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March 29, 2013

California Energy Commission
DOCKETED
09-AFC-7C
TN # 70200
MAR 29 2013

Christine Stora
Compliance Project Manager
Siting, Transmission and Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814-5512

Subject: **PALEN SOLAR HOLDINGS, LLC'S SUPPLEMENTAL RESPONSE TO CEC STAFF DATA REQUEST 5**
PALEN SOLAR ELECTRIC GENERATING SYSTEM
DOCKET NO. (09-AFC-7C)

Dear Ms. Stora,

On behalf of Palen Solar Holdings, LLC, enclosed for filing with the California Energy Commission are ten (10) hard copies and ten (10) compact disks of **PALEN SOLAR HOLDINGS, LLC'S SUPPLEMENTAL RESPONSE TO CEC STAFF DATA REQUEST 5**, for the Palen Solar Electric Generating System (09-AFC-7C).

Sincerely,

Scott A. Galati
Counsel to Palen Solar Holdings, LLC

SUPPLEMENTAL RESPONSE TO CEC STAFF DATA REQUEST 5

In support of the

PETITION TO AMEND

for the

PALEN SOLAR ELECTRIC GENERATING SYSTEM

(09-AFC-7C)

Submitted to the:

California Energy Commission

Submitted by:

PALEN SOLAR HOLDINGS, LLC

Prepared by:

centerline

MARCH 2013

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BIOLOGICAL RESOURCES (5)

Data Response 5. <u>Subject: Direct and Indirect Effects from the Modified Project Compared to the Approved Project</u>

The PSEGS PetitionFor Amendment (Palen Solar Holdings, LLC, [PSH] 2012) describes the following modifications to the approved project that are biologically relevant:

- Change from solar trough technology to power tower technology
- Reduction in project footprint by 572 acres
- Reduction in impacts to Mojave fringe-toed lizards by removal of wind fences
- Reduction in water use both during construction (from 5,750 acre feet to 1,130 acre-feet) and during operation (from 300 acre feet per year [AFY] to 201 AFY)
- Maintenance of natural hydrology across the site and beyond, via minimal grading required for erecting heliostats versus complete site grading and planing necessary for solar trough mirrors
- Mowing versus the elimination of all vegetation
- Reduction from four, four-acre evaporation ponds to two, two-acre ponds, only one of which will be used at any single point in time.
- Elimination of the relocation of the existing Southern California Edison (SCE) 161 kV transmission line
- The modified project will lie completely within the disturbance footprint of the approved project, except:
    - A shift 1,128 ft to the west of the part of the gen-tie that enters the Red Bluff Substation
    - A new, 50-foot-wide, approximately 3000-foot-long gas pipeline from the existing SoCal Gas pipeline.

The Approved Project assumed that all surfaces within the project disturbance outline would be completely disturbed (bladed, planed, and compacted). Relative to locations of facilities (Figures DR 5 -1 and DR 5-2), the common area for the Approved Project would lie at the southern end of the entire facility; it would lie at the southwestern end

for the Modified Project. The evaporation ponds for the Approved Project would lie within the solar block area (approximate center) of each solar unit; for the Modified Project, the two, smaller, ponds would be located in the common area in the southwest. Maintenance of internal facilities and the gen-tie line would be similar to the Modified Project, including mirror washing, which is anticipated to require weekly washing for both the Approved Project (Solar Millennium, LLC, and Chevron Energy Solutions 2009) and the Modified Projects (PSH 2012). Phasing of the Approved Project was to be accomplished in two, overlapping phases, requiring 39 months for completion, with Unit 2 completion within six months after Unit 1. For the Modified Project, the two phases will be constructed over a similar time frame, with construction of Solar Plant 1 beginning only a few months prior to that for Solar Plant 2 and in accordance with the Phasing Plan in *Supplement No. 1*, and both beginning commercial operation on the same date; the entire construction period would be 34 months versus the 39 for the Approved Project.

In general, the impacts to native species and systems will be less because of the smaller footprint and substantially decreased modifications to the ground surfaces. Table 1 of the PSEGS *Supplement No. 1*(PSH 2013) provides detail on direct and indirect disturbance and compensation for the Modified Project. Specific impacts pertaining to the changes in technology or footprint for individual taxa and critical subject areas are discussed below.

1.1 DESERT TORTOISES AND GENERAL WILDLIFE AND PLANT SPECIES

The Modified Project will result in fewer direct and indirect effects to desert tortoises, wildlife and plant species. The reduction in the footprint will decrease the direct loss of habitat by 572 acres. The reduction in the number and sizes of the evaporation ponds will provide less attraction to ravens, which prey not only on desert tortoises, but on other small animals. Neither the concave trough mirrors nor heliostats provide suitable perching sites for ravens. Attraction of coyotes to the area will not change from the Approved Project. A reduction in indirect effects will result because the current hydrology will be largely preserved, rather than re-routed as for the Approved Project, so offsite habitats will generally remain unaffected by the Modified Project. Indirect effects to offsite plants will also be lessened because of the preservation of many substrates and much of the vegetation onsite, with the resulting effect of decreased dust deposition offsite.

The footprint of the modification to the gen-tie and addition of the gas pipeline were surveyed in 2009 and 2010. Desert tortoise sign observations were consistent with those for other surveyed project elements in the vicinity of those modifications (Figure

DR 5-3). However, those new footprints will be re-surveyed in Spring 2013 for desert tortoises, wildlife, and plants.

Desert tortoise habitat and critical habitat on the gas pipeline was not accounted for in the original permit and will be added to the disturbance and compensation analysis already presented in the applicant's *Supplement No.1* (PSH 2013: Biological Resources Table 1 and COC BIO 29, Tables 1 and 2):

Table DR 5-1. Additional acreage for desert tortoise habitat and critical habitat for the modified gen-tie and additional gas pipeline.

Location and Habitat Type	Phase 1	Phase 2	Compensation Ratio	Compensation Acreage
Modified Gen-Tie Additional Acreage1				
DT Habitat Inside Critical Habitat	3.7	0.00	5:1	18.5
DT Habitat Outside Critical Habitat	0.8	0.00	1:1	0.00
Gas Pipeline				
DT Habitat Inside Critical Habitat	0.00	0.9	5:1	4.5
DT Habitat Outside Critical Habitat	0.00	2.4	1:1	2.4

1. Because the modified gen-tie is moved 1128 ft west, where it parallels the original gen-tie route, most of the additional acreage was for the east-west portion, plus a small amount south of I-10.

As with the Approved Project, all tortoises will be translocated from the fenced solar fields and common area; the 161 kV "channel" also will be fenced to preclude trapping tortoises. Accordingly, continued maintenance inside the facility will not harm tortoises. The existing desert tortoise translocation plan and raven monitoring plan will not require changes to accommodate the Modified Project.

There will be no changes in impacts to designated critical habitat. While the common area for the Modified Project is sited in critical habitat, the Approved Project also had designed full surface disturbance for this portion of the site that overlaps critical habitat.

Leaving vegetation onsite will encourage small mammals, lizards, and birds to continue the use of the site, even though uses may change through time depending on vegetation height and project activities. Many of these species will have full access through the chain link fence to populations outside, so the site will not be an isolated island, permitting populations to be less affected by the presence of the project. This is also true of plant species, which will be connected to outside populations via largely intact hydrology, mobile vectors (e.g., birds and insects), and wind dispersal. Periodic

mowing is likely to result in disturbance and some losses of primarily above-ground vertebrates, although nesting birds can be avoided by mowing outside the nesting season. Small birds that use the project site for nesting may be more prone to depredation because of higher visibility in the mowed field. Some behavioral issues may also be associated, such as nest abandonment and failure, due to the modified shrub conditions. An intensive monitoring bird use monitoring program will determine how birds use the site following initial mowing and during project operations, and potential effects on mortality, density, and nesting (PSH 2013: BIO 16).

Continual mowing has the potential to exacerbate existing weed populations, but the degree to which this might occur is unknown. Sahara mustard (*Brassica tournefortii*) was observed to be prevalent on the site (AECOM 2009a). The existing weed management plan will be modified, as necessary, to accommodate weed monitoring related to ongoing mowing and heliostat washing activities, as well as the preservation of the site's hydrology.

1.1.1 State Waters

The Modified Project will result in a reduction in indirect effects because the current hydrology will be largely preserved, rather than re-routed as in the Approved Project. Accordingly, offsite washes will remain largely unaffected by the Modified Project.

The footprint of the modification to the gen-tie and addition of the gas pipeline were surveyed in 2009 and 2010 (AECOM 2009b and 2010, BLM 2011). The state waters observed on the gen-tie modification were similar to those observed on the approved gen-tie a quarter of a mile to the east (Figure DR 5-4). State waters on the gas pipeline were not accounted for in the original permit and will be added to the disturbance and compensation analysis presented in the applicant's *Supplement No.1* (PSH 2013: Biological Resources Table 1 and COC BIO 29, Tables 1 and 2), using the following recalculations for direct impacts:

Table DR 5-2. Additional acreage for jurisdictional state waters for the modified gen-tie and additional gas pipeline.

Location and Habitat Type	Phase 1	Phase 2	Compensation Ratio	Compensation Acreage
Modified Gen-Tie Additional Acreage[1]				
Desert Dry Wash Woodland	0.00	0.00	3:1	0.00
Unvegetated Ephemeral Dry Wash	0.00	0.00	1:1	0.00
Gas Pipeline				
Desert Dry Wash Woodland	0.00	0.8	3:1	2.4

Unvegetated Ephemeral Dry Wash	0.00	0.00	1:1	0.00

1. Because the modified gen-tie is moved 1,128 ft west, where it parallels the original gen-tie route, calculations revealed no additional acreage of jurisdictional waters for the parallel portion. The east-west portion also did not have any jurisdictional waters. Vegetation communities will be re-mapped this spring to verify any acreage changes and the final acreage of disturbance will be calculated after the gen-tie is constructed.

Finally, indirect effects to state waters and ephemeral dry washes on the 161 kV line that divides the common area from the solar fields are assumed, although no disturbance will occur to those waters. Compensation is provided at 1.5:1 for those indirect impacts to Desert Dry Wash Woodland and 0.5:1 for indirect impacts to Unvegetated Ephemeral Dry Wash habitat (PSH 2013:BIO 29, Table 2).

1.1.2 Special-Status Plants

The reduced footprint will result in a decreased direct loss of potential habitat for special-status species of 572 acres, although no observations of special-status species were made in this reduced area (Figure DR 5-5). The footprint of the modification to the gen-tie and addition of the gas pipeline, both surveyed in 2009 and 2010, observed no new special-status plant species or sensitive vegetation communities that were not observed elsewhere on the project (Figure DR 5-5); nor were any concentrations of species observed. However, those new footprints will be re-surveyed in Spring 2013 for special-status plants and vegetation communities.

For sand-specialists, such as Harwood's woollystar (*Eriastrum harwoodii*) and ribbed cryptantha (*Cryptantha costata*), the Modified Project will eliminate the 30-foot-tall wind fences along the eastern and western borders of the solar fields that were part of the Approved Project (California Energy Commission [CEC] 2010). So sand will be permitted to move naturally through the solar array. Despite the decreased impact to sand transport, compensation will be provided for the 39.7–acre private parcel in Aeolian Zone III that is not part of the Modified Project, but is nearly surrounded by the Modified Project's solar arrays (PSH 2013:BIO 29, Table 1).

Plant species onsite will remain connected to outside populations via largely intact hydrology, mobile seed dispersers (e.g., birds, insects, granivorous rodents), and wind dispersal. Based on site surveys in 2009 and 2010 (AECOM 2009b and 2010), there are no plant species onsite that were not also found offsite in much greater concentrations; there is no evidence that the site provides a seed source for offsite populations. However, should that have been the case, the Modified Project would provide a more viable and reliable source of seed than the Approved Project.

1.1.3 Groundwater-dependent Vegetation

The Modified Project will result in a substantial reduction in water use both during construction (from 5,750 acre feet to 1,130 acre-feet) and during operation (from 300 acre feet per year [AFY] to 201 AFY). Accordingly, the Approved Project's analyses of water use are vastly overly conservative for the Modified Project. Nonetheless, PSH has agreed to the Condition of Certification BIO-23 as written for the Approved Project.

1.1.4 Desert Kit Fox and American Badger

The reduced footprint will result in the avoidance of several kit fox burrows and den complexes observed on the project during 2010 surveys (Figure DR 5-6). The Modified Project presents no impacts, either direct or indirect, that have not been previously analyzed for the Approved Project.

1.1.5 Mojave Fringe-toed Lizard

The design of the Approved Project erected 30-foot-tall wind fences along the eastern and western borders of the solar fields to minimize sand transport across the solar field (CEC 2010). The Modified Project will eliminate wind fences, so sand will be permitted to move naturally through the solar array.

Despite the decreased impact to sand transport, compensation will be provided for the 39.7–acre private parcel in Aeolian Zone III that is not part of the PSEGS project, but is nearly surrounded by the Modified Project's solar arrays and thus receives the indirect effect of partial isolation (Figure DR 5-6).

1.1.6 Migratory Birds, Bats, Raptors and Golden Eagles

There are two primary sources of potential direct risk for birds that may be residents of the project vicinity or are migrating through the area: collision and solar flux. Collisions with towers by migrating birds (Kerlinger 2000, Longcore et al 2008) and collisions with heliostats by both migrants and residents (McCrary et al 1986) have been well documented.

Tower height has a strong influence on bird collisions for nocturnally migrating birds. Fewer collisions have been observed for various tower types shorter than 400-500 ft (Kerlinger 2000, Kerlinger et al. 2010). Longcore et al (2008) reviewed the data from several studies and observed that few mortalities were observed in towers shorter than approximately 500 ft, whereas towers greater than 990 ft were associated with much higher mortality, including large mortality events in which many birds died. In most instances, the mortalities may have been a function of guy wires, which the PSEGS power towers will not have. Towers with no guy wires were observed to kill many fewer

birds in the Longcore et al (2008) study. Towers taller than 200 ft are also required by the Federal Aviation Administration (FAA) to be lit, which can disorient migrating birds. Longcore et al (2008) reported several instances of diminished mortalities at tall towers when steadily burning lights were replaced with white strobe lights.

The PSEGS towers will be 750 ft tall. Most birds migrate at elevations between 660 and 2500 ft (Kerlinger and Moore 1989, Mabee and Cooper 2004). Data from the Rio Mesa Solar Electric Generating Facility (RMSEGF) project in 2012 observed that the mean flight altitude for nocturnal spring migrants was 1261 ft, with approximately 34% of the observations below or equal to 750 ft (URS 2012). So, collisions remain a possibility for migrating species.

Certain weather conditions in the project vicinity may exacerbate collisions. For instance, wind may compromise flight, especially with young birds. In exceedingly wet winters or late summers, standing water in Palen Lake may attract shorebirds that may be less capable at maneuvering through the heliostat field or towers. A total of 33% of heliostat collisions from McCrary et al's (1986) data at Solar One in Daggett comprised waterfowl or shorebirds. Whether certain weather conditions, age groups, or species are present, the risk for collision with the heliostats would not be expected to be greater than for solar trough mirrors, which would have been addressed in the approved project.

Because mowing will preserve habitat for many prey species inside the project site, and simultaneously increase the visibility of these prey items to avian predators, avian predators may hunt the solar array with greater intensity than for the approved project. This may result in increased collisions with heliostats. However, falcons and some accipiters are highly maneuverable and have been documented to easily avoid structures, including heliostats, while pursuing prey (Avian Power Line Interaction Committee 2006, 2012; T.G. Jackson, pers. comm. to A. Karl). The mirrored surface of the heliostats may also present confusing visual images to birds that may result in collision. Mortality due to collisions will be monitored for BIO 16 (PSH 2013), with adaptive management as needed.

There is substantial disagreement and uncertainty about the risk of solar flux to birds. In recent evidentiary hearings for the Hidden Hills Solar Electric Generating System (HHSEGS) project, CEC Staff (Rick Tyler) stated that "Staff believes it is a near certainty that golden eagles and other special-status bird species will be killed or injured over the 30-year life of this project" (Ehlert Business Group 2013). Staff testified that safe exposure for birds flying in the solar field was <5 kW/m^2. BrightSource Energy, Inc., experts disagreed, citing 40-50 kW/m^2 as the threshold at which feather damage would be likely to occur; this would be located around the upper portion of the central tower (CH2MHill 2013). Dr. Sonke Johnson further testified that Staff used incorrect assumptions to reach their conclusions, and were overly simplified in their approach to a

very complex and difficult-to-model issue (Johnson 2013). He stated that the best approach to evaluating solar flux impacts to birds was to collect empirical data using real-life situations. Dr. Ivan Schwab also testified that birds will not be harmed by glare from the heliostats or tower because they will naturally exhibit an immediate aversion reaction to any painful glare; approximately 90 seconds of continuous staring at a light equivalent to the sun's intensity is required to cause retinal damage in monkeys (Ehlert Business Group 2013).

Accordingly, to account for possible impacts, the degree of which is currently very uncertain, PSH is providing an *apriori* enhancement program for all bird and bat species using the project site. This will include habitat compensation plus an additional $800,000 in avian enhancement and conservation measures (PSH 2013:BIO 16). In addition, an intensive monitoring program will be implemented prior to construction to identify species at risk and bird use of the site, including migratory species; monitoring will continue for at least three years during the first three years of operation to determine impacts to birds and changes in bird use of the site. Finally, an adaptive management program will be developed and implemented to minimize impacts to birds, should impacts be verified during the monitoring effort.

Indirect effects of the modified project may also occur to avian species, potentially including such effects as energetic costs if migrating birds avoid the project area, navigational disruption, or abandonment of breeding sites in the project vicinity. Some birds may experience sub-fatal injuries due to solar flux that may compromise their flight abilities, longevity, or reproduction after they fly beyond the site.

Solar flux, glare and collision are not relevant issues for bats.

1.1.7 Decommissioning

Because the surface disturbance for the Modified Project is substantially less than the Approved Project, valuable root crowns will be preserved. Accordingly, during decommissioning the site will achieve a natural condition far more quickly than if the site were completely graded and all root crowns and soil microorganisms destroyed, as they would be for the Approved Project. Furthermore, during the return to a natural condition, the decommissioned site will be useful to wildlife and also provide a seed source for native species.

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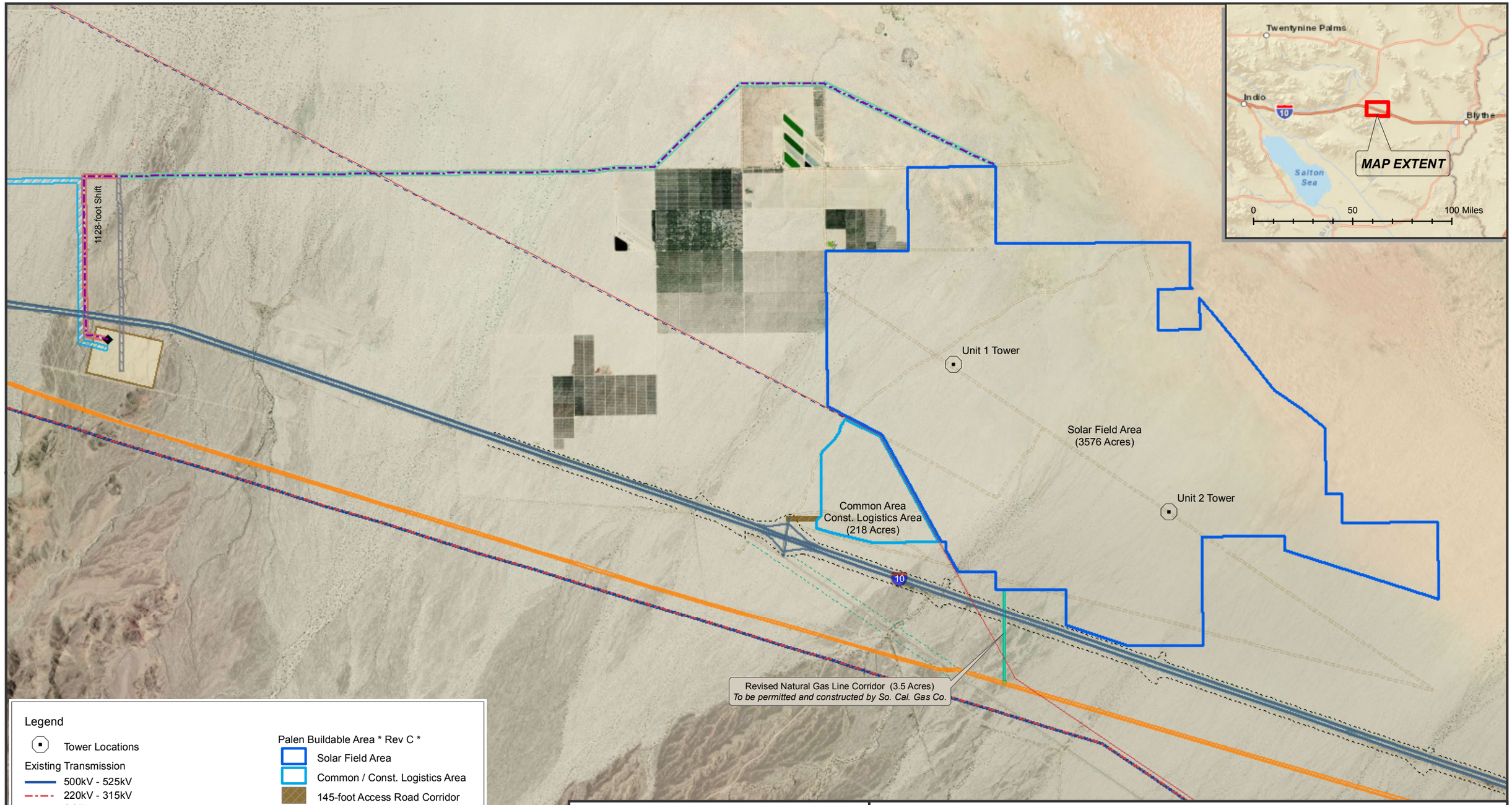


Legend

- Tower Locations
- Existing Transmission
  - 500kV - 525kV
  - 220kV - 315kV
  - SCE 161kV Line
- Natural Gas Pipeline
- Desert Sunlight 160-foot Gen-Tie Corridor
- SCE Red Bluff Substation
- Red Bluff (Position 2)
- Existing I-10 ROW
- Existing Riverside County ROW

Palen Buildable Area * Rev C *

- Solar Field Area
- Common / Const. Logistics Area
- 145-foot Access Road Corridor
- Permitted Gen-Tie Corridor
- Revised Gen-Tie Corridor
- Permitted Gen-Tie to be Dropped
- OPGW
- 12kV Service (161kV Corridor)

Natural Gas Corridor

- Revised March 2013

BrightSource

BrightSource Energy, Inc.
1999 Harrison Street, Suite 2150
Oakland, CA 94612

PSEGS FACILITY BOUNDARY MAP

N W E S

Scale: 1:36,000

0 0.5 1 Miles

Scale correct when printed at 11x17

This map is for planning purposes only. The information herein was compiled from multiple sources and is considered to be reliable, however no representation is made concerning the accuracy of the data.

Project:	Palen Solar
Date:	March 28, 2013
Revision:	C-1000
Prepared By:	NS

Figure No: DR 5-1

Path: C:\WORKSPACE\BrightSource\CA_Palen\MapDocuments\PSEGS Facility Boundary Map.mxd

FIGURE NO. DR 5-2A - APPROVED PROJECT RECONFIGURED ALTERNATIVE 2

FROM: CALIFORNIA ENERGY COMMISSION 09-AFC-07 FOR THE PALEN SOLAR POWER PROJECT REVISED STAFF ASSESSMENT PART I, ALTERNATIVES - FIGURE 1B

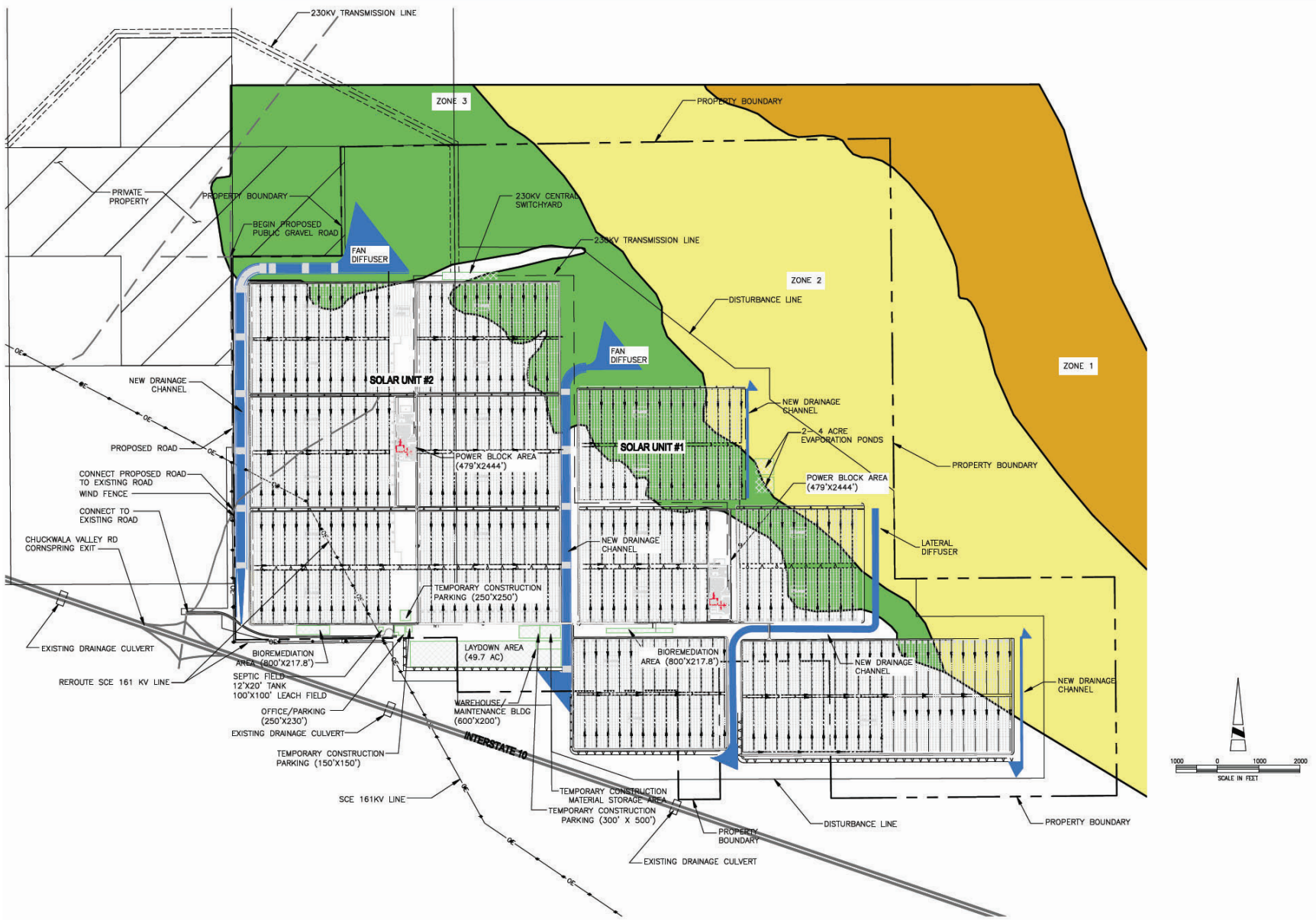
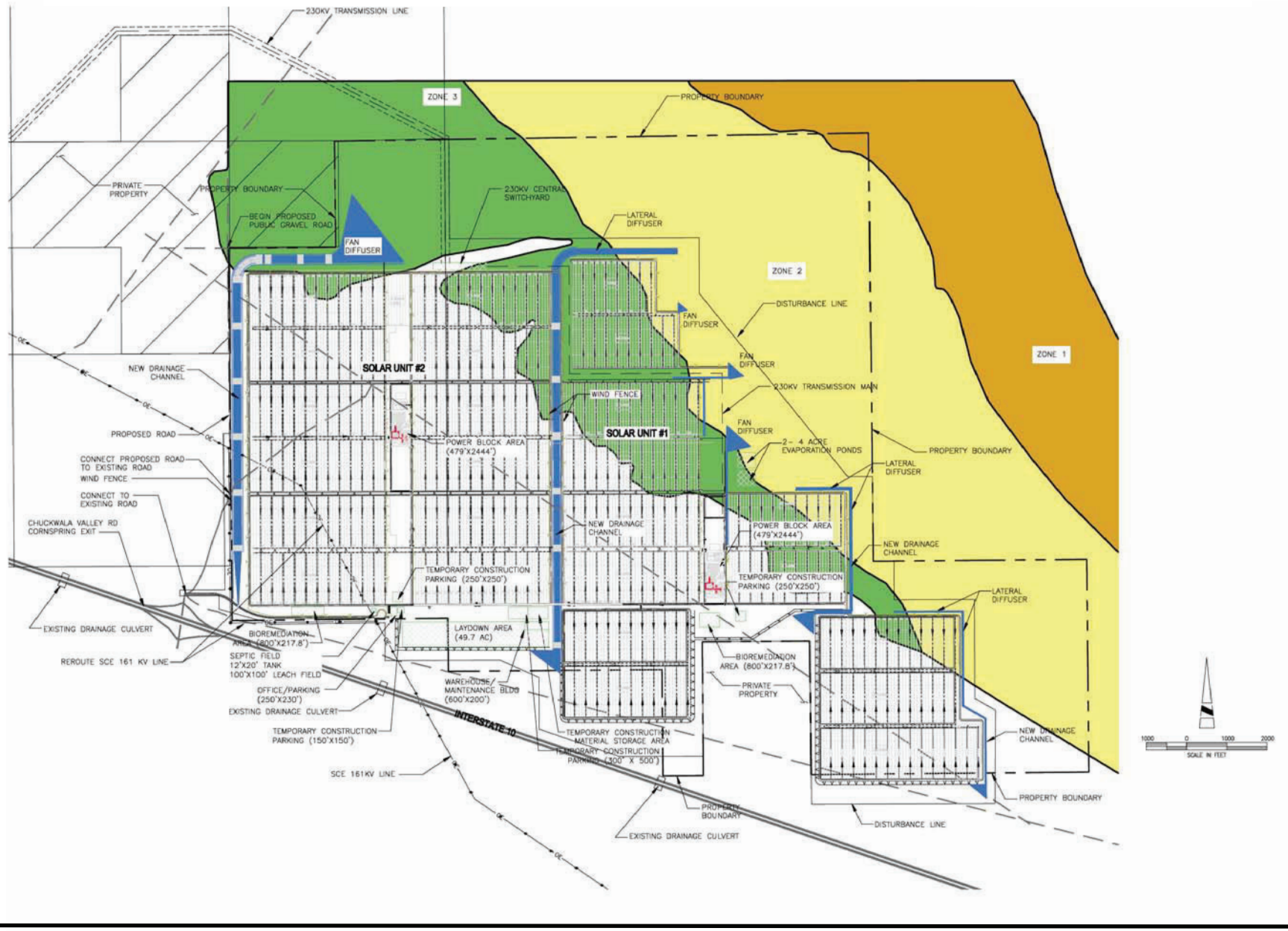


FIGURE NO. DR 5-2B - APPROVED PROJECT RECONFIGURED ALTERNATIVE 3

FROM: CALIFORNIA ENERGY COMMISSION 09-AFC-07 FOR THE PALEN SOLAR POWER PROJECT REVISED STAFF ASSESSMENT PART I, ALTERNATIVES - FIGURE 1C



Existing Transmission
- 500kV - 525kV
- 220kV - 315kV
- SCE 161kV Line
- Natural Gas Pipeline
- SCE Red Bluff Substation
- USFWS Desert Tortoise Critical Habitat

PSEGS
- Palen Solar Project Site (3793.5 Acres)
- Access Road Corridor (3.5 Acres)

PSEGS Gen-Tie Corridor
- 120-ft Permitted Corridor (81.9 Acres)
- 120-ft Proposed Corridor (18.9 Acres)

PSEGS Natural Gas Line Corridor
- 50-ft Revised Corridor (3.5 Acres)

Desert Tortoise Observations (2009-2010)
- Adult Tortoise
- Tortoise Burrow (Active) - Class 1
- Tortoise Burrow - Class 2
- Tortoise Burrow - Class 3
- Tortoise Burrow - Class 4
- Tortoise Burrow - Class 5
- Tortoise Pallet (Active) - Class 1
- Tortoise Pallet - Class 2
- Tortoise Pallet - Class 4
- Tortoise Pallet - Class 5
- Tortoise Scat - Class 1
- Tortoise Scat - Class 2
- Tortoise Scat - Class 3
- Tortoise Scat - Class 4
- Tortoise Scat - Class 5
- Tortoise Carcass - Class 3
- Tortoise Carcass - Class 4
- Tortoise Bone Fragment (Class 5) - Not Mineralized
- Tortoise Bone Fragment (Class 5) - Mineralized
- Tortoise Tracks
- Tortoise Fossilized Bones

Desert Sunlight - Desert Tortoise Survey (2008-2010)
- 100% Coverage Survey Area
- 160-foot Gen-Tie Corridor

Active Tortoise Observations (2008-2010)
- Tortoise
- Mating Ring
- Burrow
- Pallet
- Scat

Carcasses (Time Since)
- <1 yrs
- 1-2 yrs
- 1-3 yrs
- 2-3 yrs
- 2-4 yrs
- 3-4 yrs
- 3-5 yrs
- >4 yrs

Inactive Tortoise (2008-2010)
- BURROW
- PALLET
- SCAT

BrightSource

BrightSource Energy, Inc.
1999 Harrison Street, Suite 2150
Oakland, CA 94612

Desert Tortoise Observations from Surveys in 2008 through 2010

N W E S

Scale: 1:50,000

0 0.5 1 Miles

Bio Data Sources: AECOM (2009a,b and 2010); BLM; USFWS. Other information was compiled from multiple sources and is considered to be reliable, however no representation is made concerning the accuracy of the data. Scale correct when printed at 11x17

Project:	Palen Solar
Date:	March 28, 2013
Revision:	C-1000
Prepared By:	NS
Figure No:	DR 5-3

Path: C:\WORKSPACE\BrightSource\CA_Palen\MapDocuments\CEC Bio Data Request 2013-03-29 (merged).mxd

Existing Transmission
- 500kV - 525kV
- 220kV - 315kV
- SCE 161kV Line
- Natural Gas Pipeline
- SCE Red Bluff Substation

PSEGS
- Palen Solar Project Site (3793.5 Acres)
- Access Road Corridor (3.5 Acres)

PSEGS Gen-Tie Corridor
- 120-ft Permitted Corridor (81.9 Acres)
- 120-ft Proposed Corridor (18.9 Acres)

PSEGS Natural Gas Line Corridor
- 50-ft Revised Corridor (3.5 Acres)

Jurisdictional Waters (PSEGS Site & Linears)

Desert Dry Wash Woodland
- Wash Dependent Vegetation (1.5 Acres)
- Riparian Interfluve (62.8 Acres)
- Vegetated Ephemeral Dry Wash (137.6 Acres)

Unvegetated Ephemeral Dry Wash
- Unvegetated Ephemeral Dry Wash (161.7 Acres)

BrightSource

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Jurisdictional State Waters

N
W E
S

Scale: 1:40,000

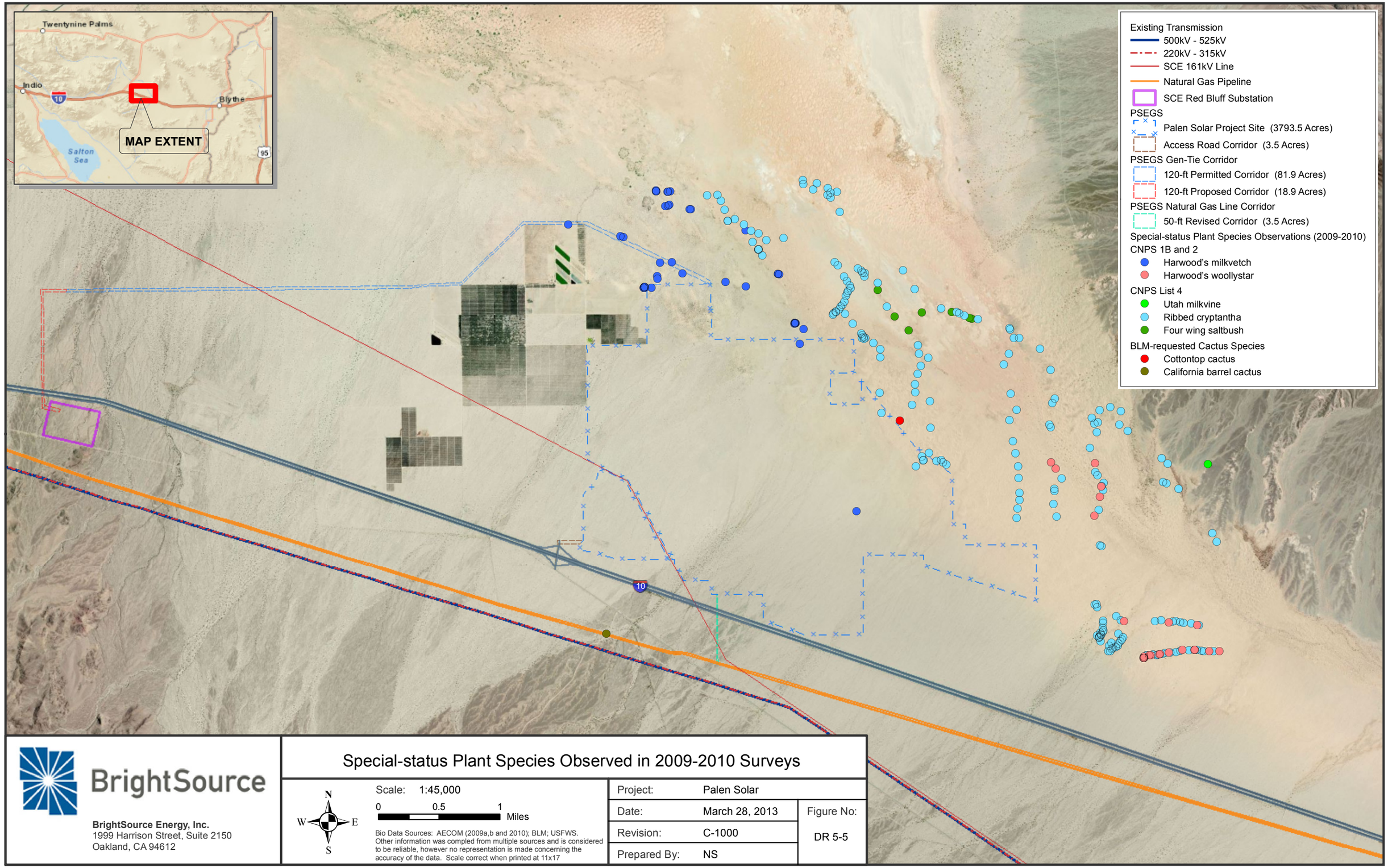
0 0.5 1 Miles

Bio Data Sources: AECOM (2009a,b and 2010); BLM; USFWS. Other information was compiled from multiple sources and is considered to be reliable, however no representation is made concerning the accuracy of the data. Scale correct when printed at 11x17

Project:	Palen Solar
Date:	March 29, 2013
Revision:	C-1000
Prepared By:	NS

Figure No: DR 5-4

Path: C:\WORKSPACE\BrightSource\CA_Palen\MapDocuments\CEC Bio Data Request 2013-03-29 (merged).mxd



BrightSource

BrightSource Energy, Inc.
1999 Harrison Street, Suite 2150
Oakland, CA 94612

Special-status Plant Species Observed in 2009-2010 Surveys

N
W E
S

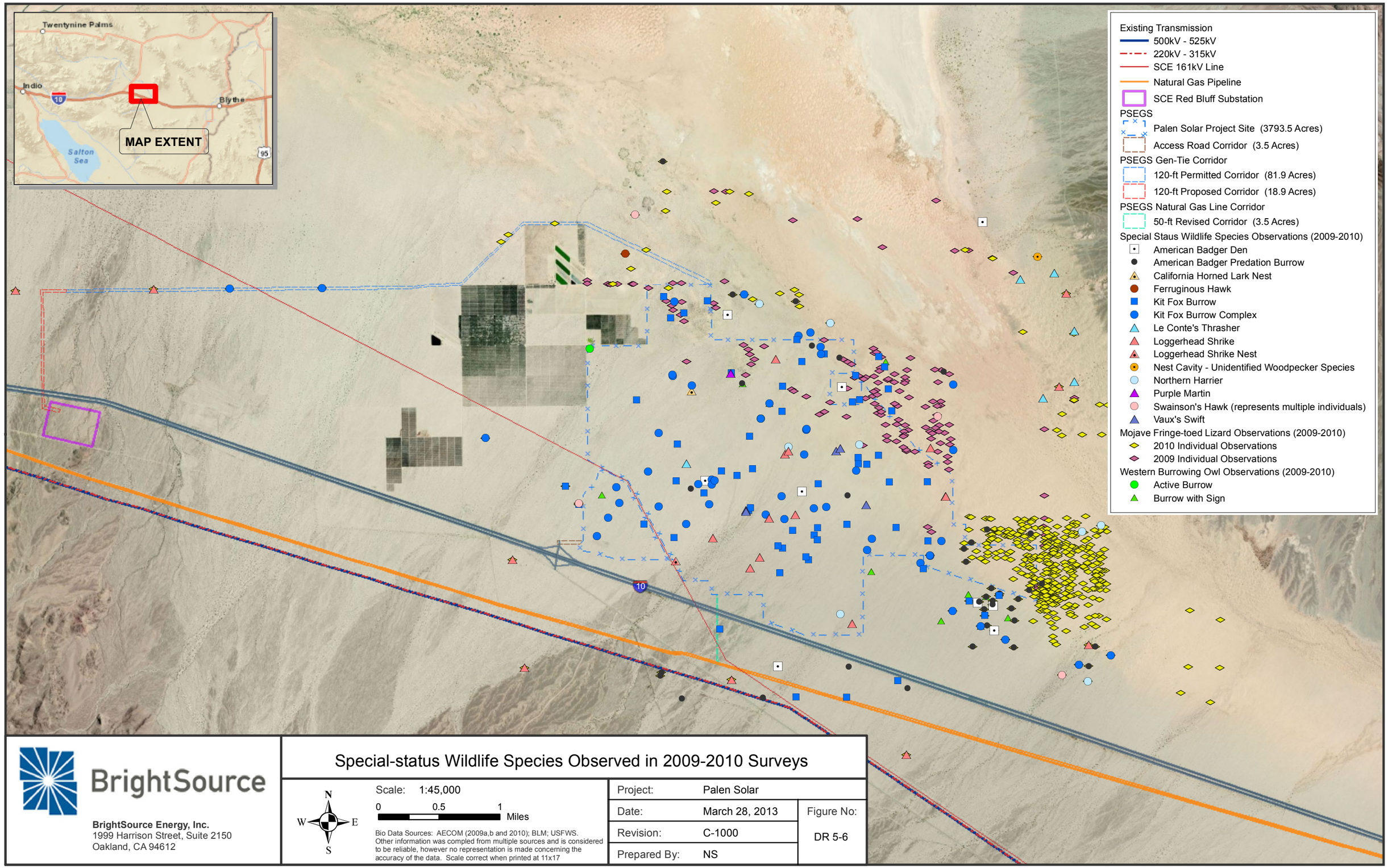
Scale: 1:45,000

0 0.5 1 Miles

Bio Data Sources: AECOM (2009a,b and 2010); BLM; USFWS. Other information was compiled from multiple sources and is considered to be reliable, however no representation is made concerning the accuracy of the data. Scale correct when printed at 11x17

Project:	Palen Solar	
Date:	March 28, 2013	Figure No:
Revision:	C-1000	DR 5-5
Prepared By:	NS	

Path: C:\WORKSPACE\BrightSource\CA_Palen\MapDocuments\CEC Bio Data Request 2013-03-29 (merged).mxd



BrightSource

BrightSource Energy, Inc.
1999 Harrison Street, Suite 2150
Oakland, CA 94612

Special-status Wildlife Species Observed in 2009-2010 Surveys

N
W E
S

Scale: 1:45,000

0 0.5 1 Miles

Bio Data Sources: AECOM (2009a,b and 2010); BLM; USFWS. Other information was compiled from multiple sources and is considered to be reliable, however no representation is made concerning the accuracy of the data. Scale correct when printed at 11x17

Project:	Palen Solar
Date:	March 28, 2013
Revision:	C-1000
Prepared By:	NS

Figure No: DR 5-6

Path: C:\WORKSPACE\BrightSource\CA_Palen\MapDocuments\CEC Bio Data Request 2013-03-29 (merged).mxd

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

AMENDMENT
FOR THE PALEN SOLAR ELECTRIC GENERATING SYSTEM

Docket No. 09-AFC-7C
PROOF OF SERVICE
(Revised 3/26/13)

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*Indicates change

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After docketing, the Docket Unit will provide a copy to the persons listed below. Do not send copies of documents to these persons unless specifically directed to do so.

KAREN DOUGLAS
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David Hochschild
Commissioner and Associate Member

Raoul Renaud
Hearing Adviser

Galen Lemei
Adviser to Presiding Member

Jennifer Nelson
Adviser to Presiding Member

Jim Bartridge
Adviser to Associate Member

Kelly Foley
Adviser to Associate Member

Eileen Allen
Commissioners' Technical
Adviser for Facility Siting

DECLARATION OF SERVICE

I, Marie Fleming, declare that on March 29, 2013, I served and filed copies of the attached, **PALEN SOLAR HOLDINGS, LLC'S SUPPLEMENTAL RESPONSE TO CEC STAFF DATA REQUEST 5** dated March 29, 2013. This document is accompanied by the most recent Proof of Service, which I copied from the web page for this project at: http://www.energy.ca.gov/sitingcases/palen/compliance/.

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

(C*heck one*)

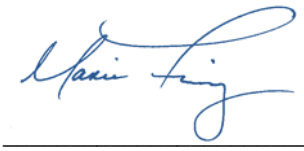
For service to all other parties and filing with the Docket Unit at the Energy Commission:

____ I e-mailed the document to all e-mail addresses on the Service List above and personally delivered it or deposited it in the US mail with first class postage to those parties noted above as "hard copy required"; **OR**

__X__ Instead of e-mailing the document, I personally delivered it or deposited it in the US mail with first class postage to all of the persons on the Service List for whom a mailing address is given.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that I am over the age of 18 years.

Dated: March 29, 2013



Marie Fleming