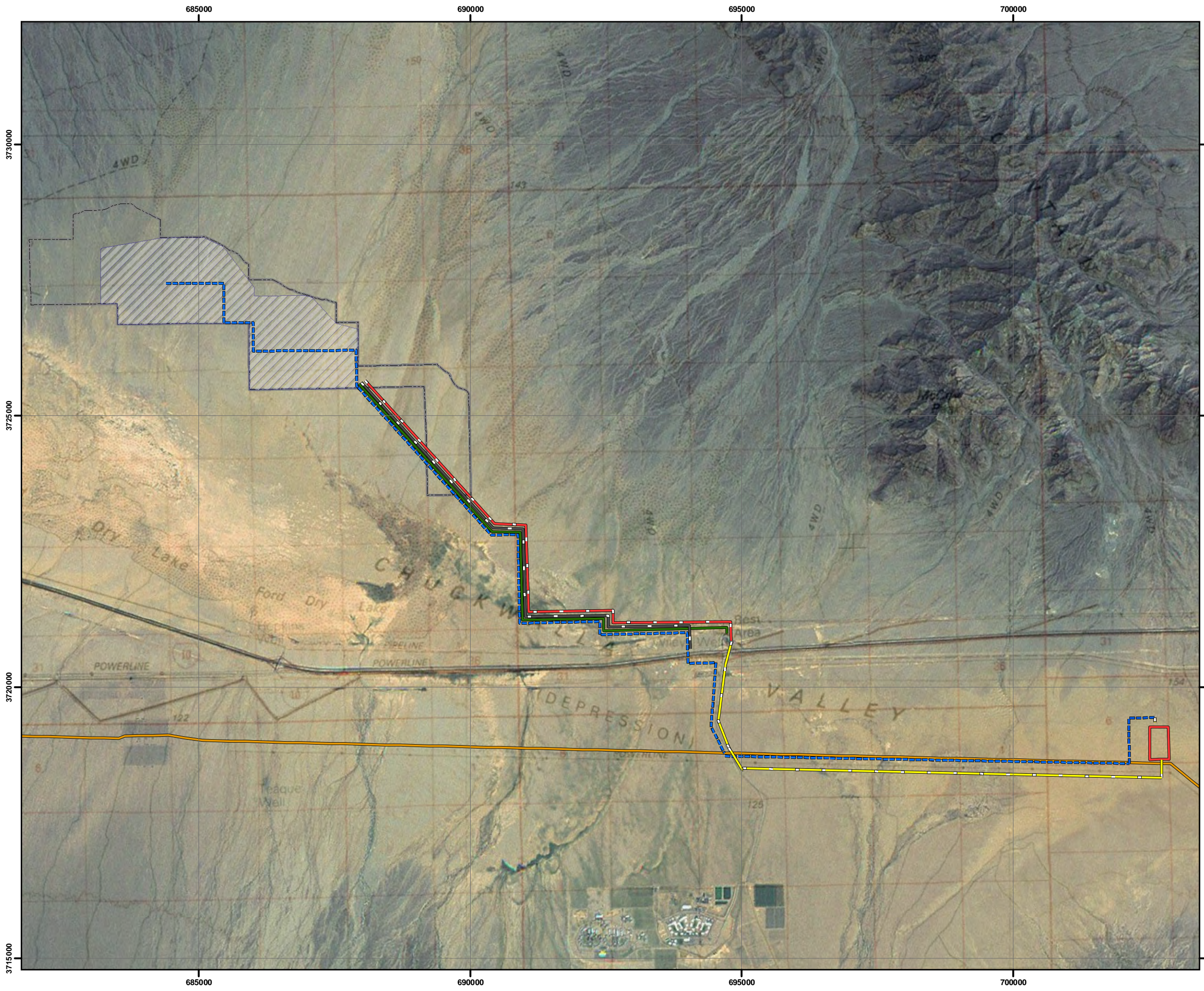


Notes:  
 (a) UTM Zone 11, NAD 1983 Projection.  
 (b) Source data: A. Karl & Assoc. Tetra Tech,  
 (c) Road data: ESRI; Imagery: USDA

**Spur Road**

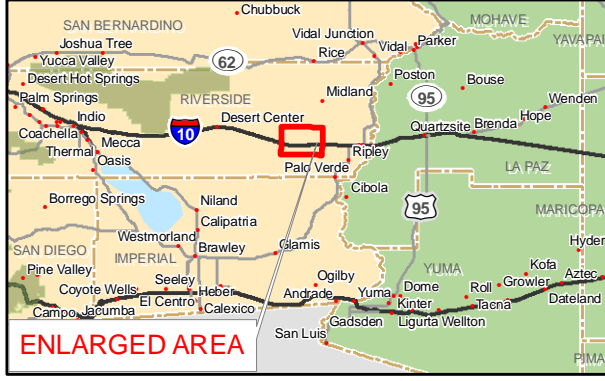


## Figure 3

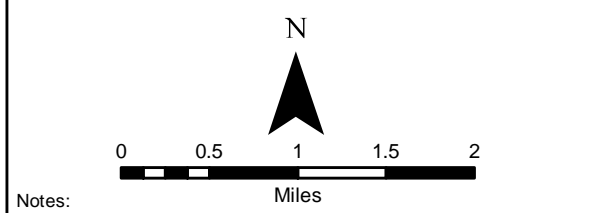


**GENESIS SOLAR, LLC**

**GENESIS SOLAR ENERGY PROJECT**  
**RIVERSIDE COUNTY,**  
**CALIFORNIA**



- Legend**
- Redundant Communication & Distribution Line On New Poles
  - Redundant Communication Line in Existing Disturbed Corridor
  - Proposed Gas Line (5.9 Miles)
  - Proposed Access Road (6.1 Miles)
  - Existing Blythe Energy Transmission Line
  - Transmission Line and Primary Communication Line On Same Poles (15.4 miles)
  - Project Requested ROW
  - Plant Site
  - Proposed Colorado River Substation

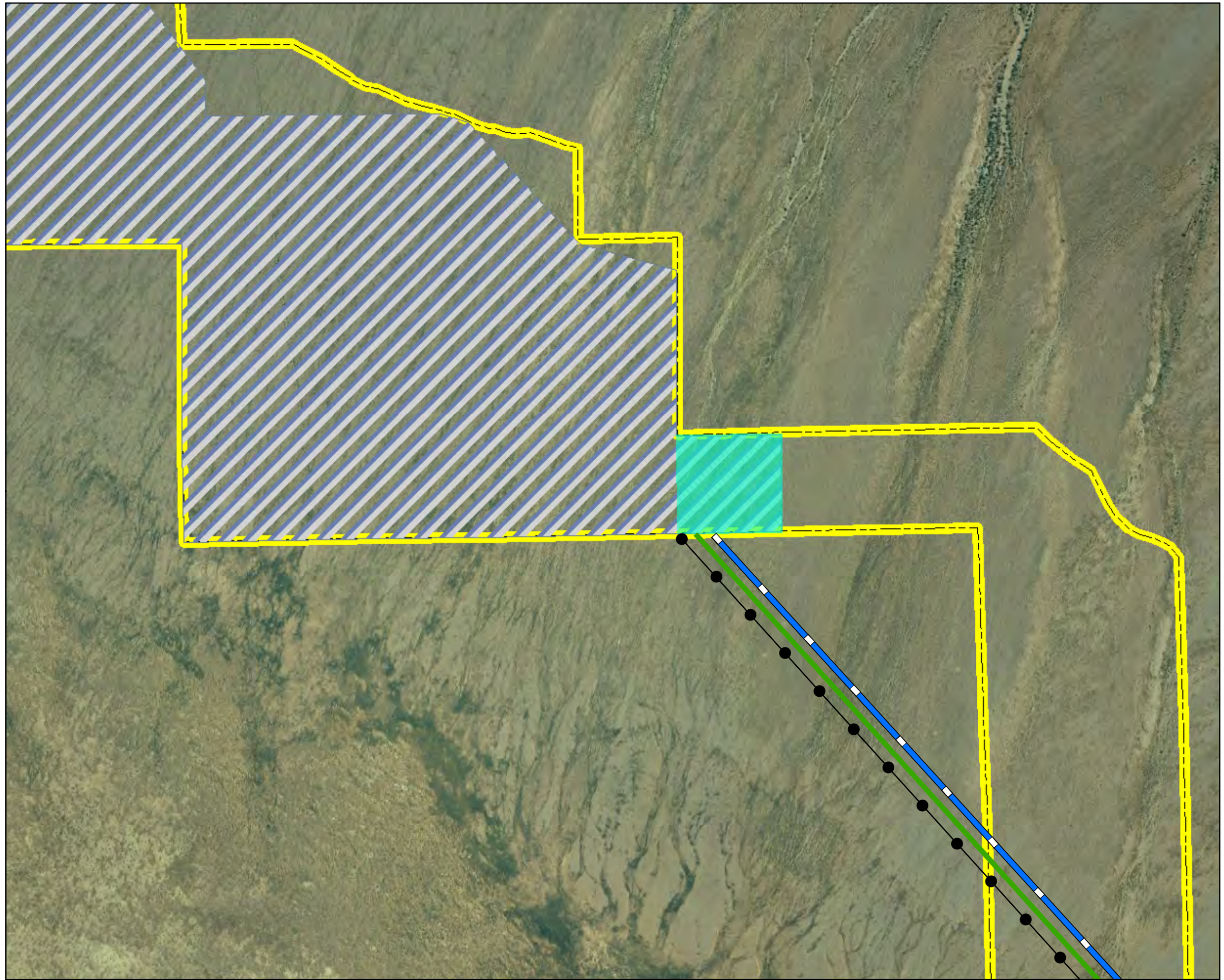


Notes:  
 (a) UTM Zone 11, NAD 1983 Projection.  
 (b) Source data: ESRI, TTEC

**TELECOMMUNICATIONS AND DISTRIBUTION LINE ROUTES**



**Figure 4**



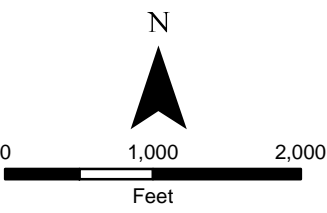
# Genesis Solar, LLC

**GENESIS SOLAR ENERGY PROJECT  
RIVERSIDE COUNTY,  
CALIFORNIA**



### Legend

- Proposed Transmission Interconnect
- Proposed Gas Line
- Proposed Access Road
- "Toe" Area - Proposed to be Removed from Plant Facility
- ▨ Plant Facility
- ▭ Project Requested ROW

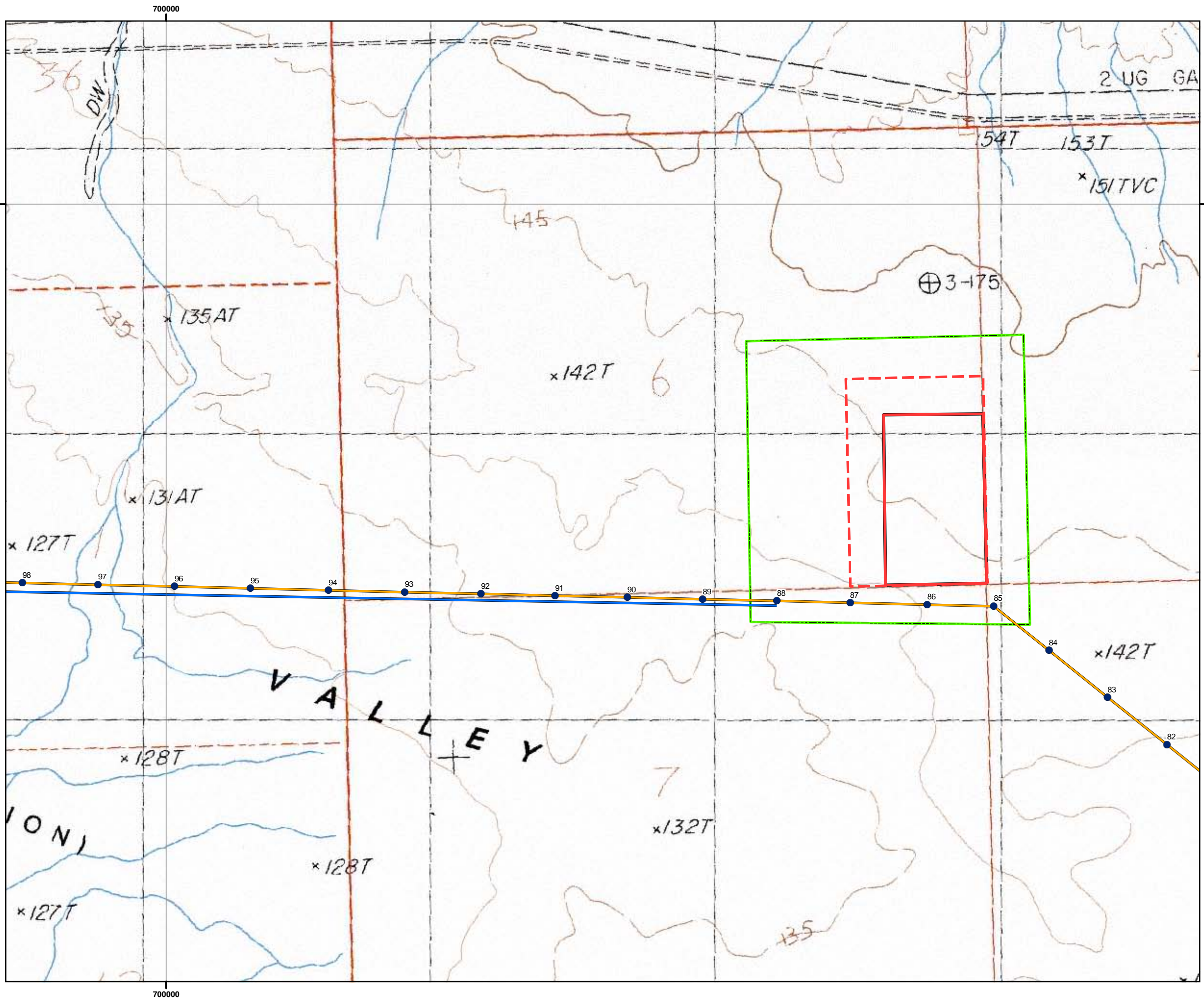


Notes:  
(a) UTM Zone 11, NAD 1983 Projection.  
(b) Source data: ESRI

### Proposed Change to "Toe" Area of Plant Facility



## Figure 5



GENESIS SOLAR, LLC

GENESIS SOLAR ENERGY PROJECT  
RIVERSIDE COUNTY,  
CALIFORNIA



- Legend**
- Existing Blythe T-line
  - Remainder Of Genesis Generation Tie Line
  - Spring 2010 Biological Resources Survey Area
- SCE CO River Substation (CRS)**
- 500kv Footprint Permitted By CPUC In 2009
  - Proposed 230kv Expansion Area

Notes:

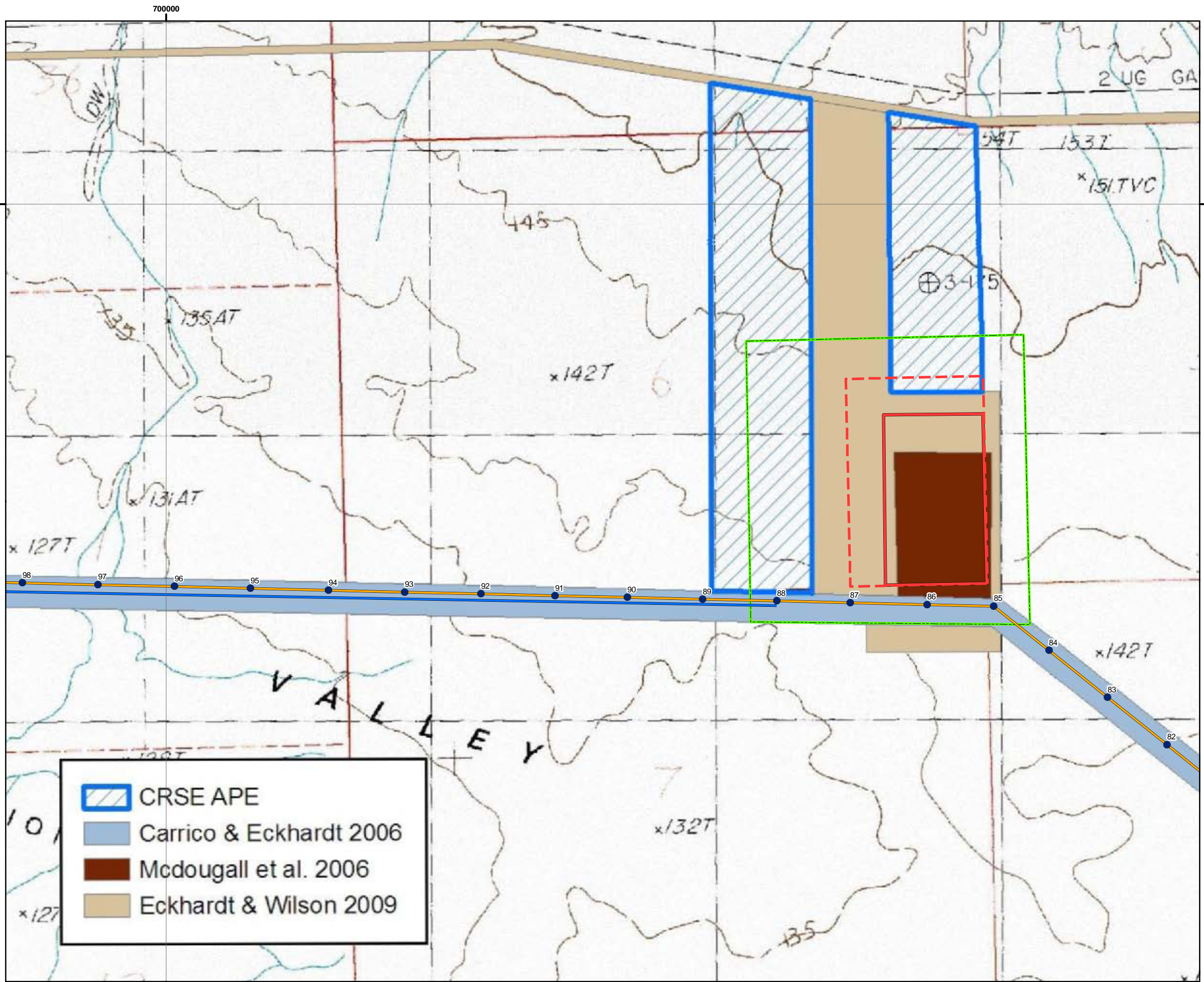
(a) UTM Zone 11, NAD 1983 Projection.

(b) Source data: ESRI, TTEC, AECOM

CRS GSEP EXPANSION

TETRA TECH EC, INC.

## Figure 6

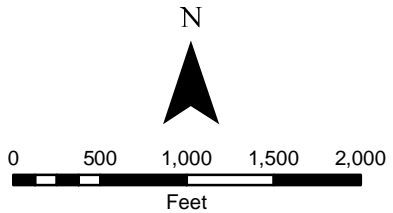


GENESIS SOLAR, LLC

**GENESIS SOLAR ENERGY PROJECT**  
RIVERSIDE COUNTY,  
CALIFORNIA



- Legend**
- Existing Blythe T-line
  - Genesis Generation Tie Line
  - Spring 2010 Biological Resources Survey Area
- SCE CO River Substation (CRS)**
- 500kv Footprint Permitted By CPUC In 2009
  - Proposed 230kv Expansion Area



Notes:

(a) UTM Zone 11, NAD 1983 Projection.  
(b) Source data: ESRI, TTEC, AECOM

**CRS GSEP EXPANSION**

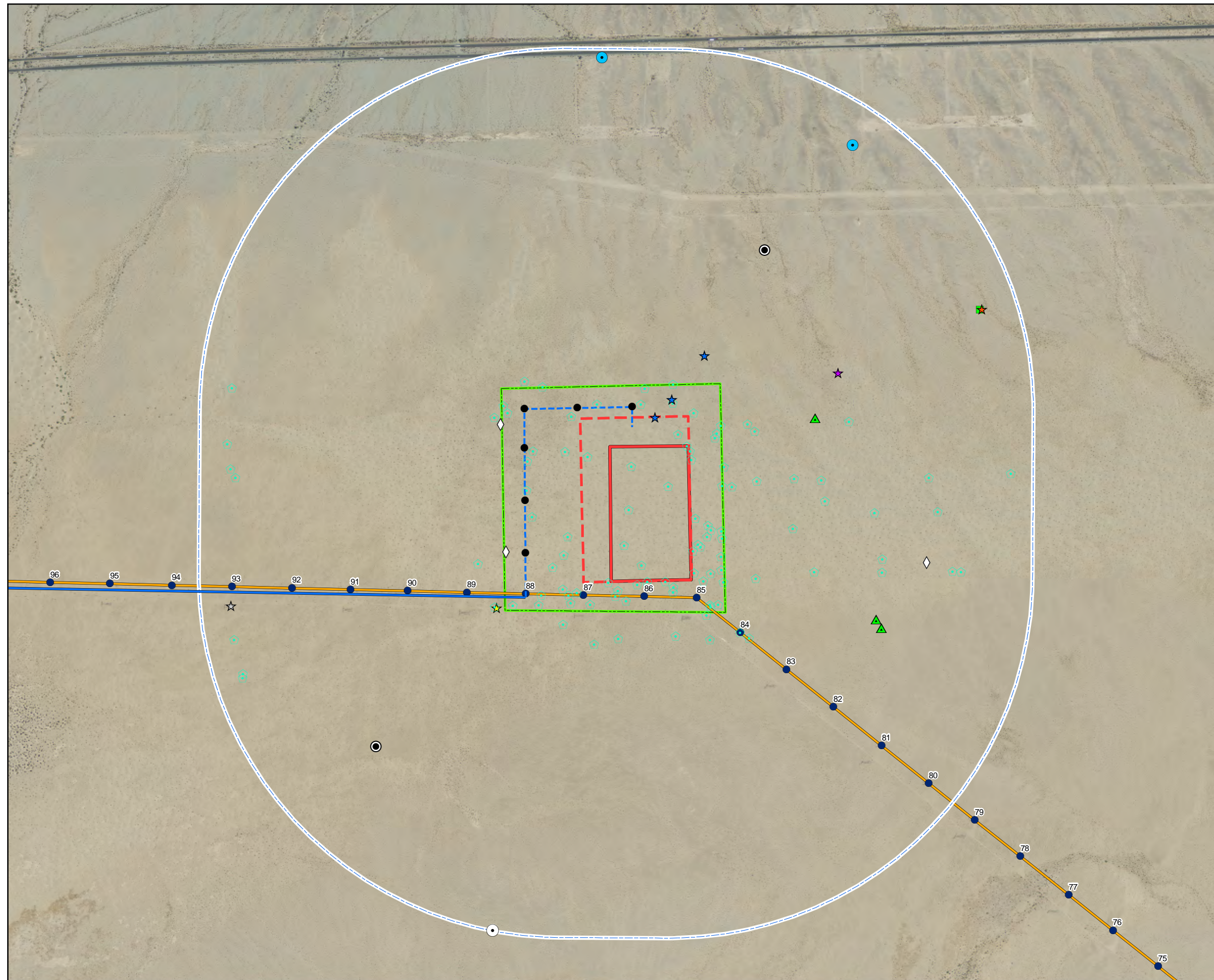
TETRA TECH EC, INC.

- CRSE APE
- Carrico & Eckhardt 2006
- Mcdougall et al. 2006
- Eckhardt & Wilson 2009

## Figure 7

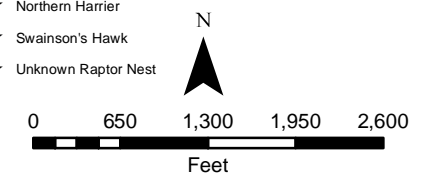
GENESIS SOLAR, LLC

GENESIS SOLAR ENERGY PROJECT  
RIVERSIDE COUNTY,  
CALIFORNIA



**Legend**

- Additional Generation Tie Line W/ 6 Additional Generation Tie Poles
- Existing Blythe T-line
- Genesis Generation Tie Line
- Spring 2010 Biological Resources Survey Area 100% Survey Coverage
- 1 Mile Buffer Area
- SCE CO River Substation (CRS)
- 500kv Footprint Permitted By CPUC In 2009
- Proposed 230kv Expansion Area
- Tortoise Bone Fragment (Class 5) - Mineralized
- Tortoise Bone Fragment (Class 5) - Not Mineralized
- Tortoise Burrow - Class 4
- Burrowing Owl
- Cooper's Hawk
- Ferruginous Hawk
- Kit Fox Complex
- Loggerhead Shrike
- Mojave Fringe-toed Lizard
- Northern Harrier
- Swainson's Hawk
- Unknown Raptor Nest



Notes:  
(a) UTM Zone 11, NAD 1983 Projection.  
(b) Source data: ESRI, TTEC, AECOM

**SPECIAL-STATUS WILDLIFE  
FOR THE GENERATION TIE LINE**

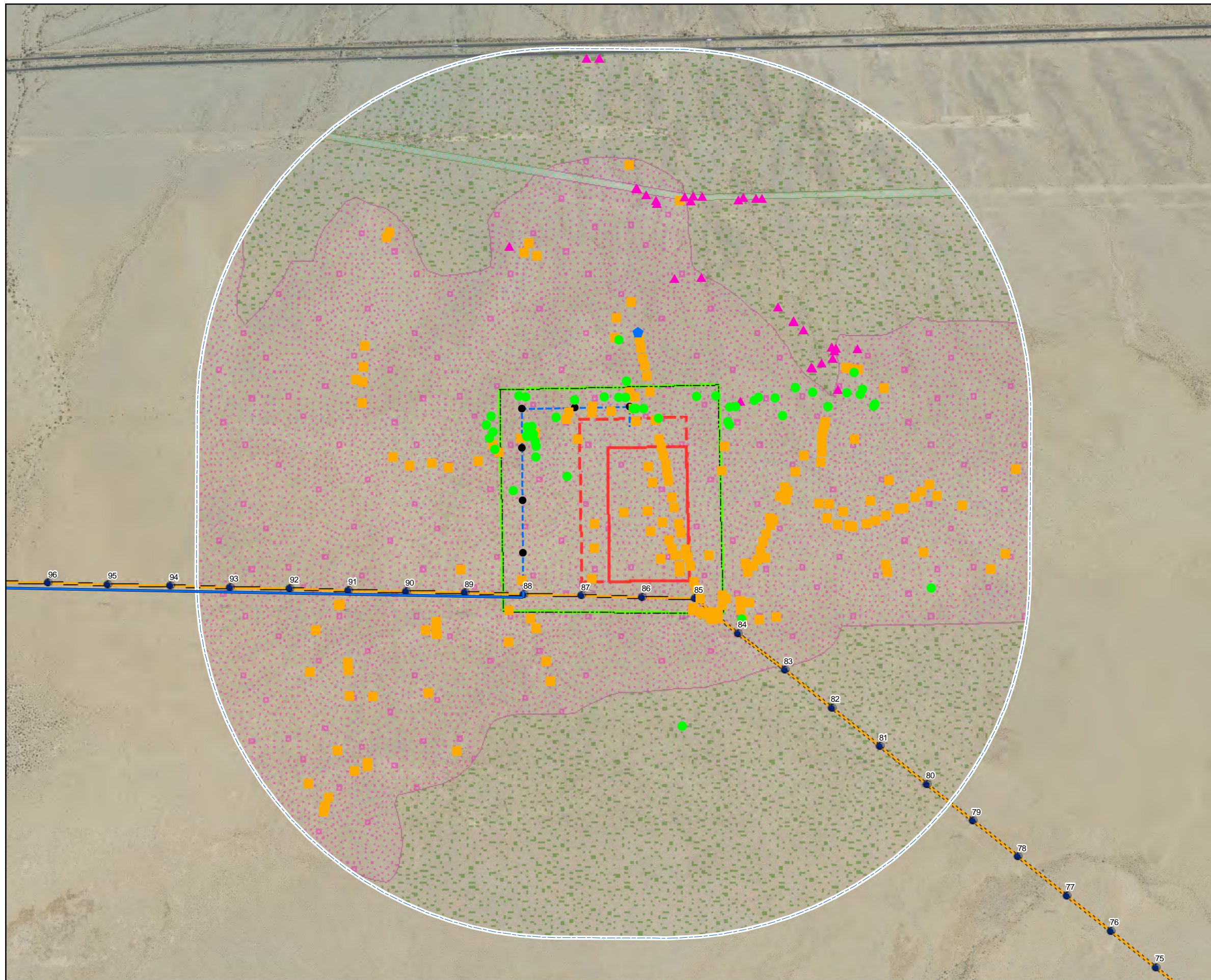




## Figure 8

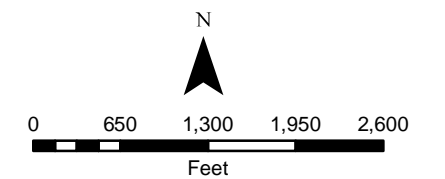
GENESIS SOLAR, LLC

GENESIS SOLAR ENERGY PROJECT  
RIVERSIDE COUNTY,  
CALIFORNIA



Legend

- Additional Generation Tie Line W/ 6 Additional Generation Tie Poles
- Existing Blythe T-line
- Genesis Generation Tie Line
- Spring 2010 Biological Resources Survey Area 100% Coverage
- 1 Mile Buffer Area
- SCE CO River Substation (CRS)
- 500kv Footprint Permitted By CPUC In 2009
- Proposed 230kv Expansion Area
- Harwood's Milkvetch
- Ribbed Cryptantha
- Winged Cryptantha
- Harwood's Woollystar
- Disturbed Habitat
- Sonoran Creosote Scrub Brush
- Stabilized and Partially Stabilized Sand Dunes

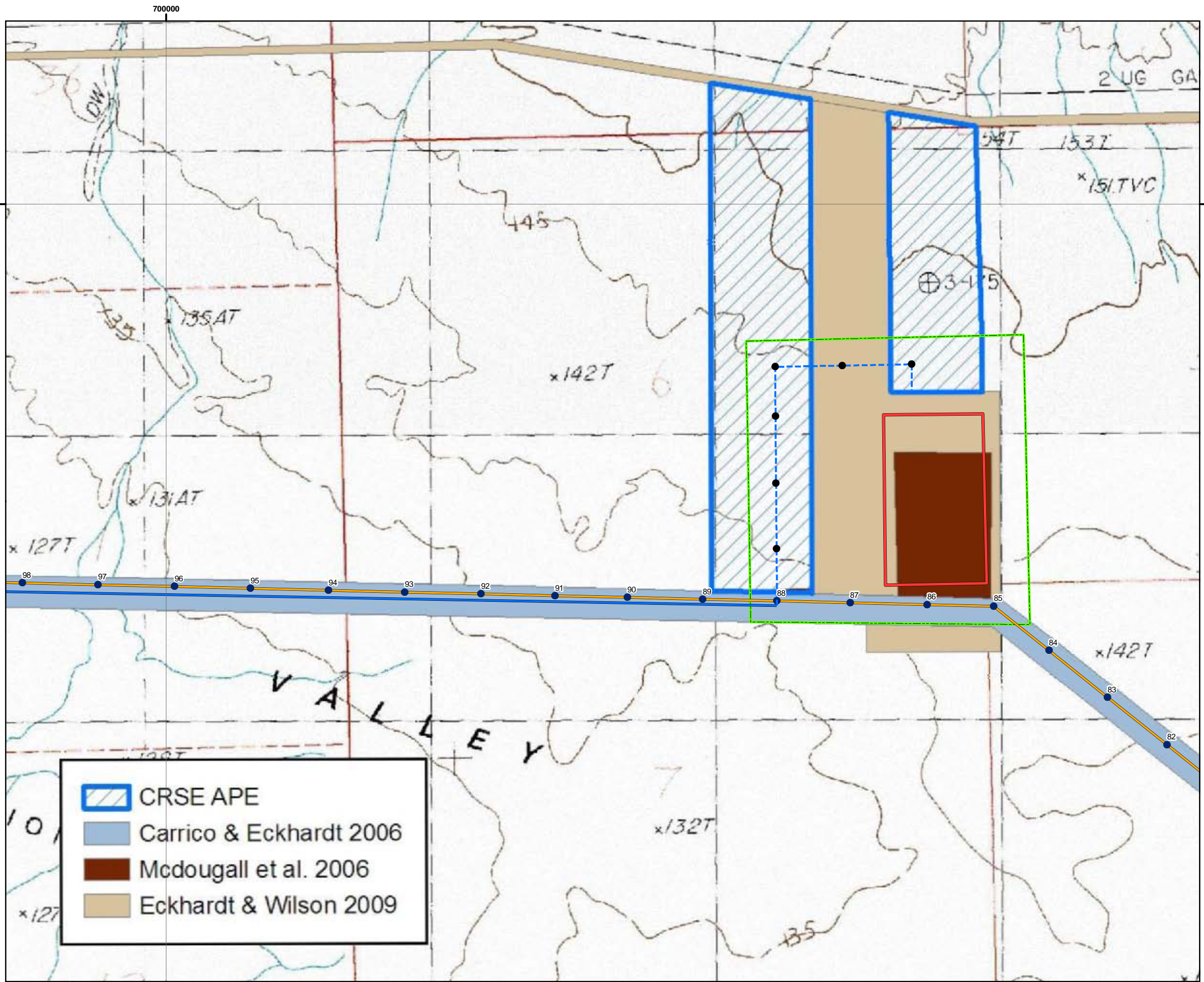


Notes:  
(a) UTM Zone 11, NAD 1983 Projection.  
(b) Source data: ESRI, TTEC, AECOM

VEGETATION AND  
SPECIAL-STATUS PLANTS  
FOR THE GENERATION TIE LINE



## Figure 9

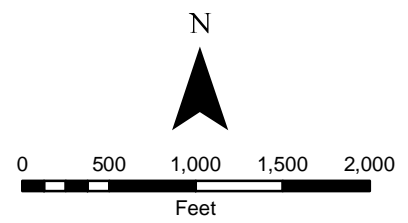


GENESIS SOLAR, LLC

GENESIS SOLAR ENERGY PROJECT  
RIVERSIDE COUNTY,  
CALIFORNIA



- Legend**
- - - Additional Generation Tie Line W/ 6 Additional Generation Tie Poles
  - - - Existing Blythe T-line
  - Genesis Generation Tie Line
  - Spring 2010 Biological Resources Survey Area
- SCE CO River Substation (CRS)**
- 500kv Footprint Permitted By CPUC In 2009



Notes:  
 (a) UTM Zone 11, NAD 1983 Projection.  
 (b) Source data: ESRI, TTEC, AECOM

- CRSE APE
- Carrico & Eckhardt 2006
- Mcdougall et al. 2006
- Eckhardt & Wilson 2009

LOCATION OF  
CULTURAL RESOURCE FIELD SURVEYS  
CONDUCTED WITHIN THE CRS



## **Appendix A**

## **Appendix A**

### **Edison Carrier Solutions, Outside Plant (OSP)**

#### **Colorado River-Q193 Desert Center Blythe (Genesis) Project**

#### **Redundant Telecommunications (Fiber Optic Cable) Installation**

**OSP Fiber Optic Cable Engineering Plan:** The construction of one All-Dielectric Self-Supporting (ADSS) fiber optic cable between the following facilities is for telecommunication interconnection between Colorado River substation and the Q193 Genesis Solar switchyard, to provide protective relay circuits, Supervisory Control and Data Acquisition (SCADA) circuits, data, and telecommunication services.

**Construction Activities:** The Colorado River-Q193 Genesis fiber optic cable, this will be a newly constructed fiber optic cable between and into the Southern California Edison (SCE) owned Colorado River-Genesis Solar switchyard MEER (Mechanical Electrical Equipment Room) buildings. The installation of ADSS fiber optic cable is approximately 69,000 feet. Edison Carrier Solution crews will use standard construction methods to construct this fiber optic cable. The crews will comply with all rules, regulations and standards with inter-departments and other agencies in their performance of the construction phase. Portions of the fiber optic cable will be constructed on existing overhead Transmission and Distribution wood pole structures. In addition, portions of the cable will be constructed in new underground conduit system(s).

**Cable Route:** At Colorado River substation, starting at the MEER building, proceed south trenching approximately 1,000 feet installing underground cable in new underground conduit to intersect with the Devers-Palo Verde No.1 500kV T/L R/W existing patrol road, turn west and install approximately 26,000 feet of underground cable in new underground conduit in the roadway, install riser on existing distribution pole 2327741E and continue north on Wiley's Well Rd approximately 7,100 feet installing overhead cable on existing wood poles, continue west approximately 1,250 feet to pole 2325077E installing overhead cable on existing overhead structures, continue north approximately 350 feet installing overhead cable on existing overhead structures, continue east approximately 350 feet installing overhead cable on existing overhead structures, continue north approximately 1,300 feet crossing over the I-10 freeway to pole 2205390E installing overhead cable on existing overhead structures, continue east approximately 1,000 feet installing overhead cable on existing overhead structures to pole 2205390E, turn west onto the new distribution line (pole number to be determined) following the Genesis entry road up to Genesis site approximately 29,500 feet, install riser on existing distribution pole, drop down and continue north trenching approximately 1,000 and installing underground cable in new conduit to the MEER building in the central switchyard at Q193 Genesis Solar site.

**Structures:** Portions of the cable will be constructed in new underground conduit system (s). On average, all existing and new overhead structures would be in height of approximately between 25 feet and 85 feet tall.

**Pole Site Preparation:** Most pole sites would need minimal site preparation prior to pole installation. The majority of the proposed pole locations would be along existing SCE ROWs or along public roads. Sites may require minor grading, leveling, or clearing to accommodate the new poles. Where new access roads would be necessary, pole sites would be cleared and graded at approximately the same time that access roads would be constructed.

**Pole Installation:** Construction activities would begin with the survey of the communication line routes. Survey crews would stake the wood pole locations, including reference points and centerline hubs. Wood Poles would be installed in native soil in holes bored approximately 18 to 24 inches in diameter and 5 to 7 feet deep. Wood poles are normally installed utilizing a Digger Derrick truck. Once the poles have been set in place, bore spoils (material from holes drilled in the soil) would be used to backfill the hole. If the bore spoils are not suitable for backfill, imported clean fill material, such as clean fill dirt and/or pea gravel, would be used. Excess bore spoils would be distributed at each pole site.

**Fiber Optic Cable:** The proposed cable construction will utilize an All-Dielectric Self-Supporting (ADSS) 48 strand single mode fiber optic cable. Approximately 69,000 feet of new fiber optic cable will be installed. New roads, grading, and lay down areas would be required for this activity.

**Fiber Optic Cable Attachments To Overhead Structures:** For the attachments (Pole Framing) to existing overhead pole structures, the fiber optic cable will utilize a T&D five foot wood cable arm and Fiberlign high-strength engineered dielectric suspension support block. This suspension support block is oriented vertically and attached to the cable arm, 1 per overhead structure would be required.

**Fiber Optic Cable Installation In Underground Systems:** For the installation in the new underground conduit and underground structures, the fiber optic cable will utilize a high density polyethylene smoothwall innerduct which provides protection and identification for the cable. The fiber optic cable will be installed in and throughout the length of the new underground conduit structure, 5" PVC schedule 40 and underground manhole structures 4'x4'x5'.

**Project-related Access Roads and Spur Roads:** The construction of the fiber optic cable will utilize the franchise area and existing T/L roads and spur roads. Lane closure permits within the franchise area shall be under local government jurisdiction. Work hour restrictions will be at their discretion and will be determined at a later date. Access roads, through roads that run between and along overhead wood pole structures form the main transport route along the major extent of the fiber optic cable. T/L Spur roads are roads that lead from the access road and dead-end into one or more overhead structure sites. All existing and new overhead structures have vehicle access routes.

***Pulling and Splice Location:*** Fiber Optic Cable stringing includes all activities associated with the installation of cables onto the overhead wood pole structures. This activity includes the installation of vibration dampeners, and suspension and dead-end hardware assemblies. Stringing sheaves (rollers or travelers) are attached during the framing process. A standard wire stringing plan includes a sequenced program of events starting with determination of cable pulls and cable pulling equipment set-up positions. Advanced planning by experienced crew Foreman determines pulling locations, times, and safety protocols needed for ensuring that the installation of cable is accomplished correctly. Typically, fiber optic cable pulls occur every 6,000 feet to 10,000 feet on flat and mountainous terrain. Fiber optic cable splices are required at the end and beginning of each cable pull. "Fiber optic cable pulls" are the length of any given continuous cable installation process between two selected points along the overhead or underground structure line. Fiber optic cable pulls are selected, where possible, based on availability of pulling equipment and designated dead-end structures at the ends of each pull, geometry of the line as affected by points of inflection, terrain, and suitability of fiber optic cable stringing and splicing equipment set ups. The dimensions of the area needed for stringing set ups varies depending upon the terrain, however a typical stringing set up is 40 feet by 60 feet. Where necessary due to suitable space limitations, crews can work from within a substantially smaller area.

***Marshalling Yard:*** The crews will utilize Colorado River Substation and Blythe District Office as a lay-down area for all material for the proposed fiber optic cable which would be delivered by truck. Material would be placed inside the perimeter of the fenced substation in a designated area during construction. The majority of the truck traffic would use major streets and would be scheduled for off-peak traffic hours. All construction debris would be placed in appropriate onsite containers and periodically disposed of in accordance with all applicable local jurisdiction regulations. The primary marshalling yard for the Colorado River-Q193 Genesis fiber optic cable project would be established inside the Colorado River Substation, or, if room is not available, a suitable existing manned SCE facility outside the substation would be located. This yard location would be selected based on its central location, and proximity to the construction project. If a primary marshalling yard is required outside of the Colorado River Substation property, the alternate location would preferably be no further than 20 miles from the Colorado River Substation. Materials and equipment to be staged to this yard include but are not limited to: fiber optic cable reels and hardware, heavy equipment, light trucks, and portable sanitation facilities. In addition to the materials and equipment already detailed for new construction, the following may be routed through this yard: empty fiber optic cable and innerduct reels, and other debris associated with the installation of the fiber optic cable process.



**Labor Force and Construction Equipment:** Construction would be performed by ECS OSP construction crews and/or by contractors. Anticipated construction personnel and equipment are summarized below.

Construction Element Requirements	Number of Personnel	Equipment
Cable Construction	4	2 – Bucket Trucks (Diesel) 1 – Pick-up (Diesel) 2 – Cable Dollies 1 – Single Drum Puller (Diesel) 1 – 2 Axle Trailer
Receive and Load Out Materials	4	1 – 5-Ton Forklift (Diesel) 1 – Pick-up (Diesel)
Pole Installation	3	1 – Digger Derrick (Diesel) 1 – Pick-up (Diesel)
Cleanup	4	2 – Bucket Trucks (Diesel) 1 – Pick-up (Diesel)



**OSP Fiber Optic Cable Construction Schedule:**

The Colorado River-Q193 Genesis fiber optic cable would require approximately 161 mandays or 32 crew days (5 man crew) to complete.

The attached information is a preliminary route and subject to change as needed based on further review by SCE. Final routes may be subject to further due diligence and approval by SCE.