

DESERT TORTOISE TRANSLOCATION PLAN
DESERT SUNLIGHT SOLAR FARM PROJECT
CASE FILE NUMBER CACA-48649
RIVERSIDE COUNTY, CALIFORNIA



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Table of Contents

1.0	Introduction.....	1
2.0	Estimated Numbers of Desert Tortoise.....	4
2.1	Solar Farm Site and Gen-Tie Line.....	4
2.2	SCE Project Components.....	4
3.0	Recipient and Control Sites.....	8
3.1	Recipient Sites.....	8
3.1.1	Chuckwalla Recipient Site.....	10
3.1.2	Red Bluff Recipient Site.....	15
3.1.3	DuPont Recipient Site.....	19
3.1.4	Linear Components of the Proposed Action.....	22
3.2	Control Sites.....	22
3.2.1	Sunlight Control Site.....	23
3.2.2	Red Cloud Control Site.....	23
4.0	Proposed Methods for Desert Tortoise Translocation.....	24
4.1	Definitions.....	24
4.1.1	Health Assessments.....	24
4.1.2	Transmitting.....	24
4.1.3	Disease Testing.....	24
4.2	Steps in Translocation Process – Solar Farm Site.....	25
4.2.1	Surveys and Disease Testing at Chuckwalla Recipient Site.....	25
4.2.2	Fencing and Clearance Surveys.....	26
4.2.3	Translocation and Disposition Plan.....	32
4.3	Steps in Translocation Process – Red Bluff Substation.....	35
4.3.1	Fencing and Clearance Surveys.....	35
4.3.2	Surveys and Disease Testing at Red Bluff Recipient Site.....	35
4.4	Linear Project Components.....	37
4.4.1	Gen-Tie Line.....	37
4.4.2	SCE Project Components.....	37
5.0	Monitoring and Reporting.....	38
5.1	Solar Farm Site and Gen-Tie Line.....	38
5.1.1	Monitoring During Construction.....	38
5.1.2	Long-Term Monitoring.....	38
5.1.3	Reporting.....	39
5.1.4	Key Resources.....	40
5.2	SCE Project Components.....	42
5.2.1	Monitoring During Construction.....	42
5.2.2	Long-Term Monitoring.....	42
5.2.3	Reporting.....	42
5.2.4	Key Resources.....	43
5.3	Roles and Responsibilities.....	43
5.3.1	Environmental Compliance Manager.....	43
5.3.2	Lead Translocation Biologist.....	44

5.3.3	Designated Biologist.....	44
5.4	Adaptive Management.....	44
5.4.1	Solar Farm Site and Gen-Tie Line.....	45
5.4.2	SCE Project Components.....	46
6.0	References.....	47

List of Tables

Table 1.	Recipient Sites.....	10
Table 2.	Disposition of Tortoises found during Perimeter Fence Installation.....	31
Table 3.	Translocation of Desert Tortoises and Eggs.....	33

List of Figures

Figure 1	Regional Location.....	2
Figure 2	Project Components.....	3
Figure 3	Solar Farm, Active Tortoise Sign.....	5
Figure 4	Active Desert Tortoise Sign, Sunlight Components, Gen-Tie Line.....	6
Figure 5	Active Desert Tortoise Sign, SCE Components.....	7
Figure 6	Translocation Sites.....	9
Figure 7	Chuckwalla Recipient Site.....	11
Figure 8	Chuckwalla Recipient Site, Fall 2010 Survey Results, All Canid Burrows.....	14
Figure 9	Chuckwalla Recipient Site, Fall 2010 Survey Results, Tortoise Sign and Estimated Site Densities.....	16
Figure 10	Red Bluff Recipient Site.....	17
Figure 11	Dupont Recipient Site.....	20
Figure 12	Chuckwalla Recipient Site, Local Density Estimates, 6.5 km Buffer.....	27
Figure 13	Chuckwalla Recipient Site, Disease Sampling Area, 6.5 km Buffer.....	28
Figure 14	Decision Making Chart for Project Desert Tortoise Translocation.....	29
Figure 15	Example of Interior Units and Temporary Fencing.....	30
Figure 16	Chuckwalla Recipient Site, Preliminary Tortoise Disposition Plan.....	34
Figure 17	Red Bluff Recipient Site, Preliminary Tortoise Disposition Plan.....	36

List of Acronyms

AC	Alternating Current
ACEC	Area of Critical Environmental Concern
BLM	U.S. Bureau of Land Management
BMP	Best Management Practice
BO	Biological Opinion
CDFG	California Department of Fish and Game
CHU	Critical Habitat Unit
DB	Designated Biologist
DOI	U.S. Department of the Interior SCE's Devers to Palo Verde 1 transmission line
DPV 1	
DTCC	Desert Tortoise Conservation Center
DWMA	Desert Wildlife Management Area
ECM	Environmental Compliance Manager
ELISA	Enzyme-linked immunosorbent assay
GIS	Geographic Information System
I-10	Interstate 10
ITS	Incidental Take Statement
kV	Kilovolt
LTB	Lead Translocation Biologist
MCL	Mean Carapace Length
MW	Megawatt
MWD	Metropolitan Water District
O&M	Operations and Maintenance
PV	Photovoltaic
PSA	Project Study Area
ROW	Right of Way
SBBM	San Bernardino Base and Meridian
SCE	Southern California Edison
URTD	Upper Respiratory Tract Disease
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 Introduction

This discussion provides a brief summary of the project description for the Applicant and SCE project components of the Proposed Action. Complete details of project locations and description are found in the *Desert Sunlight Solar Farm Final Environmental Impact Statement* (BLM 2010) and in the Biological Assessment, *Desert Sunlight Solar Farm Project* (Ironwood 2010).

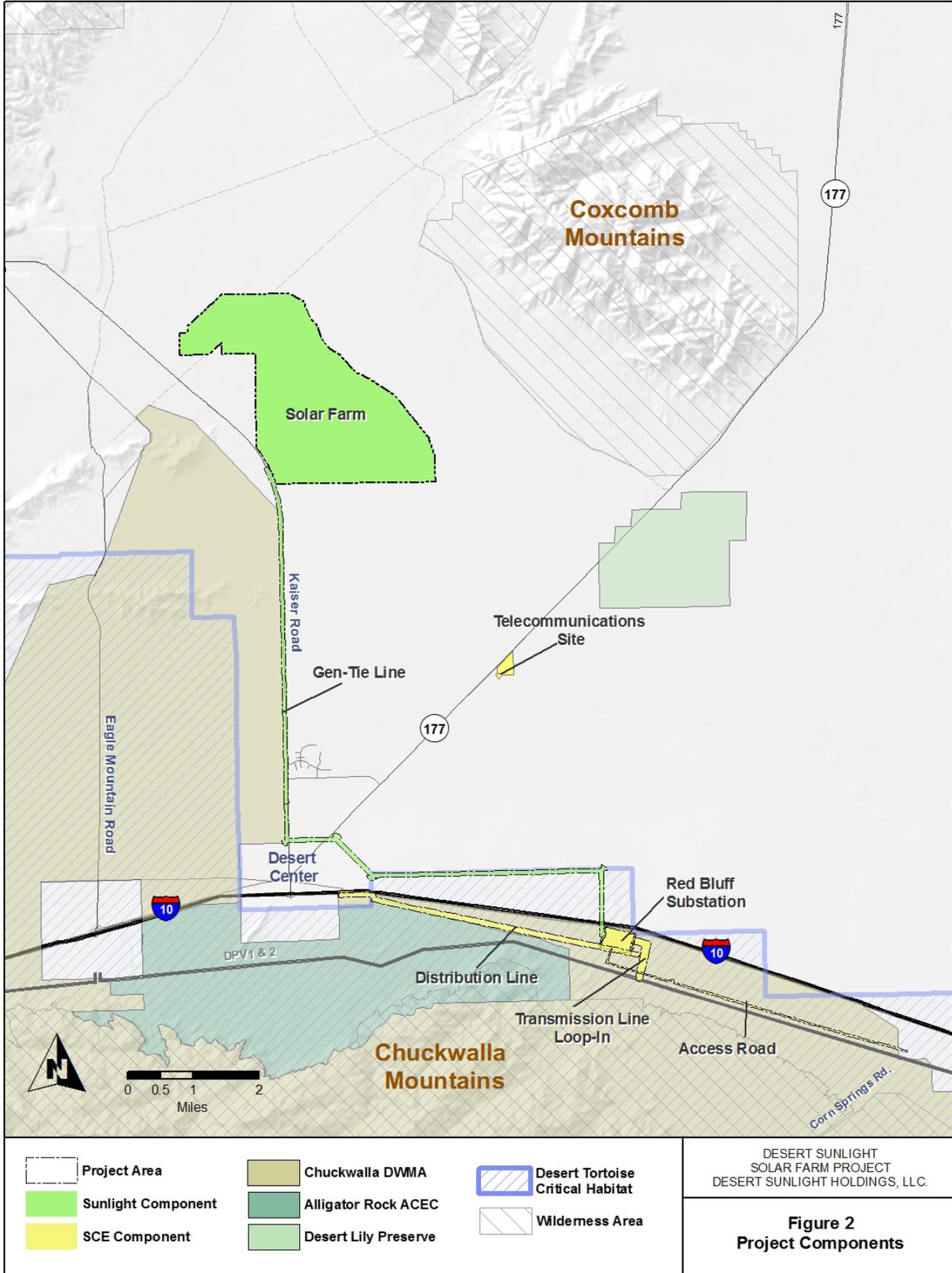
Desert Sunlight has applied to the BLM for an issuance of a right-of-way (ROW) grant that would authorize construction, operation, maintenance, and decommission of a commercial solar power-generating facility and new substation facility on over 7,600 hectares (19,000 acres) of BLM-managed lands. The proposed project is located in Riverside County, California, approximately 6 miles north of the rural community of Desert Center and approximately (10.5 kilometers or 6.5 miles north of the Interstate 10 corridor (Figure 1). Project components generally include construction, operation, and maintenance of the solar farm site, a gen-tie transmission line, and construction, operation and maintenance of the Southern California Edison (SCE) Red Bluff substation and related components (Figure 2). While the Red Bluff substation is included as part of this project description for planning and environmental considerations, it would be constructed, owned, and operated by SCE, not by the Applicant.

The purposes of this Desert Tortoise Translocation Plan are to provide:

1. Estimates of the number of desert tortoise currently present on the Project components and Recipient and Control Sites, with appropriate methodology.
2. Detailed descriptions of the methods to be used to translocate tortoises present on the Solar Farm Site and Red Bluff Substation at the time of Project construction in order to avoid and minimize potential “take” of desert tortoises during project construction and operations.
3. The details of the long-term monitoring and reporting program to track the effectiveness of the translocation effort.

This Translocation Plan is needed to support permitting for the translocation of any desert tortoises found on the Solar Farm Site (Applicant) and Red Bluff Substation (SCE). The desert tortoise is a federal and state-listed threatened species known to inhabit the Project components and the immediately surrounding areas.





2.0 Estimated Numbers of Desert Tortoise

The Biological Resources Technical Report for the Desert Sunlight Solar Farm (Ironwood Consulting, 2010) provides detailed information on the surveys and methods used to determine the estimated number of desert tortoises that could be translocated before and during construction of the Project. All surveys and analysis were conducted between 2008 and 2010 using current protocols and statistical methods (USFWS 1992, 2009a).

Reliable estimates of desert tortoise densities for the region surrounding the Project were not available prior to conducting Project surveys. Results of range-wide sampling provided limited information on densities recorded for the Eastern Colorado Recovery Unit, which can vary widely throughout the recovery unit. The U.S. Fish and Wildlife Service (USFWS) has concluded that too few study plots and transects have been utilized in this region for confident analysis, but that the ratio of carcasses to live animals found in recent range-wide sampling was low, which may indicate a relatively stable population. Density estimates from range-wide sampling between 2001 and 2005 resulted in general estimates of desert tortoise density for the entire Eastern Colorado Recovery Unit of between 3 and 15 animals per square kilometer, with estimates varying greatly by year (USFWS 2008).

2.1 Solar Farm Site and Gen-Tie Line

Solar Farm Site

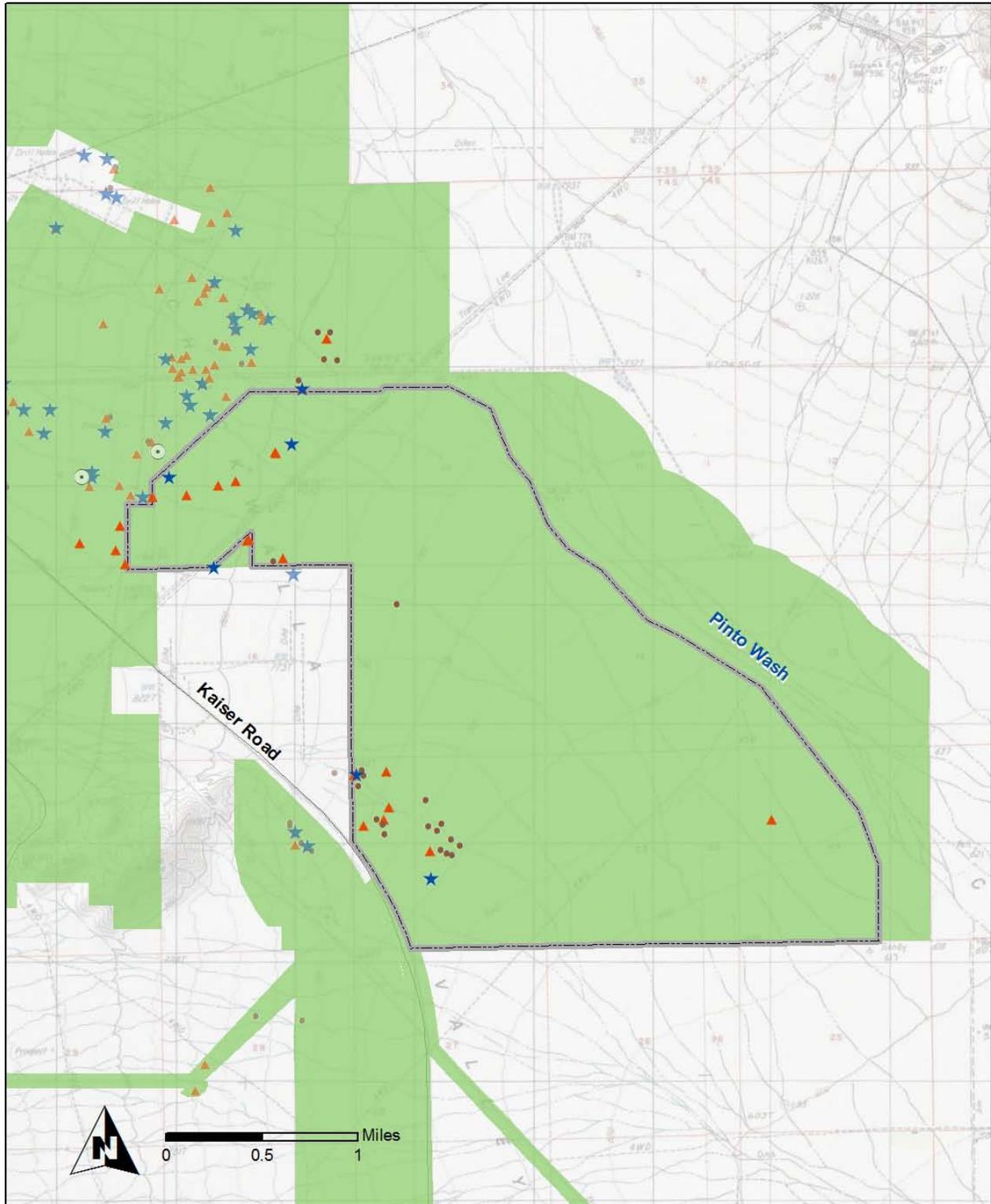
Desert tortoise sign was found within the Solar Farm Site, but was not distributed evenly (Figure 3). Four live desert tortoises and fourteen active burrows were observed within the boundaries of the Solar Farm Site in two concentrations. One concentration in the northwest area of the site contained two observations of live tortoise and the second concentration in the southwest portion of the site contained two observations of live tortoises. Except for these concentrations, relatively few sign (including active, inactive, or historic sign such as older carcasses) were found.

Gen-Tie Line

Active desert tortoise sign was present along the Gen-Tie Line (Figure 4), but abundance and distribution are not described in detail in this document because translocation of desert tortoises is not proposed for this Project component. The northern portion of the Gen-Tie Line along Kaiser Road lacked evidence of recent tortoise activity. Active sign was found along the Gen-Tie Line east of Highway 177 and north of I-10, including one live tortoise observed within 30 meters of the center of the Gen-Tie Line.

2.2 SCE Project Components

No active desert tortoise sign was found on or immediately adjacent to the Red Bluff Substation site (Figure 5). One active desert tortoise burrow and fresh scat were observed just north of the distribution line, approximately 2.0 kilometers (1.6 miles) west of the Red Bluff Substation. No desert tortoise sign was found on or near the telecommunications site.



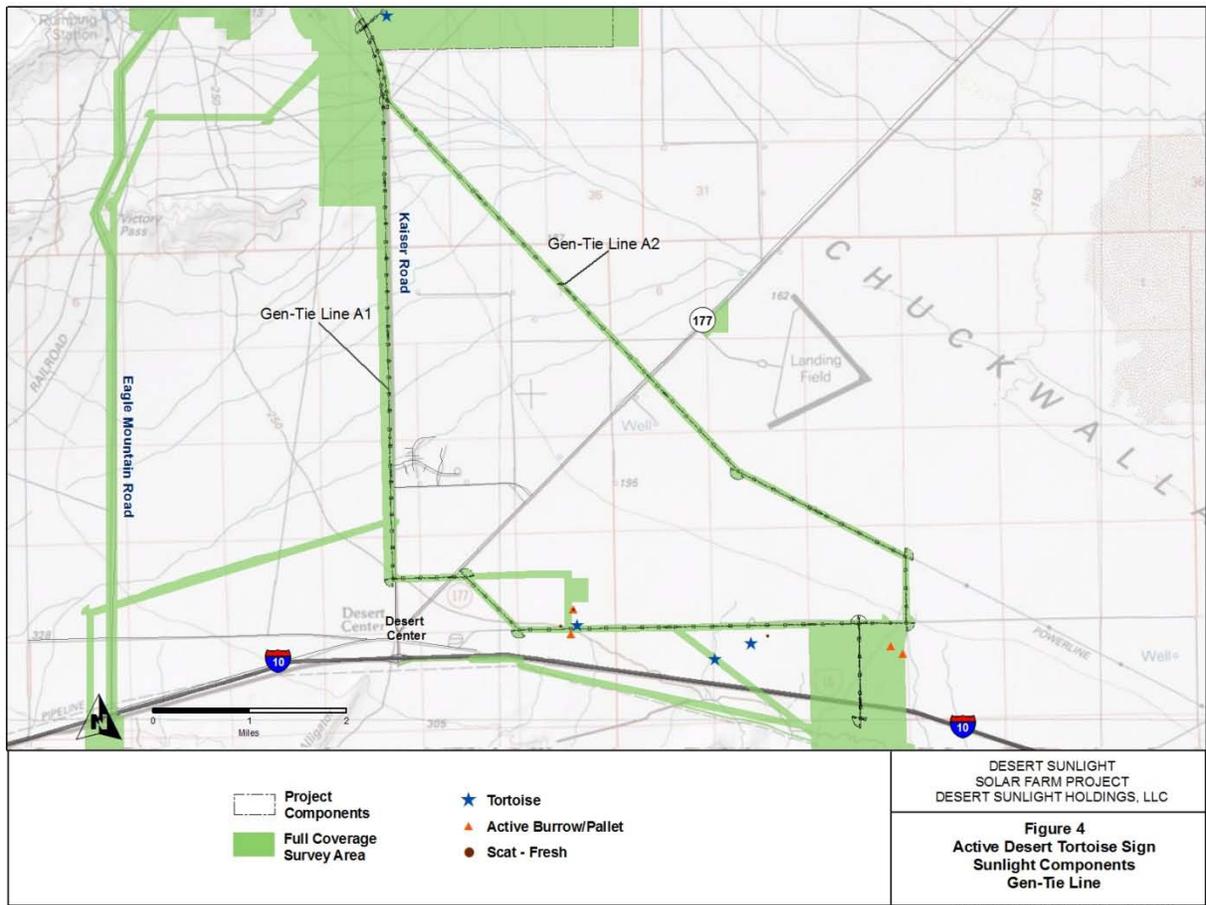
 Solar Farm
 Full Coverage Survey Area

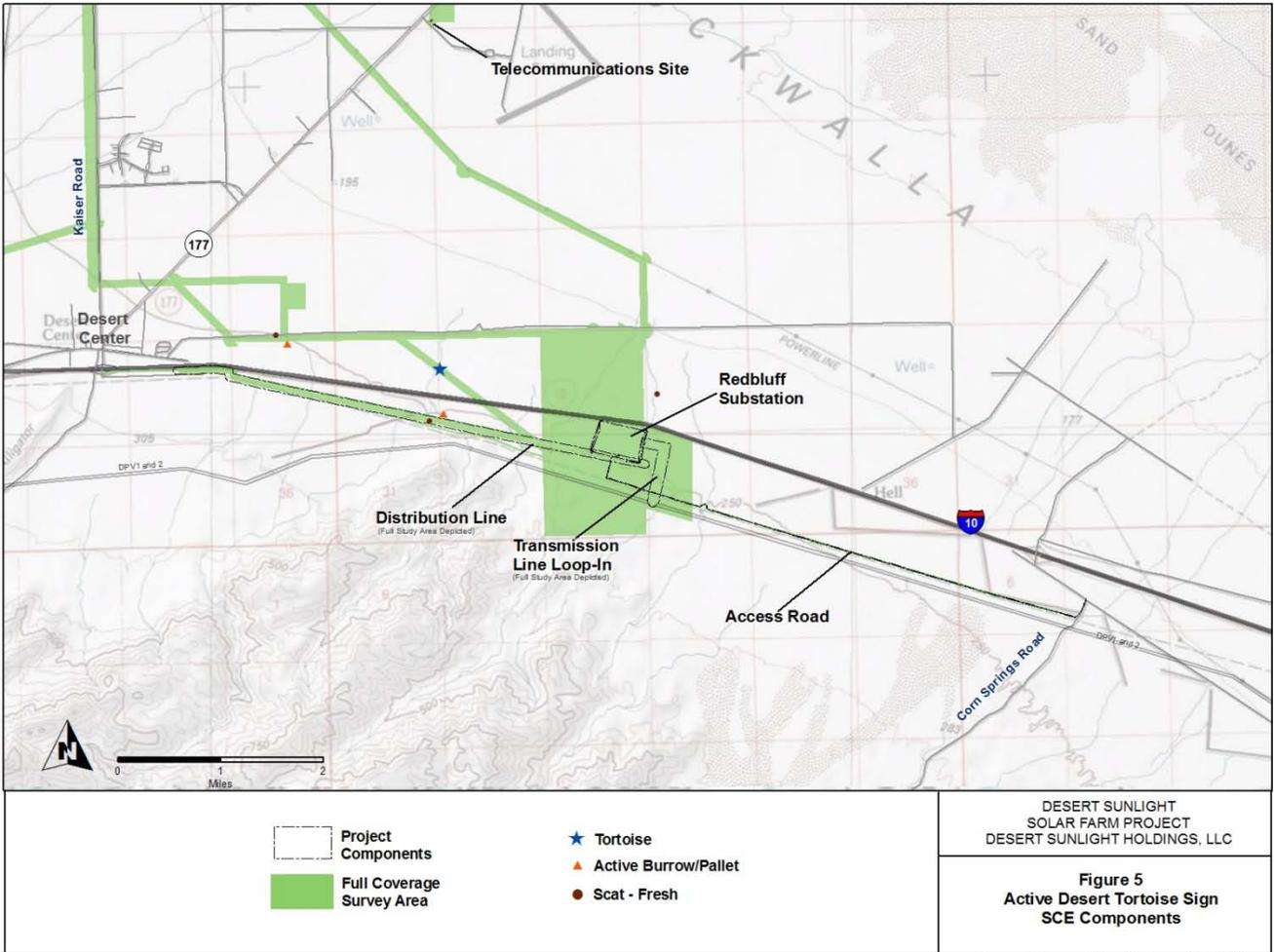
 Live Tortoise
 Active Burrow/Pallet
 Scat
 Mating Ring

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Figure 3
Solar Farm
Active Tortoise Sign

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3.0 Recipient and Control Sites

This section discusses how selected Recipient and Control Sites conform to USFWS guidance documents and protocols for the preparation of Translocation Plans (USFWS 2010; Fraser personal communications 2010). The selection criteria for the Recipient Sites and Control Sites were based on current direction from BLM, the California Department of Fish and Game (CDFG), and USFWS (2009b, 2010; Fraser personal communications 2010); and current research in the field of desert tortoise home range and movement (Bertolero 2007, Desert Tortoise Science Advisory Committee 2009, Dodd 1991, Esque et al, 2010; Harless 2009; Letty 2007, Reinert 1991, Seddon 2007).

3.1 Recipient Sites

Using Geographic Information Systems (GIS) methodology, land located within 40 kilometers (22 miles) of the Solar Farm Site boundaries was assessed for locating potential Recipient Sites. Selection criteria used to further aid in site selection included the following from the *Translocation of Desert Tortoises (Mojave Population) from Project Sites, Plan Development Guidance* (USFWS 2010):

- ◆ Areas of contiguous public lands equal to or greater than the area of the Project
- ◆ Lack of significant barriers to movement
- ◆ Habitat similarity and suitability for all life stages of the desert tortoise
- ◆ Lands containing no existing Rights-of-Way (ROWs), ROW proposals or other encumbrances
- ◆ Lands managed for conservation [in the Project region this includes the Chuckwalla Desert Wildlife Management Area (DWMA), Chuckwalla Critical Habitat Unit (CHU), Areas of Critical Environmental Concern (ACECs), National Park Service land, and both National Park Service and BLM Wilderness Areas]
- ◆ Lands where tortoise populations have been depleted yet still support suitable habitats
- ◆ Lands 15 km (9 miles) from major unfenced roads or highways with distance reduced if fencing is a proposed minimization measure (in the Project region this includes I-10)

In addition to the above criteria, additional criteria were considered in the selection of potential Recipient Sites:

- ◆ Proximity to existing home ranges of individuals on the Solar Farm Site and Red Bluff Substation
- ◆ Potential for increased predation (e.g., raven subsidies)
- ◆ Potential for Upper Respiratory Tract Disease (URTD) to the extent known
- ◆ Existing tortoise densities and distribution within the proposed Recipient Sites
- ◆ Site access

Recipient Sites were chosen as those areas that met the largest number of the selection criteria, which included areas located to the west of the Solar Farm Site, and the area south of the Red Bluff Substation. The Recipient Sites described in Table 1 and shown in Figure 6 are proposed for the Project, with detailed discussion of the selection criteria addressed in the following sections. As shown in Figure 6, these Recipient Sites are also some of the areas of greatest habitat potential in the region (Nussear et al, 2009).

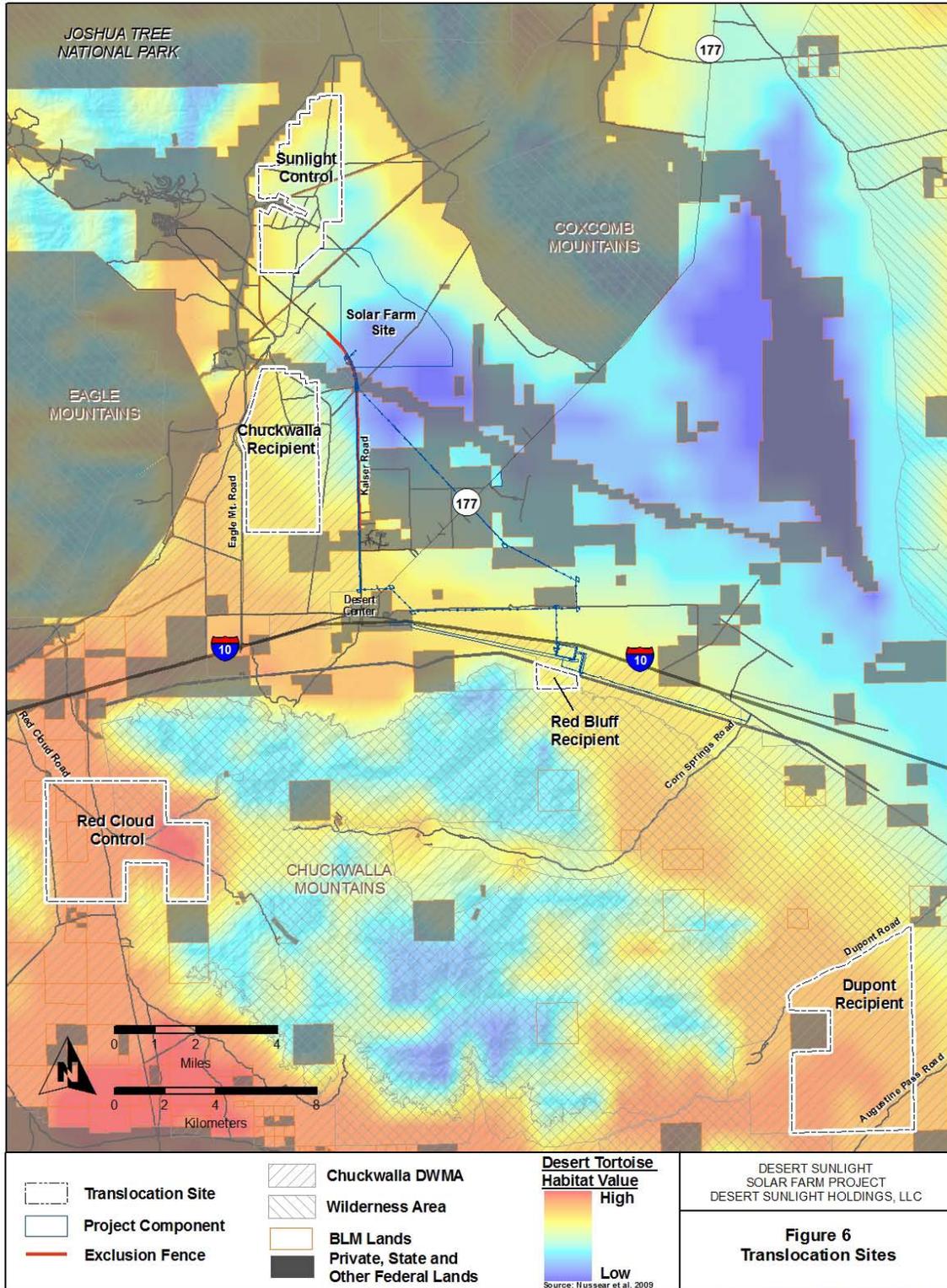


Table 1. Recipient Sites

Project Component (acres)	Responsibility	Recipient Site (acres)	Location (also shown in Figure 6)
Solar Farm Site (3,912)	Applicant	Chuckwalla Recipient Site (4,317)	North of I-10, approximately 1.8 km (1.1 miles) west and southwest of the Solar Farm Site
Red Bluff Substation (75)	SCE	Red Bluff Recipient Site (295)	South of I-10, south of the proposed Red Bluff Substation and DPV1 and DPV2 lines

In addition, the DuPont Recipient Site, covering approximately 7,460 acres south of I-10 and DuPont Road east of the Chuckwalla Mountains is evaluated as an alternative potential Recipient Site for the Solar Farm Site.

3.1.1 Chuckwalla Recipient Site

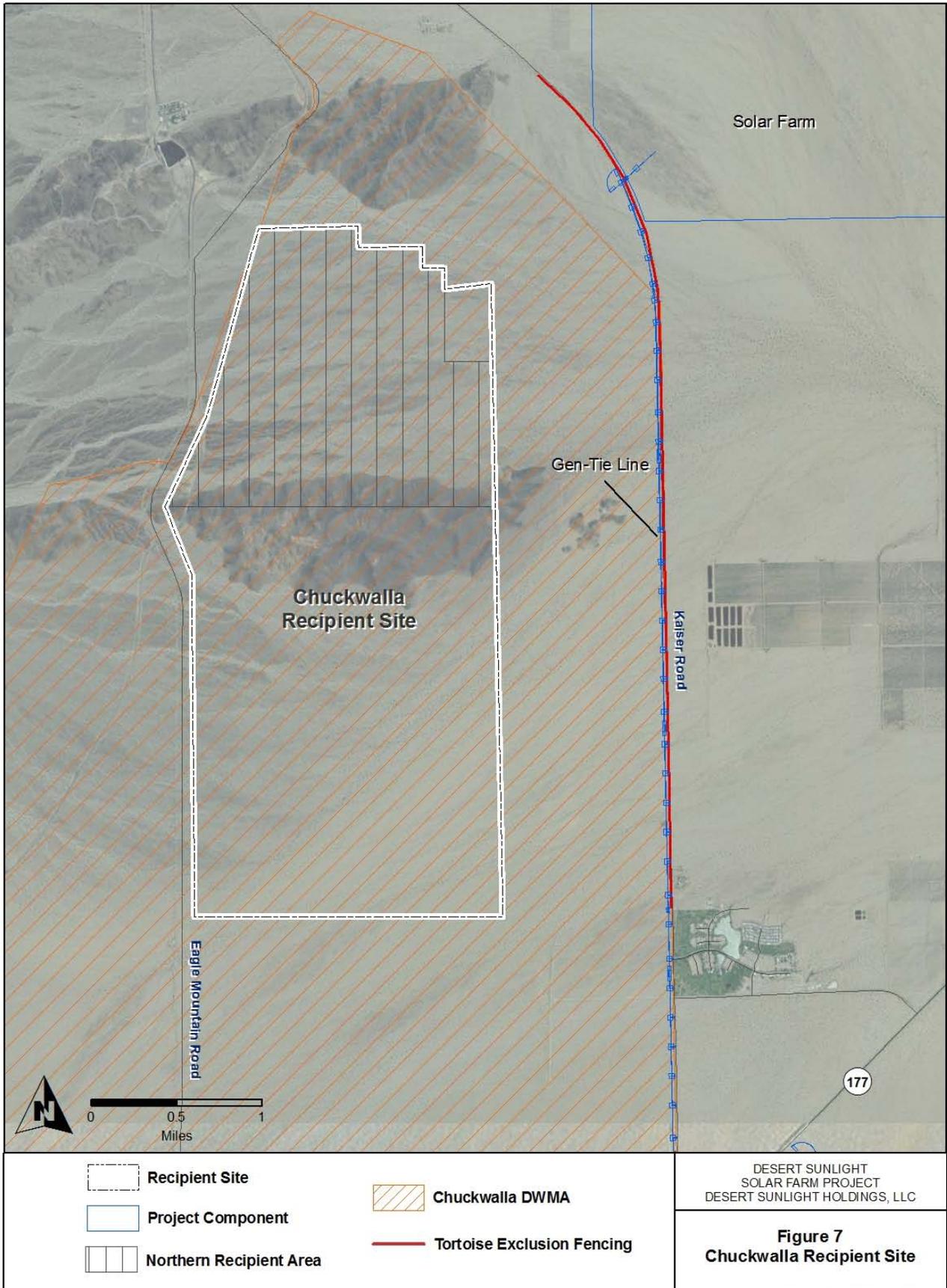
The location of the Chuckwalla Recipient Site is shown in Figure 7. This section addresses each selection criteria described above in detail, including the current densities of desert tortoise on the Chuckwalla Recipient Site.

Within the Chuckwalla Recipient Site, the site has been divided into a north and southern portion, divided by the hills in the center of the site (Figure 7). The northern Chuckwalla Recipient Site covers approximately 1,490 acres (6.0 km²), an area slightly larger than the area of the Solar Farm Site that supports moderate densities of desert tortoise (1,454 acres or 5.9 km² – Ironwood Consulting 2010b). This northern portion is the preferred location for translocation because it meets more of the selection criteria described below. However, the entire Chuckwalla Recipient Site will be retained as a potential site to ensure that if a larger number of tortoises are found that need to be translocated than can be moved into the northern portion of the site, the southern portion will be used. A preliminary disposition plan that described this further is present in Section 4.0 of this document.

The use of the Chuckwalla Recipient Site is also conditional upon the following conditions being met as stated by the USFWS Desert Tortoise Recovery Office (Fraser 2010):

1. A reasonable certainty is required that the transmission line for the Eagle Mountain Pumped Storage Project will not occur through the DWMA along Eagle Mountain Road and will instead be co-located with transmission for Desert Sunlight along Kaiser Road.

The reason for this condition is that if the transmission lines for both projects, with lattice towers for the 500kV line for Eagle Mountain Pumped Storage Project and monopoles for Desert Sunlight, are constructed where currently proposed; and tortoise fencing is constructed as recommended below for the Desert Sunlight project with similar fencing is constructed for the Eagle Mountain Pumped Storage Project with Eagle Mountain Road improved for the purposes of that project, this portion of the Chuckwalla DWMA could be isolated and potentially no longer contribute to recovery of the species.



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2. Permanent tortoise fencing is constructed along Kaiser Road to I-10 (or to a mutually agreed upon point based on land ownership or habitat suitability). Permanent tortoise fencing is constructed along I-10. A discussion of proposed fencing is presented below.
3. Raven and raptor deterrents are built into the project design for the transmission, and appropriate monitoring and adaptive management are implemented subsequent to project construction for the life of the transmission line component (details in the Project's Raven Management Plan, Ironwood 2010c).

3.1.1.1 Selection Criteria

Areas of contiguous public lands equal to or greater than the area of the Project. The Solar Farm Site covers approximately 3,912 acres. The Chuckwalla Recipient Site is located on contiguous public lands covering approximately 4,317 acres.

Lack of significant barriers to movement. In the Project region significant barriers to movement include I-10, Hwy 177, portions of the MWD aqueduct that are above ground, and steep rocky terrain along the boundaries of Joshua Tree National Park (JTNP). None of these are found on or adjacent to the Chuckwalla Recipient Site (Figure 6). In addition, regional modeling of habitat potential for desert tortoise shows an area of higher potential habitat that extends from I-10 to the south and continues north into the Pinto Basin and JTNP. The Chuckwalla Recipient Site is within this potential corridor area.

Habitat similarity and suitability for all life stages of the desert tortoise. The Chuckwalla Recipient Site supports Creosote Bush-White Bursage vegetation and several areas of Blue Palo Verde-Ironwood-Smoke Tree Series vegetation (Desert Dry Wash Woodland), similar to habitats found on the Solar Farm Site, particularly those areas that support the highest densities of desert tortoise on the Solar Farm Site. These habitats are known to support all life stages of the desert tortoise (USFWS 2008).

Containing no existing ROWs, ROW proposals or other encumbrances. There are no existing designated ROWs, no currently proposed ROWs, and no other encumbrances located within the Chuckwalla Recipient Site. BLM's LR2000 database does not show any over-filings or pending applications for use of the Chuckwalla Recipient Site property. A buffer of 100 meters (325 feet) on the north side of this corridor is excluded from the translocation area to avoid the MWD emergency spillway to the north (Figure 7).

Be managed for conservation. In the Project region DWMA, CHU, ACEC, National Park Service, and Wilderness Areas are managed for conservation. The Chuckwalla Recipient Site is located on BLM-managed lands within the Eastern Colorado Desert Recovery Unit for the desert tortoise. The Chuckwalla Recipient Site is within the Chuckwalla DWMA and CHU for desert tortoise.

Lands where tortoise populations have been depleted yet still support suitable habitats. The Chuckwalla Recipient Site is within a portion of the Chuckwalla DWMA and CHU that extends north of I-10 with the majority of the DWMA and CHU located south of I-10. The recipient site is in an area where densities are lower than the average for the recovery unit, although the lack of large numbers of carcasses found in the area do not support that these are lands that have been recently depleted. The Chuckwalla recipient Site does support suitable habitat as evidenced by the survey data for the site (Section 3.1.1.2) and supported by the USGS modeling (Nussear 2009).

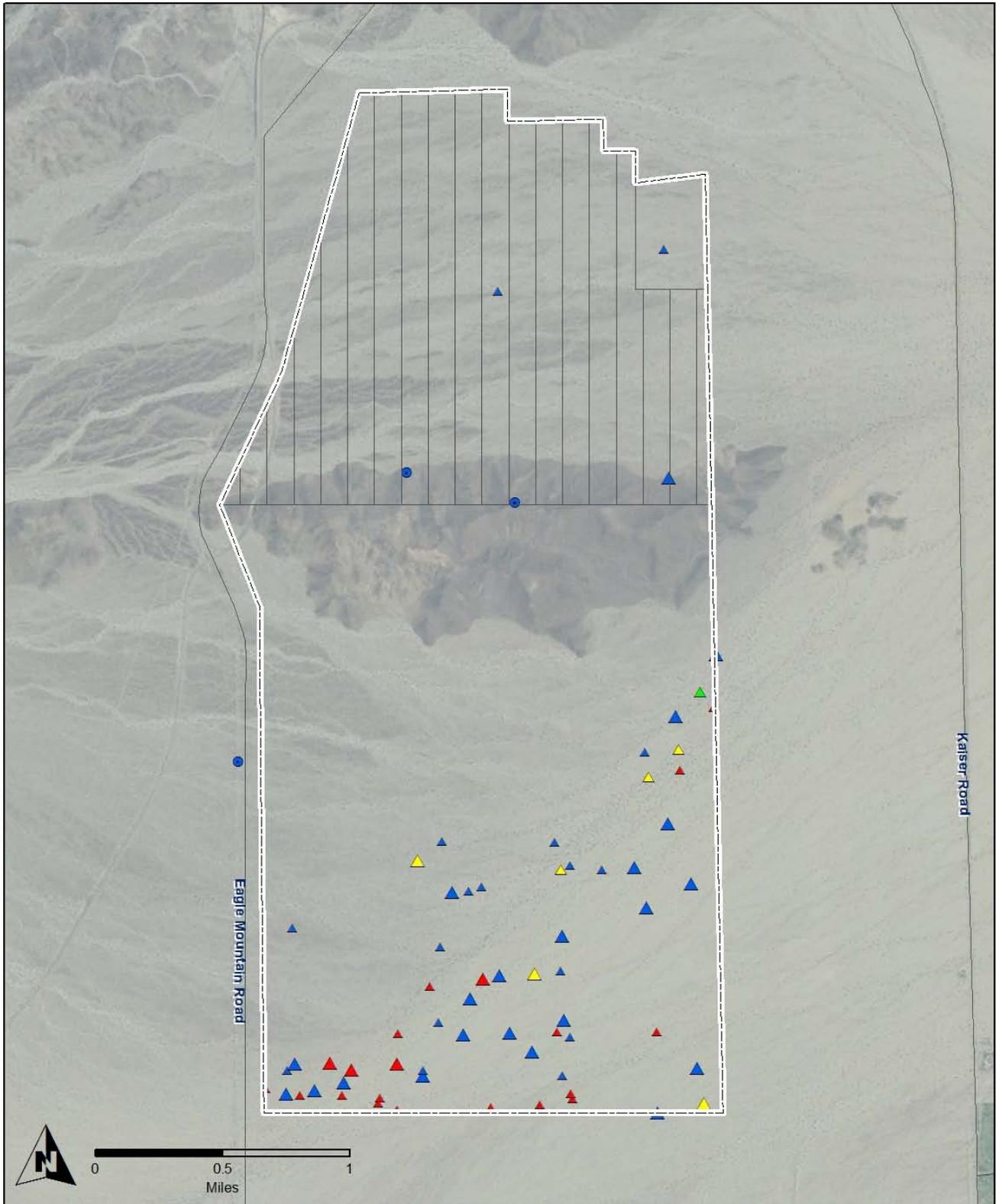
Lands 15 km (9 miles) from major unfenced roads or highways. Two phases of the Chuckwalla Recipient Site are proposed for translocation. The area north of the hills in the center of the Recipient Site will be used first for several reasons, partly because it is furthest from I-10. At the closest point, the area north of the hills is approximately 6 km (5 miles) north of I-10. Fencing will be installed along I-10 under an agreement with BLM and the easement holder of the land for the installation and long-term maintenance of this fence.

If additional area is required for translocation due to the number of desert tortoises found during clearance surveys, the area of the Chuckwalla Recipient Site south of the hills will be used and fencing along I-10 extended to include all areas within 15 km of the Chuckwalla Recipient Site's southern boundary.

In addition, desert tortoise fencing will be placed along the west side of Kaiser Road, as shown in Figure 7, under an agreement with BLM and the easement holder of the land for the installation and long-term maintenance of this fence.

Proximity to existing home ranges of individuals on the Solar Farm Site and Red Bluff Substation. The Chuckwalla Recipient Site is close enough to the Solar Farm Site (within 2.0 km or 1.6 miles) to be within the male home range of some of the individual tortoises on the southwestern part of the Solar Farm Site.

Potential for increased predation. Local known predators of desert tortoise include coyotes that can prey on tortoises of all age classes, and desert kit fox and ravens that can prey on young tortoises and eggs. The densities of coyote and kit fox on the Chuckwalla Recipient Site were mapped during full coverage surveys conducted in 2010 and are shown in Figure 8. To avoid the potential for increased predation from coyotes and kit fox, the southwestern portion of the Chuckwalla Recipient Site will not be used for translocation due to high densities of coyote and kit fox dens.



- | | | |
|-------------------------|------------------------------|------------------|
| Recipient Site | KIT FOX - direct observation | COYOTE - complex |
| Northern Recipient Area | KIT FOX - complex | COYOTE - burrow |
| | KIT FOX - burrow | CANID - complex |
| | BADGER - burrow | CANID - burrow |

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Figure 8
Chuckwalla Recipient Site
Fall 2010 Survey Results
All Canid Burrows

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To avoid and minimize the potential for increased raven predation, the following Project features are included:

- ◆ Raven deterrents will be installed on the Project Gen-Tie Line (as per the Common Raven Management Plan, Ironwood 2010c).
- ◆ Buffering the Chuckwalla Recipient Site a minimum of 500 meters away from Kaiser Road, and from a closed Riverside County landfill located west of Kaiser Road.

Site access. Kaiser and Eagle Mountain Roads provide paved access for translocation in the Chuckwalla Recipient Site within 3.2 km (2.0 miles) of all areas of the Recipient Site, which allows efficiency for monitoring of both the resident animals and the translocated animals and ensures rapid access even in situations of natural disaster. Although these roads are paved, they support extremely low traffic volumes and are not anticipated to significantly change with the implementation of the Project (with the exception of the estimated 26-month construction phase of the Project). During this phase of the Project, there will be an increased volume of truck traffic on Kaiser Road.

3.1.1.2 Desert Tortoise Densities

Surveys were conducted between September 20 and October 6, 2010 following current USFWS protocols (USFWS 2009a) to determine the current density of desert tortoise within the Chuckwalla Recipient Site. All active sign of desert tortoise (live animals, active and good burrows, scat, tracks, and mating rings) are mapped on Figure 9. All live desert tortoises found were observed for signs of upper respiratory tract disease (URTD). No individuals exhibited obvious clinical signs of these diseases.

The Chuckwalla CHU is estimated to support an average of 8.3 tortoises/km², with a range of 3 to 15 per km². No tortoises will be relocated to areas within the Chuckwalla Recipient Site that are estimated to contain more than 130% of the average estimate or 10.8 tortoises/km².

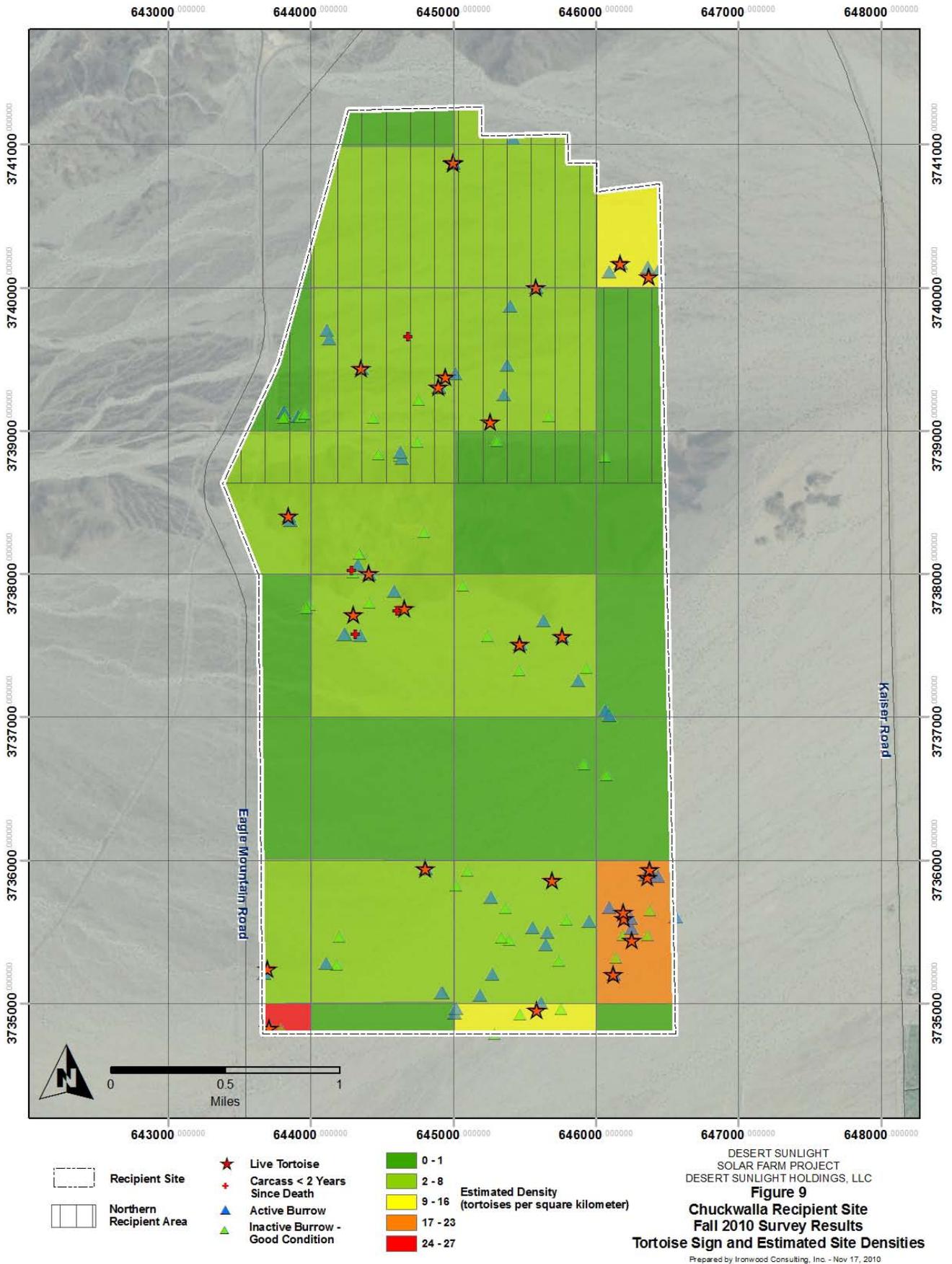
Figure 9 shows the estimated density of each square kilometer of the Chuckwalla Recipient Site. Because surveys of the recipient site showed that densities there are in most cases less than the estimated 8.3 tortoises/km², all translocated tortoises will be placed in the Project's Disposition Plan to retain density estimates under an estimated 6.0 km² (see proposed Translocation and Disposition in Section 4.2.3)

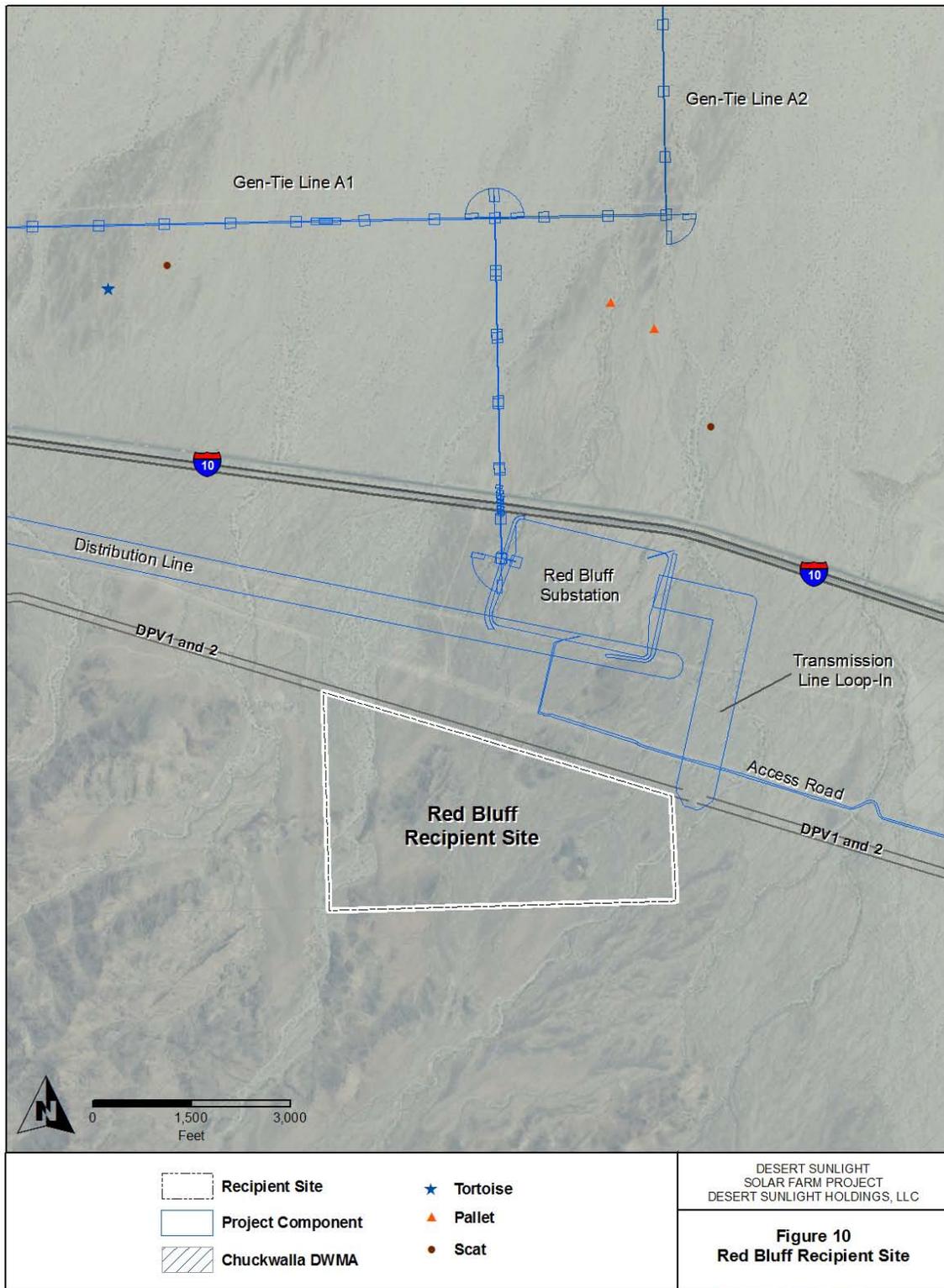
3.1.2 Red Bluff Recipient Site

The Red Bluff Recipient Site is shown in Figure 10. This section addresses each selection criteria described above in detail, and the current densities of desert tortoise on the Red Bluff Recipient Site.

3.1.2.1 Selection Criteria

Areas of contiguous public lands equal to or greater than the area of the Project. The Red Bluff Substation covers approximately 75 acres. The Red Bluff Recipient Site is located on contiguous public lands covering approximately 295 acres.





Lack of significant barriers to movement. In the region of the Red Bluff Substation, significant barriers to movement include I-10 and steep rocky terrain along the boundaries of the Chuckwalla Mountains, just south of the Red Bluff Recipient Site (Figure 10). Using the Red Bluff Recipient Site will retain any translocated tortoises within their existing corridor between the base of the Chuckwalla Mountains and I-10.

Habitat similarity and suitability for all life stages of the desert tortoise. The Red Bluff Recipient Site supports rocky substrates with sparse Creosote Bush-White Bursage vegetation and several areas of Blue Palo Verde-Ironwood-Smoke Tree Series vegetation (Desert Dry Wash Woodland), similar to habitats found on the Red Bluff Substation. These habitats are known to support all life stages of the desert tortoise (USFWS 2008).

Containing no existing ROWs, ROW proposals or other encumbrances. Several existing telephone, electrical transmission, and high-power gas lines and associated access roads are located within the Red Bluff Recipient Site. A buffer of 100 meters (325 feet) on both sides of each existing line or road was excluded from the translocation area. Beyond existing ROWs or encumbrances, and the soon-to-be constructed DPV 2 line, BLM's LR2000 database does not show any over-filings or pending applications. The northern portion of the Red Bluff Recipient Site will be avoided to the extent possible for translocation due to the proximity to DPV 1 and 2 lines

Be managed for conservation. In the Project region DWMA, CHU, ACEC, National Park Service, and Wilderness Areas are managed for conservation. The Red Bluff Recipient Site is located on BLM-managed lands within the Eastern Colorado Desert Recovery Unit for the desert tortoise. The Red Bluff Recipient Site is within the Chuckwalla DWMA and CHU for desert tortoise and is adjacent to the Chuckwalla Wilderness.

Lands where tortoise populations have been depleted yet still support suitable habitats. The Red Bluff Recipient Site is within a portion of the Chuckwalla DWMA and CHU that extends between the north side of the Chuckwalla Mountains and the south side of I-10. The lack of recent carcasses in this area suggests it is an area of relatively stable population densities.

Lands 15 km (9 miles) from major unfenced roads or highways. The closest point of the Red Bluff Recipient Site will be approximately 1.3 km (0.8 miles) south of I-10. Fencing will be installed along I-10 under an agreement with BLM and the easement holder of the land for the installation and long-term maintenance of this fence.

Proximity to existing home ranges of individuals on the Red Bluff Substation and Red Bluff Substation. The Red Bluff Recipient Site is close enough to the Red Bluff Substation (within 2.0 km or 1.6 miles) to be within the male home range of individual tortoises on the southwestern part of the Red Bluff Substation.

Potential for increased predation. Local known predators of desert tortoise include coyotes that can prey on tortoises of all age classes, and desert kit fox and ravens that can prey on young tortoises and eggs. To avoid the potential for increased predation from raven and other raptors that may be attracted to SCE facilities, the northern portion of the Red Bluff Recipient Site will be avoided to the extent possible for translocation due to the proximity to DPV 1 and 2 lines.

Site access. Existing dirt roads provide good access for translocation within 2.0 km (1.2 miles) of all areas of the Red Bluff Recipient Site, which allows efficiency for monitoring of both the resident animals and translocated animals.

3.1.2.2 Desert Tortoise Densities

The Red Bluff Recipient Site is shown in Figure 10 and includes all data collected for desert tortoise presence and distribution in this recipient site. The Red Bluff Recipient Site was surveyed for resident desert tortoises in 2009 and 2010 using current protocols (USFWS 2009a). No areas of the Red Bluff Recipient Site appear to contain densities of desert tortoise higher than eight individuals per square kilometer.

3.1.3 DuPont Recipient Site

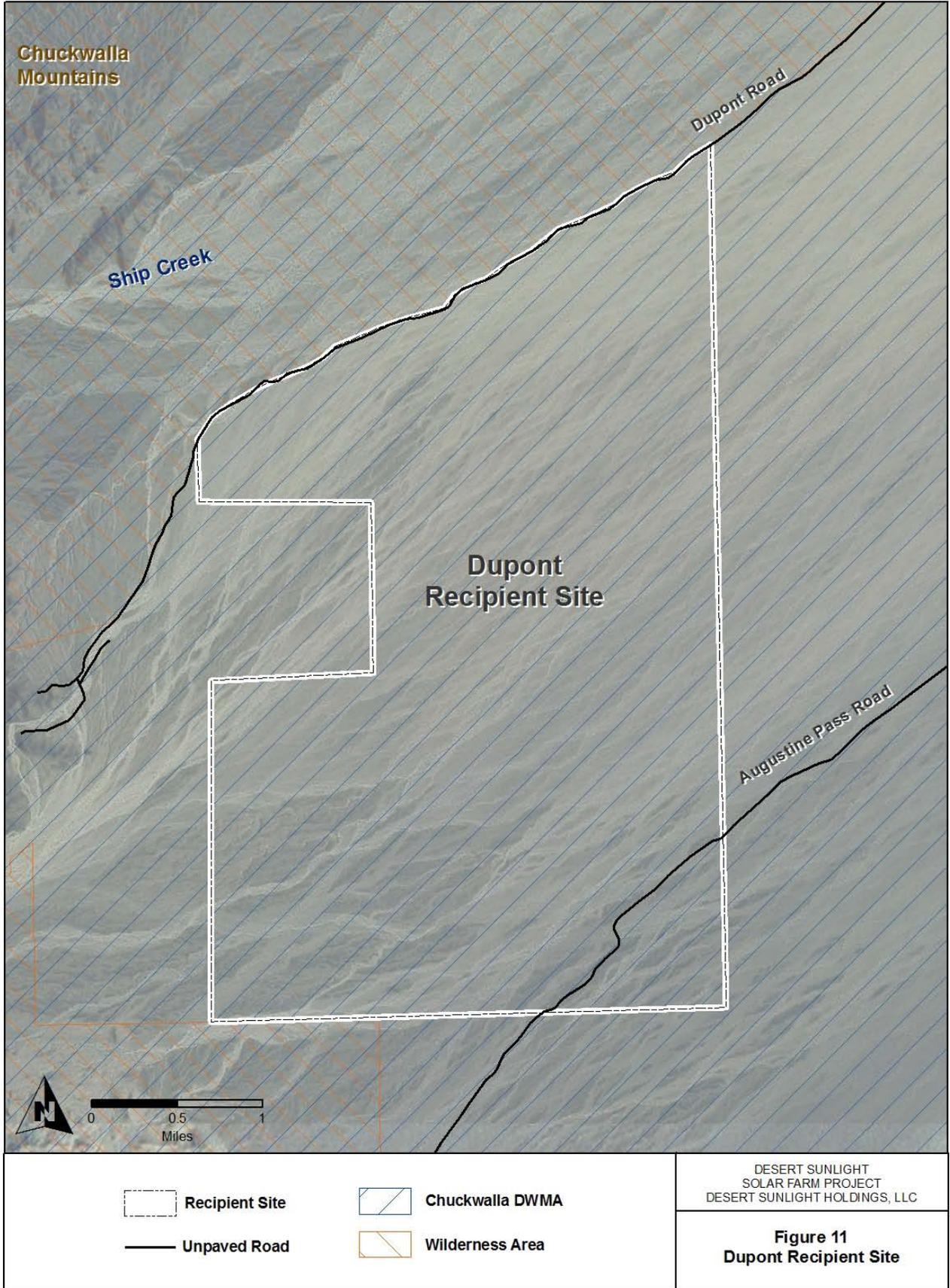
The DuPont Recipient Site is the alternative recipient site for desert tortoise and is located south of I-10 on BLM-managed lands immediately east of the Chuckwalla Wilderness Area (Figure 11). This section addresses each selection criteria in detail, and the current knowledge about densities of desert tortoise on the DuPont Recipient Site.

3.1.3.1 Selection Criteria

Areas of contiguous public lands equal to or greater than the area of the Project. The Solar Farm Site covers approximately 3,912 acres. The DuPont Recipient Site is located on contiguous public lands covering approximately 7,460 acres.

Lack of significant barriers to movement. The DuPont Recipient Site is situated approximately 24 kilometers (15 miles) southeast of the Solar Farm Site. Barriers that might pose a significant restriction to movement in the DuPont area include I-10 to the north and the Chuckwalla Mountains to the west.

Habitat similarity and suitability for all life stages of the desert tortoise. The DuPont Recipient Site supports sandy substrates with small gravel and a sparse Creosote Bush-White Bursage vegetation community with several areas of Blue Palo Verde-Ironwood-Smoke Tree Series vegetation (Desert Dry Wash Woodland). Although the vegetation communities are the same as those found on the Solar Farm Site, the substrates are more friable and vegetation appears to be both more dense and diverse than that found on the Solar Farm Site. The vegetation communities found on the DuPont Recipient Site are known to support all life stages of the desert tortoise (USFWS 2008).



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Containing no existing ROWs, ROW proposals or other encumbrances. There are no existing designated ROWs or other encumbrances that will conflict with translocation of tortoises within the DuPont Recipient Site. BLM's LR2000 database indicated withdraw of lands into the Wilderness Area, withdrawal of a Solar Energy Study Area, and a private land transfer to the BLM within portions of the site.

Be managed for conservation. In the region of the DuPont Recipient Site, DWMA, CHU, ACEC, and Wilderness Areas are managed for conservation. The DuPont Recipient Site is located on BLM-managed lands within the Eastern Colorado Desert Recovery Unit for the desert tortoise. The DuPont Recipient Site is within the Chuckwalla DWMA and CHU for desert tortoise and is adjacent to the Chuckwalla Wilderness. One section (640- acres) within the DuPont Recipient Site is owned and managed by the State of California. No individuals will be translocated in this section, although it will remain part of the recipient site.

Lands where tortoise populations have been depleted yet still support suitable habitats. Little is known about desert tortoise densities at the DuPont Recipient Site. U.S. Geological Survey (USGS) modeling (Figure 6) suggests a moderate to high potential for presence based on habitat suitability. Existing density information is discussed further in Section 3.1.3.2 below. The DuPont Recipient Site is within a large area of the Chuckwalla DWMA and CHU south side of I-10.

Lands 15 km (9 miles) from major unfenced roads or highways. The closest major unfenced road or highway to the DuPont Recipient Site is approximately 5.0 km (3.1 miles) north, where I-10 is located.

Proximity to existing home ranges of individuals on the Solar Farm Site and Solar Farm Site. The DuPont Recipient Site is too far away with too many barriers (e.g., I-10) to be within the male home range of individual tortoises on the Solar Farm Site.

Potential for increased predation. Local known predators of desert tortoise include coyotes that can prey on tortoises of all age classes, and desert kit fox and ravens that can prey on young tortoises and eggs. No known subsidies for these predators (e.g., human activity, trash dumping, etc.) are anticipated to increase within the DuPont Recipient Site. Therefore, the risk of predation from these predators is not likely to increase substantially in the near future.

Site access. The existing dirt roads that provide access for translocation within 4.0 km (3.2 miles) of all areas of the DuPont Recipient Site are in moderate to poor condition. The conditions of the roads suggest possible concern for access to translocated and resident animals in the event of impassable road conditions or natural disaster.

3.1.3.2 Desert Tortoise Densities

The DuPont Recipient Site is located in the Chuckwalla Valley and supports desert tortoise, although densities are unknown. Range-wide sampling conducted between 2001 and 2005 within the region of the DuPont Recipient Site indicated the historical presence of tortoise (i.e., carcasses) and recorded one live tortoise in 2003 (USFWS 2006).

Protocol-level surveys have not been conducted within the DuPont Recipient Site. In September 2010, random transects were walked throughout the site to assess general habitat characteristics and habitat suitability for desert tortoise. These surveys covered approximately 20 linear miles and recorded no active sign of desert tortoise, nor any older sign (currently unused burrows, old scats, carcasses, etc).

If the Chuckwalla Recipient Site is determined to be unusable prior to translocation, protocol-level surveys (USFWS 2009a) will be completed at the DuPont Recipient Site. These surveys will identify and exclude areas of tortoise densities higher than approximately 8 tortoise/km² or concentrations of predator sign.

3.1.4 Linear Components of the Proposed Action

There is no need to designate a recipient site for tortoises located along the linear components of the Project (USFWS 2010b). Linear components are often separated from the other Project component discussions in this document because desert tortoises are not required to be translocated from linear components of the Project. Linear components of the Project include:

- ◆ Applicant: Gen-Tie Line
- ◆ SCE: Access road, distribution line, transmission loop-in, and telecommunication site

Any desert tortoises found on these linear components of the Proposed Action will be moved out of harm's way but not translocated pursuant to USFWS guidance (2010) as described in further detail in Section 4.

3.2 Control Sites

The purpose of a Control Site is to observe and record the movements and behaviors of animals within an area with no impact from the Project, so that these data can be compared to data recorded for desert tortoise movement and behavior among the translocated population and the recipient population.

Selection criteria for the control site include:

- ◆ Similar habitat to the recipient site
- ◆ Not previously used as a recipient site
- ◆ Minimum distance of 10km (6 miles) from the recipient site or have fencing or other movement barrier between sites

These selection criteria are discussed in detail below for each potential control site:

- ◆ **Sunlight Control Site**, located within the original study area north of the Solar Farm Site
- ◆ **Red Cloud Control Site**, located approximately seven miles southwest of Desert Center, south of I-10.

One Control Site will be selected and used by the Applicant in conjunction with all translocated desert tortoises from the Solar Farm Site. No control site is required for the SCE components because based on surveys conducted at the site fewer than five tortoises are estimated to be translocated from the Red Bluff Substation.

3.2.1 Sunlight Control Site

The Sunlight Control Site is shown in Figure 6. Because the Sunlight Control Site is not within an area that is protected as a conservation area, this control site will only be used if BLM takes formal regulatory action to ensure protection of the control population from ROW or other encumbrances for the duration of the long-term monitoring period (Section 5).

Similar habitat to the recipient site. The Sunlight Control Site is located near the northern boundary of the Solar Farm Site and support habitats very similar to those on the portion of the site that supports higher densities of desert tortoise, such as upland areas of stabilized desert pavement and channelized drainages with soft banks and higher vegetation density and diversity than the low-density desert tortoise portions of the Solar Farm Site.

Not previously used as a recipient site. The Sunlight Control Site has not been previously used as a recipient site for other projects.

Minimum distance of 10 km (6 miles) from the recipient site or have fencing or other movement barrier between sites. Although portions of the Sunlight Control Site are within 10 km (6 miles) of the Chuckwalla Recipient Site, several barriers to movement between the sites will exist, including Kaiser Road and desert tortoise fencing placed along the west side of Kaiser Road to prevent translocated animals from crossing the road towards the Solar Farm Site.

3.2.2 Red Cloud Control Site

The Sunlight Control Site is the Applicant's preferred alternative. However, if the Sunlight Control Site is not used, the Project will use the Red Cloud Control Site (Figure 6). Although project-specific surveys of this site have not been conducted, available data suggests that this site has the potential to support at least moderate to densities of desert tortoise (Nussear 2009; USFWS 2006)

Similar habitat to the recipient site. The Red Cloud Control Site is located southwest from the Solar farm Site and supports habitats most similar to the DuPont Recipient Site, also located south of I-10 with substrates that are more friable than those on the Solar Farm Site and vegetation that appears to be more dense and diverse.

Not previously used as a recipient site. The Red Cloud Control Site has not been previously used as a recipient site for other projects.

Minimum distance of 10 km (6 miles) from the recipient site or have fencing or other movement barrier between sites. No portion of the Red Cloud Control Site is within 10 km (6 miles) of the Chuckwalla or DuPont Recipient Sites. In addition, several barriers to movement between the sites will exist including I-10 and the Chuckwalla Mountains.

4.0 Proposed Methods for Desert Tortoise Translocation

4.1 Definitions

4.1.1 Health Assessments

Detailed health assessments of desert tortoises will be conducted following current USFWS guidance by individuals approved and permitted by the USFWS and CDFG to conduct such assessments. Detailed health assessments will be performed prior to translocation and repeated periodically during long-term monitoring as discussed in Section 5.

Any individual tortoise that exhibits severe clinical signs of URTD will be transported to the DTCC near Las Vegas, Nevada for further evaluation. Tortoises will only be prepared for transport to the DTCC by individuals authorized for these activities under the Project Biological Opinion (BO). Preparation for transport will include hydrating the animal according to current USFWS guidelines and placing the tortoise in a new clean, ventilated protective container and placing it in the interior of the vehicle. Once the animal is ready for transport, the Lead Translocation Biologist will communicate with the DTCC that the animal is being transported to their facility and will remain in communication with the transport vehicle and DTCC until the animal has arrived at the DTCC and is removed from the vehicle by DTCC personnel. The tortoise will be transported to the DTCC within 48 hours of it being discovered with clinical signs of disease. The vehicle transporting the tortoise will be in good working order with working air conditioning and the driver will keep the container with the animal inside the vehicle at all times with temperatures remaining under 27 degrees Celsius (°C) or 80 degrees Fahrenheit (°F) until it is removed at the DTCC by their personnel. The driver will not stop the vehicle for longer than 10 minutes on the way to the DTCC. Personnel at the DTCC will coordinate with the Project's key personnel (Section 5) to update them on the status of the animal and any potential of moving it back out of captivity.

4.1.2 Transmittering

All tortoises found over 120 mm mean carapace length (MCL) without obvious clinical signs of URTD will be given a unique identifier provided by the USFWS and fitted with a transmitter following methods in *Review of Radio Transmitter Attachment Techniques for Chelonian Research and Recommendations for Improvement* (Boarman et al 1998). These activities will conform to restrictions of time of day, temperature, and total time handled (*Desert Tortoise Field Manual*; USFWS 2009). Transmitters will remain on all individuals throughout the 5-year monitoring period and be replaced as necessary (Section 5).

4.1.3 Disease Testing

All tortoises to be translocated to Project recipient sites will be tested for URTD using an enzyme-linked immunoabsorbent assay (ELISA) test and monitored in situ or penned on site pending test results. Blood will be drawn for disease testing between March 1 and October 15 to the extent possible. Blood drawing will only occur on the same day as transmittering if these activities combined will not exceed restrictions of time of day, temperature, and total time handled (*Desert Tortoise Field Manual*; USFWS 2009). If these restrictions could be exceeded, the blood drawing will occur on the following day.

Tortoises will remain in place until test results are received. All animals with positive test results will be transported to the DTCC as described above in Section 4.1.1. Animals with negative test results will be translocated during the active season only according to the translocation and disposition plan below. Suspect test results will indicate the animal should be held in a quarantine pen until a repeat test is run.

4.2 Steps in Translocation Process – Solar Farm Site

It is anticipated that more than five individual desert tortoises are likely to be translocated from the Solar Farm Site. Any individuals translocated will likely be translocated greater than 500 meters to the Chuckwalla Recipient Site.

4.2.1 Surveys and Disease Testing at Chuckwalla Recipient Site

Initially, only the northern portion of the Chuckwalla Recipient Site will be used for translocation (as shown in Figure 7), unless it becomes clear that the number of tortoises needed to be translocated could exceed the desired density of animals in that area. Although the northern portion of the Chuckwalla Recipient Site (1,490 acres) is smaller than the acreage of the entire Solar Farm Site, it is larger than that portion of the Solar Farm that supports desert tortoises (approximately 1,454 acres). If more tortoises are found on the Solar Farm Site than anticipated by the Preliminary Disposition Plan (Section 4.0), the southern portion of the Chuckwalla Recipient Site will also be used and activities described in this report will be extended to cover this area (fencing along I-10, disease testing, etc).

After receiving project permits allowing handling, health assessment and disease testing of tortoises for the Project, surveys will begin to: (1) confirm desert tortoise densities at the recipient site, (2) conduct health assessments and ELISA tests for all tortoises found and (3) attach transmitters to all tortoises found within the northern portion of the recipient site.

1. Surveys will be conducted using current protocols issued by the USFWS and/or CDFG to confirm densities of desert tortoises within the northern portion of the Chuckwalla Recipient Site targeted for translocation. All live tortoises found will receive detailed health assessments and blood draws for the ELISA tests.
2. No animals will be translocated to the Chuckwalla Recipient Site until test results for the ELISA test showed that none of the individuals within the northern part of the recipient site had positive or suspect test results. Suspect results will be re-tested to confirm positive or negative results.
3. Determination of Tortoise Densities and Determination of Disease Sampling Area. The northern portion of the Chuckwalla Recipient Site is approximately 1,490 acres (6.0 km²). In GIS, a 6.5 km buffer was established around this 1,490 acre area with a resulting polygon of approximately 51,000 acres (205 km²). In order to estimate the density of tortoises within this 6.5-km buffer area, the full-coverage desert tortoise survey area and observations of live tortoises from project-specific surveys were overlaid and clipped to the 6.5-km buffer. Approximately 32% of the 6.5-km buffer area has been surveyed by project-specific full coverage desert tortoise surveys. Sixty-three tortoises were located within the 16,111 acres (64 km²) of full coverage survey area. Using the USFWS formula for population estimation, 125 tortoises were estimated to occur within the full coverage survey area. The resulting density was 125 tortoises/64 km², or 2.0 tortoises/km².

Of the total 205 km² of land within the 6.5 km buffer area, 125 km² is managed by the BLM, which represents the area where authorized disease testing of tortoise will occur (Figure 12). The remaining land is owned and managed by the National Park Service (38 km²), State Lands Commission (3 km²), and other entities (including MWD and private land holdings) (39 km²). BLM land located east of Kaiser Road was excluded because the Project's installation of tortoise exclusion fence along Kaiser Road will eliminate the transfer of disease across Kaiser Road. In GIS, 1 km concentric bands were generated around the proposed northern Chuckwalla Recipient Site and restricted to the BLM land located within the 6.5 km closer to the recipient site have a higher likelihood to come into contact

with translocated tortoises, therefore a greater proportion of these tortoises will be subject to disease testing. Figure 13 shows numbers of individual desert tortoises will be located and tested for each concentric ring.

4. If any tested animals have positive results, the Chuckwalla Recipient Site will not be used and effort will begin at Step 1 above at the DuPont Recipient Site.

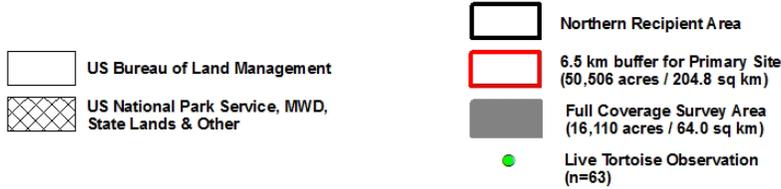
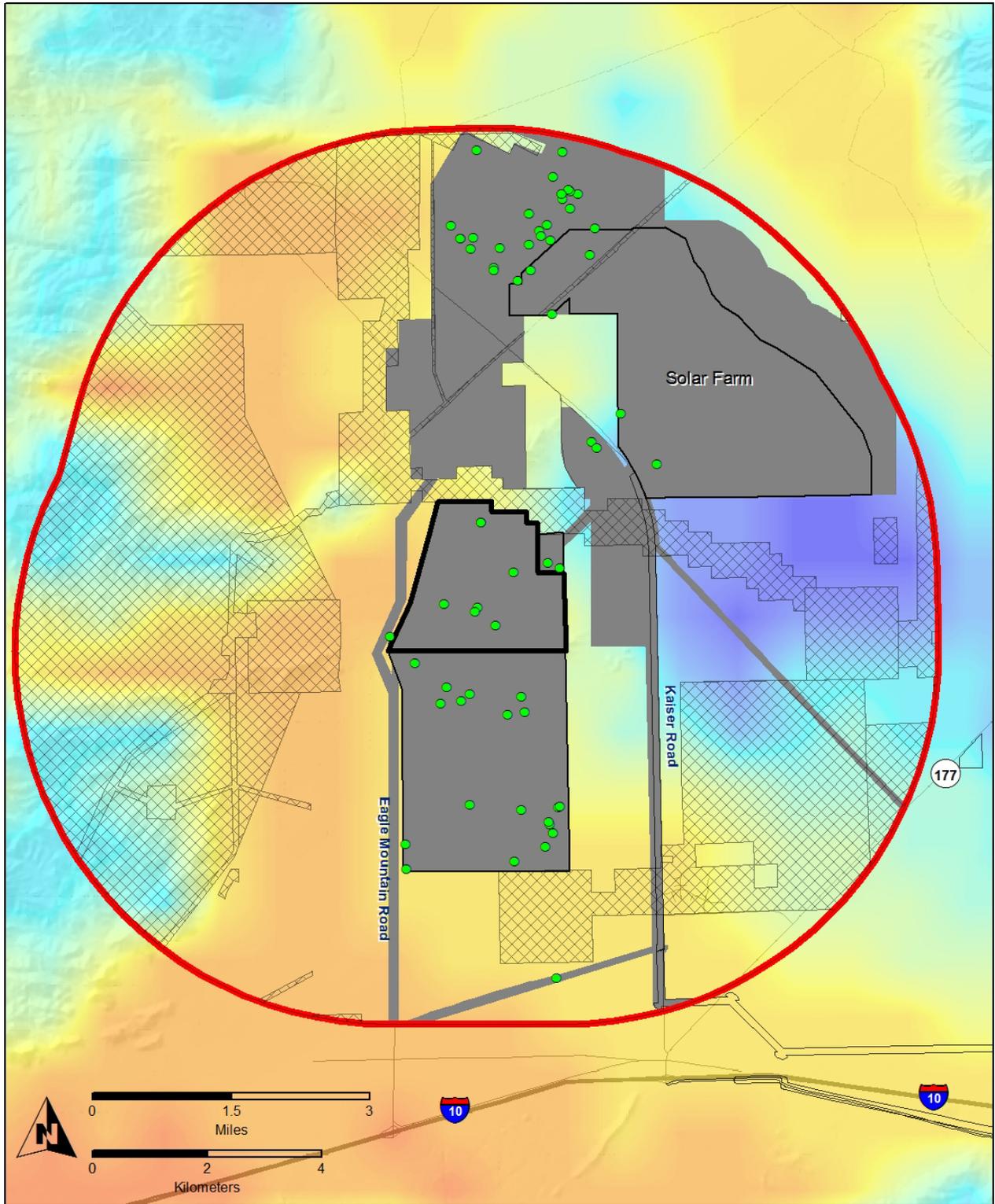
4.2.2 Fencing and Clearance Surveys

Figure 14 shows a flow chart summarizing the procedures described below and decision points in the proposed translocation process. The translocation activities will comply with the specific required terms and conditions contained in the USFWS BO and Incidental Take Statement (ITS), and the Consistency Determination issued by the CDFG.

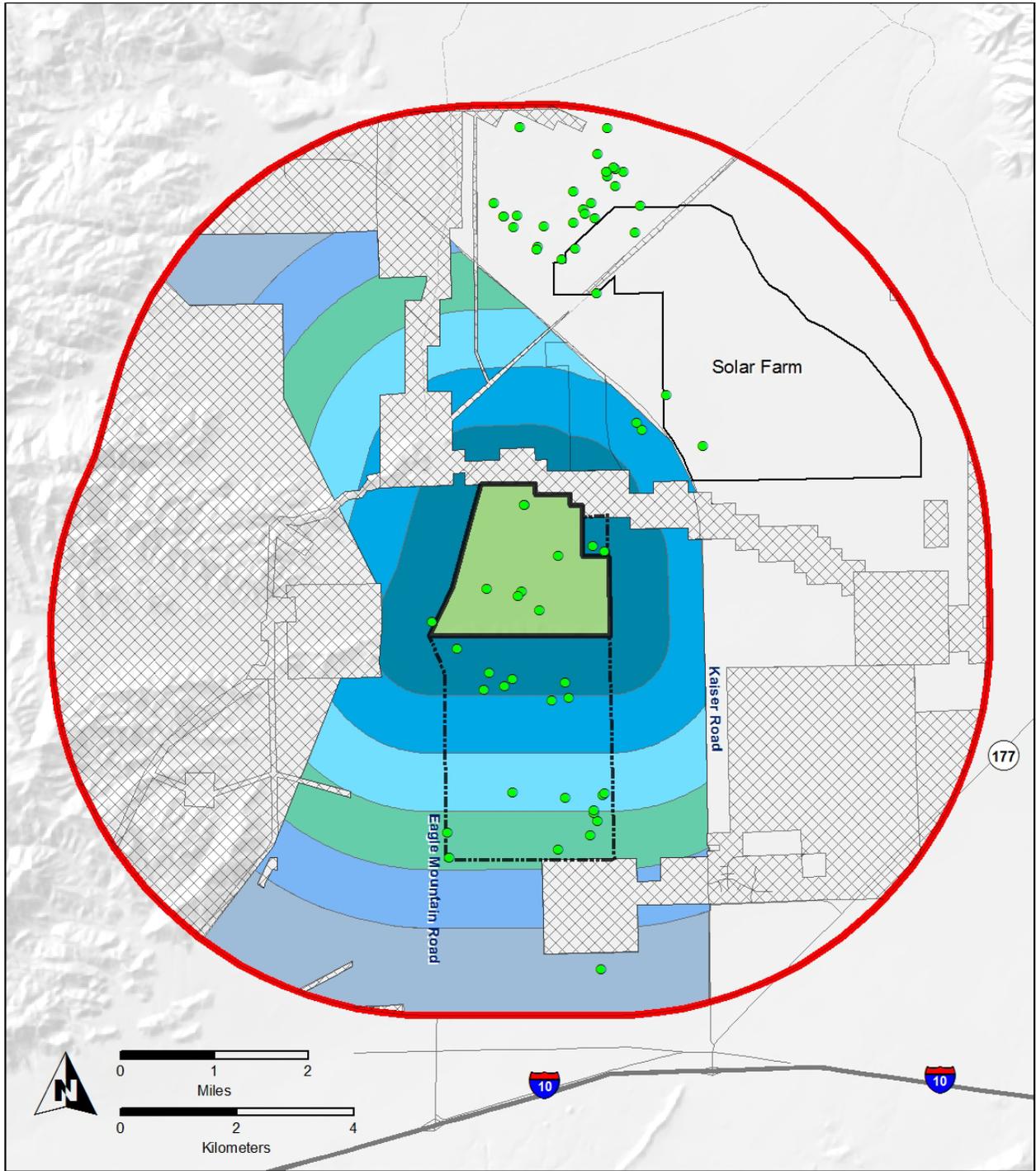
4.2.2.1 Clearance Surveys during Non-Active Desert Tortoise Season (approximately June 1 to September 1 and November 1 to April 1) – No Translocation

If construction commences in a non-active season for desert tortoise, the following procedures will be followed. Prior to any other construction activities, the Solar Farm Site will be fenced into subsections with temporary desert tortoise exclusion fencing (example shown in Figure 15).

1. Clearance surveys will be conducted for one unit near the southwestern boundary of the site that will allow the siting of an access and staging area from Kaiser Road, which will be fenced separately with permanent desert tortoise exclusion fencing (example in Figure 15).
2. Clearance surveys will be conducted for each construction unit using belt transects at a minimum of 5 meter (16 foot) spacing, using tighter spacing if vegetation becomes denser. If a desert tortoise or active burrow is found within a unit, surveys will stop at that time and the unit will not be developed until the tortoise is translocated in the following active season. If two complete passes are completed in a unit (north-south and east-west) without a desert tortoise being found, construction may commence within that unit prior to the following active season.
3. Construction will only be conducted in units without desert tortoise presence until the next active desert tortoise season when the tortoises from all remaining units will be translocated.
4. If a desert tortoise is found above ground in the non-active season, it will be fitted with a transmitter and left where it was found so that it can more easily be re-located in the following active season.



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Figure 12
Chuckwalla Recipient Site
Local Density Estimates
6.5 km Buffer
 Prepared by Ironwood Consulting, Inc. - Dec 16, 2010



- US Bureau of Land Management
- US National Park Service, MWD, State Lands, Other
- Northern Recipient Area
- 6.5 km Buffer for Northern Area (60,506 acres / 204.8 sq km)
- Live Tortoise Observation

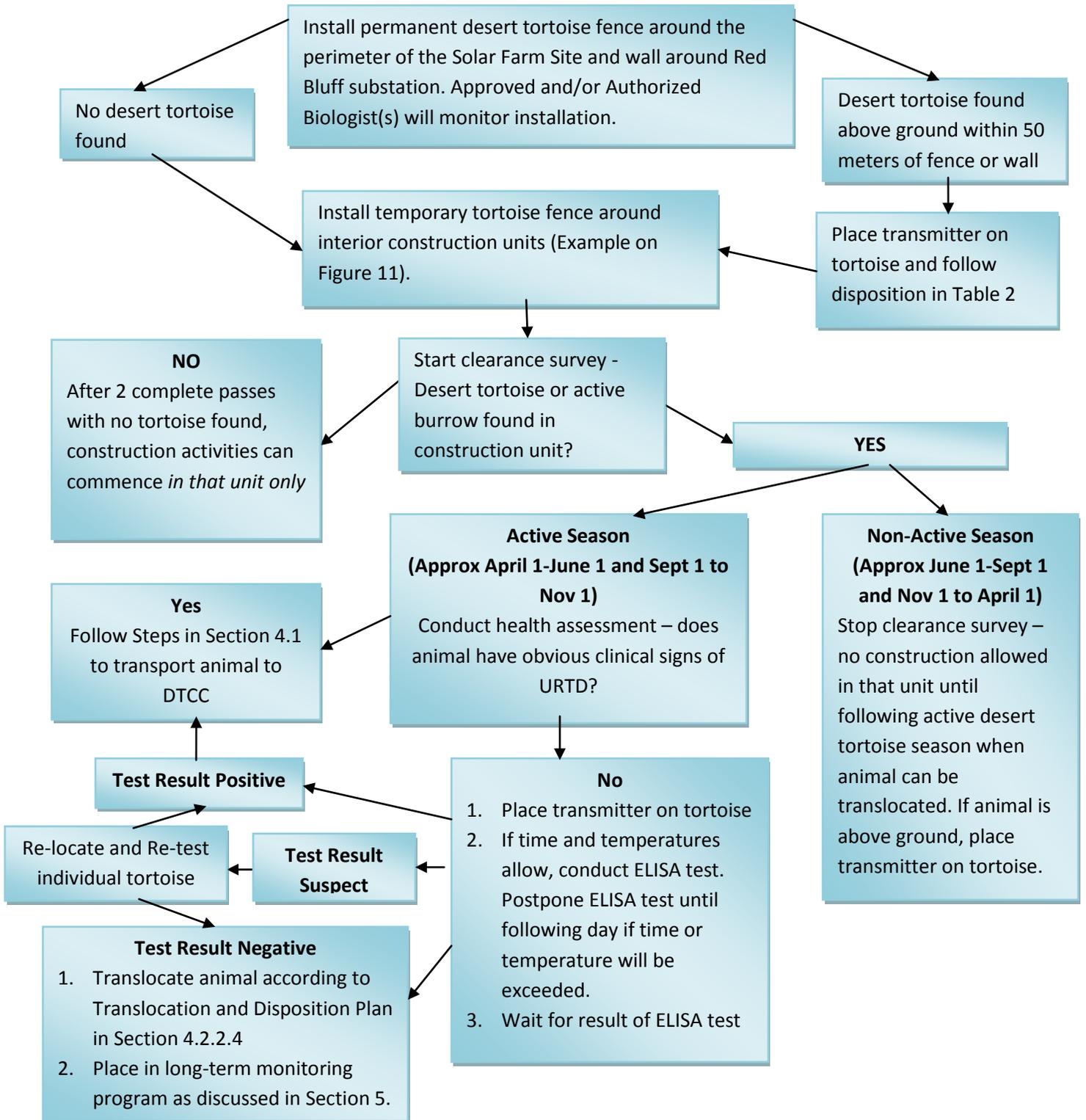
Disease Sampling Areas	
Distance from recipient area (km)	Minimum number of tortoises tested
0 - 1	16
1 - 2	12
2 - 3	8
3 - 4	4
4 - 5	2
5 - 6.5	1

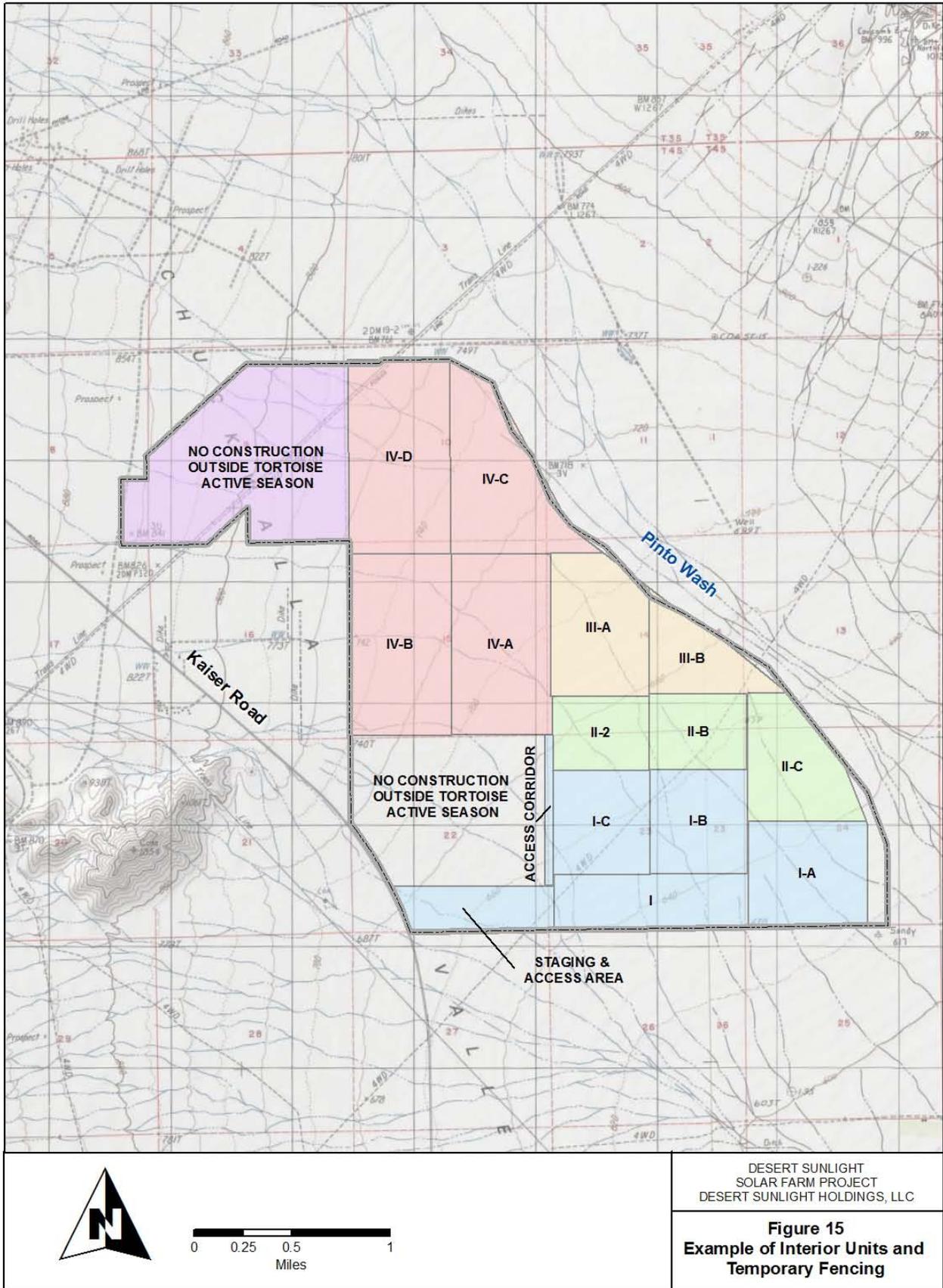
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Figure 13
Chuckwalla Recipient Site
Disease Sampling Area
6.5 km Buffer

Prepared by Ironwood Consulting, Inc. - Dec 16, 2010

Figure 14. Decision Making Chart for Project Desert Tortoise Translocation





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Figure 15
Example of Interior Units and
Temporary Fencing

Prepared by Ironwood Consulting, Inc. - Dec 16, 2010

4.2.2.2 Clearance Surveys and Translocation during Active Desert Tortoise Season (approximately April 1 to June 1 and September 1 to November 1)

If construction commences in the active season for desert tortoise (approximately April 1 to June 1 and September 1 to November 1), the following procedures will be followed.

Step 1- Complete perimeter and interior fencing at Solar Farm Site

This step can be completed concurrent with the surveys and disease testing at the Chuckwalla Recipient Site.

- a) The perimeter fence and associated desert tortoise exclusion fencing will be established around the entire Solar Farm Site. These fencing activities will be treated as a linear activity of the Proposed Action. All fencing activities will be monitored by a qualified biological monitor. All fencing will be checked and repaired (if necessary) on a daily basis to ensure its integrity.
- b) All individual desert tortoises found above ground during construction of the perimeter fence and near the fence will be given a unique identifier and fitted with a transmitter as discussed in section 4.1. Depending on location of the animal and its activity level, it will either be placed outside the perimeter fence and used as part of the Sunlight Control Site, or be placed inside the Solar Farm Site to be translocated during clearance surveys (Table 2). The individuals not placed outside the fence will eventually be part of the group of translocated animals and will be included in all other activities of the translocation program discussed in this section.

Table 2. Disposition of Tortoises found during Perimeter Fence Installation

Where Tortoise was Found	Activity Level	Disposition
Near NW area of Solar Farm Site	Active	Place outside perimeter fence to be monitored as part of the Sunlight Control Site
Near NW area of Solar Farm Site	Dormant	Place inside perimeter fence for translocation during clearance surveys
Near SW area of Solar Farm Site	Active or Dormant	Place inside perimeter fence for translocation during clearance surveys
In other areas of the Solar Farm Site	Active or Dormant	Place inside perimeter fence for translocation during clearance surveys

- c) When the entire Solar Farm Site has been cleared of desert tortoise, daily checks of the perimeter fence will continue throughout construction and the life of the project to ensure the integrity of the fence, and any remaining interior fencing can be removed.

Step 2 – Clearance Surveys

These surveys will be conducted once fencing is completed in any unit.

- a) Clearance surveys will be conducted using belt transects at a minimum of 5 meter (15 foot) spacing, using tighter spacing if vegetation becomes denser. Clearance surveys will continue in each unit until two consecutive passes are completed in a unit (north-south and east-west) without a desert tortoise being found, at which time construction may commence in that unit.
- b) When a tortoise is found during clearance surveys, an Authorized Biologist (surveyors authorized to conduct these activities under project specific permits) will:
- ◆ Complete a detailed health assessment of the animal;
 - ◆ Place a transmitter on the individual; and
 - ◆ Test the individual animal for URTD.
- c) Tortoises found during the clearance of the Solar Farm Site will be either: (1) left in situ where they were found (preferred), or (2) held in temporary pens on the project site until the results of their ELISA tests are received.
- d) Any tortoise showing clinical signs of disease, or any tortoise that tests: (1) positive in the first ELISA test, or (2) positive in a second test after an initial suspect result, will be transported to the Desert Tortoise Conservation Center (DTCC) as described in Section 4.1.1.

Step 3 - Surveys at Sunlight Control Site

After receiving project permits allowing handling, surveys will begin to (1) find a number of control tortoises equal to the number that will be translocated from the Solar Farm Site, and (2) attach transmitters to these individuals in order to monitor movement and behavior and compare this data with that recorded for both the translocated tortoises and resident tortoises at the recipient site.

If the Sunlight Control site is deemed inappropriate due to lack of protective land status or other factors, the Red Cloud Control Site will be used.

4.2.3 Translocation and Disposition Plan

After desert tortoises have been tested for disease, a Final Disposition Plan for each of the identified tortoises will be prepared by the Applicant and submitted to USFWS and CDFG. This plan will identify the proposed fate of each individual desert tortoise to be translocated in conformance with the performance standards and alternatives contained in this Translocation Plan, and will include the complete health assessment and ELISA results for each individual. Desert tortoises will not be translocated prior to concurrence by the USFWS and CDFG with the Final Disposition Plan.

Table 3 shows the different translocation strategies for juveniles, nests, adults and sub-adults.

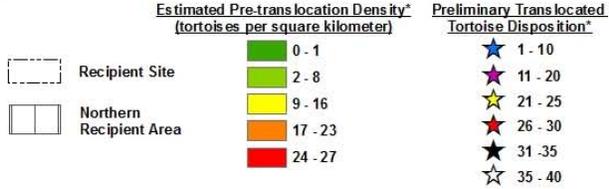
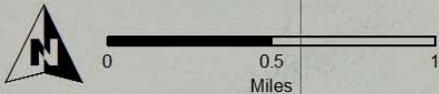
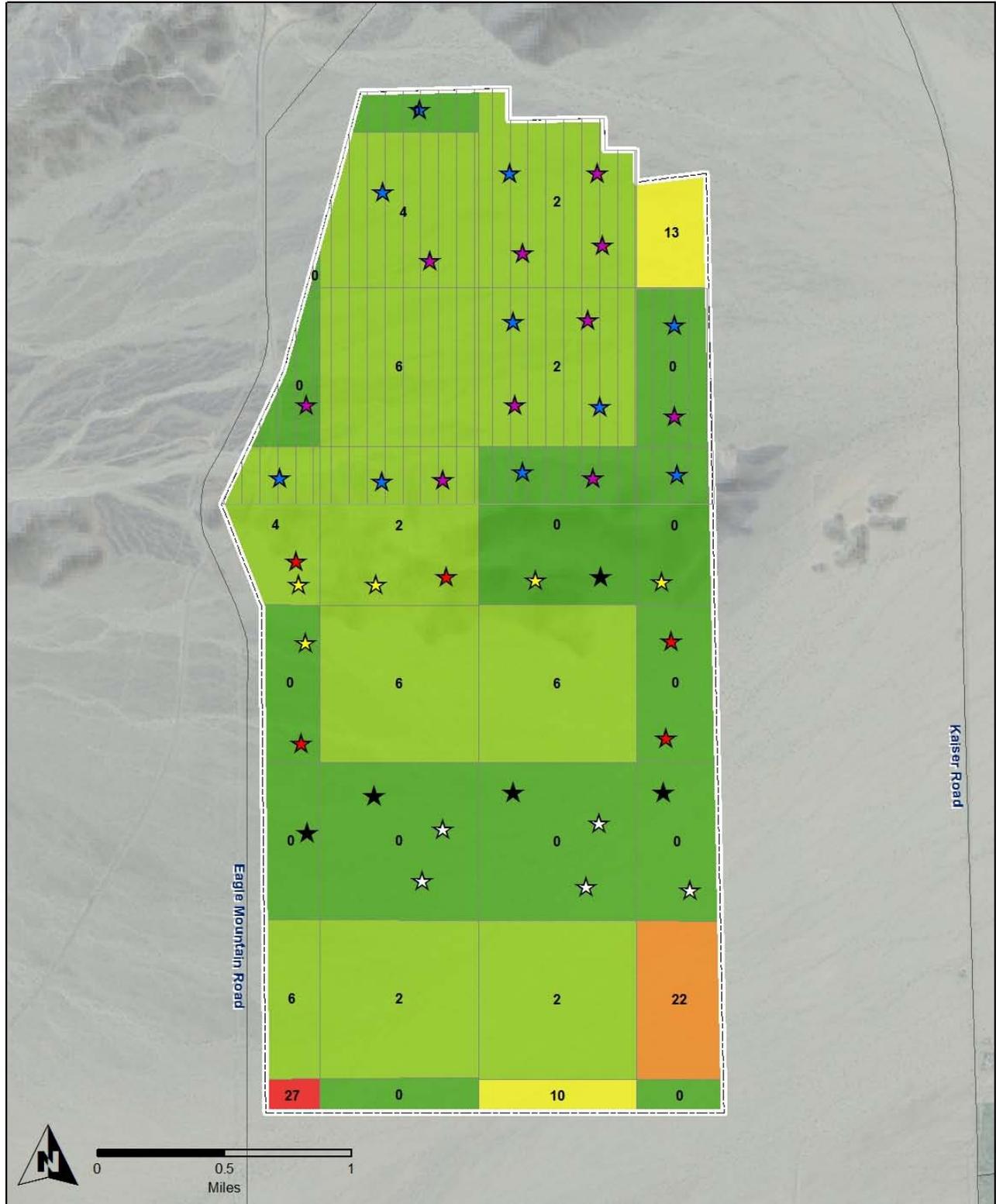
Table 3. Translocation of Desert Tortoises and Eggs

Size of tortoise	Translocation Strategy
Juveniles (<120 mm MCL)	Health assessment as described, unique identifier, no transmitter, translocated as described.
Sub-adults (120-180 mm MCL) and Adults (>180 mm MCL)	Health assessment, unique identifier, transmitter, and translocated as described above. If individual is in burrow, every effort will be made to remove it using “tapping” or repeated visits to the burrow prior to using the less preferred method of carefully excavating the burrow.
Nests with potentially viable eggs	If a nest is suspected or found, the eggs will be carefully moved together and placed in a replacement nest created by an Authorized Biologist for the project at the appropriate recipient site. The replacement nest location(s) will be added to the long-term monitoring program.

All translocations will take place on the day of collection between 0700 and 1600 hours. Translocation will occur only when temperatures range from 18-30°C (65-85°F) and are not forecasted to exceed 32°C (90°F) within 3 hours of release. Forecasted daily low temperatures should not be cooler than 10°C (50°F) for one week post-release.

After the individual desert tortoise is given a unique identifier and transmitter it will be hydrated according to existing protocols. Individual desert tortoises will then be transported to their release sites (within the appropriate recipient site as described in Section 3) in clean, ventilated protective containers. If these containers are re-used, they will be disinfected according to existing protocols. All individuals will be released at unoccupied shelter sites such as unoccupied soil burrows, spaces within rock outcrops, caliche caves, or the shade of shrubs or trees.

Translocated tortoises will first be placed within the northern portion of the Chuckwalla Recipient Site, where estimated densities of less than 8 animals per square kilometer (20 per square mile) have been determined. Release locations will be identified and spatial patterns between tortoises will be maintained as consistently as possible. Figure 16 represents a proposal of where these individual tortoises will be placed, assuming densities and distribution at the Chuckwalla Recipient Site are similar to those during the 2010 survey, and that no disease is found at or near the recipient site. Tortoises found in close proximity to each other (i.e. within 50 meters) will be released in the same area in the same proximity.



*The numerical value shown for each sq km cell is the estimated density based on project-specific survey data. The proposed tortoise disposition sites were selected as to not exceed a post-translocation density of 6 tortoises per sq km.

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Figure 16
Chuckwalla Recipient Site
Preliminary Tortoise Disposition Plan

Prepared by Ironwood Consulting, Inc. - Nov 17, 2010

4.3 Steps in Translocation Process – Red Bluff Substation

Less than five individual desert tortoises are likely to be translocated from the Red Bluff Substation. Any individuals translocated will likely be translocated greater than 500 meters to the Red Bluff Recipient Site. No control site is associated with the Red Bluff Substation because none is required when less than five individuals will be translocated.

4.3.1 Fencing and Clearance Surveys

Clearance surveys will be conducted for the Red Bluff Substation immediately following the construction of the perimeter wall or fence using belt transects at a minimum of 5 meter (16 foot) spacing:

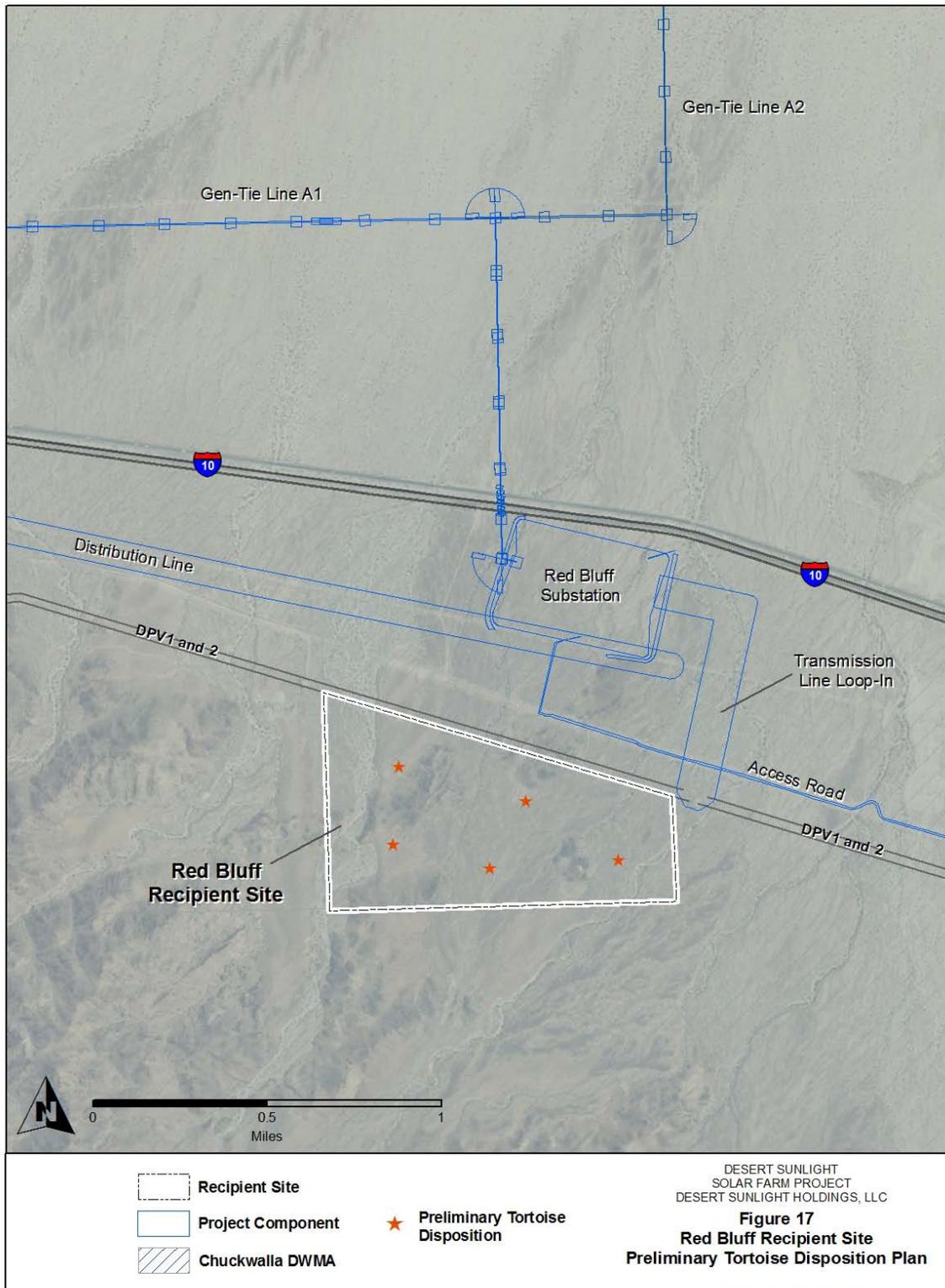
- ◆ If these surveys are conducted within any season and *no* desert tortoise or active burrows are found, construction can commence within the fence.
- ◆ If these surveys are conducted outside the active desert tortoise season and live desert tortoise or active burrow is found, construction will be halted until the next active desert tortoise season.
- ◆ If these surveys are conducted within the active desert tortoise season and a live desert tortoise or active burrow is found, the procedures listed in Sections 4.1 for health assessment, disease testing, and transmittering will be followed.
- ◆ The tortoise will be held in situ until test results are received. If the individual tests positive for disease, procedures provided in Section 4.1.1 will be followed and SCE will be responsible for the associated costs.

4.3.2 Surveys and Disease Testing at Red Bluff Recipient Site

Surveys of the Red Bluff Recipient Site will be conducted only if any desert tortoises were found within the Red Bluff Substation perimeter. If not tortoises are found within the Red Bluff Substation perimeter on the substation site, these surveys, disease testing, and associated activities will not be required.

After receiving project permits allowing handling, health assessment and disease testing of tortoises for the Project, surveys will begin to: (1) confirm desert tortoise densities at the recipient site, (2) conduct health assessments and ELISA tests for all tortoises found, and (3) attach transmitters to all tortoises found within the recipient site. Although monitoring is not required for these resident tortoises, transmitters will allow any animals with positive or suspect ELISA test results to be re-located.

1. Surveys will be conducted using current protocols issues by the USFWS and/or CDFG to confirm densities of desert tortoises within the Red Bluff Recipient Site. All live tortoises found will receive detailed health assessments and blood draws for ELISA tests.
2. No animals will be translocated to the Red Bluff Recipient Site until test results for the ELISA tests showed that none of the individuals within the northern part of the recipient site had positive or suspect test results. Suspect results will be re-tested to confirm positive or negative results.
3. Any desert tortoise translocated from the Red Bluff Substation site will be placed in the Red Bluff Recipient Site as far as possible from known future activities of to be conducted for this project or other regional projects such as the Devers-Palos Verde 2 Transmission Line. The preliminary disposition plan for these animals is shown in Figure 17 with the assumption that less than five individuals will be translocated from the Red Bluff Substation.



4.4 Linear Project Components

4.4.1 Gen-Tie Line

As a linear Project component, construction of the Gen-Tie Line can occur at any time of the year (USFWS 2010). Any desert tortoises found during clearance of linear facilities should be moved out of harm's way following clearance and handling procedures outlined in the current *Desert Tortoise Field Manual* (USFWS 2009).

1. Within 30 days prior to construction, a clearance survey will be conducted along each portion of the line and all active desert tortoise sign mapped and communicated to the Lead Biological Monitor and site-specific biological monitor(s).
2. Biological monitors will be on-site during all construction activities to ensure that active burrows along the Gen-Tie Line will be avoided by project construction and facilities.
3. If a desert tortoise is found on along the Gen-Tie Line, adverse effects will be avoided by allowing the tortoise to passively traverse the site while construction in the immediate area is halted. If the tortoise does not move out of harm's way after approximately 20 minutes, an Authorized Biologist for the Project can actively move the animal out of harm's way. The Authorized Biologist will be responsible for taking appropriate measures to ensure that any desert tortoise moved in this manner is not exposed to temperature extremes which could be harmful to the animal.
4. Vehicles parked in desert tortoise habitat shall be inspected immediately prior to being moved. If a tortoise is found beneath a vehicle, the Authorized Biologist shall be contacted to move the animal from harm's way, or the vehicle shall not be moved until the desert tortoise leaves of its own accord.

4.4.2 SCE Project Components

Construction of the Access Road, Distribution Line, and Telecommunications Site can occur at any time of the year (USFWS 2010) using the same desert tortoise methodologies described above in Section 4.4.1 for the Gen-Tie Line.

5.0 Monitoring and Reporting

All activities related to monitoring will be conducted by Approved and/or Authorized Biologists identified in the project BO. Standardized data sheets will be used to record individual tortoise locations, interactions, burrow locations, etc. during all monitoring activities.

5.1 Solar Farm Site and Gen-Tie Line

5.1.1 Monitoring During Construction

During project construction, all desert tortoise fencing at the Solar Farm Site will be monitored daily and, if necessary, repaired or replaced. All site entrances and equipment moving outside the desert tortoise exclusion fence will be monitored by Approved and/or Authorized biological monitors. If any additional desert tortoises are located within the fenced area, the translocation process described in Section 4.2 will be followed and Project activities will temporarily cease in that area with desert tortoise clearance surveys recommencing until no tortoises are found during additional clearance surveys.

All tortoises being held in situ will be monitored at least

- ◆ Once a day during first week
- ◆ Once a week for the following three weeks
- ◆ Twice per month until the Final Disposition Plan is approved and the individual is translocated

5.1.2 Long-Term Monitoring

All translocated desert tortoises and an equal number of resident individuals at the Recipient Site and Control Site (equal gender ratios) will be monitored on a long-term basis for a period of at least 5 years after the initial translocation date.

Transmitters will be changed as necessary throughout the monitoring period as necessary to maintain battery life. At the end of the 5-year monitoring period, coordination with USFWS and CDFG will determine whether transmitters should be removed and decommissioned.

Translocated desert tortoises will be monitored as follows:

- ◆ Once within 24 hours of release
- ◆ A minimum of twice weekly for the first two weeks after release
- ◆ A minimum of once a week during the active season for the 5-year monitoring period
- ◆ Once every other week during the non-active season for the duration of the 5-year monitoring period

Resident and control desert tortoises should be monitored for the 5-year monitoring period as follows:

- ◆ A minimum of once a week during the active season for the 5-year monitoring period
- ◆ Once every other week during the non-active season for the duration of the 5-year monitoring period

Health Monitoring

Condition assessment will be conducted for all translocated individuals annually prior to over-wintering (and subsequent to over-wintering; and a health assessment for each translocated individual will be conducted at the end of the 5-year monitoring period. Any health problems or mortalities observed will be reported to USFWS and CDFG verbally within 48 hours of discovery or via email within 5 business days thereafter and will include unique identifier, location, suspected health issue and/or cause of death (if known). Fresh carcasses will be brought for necropsy as directed by USFWS and CDFG. Animals showing clinical signs of disease at any time will be transported to the DTCC following the guidelines provided in Section 4.1.

Vegetation Monitoring

Vegetation transects established in 2010 within the recipient sites will be surveyed annually between March 15 and April 30 to measure potential changes in habitat characteristics.

5.1.3 Reporting***Reporting During Translocation***

All activities will be recorded on standardized data sheets and/or on digital data recorders. The Authorized Biologist for the translocation effort will send e-mails prior to the 5th day of the month summarizing the translocation activities performed the previous month. These e-mails will be sent to the project biologists at BLM, USFWS, CDFG, and SCE (see Key Resources below). Annual project reports submitted to USFWS and CDFG by BLM will contain detailed information on these translocations including all information recorded.

Reporting During Long-Term Monitoring

All activities will be recorded on standardized data sheets and/or on digital data recorders. Reporting to the respective federal and state agencies will be performed on a quarterly basis. The lead biologist for the project will send a brief report via e-mail to the appropriate contact at BLM, USFWS, and CDFG. This report will include monitoring data for all desert tortoises in the monitoring program, including those from recipient and control populations.

Annual Reports

During the period of long-term monitoring annual reports will be completed each year by the Lead Translocation Biologist and submitted to the appropriate contact at the BLM on or before January 15 for the preceding calendar year so that the February 1 deadline for annual reports to USFWS can be met. Annual reports will summarize all long-term monitoring activities conducted during the previous calendar year including health assessments, vegetation monitoring and any adaptive management employed.

Final Report

Following the completion of the fifth year of monitoring, a final report will be completed that will assess the overall success of the monitoring program. The final report will summarize all long-term monitoring activities for five years of post-construction monitoring and will discuss any observed differences in individual or group behaviors in the translocated, recipient, and/or control populations; overall tracking of health assessments for each individual; an overview of the 5-years of vegetation monitoring; and any adaptive management employed throughout the long-term monitoring period and an assessment of the success of each adaptive management strategy (see section 5.3 below).

5.1.4 Key Resources

Project Proponent

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1111 Broadway St, 4th Floor
Oakland, CA 94607
(510) 625-7400
Contact: Kim Oster
koster@firstsolar.com

Lead Translocation Biologist

PMB 613
1539 N. China Lake Boulevard
Ridgecrest, CA 93555
(760) 954-0645
Contact: Rachel Woodard
rachwoodard@earthlink.net

Biological Monitoring

Ironwood Consulting
20 Nevada St., Suite 300
Redlands, CA 92373
(909) 798-0330
Contact: Kathy Simon
Kathy@ironwoodconsultinginc.com

Bureau of Land Management

California Desert District Office
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553-9046
(951) 697-5223
Contact: Kim Marsden
Kim_Marsden@BLM.gov

U.S. Fish and Wildlife Service

Carlsbad Fish and Wildlife Office
6010 Hidden Valley Rd., 101
Carlsbad, CA 92011
760.431.9440 x 354 ph
Contact: Jody Fraser
jody_fraser@fws.gov

California Department of Fish and Game

Inland Deserts Region

3602 Inland Empire Blvd Suite C220

Ontario, CA 91764

(909) 484-0167

Contact: Magdalena Rodriguez

mcrodriguez@dfg.ca.gov

5.2 SCE Project Components

5.2.1 Monitoring During Construction

All activities will be the same as the construction monitoring and translocation monitoring discussed above in Section 5.1.1 for the Solar Farm Site and Gen-Tie Line.

During project construction, all desert tortoise fencing at the substation be monitored daily and, if necessary, repaired or replaced until a perimeter wall for the substation is built, at which time no further monitoring will be conducted for this component.

All site entrances and equipment moving outside the substation will be monitored by Approved and/or Authorized biological monitors.

Any tortoise being held in situ will be monitored at least:

- ◆ Once a day during first week
- ◆ Once a week for the following three weeks
- ◆ Twice per month until the Final Disposition Plan is approved and the individual is translocated

5.2.2 Long-Term Monitoring

All tortoises actively translocated from the Red Bluff Substation will be placed into a long-term monitoring program. Transmitters will be changed as necessary throughout the monitoring period as necessary to maintain battery life. At the end of the 5-year monitoring period, coordination with USFWS and CDFG will determine whether transmitters should be removed and decommissioned.

Translocated desert tortoises will be monitored as follows:

- ◆ Once within 24 hours of release
- ◆ A minimum of twice weekly for the first two weeks after release
- ◆ A minimum of once a week during the active season for the 5-year monitoring period
- ◆ Once every other week during the non-active season the duration of the 5-year monitoring period

Resident and control desert tortoises will not be monitored for the Red Bluff Substation and related components because, since less than 5 desert tortoises will be translocated, no such monitoring is required by the regulatory agencies.

5.2.3 Reporting

Reporting during translocation activities, long-term monitoring, annual reporting and final report will be the same as set forth above in Section 5.1.3 for the Solar Farm Site and Gen-Tie Line.

5.2.4 Key Resources

Project Proponent

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770
(626) 302-1117
Contact: Paul Yamasaki
Paul.Yamasaki@sce.com

Bureau of Land Management

California Desert District Office
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553-9046
(951) 697-5223
Contact: Kim Marsden
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U.S. Fish and Wildlife Service

Carlsbad Fish and Wildlife Office
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Contact: Jody Fraser
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California Department of Fish and Game

Inland Deserts Region
3602 Inland Empire Blvd Suite C220
Ontario, CA 91764
(909) 484-0167
Contact: Magdalena Rodriguez
mcrodriguez@dfg.ca.gov

5.3 Roles and Responsibilities

The Applicant and SCE will each appoint an Environmental Compliance Manager (ECM), Lead Translocation Biologist (LTB), and Designated Biologist (DB) who will be responsible for the implementation of all desert tortoise translocation activities. The LTB and DB can be the same person if they meet the qualifications for both positions. If at any time a change is proposed to the ECM, LTB and/or DB, the Applicant and SCE will obtain concurrence with the experience of new personnel from BLM, USFWS, and CDFG.

5.3.1 Environmental Compliance Manager

The Environmental Compliance Manager (ECM) will be independently or jointly assigned by the Applicant and SCE for their components of the Project. The ECM will be responsible for facilitating the implementation of all environmental management components of the project, including avoidance,

minimization and mitigation measures for air quality, water quality and streambed permits, and other biological permits. The name, contact info, and qualifications of the ECM(s) will be listed in the Project's *Final Biological Resources Mitigation, Implementation, and Monitoring Plan*.

The ECM will have specific experience in the implementation of similar environmental compliance programs. The ECM will complete an extensive training program with the Project's Designated Biologist(s) and work closely together to ensure compliance with all environmental avoidance, minimization, and mitigation measures for the Project.

5.3.2 Lead Translocation Biologist

The Lead Translocation Biologist (LTB) will be independently or jointly assigned by the Applicant and SCE for their components of the Project. The LTB will be responsible for facilitating the implementation of avoidance, minimization and mitigation measures for the desert tortoise translocation effort under this plan and the Final Disposition Plan.

The name, contact info, and qualifications of the DB(s) will be listed in the Project's *Final Biological Resources Mitigation, Implementation, and Monitoring Plan* and their resume(s) will have been previously confirmed by BLM, USFWS, and CDFG as appropriate individuals for this position.

The LTB will have specific experience in the implementation of similar desert tortoise translocation programs. The LTB will complete an extensive training program with the Project's ECM(s) and work closely together to ensure compliance with all desert tortoise avoidance, minimization, and mitigation measures for the Project. In addition, the LTB will hold a Bachelor's or higher degree in Biological Sciences, Zoological Sciences, or a related field and will have at least five years of field experience in California desert habitats and desert tortoise handling.

5.3.3 Designated Biologist

The Designated Biologist (DB) will be independently or jointly assigned by the Applicant and SCE for their components of the Project. The DB will be responsible for facilitating the implementation of avoidance, minimization and mitigation measures for streambed permits and other biological permits.

The name, contact info, and qualifications of the DB(s) will be listed in the Project's *Final Biological Resources Mitigation, Implementation, and Monitoring Plan* and their resume(s) will have been previously confirmed by BLM, USFWS, and CDFG as appropriate individuals for this position.

The DB will have specific experience in the implementation of similar environmental compliance programs. The DB will complete an extensive training program with the Project's ECM(s), LTB(s) and work closely together to ensure compliance with all biological avoidance, minimization, and mitigation measures for the Project. In addition, the DB will hold a Bachelor's or higher degree in Biological Sciences, Zoological Sciences, or a related field and will have at least five years of field experience in California desert habitats.

5.4 Adaptive Management

The applicant made key decisions to ensure that each phase of Project development was evaluated to attempt to reduce potential adverse effects to desert tortoise. These included the siting, design, construction, operation, and post-operation phases of the Proposed Action.

In addition to the specific Project measures described below, Sunlight and SCE are committed to an adaptive management approach that supports flexible decision making and can be adjusted as the effects of the Proposed Action are better understood, including achievement of the purpose and goals of this plan (Section 1.0). Any adaptive management actions will be proposed by the Project's ECM, LTB, and DB in response to specific management issues that arise that pose a threat to translocated or recipient tortoises. Adaptive management strategies will be coordinated with BLM, USFWS and CDFG.

5.4.1 Solar Farm Site and Gen-Tie Line

Desert Sunlight Holdings evaluated a larger Project Study Area (PSA) when determining the siting of the Solar Farm Site. Areas of DWMA, CHU, and known or modeled higher desert tortoise density were avoided when siting the current Solar Farm Site.

Project design has incorporated features to reduce adverse effects to desert tortoise, including:

- ◆ Limiting vegetation disturbance and grading to the smallest area possible
- ◆ Working closely with Project biologists to improve desert tortoise exclusion features such as fencing and gates

During the construction and the operations and maintenance (O&M) phases of the project, the following best management practices (BMPs) will be incorporated to reduce adverse effects to desert tortoise:

1. Speed limits on all unpaved areas of the Project will be a maximum of 15 miles per hour.
2. No dogs or firearms will be allowed on the project site during construction or O&M.
3. Construction and O&M activities will be limited to daylight hours to the extent possible.
4. Trash will always be contained within raptor and raven-proof receptacles and removed from the site frequently, including trash collected in vehicles in the field.
5. Water required for construction purposes will be transported throughout the site in enclosed water trucks.
6. Water sources for the project (such as wells) will be checked periodically by biological monitors to ensure they are not creating open water sources through by leaking or consistently overfilling trucks.
7. All vehicles leaking fuel or other liquids will be immediately removed to the staging area and repaired – all vehicles will carry spill materials and all spills will be cleaned up promptly and disposed of correctly.
8. A formal Worker Environmental Awareness Program will be completed for every individual on all Project components. This Program will include formal classroom training. All individual completing training will sign a sign-in sheet and receive wallet cards and stickers to show they have completed this training. The training will include the following information and include photos of all resources:
 - a. Discussion of the desert ecosystem, vegetation and wildlife communities on the project site
 - b. Discussion of desert tortoise ecology and known tortoise activity found on the Project components being constructed
 - c. Legal drivers, permitting, and penalties related to avian and bat protection
 - d. Project-specific desert tortoise protection measures
 - e. Worker responsibilities and biological monitor responsibilities, including the authority for biological monitors to halt project activities

Post-construction activities will avoid disturbing areas of native vegetation adjacent to the project site. In addition, any restoration and reclamation activities that take place during the decommissioning phase of the Project will take into account vegetation appropriate to support desert tortoise.

Results of long-term monitoring will be used to aid in making management decisions for the Project. Should adaptive management become necessary for any reason, the Lead Translocation Biologist for the Project will immediately inform the key personnel of the conditions causing management concern and possible avenues to correct these conditions. All key personnel for the Project will agree on the scope and direction of adaptive management actions prior to them being implemented except in the case of immediate threat to one or more desert tortoise. In cases of immediate threat, the Lead Translocation Biologist will direct activities to avoid or minimize the immediate threat and contact the key personnel within 3 days afterwards with information on the threat and actions taken to avoid or minimize the impacts, as well as actions recommended to avoid similar threats in the future.

5.4.2 SCE Project Components

SCE evaluated two alternative sites for the proposed Red Bluff Substation and related components, and investigated larger areas for these facilities than they will cover in order to avoid sensitive resources such as active desert tortoise burrows. SCE's Project design, construction, and operations and maintenance (O&M) phases of the project, include the same project design features and BMPs discussed above to reduce adverse effects to desert tortoises.

Post-construction activities will avoid disturbing areas of native vegetation adjacent to the project site. In addition, any restoration and reclamation activities that take place during the decommissioning phase of the Project will take into account vegetation appropriate to support desert tortoise. Adaptive management actions will follow those discussed above in Section 5.3.1 for the Solar Farm Site and Gen-Tie Line.

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