Attachment L

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County of Monterey

California Flats Solar Project

Final

Environmental Impact Report

December 2014

rincon

Environmental Scientists Planners Engineers

California Flats Solar Project

Final
Environmental Impact Report

Prepared for:
Monterey County Resource Management Agency
Planning Department
168 W. Alisal St., 2nd Floor
Salinas, California 93901

Contacts:
Delinda Robinson, Senior Planner
831-755-5198
John H. Ford, RMA Services Manager
831-755-5158

Prepared by:
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Monterey, California 93940

December 2014

This report is printed on recycled paper.

California Flats Solar Project
Final Environmental Impact Report

Table of Contents

Page

List of Figures

List of Tables

Volume II

Appendices

1.0 INTRODUCTION

1.1 PURPOSE OF THE EIR PROCESS

This Final Environmental Impact Report (FEIR) is an informational document prepared by the Monterey County Resource Management Agency (RMA) – Planning Department to evaluate the potential environmental impacts of the proposed California Flats Solar Project. The primary objectives of the EIR process under the California Environmental Quality Act (CEQA) are to inform decision-makers and the public about a project's potential significant environmental effects, identify possible ways to minimize significant effects, and consider reasonable alternatives to the project. This EIR has been prepared with assistance from Monterey County's planning and environmental consultant, Rincon Consultants, Inc., with additional input from the project applicant team. The FEIR has been reviewed by County staff for completeness and adequacy in accordance with Public Resources Code (PRC) Sections 21000–21177 and the *State CEQA Guidelines*.

As prescribed by the *State CEQA Guidelines* Sections 15088 and 15132, the lead agency, the County of Monterey, is required to evaluate comments on environmental issues received from persons who have reviewed the Draft EIR and to prepare written responses to those comments. This document, together with the DEIR (incorporated by reference in accordance with State CEQA Guidelines Section 15150) will comprise the Final Environmental Impact Report (FEIR) for this project. Pursuant to the requirements of CEQA, the County of Monterey must certify the FEIR as complete and adequate prior to approval of the project or a project alternative.

This FEIR contains individual responses to each written letter received during the public review period for the DEIR. In accordance with *State CEQA Guidelines* Section 15088(b), the written responses describe the disposition of significant environmental issues raised. The Monterey County RMA - Planning Department and its consultants have provided a good faith effort to respond in detail to all significant environmental issues raised by the comments.

1.2 EIR CERTIFICATION PROCESS AND PROJECT APPROVAL

In accordance with the requirements of CEQA and the procedures of Monterey County, the FEIR must be certified as complete and adequate prior to any action on the proposed California Flats Solar Project. Once the EIR is certified and all information considered, using its independent judgment, the County can take action to go forward with the proposed project, make changes, or select an alternative to the proposed project. While the information in the EIR does not control the County's ultimate decision, Monterey County must respond to each significant effect and mitigation measure identified in the EIR by making findings supporting its decision.

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2.0 RESPONSES to COMMENTS

This section includes the comments received during circulation of the Draft Environmental Impact Report (EIR) for the California Flats Solar Project (Project) and responses to those comments. Where a comment resulted in a change to the DEIR text, a notation is made in the response indicating that the text is revised. Changes in text are signified by strikeouts (~~strikeouts~~) where text is removed and by underlined font (underline font) where text is added. Other minor clarifications and corrections to typographical errors are also shown as corrected in this format, including corrections not based on responses to comments. The information added to the EIR clarifies or amplifies the analysis and conclusions of the Draft EIR. These changes do not introduce significant new information or otherwise affect the analysis or conclusions of the EIR and thus do not require recirculation under State CEQA Guidelines § 15088.5.

The DEIR was circulated for a 47-day public review period that began on August 6, 2014 and ended on September 22, 2014. The County of Monterey (County) received 24 comment letters on the DEIR. The commenters and the page numbers on which each commenter's letters appear (as applicable) are listed below.

Letter No.	Commenter	Agency/Organization	Page No.
Agencies			
1.	Stephen Bachman, Senior Park & Recreation Specialist	California State Parks	2-3
2.	John J. Olejnik, Associate Transportation Planner	California Department of Transportation	2-9
3.	Jeffrey R. Single, Regional Manager	California Department of Fish and Wildlife	2-12
4.	Amy Clymo, Supervising Air Quality Planner	Monterey Bay Unified Air Pollution Control District	2-24
5.	Teresa Taylor, Superintendent	Shandon Joint Unified School District	2-42
6.	Christopher E. Browder, Deputy Chief, Environmental Protection	California Department of Forestry and Fire Protection	2-45
7.	Michael Horowitz, Senior Safety Engineer/Industrial Hygienist	California Department of Industrial Relations, Division of Occupational Safety and Health	2-51
8.	Rob Fitzroy, Project Manager	San Luis Obispo County Department of Planning and Building	2-58
9.	Andy Mutziger, Air Quality Specialist	San Luis Obispo County Air Pollution Control District	2-60
10.	Lisa Mangione, Regulatory Project Manager	U.S. Army Corps of Engineers	2-70
Organizations and Businesses			
11.	Kristin Cushman, Executive Director	The Offset Project	2-73
12.	Laura E. Horton	Adams Broadwell Joseph & Cardozo	2-76
13.	Robert Hale, Conservation Chair, Monterey Bay Chapter	California Native Plant Society	2-390
14.	Don Romeka, CEO	Extreme Impact, Inc.	2-398
15.	Kim Delfino, Greg Suba, Garry George, Ileene Anderson, Blake Matheson, Rita Delassio	Defenders of Wildlife, California Native Plant Society, Audubon California, Center for Biological Diversity, Monterey Audubon, Sierra Club Ventana Chapter	2-400
16.	Koryn Kendall, Manager, Project Development	First Solar	2-430
17.	Greg Parker, Principal Land Planner, Environmental Planning and Permitting	Pacific Gas and Electric Company	2-643

Letter No.	Commenter	Agency/Organization	Page No.
Public			
18.	W.J. Van Boxtel	Public	2-650
19.	Jane Wooster and Ann Myhre	Public	2-700
20.	Ann Gaglioti	Public	2-714
21.	Cameron Hunter	Public	2-717
22.	Holly Temple	Public	2-720
23.	Kathleen D. Lambeth	Public	2-722
24.	Tristan James Mabry	Public	2-726

The comment letters and the County's responses follow. Each comment letter has been numbered sequentially and each separate issue raised by the commenter, if more than one, has also been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 2.1, for example, indicates that the response is for the first issue raised in Comment Letter 2). Also, responses that include a letter refer to the attachment included with a comment letter (Response 12.A.1, for example, refers to the first issue raised in Attachment A of Comment Letter 12).

Letter 1

Gonzales, Eva x5186

From: Bachman, Stephen@Parks [Stephen.Bachman@parks.ca.gov]
Sent: Friday, August 22, 2014 1:02 PM
To: Robinson, Delinda x5198
Subject: RE: California Flats Solar Project - PLN120294

Thank you ☺

We have no comments, its not close to a state park. Thanks again. | 1.1

Stephen Bachman
Senior Park & Recreation Specialist
Senior Environmental Scientist
2211 Garden Road
Monterey, CA 93940
Phone (831) 649-2862
Cell (831) 647- 6239
Cell (831) 277-3037

Stephen.bachman@parks.ca.gov

State Parks Mission Statement

The mission of California State Parks is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

From: Robinson, Delinda x5198 [mailto:robinsond@co.monterey.ca.us]
Sent: Friday, August 22, 2014 12:58 PM
To: Bachman, Stephen@Parks
Subject: California Flats Solar Project - PLN120294

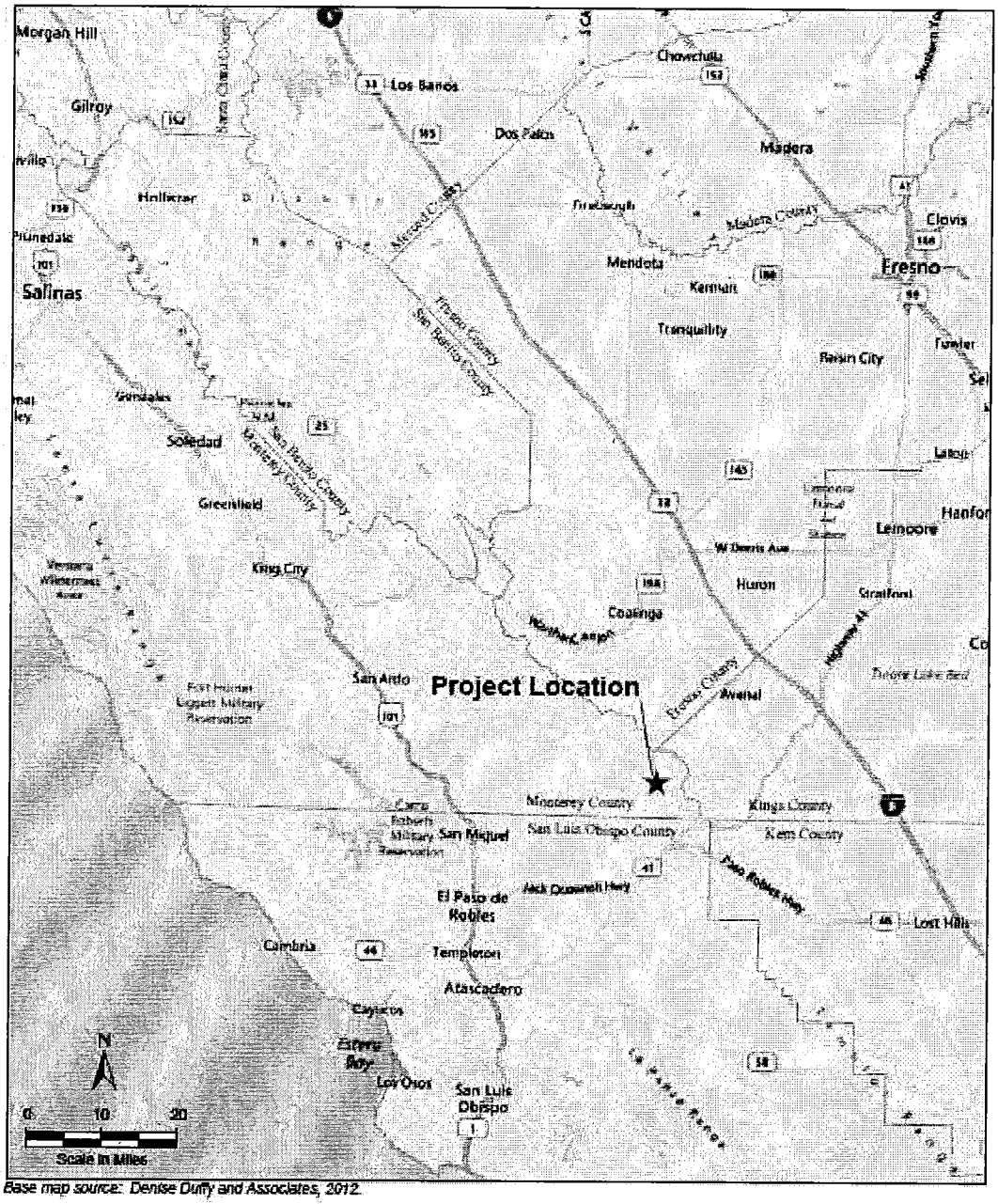
Hi Steve –

I've attached a vicinity map that shows where the California Flats Solar project will be located. The maps below are screen shots of the vicinity map figures from the DEIR. The big view is Figure 2-1, Figure 2-2 zooms in a bit and then the one I attached is the County's base map showing the parcels involved. It's southeast of Parkfield in the southeastern

corner of Monterey County. The primary access will be from a private ranch road off of Hwy 41 in San Luis Obispo County. It's miles up a private road in the middle of a big ranch. Here's a link to the webpage with the EIR if you want to look in more detail:
http://www.co.monterey.ca.us/Planning/major/California%20Flats%20Solar/California_Flats_Solar.htm

Thanks for calling. If you have any more questions, don't hesitate to call or e-mail.

Delinda Robinson
Senior Planner
(831) 755-5198

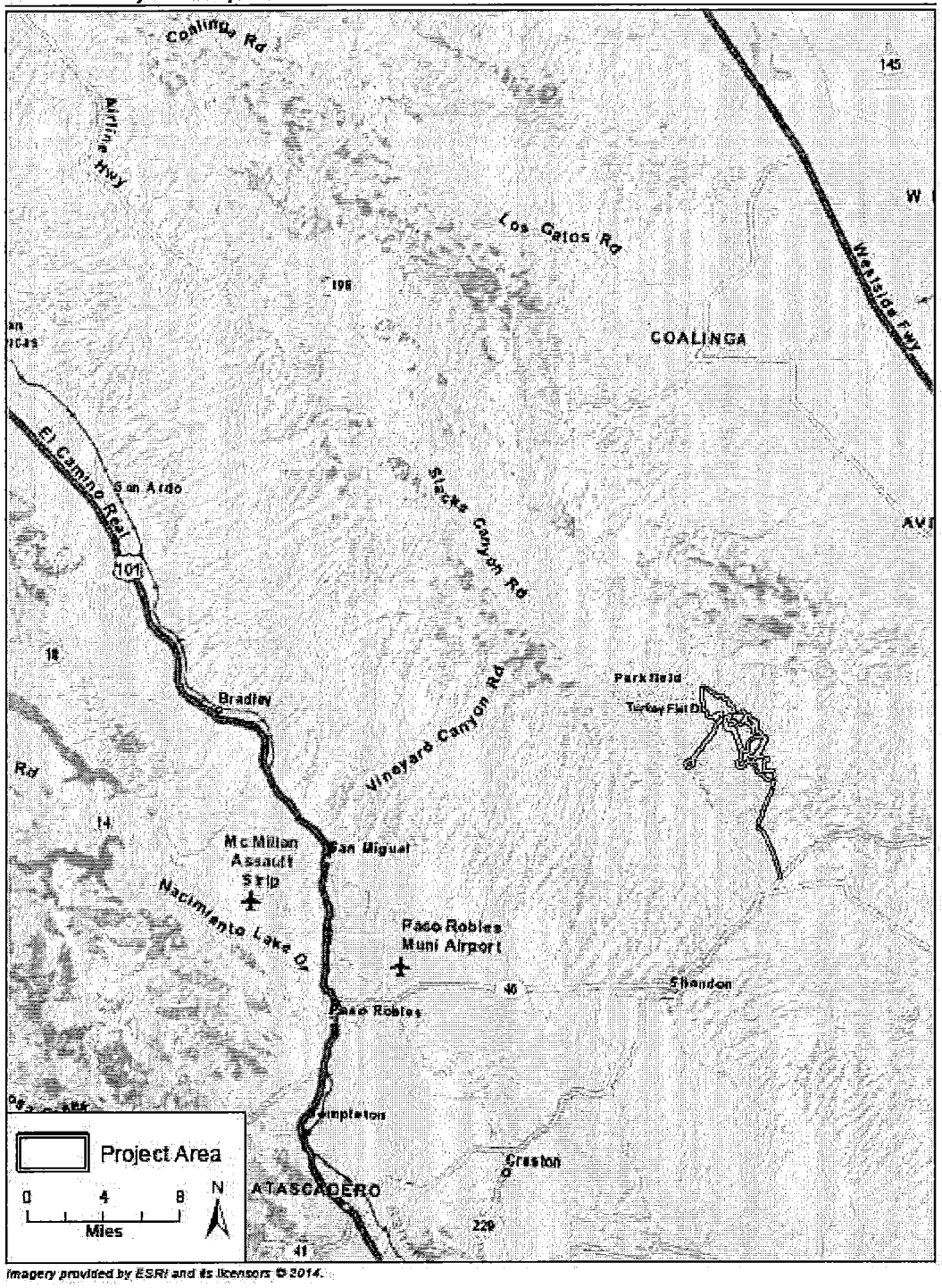


Base map source: Denise Duffy and Associates, 2012

Project Location

Figure 2-1

County of Monterey



Vicinity Map Figure 2-2

Delinda Robinson
Senior Planner
Monterey County RMA-Planning Department
168 West Alisal Street, Second Floor

Salinas, CA 93901
(831) 755-5198

Website: www.co.monterey.ca.us/planning

To access our permit database, please go to: https://aca.accela.com/monterey/Default.aspx

Letter 1

COMMENTER: Stephen Bachman, Senior Park & Recreation Specialist, California State Parks

DATE: August 22, 2014

Response 1.1

The commenter states that they have no comments on the DEIR. The comment is noted.

DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3101
FAX (805) 549-3329
TTY 711
http://www.dot.ca.gov/dist05/

Letter 2

Serious drought
Help save water!

September 8, 2014

MON/SLO 41.44.87
SCH# 2013041031

Delinda Robinson
Monterey County Planning Department
168 West Alisal, 2nd Floor
Salinas, CA 93901

Dear Ms. Robinson:

COMMENTS TO CALIFORNIA FLATS SOLAR PROJECT ACCESS IMPROVEMENTS

The California Department of Transportation (Caltrans), District 5, Development Review, has reviewed the above referenced project and offers the following comments as it relates to design features of transportation improvements required for the access to the project site.

1. The analysis states that during the Friday peak hour, traffic control measures will be put in place to prevent project-generated trips leaving the site from making right turn (south) movements on State Route (SR) 41. Vehicles will be directed to make left turn movements north. Caltrans has stated in the past and continues to require that an acceleration/receiving lane be constructed to accommodate this movement. 2.1

2. The left and right turn storage lanes required for project access have been preliminarily designed at 530 feet. However, the required length for deceleration lanes should be 530 feet plus storage for a 25 foot vehicle and a 75 foot truck. This would increase the total storage length required to 630 feet. (Highway Design Manual 405.2.2e, Page 400-11) 2.2

3. Any work within the State right-of-way will require an encroachment permit issued from Caltrans. Detailed information such as complete drawings, biological and cultural resource findings, hydraulic calculations, environmental reports, traffic study, etc., may need to be submitted as part of the encroachment permit process. 2.3

If you have any questions, or need further clarification on items discussed above, please don't hesitate to call me at (805) 542-4751.

Sincerely,

JOHN J. OLEJNIK
Associate Transportation Planner
District 5 Development Review Coordinator
john.olejnik@dot.ca.gov

cc: Rob Fitzroy (SLO County)

Letter 2

COMMENTER: John J. Olejnik, Associate Transportation Planner, California Department of Transportation

DATE: September 8, 2014

Response 2.1

The commenter recommends that an acceleration/receiving lane be constructed to accommodate project-generated trips leaving the site making left turn movements north. In response to this comment, Mitigation Measure T-2 in Section 4.13, *Transportation/Traffic,* has been revised as follows:

> **T-2** **Friday Peak Hour Control Measures – Construction Phase.** All project generated traffic bound for SR 46 eastbound that would make the southbound left turn movement at the intersection of SR 41/SR 46 shall be removed by implementing traffic control measures at the project access road exit during the Friday PM peak hour between 4:35 PM and 5:35 PM. Truck delivery and construction workers bound for eastbound SR 46 shall be prohibited from making right turns from the project access road onto SR 41 by a flagman located at the project access road during the Friday PM peak hour. Vehicle destinations shall be identified by vehicle badges. The flagman shall identify these vehicles and direct them to make an eastbound left out movement from the project access road onto SR 41 east. An acceleration/receiving lane shall be constructed to accommodate this movement, in accordance with Caltrans requirements.
>
> Significance After Mitigation. The removal of project generated trips destined for SR 46 east would divert all project trips from the southbound right turn movement and ultimately from the eastbound SR 46 during the Friday PM Peak Hour. The construction of an acceleration/receiving lane to accommodate left out movement from the project access road onto SR 41 east would occur entirely within the existing Caltrans right-of-way, and would be subject to a Caltrans encroachment permit. Impacts would be reduced to a less than significant level.

Response 2.2

The commenter notes that the left and right turn storage lanes required for project access should be 630 feet in length, rather than 530 feet. A conceptual layout of the proposed access road entrance and associated turn lanes improvements is shown in Figure 4.13-3. This layout is conceptual, and final design will require a Caltrans encroachment permit. The requirement for additional storage length will be incorporated into the final design.

It should be noted that this improvement would occur entirely within the SR 41 right-of-way, and therefore would not generate additional environmental impacts.

Response 2.3

The commenter notes that any work within the State right-of-way will require an encroachment permit from Caltrans. The commenter further notes that detailed information such as drawings, biological and cultural resource findings, hydraulic calculations, environmental reports, traffic study, etc. may need to be submitted as part of this process. Section 2.10 (Required Approvals and Permits) in Section 2.0,*Project Description,* lists an encroachment permit from as one of the discretionary approvals that may be required for the project.

Letter 3

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

EDMUND G. BROWN, JR., Governor
CHARLTON H. BONHAM, Director

September 19, 2014

Delinda Robinson
County of Monterey Resource Management Agency
Planning Department
168 West Alisal Street, 2nd Floor
Salinas, California 93901

Subject: Draft Environmental Impact Report (DEIR)
California Flats Solar Project
SCH No. 2013041031

Dear Ms. Robinson:

The California Department of Fish and Wildlife (Department) has reviewed the DEIR submitted by the County of Monterey Resource Management Agency (County) for the California Flats Solar Project (Project) located in the southeastern corner of Monterey County; approximately 7 miles southeast of the community of Parkfield and 25 miles northeast of the City of Paso Robles, near the borders of Monterey, San Luis Obispo, Kings and Fresno counties. Project approval would allow the construction, operation, and eventual decommissioning of a 280-megawatt photovoltaic (PV) solar power facility on an approximately 3,000-acre portion of an existing 72,000-acre cattle ranch known as Jack Ranch. The 3,000-acre Project site includes the following: 2,120 acres for the solar facility; 135 acres for an existing 230-kilo-volt Morro Bay-Gates transmission line corridor; 155 acres for a new utility corridor; a 5-acre, high-capacity, collection system line corridor; two substations six acres each in size; a 6-acre Pacific Gas and Electric Company switching station; an operations and maintenance facility; improvements to an existing access road covering approximately 60 acres; and temporary construction staging/laydown areas. The Project also includes installation of security lighting, security fencing, and water infrastructure. Primary vehicle access to the Project site is off of California State Route 41 (Highway 41), by way of an existing 5.6-mile dirt road that will be improved (60-acre access road). 3.1

In a letter dated May 16, 2013, the Department provided comments on the Notice of Preparation of a DEIR for the Project. In that previous letter, the Department recommended that the County include the results of all field surveys in the DEIR and use them as biological baselines in the DEIR when analyzing Project-specific and cumulative impacts, including impacts to population connectivity and movement, for species with the potential to be impacted through implementation of the Project including, but not limited to, the following: San Joaquin kit fox (*Vulpes macrotis mutica*, SJKF), which is listed as threatened under the California Endangered Species Act (CESA) and endangered under the federal Endangered Species Act (ESA); California tiger salamander (*Ambystoma californiense*, CTS), which is listed as threatened under CESA and ESA; golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*), both 3.2

of which are State fully protected species; California condor (*Gymnogyps californianus*), which is listed as endangered under CESA and ESA and is a State fully protected species; California red-legged frog (*Rana aurora draytonii*, CRLF), which is listed as threatened under ESA and is a State Species of Special Concern; Swainson's hawk (*Buteo swainsoni*, SWHA), which is listed as threatened under CESA; burrowing owl (*Athene cunicularia*, BUOW), western pond turtle (*Emys marmorata*), coast horned lizard (*Phrynsosoma blainvillii*), San Joaquin whipsnake (*Masticophis flagellum*), and American badger (*Taxidea taxus*), all of which are State Species of Special Concern; and a variety of native plants, both listed under CESA and/or ESA or otherwise considered special-status. Adobe navarretia (*Navarretia nigelliformis* ssp. *Nigelliformis*), Hogwallow starfish (*Hesperevax caulescens*), and round-leaved filaree (*California macrophylla*) were observed on the Project site during surveys conducted for the Preliminary Biotic Report. 3.2

The DEIR includes a variety of mitigation measures with the intent of reducing potentially significant impacts on biological resources to less than significant levels. The Department has reviewed the proposed mitigation measures included in the DEIR and has the following recommendations to improve their effectiveness. The Department recommends the County revise the following mitigation measures for the Final Environmental Impact Report as follows: 3.3

For all mitigation measures required for biological resources, the Department recommends the County include a requirement for the Project proponent to submit all survey reports and plans to the Department for review no less than 14 days before starting Project-related activities. 3.4

Mitigation Measures B-1(b) through B-1(e) provide for the protection of special-status plant species. However, there is no proposal of minimizing impacts to special-status plant species on the Project site. The Department recommends the County include an additional Mitigation Measure to require that before Project-related activities commence and once on-site special-status plants go to seed that the ground be scraped to collect the seeds and duff that will then be redistributed on compensatory lands. A qualified botanist shall determine the most suitable locations for the duff to be distributed on the compensatory lands, which may include but not be limited to creation of "wetland" depressions for those plants associated with wetlands, seeps, vernal pools or clay soils and determining correct soil types or topographic aspect to support each plant species. The Department does not recommend scraping of soils in vernal pools that contain federally listed invertebrates unless permitted to do so by the United States Fish and Wildlife Service (USFWS). See also B-2(b), these recommendations can be applied to the off-site mitigation lands for impacts to special-status plant species. 3.5

Mitigation Measure B-1(g), the fourth paragraph, allows for construction fencing to be installed around potential dens. The Department recommends the County modify this requirement to require that the fencing be installed in such a manner to allow movement of badger from inside the fencing to outside the fencing and vice versa. Alternatively, the Project proponent may install fencing around the area of Project activities, but not including potential badger dens, that will exclude badger from the area where Project activities are occurring. 3.6

Mitigation Measure B-1(i) provides avoidance and minimization measures for SJKF. When determining whether or not a potential SJKF den is occupied, the Department recommends the County increase the camera monitoring time from three days to five consecutive days. In-field observations and the USFWS indicate that SJKF may not emerge from dens until day four when there is a pregnant female occupying the den or when pups are newly born. Therefore, the Department recommends the monitoring of potentially occupied dens be increased to five consecutive days to determine use. 3.7

Mitigation Measure B-1(k) requires the removal of wildlife carcasses by an individual in possession of appropriate federal and state permits, if any are required. The Department recommends the County include additional language in this Mitigation Measure requiring that any individual that will remove and dispose of native California wildlife species will be in possession of a state scientific collecting permit pursuant to Fish and Game Code section 2081. 3.8

Mitigation Measure B-1(m) 1. uses language from outdated guidance for burrowing owl protection. The Department recommends the Project proponent follow the guidance recommendations provided in the more recent Staff Report on Burrowing Owl Mitigation (DFG 2012). The Department recommends the County remove the outdated guidance language starting from "...unless a qualified biologist and ending at ...capable of independent survival." The Department recommends the County modify the language in the following two sentences to read, "Owls present after 1 February shall be assumed to be nesting. Nest protection buffers described below shall remain in effect until 31 August or all juvenile owls are observed foraging independently, whichever is later, as determined by a qualified biologist." 3.9

Mitigation Measure B-1(m) 2. allows for buffer modifications by a qualified ornithologist based on Project activities, intensity of activities, etc. The Department recommends the County require that buffer modifications be developed in consultation with the Department. 3.10

Mitigation Measure B-1(m) 3. requires that a Burrowing Owl Exclusion Plan be prepared and submitted to the Department and the County for review and approval by the County. The Department recommends that the County include the Department as part of the approval process. 3.11

Mitigation Measure B-1(p) requires wildlife-friendly fencing design by incorporating 4-inch by 4-inch openings along the bottom of the fence spaced no more than 500 feet apart. The Department does not concur that this fencing design is appropriate for SJKF to escape traffic or predators quickly if they perceive the fencing to be a solid barrier with the opening so widely spaced. The Department recommends the County modify the language in this Mitigation Measure to require that perimeter fencing be either standard deer fencing installed so that the larger openings occur at the bottom or chain link fencing with the bottom edge raised 5 to 7 inches above the ground for the entire length, which will allow for unimpeded movement of SJKF through the Project site. 3.12

Mitigation Measure B-1(r) requires pre-construction surveys be completed for raptors and other special-status bird species. This Mitigation Measure requires the Project site plus a 1 mile 3.13

buffer be used for golden eagle and that all other bird species shall be searched for on the Project site and within a 300 foot buffer. The Department recommends that the County modify this Mitigation Measure by requiring surveys for fully protect species, such as white-tail kite or bald eagle or State-listed species, such as SWHA be conducted on the Project site and within ½ mile of the Project site. The Department also recommends the County increase the no-disturbance buffers around active nests of fully protected or state listed species to ½ mile. If this no-disturbance buffer is infeasible for State-listed species, consultation with the Department is warranted to discuss how the Project may be implemented to avoid "take." If take cannot be avoided, an ITP would be necessary to comply with CESA. 3.13

Mitigation Measure B-1(w) allows for the relocation of CTS and CRLF from the impact areas of the Project site. These species are listed under CESA and/or ESA. The capture and movement of any species listed under CESA would require an Incidental Take Permit (ITP) from the Department, as capture (or attempt to do so) is defined as take under Fish and Game Code Section 86. In addition, if CTS are observed within exclusion fencing, CDFW may consider the individuals captured. The Department recommends the County include additional language in this Mitigation measure to require that the Project proponent obtain take authorization from the Department and/or USFWS before conducting any barrier fencing installation or species collection or relocation activities. 3.14

Mitigation Measure B-1(cc) requires compensatory mitigation for CTS. The Project proponent should be made aware that the compensatory measures provided in the DEIR may differ from that required in a state ITP. 3.15

Mitigation measure B-1(dd) requires mitigation for impacts to vernal pool occupied by branchiopods. The Department has a no-net-loss policy for wetlands, including vernal pools whether or not they are occupied by branchiopods. As such, the Department recommends the County include additional language in this Mitigation Measure to require compensation for all direct or indirect impacts to all wetlands identified on the Project site or within 250 feet of the Project site. 3.16

Mitigation Measure B-1(ff) 7. requires excavations, holes, or trenches to be covered or outfitted with escape ramps to prevent entrapment of wildlife. Because pronghorn are known in the vicinity of the Project site, the Department recommends the County include additional language in this Mitigation Measure to prevent entrapment of newly born pronghorn. The Department recommends the County prohibit the creation of excavations and trenches two feet deep or greater during the month of May when the young are on the move, but too small and weak to extricate themselves from a deep excavation or trench. 3.17

Mitigation Measures B-2(e) through B-2(h) provide protection measures for riparian vegetation and stream resources. The Department would like to make the Project proponent aware that any alteration to any stream bed, bank, or channel or associated vegetation would warrant obtaining a Lake or Streambed Alteration Agreement pursuant to Fish and Game Code sections 1600 et seq. from the Department before starting any work that may impact a Department jurisdictional feature. 3.18

Thank you for providing the Department the opportunity to comment on the California Flats Solar Project DIER. If you have any questions regarding these comments, please contact Lisa Gymer, Senior Environmental Scientist (Specialist) at (559) 243-4014, extension 238, or Lisa.Gymer@wildlife.ca.gov.

Sincerely,

Jeffrey R. Single, Ph.D.
Regional Manager

cc: Ray Bransfield
United States Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, California 93003-7726

Scott Dawson
California Flats Solar, LLC
135 Market Street, 6th Floor
San Francisco, California 94105

State Clearinghouse
Post Office Box 3044
Sacramento, California 95812-3044

ec: Julie Vance
Lisa Gymer
California Department of Fish and Wildlife

Letter 3

COMMENTER: Jeffrey R. Single, Ph.D., Regional Manager, California Department of Fish and Wildlife

DATE: September 19, 2014

Response 3.1

The commenter states that the California Department of Fish and Wildlife (CDFW) has reviewed the DEIR and provides a summary of the proposed project. The comment is noted.

Response 3.2

The commenter states that CDFW submitted a letter on May 16, 2013 which provided comments on the Notice of Preparation (NOP) of the DEIR. The commenter summarizes the letter which recommended that the County include the results of all field surveys in the DEIR and use them as biological baselines when analyzing project-specific and cumulative impacts. The results of all biological surveys and studies completed to date were presented in the DEIR, and potential impacts to each species identified in the CDFW NOP comment letter were addressed accordingly.

Response 3.3

The commenter states that CDFW has reviewed the proposed mitigation measures included in the DEIR and states that they have provided recommendations to improve the effectiveness of the proposed mitigation measures. The commenter recommends that the County revise the mitigation measures for the Final EIR. These recommendations are discussed in subsequent comments and responses in this letter.

Response 3.4

The commenter recommends that for all mitigation measures required for biological resources, the County include a requirement for the project proponent to submit all survey reports and plans to CDFW for review no less than 14 days before starting project-related activities. The DEIR included required reporting on biological mitigation activity be submitted to the County for CEQA-level impacts, to CDFW for potential impacts to state listed and fully protected species, and to the USFWS for federally listed species. Should a state incidental take permit (ITP) be required of the applicant, the County assumes that the ITP will include any specific reporting requirements for state listed species. Mitigation Measure B-1(r) in Section 4.4, *Biological Resources,* of the DEIR has been revised as follows:

> **Mitigation Timing**: The applicant shall submit documentation to the County that either no raptors or other special status birds were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of impacts to raptors and other special status birds prior to ~~issuance of grading permits~~ the start of construction activity. If results of the preconstruction surveys for raptors or other special status birds identify any state listed or state

> fully protected species, a preconstruction survey report shall also be provided to CDFW prior to the start of construction.

Response 3.5

The commenter states that Mitigation Measures B-1(b) through B-1(e) do not include a proposal to minimize impacts to special-status plant species on the project site. The commenter recommends that the County include an additional mitigation measure to require that before project-related activities commence and once on-site special-status plants go to seed that the ground be scraped to collect the seeds and duff that will then be redistributed on compensatory lands. Mitigation Measure B-1(d) provides avoidance and minimization measures for special status plants. This measure was revised for clarity as follows:

> Impacts to all other (CRPR 1B and 4) special status plant species shall be avoided or minimized to the greatest extent feasible.
>
> Visible delineation markers shall be required where special status plants to be avoided occur within 50 feet of general Project construction access areas and array installation, or within 100 feet of grading.

Because grading is not proposed over the majority of project site where solar panels would be developed, scraping of the entire project site could result in a significant impact to plants and wildlife. Furthermore the collection and storage of duff from an approximately 3,000-acre project site would not be feasible. However, if grading activity on portions of the project site associated with project infrastructure were to occur in areas where special status plants have been recorded, scraping and collection of duff in these areas would be feasible. Mitigation Measure B-1(e) in Section 4.4, *Biological Resources,* of the DEIR has been revised to add the following:

> If compensatory mitigation for special status plants involves restoration, then the applicant shall scrape and collect topsoil and/or duff from permanent impact areas that support rare plants as feasible, to be used in compensatory mitigation site restoration. Alternatively, seed may also be collected from permanent impact areas that support rare plants. Before project-related activities commence and once on-site special status plants go to seed, areas of proposed site grading where special status plants have been recorded shall be scraped to collect the seeds and topsoil/duff for redistribution on compensatory lands. A qualified botanist shall determine the most suitable locations for the topsoil/duff to be distributed on the compensatory lands, which may include but not be limited to creation of "wetland" depressions for those plants associated with wetlands, seeps, vernal pools or mesic sites with clay soils, and determining correct soil types or topographic aspect to support each plant species. Scraping shall not be conducted for soils in vernal pools that could contain federally listed invertebrates, unless permitted to do so by the United States Fish and Wildlife Service (USFWS).

Note that additional revisions to Mitigation Measure B-1(e) were made for clarity; see also responses 12.A.45, 12.A.60, and 12.A.61 regarding special status plant impacts and mitigation.

Response 3.6

The commenter recommends that the County modify Mitigation Measure B-1(g) to require that construction fencing be installed in such a manner as to allow movement of badger from inside the fencing to outside and vice versa, or to install fencing around the area of project activities, but not including potential badger dens, that would exclude badger from the area where project activities are occurring. Mitigation Measure B-1(g) in Section 4.4, *Biological Resources,* of the DEIR has been revised as follows:

> If a potential den is located outside of the disturbance footprint but within 500 feet of ground disturbing activities (including staging areas), the dens shall be avoided by installation of highly visible orange construction fencing a minimum of 100 feet around the den, designating the area an ESA. If the den is to be completely enclosed by fencing, the fencing must be installed in a manner that allows badger to move through the fencing at will, as determined by a qualified biologist.

Response 3.7

The commenter recommends that the County modify Mitigation Measure B-1(i) to increase the monitoring of potentially occupied San Joaquin kit fox dens from three days to five consecutive days. The County recognizes that CDFW (along with USFWS) has authorization over the federally and state listed San Joaquin kit fox and as such accepts the recommendations of a five-day monitoring period for potentially occupied San Joaquin kit fox dens, and Mitigation Measure B-1(i) in Section 4.4, *Biological Resources,* of the DEIR has been revised as follows:

> Dens with proper dimensions but no obvious sign will require further investigation. A remote motion-sensing camera will be deployed for at least ~~3~~five (5) days to document whether the hole is being used by kit fox. If, after ~~3~~five days, no kit foxes are detected and the hole has remained unchanged (no new tracks or excavations are observed), the den will be deemed unoccupied. The den will be considered occupied if a kit fox is photographed using the den frequently or if recent sign is found.

Response 3.8

The commenter recommends that the County modify Mitigation Measure B-1(k) to require that any individual that will remove and dispose of native California wildlife species be in possession of a state scientific collecting permit pursuant to Fish and Game Code section 2081. The County notes that the language as written would include a state scientific collecting permit; however, for clarification, Mitigation Measure B-1(k) in Section 4.4, *Biological Resources,* of the DEIR has been revised as follows:

> The removal and disposal shall be conducted by an individual in possession of appropriate federal and state permits, if any are required, including but not necessarily limited to a state scientific collection permit pursuant to Fish and Game Code Section 2081.

Response 3.9

The commenter states that Mitigation Measure B-1(m) uses language from outdated guidance for burrowing owl protection and recommends that the project proponent follow the guidance recommendations provided in the more recent Staff Report on Burrowing Owl Mitigation (DFG, 2012). The Staff Report on Burrowing Owl Mitigation states the following: "Owls present after 1 February shall be assumed to be nesting. Nest protection buffers described below shall remain in effect until 31 August or all juvenile owls are observed foraging independently, whichever is later, as determined by a qualified biologist." The proposed revisions would result in a blanket assumption of breeding activity at all burrows, and would therefore not provide for a reasonable analysis of burrow activity based on verifiable field observations. In response to this comment, Mitigation Measure B-1(m) in Section 4.4, *Biological Resources,* of the DEIR has been revised as follows:

> Occupied burrows shall not be disturbed during the nesting season (1 February through 31 August) unless a qualified biologist verifies, through noninvasive methods, that either (1) the ~~birds have not begun egg-laying and incubation~~ burrow is not being used for breeding, (2) a previously active nest has failed and the burrow is no longer active ~~re-nesting is highly unlikely~~, or (3) all juveniles from the occupied burrow are foraging independently and capable of independent survival and the burrow is no longer an active nest burrow. Owls present after 1 February shall be assumed to be nesting unless evidence indicates otherwise. Nest-protection buffers described below shall remain in effect until 31 August or, based upon monitoring evidence, until the nest has failed or all juvenile owls are foraging independently as determined by a qualified biologist.

Response 3.10

The commenter recommends that the County modify Mitigation Measure B-1(m) to require that buffer modifications be developed in consultation with CDFW. The DEIR included language about consultation with CDFW on buffer reduction, which has clarified as follows:

> The appropriateness of using reduced buffer distances or burrow-specific buffer distances shall be established on a case-by-case basis by a qualified ornithologist ~~who may consult~~ in consultation with CDFW, and shall depend on existing conditions (e.g., vegetation/topographic screening and current disturbance regimes).

Response 3.11

The commenter recommends that the County modify Mitigation Measure B-1(m) to include CDFW as part of the approval process for the Burrowing Owl Exclusion Plan. The intention of this measure was to have CDFW involved in the review and approval of any Burrowing Owl Exclusion Plan. To clarify, Mitigation Measure B-1(m) in Section 4.4, *Biological Resources,* has been revised as follows:

> The Burrowing Owl Exclusion Plan shall be submitted for review and approval to the CDFW and County ~~for review and approved by the County~~ prior to implementation.

Response 3.12

The commenter argues that the wildlife-friendly fencing described in Mitigation Measure B-1(p) is not appropriate for San Joaquin kit fox to escape traffic or predators and recommends revised fencing standards. CDFW concerns that the proposed wildlife friendly fence design may not be sufficient to allow for kit fox to escape traffic or predators are noted, and the County accepts CDFW's recommendation on mitigation for this state and federally listed species. As a result, Mitigation Measure B-1(p) in Section 4.4, *Biological Resources,* has been revised as follows:

> The fencing around the perimeter of the project site and SDAs shall be designed to allow passage by SJKF, American badger, and their prey species, by incorporating either standard deer fencing installed so that the larger openings occur at the bottom or chain link fencing with the bottom edge raised five to seven inches above the ground for the entire length of the fence, to allow for unimpeded movement of SJKF and American badger through the site. ~~openings in the perimeter fence that are a minimum of 4- inch by 4-inch for SJKF, with additional 6-inch by 7-inch openings to allow permeability by American badgers~~. ~~The opening should be located at least every 500 feet along the perimeter fence.~~ Interior fencing may be designed such that it is installed four to five inches above ground.

Response 3.13

The commenter recommends modifications to survey and no-disturbance buffers for fully protected species, such as white-tailed kite or bald eagle or State-listed species, such as Swainson's hawk, in Mitigation Measure B-1(r), and specifies conditions that may require CDFW consultation for "take" avoidance. The County understands that CDFW has authority over state listed and fully protected species, and as such accepts CDFW's recommendations for survey and avoidance buffers of fully protected species and Swainson's hawks. Mitigation Measure B-1(r) in Section 4.4, *Biological Resources,* of the DEIR has therefore been revised as follows:

> If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer ranging from 50 to 300 feet based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest, and 0.5 mile for fully protected and state-listed raptors (such as white-tailed kite, bald eagle and Swainson's hawk).

Response 3.14

The commenter notes that relocation of California tiger salamander and California red-legged frog which are listed under the California Endangered Species Act and/or Federal Endangered Species Act would require an incidental take permit from CDFW, identifies conditions that would be considered "take" by CDFW and recommends revisions to require take authorization. The County has required take authorization for any activity that would result in take of state or federally listed

species (including the relocation of CTS and CRLF). This is specified in Mitigation Measure B-1(ee) for construction biological monitoring. For clarification, Mitigation Measure B-1(w) in Section 4.4, *Biological Resources,* of the DEIR has also been revised as follows:

> **B-1(w)** **California Tiger Salamander and California Red-Legged Frog Relocation Sites.** Prior to the initiation of any other protective measures, a qualified biologist (i.e., biologist approved by USFWS and/or CDFW to translocate CTS and CRLF) shall, in consultation with USFWS and/or CDFW as applicable, identify appropriate relocation sites for any adult, juvenile, and larval CTS and CRLF that may be observed during the pre-construction survey or monitoring activities described below and need to be moved from within the limits of direct impact disturbance. Relocation or other take (e.g. entrapment) of CTS and CRLF can only be conducted by an authorized biologist and the project must have been issued the requisite take authorizations from CDFW and USFWS before any relocation activity can commence.

Response 3.15

The commenter notes that Mitigation Measure B-1(cc) requires compensatory mitigation for California tiger salamander and that the project proponent should be made aware that the compensatory measures provided in the DEIR may differ from that required in a state incidental take permit. The compensatory mitigation measures included in the DEIR are intended to provide standards for compensatory mitigation under CEQA. Conditions in state take authorization(s) may include different or additional measures, including compensatory mitigation measures. The goal in providing a compensatory mitigation measure for CTS within the DEIR was to ensure mitigation was not deferred, while also minimizing the potential for including measures that could contradict conditions that may be included under state authorization for take of CTS.

Response 3.16

The commenter notes that CDFW has a no-net-loss policy for wetlands (including vernal pools) and recommends that the County modify Mitigation Measure B-1(dd) to require compensation for all direct or indirect impacts to all wetlands identified on the project site or within 250 feet of the project site. Potential impacts to wetlands are identified in Impact B-3 of the DEIR, and wetland habitat mitigation measures are required to compensate for permanent impacts to wetland habitat [refer to Mitigation Measure B-3(d) in Section 4.4, *Biological Resources*]. Therefore, the DEIR has not been revised.

Response 3.17

The commenter recommends the County modify Mitigation Measure B-1(ff) to prevent the entrapment of newly born pronghorn by prohibiting the creation of excavations and trenches two feet deep or greater during the month of May when the young are on the move, but too small and weak to extricate themselves from a deep excavation or trench. Mitigation Measure B-1(ff) requires that trenches be either covered to prevent entrapment of wildlife (including pronghorn) or include an earthen ramp that would allow wildlife (including young pronghorn) to escape. Furthermore,

all trenching and excavations are to be inspected daily. Nevertheless, Mitigation Measure B-1(ff) in Section 4.4, *Biological Resources,* of the DEIR has been revised as follows:

> To prevent entrapment of special-status wildlife, all excavations (e.g., steep-walled holes, or trenches) more than six inches deep shall be covered with plywood or similar materials when not in use or fitted with at least one escape ramp constructed of earth dirt fill, wooden planks, or another material that wildlife could ascend. During the month of May excavations and trenches two-feet deep or greater shall be covered with plywood or similar materials when not in use, and any excavations or trenches that cannot be covered when not in use shall be monitored daily to prevent entrapment of pronghorn calves. All excavations more than six inches deep shall be inspected daily for entrapped wildlife before construction activities begin and once immediately before being covered with plywood. Before excavations are filled, they shall be thoroughly inspected for entrapped wildlife. Any wildlife discovered shall be allowed to escape unimpeded before field activities resume or shall be removed from excavated areas by a qualified biologist and released at a safe nearby location.

Response 3.18

The commenter states that Mitigation Measures B-2(e) through B-2(h) provide protection measures for riparian vegetation and stream resources. The commenter notes that the project proponent should be made aware that any alteration to any stream bed, bank, or channel or associated vegetation would warrant obtaining a Lake or Streambed Alteration Agreement (LSAA) pursuant to Fish and Game Code sections 1600 et seq. from CDFW before starting any work that may impact a CDFW jurisdictional feature. As described in the DEIR, a LSAA would be required for impacts to waters subject to CDFW jurisdiction. See response 16.84 which also addresses LSAA permitting and CDFW authority. Mitigation Measures B-3(b) and B-3(d) in Section 4.4, *Biological Resources,* have been revised as follows:

> **Revisions to B-3(b):**
>
> If a new well must be sited in an area where impacts to W19 or other wetlands cannot be ruled out (or limited to no more than one rainy season) by the hydrologic study, mitigation measure B-3(c) shall apply, and the applicant shall consult with CDFW, USACE and RWQCB, as applicable, to determine if permitting is required.
>
> **Revisions to B-3(d):**
>
> **Mitigation Timing:** The applicant shall obtain County approval of the location of mitigation lands, the holder of conservation easements, and the restrictions contained in the easement(s) created for the permanent protection of these lands. Documentation of recorded easement(s) shall be submitted to and approved by the County consistent with the timing outlined in mitigation measureB-1(a). The applicant shall consult with CDFW on the requirement for a Lake and Streambed Alteration Agreement (LSAA; Fish and Game Code 1600) for waters subject to CDFW jurisdiction.

Letter 4

MBUAPCD
Monterey Bay Unified Air Pollution Control District
Serving Monterey, San Benito, and Santa Cruz Counties

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Monterey, CA 93940
PHONE: (831) 647-9411 • FAX: (831) 647-8501

September 19, 2014

Delinda Robinson
Monterey County Resource Management Agency
Planning Department
168 W. Alisal St., 2nd Floor
Salinas, CA 93901
Submitted via email to: CEQAcomments@co.monterey.ca.us

SUBJECT: Comments on DEIR for California Flats Solar Project (PLN120294; SCH#2013041031)

Dear Ms. Robinson:

Thank you for providing the Monterey Bay Unified Air Pollution Control District (Air District) the opportunity to comment on the above-referenced document. The Air District has reviewed the document and has the following comments:

GENERAL:

The Air District supports the development of renewable energy sources, and the generation of electricity from solar power, in particular. Solar represents a combustion free source of energy which can have across the board benefits in terms of reducing criteria pollutants, toxic and GHG emissions. However, the proposed solar project needs to be carefully planned and implemented to avoid unwanted air pollution impacts.

Overall, the DEIR represents a reasonable effort to estimate air quality impacts and mitigate effects. However, given the massive scale of the project, Air District concerns include the expected significant and unavoidable air quality impacts expected during construction, fugitive dust generated during operations as well as the actual level of emission offsets expected from the project.

Although the project is located in the southeastern most corner of Monterey County, it is on the doorstep to two other air districts that could also be impacted. The Air District suggests that the lead agency coordinate closely with the San Luis Obispo County APCD well as the San Joaquin Valley Unified APCD regarding project alternatives and mitigation.

4.1

SPECIFIC COMMENTS:

1. Construction Impacts AQ-2 and Table 4.3-5 pages 4.3-22 to 4.3-23 – The DEIR concludes that impacts from this large construction project will be significant and unavoidable, even after employing an extensive array of fugitive dust mitigation measures. Table 4.3-5 indicates construction PM10 emissions at eight times the Air District's threshold. Although construction activities may tend to be decentralized over a large project area, the Air District requests that

4.2

additional due diligence be applied when disturbing dry soils and when clustering construction activities.

Specifically, the Air District recommends a "Good Neighbor" approach to these activities by including the following additional measures:

- Avoid clustered construction activities near residences.
- Apply excess water and modulate soil disturbance when working near residences, especially when wind gusts exceed 15 mph.
- Notify residents when the construction schedule calls for activity near their homes.
- Continue grading activities during light rain events.
- Consider paving unpaved onsite roads. Alternatively, use surfactants on unpaved onsite roads and staging areas for dust suppression as this reduces entrained road dust.
- Consult with habitat managers and local ranchers to establish tall hedges/shrubs or evergreen trees along the perimeter of the site to reduce offsite drift of dust, particularly along the perimeter of the site where residents are located.
- Develop a landscape plan which includes habitat acceptable ground cover in disturbed areas prone to emitting fugitive dust.

4.2

Note 6 to Table 4.3-5 states the Tier 3 was used for mitigation in CalEEMod. However, this measure is not reflected in the mitigation measures. Due to the significant amounts of NOx and ROG emissions from project construction, the Air District strongly recommends adding in a mitigation measure, such as the following, to address construction equipment exhaust emissions:

All off-road construction diesel engines not registered under the California Air Resources Board's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower (hp) or more, will meet, at a minimum, the Tier 3 California Emissions Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. If a Tier 3 engine is not available for any off-road engine larger than 50 hp, that engine will have tailpipe retrofit controls that reduce exhaust emissions of NOx and PM to no more than Tier 2 emission levels. Tier 1 engines will be allowed on a case-by-case basis only when the Project owner has documented that no Tier 2 equipment or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete the Project's construction. This will be documented with signed written correspondence by the appropriate construction contractor along with documented correspondence with at least two construction equipment rental firms. A list of the construction equipment and the associated EPA Tier shall be submitted to the County Resource Management Agency prior to the issuance of a grading permit to verify implementation of measure.

2. Project Setting Section 2.4.1/Prevailing Winds – This section, as well as Figure 2.4a, indicate there are two rural residences located in close proximity to the site (775 feet N to NW of site). The attached wind rose from Parkfield (2008-2010) suggests that prevailing daytime winds during construction work hours are generally from the SE. This would put the residences, as well as the

4.3

more distant settlement of Parkfield, downwind of the large construction area most of the time. This alignment emphasizes the need to carefully manage construction emissions depending on wind, location and the level of construction activity. 4.3

3. Air District Rule 402 Nuisance on page 4.3-16 – Air District Rule 402 Nuisance is listed on this page as an applicable regulation, however, there is no discussion regarding its implication. The rule applies to the construction and operation of the facility and can be enforced if there are local dust or odor complaints, or if adverse local conditions are observed by an inspector. Given the significant and unavoidable impacts expected during construction, discussion should be added to the DEIR on how Rule 402 relates to the project. Application of the mitigation measures in the DEIR, as well as those listed above aimed at reducing offsite drift of fugitive dust, should help maintain compliance with Rule 402. 4.4

4. Impact AQ-6, Valley Fever page ES-11 – The Air District supports efforts to mitigate potential impacts of the soil dwelling fungus associated with Valley Fever. Although the Air District has no direct jurisdiction over airborne pathogens, the mitigation measures designed to reduce fugitive dust under AQ-6 and also in the Air District comment above should also help to reduce dust that may carry this pathogen. We encourage the applicant to work with the Monterey County Health Department as the primary contact on this issue. 4.5

5. AQ-6(b) Additional Valley Fever Dust Suppression Measures page 4.3-34 – The text states "If wind speeds exceed 15 mph or temperatures exceed 95 degrees Fahrenheit for three consecutive days, additional dust suppression measures (such as additional water or the application of additional soil stabilizer) shall be implemented prior to and immediately following ground disturbing activities." Please clarify if these criteria are triggered by peak daily values or conditions sustained continuously for 24 hours. 4.6

6. Project Characteristics, Onsite Weather Stations on page 2-14 – The text in the second paragraph on this page indicates there will be weather stations placed throughout the solar arrays. The Air District recommends adding a condition to mitigation measure AQ-2(a) that the real-time weather station data will be made available online to the Air District and the public so that the Air District can assess conditions in the area. This should include at a minimum hourly wind speed (mph) and direction, temperature and humidity. 4.7

7. GHG Threshold on page 4.7-11 – The text states "The MBUAPCD recommends using the adopted SLOAPCD quantitative emissions threshold of 1,150 metric tons of carbon dioxide equivalent (MT CO2E) per year for most land use projects." It should be noted that the Air District does not have a formal policy recommending specific thresholds. The Air District is currently developing CEQA 4.8

GHG thresholds that may or may not be consistent with SLOAPCD's approach. The Air District does encourage lead agencies to consider a variety of metrics for evaluating GHG emissions and related mitigation measures as they best apply to the specific project. 4.8

8. Daily Operational Emissions Table 4.3-6 page 4.3-29 – Table 4.3-6 shows a net benefit in emissions due to the displaced (offset) emissions the project would prevent that would otherwise occur at "traditional natural gas and coal-fired power plants". The emission offsets presented in this table appear to be overstated and should be re-evaluated. The offsets appear to be based obsolete conditions no longer representative of power plants operating on the California grid.

   The calculated offsets are difficult to reconstruct from the information in the DEIR and supporting appendices. For instance, Table 4.3-6 of the DEIR shows a net displacement of 1,278 lbs/day of NOx. An unmarked table on page 94 of Appendix C1 suggests that this was based on 2,068 MWh/day at 0.62 lbs NOx/MWh which is apparently from the CAMX region in EPA's eGRIDweb model for the year 2005. However, if the factor from the natural gas fired MLPP in Monterey County was used instead (0.0576 lb NOx/MWh), the emissions savings would be an order of magnitude lower. The overstatement is further illustrated by the large 1,098 lb/day SOx offset shown in Table 4.3-6, which is two orders of magnitude higher than what is typical for a natural gas fired power plant operating in California. 4.9

   The emission offsets shown in Table 4.3-6 appear to be related to out of state coal fired power plants, some of which no longer exist. CEC's Energy Almanac indicates that in 2005, power generated by coal plants accounted for 12.5% of in-state generation with that figure diminishing to a mere 0.5% by 2013. Please re-evaluate the displaced emissions in Table 4.3-6 to reflect more current and representative conditions.

9. 2005 Base Year for Daily Generation/Emissions – Table 4.3-6 from page 4.3-29 in the DEIR as well as the table from Appendix C1 are based on the year 2005. However, the NOP was submitted in 2013. In CEQA, the baseline is the existing environment at the time the NOP was submitted. Please provide the emission and generation figures based on a more current year with a more representative mix of non-coal burning power plants on the grid. 4.10

10. Operational Energy Use page 94 Appendix C1 – The operational emission offsets calculated in the unmarked table on page 94 of Appendix C1 (also Table 4.3-6 DEIR) are based on 2,067.67 MWh/day of electricity generation, presumably offset generation from the 280 MW solar plant. Please explain how this figure was developed. 4.11

11. Impact AQ-3 Operational Impacts Local vs. Regional pages 4.3-27 to 29 – The text indicates that overall the project would have a net benefit in term of long-term emissions of operational criteria 4.12

pollutants and thus, the operational impacts on regional air quality would be beneficial. It should be made very clear in the text and in Table 4.3-6 that the increased vehicle emissions are local in nature and that the displaced emissions causing the net benefit are statewide or even out of state (coal) across the grid. Thus, the projected benefits would not occur in the local community and the onsite dust and exhaust emissions would impact local air quality conditions. 4.12

12. Mitigation Monitoring Construction Dust AQ-2, page ES-10 – The DEIR indicates there will be onsite enforcement and monitoring of the mitigation measures for construction dust AQ-2. This is to include a daily log of activities summarized in a monthly report to the Monterey County RMA. The Air District requests that the mitigation measure includes a statement that copies of these reports will be provided to the Air District for confirmation. 4.13

13. Back-up Generators – Given the remote location of the project site, auxiliary power equipment may be needed. Please update the operational emissions analysis to account for these sources. 4.14

14. Other Considerations: 4.15

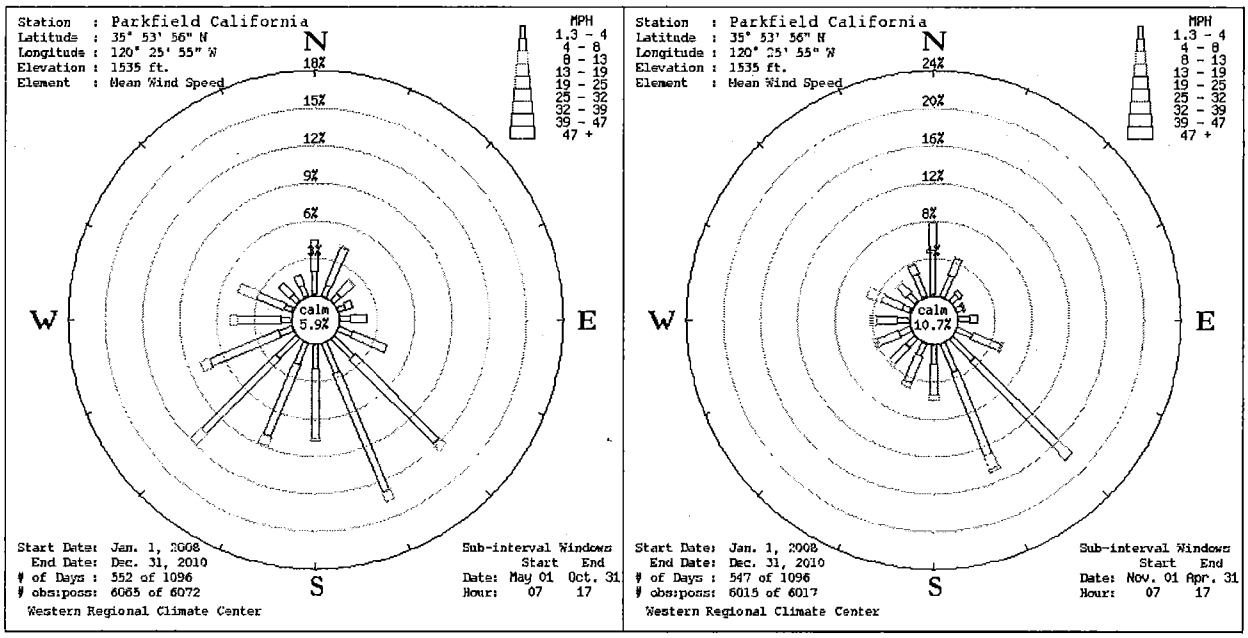
- Use CNG-powered equipment for site preparation and construction activities.
- Establish an onsite EV charge station powered by the solar plant for onsite maintenance vehicles and include electric powered vehicles in the maintenance fleet.
- Sponsor an EV charge station in Parkfield which would run off the solar plant.

Please let me know if you have questions, I can be reached at (831) 647-9418 ext. 227 or aclymo@mbuapcd.org.

Best regards,

Amy Clymo
Supervising Air Quality Planner

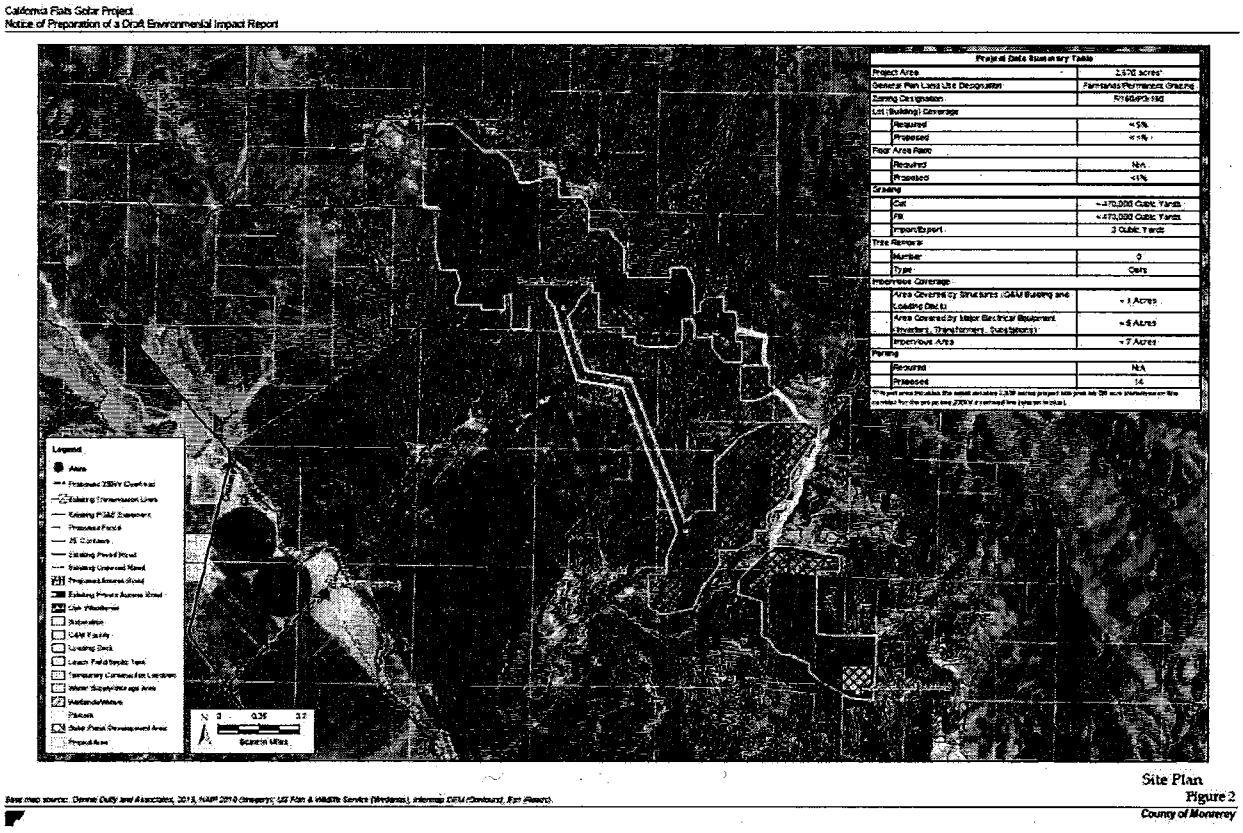
cc: Richard A. Stedman, Air Pollution Control Officer
Mike Gilroy, Deputy Air Pollution Control Officer
Bob Nunes, MBUAPCD Air Quality Planner



DRY SEASON May-Oct **WET SEASON Nov-Apr**

Parkfield Winds during Daytime Work Hours 7 am- 5 pm

(Direction the wind is coming from)



Project site plan and location of nearest residences NW of site.

Letter 4

COMMENTER: Amy Clymo, Supervising Air Quality Planner, Monterey Bay Unified Air Pollution Control District

DATE: September 19, 2014

Response 4.1

The commenter notes that the MBUAPCD supports the development of renewable energy sources and the generation of electricity from solar power, but notes that new solar projects need to be planned to avoid significant air pollution impacts. The commenter states that the DEIR represents a reasonable effort to estimate the air quality impacts and mitigate effects, but that MBUAPCD concerns about the project include the significant and unavoidable air quality impacts expected during construction, fugitive dust generated during operations, as well as the actual level of emission offsets expected from the project. These concerns are discussed in subsequent comments and responses to this letter.

The commenter notes that the project is located near two other air districts – the San Luis Obispo Air Pollution control District (SLOAPCD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD), and recommends that the lead CEQA agency coordinate with these districts regarding project alternatives and mitigation. For responses to SLOAPCD comments on the DEIR pertaining to project mitigation, refer to Letter 9 and responses 9.1 through 9.6. As described in the DEIR, the project would include use and minor maintenance of the southern portions of the existing private ranch road within San Luis Obispo County and the South Central Coast Air Basin (SCCAB) that is within the jurisdiction of SLOAPCD. The regulatory setting associated with the SCCAB and SLOAPCD jurisdiction is discussed in Section 4.3.2(f) in Section 4.3, *Air Quality*. Potential impacts within the SCCAB are discussed in Section 4.3.3(d) of the DEIR, under Impact AQ-8 (SLOAPCD and SJVAPCD Air Quality Management Plan [AQMP] consistency), Impact AQ-9 (short-term construction emissions within SCCAB), and Impact AQ-10 (long-term air pollutant emissions in SCCAB). None of the project components would be within the San Joaquin Valley Air Basin (SJVAB) or otherwise under the jurisdiction of the SJVAPCD; however, SJVAB's air quality may be affected due to its proximity to the site. Potential impacts within the SJVAB are discussed in Section 4.3.3(d) of the DEIR, under Impact AQ-8 (SLOAPCD and SJVAPCD Air Quality Management Plan [AQMP] consistency). Cumulative impacts, including cumulative air pollutant emissions in the SCCAB and the SJVAB, are described in Section 4.3.3(e), *Cumulative Impacts*.

Response 4.2

The commenter notes that the DEIR concludes that impacts from construction of the project would exceed the applicable MBUAPCD CEQA thresholds for NO_X and PM_{10}, and would be significant and unavoidable. The commenter states that MBUAPCD recommends including several additional construction emission mitigation measures, including avoiding clustered construction activities near residences, applying excess water and modulate soil disturbance when working near residences, notification of residents when construction activity occurs near their homes, continuing grading activity during light rain events, paving on-site road where possible, consulting with habitat managers and local ranchers to establish vegetation along the perimeter of the site, and

developing a landscape plan that includes ground cover in disturbed areas. Mitigation Measure AQ-2, Dust Control Measures, in Section 4.3, *Air Quality,* incorporates recommended dust control measures from MBUAPCD's *CEQA Air Quality Guidelines* document (last revised February 2008) as well as SLOAPCD's *CEQA Air Quality Handbook* (April, 2012) designed to minimize dust impacts associated with project construction. In addition, several of the commenter's recommendations are included in project design features formalized as applicant proposed measures (or APMs), including implementing a Final Construction Management Plan (CMP) that would include measures to ensure on-going coordination with adjacent property owners during project construction (APM-2), and preparing a Dust Control Plan to minimize fugitive dust emissions during project construction, including dust control measures to be provided in accordance with MBUAPCD requirements (APM-4). The project APMs, in combination with Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c), would maintain compliance with MBUAPCD Rule 402, and would minimize impacts associated with emissions during project construction to the maximum extent feasible.

The commenter also notes that Table 4.3-5, under Impact AQ-2, states that Tier 3 California Emissions Standards for equipment were used for mitigation in the emissions modeling conducted for the project, but were not specified as mitigation. In order to ensure that air quality impacts are mitigated to the maximum extent feasible, Mitigation Measure AQ-2(c) has been added, requiring the use of Tier 3 construction equipment, as follows:

AQ-2(c) **Tier 3 Construction Equipment**. All off-road construction diesel engines not registered under the California Air Resources Board's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower (hp) or more, shall meet, at a minimum, the Tier 3 California Emissions Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment.

Construction or trucking companies with fleets that that do not have engines in their fleet that meet the Tier 3 standards may be eligible by proving alternative compliance. If a Tier 3 (or equivalent alternative compliance) engine is not available for any off-road engine larger than 50 hp, that engine will have tailpipe retrofit controls that reduce exhaust emissions of NO_X and PM_{10} to no more than Tier 2 emission levels. Tier 1 engines will be allowed on a case-by-case basis only when the project applicant has documented that no Tier 2 equipment or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete project construction. This shall be documented with signed written correspondence by the appropriate construction contractor along with documented correspondence with at least two construction equipment rental firms. A list of the construction equipment used on-site and the associated EPA Tier shall be submitted to the County of Monterey RMA-Planning quarterly to verify implementation of this measure.

It should be noted that Mitigation Measure AQ-2(c) is not mitigation for a previously unidentified impact; rather, this measure is intended to further reduce impacts identified in the DEIR to the maximum extent feasible. The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 4.3

The commenter notes that there are two rural residences located near the project site (approximately 775 feet north of the site boundary, near the eastern public road terminus of Turkey Flat Road), and provides a wind rose from Parkfield (2008-2010), which shows prevailing daytime winds during construction work hours from the southeast, which indicates that these residences would be located downwind of construction activity during the daytime hours when project construction is primarily expected to occur. The DEIR states that the prevailing winds of the Paso Robles area are westerly to northwesterly (meaning that winds generally blow west to east and northwest to southeast; National Oceanic and Atmospheric Administration, 2009), but notes that seasonal and local topographic conditions may alter the wind directionality. Mitigation Measure AQ-2(a) requires dust control measures throughout the duration of construction, including a grading plan that minimizes the amount of disturbed area, water trucks or sprinkler systems to prevent airborne dust from leaving the site, establishment of clear boundaries for dust control between work areas, a 15 mph on-site speed limit, and on-site dust control monitoring during construction activity. These measures would minimize temporary impacts associated with windblown dust. Mitigation Measure AQ-6(b) specifies additional dust suppression measures (to be incorporated into the Final Construction Management Plan, subject to County of Monterey RMA – Planning Department approval prior to the issuance of the grading permit) that would be required if wind speeds exceed 15 mph or temperatures exceed 95 degrees Fahrenheit for three consecutive days. Refer also to response 4.2.

Response 4.4

The commenter notes that MBUAPCD Rule 402 is listed in the DEIR as an applicable regulation, but that there is no subsequent discussion regarding the implications of MBUAPCD Rule 402. The commenter also states that application of the mitigation measures in the DEIR, as well as the recommended additions described in response 4.2, above, which would reduce off-site drift of fugitive dust, would be expected to help maintain compliance with Rule 402. Impact AQ-2 of the DEIR has been modified as follows:

> *Total Short-Term Construction Emissions*. As described above and shown in Table 4.3-5, temporary emissions during construction would exceed MBUAPCD thresholds for PM_{10} and NO_X. As described in Section 2.0, *Project Description*, the project includes APM-2 through APM-5, which would reduce temporary emissions associated with construction of the proposed project. Project construction activity would be required to comply with MBUAPCD Rule 402, which states that:
>
> > *No person shall discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health, or safety of any such persons or the public; or which cause, or have a natural tendency to cause, injury or damage to business or property. {CAL. HSC Section 41700}*

~~Therefore~~ However, short-term air quality emissions during project construction would be remain potentially significant.

In addition, the *Significance After Mitigation* discussion for Impact AQ-2 in Section 4.3, *Air Quality,* has been modified as follows:

Significance After Mitigation. Air emissions calculations were performed for both before and after the incorporation of the above-identified mitigation measures. The mitigation measures include those typically required by CARB and the MBUAPCD for NO_X (such as use of off-road equipment with Tier **3** ~~III~~ engines) and PM_{10} (such as watering program for dust control). As shown in Table 4.3-5, despite implementation of Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c), temporary construction emissions would continue to exceed MBUAPCD thresholds for NO_X and PM_{10}. In addition, due to the proximity of the site to other air basins, construction emissions could potentially impact air quality in those air basins. No other feasible measures are available that would further reduce construction emissions. Implementation of Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c) would help maintain compliance with MBUAPCD Rule 402. ~~Therefore~~ However, due to the exceedance of MBUAPCD thresholds for construction activity, impacts would remain significant and unavoidable during construction.

Response 4.5

The commenter states that MBUAPCD supports efforts to mitigate potential impacts related to Valley Fever. The commenter notes that MBUAPCD has no direct jurisdiction over airborne pathogens, and that Mitigation Measures AQ-6(a) through AQ-6(e) in addition to the recommended additions described in response 4.2, above, which would reduce off-site drift of fugitive dust, would help reduce dust that may carry the Coccidioides fungus. The commenter encourages the project applicant to work with the Monterey County Health Department as the primary contact on this issue.

Mitigation Measure AQ-6(a) requires the applicant to consult with the Monterey County Health Department (Health Officer), MBUAPCD, and the California Occupational Safety and Health Administration (Cal/OSHA) Compliance Program to develop a Valley Fever Management Plan that includes specific measures to reduce the potential for exposure to Valley Fever. Mitigation Measure AQ-6(c) requires the applicant to notify the Monterey County Health Department (Health Officer) and the Monterey County RMA–Planning Department not more than 60 nor less than 30 days before construction activities commence to allow the Health Officer opportunity to provide educational outreach to community members and medical providers, as well as enhanced disease surveillance in the area both during and after construction activities involving grading.

Response 4.6

The commenter notes that Mitigation Measure AQ-6(b) requires additional dust suppression measures if wind speeds exceed 15 mph or temperatures exceed 95 degrees Fahrenheit for three consecutive days. The commenter requests clarification as to whether this requirement would be triggered based on peak daily values or conditions sustained continuously for 24 hours. Mitigation

Measure AQ-6(b) has been clarified to address this ambiguity, as follows (refer also to response 16.26):

> **AQ-6(b)** **Additional Valley Fever Dust Suppression Measures**. If peak daily wind speeds exceed 15 mph or peak daily temperatures exceed 95 degrees Fahrenheit for three consecutive days, additional dust suppression measures (such as additional water or the application of additional soil stabilizer) shall be implemented prior to and immediately following ground disturbing activities. The additional dust suppression shall continue until winds are 10 mph or lower and outdoor air temperatures are below a peak daily temperature of 90 degrees for at least two consecutive days. The additional dust suppression measures shall be incorporated into the Final Construction Management Plan. The Final Construction Management Plan shall be submitted to the County of Monterey RMA-Planning Department for review and approval prior to ~~the issuance of any grading permit~~ commencing ground disturbing activities.

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 4.7

The commenter notes that the project would include weather stations located throughout the solar arrays, and requests that Mitigation Measure AQ-2(a) be revised to condition the project to make the real-time weather station data available online to MBUAPCD and the public, including hourly wind speed and direction, temperature, and humidity. The revision requested by the commenter would not directly address an environmental impact identified in the DEIR, and is therefore not an appropriate requirement for mitigation under CEQA. The MBUAPCD may request that the approving agency – in this case the County – condition the project to make the weather station data available, or may submit their request to the project applicant directly; however, no changes to the DEIR are required.

Response 4.8

The commenter states that MBUAPCD does not have a formal policy recommending any specific threshold for greenhouse gas (GHG) emissions. The DEIR states that "the MBUAPCD recommends using the adopted SLOAPCD quantitative emissions threshold of 1,150 metric tons of carbon dioxide equivalent (MT CO_2E) per year for most land use projects." Because the MBUAPCD has not yet adopted CEQA GHG thresholds, the adopted SLOAPCD quantitative threshold is the most appropriate threshold for determining the significance of GHG emissions, and is supported by substantial evidence. However, to accurately reflect MBUAPCD's position and relationship of the adopted SLOAPCD GHG threshold to the proposed project, Section 4.7.3(a) (Methodology and Significance Thresholds) in Section 4.7, *Greenhouse Gas Emissions/Climate Change,* has been revised as follows:

> The MBUAPCD does not have a formal policy recommending any specific threshold for GHG emissions. The SLOAPCD has ~~recommends using the~~ adopted a ~~SLOAPCD~~ quantitative emissions threshold of 1,150 metric tons of carbon dioxide equivalent (MT CO_2E) per year for most land use projects. Therefore, the project's contribution to cumulative impacts related to GHG emissions and climate change would be cumulatively considerable if the project would produce more than 1,150 metric tons of CO_2E per year. In addition, a project that contributes to a net decrease in GHG emissions and is consistent with the reduction goals of AB 32 is presumed to have a less than significant GHG impact.

Response 4.9

The commenter states that the calculated emissions offsets (shown in Table 4.3-6 of the DEIR) are not based on current conditions (i.e., no longer representative of power plants operating on the California grid), and are therefore overstated. As noted in the DEIR, the proposed project would reduce or "offset" emissions associated with electricity on the state-wide utility grid, which includes energy generated by traditional, non-renewable sources, such as natural gas and coal-fired plants. These emissions are often referred to as "displaced" or "avoided" emissions. Calculating displaced emissions is dependent on a variety of factors, including seasonal changes, weather conditions, fuel demands and availability, and changes in the state-wide energy resource mix. These factors often fluctuate, sometimes daily, which complicates the estimation of displaced emissions. For instance, during drought years, less hydroelectricity is available and other power sources are used to supplement the lack of available hydroelectricity. These other sources can be in-state or out-of-state plants, including those powered by fossil fuels (e.g., natural gas, coal). For this same reason and because electricity enters the state-wide electrical transmission and distribution system (more commonly referred to as the grid) from multiple sources and locations, it is typically not possible to calculate displaced emissions for a specific facility or in-state geographic area. The following paragraphs provide a detailed explanation of the data sources used to estimate displaced emissions associated with the project. As discussed in detail below, the quantification of displaced emissions is based on state-wide electricity consumption, which is not limited solely to electricity generated in-state. For projects that are not specific to an individual facility or provider, such as the proposed project, the quantification of displaced emissions is more appropriately based on the state-wide rates.

In accordance with the Climate Registry's *Local Government Operations Protocol* and the World Resources Institute's *GHG Protocol*, displaced emissions of NO_X and SO_X, as identified in the DEIR, were calculated based on emission factors obtained from the U.S. EPA's *Emissions & Generation Resource Integrated Database* (eGRID) 2007, version 1.1, for the WECC California (CAMX) sub-region. GHG emission factors were derived from the California Air Pollution Control Officers Association (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures* (2010) and California Climate Action Registry (CCAR) *Database, Power/Utility Protocol* (2007). The eGRID2007 and CCAR databases represented the most current information available at the time the DEIR's analysis was prepared. As noted by the commenter, the emission factors contained in eGRID2007 were derived from actual utility generation data specific to the WECC CAMX sub-region for year 2005. These emissions factors are generally representative of state-wide averages and, therefore, are recommended for use by the Climate Registry. Although eGRID also provides data specific to individual power-generation facilities, this information is typically not considered appropriate for the purposes of calculating displaced emissions for grid-tied projects given that electricity within the state comes from a variety of sources, as opposed to an individual plant.

As noted by the commenter, the electricity generation rate used in the DEIR analysis was based on a rate of 2,067.7 megawatt hours per day (MWh/day). As a result of subsequent revisions to refine the project design, the current estimation of power generation for the proposed project has decreased slightly to 1,991 MWh/day. This rate is based on data provided by the project proponent assuming an estimated average of 726.9 GWh/year over an assumed 365 days of annual operation. As noted above, actual power generation rates would vary depending on multiple factors, such as weather conditions. The decrease in the rate from 2,067.7 MWh/day to 1,991 MWh/day represents a reduction of less than 4% in displaced emissions, and would not result in a change in the DEIR conclusion that the project would displace far more emissions than it would generate during the operational period, and that the operational impacts to air quality of the proposed project would be beneficial (refer to Impact AQ-3 and Impact AQ-10 in Section 4.3, *Air Quality,* of the DEIR).

The evaluation of displaced emissions identified in the DEIR was based on that state-wide electricity power system, which includes in-state and out-of-state resources. A summary of total state-wide power resources is provided in Table 2-1. The resource mix identified in Table 2-1 is based on year 2013 data (published in September 2014) and represents the most current data available.

Table 2-1
2013 Total System Power for the State of California (Gigawatt Hours)

Fuel Type	California In-State Generation	Percent of California In-State Generation	Northwest Imports	Southwest Imports	California Power Mix	Percent California Power Mix
Coal	1,018	0.51%	812	21.363	23,193	7.82%
Large Hydro	20,754	10.39%	96	2,159	23,009	7.76%
Natural Gas	120,863	60.50%	1,241	9,319	131,423	44.31%
Nuclear	17,860	8.94%	0	8,357	26,217	8.84%
Oil	38	0.02%	0	0	38	0.01%
Other	14	0.01%	0	0	14	0.00%
Renewables	39,236	19.64%	13,187	3,256	55,679	18.77%
Biomass	6,423	3.21%	1,485	21	7,929	2.67%
Geothermal	12,485	6.25%	212	495	13,192	4.45%
Small Hydro	3,343	1.67%	470	0	3,813	1.29%
Solar	4,291	2.15%	58	1,040	5,389	1.82%
Wind	12,694	6.35%	10,962	1,700	25,356	8.55%
Unspecified Sources of Power	n/a	n/a	19,750	17,305	37,055	12.49%
Total:	199,783	100%	35,086	61,759	296,628	100%
Percent Statewide Contribution:	67.4%		11.8%	20.8%		

Data as of September 25, 2014.
Source: The California Energy Commission. 2014 Energy Almanac. Available at website url: http://energyalmanac.ca.gov/electricity/total_system_power.html.

As noted in Table 2-1, a total of roughly 67.4% of the electricity consumed within the State of California is produced by in-state facilities. The remaining approximately 32.6% is imported from out-of-state facilities located within the northwest and southwest geographical regions of the United States. As correctly noted by the commenter, power generated by coal-fueled plants comprises roughly 0.5% of the electricity generated by facilities located within the State of California. However, with the inclusion of out-of-state coal facilities, power produced by coal-fueled facilities totaled approximately 7.82% of power consumed state-wide. In addition, it is also important to note that the power source for some out-of-state facilities is unspecified and accounts for roughly 12.5% of the state-wide estimate. These unspecified power sources may include some coal-fueled facilities not accounted for in the above stated estimates, particularly for imports from the southwest region of the United States. Because the quantification of displaced emissions is based on state-wide electricity consumption, which is not limited solely to electricity generated in-state, the use of emissions factors derived from the eGRID database, which includes coal-fueled plants, is appropriate. Conversely, the use of emission factors specific to natural gas fired facilities would not be representative of state-wide energy use.

The commenter states that the estimated emissions of NO_X and SO_X identified in the DEIR are overstated when compared to emissions associated with the natural gas fired Moss Landing Power Plant (MLPP) located in Monterey County. As previously discussed and per the Climate Registry's *Local Government Operations Protocol*, displaced GHG emissions identified in the DEIR were calculated based on emission factors obtained from the U.S. EPA's eGRID2007, version 1.1, for the WECC California sub-region. These rates are reflective of state-wide energy consumption rates, which include energy imported from out-of-state regions. As previously discussed, eGRID also provides data specific to individual power-generation facilities, including MLPP. However, for projects that are not specific to an individual facility or provider, such as the proposed project, the quantification of displaced emissions is more appropriately based on the state-wide rates.

Table 2-2 provides a summary of the displaced emissions, as identified in the DEIR. As noted above, the DEIR estimates of displaced NO_X, SO_X, and GHGs (i.e., CO_2, N_2O, and CH_4) are based on year 2005 data obtained from the 2007eGRID database (December 2008) and an estimated daily power-generation rate of 2,067.7 MWh/day. The eGRID2007 database was the most current data available for state-wide power generation/consumption at the time the analysis was prepared.

Table 2-2 also provides updated estimates of displaced emissions based on the recently released 2010eGRID database, which was updated in February 2014, and the revised daily power-generation rate of 1,991 MWh/day. This power-generation rate is roughly equivalent to and more conservative than the 2,067.7 generation rate identified in the DEIR.

For informational purposes only, displaced emissions were also quantified specific to eGRID2014 rates for Dynegy's MLPP, as well as projected year 2014 rates obtained from PG&E. It is important to note that the displaced emissions quantified based on MLPP and PG&E rates do not include the full mix of fuels and, therefore, may not be representative of the current state-wide energy consumption resource mix. It is also important to reiterate that actual displaced emissions would vary depending on multiple factors including weather conditions and the state-wide mix of energy resources.

Table 2-2
Estimated Displaced Emissions, California Flats Solar Project

Resource/Provider	Emissions (lbs/day)								
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	CO_2	N_2O	CH_4
State-Wide Grid (eGrid2007; DEIR) [1,5]	20.7	1,277.2	413.5	1,097.9	186.1	124.1	1,217,875.3	20.7	82.7
State-Wide Grid (eGrid2014) [2]	19.9	805.8	398.2	340.1	179.2	119.5	1,216,142.6	12.0	56.7
PG&E Projected Year 2014 [3]	n/a	n/a	n/a	n/a	n/a	n/a	820,292.0	n/a	n/a
Dynegy Moss Landing Power Plant, Monterey County	n/a	112.5	n/a	9.0	0.0	0.0	1,775,633.5	3.5	34.7

1. Based on information derived from the California Flats Solar Project EIR, Tables 4.3-6 and 4.7-6: NO_X and SO_X emission factors derived from U.S. EPA's eGRID2007(v 1.1) Year 2005 Summary Tables. PM_{10} derived from 2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, revised June 2009; $PM_{2.5}$ assumes 67% of PM_{10} per USEPA AP42; PM_{10} rate varies from 0.0525 to 0.0985 lbs/MWh with an average of 0.0619lbs/MWh. ROG and CO emission factors assumed based on rates identified in SCAQMD's CEQA Air Quality Handbook, Table A9-11-A (1993) and CARB Guidance for Permitting of electric generating technologies. GHG emission factors derived from CAPCOA Quantifying Greenhouse Gas Mitigation Measures (2010) and California Climate Action Registry Database, Power/Utility Protocol (2007).
2. Based on updated emission factors for NO_X, SO_X, CO_2, N_2O, and CH_4 obtained from eGRID2014 database.
3. Derived from PG&E's Greenhouse Gas Emission Factors: Guidance for PG&E Customers April 2013.
4. Based on emission factors obtained from U.S. EPA's eGRID2014 database.
5. Emissions may vary due to rounding.

As depicted in Table 2-2, displaced emissions based on the more current eGRID2014 database would total approximately 19.9 lbs/day of ROG, 805.8 lbs/day of NO_X, 398.2 lbs/day of CO, 340.1 lbs/day of SO_X, 179.2 lbs/day of PM_{10}, 119.5 lbs/day of $PM_{2.5}$, 1,216,142.6 lbs/day of CO_2, 12.0 lbs/day of N_2O, and 56.7 lbs/day of CH_4. Displaced emissions of CO_2, based on projected year 2014 PG&E rates, would total 820,292 lbs/day; whereas projected emissions of CO_2 based on the MLPP rate would be approximately 1,775,633.5 lbs/day. It is important to note that the estimated emissions based on the forecasted PG&E year 2014 rate includes a higher percentage of renewables than the state-wide average; whereas, calculated emissions based on the MLPP rate are specific to this natural-gas fueled plant.

Based on the updated emissions modeling conducted, displaced emissions attributable to the proposed project would be slightly, but not significantly, lower than what was presented in the DEIR, and would still represent a beneficial impact from the proposed project. The eGRID2014 emission rates reflect an overall decrease when compared to the rates identified in the previous eGRID2007 database. The reduction is due, in part, to recent reductions in reliance on energy facilities powered by fossil fuels, including coal. This overall reduction in emission rates is projected to continue in future years as reliance on renewable energy sources increases. Rates will also vary depending on various other factors, including weather conditions. For these reasons, actual estimates of displaced emissions are inherently dynamic and will vary, depending on any number of changing conditions and assumptions. The revised modeling does not result in a change to the impact conclusions identified in the DEIR. The development of renewable sources of power, such as solar, would help to decrease the State's reliance on non-renewable sources of energy, including out-of-state coal-fueled plants, which is projected to result in a projected overall decline in emissions in future years.

Response 4.10

The commenter states that the emissions estimates shown in Table 4.3-6 of the DEIR are based on the year 2005, but that the baseline should be 2013 based on the date of the Notice of Preparation (NOP), and requests emission and generation factors based on a more current year with a more representative mix of non-coal-burning power plants on the grid. As noted in the DEIR, the proposed project would reduce or "offset" emissions associated with electricity on the state-wide utility grid, which includes energy generated by traditional, non-renewable sources, such as natural gas and coal-fired plants. The proposed project would not offset emissions specific to a currently operating facility. Because electricity enters the state-wide grid from multiple sources and locations, it is typically not possible to calculate displaced emissions for a specific facility or in-state geographic area.

Displaced emissions identified in the DEIR were based on emissions factors derived from documents and databases that represented the most current information available at the time the DEIR analysis was prepared. These sources included the U.S. EPA's *Emissions & Generation Resource Integrated Database* (eGRID) 2007, version 1.1, for the WECC California (CAMX) sub-region, the California Air Pollution Control Officers Association (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures* (2010), and the California Climate Action Registry (CCAR) *Database, Power/Utility Protocol* (2007). The emission factors used in the DEIR analysis were based on state-wide averages, which includes in-state and out-of-state facilities.

A summary of total state-wide power resources is provided in response 4.9, Table 2-1. The resource mix identified in Table 2-1 is based on year 2013 data (published in September 2014) and represents the most current data available. As previously noted in Table 2-1, a total of roughly 67.4% of the electricity consumed within the State of California is produced by in-state facilities. The remaining approximately 32.6% is imported from out-of-state facilities located within the northwest and southwest geographical regions of the United States. Based on the most current information available, coal-fueled facilities constituted approximately 7.82% of power consumed state-wide, excluding unspecified out-of-state facilities. Because the quantification of displaced emissions is based on state-wide electricity consumption, which is not limited solely to electricity generated in-state, the use of emissions factors derived from the eGRID database, which includes coal-fueled plants, is appropriate. Conversely, the use of emission factors specific to natural gas fired facilities would not be representative of state-wide energy grid. Please refer to response 4.9 for additional information.

Response 4.11

The commenter states that the operational emissions offsets calculated in the table on page 94 of Appendix C1 (also Table 4.3-6 of the DEIR) are based on 2,067.67 MWh/day of electricity generation, and requests an explanation for how this figure was developed. As a result of subsequent changes in project design, the current estimation of power generation for the proposed project has decreased slightly to 1,991 MWh/day. This rate is based on data provided by the project proponent assuming an estimated average of 726.9 GWh/year over an assumed 365 days of annual operation, which yields an estimated 1.991 GWh/day (1,991 MWh/day). As noted in response 4.9, actual power generation rates would vary depending on multiple factors, such as weather conditions and changes in the state-wide grid resource mix.

Response 4.12

The commenter notes that Impact AQ-3 of the DEIR indicates that the project's operational impacts on regional air quality would be beneficial, and requests that the DEIR explain that the increased vehicle emissions associated with project operation are local in nature, whereas the displaced emissions causing the net benefit are statewide or out-of-state, and therefore that the on-site dust and exhaust emissions would impact local air quality conditions. Impact AQ-3 has been revised to clarify this, as follows:

> As depicted in Table 4.3-6, the estimated long-term emissions from mobile sources would be below the MBUAPCD thresholds. In addition, because the power generated by the project would substantially reduce existing demands for new fossil fuel-fired facilities, other types of project-related emissions would be entirely offset by the indirect emission reductions provided by the energy output of the project. Therefore, total operational emissions would not exceed MBUAPCD thresholds. Overall, the project would have a net regional benefit in term of long-term emissions of operational criteria pollutants and thus, the operational impacts on regional air quality would be beneficial.

Response 4.13

The commenter requests that Mitigation Measure AQ-2(a) be revised to include a statement that copies of the required daily log documenting monitoring activities be provided to MBUAPCD. Mitigation Measure AQ-2(a) has been modified as follows:

> - The contractor or builder shall designate up to four persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. As necessary, the monitor shall have the authority to require additional dust control measures be implemented. The monitor shall file monthly reports to the Monterey County RMA – Planning Department, including a daily log documenting monitoring activities, exceedances, and measures taken to reduce dust emissions. Their duties shall include weekdays, holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to RMA-Planning and the APCD Compliance Division prior to the start of any grading, earthwork or demolition. In addition, the log of monitoring activities shall be provided to MBUAPCD for confirmation that dust control measures are meeting the requirements of Rule 402.

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 4.14

The commenter asks whether back-up generators would be required for the project, and requests an update to emissions calculations if so. As described in the *California Flats Solar Project, Air*

Quality and Greenhouse Gas Assessment, prepared by Denise Duffy & Associates (March 2013; DEIR Appendix C.1), the air quality analysis included the use of two generator sets during the construction period. The *California Flats Solar Project, Air Quality and Greenhouse Gas Assessment* does not assume that the project would require generators during operation, since the project would generate electricity as a result of operation. If emergency generators are required for any component of the project, such generators would only be in use rarely, and for short duration. The inclusion of generators for use in emergency situations on the project site would not result in emissions that would change the DEIR conclusion that the project would displace far more emissions than it would generate during the operational period, and that the operational impacts to air quality of the proposed project would be beneficial (refer to Impact AQ-3 and Impact AQ-10 in Section 4.3, *Air Quality,* of the DEIR)

Response 4.15

The commenter suggests additional measures to reduce emissions, including the use of compressed natural gas (CNG)-powered equipment for construction activities, using electrically-powered vehicles (EVs) for the maintenance fleet, establishing an EV charge station powered by the project for on-site vehicles, and sponsoring an EV charge station in Parkfield to be powered by the project. The project applicant may opt to include additional emissions reduction measures in the construction and operational plans for the project; however, additional operational measures are not required by CEQA, as the project's operational impacts would be less than significant (refer to Impact AQ-3). As described in response 9.2, below, Mitigation Measure AQ-2(b) has been revised to include standard measures to reduce ozone precursor and diesel PM emissions from construction equipment, including alternatively fueled construction equipment, as follows:

- Operational NO_X and Diesel PM Emissions Reduction Measures for Construction Equipment
- All construction equipment shall be maintained in proper tune according to manufacturer's specifications;
- All off-road and portable diesel powered equipment shall be fueled with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);
- Use of on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines;
- On- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5-minute idling limit;
- Use of electrically-powered equipment when feasible;
- Gasoline-powered equipment shall be substituted in place of diesel-powered equipment, where feasible; and
- If available, use of alternatively fueled construction equipment on-site, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Letter 5

SHANDON
JOINT UNIFIED SCHOOL DISTRICT

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September 19, 2014

Delinda Robinson
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Monterey County RMA-Planning Department
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RE: California Flats Solar, LLC (REF130073 & PLN120294)

Dear Ms. Robinson:

The California Flats Solar project is of concern to the Shandon Joint Unified School District as it will be located within our District. As stated in the project EIR Parkfield Elementary, a small k-6 School in our District, is located approximately 7 miles from the project. 5.1

Many of our concerns have been addressed in the EIR. However we want to make sure that our concerns our noted and that the restrictions placed on the project are strictly monitored.

For example, the project plan calls for a road off Highway 41 to be the main access road to the project with plans for improvements to the road to take place. Give the current condition of that road off Highway 41, considerable improvements would need to be made in order to accommodate the number and type of vehicles that will need to use the road. If that road is not adequately improved the natural flow of traffic will be from Highway 46 to Cholame Road to Turkey Flat Road as has been used by vehicles associated with the initial planning stages of the project. Cholame Road is the pathway used by our District to transport students to and from Parkfield Elementary as well as Shandon High School and Shandon Elementary. Safety and deterioration of Cholame road would affect our District. 5.2

We are concerned that the housing situation be closely monitored. The EIR plan calls for the 95% of project employees to not live in the area and be shuttled in. Similar Solar Projects in rural areas of San Luis Obispo County have encountered problems with illegal temporary housing such as travel trailers housing project employees in the vicinity of the project leading to unsanitary situations and a burden on local law enforcement not equipped to serve such a large population. While we welcome more students into our school district, serving students enrolled on a temporary basis due to their parent's employment is very difficult as most staff and facilities expenses depend on a long term revenues. 5.3

We hope that you will keep our concerns in mind as the project progresses.

Sincerely,

Teresa Taylor – Superintendent

Letter 5

COMMENTER: Teresa Taylor, Superintendent, Shandon Joint Unified School District

DATE: September 19, 2014

Response 5.1

The commenter states that the California Flats Solar project is of concern to the Shandon Joint Unified School District because it is located within SJUSD and Parkfield Elementary School is located approximately 7 miles from the project site. This comment is acknowledged and will be forwarded to County decision-makers for their consideration.

Response 5.2

The commenter states that if the main access road is not adequately improved to accommodate the number and type of vehicles serving the project site, then the natural flow of traffic would be from Highway 46 to Cholame Road to Turkey Flat Road. Cholame Road is the pathway used by SJUSD to transport students to and from Parkfield Elementary School, Shandon High School, and Shandon Elementary School. The commenter states that unsafe conditions and deterioration on Cholame Road would affect SJUSD. It should be noted that in the vicinity of the project site, Cholame Road turns into Cholame Valley Road, which is analyzed in the DEIR. As shown in Table 4.13-12 (Current Accident Totals and Rates) in the DEIR, the current rate of accidents per million vehicles entering the Cholame Valley Road/SR 41/46 intersection is less than the statewide average. At this intersection, the DEIR finds that the addition of traffic during construction and operation of the proposed project would not significantly increase hazards. In addition, based upon discussions with Caltrans, the project proponent specifically identified the SR 41/Private Access Road intersection as the preferred method of site access, since the intersection of Cholame Valley Road/SR 46 did not have sufficient roadway queuing length to accommodate the necessary acceleration, deceleration, and vehicle storage to serve the proposed project. The location of primary site access at SR 41 would minimize traffic hazards on Cholame Valley Road and Cholame Road. This private access road would be improved to accommodate project construction and operational traffic. Turkey Flat Road is currently gated, and would continue to be gated during project construction and operation, and there are no improvements proposed to this access.

Response 5.3

The commenter expresses concern about housing demand generated by the proposed project. Similar solar projects in rural areas of San Luis Obispo County, the commenter notes, have encountered problems with illegal temporary housing such as travel trailers housing employees in the vicinity of the project, leading to unsanitary situations and a burden on local law enforcement. As discussed in DEIR Section 4.13, *Transportation/Traffic*, an employee shuttle service would transport 95% of the total construction workforce to and from the project site. Designated employee shuttle park and ride locations would provide parking for the construction workforce.

However, as discussed in DEIR Section 6.0, *Long-Term Impacts*, some of the labor force may elect to temporarily relocate near the project site. Given the remote nature of the project site and the relatively limited availability of lodging in nearby rural communities (including Parkfield,

Cholame, and Shandon), it is assumed that workers would find accommodation in the City of Paso Robles and/or the City of Avenal. Although these cities have the capacity to temporarily house this workforce, this would occur at the exclusion of other travelers and seasonal residents. Additionally, many of the accommodations available, such as recreational campsites, are not designed for long-term temporary residents and such use would deteriorate or degrade the facilities. Nevertheless, with implementation of Mitigation Measure LT-1 for the applicant to prepare and implement a Worker Housing Program, impacts related to housing of the construction workforce would be reduced to a less than significant level, and substantial adverse effects from illegal temporary housing near the project site are not anticipated.

In addition, the commenter states that it is very difficult to serve students enrolled on a temporary basis due to the parent's employment, since most staff and facilities expenses depend on long-term revenues. This comment is acknowledged and will be forwarded to County decision-makers for their consideration. However, pursuant to the analysis of environmental impacts under CEQA, the pertinent question is whether a project would generate enough new students to warrant the construction of new school facilities that could result in physical environmental impacts. As noted in DEIR Section 4.12, *Public Services*, the proposed project would not generate an increase in population that would warrant the construction of new school facilities.

Letter 6

Gonzales, Eva x5186

From: Browder, Chris@CALFIRE [Chris.Browder@fire.ca.gov]
Sent: Monday, September 22, 2014 4:56 PM
To: ceqacomments
Cc: Pangburn, Jonathan@CALFIRE; Owens, John@CALFIRE; Blue, Brennan@CALFIRE; Nehoda, Ken@CALFIRE
Subject: CAL FIRE Comments: CALIFORNIA FLATS SOLAR PROJECT (PLN120294; SCH# 2013041031)

County of Monterey RMA – Planning Department
168 W. Alisal Street, 2nd Floor
Salinas, CA 93901

Dear Sir,

The California Department of Forestry and Fire Protection (CAL FIRE) hereby submits the following comments regarding the proposed draft EIR for the California Solar Flat Project (PLN120294; SCH#2013041031).

4.12.2 Setting

a. **Site Access and Internal Roads.** "Interior access roads would be maintained to provide emergency access." Due to the nature of the soils and precipitation patterns in the area, it is highly likely that road conditions will become unsuitable for vehicle traffic, including emergency access, during and following peak storm events. This necessitates the purchase of additional equipment for emergency response, specifically a patrol/rescue vehicle (generally classified as a Class VI engine with extrication and other rescue gear on board, in addition to the ALS equipment). This is consistent with 4.12.3b, 3rd paragraph, which states in part, "Additionally, adequate access would depend on road type and conditions, locked gates, weather, and the exact location of the emergency." This is also consistent with 4.12.3b, 4th paragraph, which states in part, "An increase in engine availability would be necessary in the area and would require purchasing one new engine." 6.1

b. **Fire Protection Services.** "The project site is located in a State Responsibility Area (SRA)." I suggest the removal of the word "a." It should be noted, also, that this area lies outside of a legally formed fire protection district, and as such there is no Fire Authority Having Jurisdiction (FAHJ). "As such, the California Department of Forestry and Fire Protection Services (Cal Fire)…" The official name is the California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE is in all caps – this should be a global change to the document. Also, the word "Services" needs to be removed from the department name. "…(CAL FIRE) is responsible for providing wildland fire suppression and general fire protection services to the site and surrounding area…" This is incorrect. CAL FIRE has statutory responsibility for wildland fire suppression (vegetation fires) in the SRA. Again, there is no FAHJ, as this area lies outside of a legally formed fire protection district. However, the area is part of an existing annexation process, into the South Monterey County Fire Protection District/CAL FIRE, which will then have responsibility for general fire protection services – this is more commonly referred to as fire and rescue services. "…and general fire protection services to the site and surrounding area, and would provide fire protection services for the proposed project." It is my understanding that the fire protection services for the proposed project will be provided by South Monterey County Fire Protection District/CAL FIRE, after the annexation process is complete through the LAFCO. 6.2

"The nearest Cal Fire (sic) substation…" It is a Forest Fire Station (FFS). The CAL FIRE Parkfield FFS is approximately seven miles northwest of the project site. "…and would be the primary station responsible for responding to an emergency at or near the site during fire season." This needs to say during peak fire season. It is not staffed, generally speaking, outside of peak season. "The Cal Fire (Sic) Parkfield substation (sic) has one deputy assigned to the area…" This needs modification. There is no deputy assigned. Perhaps this is from copying from the law enforcement section. There is one fire engine assigned, with a captain and usually 3 or 4 firefighters, depending on staffing, funding, and availability.

4.12.3 Impact Analysis

b. Project Impacts and Mitigation Measures.

2nd paragraph – "Emergency Access." 2nd sentence – "Cal-Fire…" This needs to say CAL FIRE. A global change for both Cal Fire and Cal-Fire to CAL FIRE will fix these errors. 6.3

3rd paragraph – "As part of this analysis, fire service providers were contacted…" There is mention only of CAL FIRE Assistant Chief John Owens. This sentence should change to state that, rather than insinuating, that more than one provider was contacted. 4th sentence – "A cleared area free of overhead obstructions suitable for use as a landing site has not been identified on project site plans." This needs to be addressed, identified and agreed upon for a location. 6.4

5th paragraph – "During operation, Cal Fire (sic) would serve as the fire authority for the site. The project would also be required to meet requirements of the California Building Code, California Fire Code, the Monterey County Fire and Building Code, and policies set forth in the Monterey County 2010 General Plan in order to adequately mitigate risks associated with the potential for wildland fires. Impacts related to wildland fire hazards are discussed in section 4.8, Hazard and Hazardous Materials." CAL FIRE is not the fire authority for the site. Rather, after annexation, South Monterey County FPD/CAL FIRE will serve as the fire authority, as it will be the FAHJ. 6.5

6th paragraph – "Cal Fire (sic) identified additional hazards and access issues… As such, the department would need to provide specialized training for existing staff to service solar PV project sites." The obligation for this training lies with the project proponent, not CAL FIRE. 6.6

Table 4.12-3 Service Provider. Bradley, Lockwood, and King City are not staffed year round. They should also be listed as peak fire season only, or something to designate them as not 24/7/365 operational facilities. 6.7

PS-1(c) "Prior to the issuance of a construction permit, the application shall enter into an agreement with Cal Fire (sic) to provide fire protection services during the non-peak fire season for the duration of project construction via provision of sufficient funding and other measures necessary to keep the Cal Fire (sic) Parkfield substation (sic) operational during the non-peak fire season." This agreement should be with South Monterey County FPD/CAL FIRE, not CAL FIRE. 6.8

All of the above comments relate to Alternative #1, ALS staffing of a CAL FIRE engine on an Amador contract, via South Monterey County FPD/CAL FIRE. Should this alternative not prove feasible (e.g., the annexation does not occur), then Alternative #2 is ALS staffing of a CAL FIRE engine on an Amador contract, via Monterey County. 6.9

All discussion of fire protection is related to wildland fires. There is no mention of other types of response, except that there needs to be training for photovoltaic project sites. There is no mention of hazardous materials incidents, or even EMS response. There is a mention of ALS staffing, but only in the listing of personnel needed. 6.10

For additional information or clarification of comments, please contact Jonathan Pangburn at (831) 233-9475.

Thanks very much.

Christopher E. Browder
Deputy Chief, Environmental Protection
Registered Professional Forester #2662
CAL FIRE
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244
(916) 653-4995
chris.browder@fire.ca.gov

Letter 6

COMMENTER: Chris Browder, Deputy Chief, Environmental Protection Cal Fire

DATE: September 22, 2014

Response 6.1

The commenter states that due to the nature of soils and precipitation patterns in the area, it is highly likely that road conditions will become unsuitable for emergency access during and following peak storm events. This would necessitate the purchase of an additional patrol/rescue vehicle for emergency response. In accordance with this comment, the *Fire Services* discussion under Impact PS-1 in Section 4.12, *Public Services*, has been amended as follows. Note that "Cal Fire" was replaced with "CAL FIRE" in response to comment 6.3, below.

> *Fire Services.* As noted previously, the nearest ~~Cal Fire~~CAL FIRE station is located approximately seven miles from the site in Parkfield, and is staffed only during peak fire season (generally May through October). In order to meet the needs of the proposed project and the surrounding community during construction, ~~Cal Fire~~CAL FIRE would require year round staffing during both non-peak and peak fire season (Owens, Personal Communication, July 31, 2013). This could include the increase of staffing by five fire personnel: two Fire Captains and three Fire Apparatus Engineers -Paramedics or three Firefighter II Paramedics. Due to the nature of soils and precipitation patterns in the area, road conditions may become unsuitable for emergency access during and following peak storm events, which ~~An increase in engine availability would be necessary in the area and w~~could require the purchase of one additional patrol/rescue vehicle~~new engine~~ to serve the proposed project (Browder, Personal Communication, September 22, 2014~~Owens, Personal Communication, July 31, 2013~~).

In addition, Mitigation Measure PS-1(c) has been revised as follows. Note that other revisions to this measure were made in response to comments 6.2 and 6.3, below.

> **PS-1(c)** **Fire Protection during Construction.** Prior to the issuance of a construction permit, the applicant shall enter into an agreement with ~~Cal Fire~~ South Monterey County FPD/CAL FIRE to provide sufficient fire protection services during the non-peak fire season for the duration of project construction via provision of sufficient funding (supplied by the applicant) and other measures necessary to keep the ~~Cal Fire~~ South Monterey County FPD/CAL FIRE Parkfield substation operational during the non-peak fire season. The measures to assure sufficient fire protection services in accordance with existing standards shall be subject to the review and approval of ~~Cal Fire~~ South Monterey County FPD/CAL FIRE and may include but not be limited to the following: funding (by the applicant) for provision for fire personnel, ~~increasing engine availability in the area~~ purchase of one additional patrol/rescue vehicle or equivalent vehicle capacity, and/or provision of a helicopter landing space in consultation with

> ~~Cal Fire~~ South Monterey County FPD/CAL FIRE, the use of which will be restricted to emergency use only. A copy of the final, executed agreement shall be submitted to the County prior to the issuance of a construction permit.

The above revisions have also been made to Table 4.12-1 (Impact and Mitigation Summary: Public Services) and Table ES-1 in the *Executive Summary.* In addition, the following reference has been added to Section 8.1.2 (Agencies/Individuals Contacted) in Section 8.0, *References and Preparers:*

> Browder, Christopher. Deputy Chief, Environmental Protection, CAL FIRE. Personal Communication. September 22, 2014.

Response 6.2

In Section 4.12 of the DEIR, the commenter suggests the removal of the word "a" from the sentence, "The project is located in a State Responsibility Area (SRA)." The commenter also notes that this SRA lies outside of a legally formed fire protection district, and as such there is no Fire Authority Having Jurisdiction (FAHJ). In addition, the commenter notes that CAL FIRE has statutory responsibility for wildland fire suppression in the SRA but not for general fire protection services (i.e., fire and rescue services). The commenter adds that the project site is part of an existing annexation process, into the South Monterey County Fire Protection District/CAL FIRE, which will then have responsibility for general fire protection services for the proposed project upon LAFCO approval of annexation. These comments are noted, and Section 4.12.2(b) (Fire Protection Services) has been revised as follows:

> **b. Fire Protection Services**. The project site is located in a State Responsibility Area (SRA).[1] Currently, this SRA lies outside of a legally formed fire protection district, so there is no Fire Authority Having Jurisdiction (FAHJ) on the project site (Browder, Personal Communication, September 22, 2014). As such, although the California Department of Forestry and Fire Protection ~~Services (Cal Fire~~CAL FIRE) is responsible for providing wildland fire suppression to the site and surrounding area, it is not responsible ~~and~~ for general fire protection services to the site and surrounding area~~, and would provide fire protection services for the proposed project~~. However, the project site is part of an existing annexation process into the South Monterey County Fire Protection District (FPD)/CAL FIRE, which would then have responsibility for general fire protection services (i.e., fire and rescue services) for the proposed project upon LAFCO approval of annexation.

The commenter also requests that the EIR refer to his agency as the California Department of Forestry and Fire Protection, or CAL FIRE in all capital letters, for short. All references to CAL FIRE have been updated accordingly.

[1] *The State Responsibility Area (SRA) is the area of the state where the State of California is financially responsible for the prevention and suppression of wildfires.*

Additionally, the commenter suggests corrections to the DEIR's description of the CAL FIRE Parkfield Forest Fire Station (FFS). The second paragraph in Section 4.12.2(b) (Fire Protection Services) in Section 4.12, *Public Services,* has been revised as follows:

> The nearest ~~Cal Fire~~CAL FIRE Forest Fire Station (FFS) ~~substation~~ to the project site is located in Parkfield, which is approximately seven miles northwest of the project site, and would be the primary station responsible for responding to an emergency at or near the site during peak fire season. ~~Cal Fire~~CAL FIRE typically responds with a minimum of three personnel. The ~~Cal Fire~~CAL FIRE Parkfield FFS~~substation~~ has a captain and usually three to four firefighters~~one deputy~~ assigned to the area (depending on staffing, funding, and availability) and is staffed for five months out of the year, within the period between May and October (Browder, Personal Communication, September 22, 2014; John Owens, Assistant Chief ~~Cal Fire~~CAL FIRE, San Benito/Monterey Unit, Personal Communication, July 31, 2013).

Response 6.3

The commenter requests a global change in the EIR from "Cal Fire" and "Cal-Fire" to "CAL FIRE." The EIR has been revised accordingly.

Response 6.4

The commenter requests that the DEIR clarify whether more than one fire service provider was contacted as part of the analysis of public services. Impact PS-1 has been updated to clarify that Assistant Chief John Owens of CAL FIRE was the source contacted about emergency access for fire protection on the project site.

In addition, the commenter requests that a cleared area free of overhead obstructions and suitable for use as a landing site for air ambulance services be addressed, identified, and agreed upon for a location. Please refer to Mitigation Measure PS-1(c) in Section 4.12, *Public Services,* of the DEIR, whereby the applicant shall enter into an agreement with the fire service provider to assure sufficient fire protection services during construction, which may include "provision of a helicopter landing space in consultation with CAL FIRE."

Response 6.5

The commenter requests that Impact PS-1 in the DEIR be corrected to state that South Monterey County FPD/CAL FIRE will serve as the fire authority for the project site, upon annexation of the site into that fire protection district. Please refer to the second paragraph in Response 6.2.

Response 6.6

The commenter states that the project proponent, rather than CAL FIRE, would be obligated to provide specialized training for existing CAL FIRE staff to service solar PV sites. In response to this comment, Mitigation Measure PS-1(b) in Section 4.12, *Public Services*, has been revised to incorporate this responsibility, as follows:

PS-1(b) **Emergency Response Training.** During project construction and operation, on-site staff shall receive emergency response training and shall be informed of all emergency response procedures on a minimum annual basis. Prior to operation of the project, the applicant shall consult with South Monterey County FPD/CAL FIRE staff to educate them in emergency response procedures for solar power facilities. In addition, on-site fire suppression equipment (e.g. fire extinguishers) shall be maintained on-site for the duration of project operation.

Refer also to response 16.139, which also addresses responsibility for specialized training for fire protection staff.

Response 6.7

The commenter requests that Table 4.12-3 (Average Response Time for Fire Service Providers) note that CAL FIRE's stations in Bradley, Lockwood, and King City are staffed only for peak fire season but not year-round. In response to this comment, the following revisions have been made to the sources and notes section of Table 4.12-3:

Sources: John Owens, Assistant Chief, ~~Cal Fire~~CAL FIRE San Benito – Monterey South Division. Christopher Browder, Personal Communications, September 22, 2014.
Notes:
1. The existing average response times for CAL FIRE stations in Bradley, Lockwood, and King City only apply to the portion of the year when these stations are staffed (peak fire season).
n/a - ~~Cal Fire~~CAL FIRE does not have a set response time goal for State Response Areas. Response times are variable based on availability of engines and time of year (depending on preparedness levels).

Response 6.8

The commenter requests that prior to issuance of a construction permit, the project applicant enter into an agreement with South Monterey County FPD/CAL FIRE (rather than CAL FIRE) to provide fire protection services during the non-peak fire season for the duration of project construction. Please refer to the second paragraph in Response 6.2.

Response 6.9

The commenter states that if Advanced Life Support (ALS) staffing of a CAL FIRE engine on an Amador contract, via South Monterey County FPD/CAL FIRE, should prove infeasible (i.e., annexation into that fire protection district does not occur), then the alternative would be ALS staffing of a CAL FIRE engine on an Amador contract, via Monterey County. The comment is noted.

Response 6.10

The commenter states that the DEIR's discussion of fire protection only relates to wildland fires, not hazardous materials incidents or emergency medical services (EMS) response. DEIR Section 4.8, *Hazards and Hazardous Materials*, includes a discussion of hazardous materials incidents. In DEIR Section 4.12, *Public Services*, Impact PS-1 addresses emergency access and response times for EMS response.

The commenter adds that the DEIR mentions ALS staffing, but only in the listing of personnel needed. This comment is noted.

Letter 7

STATE OF CALIFORNIA EDMUND G. BROWN, JR. *Governor*

DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
Headquarters Office
1515 Clay Street, 19th Floor
Oakland, CA 94612
Tel: (510) 286-7000 Fax: (510) 286-7037

Juliann Sum, Acting Chief

September 22, 2014

Delinda Robinson, Senior Planner
Monterey County RMA-Planning Department
168 West Alisal Street, Second Floor
Salinas, CA 93901

Re: Coccidiomycosis and California Flats Solar, PLN 120294 Draft Environmental Impact Report (DEIR)

Dear Ms. Robinson,

I am writing in response to the request for comment by the Division of Occupational Safety and Health on the DEIR for the California Flats Solar project.

The Division cannot take an official position as to whether the DEIR contains provisions adequate to comply with Cal/OSHA regulations relevant to protecting employees from Coccidiomycosis, or Valley Fever. It is the obligation of employers to effectively implement all California Title 8 safety and health regulations necessary to protect their employees--whether or not the EIR specifically addresses those regulatory requirements. 7.1

This letter will discuss relevant regulations and provide information and suggestions related to mitigation of Valley Fever risk without directly critiquing the specific contents of the DEIR--except for the following aspect. In AQ-6(a), the DEIR requires the project applicant to consult with Cal/OSHA Enforcement in developing its Valley Fever Management Plan. Please note that while the Division's staff is always happy to discuss health and safety issues with employers, it is not the Division's role to guarantee that complex written health and safety plans will be effective when implemented. Please note that the Division has already published advice to employers and employees regarding work-related Valley Fever, found here: http://www.dir.ca.gov/dosh/valley-fever-home.html . This web resource contains links to other substantial sources of information, including the Valley Fever information pages of the California Department of Public Health (CDPH) and of the United States Center for Disease Control (CDC). This web resource also contains a link to citations that the Division issued after many employees contracted Valley Fever while building a solar plant in San Luis Obispo County. Please also note that construction contractors must acquire a permit from the nearest enforcement office of the Division if the work involves construction of an excavation greater than five feet in depth or of a structure more than 36 feet in height [http://www.dir.ca.gov/title8/341.html]. During the process of securing this permit, Valley Fever mitigation plans might be discussed. 7.2

The Division's web resource on Valley Fever lists five Title 8 regulations that are applicable with regard to Valley Fever protection: 7.3

342 (Reporting Work-Connected Fatalities and Serious Injuries),

3203 (Injury and Illness Prevention),
5141 (Control of Harmful Exposures),
5144 (Respiratory Protection) and
14300 (Employer Records-Log 300).

An additional relevant regulation is: 8CCR 5145 Media for Allaying Dusts, Fumes, Mists, Vapors, and Gases. This regulation requires adequate wetting to suppress harmful dusts. In the context of Valley Fever risk, soil should be wetted before it is disturbed and continuously during the activity, such as grading or excavating. Other allaying methods might include the prompt (meaning as soon as feasible or practicable) application of soil stabilizers. 8 CCR 5141 requires the use of engineering and administrative controls. These might include prompt re-vegetation of disturbed areas. When the preceding methods cannot be employed on the same day as soil is disturbed, methods such as utilization of tarps for spoils piles, seeding, paving and laying of building pads should be considered. In this context, all sweeping of dust should be *wet*-sweeping. Engineering controls might also include air conditioned HEPA-filtered equipment cabs. 7.3

Administrative controls could include the provision of eating areas either inside or otherwise sheltered from wind-blown dust, and workers should be required to be clean before eating. Workers should be required to change clothes at the end of shifts, and their personal vehicles should be either kept off-site or otherwise protected from wind-blown dust or cleaned with water daily. Construction vehicles should also be cleaned with water when leaving the site. Other administrative controls might include arranging work so workers not in protected machine cabs are as far as possible and upwind of earth moving equipment or inside during the soil disturbing activities such as grading or excavating. Effective administrative controls might entail suspension of work when winds are high and dust clouds are visible. Some research indicates that wind speeds as low as two or three miles an hour may be sufficient to suspend particles the size of spores, and higher wind velocities clearly could send spores over large distances. 7.4

Engineering and administrative controls alone will likely not be sufficiently effective to protect all workers during soil disturbing activities, so a comprehensive respiratory protection program is nearly always necessary. A comprehensive respiratory protection program involves a continuing assessment of the changing job-site so the degree of hazard and consequent choice of NIOSH–approved respirator can be constantly reviewed. Some conditions may require the use of respirators more protective than filtering face piece respirators (for example, PAPR). All potentially exposed workers should be included in the respiratory protection program. 7.5

The Injury and Illness Prevention regulation requires that workers be adequately and effectively trained. For soil disturbing activities in Coccidiomycosis-endemic areas, this means all potentially exposed workers must be adequately trained on the signs and symptoms of the disease. One place these are listed is the CDPH fact sheet on Valley Fever which can be found here: http://www.cdph.ca.gov/programs/hesis/Documents/CocciFact.pdf . To be effective, training should include the fact that certain ethnic groups and immune-compromised persons are at far greater risk of becoming seriously ill with Valley Fever. 7.6

Occurrence of Valley Fever in any occupationally exposed worker triggers several reporting requirements. If the worker is hospitalized, the nearest Division Enforcement office must be notified pursuant to 8CCR 342. Even if the employee is not hospitalized, the employer must record 7.7

the illness on its Cal/OSHA 300 log and file an Employer's Report of Occupational Injury or Illness form. The treating physician must file a Doctor's First Report of Injury form. The treating physician is also required by Title 17 Section 2500 to report the illness to the local public health officer. It is critical that contractors who will be disturbing soil in Coccidiomycosis-endemic areas to make prior arrangements with health care providers who are familiar with Valley Fever diagnosis and treatment. On the CDPH website mentioned above is a link to a free online continuing medical education program for medical professionals on Valley Fever. 7.7

I hope that the above discussion of some of the relevant regulations is informative about the Division's approach to protecting employees from the risk of Valley Fever.

Sincerely,

Michael Horowitz
Senior Safety Engineer/Industrial Hygienist
Cal/OSHA Research and Standards Unit
510-286-7009

Letter 7

COMMENTER: Michael Horowitz, Senior Safety Engineer / Industrial Hygienist, California Department of Industrial Regulations, Division of Occupational Safety and Health

DATE: September 22, 2014

Response 7.1

The commenter notes that the Division of Occupational Safety and Health (Cal/OSHA) cannot take an official position as to whether the DEIR contains provisions adequate to comply with Cal/OSHA regulations relevant to protecting employees from Coccidiomycosis (Valley Fever), and that it is the obligation of employers to effectively implement all of California Title 8 safety and health regulations necessary to protect employees, whether or not the DEIR specifically addresses those regulatory requirements. Impact AQ-6 has been revised to clarify that the project applicant and all construction contractors operating on the site would be required implement all of California Title 8 safety and health regulations, as follows:

> The project applicant and all construction contractors operating on the site would be required to implement all of California Title 8 safety and health regulations necessary to protect employees. As described in Section 2.0, *Project Description*, the project includes APM-3 through APM-5, which would reduce fugitive dust emissions associated with construction of the proposed project. Standard construction Best Management Practices (BMPs) to minimize fugitive dust emissions, as well as standard erosion control measures, would minimize potential hazards associated with the release of fungal spores and are consistent with the recommendations of the California Department of Public Health…

Response 7.2

The commenter notes that Mitigation Measure AQ-6(a) in the DEIR requires the project applicant to consult with the Cal/OSHA Compliance Program in developing the required Valley Fever Management Plan. The commenter notes that it is not Cal/OSHA's role to guarantee that health and safety plans will be effective when implemented. The commenter provides applicable resources, including links to advice to employers and employees regarding work-related Valley Fever, Valley Fever information pages from the California Department of Public Health and the United States Center for Disease Control, and citations that Cal/OSHA has issued in response to Valley Fever cases associated with a solar project in San Luis Obispo County. The DEIR discusses the potential environmental impact associated with Valley Fever throughout Impact AQ-6, including the required Mitigation Measures AQ-6(a) through AQ-6(e). In addition, as discussed in the DEIR, the project would be required to comply with California health and safety regulations intended to protect employees.

The commenter also notes that construction contractors must acquire a permit if construction work involves construction of an excavation greater than five feet in depth or of a structure more than 36 feet in height, and that Valley Fever mitigation plans may be discussed during the process of

securing this permit. As discussed in the DEIR, the project would be required to comply with State and local permit requirements.

Response 7.3

The commenter notes that the Cal/OSHA web resource on Valley Fever lists applicable Title 8 regulations (342, 3203, 5141, 5144, and 14300). The commenter also describes the additional relevant regulation 8 CCR 5145 (Media for Allaying Dusts, Fumes, Mists, Vapors, and Gases), which requires adequate wetting to suppress harmful dusts. The commenter indicates that soil should be wetted before it is disturbed and continuously during grading or excavating activity, and lists other applicable allaying methods. The commenter also describes 8 CRR 5141, which requires the use of engineering and administrative controls, including revegetation of disturbed areas, utilization of tarps for spoils piles, seeding, paving and laying of building pads, and air-conditioned HEPA-filtered equipment cabs. Finally, the commenter notes that all sweeping of dust should be wet sweeping.

As discussed in the DEIR, the project would be required to comply with applicable regulations and State and local permit requirements. The DEIR discusses the potential environmental impact associated with Valley Fever throughout Impact AQ-6, including the required Mitigation Measures AQ-6(a) through AQ-6(e), as well as the dust control measures in Mitigation Measure AQ-2(a). Mitigation Measure AQ-2(a) describes in detail requirements for water suppression of dust during soil disturbance, as well as additional dust suppression measures and the provision of HEP-filtered air-conditioned enclosed cabs on heavy equipment. Mitigation Measure AQ-2(a) also notes the dust control measures identified in the proposed Habitat Restoration and Revegetation Plan (refer to Biology Mitigation Measure B-2[b]). Mitigation Measures AQ-6(a) through AQ-6(e) describe additional engineering and administrative controls to be included in the required Valley Fever Management Plan.

Response 7.4

The commenter lists several examples of administrative controls for Valley Fever. All of these control measures are included in Mitigation Measures AQ-6(a) through AQ-6(e), which describe administrative controls that may be included in the required Valley Fever Management Plan.

Response 7.5

The commenter states that engineering and administrative controls alone may not be sufficiently effective to protect all workers during soil disturbing activities, and recommends a comprehensive respiratory protection program involving ongoing assessment to ensure that appropriate respirators are used by all potentially exposed workers. Mitigation Measure AQ-6(a) requires the applicant to prepare a Valley Fever Management Plan (VFMP) that includes specific measures to reduce the potential for exposure to Valley Fever, which would minimize the risk of dust exposure for construction personnel and off-site receptors, and would ensure that construction personnel are adequately protected from exposure to Valley Fever during grading and other earth-moving activities on-site. Mitigation Measure AQ-6(a) includes a provision for respirator use, as may be mandated by the required job hazard analysis, which states that the "respiratory protection program shall be implemented in accordance with the applicable Cal/OSHA Respiratory

Protection Standard (8 CCR 5144)." The Cal/OSHA Respiratory Protection Standard requires that the respiratory protection program include "procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators." Implementation of the required mitigation in accordance with the Cal/OSHA Respiratory Protection Standard (8 CCR 5144) would ensure that appropriate respirators are used by all potentially exposed workers.

Response 7.6

The commenter notes that the Injury and Illness Prevention regulation requires workers to be adequately and effectively trained on the signs and symptoms of Coccidiomycosis. The commenter recommends that training include the fact that certain ethnic groups and immune-compromised persons are at greater risk of becoming ill with Valley Fever. Mitigation Measure AQ-6(d) describes the required Valley Fever Worker Training Program and Safety Measures. Mitigation Measures AQ-6(d) has been revised to reflect the commenter's recommendation, as follows:

> **AQ-6(d)** **Valley Fever Worker Training Program and Safety Measures**. Prior to any project grading activity, the primary project construction contractor shall prepare and implement a worker training program that describes potential health hazards associated with Valley Fever, common symptoms, proper safety procedures to minimize health hazards, and notification procedures if suspected work-related symptoms are identified during construction, including the fact that certain ethnic groups and immune-compromised persons are at greater risk of becoming ill with Valley Fever. The objective of the training shall be to ensure the workers are aware of the danger associated with Valley Fever…

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 7.7

The commenter describes the reporting requirements for occupationally exposed workers to Valley Fever. As discussed in the DEIR, the project would be required to comply with applicable regulations and State and local permit requirements. In addition, Mitigation Measure AQ-6(a) describes the reporting measures to be included in the required Valley Fever Management Plan, which are consistent with County and State requirements, and include (revisions to this language are discussed in detail under Response 16.25):

- ~~Work with a medical professional~~ Each primary employer of contracted workers will be required by the terms and conditions of their contract for services to retain and consult with an Occupational Medicine Professional, licensed by either the Medical Board of California or the Osteopathic Board of California to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever. Reporting of symptoms of Valley Fever and diagnosed

cases of Valley Fever must occur consistent with ~~Cal/OSHA~~ County and State requirements.

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary*.

Letter 8

SAN LUIS OBISPO COUNTY

DEPARTMENT OF PLANNING AND BUILDING

Promoting the Wise Use of Land – Helping to Build Great Communities

RECEIVED
SEP 22 2014
MONTEREY COUNTY
PLANNING DEPARTMENT

September 22, 2014

Delinda Robinson
Monterey County Resource Management Agency
Planning Department
168 W. Alisal St., 2nd Floor
Salinas, CA 93901

Subject: California Flats Solar Project - Draft Environmental Impact Report Comments

Dear Ms. Robinson,

Thank you for the opportunity to comment on the Draft EIR for the California Flats Solar Project. The County of San Luis Obispo is a Responsible Agency and will be considering approval of a Conditional Use Permit for the portion of the project located within San Luis Obispo County. Once the County of Monterey has taken final action on the project, the County of San Luis Obispo as a Responsible Agency will rely upon the EIR when processing the Conditional Use Permit. 8.1

The County has reviewed the Draft EIR and has determined that the Draft EIR adequately evaluates the portion of the project within San Luis Obispo County. Based on the current project description and available information, the County will likely be able to rely upon the EIR when processing the Conditional Use Permit. The County has no comments regarding the adequacy of the EIR at this time. We look forward to further coordination as the project continues to move forward. 8.2

If you have any questions, please feel free to contact me at rfitzroy@co.slo.ca.us or (805) 781-5179.

Sincerely,

Rob Fitzroy,
Project Manager

Letter 8

COMMENTER: Rob Fitzroy, Project Manager, San Luis Obispo County Department of Planning and Building

DATE: September 22, 2014

Response 8.1

The commenter notes that the County of San Luis Obispo is a Responsible Agency for the proposed project and, after the County of Monterey has taken final action on the project, will rely upon the EIR in considering approval of a Conditional Use Permit for the portion of the project located within the San Luis Obispo County. Consistent with this comment, DEIR Section 2.0, *Project Description*, notes that discretionary approval of a Conditional Use Permit from San Luis Obispo County may be required for grading, temporary construction yards along SR 41, and/or temporary park and ride locations.

Response 8.2

The commenter states that the County has reviewed the DEIR and determined that it adequately evaluates the portion of the project within San Luis Obispo County. This comment is acknowledged.

Letter 9

SLO COUNTY apcd | Air Pollution Control District
San Luis Obispo County

September 22, 2014

Delinda Robinson
Monterey County Resource Management Agency
Planning Department
168 W. Alisal Street, 2nd Floor
Salinas, CA 93901
Submitted via email to: CEQAcomments@co.monterey.ca.us

Subject: Comments on DEIR for California Flats Solar Project (PLN120294; SCH#2013041031)

Dear Ms. Robinson:

Thank you for including the San Luis Obispo County Air Pollution Control District (SLOCAPCD) in the environmental review process. We have completed our review of the proposed California Flat 280-megawatt solar power facility in the unincorporated southeastern Monterey County, seven miles southeast of Parkfield and 25 miles northeast of Paso Robles.

The San Luis Obispo (SLO) County aspect of this project would be improvements to and use of the project's access road, and the construction and utilization of two temporary construction staging areas. This aspect requires a SLO County Conditional Use Permit (CUP; DRC2014-00016). Although the project is located in the southeastern most corner of Monterey County, the project's primary access to the project site during both construction and operation would be provided in SLO County. This access is by an existing private ranch road from SR 41 which is approximately 1.14 miles northeast of Cholame Valley Road. The portion of the project's access road that is in SLO County is 5.6-miles in length. 9.1

In addition to the improvements to the access road and SR 41, two temporary staging areas would also be established within SLO County and the California Department of Transportation ("Caltrans") right-of-way for the purposes of constructing the proposed SR 41 improvements at the existing access road and receiving deliveries, along with providing areas for vehicle queuing. These staging areas would be located on the northwest and southeast shoulder areas of SR 41, as well as along the shoulder of the existing private ranch access road. The northwest staging area is approximately four acres and would be used throughout construction for temporary construction staging, vehicle

queuing and deliveries. The southeast staging area would be approximately 0.5 acre. This area would be used during construction of SR 41 improvements.

The portion of this project that is located in SLO County also resides in the non-attainment region of the county for the Federal ozone standard. Mitigation measures to reduce the project's impact below the SLOCAPCD's CEQA significant threshold for ROG + NOx are necessary to ensure the ongoing air quality improvements for that area continue. 9.1

The following are SLOCAPCD comments that are pertinent to this project.

GENERAL COMMENTS

As a commenting agency in the California Environmental Quality Act (CEQA) review process for a project, the SLOCAPCD assesses air pollution impacts from both the construction and operational phases of a project, with separate significant thresholds for each. **Please address the action items contained in this letter that are highlighted by bold and underlined text**.

Construction Phase Exceedance EIR:

Based on the modeled DEIR emission estimates, the construction phase would exceed the SLOCAPCD's construction emission thresholds identified in Table 2-1 of the CEQA Air Quality Handbook for particulate matter (PM), diesel PM and ozone precursors. The air quality mitigation measures [AQ-2(a) and (b)] included in the DEIR are focused primarily on reducing fugitive dust, but fail to include proven, feasible measures that reduce ozone precursors and diesel PM. The SLOCAPCD disagrees with the Class 1 classification for the construction emissions impact. There have been many projects similar to the California Flats Solar Project, that have exceeded the SLOCAPCD's significance thresholds for ROG+NOX, PM and diesel PM that have implemented mitigation measures to get the project below our significance threshold (e.g. incorporated on-site mitigation measures and off-site mitigation measures).

9.2

The SLOCAPCD recommends the inclusion of mitigation measures to reduce all air pollutions below the significance thresholds as defined in the SLOCAPCD CEQA Handbook. Air quality mitigation measures AQ 2 (a) and (b) should be modified to include all exceeded air pollutants and conditioned as follows to demonstrate mitigation measures have been sufficiently addressed:

> **Prior to grading permit issuance, and at least six months before construction activities are to begin, the applicant needs to demonstrate how the construction phase impacts will be below the level of significance as identified in the SLOCAPCD's CEQA Handbook. The SLOCAPCD recommends on-site mitigation from construction activities to the greatest extent possible. Potential SLOCAPCD construction phase mitigation measures are listed in Chapter 2 of the SLOCAPCD CEQA Handbook.**

SLOCAPCD's protocol for projects that cannot mitigate their construction emissions below thresholds of significance with on-site mitigation is for these projects to develop a Construction Activity Management Plan that includes off-site mitigation to bring ozone 9.3

precursor exceedances to a level of insignificance. We recommend this approach for the SLOCAPCD component of this project.

Construction Activity Management Plan

If the estimated construction emissions from the actual fleet are expected to exceed either of the SLOCAPCD Quarterly Tier 2 thresholds of significance (ROG+NO_x and/or PM) after the standard and BACT measures are factored into the estimation, then a SLOCAPCD approved CAMP (See the SLOCAPCD's 2012 CEQA Handbook's Technical Appendix 4.5 for CAMP Guidelines) and off-site mitigation need to be implemented in order to reduce potential air quality impacts to a level of significance. **The CAMP should be submitted to the SLOCAPCD for review and approval prior to the start of construction and should include, but not be limited to, the following elements:** 9.3

- A Dust Control Management Plan that encompasses all, but is not limited to, dust control measures that were listed above in the "dust control measures" section;
- Tabulation of on and off-road construction equipment (age, horse-power and miles and/or hours of operation);
- Schedule construction truck trips during non-peak hours to reduce peak hour emissions;
- Limit the length of the construction work-day period, if necessary; and,
- Phase construction activities, if appropriate.

In addition, the DEIR references emission reduction strategies such use of Tier 3 off-road equipment engines and transportation demand management (TDM), such as shuttle service for employees, as means to reduce construction phase emissions. If these, and other strategies, were used in the construction phase modeling as mitigation to project impacts, they also need to be included in the conditions of approval to ensure the emission reductions are realized. Currently, there are no mitigation measures in the DEIR that specify that Tier 3 engines or TDM shall be required to ensure that the DEIR modeled emissions are consistent with the actual emissions from the project. **The SLOCAPCD recommends that all emission reduction strategies modeled in the DEIR for construction phase emissions be included as mitigation measures in conditions of approval for the project.** 9.4

Construction Phase Fugitive Dust Mitigation Measure Conditions to Yield a Class 2 Impact for PM10:

The SLOCAPCD recognizes that the results of the project's construction phase air quality modeling indicates that even with modeled fugitive dust mitigation, the PM10 impacts exceed the SLOCAPCD's CEQA Significance Threshold as stated in Table 2-1 of the 2012 CEQA Air Quality Handbook. With regards to short-term construction PM10 emissions, SLOCAPCD also recognizes that the PM10 mitigation modeling may not be able to accurately calculate the emission reduction potential of all SLOCAPCD approved dust mitigation measures required in the DEIR. With full implementation of all the PM10 mitigation measures, and ongoing compliance with SLOCAPCD's 20% opacity limit (SLOCAPCD Rule 401; i.e. from anywhere on-site 20% opacity is not exceeded for greater than 3 minutes in any 60 minute period) and SLOCAPCD's nuisance rule (Rule 402), SLOCAPCD deems the construction project's PM10 impacts shall be at a level of insignificance. 9.5

Construction Class 1 Impacts for PM10

The SLOCAPCD recommends the following construction phase PM10 conditions be added to the DEIR and that the EIR's residual impact be changed to Class 2, Significant but Mitigable.

The SLOCAPCD recommends that the DEIR AQ-2(a) Dust Control Measures be aligned with the following conditions to ensure that this project's construction phase fugitive dust impacts are managed and mitigated to a less than significant impact:

1. The project shall fully implement the SLOCAPCD approved construction dust mitigation measures as defined in Section 2.4 Fugitive Dust Mitigation Measures in the 2012 SLOCAPCD CEQA Handbook;
2. Should the FEIR dust mitigation measures prove to be ineffective at eliminating violations of SLOCAPCD Rules 401 and/or 402, then the project shall promptly work with the SLOCAPCD Compliance Division to define additional and/or alternative measures to correct mitigation deficiencies; and
3. The SLOCAPCD Compliance Division shall have final enforcement authority to ensure that the project promptly addresses opacity and nuisance rule violations.

9.5

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) has been identified by the state Air Resources Board as a toxic air contaminant. Serpentine and ultramafic rocks are very common throughout California and may contain naturally occurring asbestos. The SLOCAPCD has identified areas throughout the County where NOA may be present (see the SLOCAPCD's 2012 CEQA Handbook, Technical Appendix 4.4). The portion of this project is located in a candidate area for Naturally Occurring Asbestos (NOA), and the following requirements apply. Under the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (93105), **prior to any construction activities at the site, the project proponent shall ensure that a geologic evaluation is conducted to determine if the area disturbed is exempt from the regulation. An exemption request must be filed with the SLOCAPCD.** If the site is not exempt from the requirements of the regulation, the applicant must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the SLOCAPCD. More information on NOA can be found at http://www.slocleanair.org/business/asbestos.php.

9.6

Again, thank you for the opportunity to comment on this proposal. If you have any questions or comments, feel free to contact me at 781-5912.

Sincerely,

for

Andy Mutziger
Air Quality Specialist

cc: Rob Fitzroy, SLO County Planning & Building
Amy Clymo, Monterey Unified APCD
John Gaglioti, California Flats Solar, LLC
Scott Dawson, California Flats Solar, LLC

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Letter 9

COMMENTER: Andy Mutziger, Air Quality Specialist, San Luis Obispo County Air Pollution Control District

DATE: September 22, 2014

Response 9.1

The commenter states that they have reviewed the project, and describes the portions of the project within San Luis Obispo County, which include improvements to and use of the project's access road, and construction and utilization of two temporary construction staging areas. The commenter notes that the project components within San Luis Obispo County require a Conditional Use Permit (CUP; DRC2014-00016). The commenter also notes that the portion of the project within San Luis Obispo County also resides in the non-attainment region of the County for the Federal ozone standard, and that mitigation measures to reduce the project's impact below the SLOAPCD's CEQA significance threshold for ROG + NO_X are necessary to ensure the ongoing air quality improvements for that area continue. Potential impacts within the SCCAB are discussed in Section 4.3.3(d) of the DEIR, under Impact AQ-8 (SLOAPCD and SJVAPCD Air Quality Management Plan [AQMP] consistency), Impact AQ-9 (short-term construction emissions within SCCAB), and Impact AQ-10 (long-term air pollutant emissions in SCCAB). The analysis of potential impacts within the SCCAB finds that:

- Impact AQ-8 – The project would be consistent with the local SLOAPCD air quality management plan (2001 Clean Air Plan [2001 CAP]), based upon minimal ongoing employee and other travel to and from the site (Class III, *less than significant*);
- Impact AQ-9 – The project's short-term emissions from construction vehicles traveling to and from the site within the SCCAB would exceed the SLOAPCD's CEQA thresholds for ROG, NO_X, diesel PM, and fugitive PM_{10} emissions (Class I, *significant and unavoidable*); and that
- Impact AQ-10 – The project would not violate or contribute substantially to an existing or project air quality violation in the SCCAB during project operation (Class IV, *beneficial*).

The commenter requests that the specific action items in comments 9.2 through 9.6 be addressed in the DEIR. Refer to responses 9.2 through 9.6.

Response 9.2

The commenter notes that, as described in Impact AQ-9 of the DEIR, construction emissions would exceed the SLOAPCD quarterly Tier 1 thresholds for ROG + NO_X and diesel PM, as well as the SLOAPCD quarterly thresholds for PM_{10}. The commenter states that Mitigation Measures AQ-2(a) and AQ-2(b) focus primarily on reducing fugitive dust, and that the required mitigation does not include adequate measures to reduce ozone precursors and diesel PM. The commenter further states that SLOAPCD disagrees with the determination that construction impacts within the SCCAB would be significant and unavoidable, and recommends inclusion of mitigation measures to reduce all air pollutants below the significance thresholds as defined in the SLOAPCD *CEQA*

Handbook. Chapter 2 of the SLOAPCD *CEQA Handbook* lists a variety of measures for reducing dust, ozone precursors, and diesel PM, including:

- Diesel idling restrictions;
- Standard measures to reduce ozone precursor and diesel PM emissions from construction equipment;
- Best Available Control Technology (BACT) for Construction Equipment; and
- Construction Activity Management Plan (CAMP) and off-site mitigation.

The DEIR describes the diesel idling restrictions that apply to the project, including compliance with Section 2485 of Title 13, the California Code of Regulations and Section 2449(d)(3) of the California Air Resources Board's In-Use off-Road Diesel regulation. Mitigation Measure AQ-2(b) includes idling restrictions that would reduce ozone precursor and diesel PM emissions, and has been revised to include standard measures to reduce ozone precursor and diesel PM emissions from construction equipment, as follows:

AQ-2(b) **Emission-Reduction Measures for Construction Equipment** ~~**Idling Restrictions.**~~ The Project Applicant and/or Contractor shall be responsible for implementing the following mitigation measures throughout the duration of construction. Prior to the issuance of any grading permit, the Project Applicant and/or Contractor shall submit construction drawings to RMA-Planning and RMA – Building Services for review and approval that include the following measures on all plans and specifications:

- Idling Restrictions Near Sensitive Receptors for Both On and Off-Road Equipment (applicable to northernmost edge of the project site only), including:
    - Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
    - Diesel idling within 1,000 feet of sensitive receptors is not permitted;
    - ~~Use of alternative fueled equipment is recommended whenever possible;~~ and,
    - Signs that specify the no idling requirements must be posted and enforced at the construction site.
- NO_X and Diesel PM Emissions Reduction Measures for Construction Equipment
    - All construction equipment shall be maintained in proper tune according to manufacturer's specifications;
    - All off-road and portable diesel powered equipment shall be fueled with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);
    - Use of on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines;
    - On- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the

designated queuing areas and or job sites to remind drivers and operators of the 5-minute idling limit;
- Use of electrically-powered equipment when feasible;
- Gasoline-powered equipment shall be substituted in place of diesel-powered equipment, where feasible; and
- If available, use of alternatively fueled construction equipment on-site, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

In addition, a new mitigation measure which requires the use of Tier 3 construction equipment, consistent with SLOAPCD recommendations for BACT for Construction Equipment, has been incorporated into the DEIR to ensure that air quality impacts are mitigated to the maximum extent feasible, as follows:

AQ-2(c) **Tier 3 Construction Equipment**. All off-road construction diesel engines not registered under the California Air Resources Board's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower (hp) or more, shall meet, at a minimum, the Tier 3 California Emissions Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment.

Construction or trucking companies with fleets that that do not have engines in their fleet that meet the Tier 3 standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance. If a Tier 3 (or equivalent alternative compliance) engine is not available for any off-road engine larger than 50 hp, that engine will have tailpipe retrofit controls that reduce exhaust emissions of NO_X and PM to no more than Tier 2 emission levels. Tier 1 engines will be allowed on a case-by-case basis only when the project applicant has documented that no Tier 2 equipment or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete project construction. This shall be documented with signed written correspondence by the appropriate construction contractor along with documented correspondence with at least two construction equipment rental firms. A list of the construction equipment and the associated EPA Tier shall be submitted to the County of Monterey RMA-Planning Department prior to the issuance of a grading permit to verify implementation of measure.

In response to the commenter's recommendation that the DEIR include a CAMP and off-site mitigation to reduce construction impacts within the SCCAB to a less than significant level, it should be noted that preparation of a Final Construction Management Plan (CMP) is included

among the applicant proposed measures (or APMs) described in Section 2.0, *Project Description*. The CMP (APM-2) would include measures to ensure on-going coordination with adjacent property owners during project construction. The DEIR has been revised to include mitigation requiring that the CMP developed pursuant to APM-2 include provisions recommended in the SLOAPCD *CEQA Handbook*, as follows:

Mitigation Measures. Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) are required for the proposed project, and are based on SLOAPCD recommendations for mitigating construction emission thresholds of significance. These measures are consistent with standard MBUAPCD and SLOAPCD recommended measures, and would ensure that construction-phase mitigation is uniformly applied across the project. ~~Thus, separate additional mitigation is not required for the portion of the project within SLOAPCD.~~ In addition, SLOAPCD *CEQA Air Quality Handbook* (April 2012) requires projects that cannot mitigate their construction emissions below the SLOAPCD thresholds of significance with on-site mitigation to develop a Construction Activity Management Plan that includes off-site mitigation to reduce emissions below the applicable threshold. Preparation of a Final Construction Management Plan (CMP) is required by APM-2, described in Section 2.0, *Project Description*. Therefore, the following mitigation measure is required to minimize construction emissions within the SCCAB:

AQ-9 **Construction Management Plan Requirements**. The Final Construction Management Plan (CMP) proposed as Applicant Proposed Measure 2 (APM-2) shall include, but not be limited to, the following construction emissions reduction measures, recommended by SLOAPCD:

- Best Available Control Technology for Construction equipment (BACT) measures to reduce construction emissions, which can include:
  - Expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines;
  - Repowering equipment with the cleanest engines available;
  - Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm
- Schedule construction activities to minimize the amount of large construction equipment operating simultaneously during any given time period; and
- Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions.

The CMP shall be submitted to the County of Monterey RMA-Planning Department for review and approval.

Significance After Mitigation. ~~Even w~~ With implementation of ~~these m~~ Mitigation ~~m~~ Measures AQ-2(a), AQ-2(b), AQ-2(c), and AQ-9, temporary emissions

within the SCCAB during construction would be reduced to the maximum extent feasible, but would continue to exceed ambient air quality standards within the SCCAB. Therefore, the impact would be significant and unavoidable.

The provisions required to be included in the CMP by Mitigation Measure AQ-9 do not include off-site mitigation. Off-site mitigation fees generally provide funding for off-site projects that would reduce long-term air pollutant emissions in a proportionate amount to the identified impact. With regard to the proposed project, the project itself would result in a long-term reduction in air pollutant emissions associated with the project's generation of renewable energy that would reduce demand for new fossil fuel-fired facilities. Regionally, the proposed project would reduce operational air pollutant emissions, as identified in Impact AQ-3 of the DEIR. Therefore, off-site mitigation is not required for the project; however, short term construction emissions within the SCCAB would remain significant and unavoidable, as identified in Impact AQ-9.

The above revisions to mitigation measures have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 9.3

The commenter states that SLOAPCD protocol for projects that cannot mitigate their construction emissions below SLOAPCD thresholds using on-site mitigation is for these projects to develop a Construction Activity Management Plan (CAMP) that includes off-site mitigation, and recommends that the DEIR include these provisions for the portion of the project within the SCCAB. As described in response 9.2, above, the DEIR has been revised to include Mitigation Measure AQ-9, which requires the applicant to develop a CMP for the portion of the project within the SCCAB.

Response 9.4

The commenter states that the DEIR references emission reduction strategies including Tier 3 off-road equipment and transportation demand management (TDM) strategies, such as shuttle services for employees, to reduce construction phase emissions. As described in Table 4.3-5 of the DEIR, the emissions modeling for mitigated emissions assumes Tier 3 engines for construction equipment. Refer to response 9.2, above. As noted therein, Mitigation Measure AQ-2(c) has been incorporated into the DEIR, and would require the use of Tier 3 construction equipment, consistent with SLOAPCD recommendations for BACT for Construction Equipment. The addition of this measure ensures that required mitigation is consistent with assumptions made in the DEIR emissions estimates. As described in Section 4.3.3(a) of the DEIR, the project includes a shuttle program to minimize traffic trips associated with project construction; however, the *California Flats Solar Project Traffic Impact Analysis Report* (August 2013) evaluated the amount of trips based on a conservative estimate of daily on-site employees, and no reduction in vehicle trips associated with the proposed shuttle is assumed in the emissions analysis, resulting in a conservative estimate of construction vehicle trip emissions.

Response 9.5

The commenter notes that Impact AQ-9 of the DEIR describes fugitive dust impacts from the portion of the project within the SCCAB as significant an unavoidable, but states that with implementation of SLOAPCD-approved construction dust mitigation measures and ongoing compliance with SLOAOCD's Rule 401 (opacity) and Rule 402 (nuisance), this impact would be reduced to a less than significant level. The commenter recommends the following additions to the DEIR mitigation for fugitive dust (Mitigation Measure AQ-2[a]):

- *Fully implement the SLOAPCD-approved construction dust mitigation measures as defined in Section 2.4 of the 2012 SLOAPCD CEQA Air Quality Handbook;*
- *If the required dust mitigation measures are ineffective at eliminating violations of SLOAPCD Rules 401 and 402, the project shall "promptly work with the SLOAPCD Compliance Division to define additional and/or alternative measures to correct mitigation deficiencies;" and*
- *SLOAPCD Compliance Division shall have final enforcement authority to ensure that the project promptly addresses opacity and nuisance violations.*

Mitigation Measure AQ-2(a) contains an extensive list of required dust control measures for the proposed project which are based on and consistent with the measures defined in Section 2.4 of the 2012 SLOAPCD *CEQA Air Quality Handbook*. However, the recommendation that the applicant "work with the SLOAPCD Compliance Division to define additional and/or alternative measures" in the event that fugitive dust emissions violate Rule 401 and/or Rule 402 is not considered necessary at this time because of the dust reduction measures already required in Mitigation Measure AQ-2(a). Mitigation Measure AQ-2(a) would reduce dust associated with project construction to the maximum extent feasible. SLOAPCD Compliance Division would retain enforcement authority with respect to Rule 401 and Rule 402 for the portion of the project within the SCCAB. Because no additional feasible mitigation is available that would reduce Impact AQ-9 to a less than significant level, this impact remains significant and unavoidable.

Response 9.6

The commenter states that the portion of the project within San Luis Obispo County is located in a candidate area for Naturally Occurring Asbestos (NOA), and that project construction within San Luis Obispo County is subject to the California Air Resources Board Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (93105). The potential for encountering NOA during project construction activity is discussed in Impact AQ-4 in Section 4.3, *Air Quality,* of the DEIR. As described therein, the project site contains limited areas that could contain ultramafic rock in the southern portion of the site. As noted in the DEIR, CARB has developed a list of suggested mitigation measures to reduce potential impacts during the design, construction, and operation of projects in areas containing NOA. According to CARB, the use of BMPs during construction would minimize potential impacts due to NOA. Mitigation Measure AQ-2(a) requires dust control measures throughout the duration of construction, including a grading plan that minimizes the amount of disturbed area, water trucks or sprinkler systems to prevent airborne dust from leaving the site, establishment of clear boundaries for dust control between work areas, a 15 mph on-site speed limit, and on-site dust control monitoring during construction activity, which would minimize temporary impacts in accordance with the recommendations of CARB and technical guidance provided by the OPR. Due to the limited distribution of on-site soils containing NOA, as well as the implementation of standard construction BMPs, the DEIR determined that potential impacts associated with NOA would be less than significant.

Letter 10

Robinson, Delinda x5198

From: Mangione, Lisa SPN [Lisa.Mangione@usace.army.mil]
Sent: Monday, September 22, 2014 1:48 PM
To: Robinson, Delinda x5198
Subject: RE: California Flats Solar Draft Environmental Impact Report (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi, Delinda,

Per your request, this email is to inform you that the Corps will not be providing comments on the California Flats Solar DEIR. 10.1

Lisa Mangione
Regulatory Project Manager
Regulatory Division, South Branch
U.S. Army Corps of Engineers
1455 Market Street, 16th Floor
San Francisco, California 94103-1398
415-503-6763
Lisa.Mangione@usace.army.mil

-----Original Message-----
From: Robinson, Delinda x5198 [mailto:robinsond@co.monterey.ca.us]
Sent: Wednesday, September 17, 2014 3:45 PM
To: Mangione, Lisa SPN
Subject: [EXTERNAL] California Flats Solar Draft Environmental Impact Report

Lisa -

On August 6, 2014 a copy of the Notice of Availability of the Draft Environmental Impact Report for the California Flats Solar Project was sent electronically to the US Army Corps of Engineers at these e-mail addresses: 'galacatos@usace.army.mil'; and 'paula.c.gill@usace.army.mil'. A paper copy of the NOA and a CD containing the entire DEIR were also mailed to the USACE on that date. Unfortunately, the mailing address was outdated and the hard copies were returned. The DEIR is available on our website at http://www.co.monterey.ca.us/planning/major/California%20Flats%20Solar/California_Flats_Solar.htm and a copy of the NOA is attached for your reference. If the USACE did not receive the NOA electronically on August 6, 2014, please let me know immediately if you would like to have some additional time to review the DEIR and provide comments. It is my understanding that you will be out of the office until Monday, September 22 which is the deadline to provide comments. I will attempt to call you on Monday if I don't hear from you.

Thank you very much.

Delinda Robinson
Senior Planner
Monterey County RMA-Planning Department
168 West Alisal Street, Second Floor
Salinas, CA 93901
(831) 755-5198

Website: www.co.monterey.ca.us/planning <http://www.co.monterey.ca.us/planning>

To access our permit database, please go to: https://aca.accela.com/monterey/Default.aspx <https://aca.accela.com/monterey/Default.aspx>

Classification: UNCLASSIFIED
Caveats: NONE

Letter 10

COMMENTER: Lisa Mangione, Regulatory Project Manager, Regulatory Division, U.S. Army Corps of Engineers

DATE: September 22, 2014

Response 10.1

The commenter states that USACE will not be providing comments on the DEIR. This comment is noted.

Letter 11

Gonzales, Eva x5186

From: Kristin Cushman [kristin@theoffsetproject.org]
Sent: Saturday, September 06, 2014 9:51 AM
To: ceqacomments
Subject: Public Comment for California Flats project
Attachments: TOP Public Comment_CA Flats.PDF

Ms. Robinson,

On behalf of The Offset Project, I would like to make a public comment in support of the California Flats solar project. Please see formal letter attached with a hard copy being mailed to you this afternoon. 11.1

Thank you in advance for your consideration.

Sincerely,
Kristin

--
Kristin Cushman
Executive Director
m. (831) 277-0167
o. (831) 917-7565
www.theoffsetproject.org

The Offset Project

Delinda Robinson
Monterey County Resource Management Agency
Planning Department
168 W. Alisal St., 2nd Floor
Salinas, CA 93901

Dear Ms. Robinson,

On behalf of The Offset Project, I would like to extend a letter of support for California Flats solar project. This project incorporates the principles of climate protection, green job creation and economic development through locally produced, clean and renewable energy that are pillars of our mission, our vision for a sustainable Monterey Bay community, and our program offerings. We encourage the Monterey County Planning Commission and the Monterey County Board of Supervisors to approve, and continue to support this project.

California Flats supports state and local renewable energy goals outlined in the Renewable Energy Portfolio standards and Governor's 12,000 Megawatt Challenge as well as the greenhouse gas reduction goals of AB32. The project also utilizes highly efficient, state-of-the-art equipment and design and has chosen an optimal project site to maximize production and yield the greatest GHG benefits.

While no large project of any type can be developed in California without acknowledging the potential impacts on the surrounding environment and communities, a review of the project's EIR shows that these benefits are accrued with very nominal side effects. California Flats has done a commendable job mitigating for traffic, dust, habitat and species and as such is a model for a low impact power plant. Specifically, California Flat's location on the existing power grid means that electricity will get to consumers without the added costs of new power line construction . The design and location of the photovoltaic panels is such that the watershed, local flora and fauna will be protected. 11.2

In addition to the greenhouse gas reductions, California Flats will provide economical development benefits to the region with close to 900 full time jobs during. These are high wage "green" jobs that are the model for enhancing the 21st century California economy.

California Flats provides Monterey County with the opportunity to be a leader in both green energy and sustainable economic development and I encourage your approval of the project.

Sincerely,

Kristin Cushman
Executive Director, The Offset Project
(831) 277-0167
Kristin@theoffsetproject.org

Nick Tomb
Chairman of the Board, The Offset Project
(831) 238-6848
nicktomb@yahoo.com

Letter 11

COMMENTER: Kristin Cushman, Executive Director, The Offset Project

DATE: September 6, 2014

Response 11.1

The commenter expresses support of the proposed project. The comment is noted.

Response 11.2

The commenter expresses support of the proposed project, citing the benefits of renewable energy, greenhouse gas reduction, and economic development. The commenter additionally notes that the project achieves these benefits with nominal side effects. The comment is noted.

Letter 12

September 22, 2014

Via Overnight and Electronic Mail

Delinda Robinson
Monterey County Resource Management Agency
Planning Department
168 W. Alisal St., 2nd Floor
Salinas, CA 93901
Phone: (831) 755-5198
E-mail: robinsond@co.monterey.ca.us
ceqacomments@co.monterey.ca.us

Re: Comments on the Draft Environmental Impact Report for the California Flats Solar Project (PLN120294; SCH#2013041031)

Dear Ms. Robinson:

We are writing on behalf of the Monterey County Residents for Responsible Development to provide comments on the Draft Environmental Impact Report ("DEIR") prepared by the Monterey County Resource Management Agency Planning Department ("County"), pursuant to the California Environmental Quality Act ("CEQA"),[1] for the California Flats Solar Project ("Project") proposed by California Flats Solar, LLC (the "Applicant"). The Applicant seeks a Combined Development Permit ("CDP") to develop a 280-megawatt ("MW") solar facility on approximately 3,000 acres of land in unincorporated Monterey County. 12.1

I. INTRODUCTION

The Project is comprised of the solar generating facility area, a utility corridor, and improvements to an existing access road. The solar generating facility area would be located on approximately 3,000 acres, and would include an approximately 2,120 acre solar development area, an approximately 135-acre (2.8 miles) 230 kV 12.2

[1] Pub. Resources Code, §§ 21000 et seq.

overhead transmission line corridor, an approximately 5-acre high-capacity collection system line corridor, two on-site substations each approximately six acres in size, a switching station to be owned and operated by Pacific Gas & Electric Company ("PG&E") approximately six acres in size, an operations and maintenance ("O&M") facility, and temporary construction staging areas. In addition, implementation of the proposed solar project would require construction and operation of an approximately 155 acre utility corridor and improvements to an existing private access road within an approximately 60 acre area. The site is bordered by grazing land, some farmland, and several rural residences located in close proximity to the site. 12.2

The DEIR for this Project fails to comply with CEQA's basic requirement to act as an "informational document": it is devoid of meaningful details upon which to make an adequate assessment of the Project's significant impacts. The DEIR fails to provide a stable project description; fails to provide adequate environmental baseline information; lacks substantial evidence to support its conclusions regarding the Project's significant impacts; fails to incorporate all feasible mitigation measures necessary to reduce such impacts to a level of insignificance; fails to adequately identify and analyze the Project's cumulative impacts; and is not consistent with the Monterey County General Plan. As a result of these shortcomings, the DEIR lacks substantial evidence to properly identify and mitigate the Project's significant environmental impacts. These defects render the DEIR inadequate as an informational document. 12.3

These comments will demonstrate that the DEIR for the Project is fatally flawed. The DEIR is a classic example of bare conclusions without appropriate prior analysis or due consideration. In light of the DEIR's fundamentally flawed nature, the comments contained in this letter should be viewed as illustrative of the problems with the document, rather than as a comprehensive catalogue of the document's deficiencies. A number of the conclusions contained in the DEIR are not supported by facts, reasonable assumptions predicated on facts, or expert opinion supported by facts. Based on the findings of this comment letter, a revised DEIR must be written and recirculated before the County may legally approve the Project.

We have reviewed the DEIR and its technical appendices with assistance from technical consultants, whose comments and qualifications are attached as follows: Scott Cashen, with the assistance of Michael Morrison and Vernon Bleich (**Attachment A**), Matt Hagemann and Anders Sutherland (**Attachment B**), and 12.4

Tom Myers **(Attachment C)**. The County must respond to these consultants' comments separately and individually. 12.4

II. STATEMENT OF INTEREST

Monterey County Residents for Responsible Development is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The association includes Monterey County residents, such as Manuel Ramos, Robert Greene, and California Unions for Reliable Energy ("CURE") and its members and their families and other individuals that live and/or work in Monterey County (collectively, "Monterey County Residents"). The association was formed to advocate for responsible and sustainable solar development in Monterey County and nearby surrounding areas in order to protect public health and safety and the environment where the association members and their families live, work and recreate.

The individual members of Monterey County Residents and the members of the affiliated labor organizations live, work, recreate and raise their families in the Monterey County. They would be directly affected by the Project's environmental and health and safety impacts. Individual members may also work constructing the Project itself. They will be first in line to be exposed to any health and safety hazards that may be present on the Project site. They each have a personal interest in protecting the Project area from unnecessary, adverse environmental and public health impacts. 12.5

The organizational members of Monterey County Residents also has an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for the union organization's members that they represent. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for businesses to locate and people to live there. This in turn jeopardizes future development by causing construction moratoriums and otherwise reducing future employment opportunities for construction workers. The labor organization members of Monterey County Residents therefore have a direct interest in enforcing environmental laws to minimize the adverse impacts of projects that would otherwise degrade the environment.

III. THE PROJECT DESCRIPTION IS INADEQUATE

The DEIR does not meet CEQA's requirements because it fails to include a complete and accurate project description, rendering the entire impact analysis unreliable. An accurate and complete project description is necessary to perform an evaluation of the potential environmental effects of a proposed project.[2] Without a complete project description, the environmental analysis will be impermissibly narrow, thus minimizing the project's impacts and undercutting public review.[3] The courts have repeatedly held that "an accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient [CEQA document]."[4] "Only through an accurate view of the project may affected outsiders and public decision makers balance the proposal's benefit against its environmental costs."[5] 12.6

CEQA Guidelines section 15378 defines "project" to mean "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."[6] "The term 'project' refers to the activity which is being approved and which may be subject to several discretionary approvals by governmental agencies. The term project does not mean each separate governmental approval."[7] Courts have explained that a complete project description of a project has to address not only the immediate environmental consequences of going forward with the project, but also all "*reasonably foreseeable* consequence[s] of the initial project."[8]

A. The DEIR Fails to Provide Sufficient Detail Regarding the Project's Planning and Design Features

The DEIR fails to sufficiently describe the Project in several ways. For instance, it is unclear in the DEIR whether PG&E, rather than the Applicant, is actually constructing the switching station or will take ownership and operate the 12.7

[2] *See, e.g., Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 376.
[3] *See id.*
[4] *County of Inyo v. County of Los Angeles* (1977) 71 Cal.App.3d 185, 193.
[5] *Id.*, at 192-193.
[6] 14 Cal.Code Regs, tit. 14, §15378 ("CEQA Guidelines").
[7] CEQA Guidelines, § 15378(c).
[8] *Laurel Heights*, 47 Cal.3d 376, emphasis added; *see also Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 449-50.

station after construction.[9] It is also unclear whether the Project will require the construction of a new well, what kind of construction would be required, and whether there are any potentially significant impacts resulting from the construction. The DEIR references a potential new well in several areas, but is vague in its conclusion as to the Project's need.[10] The extent of the discussion is a brief statement:

> "[t]he ultimate locations of the potential new well would depend on final design and operational efficiencies. If the new well is constructed, the applicant would first be required to obtain a well drilling permit from the Monterey County Environmental Health Department, and would be required to comply with applicable County requirements related to the siting and design of new wells."

12.7

This is an insufficient analysis of an important component of the Project description. Mere assurance for compliance with local law *if* there is a need for an additional Project feature, without further analysis regarding that feature and its impacts, "does not adequately apprise all interested parties of the true scope of the project for intelligent weighing of the environmental consequences of the project."[11] Furthermore, should the Applicant decide to move forward with drilling a new well, that in itself could have potentially significant impacts that must be addressed in this environmental review process. Without more information, "informed decisionmaking cannot occur under CEQA and the final EIR is inadequate as a matter of law."[12]

Another failure in the Project description can be found in the discussion of park-and-ride facilities for employee shuttles. In one section, the DEIR refers to specific locations for park-and-ride lots, namely Cuesta College North County Campus in Paso Robles, Wild Horse Café in King City and Blackwell's Corner near the intersection of SR 46 and SR 33.[13] In addition, the DEIR vaguely states that the sites may require temporary fencing and minor surface improvements.[14] However,

12.8

[9] DEIR, p. 2-92 ("PG&E's *construction* of switching station") (emphasis added); DEIR, p. 2-15 ("the *project proponent would also construct* a new 230kV interconnection switching station that would provide an interconnection to the existing Morro Bay-Gates 230kV transmission line and would be owned and operated by PG&E") (emphasis added).
[10] DEIR, p. 2-79.
[11] *Riverwatch v. Olivenhain Municipal Water Dist*. (2009) 170 Cal.App.4th 1186, 1201.
[12] *Id.*
[13] DEIR, p. 2-84.
[14] DEIR, p. 2-84.

elsewhere in the DEIR, it is asserted that "[t]he exact location and size of the proposed park and ride facilities are not known at this time" and that the lots "shall be currently improved and have existing stormwater drainage infrastructure in place."[15] Thus, it is unclear whether the County has actually identified specific locations for the park-and-ride facilities and whether any construction or improvements would be needed. 12.8

This is not an isolated example of the DEIR inconsistencies; rather it is demonstrative of a systemic problem plaguing the environmental analysis. The DEIR's lack of a consistent construction period thwarts an adequate biological resource and air quality analysis, as well as analysis of potential impacts in other areas.[16] In addition, the DEIR is silent as to how many PV panels will be installed for the Project and provides only tentative design features for the PV modules. The DEIR merely states that the Project "would utilize high-efficiency commercially available solar PV modules" and lists potential materials to be included in the design.[17] Finally, the DEIR fails to provide important information on the specific type of stream crossings the Project would require on the site, such as the number and location of crossings. The DEIR merely states that stream crossings would be "determined at the time of project design."[18] 12.9

These are examples of the County's failure to identify relevant information in the DEIR in violation of CEQA's fundamental purpose to "alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."[19] For the public and policy-makers to be informed of the environmental consequences, they must be presented with reliable and current information.

B. The DEIR Fails to Provide a Complete Description of Decommissioning Phase

A complete project description must also include details as to the "later phases of the project, and any secondary, support, or off-site features necessary for its 12.10

[15] DEIR, p. 4.13-3.
[16] DEIR, p. 2-81 ("Construction of the proposed project would take approximately 12 to 24 months…"); DEIR p. 4.4-183 ("…construction is anticipated to occur for up to 18 months…"); DEIR, Appendix M, p. 21 ("…total construction phase duration of approximately 12 to 18 months…")
[17] DEIR, p. 2-13 – 2-14.
[18] DEIR, p. 2-73.
[19] *Laurel Heights*, 47 Cal. 3d at 392.

implementation."[20] The requirements of CEQA cannot be avoided by chopping a large project into many small parts or by excluding reasonably foreseeable future activities that may become part of the project.[21] The DEIR must supply enough information so that the decision makers and the public can fully understand the scope of the Project.[22] The County, as the lead agency, must fully analyze the whole of a project in a single environmental review document and may not piecemeal or split a project into pieces for purposes of analysis.

The DEIR here fails to describe the full scope of the Project being approved, and thus fails to disclose the full range and severity of the Project's environmental impacts. In this case, the Project has three distinct phase's: construction, operation/maintenance and decommissioning. The decommissioning phase consists of dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements, and revegetation on the approximately 3,000 acre Project site.[23] These decommissioning activities are a part of the "whole of the project," and as a matter of common sense they will result in environmental impacts, including impacts to air quality, biological resources, water and solid waste capacity. The DEIR, however, underestimates these potentially significant impacts by failing to adequately investigate and mitigate the impacts in light of their "speculative" nature and alleged inherent similarity to the construction phase.[24] 12.10

The public and decision makers are provided with a one-sentence assessment that the impacts associated with the decommissioning will be "similar" to those associated with construction as "based on current decommissioning practices."[25] The DEIR provides no evidence to support this statement. This is not factual evidence but is speculation and opinion. Also, it is inappropriate for the DEIR to provide only generalized, programmatic-level evaluation of decommissioning impacts in a project-level CEQA review. Without suitable details and impact analysis, proper mitigation measures are precluded and the decommissioning could result in significant unmitigated impacts (impacts will be discussed in detail, in the paragraphs below). The inaccurate and cursory depiction of the decommissioning activities results in an illegal minimization of the entire Project's environmental impacts in contravention of

[20] *Bozung v. Local Agency Formation Com.* (1975), 13 Cal.3d 263, 283-84.
[21] Pub. Resources Code § 21159.27 (prohibiting piecemealing); *see also, Rio Vista Farm Bureau Center v. County of Solano,* 5 Cal.App.4th 351, 370 (1992).
[22] *Dry Creek Citizens Coalition v. County of Tulare,* 70 Cal.App.4th 20, 26 (1999).
[23] DEIR, p. 2-88.
[24] DEIR, p. 2-87 – 2-88.
[25] DEIR, p. 2-88.

CEQA. The information, or rather lack thereof, is inexorably linked to the adequacy of the DEIR's analysis of the Project's environmental effects. The mistake in the Project description is compounded throughout the DEIR because all of the DEIR's analyses (e.g., of air, biological resources, agriculture) rely on an inaccurate level of use.[26] The failure to provide an adequate description of the decommission activities thwarts the DEIR's environmental analysis because, as this comment letter will show, the DEIR does not properly evaluate significant impacts in several resource areas. 12.10

The shifting and ambiguous duration and timing of the decommissioning further frustrates an "accurate, stable, and finite description" which, as highlighted, is as an indispensible prerequisite to an informative and legally sufficient DEIR. [27] The public and decision makers are left in the dark as to the specific impacts of decommissioning and are thus unable to fully assess the whole of the Project.

IV. THE DEIR FAILS TO ADEQUATELY DESCRIBE THE ENVIRONMENTAL BASELINE

The DEIR must demonstrate a good faith effort at full disclosure.[28] "The EIR must demonstrate that the significant environmental impacts of the proposed project were investigated and discussed" and permit project effects "to be considered in the full environmental context."[29] An EIR must also include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.[30] A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process.[31] 12.11

Here, the DEIR's failure to adequately describe the existing setting is inconsistent with the fundamental purpose of the environmental review process, which is to determine whether there is a potentially substantial, adverse change compared to the existing setting. CEQA requires that a lead agency include a

[26] *See, Laurel Heights*, 47 C.3d 376 [EIR failed to describe or analyze project accurately].
[27] *San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus* (1994), 27 Cal. 4th 713, 730 32 Cal.Rptr.2nd 704.
[28] *Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1390.
[29] CEQA Guidelines § 15125 subd. (c).
[30] *Association of Irritated Residents*, 107 Cal.App.4th at 1390.
[31] *Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners* (1993) 18 Cal.App.4th 729, 748.

description of the physical environmental conditions in the vicinity of the Project, as they exist at the time environmental review commences.[32] The Courts have consistently held that the impacts of a project must be measured against the "real conditions on the ground."[33] The description of the environmental setting constitutes the baseline physical conditions by which a lead agency must measure the significance of a project's impacts.[34]

12.11

The County is under an obligation to describe the existing environmental setting in sufficient detail to enable a proper analysis of project impacts.[35] CEQA Guidelines section 15125 provides, in relevant part, that "[k]nowledge of the regional setting is critical to the assessment of environmental impacts."[36] This level of detail is necessary to "permit the significant effects of the project to be considered in the full environmental context."[37] The description of the environmental setting in the DEIR is inadequate because it omits highly relevant information regarding biological resources and potential hazards on the Project site.

A. The DEIR Fails to Adequately Describe the Existing Baseline for Biological Resources.

Monterey is the biological center of California; many plant species that find either their northern or southern limits can be found in Monterey County. In addition, a high number of plant species are native only to Monterey County.[38] A review of this Project by Biologist Scott Cashen reveals that the description of the existing environmental setting found in the DEIR, and the *Biotic Report* upon which it relies, is incomplete and plagued with errors.[39] In its current form, it fails to provide an adequate description of the presence of special-status biological resources on the Project site against which to assess the Project's significant impacts. For example, Mr. Cashen's review shows that protocol-level surveys for several plant and

12.12

[32] CEQA Guidelines § 15125, subd. (a); *see* also *Communities For A Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 321.
[33] *Save Our Peninsula Com. v. Monterey Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 121-22; *City of Carmel-by-the Sea v. Bd. of Supervisors* (1986) 183 Cal.App.3d 229, 246.
[34] CEQA Guidelines, § 15125, subd. (a).
[35] *Galante Vineyards v. Monterey Peninsula Water Management District* (1997) 60 Cal.App.4th 1109, 1121-22.
[36] CEQA Guidelines § 15125, subd. (d).
[37] *Id.*
[38] Monterey County General Plan, Conservation and Open Space Element (2002).
[39] *See* Letter from Scott Cashen, et al., to Laura Horton re: Draft Environmental Impact Report for the California Flats Solar Project, September 22, 2014 (hereinafter, "Cashen Comments"), **Attachment A**.

animal species were not properly implemented, or implemented at all, across the Project and survey area.[40] In addition to problematic survey methods, there was inadequate trapping to identify small mammal species.[41]

12.12

Consequently, the documentation of special status species occurrence on the Project site and biological assessment area is inadequate. Mr. Cashen states that "[t]he DEIR cannot be considered a robust and comprehensive analysis of biological resources until the surveys have been adequately conducted, documented, and vetted by the public and resource agencies."[42] Faulty baseline analysis for specific species is as follows.

1. *Rare Plants*

Mr. Cashen observed many errors in the rare plant surveys referenced in the DEIR.[43] For example, he states that because many surveys were conducted in such a poor rainfall year, results should be considered inconclusive and the Biological Study Area ("BSA") resurveyed.[44] In addition, Mr. Cashen found that in order for the DEIR to properly assess all potentially significant impacts, and formulate appropriate mitigation, the Project area needs to be resurveyed when the aforementioned plants are evident and identifiable.[45]

12.13

According to Mr. Cashen, the DEIR provides inaccurate information regarding the presence of Mason's neststraw (*Stylocline masonii*), stating that the plant has no potential of occurring within the BSA.[46] The statement conflicts with the *Biotic Report* Addendum, which indicates the species could occur within the Project's utility corridor.[47] Furthermore, the DEIR and appendices do not indicate whether protocol-level surveys were conducted for this taxon during a time when it would have been evident and identifiable.[48] The DEIR is also misleading as to several of the target annual plant species being "absent" from the survey areas.[49] Mr. Cashen states that

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12.15

[40] *Id*.
[41] *Id*., at 16.
[42] *Id*., at 2.
[43] *Id*., at 3-7.
[44] *Id*., at 3.
[45] *Id*., at 5.
[46] *Id*; DEIR, p. 4.4-41.
[47] DEIR, Appendix E13, p. 7.
[48] Cashen Comment, p. 5.
[49] *Id*; DEIR, Table 4.4-4.

"it is virtually impossible to prove a species' absence, especially within a survey area that encompassed either 4,361 acres (as reported in Table 4) or over 4,800 acres (as reported on p.31). This is especially true for annual plant species, which may have seed banks present in the soil, but the seeds do not germinate in a given year (e.g., due to drought)."[50] 12.15

The DEIR's survey report also lacks details regarding the number of personnel hours spent checking reference sites and conducting the regional contextual surveys, and as a result, Mr. Cashen believes the DEIR and appendices falsely inflate the amount of time dedicated to Project-specific surveys.[51] 12.16 All of these deficiencies, plus many more highlighted in Mr. Cashen's letter, result in a DEIR that fails in establishing an accurate environmental baseline in violation of CEQA. 12.17

2. <u>San Joaquin Kit Fox</u>

The DEIR indicates known records of the San Joaquin kit fox, showing frequent occurrence to the south and east of the Project area.[52] However, according to Mr. Cashen, there is no indication whether surveys were conducted to the north and west of the Project area.[53] The DEIR is also inconsistent in its assessment of whether the Project area could be a wildlife corridor for the kit fox, thus according to Mr. Cashen, the DEIR gives completely contradictory information regarding the presence of, and Project impacts to, this special-status species.[54] The high potential for significant impacts on the kit fox makes establishing an accurate environmental baseline extremely important. 12.18

3. <u>San Joaquin Pocket Mouse</u>

The DEIR states that the San Joaquin pocket mouse could occur on site, but implies none were located during kangaroo rat focused trapping.[55] However, Mr. Cashen found that "adequate trapping was not conducted to determine the presence of this special status species."[56] Furthermore, the information was based on the state's natural diversity database ("CNDDB") alone, which only includes records 12.19

[50] Cashen Comments, p. 5.
[51] *Id.*, at 6.
[52] DEIR, p. 4.4-50.
[53] Cashen Comments, p. 14.
[54] *Id.*, at 15.
[55] DEIR, p. 4.4-77.
[56] Cashen Comments, p. 16.

submitted to California Department of Fish and Wildlife ("CDFW") and is "not a substitute for site-specific surveys."[57] The DEIR further states that the Project will "…reduce a relatively small amount of habitat that is regionally abundant for this species; consequently, this permanent habitat conversion would not substantially reduce the number of this species or restrict its range."[58] This "fails to acknowledge that if the pocket mice in the Project area represent part of a metapopulation structure, loss of this subpopulation could negatively impact overall species viability and diversity."[59] 12.19

4. California Tiger Salamander

According to Mr. Cashen, the Project area was not adequately surveyed for the California Tiger Salamander ("CTS") because not all suitable breeding sites were surveyed and it was only surveyed during drought conditions.[60] As a result, "definitive statements made in the DEIR about baseline conditions for occurrence or habitat suitability at the Project area are not supported."[61] 12.20

5. California Red-Legged Frog

Mr. Cashen found that, based on the description of the survey efforts to locate California red-legged frogs ("CRLF") in the Project area, the survey team did not sample the Project and biological assessment area according to USFWS protocol, which recommends: 12.21

> "a total of up to eight (8) surveys to determine the presence of [CRLF] at or near a project site. Two (2) day surveys and four (4) night surveys are recommended during the breeding season; one (1) day and one (1) night survey is recommended during the non-breeding season. Each survey must take place at least seven (7) days apart. At least one survey must be conducted prior to August 15th. The survey period must be over a minimum period of 6 weeks (i.e., the time between the first and last survey must be at least 6

[57] *Id.*
[58] DEIR, p. 4.4-95.
[59] Cashen Comments, p. 16.
[60] *Id.*, at 11.
[61] 11.

> weeks). Throughout the species' range, the non-breeding season is defined as between July 1 and September 30."[62]

It appears that only 3 surveys were conducted and no night surveys were conducted at all. Additionally, the CRLF survey was completed during a suboptimal drought conditions.[63] As a result, in Mr. Cashen's expert opinion, the full extent of CRLF occurrences across the Project and survey area was "likely underrepresented and could result in unmitigated impacts to the species."[64] 12.21

6. Western Pond Turtle

According to the *Biotic Report*,[65] protocol surveys for the western pond turtle ("WPT") were not conducted despite the existence of established protocols.[66] Instead, the detection of this species, along with other amphibian and reptile species, was based on casual observations while conducting CRLF, CTS, or other reconnaissance-level surveys.[67] As a result, Mr. Cashen concludes that the DEIR fails to establish the abundance and distribution of western pond turtles in the Project area, which could cause "severe consequences" for the conservation of the species.[68] 12.22

7. Swainson's Hawk

The DEIR states:

> Currently, Swainson's hawk, white-tailed kite, and northern harrier are not known to nest on the Solar Generating Facility Area or in the Access Road. Although the project site contains suitable foraging habitat for these species, none have been detected 12.23

[62] *Id*. at 13; USFWS, *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* 6 (2005), http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/crf_survey_guidance_aug2005.pdf.
[63] Cashen Comments, p. 13; Annual Climatological Summary (2013), National Climatic Data Center National Oceanic & Atmospheric Administration, http://www.ncdc.noaa.gov/cdo-web/.
[64] Cashen Comments, p. 13.
[65] DEIR, Appendix E1.
[66] Cashen Comments, p. 3; DEIR, Appendix E.1, Section 2.5. *See also* U. S. Geological Survey. 2006. USGS western pond turtle (*Emys marmorata*) visual survey protocol for the southcoast ecoregion. U. S. Geological Survey protocol. San Diego, CA.
[67] Cashen Comments, p. 13.
[68] *Id*., at 14.

> nesting or foraging on the project site. If any of the species occur on the site, it would be infrequently.[69]

Mr. Cashen found these statements to be misleading because, as stated above, no protocol-level surveys were conducted for Swainson's hawk nest sites, "which can be very difficult to locate."[70] The CDFW even sent a letter to the County indicating the need for protocol-level surveys in the Project area.[71] In fact, the *Biotic Report* recognized the existence of CDFW promulgated standards for locating nest sites, and it acknowledged surveys adhering to those standards have not been conducted for the Project.[72] This is an utter failure to establish accurate baseline information regarding the Swainson's hawk. 12.23

8. *Mountain Plover*

The DEIR states that "there are no CNDDB records for mountain plover within 20 miles of the BSA, but small flocks have been reported in the Cholame Valley as close as four miles south of the project site."[73] However, as Mr. Cashen points out, "the mountain plover is indicted to occur on the 1-mile radius line on the southern side of the Project area, as documented in Fig. 4.4-6 (CNDDB records) of the DEIR."[74] 12.24

9. *Northern Harrier*

The DEIR states that "there are no CNDDB records of northern harriers within 20 miles of the BSA, but they have been observed foraging within the project site. Due to ongoing grazing activities, the Project site and Access Road provide suitable foraging habitat, but suitable nesting habitat is absent."[75] However, Mr. Cashen states in his review, that "the Applicant's consultant did not conduct surveys for northern harrier nests on and around the Project area, nor where nest searches 12.25

[69] DEIR, 4.4-103.
[70] Cashen Comments, p. 69; CDFG. 2000 May 31. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee.
[71] *See* DEIR, Appendix A.
[72] DEIR, Appendix E1, pp. 90, 91.
[73] DEIR, p. 4.4-74.
[74] Cashen Comments, p. 10.
[75] DEIR, p. 4.4-74.

conducted for any other species except the golden eagle."[76] In addition, "[a]ccording to the Biotic Report, harriers are known to nest in Cholame Valley."[77] 12.25

10. Pronghorn

Mr. Cashen explains that "the past presence and abundance of pronghorn (*Antilocapra americana*) in Monterey County, California have long been established."[78] The DEIR states: "pronghorn and Tule elk have not been observed with the project site."[79] However, as Mr. Cashen points out, that statement appears to conflict with information on the Applicant's website, which states: "A herd of approximately 100 antelope have flourished on the [Jack] ranch, since their original introduction by Fish and Game on neighboring land."[80] Moreover, he states that "pronghorn have been observed within the access road corridor and reportedly in the southern end of the Project site.[81] Therefore, the DEIR is inaccurate and does not properly establish baseline conditions regarding the presence of pronghorn on the Project site. 12.26

B. The DEIR Fails to Adequately Describe the Existing Baseline to Determine the Potential for Hazards

The DEIR failed to accurately establish the existing environmental setting for hazards because it failed to rely on a Phase I Environmental Site Assessment ("ESA") at the Project site. According to Matt Hagemann and Anders Sutherland of SWAPE Consulting, a Phase I ESA is the customary due diligence investigation used by developers to establish the baseline setting for potential hazards at a project site.[82] However, instead of abiding by this industry standard, the DEIR makes assumptions that are not substantiated by the facts.[83] This failure resulted in the oversight of several potentially significant impacts. 12.27

[76] Cashen Comments, p. 10-11.
[77] *Id*; DEIR, Appendix E1, p. 97.
[78] Cashen Comments, p. 16.
[79] DEIR, p. 4.4-81.
[80] Hearst Ranch Website, http://www.hearstranch.com/about.
[81] Cashen Comments, p. 17.
[82] Letter from Matt Hagemann and Anders Sutherland to Laura Horton re: Draft Environmental Impact Report for the California Flats Solar Project, September 19, 2014 p. 1 (hereinafter, "Hagemann Comments"), **Attachment B**.
[83] *See* DEIR, Sec. 4.8.

First, as Mr. Hagemann and Mr. Sutherland found in their review of the DEIR, there are two oil and gas wells on the Project site.[84] The DEIR does not contain enough information to determine the methods by which these wells were abandoned. Mr. Hagemann and Mr. Sutherland explained that "poorly abandoned wells may act as conduits for contamination to move from the surface to deeper levels in the subsurface, including movement of surface contaminants to groundwater."[85] Construction near the wells could damage and expose the wells, creating hazards to the environment and people. Further research must be done to determine the exact location of these wells in relation to proposed construction and whether the wells were abandoned in conformance with current regulations. If the abandonment techniques cannot be determined or if the techniques used are outdated and unsafe, Mr. Hagemann and Mr. Sutherland recommend that the wells "should be re-abandoned to meet modern [] requirements."[86] 12.28

In addition to failing to identify oil and gas wells on the site, the DEIR does not adequately analyze the potential for pesticides in Project site soils or groundwater. The DEIR references Monterey County Agricultural Commissioner records but as Mr. Hagemann and Mr. Sutherland point out, the analysis is lacking sufficient detail to make a determination as to whether pesticides were used at the site.[87] This is especially important because approximately 38.7 acres of irrigated cropland are present at the site. According to Mr. Hagemann and Mr. Sutherland, the potential exists for worker exposure to hazardous pesticides "through inhalation and dermal contact with soil and dust that may be contaminated."[88] Mr. Hagemann and Mr. Sutherland conclude that the DEIR should be revised to include soil sampling and analysis for organochlorine pesticides and arsenic.[89] 12.29

In order to enable an analysis of the environmental setting and thus whether potentially significant impacts could exist, a Phase I ESA is necessary.[90] The County must determine if past uses on the Project site resulted in hazards that are actually present before approving the Project. Failure to assess the real conditions on the Project site may result in unanalyzed and unmitigated impacts to worker health and the environment. 12.30

[84] Hagemann Comments, pp. 2-3.
[85] *Id.*, at 3.
[86] *Id.*
[87] *Id.*
[88] *Id.*, at 4.
[89] *Id.*
[90] *Id.*, at 2.

V. THE DEIR LACKS SUBSTANTIAL EVIDENCE TO SUPPORT ITS CONCLUSIONS REGARDING THE PROJECT'S SIGNIFICANT IMPACTS AND FAILS TO INCORPORATE ALL FEASIBLE MITIGATION MEASURES NECESSARY TO REDUCE SUCH IMPACTS TO A LEVEL OF INSIGNIFICANCE

CEQA has two basic purposes, neither of which the DEIR satisfies. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project.[91] CEQA requires that an agency analyze potentially significant environmental impacts in an EIR.[92] The EIR should not rely on scientifically outdated information to assess the significance of impacts, and should result from "extensive research and information gathering," including consultation with state and federal agencies, local officials, and the interested public.[93] To be adequate, the EIR should evidence the lead agency's good faith effort at full disclosure.[94] Its purpose is to inform the public and responsible officials of the environmental consequences of their decisions before they are made. For this reason, the EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.[95] Thus, the EIR protects not only the environment but also informed self-government."[96] 12.31

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures.[97] The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to "identify ways that environmental damage can be avoided or significantly reduced."[98] If a project has a significant effect on the environment, the agency may approve the project only upon a finding that it has "eliminated or substantially lessened all significant effects on the environment where feasible," and that any unavoidable

[91] Cal. Code Regs., tit. 14, § 15002, subd. (a)(1) (hereinafter, "CEQA Guidelines").
[92] *See* Pub. Resources Code § 21000; CEQA Guidelines § 15002.
[93] *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm.* (2001) 91 Cal. App.4th 1344, 1367 and Schaeffer *Land Trust v. San Jose City Council*, 215 Cal.App.3d 612, 620.
[94] CEQA Guidelines § 15151; *see also Laurel Heights I* (1998) 47 Cal.3d 376, 406.
[95] *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.
[96] *Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 564 (citations omitted).
[97] CEQA Guidelines § 15002(a)(2)-(3); *Berkeley Keep Jets Over the Bay Com.,* 91 Cal.App.4th at 1354.
[98] CEQA Guidelines § 15002 subd. (a)(2).

significant effects on the environment are "acceptable due to overriding concerns" specified in CEQA section 21081.[99]

The DEIR fails to provide substantial evidence to support its conclusions regarding the Project's significant impacts. The DEIR also fails to propose feasible measures to reduce significant impacts that are identified in the DEIR, including the Project's significant impacts on air quality and biological resources. As a result, the DEIR fails to inform decision makers and the public of the Project's potentially significant environmental effects and to reduce damage to the environment before they occur. An EIR may conclude that impacts are insignificant only after providing an adequate analysis of the magnitude of the impacts and the degree to which they will be mitigated. Thus, if the lead agency, here Monterey County, fails to investigate a potential impact, its finding of insignificance simply will not withstand legal scrutiny.[100] 12.31

A. The DEIR Fails to Adequately Analyze and Mitigate the Project's Impacts on Biological Resources

The DEIR's treatment of potential significant impacts to biological resources falls exceptionally short of complying with CEQA's mandate to analyze the Project's impacts on the environment.[101] The County lacks substantial evidence to support a finding regarding the Project's impacts on biological resources. The DEIR relies on the *Biotic Report*, *Biological Resources Impact Analysis* and Addendum, and other documents prepared by the Applicant's consultants H.T. Harvey & Associates.[102] However, there are several deficiencies in the Applicant's reports and the DEIR's assessment of the Project's impacts on biological resources, and in Mr. Cashen's expert opinion, "the DEIR fails to disclose, analyze, and mitigate potentially significant impacts to all special-status wildlife species."[103] Because Mr. Cashen based his opinion on facts specific to the proposed Project, his opinion constitutes substantial evidence that the Project may cause unmitigated significant impacts to biological resources. [104] 12.32

[99] CEQA Guidelines § 15092, subd. (b)(2)(A)-(B).
[100] Pub. Res. Code § 21081.6(b); Guidelines § 15126.4(a)(2).
[101] *See* Pub. Res. Code § 21061.
[102] DEIR, p. 4.4-1.
[103] Cashen Comments, p. 2.
[104] CEQA Guidelines, §15384, subd.(b).

Complete surveys of the current Project area are essential and must be conducted before the Project's potentially significant impacts to biological resources can be assessed. The limited surveys that were conducted by the Applicant's consultants, as discussed above, do not constitute substantial evidence. Substantial evidence is defined to include "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts."[105] The Applicant's technical documentation excludes information, including details regarding the survey methods, that is vital for the public to make an informed assessment.[106] This basic information is fundamental and necessary to ascertain the validity of the Applicant's documentation. In addition, as Mr. Cashen stated in his comments, the DEIR is deficient because it completely ignores several of the species on CDFW's *Special Animals* list, including, but not limited to: Cooper's hawk, ferruginous hawk, horned lark, prairie falcon, Lewis's woodpecker, yellow-billed magpie, and Lawrence's goldfinch.[107] Mr. Cashen identified many impacts on biological resources in his comments, some of which are discussed below. Any remaining issues detailed in Mr. Cashen's comments are incorporated herein by reference.

12.32

12.33

1. <u>Proposed Mitigation Measures for Significant Impacts to Sensitive Species are Insufficient and Vague</u>

According to Mr. Cashen, the proposed mitigation measures for sensitive species are inadequate, and thus "the County has not ensured Project impacts to sensitive biological resource would be reduced to a less-than-significant level."[108]

Two main components of the County's proposed mitigation are: (1) Nested Compensatory Mitigation; and (2) a Habitat Mitigation and Monitoring Plan ("HMMP"). Mr. Cashen suggests that "the County fails to identify critical components of the compensatory mitigation package and HMMP" and "[i]nstead, it defers that responsibility back onto itself (as the body responsible for approving anything proposed by the Applicant)—after the CEQA review process terminates."[109] This precludes the public, resource agencies, and scientific community from being able to submit informed comments on the adequacy of the actual mitigation.

12.34

Mr. Cashen states that these mitigation measures fail to establish:

[105] CEQA Guidelines § 15384.
[106] *See* Cashen Comments.
[107] *Id.*, at 3.
[108] *Id.*, at 31.
[109] *Id.*, at 31.

> (a) the location of potential mitigation sites, the status of the target species at those sites, and the feasibility of acquiring sites in the vicinity of the Project; (b) success standards for the proposed mitigation measures, and a definitive enforcement mechanism that ensures those standards are met; (c) the contingency or remedial action measures that will triggered if success standards are not achieved; (d) the measures that will be implemented to ensure the long-term protection and management of the target species at the mitigation sites; and (e) the required monitoring program, including the monitoring techniques, effort, and frequency. [110]

12.34

Because the DEIR lacks these fundamental details, Mr. Cashen concludes that the County has not ensured Project impacts to sensitive biological resource would be reduced to a less-than-significant level.[111]

Regarding the CTS and CRLF relocation sites,[112] measure B-1(w), it is unclear from the DEIR if these relocation sites have or will have sufficient acreage and habitat quality and/or are available for relocation. Consequently, it is not possible to determine if this vague mitigation measure would be effective for CTS and CRLF.[113] Additionally, in the discussion on CTS daily pre-activity surveys, measure B-1(bb), the DEIR states that "any individual detected during these pre-activity surveys shall be moved to a designated relocation sites identified under B-1(p)."[114] However, B-1(p) does not specifically identify and document the actual location(s) and habitat quality of designated relocation sites, but instead discusses wildlife-friendly fence design.[115] Similarly, measure B-1(y), Construction Timing, Preconstruction Surveys and Avoidance Measures for California Red-Legged Frog, states that "any individual detected during these pre-activity surveys shall be moved to a designated relocation sites identified under B-1(p)."[116] Again, B-1(p) does not specifically identify and document the actual location and habitat quality of designated relocation sites, but

12.35

[110] *Id.*, at 31.
[111] *Id.*, at 31.
[112] DEIR, 4.4-144.
[113] Cashen Comments, p. 37.
[114] DEIR, p. 4.4-148.
[115] DEIR, p. 4.4-138.
[116] DEIR, p. 4.4-145.

instead discusses wildlife-friendly fence design. The County must revise the DEIR to address these errors and recirculate the DEIR for public review. Therefore, proposed mitigation measures to reduce significant impacts to sensitive species are insufficient and vague. 12.35

2. Potential Significant Impacts on Burrowing Owls were Not Properly Identified and Mitigated

The DEIR states that "[i]f suitable burrows for burrowing owls are identified during preconstruction surveys, mitigation measure B-1(m) shall be implemented."[117] The Avoidance and Mitigation Efforts in B-1(m) are discussed as, "[t]he appropriateness of using reduced buffer distances or burrow-specific buffer distances shall be established on a case-by-case basis by a qualified ornithologist who may consult with CDFW…If no suitable alternative natural burrows are available for the owls, then, for each owl that is evicted, at least two artificial burrows shall be installed in suitable nearby habitat areas."[118] 12.36

Mr. Cashen found that there was no discussion on long-term maintenance of the artificial burrows and that the DEIR did not "provide measures to indicate that successful occupation of the artificial burrows by owls will be determined or is required. These mitigation efforts, therefore, are incomplete and do not qualify as acceptable measures to mitigate Project impacts on this special-status bird."[119]

3. Failure to Adequately Mitigate Impacts to the San Joaquin Kit Fox

The DEIR states that the San Joaquin kit fox was detected on the Project site.[120] In discussing the use of the Project area as a wildlife movement corridor for these species, it states that "[g]iven the remote location of the project site, the low level of development in the vicinity, the relatively low degree of disturbance on the site and the presence of natural habitats on and adjacent to the project site, it is highly likely that wildlife move freely through the site; however the site is unlikely to serve as a distinct or important movement corridor or habitat linkage for any 12.37

[117] DEIR, p. 4.4-134.
[118] DEIR, p. 4.4-136.
[119] Cashen Comments, p. 36.
[120] DEIR, p. 4.4-76.

protected or managed species."[121] However, Mr. Cashen's review suggests that there is no substantial evidence to support this conclusion.[122] Given that the Project area "represents the northern target zone for kit fox connectivity through the Carrizo Plain" and that the kit fox occurs in and around the Project area, a conservative conclusion offered by Mr. Cashen would be that the Project area is included within an established population of the kit fox; and/or the Project area is serving as a frequently used movement corridor.[123] In this case, wildlife corridor modeling is essential for an adequate evaluation of the Project's significant impacts on wildlife movement through the 3,000-acre Project area. 12.37

In addition, kit fox den avoidance measures described in the DEIR are inadequate.[124] Mr. Cashen states that "[o]ne of the stated prescriptions is the implementation of buffers of 100-200 feet to avoid dens including natal dens, with up to 500 feet for natal dens during construction. However, these buffers are severely inadequate because, even during the pup-rearing season, nightly movements average greater than 6 miles."[125]

4. <u>Failure to Adequately Analyze and Mitigate Impacts to Avian Species</u>

Avian species impacted by the Project include the golden eagle and the Swainson's hawk. The golden eagle is protected under both state and federal law and the Project site provides nesting and foraging habitat for golden eagles.[126] The DEIR provides the following conclusion pertaining to Project impacts to golden eagles: 12.38

- "[p]roject development would permanently affect up to 2,188 acres of golden eagle foraging habitat within the project site…This could potentially result in reduced reproductive output and success, increased competition between territories, or abandonment of territories or nests if available foraging habitat in the region proved limiting."[127]
- "[o]ther construction-related disturbances could result, including activities and noise associated with earth moving, grading, vegetation removal, and

[121] DEIR, p. 4.4-81.
[122] Cashen Comments, pp. 14, 38.
[123] *Id.*, at 14.
[124] *Id.* at 38; DEIR, p. 4.4-126-133.
[125] Cashen Comments, p. 38.
[126] *Id.*, at 9.
[127] DEIR, p. 4.4-98.

installation of Project infrastructure. These disturbances may alter foraging behavior of golden eagles nesting near the site, which could lead to reduced productivity and nestling survival."[128]

- "[a]lso, the increased traffic may disrupt eagle foraging and movement at the project site, again potentially reducing eagle productivity and survival."[129]

12.38

Each of these impacts would constitute a take, as defined by the Federal Bald and Golden Eagle Protection Act ("Eagle Act"). As a result, the Project will require an incidental take permit from the USFWS. Mr. Cashen concludes that the DEIR fails to assess the Project's compliance with the Eagle Act, or establish a mechanism that ensures the Applicant consults with the USFWS regarding the need for an eagle take permit.[130] As a result, "the Project would have a significant and unmitigated impact to golden eagles."[131] In addition, as explained above, the DEIR does not require protocol-level surveys for the Swainson's hawk prior to Project construction, and as a result, Mr. Cashen believes that Project impacts to the Swainson's hawk remain potentially significant and unmitigated.[132]

12.39

In addition to direct impacts to special status species, the DEIR fails to adequately address the potential for avian collisions. Mr. Cashen states that at PV facilities, birds appear to mistake the broad reflective surfaces of the solar arrays for water, trees, and other attractive habitat.[133] When this occurs, Mr. Cashen states that "the birds become susceptible to mortality by: (a) colliding with the solar arrays; or (b) becoming stranded (often injured) on a substrate from which they cannot take flight, thereby becoming susceptible to predation and starvation."[134]

12.40

The DEIR's analysis of the collision risk to birds is limited to the following:

> Solar facilities also present risk for bird collisions with solar panels. Birds migrating at night or moving between the perennial and ephemeral streams on the project site or the adjacent stock ponds would also be at an increased risk of collision with the solar panels as

[128] DEIR, p. 4.4-98.
[129] DEIR, p. 4.4-99.
[130] Cashen Comments, p. 9.
[131] *Id.*
[132] *Id.*, at 10.
[133] *Id.*, at 30; *See* **Attachment D**.
[134] *Id.*

> the panels might be mistaken for open sky or water. Based on the known distribution of the species in the project area, observations made during surveys, and fatality results emerging from other solar sites in California (Western EcoSystems Technology, Inc. 2014), some collision mortality is anticipated to occur.[135]

As Mr. Cashen points out, "the collision risk posed by the Project's solar arrays *is not* limited to birds migrating at night or birds moving between water features."[136] A recent study completed by the National Fish and Wildlife Forensics Laboratory (2014) reported:

> "solar facilities appear to represent 'equal-opportunity' hazards for the bird species that encounter them. The remains of 71 species were identified [at three solar facilities], representing a broad range of ecological types. In body size, these ranged from hummingbirds to pelicans; in ecological type from strictly aerial feeders (swallows) to strictly aquatic feeders (grebes) to ground feeders (roadrunners) to raptors (hawks and owls). The species identified were equally divided among resident and non-resident species, and nocturnal as well as diurnal species were represented."[137]

12.40

Mr. Cashen believes that the level of bird mortality due to collisions cannot be accurately estimated because the "Applicant's consultant did not conduct any surveys to assess avian abundance in the Project area."[138] Without a defensible, quantitative estimate of likely mortality, the County does not have the basis to defend its conclusion that avian mortalities would be mitigated to a less-than-significant level.[139] Moreover, the DEIR does not contain any specific measures to mitigate avian collisions with the Project's solar arrays. As a result, Mr. Cashen concludes that "the Project would have an unmitigated significant impact to special-status bird species, including species protected by Fish and Game Code and/or the Migratory Bird Treaty Act."[140] Therefore, the analysis and mitigation proposals in the DEIR are

[135] DEIR, p. 4.4-106.
[136] *Id.*, at 30.
[137] Kagan RA, TC Viner, PW Trail, EO Espinoza. 2014. *Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis*. National Fish and Wildlife Forensics Laboratory. 28.
[138] DEIR, Appendix E1, p. 17.
[139] DEIR, p. 4.4-106.
[140] Cashen Comments, p. 31.

inadequate to address predicted impacts to avian species, and the DEIR must be revised. 12.40

5. Failure to Provide a Discussion of the Impacts Associated with Soil Stabilization on Biological Resources.

The DEIR refers to the use of soil stabilizers, including chemicals, in several areas.[141] These chemicals have the potential to cause adverse impacts to biological resources. The soil stabilizers are applied over the ground surface, and vegetation or fauna on the site will come into direct contact with the chemical stabilizers. The DEIR is silent as to any of the potentially significant environmental impacts from the use of chemicals on the site. Absent additional information, including the concentration, and range of frequency of use of the soil stabilizers, comprehensive impacts analysis is barred and the DEIR is legally indefensible. 12.41

B. The DEIR Fails to Properly Evaluate Significant Impacts on Water Resources and the Project Violates the County Code

CEQA requires that an EIR include, among other things, a detailed statement setting forth "[a]ll significant effects on the environment of the proposed project" and "[m]itigation measures proposed to minimize significant effects on the environment."[142] "For each significant effect, the EIR must identify specific mitigation measures; where several potential mitigation measures are available, each should be discussed separately, and the reasons for choosing one over the others should be stated."[143] 12.42

The DEIR fails to properly evaluate the significance of impacts on water resources, namely potential flooding and erosion in the Project area. The DEIR identifies several "flood avoidance measures" including: 12.43

- No modules shall be placed in areas where the product of the flow depth and flow velocity is greater than 9 feet per second (corresponding to a hazard level 3, as defined in the *Preliminary Drainage Report*) during a

[141] DEIR, pp. 4.3-3, 4.3-7, 4.3-33, 4.3-34.
[142] Pub. Resources Code, § 21100, subd. (b); see also Guidelines, § 15126 ["Significant Environmental Effects of the Proposed Project" and "The Mitigation Measures Proposed to Minimize the Significant Effects" shall be discussed "preferably in separate sections or paragraphs of the EIR."].
[143] Sacramento Old City Assn. v. City Council (1991) 229 Cal.App.3d 1011, 1027; *Lotus v. Department of Transporation, et al.* (2014) 223 Cal.App.4th 645,653.

100-year, 24-hour storm event, based on the results of a design-level drainage analysis;

- No transformers, substations, or inverters shall be placed in areas where the flow depth exceeds 2 feet (corresponding to a hazard level 3, as defined in the *Preliminary Drainage Report*) during a 100-year, 24-hour storm event; and
- Solar modules, transformers, substations, or inverters constructed in areas where any inundation is expected to occur should be placed a minimum of 1 foot above the 100- year water surface elevation.[144]

The DEIR states that a design-level drainage analysis would be prepared by the Applicant, based on the *Preliminary Drainage Report*,[145] and would incorporate the above measures and further recommendations, ensuring that "proposed facilities avoid higher flow rates."[146] The DEIR further implies that following the those measures and recommendations in the future drainage analysis would also ensure compliance with Chapter 16.16 of the Monterey County Code, which prohibits development within 50 feet from the top of the bank of a watercourse.[147] The County clearly admits that there will be "some improvements constructed within 50 feet from the top of the bank of [] drainages."[148] The County insists that the Project meet the criteria for the exception in the law which requires that: 12.43

1. The proposed development will not significantly reduce the capacity of existing rivers or watercourses or otherwise adversely affect any other properties by increasing stream velocities or depths, or diverting the flow; and
2. The proposed new development will be safe from flow related erosion and will not cause flow related erosion hazards or otherwise aggravate flow related erosion hazards.[149]

There are several problems with the DEIR's analysis. First, the DEIR identifies this impact as less than significant based on its assurances that it will incorporate those measures and other unknown recommendations.[150] In *Lotus v.*

[144] DEIR, p. 4.9-26.
[145] DEIR, Appendix J1.
[146] DEIR, p. 4.9-3.
[147] MCC 16.16.050 (K).
[148] DEIR, p. 4.9-26.
[149] MCC 16.16.050 (K).
[150] DEIR, p. 4.9-27.

Department of Transportation, an EIR approved by CalTrans contained several measures "[t]o help minimize potential stress on the redwood trees" during construction of a highway.[151] Although those measures were clearly separate mitigation, the project proponents considered them "part of the project," and the EIR concluded that because of the planned implementation of those measures, no significant impacts were expected.[152] However, the Appellate Court found that because the EIR had "compress[ed] the analysis of impacts and mitigation measures into a single issue, the EIR disregard[ed] the requirements of CEQA."[153] The Court continued, stating "[a]bsent a determination regarding the significance of the impacts… it is impossible to determine whether mitigation measures are required or to evaluate whether other more effective measures than those proposed should be considered."[154]

Similarly, the DEIR for this Project states that "[c]ompliance with the recommendations contained in the design-level analysis would ensure that impacts are less than significant." Those recommendations, including specific "flood risk avoidance measures" outlined in the DEIR, are comparable to the risk avoidance measures at issue in *Lotus*.[155] The DEIR must separately identify and analyze the significance of the impacts to water resources before proposing mitigation measures. The clear violation of MCC 16.16 by developing with 50 feet of the top of a watercourse must be evaluated as a potential significant impact to be avoided or mitigated. If the County's analysis includes mitigation that relies solely on compliance with those measures, then it should characterize such compliance as mitigation for the significant impact, rather than treating the impact as less than significant and claiming "[n]o mitigation is required."[156] 12.43

Nevertheless, even if the County treats those measures and compliance with MCC 16.16 as mitigation, those measures fail to reduce potential impacts to less than significant levels. According to hydrology expert Dr. Tom Myers, the flow estimates relied upon in the *Preliminary Drainage Report* and DEIR are inaccurate and 12.44

[151] *Lotus,* 223 Cal.App.4th at 650.
[152] *Id*., at 651.
[153] *Id*., at 656.
[154] *Id*.
[155] DEIR, p. 4.9-26.
[156] *Id*.

flooding and erosion potential is "significantly underestimate[d]."[157] Therefore, the County has failed to show the impact is less than significant or could be reduced to a less than significant level using the measures outlined in the DEIR.

Dr. Myers concludes that because flow velocities and potential erosion may have been "significantly underestimated," the DEIR fails to provide substantial evidence that Impact HYD-5 is less than significant.[158] Indeed the DEIR should be revised to evaluate a potentially significant impact based on accurate calculations, and to implement proper mitigation measures. As Dr. Myers points out, the "flood avoidance measures"[159] discussed in the DEIR are not based on accurate calculations and therefore do provide substantial evidence that they would reduce the impact.[160] As it stands now, the analysis in the DEIR "completely neglects that ephemeral streams with occasional high flows have significant erosion potential."[161] In addition, the level of mapping used in the DEIR makes it "simply impossible to define these zones with sufficient accuracy to keep the modules out of them."[162] Updated calculations and sufficient information could "significantly change the area available for development," which would require new hazard mapping for determining appropriate areas for placing the modules.[163] The DEIR has not provided substantial evidence that Impact HYD-5 is less than significant and has failed to provide accurate calculations for the public to make an informed assessment. 12.44

C. The DEIR Fails to Adequately Analyze and Mitigate Significant Air Quality Impacts

An EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.[164] A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process.[165] The air quality section of the DEIR is generally inadequate because it fails to disclose 12.45

[157] Letter from Dr. Tom Myers to Laura Horton re: Draft Environmental Impact Report for the California Flats Solar Project, September 16, 2014 p. 3-4 (hereinafter, "Myers Comments"), **Attachment C**.
[158] *Id.*, at 4.
[159] DEIR, p. 4.9-26.
[160] Myers Comments, p. 4.
[161] *Id.,* at 6.
[162] *Id.*, at 6.
[163] *Id.*, at 4, 6.
[164] *Association of Irritated Residents*, 107 Cal.App.4th at 1390.
[165] *Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners* (1993) 18 Cal.App.4th 729, 748.

information necessary to evaluate the significance of the Project's construction emissions. 12.45

1. Inadequate Air Quality Mitigation Measures

NOX and PM10 emissions during construction will exceed significance thresholds for air quality. The DEIR concludes that even with implementation of proposed mitigation measures, the Project's construction emissions would still result in significant impacts to air quality, but that "[n]o other feasible measures are available…"[166] This conclusion is patently wrong and unsubstantiated. A project must mitigate impacts to the greatest extent feasible under CEQA and proposed mitigation measures must be "fully enforceable."[167] The DEIR's attempt to scrape by on the bare minimum violates CEQA's mitigation requirements[168] and produces a document that is inadequate and misleading. The County must analyze these impacts and propose all feasible mitigation measures to reduce the Project's significant air quality and public health impacts in a revised DEIR. 12.46

In their review of proposed mitigation measures, Mr. Hagemann and Mr. Sutherland provide recommendations for several additional measures that should be included in a revised DEIR. For example, mitigation for NOx that has been proposed in other recent CEQA documents[169] may include reduction of exhaust emissions during construction through "the use of diesel haul trucks (e.g., material delivery trucks and soil import/export) that meet U.S. Environmental Protection Agency 2007 model year NOx emissions requirements."[170] In addition, Mr. Hagemann points out that off-road construction equipment for the Project will meet Tier 3 engine technology.[171] However, Tier 4 standards, which EPA is currently phasing in, require that "emissions of PM and NOx be further reduced by about 90% through the use of control technologies including advanced exhaust gas after treatment."[172]

[166] DEIR, p. 4.3-1.
[167] Pub. Res. Code § 21081.6(b); Guidelines § 15126.4(a)(2).
[168] *See* CEQA Guidelines, § 15126.4.
[169] September 2013 Draft Environmental Impact Report Fremont Valley Preservation Project, http://www.co.kern.ca.us/planning/pdfs/eirs/fremont_solar/fremont_solar_deir_vol1.pdf, p. 4.3-33.
[170] Hagemann comments, p. 5.
[171] *Id.*, at 5.
[172] *Id.*, at 6.

Mr. Hagemann and Mr. Sutherland also identify further mitigation measures for reduction of PM10, in addition to using Tier 4 technology, that have been incorporated into renewable energy projects in other air districts.[173] These include:

- Prohibit visible dust from leaving the Project site property line during all construction activities, including trenching and pile-driving;
- Conduct simultaneous sampling (upwind and downwind of construction activities) with air sampling equipment to ensure that PM10 levels do not exceed 50 micrograms per cubic meter. This measure would be consistent with other California air district's rule (see for example, South Coast Air Quality Management District[174] and El Dorado County Air Pollution Control District; 12.46
- Prevent "track-out" of soil from construction equipment more than 25 feet onto paved roads; and
- Apply water once per hour to unpaved roads during high wind conditions.[175]

Contrary to the DEIR's assertions, additional mitigation for air quality impacts is available and must be evaluated. The DEIR failed to identify these mitigation measures and thus failed to fulfill CEQA's requirement that significant impacts be mitigated to the greatest extent possible, particularly when an impact has been identified as unavoidable.

2. Failure to Evaluate Impacts from Emissions of Diesel Particulate Matter

As discussed in these comments, the Project will result in significant emissions of harmful air pollutants, including diesel particulate matter emissions, during Project construction and decommissioning. The majority of the Project site is located within the North Central Coast Air Basin ("NCCAB"), which includes Monterey County, San Benito County, and Santa Cruz County. The NCCAB is under the jurisdiction of the Monterey Bay Unified Air Pollution Control District ("MBUAPC"). The southern portion of the private access road is in the South Central Coast Air Basin ("SCCAB"), which includes San Luis Obispo County, Santa Barbara County, 12.47

[173] *Id*; AVAQMD Rule 403(D), *Dust Control Plan*, http://www.avaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=867.
[174] Rule 403. Fugitive Dust, p.6, http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4, p. 6
[175] AVAQMD Rule 403(C), *see* footnote 11, *supra*.

and Ventura County. The SCCAB is under the jurisdiction of the San Luis Obispo County Air Pollution Control District ("SLOAPCD"). The NCCAB and SCCAB are in "nonattainment" for state ozone and particulate matter less than 10 microns ("PM10") standards.[176]

During construction, numerous diesel-powered trucks are required to deliver supplies. Emissions from construction related activities, specifically PM10, are associated with adverse health impacts, such as cancer due to the increased intensity of emissions (during both construction and decommissioning) of diesel particulate matter, a known carcinogen.[177] According to Mr. Hagemann and Mr. Sutherland, the DEIR failed to adequately evaluate the potential for significant air quality impacts resulting from diesel particulate matter ("DPM") emissions and fails to fulfill the CEQA requirements set forth by MBUAPCD and the SLOCAPCD with regards to DPM.[178]

12.47

As explained by Mr. Hagemann and Mr. Sutherland, the estimated DPM for Project construction, averaging to about 0.56 tons/quarter, exceeds the SLOCAPCD Tier 2 threshold.[179] This is a significant impact that was not disclosed or mitigated in the DEIR. Furthermore, Mr. Hagemann and Mr. Sutherland expressed concerns over the County's failure to adequately examine off-site concentrations of DPM "that will be generated by Project construction, despite claiming that the CEQA guidelines for both air districts were adhered to in preparing the DEIR and supplemental air quality appendices."[180] Mr. Hagemann and Mr. Sutherland highlight the MBUAPCD guidelines, which state that, "impact analyses for sources of [Toxic Air Contaminents ("TACs)] should include project level and cumulative impacts,"[181] and he suggests that a "revised DEIR and supplemental air quality assessment should include a Project-level analysis of DPM that is expected to be generated by construction and any necessary mitigation measures."[182] Absent this information, the County cannot conclude that the Project's public health impacts have been fully assed and properly mitigated.

[176] DEIR, p. 4.3-12 – 4.3-13.
[177] Hagemann Comments, p. 11.
[178] *Id.*, at 7.
[179] *Id.*, at 8.
[180] *Id.*
[181] *Id.*
[182] *Id.*

Mr. Hagemann and Mr. Sutherland provide their own screening-level health risk assessment for a child living 1,000 feet away from the Project boundary during construction. The experts conclude that "air quality impacts from construction-related DPM have not been adequately or appropriately evaluated or mitigated" in the DEIR. "DPM associated with Project construction may present an significant impact on air quality and warrants further investigation prior to the Project's approval."[183] Therefore, the DEIR is wholly inadequate and must be revised and recirculated based on accurate calculations and more in-depth analysis, or the County risks ignoring significant air quality impacts. 12.47

3. *Failure to Consider Impacts from Continuous Application of Dust Suppressants*

The DEIR utterly fails to analyze the impacts of dust suppressants. Chemical properties, particularly toxic contaminants, can vary significantly depending on the type of stabilizer (and manufacturer). United States Environmental Protection Agency ("EPA") experts have found that the use of dust suppressants can

> "affect air quality characteristics' in a number of ways. In arid areas, for example, the use of water may add moisture to air fostering the proliferation of microorganisms. Dust suppressants that adhere to soil particles can be re-entrained into the air with strong winds, potentially adding contaminants to the air in addition to particulate matter. It is noteworthy that dust suppressants have little efficacy at suppressing small respirable dust that have the potential to be inhaled directly into lung parenchyma and cause lung disease."[184]

12.48

Furthermore, EPA found that dust suppressants "could be potentially harmful since smaller dust particles (less than 10mm) can be inhaled" and that they may contain "volatile organic compounds in the products that may be dispersed into the air when the product is applied."[185]

[183] *Id.*, at 11.
[184] Environmental Protection Agency, *Potential Environmental Impacts of Dust Suppressants: "Avoiding Another Times Beach"* 16 (2004).
[185] *Id.*

With the knowledge that dust suppressants carry known impacts to air quality and human health, the DEIR neglects to make available any details related to potentially existing soil contamination, and the method of application, type of chemical stabilizer, concentration, combination, range or frequency of the proposed use of soil stabilizers. The failure to provide specifics is notable because each type of stabilizer has different effects on the environment; the effectiveness of the DEIR's proposed mitigation is thereby thwarted. 12.48

The County must also assess potentially significant impacts associated with the use of dust suppressants and soil stabilizers, such as from the change in volume, rate, and timing of runoff from the Project site. The DEIR should use a range including a reasonably forseeable worst-case scenario alternative to evaluate the actual impacts of the soil stabilization. The exclusion of such an assessment prohibits the DEIR from implementing necessary mitigation measures to reduce significant impacts. The County must cure this lack of analysis in a revised DEIR.

D. The DEIR Fails to Adequately Analyze the Project's Impacts on Agricultural Resources

For the purpose of a significance determination under CEQA, the lead agency is required to consider a project's direct and reasonably foreseeable indirect environmental impacts.[186] In particular, CEQA Guidelines sections 15064(d)(2)-(3) provide: 12.49

> An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.
>
> An indirect physical change is to be considered only if that change is a reasonably foreseeable impact, which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable.

According to the DEIR, the solar generating facility area, the northern half of the Project access road, and the majority of the utility corridor are comprised of 12.50

[186]CEQA Guidelines § 15064 subd. (d).

Grazing Land; the utility corridor contains both Prime Farmland and Unique Farmland, and a portion of the existing private access road traverses through an area designated as Other Land.[187] The Project site will "temporarily" convert 38.6 acres of Prime Farmland and 0.1 acres of Unique Farmland.[188] The County admits that the Project will result in two types of impacts: direct impacts in the form of temporary loss of land within the project sites' boundaries for agricultural use, as well as indirect impacts on adjacent agricultural use "due to temporary construction-related effects."[189] 12.50

However, the DEIR concludes that both impacts will be less than significant, in part because of the temporary nature of the impacts.[190] The DEIR states that "[t]emporary construction-related impacts would not permanently impact existing agricultural use of the site" and that the "property owner could resume agricultural production on the site consistent with existing operations once the construction of utility improvements is complete. All impacts would be temporary in nature and no permanent loss of agricultural production would occur."[191] The DEIR also claims that measures included as part of the Project enable the County to find that impacts are less than significant. The DEIR is legally insufficient for three reasons.

First, temporary impacts alone can be significant. The conclusion that impacts to agricultural lands will be insignificant or temporary cannot be squared with the Monterey County General Plan's prohibition on "land uses that would interfere with routine and on-going agricultural operations on Farmlands designated Prime Farmland, Unique Farmland."[192] There is no support for the claim that because a significant impact and clear violation of local law is temporary, that it should be ignored.

Second, the DEIR vaguely states that other improvements within the utility corridor, apart from the agricultural plot, "would be permanent" but that use of the agricultural portion could resume after construction.[193] The DEIR acknowledges that construction impacts could "potentially result in temporary disturbances to adjacent

[187] DEIR, p. 4.2-3.
[188] DEIR, p. 4.2-8.
[189] DEIR, p. 4.2-1.
[190] *Id*.
[191] DEIR, p. 4.2-8.
[192] DEIR, p. 4.2-5.
[193] DEIR, p. 4.2-8.

grazing activities."[194] However, the DEIR does not evaluate permanent indirect impacts in relation to the surrounding agricultural use.

Third, the DEIR's conclusion regarding agricultural resources suffers from the same legal deficiency as its conclusion regarding water resources. The DEIR does not properly evaluate significant impacts to adjacent agricultural lands because it relies on mitigation measures that are mischaracterized as being "part of the project." [195] The DEIR lists potential measures to "minimize the extent" of those impacts, which includes other mitigation measures found throughout the DEIR.[196] Those measures include "the implementation of Best Management Practices (BMPs) during project construction, including installing mud shakers and/or rumble strips to limit the transport of invasive species, implementing applicable SWPPP and erosion control measures, implementing a dust control plan to minimize fugitive dust emissions, developing a hazardous materials response plan, and implementing a post-construction restoration and revegetation plan." As with the faulty evaluation of flooding and erosion discussed above, the DEIR concludes that clear agricultural impacts are less than significant because of the incorporation of these measures, without analyzing the measures as mitigation specifically crafted for the impact on agricultural resources. 12.50

The DEIR disregards potential significant impacts to agricultural lands within the Project site because of misguided reliance on the "temporary" aspect of construction. In addition, the DEIR does not properly evaluate significant impacts to adjacent agricultural lands because it relies on mitigation measures that are mischaracterized as being "part of the project" [197] or are mitigation measures intended for other significant impacts. For these reasons, the conclusions in the DEIR lack necessary substantial evidence and the County's analysis of the Project's impacts on agricultural resources must be revised.

E. The DEIR Fails to Adequately Analyze and Mitigate Significant Impacts Related to Traffic

As the California Supreme Court has observed, "[t]he EIR's function is to ensure that government officials who decide to build or approve a project do so with a 12.51

[194] DEIR, p. 4.2-10.
[195] *Lotus*, 223 Cal.App.4th at 656.
[196] DEIR, p. 4.2-10.
[197] *Lotus*, 233 Cal.App.4th at 656.

full understanding of the environmental consequences and, equally important, that the public is assured those consequences have been taken into account." [198] In order for an EIR to meet those goals, it must "present information in such a manner that the foreseeable impacts of pursuing the project can actually be understood and weighed, and the public must be given an adequate opportunity to comment on that presentation before the decision to go forward is made.[199] Furthermore, California courts have found that an EIR is inadequate if "[t]he success or failure of mitigation efforts . . . may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review within the EIR."[200]

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Here, the DEIR did not properly evaluate significant impacts related to traffic nor did it formulate clear and enforceable mitigation measures to reduce those impacts. For example, the Project will admittedly create significant and unavoidable impacts due to the amount of traffic to be generated during construction and the resulting hazards that will be created.[201] The areas in question already operate at an unacceptable level for traffic and accident rates are currently more than two times the statewide average.[202] Project generated traffic during the operational phase would add an additional 20 trips per day to this roadway segment, resulting in a significant impact to roadway operations based on Caltrans significance thresholds. The County admits that the impacts will remain significant and unavoidable until the completion of a Caltrans road widening project in the area. However, there is no clear timeline for the completion of that project, and it will likely not be completed until well after the construction phase is over, according to the little information provided in the DEIR.[203] There is no indication that the County has attempted to mitigate these impacts through alternative means.

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In addition, the County failed to adequately address and mitigate significant impacts in relation to Impact T-7.[204] The County attempts to reduce traffic by developing park-and-ride lots away from the Project site and using employee shuttles

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[198] *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 449-450 (Vineyard Area Citizens; *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 80.
[199] *Id*.
[200] *San Joaquin Raptor*, 149 Cal.App.4th at 670; *Communities*, 184 Cal.App.4th at 92.
[201] DEIR, p. 4.13-2 – 4.13-2.
[202] *Id*.
[203] DEIR, p. 4.13-20 ("…the segment from West Center Drive through SR 41 and the segment immediately east of SR 41 are not anticipated to be constructed *until 2018*…") (emphasis added).
[204] DEIR, p. 4.13-25.

for 95% of the workers.[205] However, the DEIR does not provide an analysis of the potential impacts resulting from the development of the park-and-ride lots, even though it acknowledges that "there is the potential for adverse impacts to occur in several issue areas including but not limited to aesthetics, biological resources, water quality and hydrology, noise and transportation and traffic" and that "impacts would therefore be potentially significant."[206] The mitigation for this impact provided in the DEIR is vague and unenforceable. It states:

> Any proposed park and ride facilities shall be sited in already developed parking lots designed to accommodate large numbers of vehicles (e.g. shopping center locations). All vehicles shall be required to park in designated parking spaces. These lots shall be currently improved and have existing stormwater drainage infrastructure in place. No permanent new lighting shall be installed. The location of the park and ride facilities within these existing parking lots shall be sited in an area located away from residences and other sensitive receptors to limit nighttime disturbance from noise.

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However, the DEIR does not identify suitable lots, account for the possibility that suitable areas fitting that description may not be easily found, or consider that new lots would have to be developed. The entire traffic analysis is dependent on the existence of these lots; therefore a detailed plan must be provided for the siting and potential development of the lots. A loose assumption that the facilities already exist and just need to be located fails to comply with the requirements of CEQA. The potential impacts from the development of the park-and-ride lots could have significant impacts in several areas, as acknowledged in the DEIR. Vague mitigation measures without detailed analysis or enforceable criteria are unlawful. Finally, concluding that the impact is significant and unavoidable without attempting to identify feasible mitigation violates CEQA.

[205] DEIR, p. 4.13-3.
[206] DEIR, p. 4.3-25.

F. The DEIR Relies on Uncertain Mitigation for Significant Impacts on Public Services

The DEIR concludes that potential insufficient emergency access for fire or emergency medical services and subsequent slower response times constitutes a significant impact.[207] The mitigation offered for this impact includes "measures to assure sufficient fire protection services in accordance with existing standards [that] shall be subject to the review and approval of Cal Fire."[208] That measure includes a future agreement with Cal Fire to "provide sufficient fire protection services during the non-peak fire season for the duration of project construction via provision of sufficient funding and other measures…"[209] The DEIR further states that "year round staffing at the local Cal Fire station during the construction phase would address response times to the site," reducing the impact to a less than significant level.[210] It is clear that additional funding for Cal Fire is essential to mitigate the impact. 12.54

However, what is unclear is how or from whom Cal Fire will acquire this funding. Infeasible and uncertain mitigation is not mitigation at all. The County has a duty to propose and analyze a reasonable range of mitigation measures for each significant impact, including identifying a source or alternative sources of funding. The County has not met this burden, providing only vague assurances that an agreement with Cal Fire will be completed and funding secured. Therefore, the impact on public services remains significant until the DEIR provides a detailed plan for the implementation of this mitigation.

G. The DEIR Fails to Adequately Analyze Potentially Significant Impacts Caused by Decommissioning Activities.

At the end of the Project's "useful life," anticipated in the DEIR to be 30 to 40 years, the Project will be decommissioned. [211] As explained above, the decommissioning phase of the Project is part of the whole of the Project. The description and analysis provided by the DEIR regarding the decommissioning activities are insufficient to achieve CEQA's mandate for an information document. Moreover, as a project-level EIR, no further environmental review would be necessary 12.55

[207] DEIR, p. 4.12-1.
[208] DEIR, p. 4.12-1 – 4.12-2, 4.12-10.
[209] *Id*.
[210] *Id*.
[211] DEIR, p. 2-87.

to carry out the Project; therefore, the same level of detail the EIR provides on the Project's construction and operation impacts must be provided for decommissioning.

The DEIR frames the Project as a "temporary" displacement of agricultural resources. Concrete assurances are needed to guarantee that the impacts are indeed temporary, hence the need for a well defined and detailed restoration plan. There are documented impacts from non-operational power generation facilities with equipment that have been left to deteriorate on agricultural land. The impacts are not confined to the boundaries of the Project.

Project materials include PV panels, an electrical collection and inverter system, two on-site substations, a switching station, an operations and maintenance (O&M) facility, a perimeter security fence, and related infrastructure.[212] During Project decommissioning these materials would have to be removed. The County must provide a complete description of the decommissioning activities necessary to assess all of the Project's impacts. The decommissioning of solar energy facilities and reclamation of solar energy facility sites has been associated with noise, air quality, biological resources, hazardous materials and waste management, human health and safety, soils and geologic resources, transportation, water resources, water quality and flow alteration impacts.[213] This is particularly true when multiple proposed solar projects in the area will be decommissioned at approximately the same time. The public and decision makers cannot engage in a meaningful assessment of these potential impacts, without a proper description and analysis of impacts. 12.55

The DEIR provides minimally useful information in Conceptual Restoration Plan for Project Decommissioning,[214] along with a statement that "[n]o less than eighteen (18) months prior to the expiration of the CDP, the Applicant (or successor in interest) shall submit a proposed Decommissioning and Restoration Plan (Decommissioning Plan) to the County of Monterey."[215] The DEIR attempts to dispel its requirement for full disclosure and analysis of potential impacts by stating that decommissioning "is similar to constructing the project" and providing only a minimal and generalized evaluation of potential steps to be taken at decommissioning.[216] As

[212] DEIR, pp. 2-13, 2-73.
[213] Tribal Energy and Environmental Clearinghouse, Solar Energy Decommissioning/Site Reclamation Impacts, available at: http://teeic.anl.gov/er/solar/impact/decom/index.cfm.
[214] DEIR, Appendix E.4.
[215] DEIR, p. 2-89.
[216] DEIR, Appendix E.4, p. 3.

explained above, under CEQA, if a project description and evaluation is not complete, then environmental review for the project has not been fully conducted.

Furthermore, the County has enough information, such as the type of equipment to be utilized and range of activities to be performed, as well as baseline knowledge of impacts resulting from the Project's construction and operation, to make a reasonable assessment of impacts the decommission and restoration phase might yield. The courts may not look for "perfection" but would expect "adequacy, completeness, and a good faith effort at full disclosure,"[217] which is not achieved through unsubstantiated claims, as is the case here. Moreover the County is open to a "prejudicial abuse of discretion … if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process."[218]

For example, the DEIR fails to adequately investigate and mitigate air quality impacts related to decommissioning, assuming that "air quality emissions generated during future decommissioning would be similar to air quality emissions generated during the construction phase of the proposed project."[219] The County's insistence that describing specific activities and resulting impacts would be "too speculative" indicates nothing more than an unwillingness to provide a detailed analysis of the whole Project. [220] Aside from the inherent uncertainty, the DEIR provides no evidentiary support that the impacts associated decommissioning will be similar or less than those associated with construction of the Project. The construction phase already produces emissions beyond an acceptable threshold, and while the DEIR does acknowledge that the impacts of decommissioning would be significant and unavoidable, it is unclear whether the mitigation measures for construction would be required during decommissioning. The DEIR states merely that the measures for construction, "or equivalent measures based on available technology at the time of project decommissioning, would be required during project decommissioning, *if proposed*."[221] Furthermore, as discussed above, there are other feasible mitigation measures that can and should be required to mitigate significant air quality impacts before the County can legally conclude that the impacts are unavoidable. 12.55

[217] CEQA Guidelines, section 15151.
[218] *Laurel Heights Improvement Assn. v. Regents of University of California* 47 Cal.3d at pp. 403-405, 253 Cal.Rptr. 426, 764 P.2d 278.
[219] DEIR, p. 4.3-21.
[220] *Id.*
[221] DEIR, p. 4.3-36 – 4.3-37 (*emphasis added*).

The assumption that impacts related to decommissioning are similar to construction is unsubstantiated, as decommissioning activates are completely dissimilar. Unlike construction where the solar panel infrastructure was driven into the ground, decommissioning would require excavation and ripping the steel framework from the earth. The simple action of ripping versus driving an object into the ground is logically associated with increased dust and particulate matter into the air. The concentration build up of the dust suppressant in the soil mixed with the increased ground disturbance could create an impact to air quality that is more significant than those associated with construction. The continual application of soil stabilizers over a 30-40 year period could result in the manifestation of additional challenges in achieving restoration to pre-existing conditions. The DEIR is silent as to what lasting impacts the soil stabilizers would have on future restoration, in part because, as discussed above, the DEIR omits specificity with regard the management of dust suppression.

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If decommissioning activities are left to languish, conceivably well beyond the 12-24 month construction period, the impacts to the air quality could potentially increase as the area, its residences and biological resources would incur significant long-term exposure to decommissioning construction-related activities, including increased intensity of diesel emissions, which as Mr. Hagemann and Mr. Sutherland highlight in their comments are known to produce a significant health impact.[222]

To properly disclose the Project's impacts from decommissioning the County must revise the DIER to include the type (i.e., direct, indirect, or cumulative), the duration (i.e., temporary or permanent), the nature (i.e., source), and extent (i.e. scale) of the associated potential impacts. The County must then engage in the development of mitigation measures that are certain, enforceable, and linked to measurable performance standards. Absent additional information, the County cannot conclude that the Project's decommissioning impacts have been fully assed and properly mitigated.

H. The DEIR Fails to Adequately Disclose, Analyze and Mitigate the Project's Odor Impacts

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The DEIR states:

[222] Hagemann Comments, p. 10-11.

> Odor emissions from the project would be limited to odors associated with vehicle and engine exhaust and fueling during construction… Construction-related odors would be short-term, and would cease upon completion. There are two residences located within 1,000 feet of the project site, and due to the size of the project site, these residences would only be exposed to construction activity for a relatively short portion of the total construction schedule. Therefore, short-term fueling odors during construction would not impact a substantial number of people.[223]

This "analysis" is entirely inadequate and the DEIR's conclusion regarding the significance of odor impacts is unsupported.

Diesel exhaust odor can be objectionable to people, and EPA has found that, at high intensities, diesel exhaust may produce sufficient physiological and psychological effects to warrant concern for public health.[224] The DEIR effectively admits to potential odor impacts but downplays those impacts by focusing on the "short-term" nature of construction phase and the direction of prevailing wind away from nearby residences.[225] However, the construction phase could last up to 24 months, which might not be considered "short-term" to those living in nearby residences. In addition, the Air Quality Analysis[226] concluded that a detailed odor analysis was not warranted because the number of odor sources sensitive receptors was sparse.[227] Regardless of whether the impacts are temporary, or how many neighbors are affected, a potential significant impact exists and the DEIR's analysis of those potentially significant odor impacts is inadequate. Construction will require a significant amount of heavy duty equipment and many daily vehicle trips around the Project site.[228] The DEIR's conclusion that the Project would not cause significant odor impacts is unsupported. Substantial evidence shows that the Project may cause significant odor impacts. The DEIR must be revised to adequately disclose, analyze and mitigate the Project's potentially significant odor impacts. 12.56

[223] DEIR, p. 4.31-32.
[224] Environmental Protection Agency, *Health Assessment Document for Diesel Engine Exhaust*, 5-4 (2002) http://www.epa.gov/ttn/atw/dieselfinal.pdf.
[225] DEIR, p. 4.3-31.
[226] DEIR, Appendix C1.
[227] DEIR, Appendix C1, p. 37.
[228] DEIR, p. 4.3-23, 4.3-39; DEIR, Appendix C1 [Appendix A: Air Quality Data].

VI. THE DEIR FAILS TO ADEQUATELY IDENTIFY AND ANALYZE THE PROJECT'S CUMULATIVE IMPACTS

CEQA requires consideration of the incremental impacts caused by a project, together with other past, present, and reasonably foreseeable future projects, including projects outside of the lead agency's jurisdiction.[229] As defined by the CEQA Guidelines, a cumulative impact is one "which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts."[230] The potentially significant impacts of the proposed Project must be considered in conjunction with the impacts from these other projects.

> [T]he statutory injunction to assess "the incremental effects of an individual project ... in connection with the effects of *past projects*, the effects of other current projects, and the effects of probable future projects" (Pub. Resources Code, § 21083, subd. (b)(2), italics added) signifies an obligation to consider the present project in the context of a realistic historical account of relevant prior activities that have had significant environmental impacts.[231]

12.57

Thus, a legally adequate "cumulative impacts analysis" views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand.[232] A lead agency's cumulative impact analysis is invalid under CEQA if it fails to adequately reflect the severity and significance of a

[229] CEQA Guidelines, § 15064(h)(1); *see also* 15355, subd. (b) ["The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."]; see *also Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1024-1025.

[230] CEQA Guidelines § 15130 subd. (a)(1).

[231] *Environmental Protection Information Center v. California Dept. of Forestry and Fire Protection* (2008) 44 Cal.4th 459, 524 (emphasis in original).

[232] *See* CEQA Guidelines, § 15355 subd. (b) ("Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time"); *see also Communities for a Better Environment v. Cal. Resources Agency* (2002) 103 Cal.App.4th 98, 117.

project's cumulative impacts.[233] "The disparity between what was considered and what was known is the basis upon which . . . [a court] will find abuse of discretion."[234]

As discussed in this comment letter, the Project may have significant impacts on agriculture, air quality, water resources, protected and sensitive biological resources, traffic, odor and public health. These significant impacts may become even more significant when viewed in connection with past, current and reasonably foreseeable future projects. When these projects are considered with the County's other pending industrial, commercial and residential projects in the same region, the impacts may be even greater.[235] While the DEIR does identify the size and location of other renewable energy projects in the region, it does not isolate those projects that would be constructed concurrently with the Project.[236] The DEIR states that "the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the proposed California Flats Solar Project"[237] but it is not clear whether the DEIR considers overlap of actual construction, which is when the most significant environmental impacts will occur. 12.57

Despite the number of past, present and foreseeable projects in the same region, the County does not address potential significant impacts, but merely states that "[s]ignificant adverse impacts of the cumulative projects would be required to be reduced, avoided, or minimized through the application and implementation of mitigation measures" and that the "net effect of these mitigation measures is assumed to be a general lessening of the potential for a contribution to cumulative impacts."[238] This improperly assumes that the other projects in the region will adequately mitigate all impacts, including cumulative. Furthermore, this analysis does not include any detailed discussion of any of the proposed mitigation measures at other regional projects. It also fails to provide adequate context for projects in the area. The DEIR only provides the location of other solar projects and thus does not allow for a full understanding of the location and environmental context of any of the other projects listed.[239]

[233] *See* CEQA Guidelines § 15130 subd. (b); *see also San Franciscans for Reasonable Growth v. City and County of San Francisco* (1984) 151 Cal.App.3d 61, 72-73.
[234] *Id.*
[235] This letter incorporates all reasonably foreseeable projects in Monterey County.
[236] DEIR, p. 5-2 – 5-7.
[237] DEIR, p. 5-11.
[238] DEIR, p. 5-1.
[239] DEIR, p. 5-9 – 5-11.

The DEIR misleads the public by stating that "the majority of the projects identified in Table 5-1 would include only minor construction and renovation if any…"[240] In fact, many of the projects will require major construction including a 57-mile underground oil pipeline, 92 acre residential development plus future expansion plans for additional facilities, the division of an existing 160 acre parcel into 4 smaller parcels for development, several gas or oil drilling projects, and several projects to convert General Agriculture into Highway Commercial zoning.[241] Furthermore, even if a *majority* of the projects listed were minor, that still leaves several projects that even the County would consider major. However, the DEIR still severely lacks a detailed cumulative impacts analysis of those major projects. 12.57

The DEIR grossly underestimated the Project's direct and indirect significant impacts in several areas. The County must conduct an adequate cumulative impacts analysis, which would include a detailed list of past, current and reasonably foreseeable future projects with actual evaluation of their potential impacts in combination with this Project. The DEIR failed to provide such an analysis and therefore must be revised.

VII. THE PROJECT IS INCONSISTENT WITH THE MONTEREY COUNTY GENERAL PLAN AND LAND USE LAWS

For over three decades, the courts have consistently required that use permits must comply with a County's General Plan. The Court of Appeal opined on this issue in *Neighborhood Action Group v. County of Calaveras,* when it held that the requirement that use permits be consistent with the County General Plan "is necessarily to be implied from the hierarchical relationship of the land use laws. To view them in order: a use permit is stuck from the mold of the zoning law ([Government Code] § 65901); the zoning law must comply with the adopted general plan; the adopted general plan must conform to state law (§§ 65300, 65302). [242] Furthermore, the "validity of the permit process derives from compliance with this hierarchy of planning laws. These laws delimit the authority of the permit issuing agency to act and establish the measures of a valid permit…a permit action taken without compliance with the hierarchy of land of land use law is ultra vires as to any defect implicated by the uses sought by the permit."[243] 12.58

[240] DEIR, p. 5-11.
[241] DEIR, p. 5-2 – 5-7.
[242] *Neighborhood Action Group v. County of Calaveras* (1984) 156 Cal.App.3d 1176, 1184.
[243] Id.

The DEIR concludes that the proposed Project uses are consistent with the General Plan thus eliminating any need for mitigation.[244] The conclusion reached is incorrect. Monterey County's 2010 General Plan consists of eight elements, including all of the mandatory elements [land use, circulation, housing, conservation and open space, and safety (includes noise)], plus agriculture, economic development and public services elements.[245] The DEIR concludes that with the implementation of mitigation measures found throughout the document, "the proposed project would be consistent with applicable policies of Monterey County's 2010 General Plan and the County of San Luis Obispo General Plan."[246] However, there are several policies with which the Project is inconsistent.

For example, the "disturbances to adjacent grazing activities" resulting from Project construction , regardless of the DEIR's insistence that the impacts would be "temporary," conflicts with the General Plan policy that "[l]and uses shall be designated to achieve compatibility with adjacent uses."[247] The County does not evaluate this impact as significant based on the nonsensical argument of impermanence, insisting that mitigation measures designed specifically for this impact are not necessary, and points to other mitigation measures found throughout the document without further analysis.[248] 12.58

Another General Plan policy calls for the use of Best Management Practices ("BMPs") to prevent and repair erosion damage.[249] Although the DEIR acknowledges that the Project would "alter the existing drainage pattern of the project area [and] may therefore increase runoff, resulting in flooding or increased erosion downstream," the County claims consistency with the General Plan based on its hydrology analysis and an intended erosion control plan.[250] However, as Dr. Myers concluded in his expert review, the DEIR substantially underestimates erosion potential, completely neglecting "that ephemeral streams with occasional high flows have significant erosion potential."[251] Given Dr. Myers' opinion that the DEIR's calculations as to the Project area's erosion potential are flawed, it would be difficult

[244] DEIR, p. 4.10-1.
[245] DEIR, p. 4.10-3.
[246] DEIR, p. 4.10-7.
[247] DEIR, pp. 4.10-8, 4.2-10.
[248] DEIR, p. 4.2-10 – 4.2-11.
[249] DEIR, p. 4.10-10.
[250] DEIR, pp. 4.9-1, 4.10-10.
[251] Myers Comments, p. 4.

to implement BMPs until the DEIR evaluates this potential impact based on accurate calculations. 12.58

General Plan policies related to biological impacts include protection of federal and state listed species, conservation and maintenance of critical habitat, and avoidance, minimization, and mitigation of impacts to listed species, critical habitat, and migratory birds, among others.[252] As explained in this comment letter, the DEIR falls short in its analysis on biological resources impacts, and it is clear that those impacts are significant and not adequately mitigated. The Project will cause unmitigated harm to several federal and state-listed species and will impact critical habitat; therefore it is not consistent with the General Plan policies intended to protect those resources. 12.59

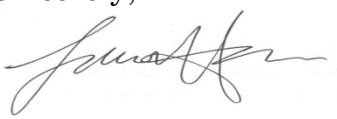
The General Plan requires that all developments "implement applicable Monterey Bay Unified Air Pollution Control District control measures" and that all projects "incorporate feasible measures that assure that health-based standards for diesel particulate emissions are met" and do not exceed construction-related PM10 and NOx emissions thresholds.[253] The DEIR concludes that because the Project is implementing "all feasible mitigation measures," the Project is consistent with the General Plan.[254] However, as Mr. Hagemann and Mr. Sutherland found in their review of the DEIR, there are several additional measures that the Project could incorporate to address significant air quality impacts, including clear exceedances of the PM10 and NOx thresholds.[255] In addition, in Mr. Hagemann and Mr. Sutherland's opinions, the DEIR is severely lacking in its DPM assessment and does not assure health-based standards are met, in violation of the General Plan.[256] 12.60

[252] DEIR, p. 4.10-11 – 4.10-14.
[253] DEIR, p. 4.10-17.
[254] *Id*.
[255] *See* Hagemann Comments.
[256] *Id*.

VIII. CONCLUSION

For all of the reasons discussed above, the DEIR for the Project is wholly inadequate under CEQA. It must be thoroughly revised to include an adequate description of the Project and environmental baseline and provide analysis of, and mitigation for, all of the Project's impacts. This revision will necessarily require that the DEIR be recirculated for public review. Until the DEIR has been revised and recirculated, the County may not lawfully approve the Project. 12.61

Sincerely,



Laura E. Horton

LEH:clv

Attachments	
Attachment A	Comments and Attachments, Scott Cashen
Attachment B	Comments and Attachments, SWAPE Consulting
Attachment C	Comments and Attachments, Tom Myers
Attachment C	Comments and Attachments, Tom Myers
Attachment D	Study: Avian Mortalities at Solar Energy Facilities

ATTACHMENT A

September 22, 2014

Ms. Laura E. Horton
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

Subject: Comments on the Draft Environmental Impact Report Prepared for the California Flats Solar Project

Dear Ms. Horton:

This letter contains my comments on the Draft Environmental Impact Report ("DEIR") prepared for the California Flats Solar Project ("Project") by Monterey County ("County"). California Flats Solar, LLC ("Applicant") proposes to construct, operate, maintain, and decommission a 280-megawatt photovoltaic solar generating facility in an unincorporated portion of southeastern Monterey County. The total Project area encompasses approximately 3,000 acres, and would be comprised of the solar generating facility area, a utility corridor, and improvements to an existing access road.

I prepared these comments with assistance from Dr. Michael Morrison and Dr. Vernon Bleich. I am an environmental biologist with 21 years of professional experience in wildlife ecology and natural resource management. Dr. Morrison is a professor and Caesar Kleberg Chair in Wildlife Ecology and Conservation at Texas A&M University, and he has published numerous books and peer-reviewed papers pertaining to wildlife ecology and study design. Dr. Vernon Bleich is a recognized expert on mammal ecology and he is a former senior environmental scientist with the California Department of Fish and Wildlife. All three of us have served as biological resources experts for many development projects in California and other states. Our experience and scope of work in this regard has included assisting various clients with evaluations of biological resource issues, reviewing environmental compliance documents prepared pursuant to the California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA"), and submitting written comments in response to CEQA and NEPA documents. True and correct copies of our curricula vitae are attached hereto. 12.A.1

The comments herein are based on our review of the environmental documents prepared for the Project, a review of scientific literature pertaining to biological resources known to occur in the Project area, consultations with other biological resource experts, and the knowledge and experience we have acquired during decades of work in the field of natural resources management.

EXISTING SETTING ISSUES

The DEIR Fails to Disclose and Analyze All Pertinent Survey Data

The Biotic Report that was prepared by the Applicant's consultant references several ongoing survey efforts. Specifically, it states: "[t]o assist the Project proponent with its CESA and FESA permitting efforts, the Project proponent will complete a wildlife corridor analysis and conduct the following additional surveys in 2013:

- Focused special-status mammal trapping surveys (underway)
- Dry-season listed branchiopod surveys (underway, samples in analysis)
- Winter bird surveys
- Avian activity surveys (underway)
- Wildlife corridor analysis
- Scent dog surveys for kit fox
- Additional spotlighting surveys"[1]

12.A.2

The DEIR includes a report for the dry-season listed branchiopod surveys. However, none of the other survey reports were included with the DEIR. Data from the aforementioned surveys are required to fully assess existing conditions, analyze Project impacts, and formulate appropriate mitigation. Deferring the survey results until after completion of the CEQA review process prevents full disclosure of Project impacts. This precludes the public, resource agencies, and scientific community from being able to submit informed comments pertaining to Project impacts, and from having those comments vetted during the environmental review process. The DEIR cannot be considered a robust and comprehensive analysis of biological resources until the surveys have been adequately conducted, documented, and vetted by the public and resource agencies.

The DEIR Fails to Disclose, Analyze, and Mitigate Potentially Significant Impacts to All Special-Status Wildlife Species

The information and analyses provided in the DEIR are limited to a subset of the special-status animals that occur, or have the potential to occur, in the Project area.[2] According to the California Department of Fish and Wildlife ("CDFW"):[3]

12.A.3

> "Special Animals" is a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species". The

[1] DEIR, Appendix E1, p. 17.

[2] DEIR, p. 4.4-40 and Table 4.4-4.

[3] Prior to 2013 the California Department of Fish and Wildlife was called the California Department of Fish and Game. The State's list of Special Animals was updated in September 2014. However, reference is made to the 2011 list, which the list that was available when the DEIR was prepared.

> Department of Fish and Game considers the taxa on this list to be those of greatest conservation need…The species on this list generally fall into one or more of the following categories:…**Taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or non-governmental organization (NGO).**"[4]

The DEIR is deficient because it ignores several of the species on CDFW's *Special Animals* list, especially "taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or NGO." Several of those taxa were detected during surveys of the Project site and Biological Study Area ("BSA"). They include, but are not limited to: Cooper's hawk, ferruginous hawk, horned lark, prairie falcon, Lewis's woodpecker, yellow-billed magpie, and Lawrence's goldfinch.[5] 12.A.3

Botanical Resources

Rare Plant Surveys

The state of California is in the midst of an exceptional drought, which has affected germination and abundance of native and naturalized plant species. The Biotic Report states that full protocol surveys were not conducted in 2012 "due to low rainfall received by the site during the 2011-2012 rain year."[6] The site received just over 7 inches of rain, which is only 59% of the long-term average. The Biotic Report goes on to state that: "[a]s of May 2013, the site has received approximately 7 inches of rain during the current 2012-2013 rain year." The *Special Status Plant Pre-construction Survey* report includes a graph that shows the 2011-2012 rain year as totaling 10.27 inches in Parkfield, California. This same graph shows the 2012-2013 rainfall totals as 6.31 inches, almost four inches below the previous year (2012) when surveys were skipped due to low rainfall. Local experts John Chestnut[7] (Professional Botanist), George Butterworth[8] (Carrizo Plain and Chimineas Ranch Expert), and Dr. David Keil[9] (Emeritus Professor at CalPoly San Luis Obispo) confirmed that germination rates and abundance of native plants in the region during 2013 were very low based on their personal observations. Although some rare plants were recorded within the BSA in 2013, more might have been recorded had surveys been conducted in a year with average rainfall. Given that surveys were conducted in such a poor rainfall year, results should be considered inconclusive and the BSA resurveyed. 12.A.4

There were also negative results during reference population checks for species that have a potential to occur on the Project site.[10] Reference population surveys are important

[4] California Department of Fish and Game. 2011. Special Animals (898 taxa). Department of Fish and Game, Biogeographic Data Division, Sacramento (CA). 60 pp.

[5] DEIR, Table 4.4-4 and Appendix C to Appendix E1.

[6] *Ibid, p*. 14.

[7] Personal communication with Heath Bartosh September 18, 2014.

[8] *Ibid.*

[9] *Ibid.*

[10] H.T. Harvey & Associates. 2014b. California Flats Solar Project, Monterey and San Luis Obispo Counties, CA, 2013 Special Status Plant Pre-Construction and Project Vicinity Survey Report.

(especially for annual plant species) in determining if a plant germinated and flowered in a given year as well as determining survey timing. The following is a list of target plant species that Project botanists could not locate during visits to reference populations, and that therefore could not have been successfully located during the 2013 surveys:

- oval-leaved snapdragon (*Antirrhinyum ovatum*) - Richard Burgess (Ventura County botanist) has been surveying for this species annually since 1994 at known locations in Ventura County and he did not detect the species until 2014.[11] The species description for this species states that it is only abundant every 20-50 years.[12]
- La Panza mariposa lily (*Calochotus simulans*) - Dr. Keil did not see this species in 2013 where it is frequent in good years.[13]
- Lemmon's jewel-flower (*Caulanthus lemmonii*) - most locations known by Mr. Chestnut and Mr. Butterworth did not germinate in 2013.[14]
- Rattan's cryptantha (*Cryptantha rattanii*) - reference populations not located by Project botanists, therefore it is unknown if this species even germinated in 2013.
- Cottony buckwheat (*Eriogonum gossypinum*) - Mr. Butterworth located this species in the fall of 2013.[15] The timing of the Applicant's surveys may have been too early for this taxon.
- diamond-petaled poppy (*Eschscholzia rhombipetala*) - Not observed by Mr. Chestnut in 2013 at the Chesterfield Road and Belmont Trail reference sites.[16]
- trumpet-throated gilia (*Gilia tenuiflora* subsp. *amplifaucalis*) - reference populations not located by Project botanists, therefore it is unknown if this species even germinated in 2013.
- Panoche pepper-grass (*Lepidium jaredii* subsp. *album*) - Dr. Keil did not see this species during a March 2013 visit to the Carrizo Plains.[17]
- Jared's pepper-grass (*Lepidium jaredii* subsp. *jaredii*) - Mr. Chestnut reported this species did not germinate at the south end of Soda Lake or at Panorama Road reference sites in 2013.[18]
- San Joaquin woollythreads (*Monolopia congonii*) - Mr. Chestnut observed no germination at the Center Well Pasture site in 2013. Though observed by Project botanists, it was not a favorable year to survey for this species.

12.A.4

[10] *Ibid, p*. 14.

[11] Personal communication with Heath Bartosh September 17, 2014.

[12] Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. *The Jepson manual: vascular plants of California, second edition*. University of California Press, Berkeley.

[13] Personal communication with Heath Bartosh September 18, 2014.

[14] *Ibid.*

[15] *Ibid.*

[16] *Ibid.*

[17] *Ibid.*

[18] *Ibid.*

- Mason's neststraw (*Stylocline masonii*) - No reference population checked by Project botanists. Dr. Keil did not observe this plant at the Shell Creek reference site in 2013.[19]

This information demonstrates the consultant's surveys were conducted when 20% of the species on its target list were not evident and/or identifiable (i.e., 10 out of 50).[20] To accurately establish existing condition, assess all potentially significant impacts, and formulate appropriate mitigation, the Project area needs to be resurveyed when the aforementioned plants are evident and identifiable. 12.A.4

The DEIR inaccurately states that Mason's neststraw (*Stylocline masonii*) has no potential of occurring within the BSA.[21] This statement conflicts with the Biotic Report Addendum, which indicates the species could occur within the Project's utility corridor.[22] The DEIR and appendices do not indicate whether protocol-level surveys were conducted for this taxon during a time when it would have been evident and identifiable. 12.A.5

The DEIR and appendices identify several of the target annual plant species as being "absent" from the survey areas.[23] This is misleading and improper. It is virtually impossible to prove a species' absence, especially within a survey area that encompassed either 4,361 acres (as reported in Table 4) or over 4,800 acres (as reported on p.31).[24] This is especially true for annual plant species, which may have seed banks present in the soil, but the seeds do not germinate in a given year (e.g., due to drought). 12.A.6

A review of the survey dates and survey personnel allows for an assessment of the level of survey effort and whether surveys were floristic in nature.[25] It should be noted that almost all of the rare plants observed during these studies were in California Annual Grasslands (2,022 acres) and Wildflower Fields (552 acres), which total 2,574 acres.

- March = 117 person days
- April = 66 person days
- May = 9 person days
- June = 8 person days
- July = 3 person days

12.A.7

This information clearly illustrates the fact that surveys were conducted during very few days in June and July. This paucity of dates is insufficient to sample special-status plants occurring during the latter part of the season, especially to conclude "absence" throughout at least 4,361 acres. Furthermore, it is likely insufficient to cover even the

[19] *Ibid.*
[20] DEIR, Appendix E6, p. 27.
[21] DEIR, p. 4.4-41.
[22] DEIR, Appendix E13, p. 7.
[23] DEIR, Table 4.4-4.
[24] DEIR, Appendix E6, p. 31.
[25] DEIR, Appendix B to Appendix E1.

2,574 acres of grasslands and wildflower fields. This is important because some of the plant species on the consultant's target list reach peak flower in the months of June, July, and October and therefore may not have been sufficiently surveyed for.[26] For example, the data for a reference population of western lessingia (*Benitoa occidentalis*) CRPR 4.3 indicates that on June 24, 2014, plants observed were only in early flower.[27] The following month, when western lessingia would have been farther along in flowering phenology, the Applicant's survey effort was limited to 16.5 man-hours.[28]

A lack of sufficient late season surveys are also indicated by an absence of positive identifications for certain late blooming species on the list of plants detected during the Applicant's surveys.[29] This is reflected by a plant with a genus name listed followed by the suffix "sp." (i.e., unknown species) or parentheses which indicates "uncertainty in the identification of a specimen located on the project site due to a lack of floral characteristics required for accurate identification (often due to early phenology during the site visit)."[30] These unidentified species bloom in June, July, August, and September.[31] 12.A.7

The aforementioned issues are confounded because the Applicant's survey report lacks details regarding the number of personnel hours spent checking reference sites and conducting the regional contextual surveys—which reportedly occurred on the same days, and by the same individuals responsible for the protocol-level surveys of the BSA.[32] As a result, the DEIR and appendices falsely inflate the amount of time dedicated to Project-specific surveys.

A new tarplant species Diablo Range hare-leaf (*Lagophylla diabolensis*) was published in 2013 and added to the CNPS Inventory in January of 2014 as a CRPR 1B.2 species.[33,34] Because this taxon was published after the conclusion of the Project surveys it was not a target of the suvey effort. *Lagophylla diabolensis* is known to occur in the vicinity of the Project site, and the Project site provides suitable habitat for the species.[35] In addition, *L.* 12.A.8

[26] Consortium of California Herbaria. 2014. Data provided by the participants of the Consortium of California Herbaria (ucjeps.berkeley.edu/consortium/).

[27] DEIR, Appendix E6. *See also* California Native Plant Society (CNPS). 2014. *Inventory of Rare and Endangered Plants* (online edition). California Native Plant Society. Sacramento, CA. Accessed from http://rareplants.cnps.org/

[28] DEIR, Appendix B to Appendix E1.

[29] DEIR, Appendix A to Appendices E1 and E6.

[30] DEIR, Appendix A to Appendices E1 and E6.

[31] Consortium of California Herbaria. 2014. Data provided by the participants of the Consortium of California Herbaria (ucjeps.berkeley.edu/consortium/).

[32] *Ibid* and Appendix E6, Tables 4, 6 and 7.

[33] Baldwin, Bruce. 2013. Lagophylla diabolensis (Compositae-Madiinae), a New Hare-Leaf from the Southern Diablo Range, Californi. Madrono: Vol. 60, No. 3, pp. 249-254. California Botanical Society, University of California, Berkeley, CA.

[34] California Native Plant Society (CNPS). 2014. *Inventory of Rare and Endangered Plants* (online edition). California Native Plant Society. Sacramento, CA. Accessed from http://rareplants.cnps.org/

[35] California Natural Diversity Database (CNDDB). 2014. RareFind 5 [Internet]. California Department of Fish and Wildlife [2014 September 2].

diabolensis is closely related to, and difficult to distinguish from to *L. ramosissima*, which is listed as one of the plants detected within the BSA.[36] Focused surveys for *L. diabolensis* should be conducted prior to Project development. 12.A.8

The Applicant's plant list also includes plant species that were not identified to the level necessary to determine rarity. One of these plants is identified as *Isocoma (menziesii).* This taxon has a variety, var. *diabolica*, which has a rare plant rank of 4.2. It is possible that this unidentified *Isocoma* is a rare species. Another plant on the list is identified as *Delphinium (gypsophilum).* A subspecies of this taxon, subsp. *parviflorum,* was included on the consultant's target list of rare plants that have the potential to occur on the Project site. These two species should be positively identified to determine if additional rare plants occur in the Project area. 12.A.9

Biotic Habitat Types

In reviewing the DEIR and appendices it became evident that vegetation types were not sufficiently evaluated to determine their conservation status as sensitive natural communities.[37] Particularly, wildflower fields were described using Holland types;[38] however, they should have been characterized using current vegetation survey protocols[39] in order to determine specific vegetation alliances[40] and associations.[41] Describing vegetation types using this protocol better characterizes species composition more accurately ensuring that mitigation is "in-kind." The long-term persistence of wildflower fields and their related vegetation associations rely on specific pollinator guilds, which have an affect on fecundity of plant species and communities as a whole. As a result, in-kind mitigation needs to take into account specific wildflower field associations and pollinator guilds. Additionally, there may be certain native grassland alliances and associations within areas designated as wildflower fields that have a higher conservation status. 12.A.10

The description for Riparian Oak Woodland in the Biotic Report states that this community is dominated by valley oak (*Quercus lobata*). The membership rules[42] indicate that if valley oak is greater than 30 percent relative cover when other tree species are present then it qualifies as Valley Oak Woodland. Valley Oak Woodland is 12.A.11

[36] DEIR, Appendix E1, p. A-2.

[37] California Department of Fish and Game. 2010. *List of Vegetation Alliances and Associations*. Vegetation Classification and Mapping Program, California Department of Fish and Game. Sacramento, CA. September.

[38] Holland, R. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, The Resources Agency. 156 pp.

[39] California Native Plant Society. 2014. California Native Plant Society/Department of Fish and Game Protocol for Combined Vegetation Rapid Assessment and Relevé Sampling Field Form.

[40] A classification unit of vegetation, containing one or more associations and defined by one or more diagnostic species, often of high cover, in the uppermost layer or the layer with the highest canopy cover.

[41] A vegetation classification unit defined by a diagnostic species, a characteristic range of species composition, physiognomy, and distinctive habitat conditions.

[42] Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation.* Second edition. California Native Plant Society, Sacramento. 1300 pp.

considered a sensitive natural community [43] as it has a Subnational Conservation Status Rank of S3.[44] A rank of S3 indicates a vegetation alliance or association is "Vulnerable," meaning it is at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors. The DEIR and associated appendices failed to accurately describe the vegetative cover of valley oak within this vegetation type, and therefore allow an independent assessment of whether the membership rule was met (and thus an additional sensitive natural community is present in the Project area).

Four other vegetation types that occur in the Project area are considered sensitive natural communities. These four vegetation types are: Willow-Cottonwood Riparian Woodland (*Populus fremontii-Salix laevigata*), alkali heath (*Frankenia salina*), chairmakers's bulrush (*Scirpus americanus*), and purple needlegrass (*Stipa pulchra*). These associations have Subnational Conservation Status Ranks of S3 and are therefore considered sensitive.[45] The DEIR and associated appendices failed to disclose, analyze, or mitigate potentially significant impacts to these sensitive natural communities. 12.A.11

Yerba mansa (*Anemopsis california*) is also identified as being dominant in perennial marsh habitats. This alliance has a Conservation Status Rank of S2.[46] A rank of S2 indicates a vegetation alliance or association is "Imperiled" because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation.[47] Serpentine bunchgrass grassland also has a ranking of S2.[48]

Golden Eagle

Golden eagles are protected under Fish and Game Code Section 3511 and the federal Bald and Golden Eagle Protection Act ("Eagle Act"). California law prohibits take of golden eagles, and the USFWS requires a permit to be issued for take of bald or golden eagles where the taking is associated with, but not the purpose of the activity, and cannot be practicably avoided. Take includes: (1) injury to an eagle; (2) causing a decrease in golden eagle productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment by substantially interfering with normal 12.A.12

[43] California Department of Fish and Game. 2010. *List of Vegetation Alliances and Associations*. Vegetation Classification and Mapping Program, California Department of Fish and Game. Sacramento, CA. September.

[44] NatureServe. 2013. Interpreting NatureServe Conservation Status Ranks. NatureServe Explorer [Online] and NatureServe Central Databases, Arlington, VA. Available: http://www.natureserve.org/explorer/.

[45] California Department of Fish and Game. 2010. *List of Vegetation Alliances and Associations*. Vegetation Classification and Mapping Program, California Department of Fish and Game. Sacramento, CA. September.

[46] *Ibid.*

[47] NatureServe. 2013. Interpreting NatureServe Conservation Status Ranks. NatureServe Explorer [Online] and NatureServe Central Databases, Arlington, VA. Available: http://www.natureserve.org/explorer/.

[48] *Ibid. See also* DEIR, p. 4.4-30.

breeding, feeding, or sheltering behavior.[49]

The Project site provides nesting and foraging habitat for golden eagles. In 2013, one occupied nesting territory was known to be within the Project site and one active nest was located along the southwestern edge of the BSA.[50] In addition, there were several other occupied territories within 2 miles, and a total of 23 confirmed or suspected nesting territories within 10 miles of the project site (of which at least 13 were active in 2013). These relatively high numbers convey the value of the Project area to golden eagles.

The DEIR provides the following conclusion pertaining to Project impacts to golden eagles:

1. "Project development would permanently affect up to 2,188 acres of golden eagle foraging habitat within the project site…This could potentially result in reduced reproductive output and success, increased competition between territories, or abandonment of territories or nests if available foraging habitat in the region proved limiting."[51]
2. "Other construction-related disturbances could result, including activities and noise associated with earth moving, grading, vegetation removal, and installation of Project infrastructure. These disturbances may alter foraging behavior of golden eagles nesting near the site, which could lead to reduced productivity and nestling survival."[52]
3. "Also, the increased traffic may disrupt eagle foraging and movement at the project site, again potentially reducing eagle productivity and survival."[53]

12.A.12

Each of these impacts would constitute a take, as defined by the Eagle Act. As a result, the Project will require an incidental take permit from the USFWS. Take of an eagle without a permit is a violation of Eagle Act, and could result in prosecution—especially if project proponents willingly operate a project that they know may cause take.

The DEIR fails to assess the Project's compliance with the Eagle Act, or establish a mechanism that ensures the Applicant consults with the USFWS regarding the need for an eagle take permit. As a result, the Project would have a significant and unmitigated impact to golden eagles.

Swainson's Hawk

The Swainson's hawk is a state listed threatened species. In California, the breeding population of Swainson's hawks has decreased by an estimated 91% since the late

12.A.13

[49] 50 CFR 22.3. *See also* U.S. Fish and Wildlife Service. 2009. Final Environmental Assessment: Proposal to Permit Take as Provided Under the Bald and Golden Eagle Protection Act. U.S. Fish and Wildlife Service, Washington, D.C. Table 1.

[50] DEIR, Table 4.4-4.

[51] DEIR, p. 4.4-98.

[52] DEIR, p. 4.4-98.

[53] *Ibid*, p. 4.4-99.

1800s.[54] This dramatic population decline has been attributed primarily to the loss of suitable nesting and foraging habitat.[55]

According to the DEIR:

> Currently, Swainson's hawk, white-tailed kite, and northern harrier are not known to nest on the Solar Generating Facility Area or in the Access Road. Although the project site contains suitable foraging habitat for these species, none have been detected nesting or foraging on the project site. If any of the species occur on the site, it would be infrequently.

These statements are misleading because the Applicant did not conduct protocol-level surveys for Swainson's hawk nest sites, which can be very difficult to locate.[56] The CDFW sent a letter to the County indicating the need for protocol-level surveys in the Project area.[57] Indeed, the Biotic Report recognized the existence of CDFW promulgated standards for locating nest sites, and it acknowledged surveys adhering to those standards have not been conducted for the Project.[58] Nevertheless, the DEIR does not require Swainson's hawk surveys prior to Project construction. This has direct implications on the Project's ability to meet the "full mitigation" standard required under the California Endangered Species Act ("CESA"). As a result, Project impacts to the Swainson's hawk remain potentially significant and unmitigated. 12.A.13

Mountain Plover

The DEIR states that in regards to the mountain plover "there are no CNDDB records for mountain plover within 20 miles of the BSA, but small flocks have been reported in the Cholame Valley as close as four miles south of the project site."[59] Additionally, "most observations have been in agricultural lands 10 to 15 miles east of the BSA. No mountain plovers have been observed within the BSA, but suitable foraging habitat is present." However, the mountain plover is indicted to occur on the 1-mile radius line on the southern side of the Project area, as documented in Fig. 4.4-6 (CNDDB records) of the DEIR. 12.A.14

Northern Harrier

In regards to the northern harrier, the DEIR concludes "there are no CNDDB records of northern harriers within 20 miles of the BSA, but they have been observed foraging within the project site. Due to ongoing grazing activities, the project site and Access 12.A.15

[54] California Department of Fish and Game. 1994. Staff report regarding mitigation for impacts to Swainson's hawks (*Buteo swainsoni*) in the Central Valley of California [internet]. Available at: http://www.madera-county.com/rma/archives/uploads/1188143775_Document_upload_23w.pdf.
[55] *Ibid.*
[56] CDFG. 2000 May 31. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee.
[57] DEIR, Appendix A.
[58] DEIR, Appendix E1, pp. 90 and 91.
[59] DEIR, p. 4.4-74.

Road provide suitable foraging habitat, but suitable nesting habitat is absent."[60] However, the Applicant's consultant did not conduct surveys for northern harrier nests on and around the Project area, nor where nest searches conducted for any other species except the golden eagle. According to the Biotic Report, harriers are known to nest in Cholame Valley.[61]

12.A.15

California Tiger Salamander (CTS)

The DEIR reports: "No adult or larval CTS were found within the BSA despite multiple survey efforts; therefore, based on surveys that have been conducted, the species is unlikely to occur on the site."[62] According to the Project survey report, a general reconnaissance-level survey was conducted in 2011 to identify potential habitat and only 17 of 42 ponds were surveyed in 2013 for CTS with six of the 17 ponds dry at the time of the first survey.[63] And according to the DEIR – "One potentially suitable pond is located approximately 100 feet from the Utility Corridor study area but was not included in the 2013 surveys because the Utility Corridor was added after the protocol survey period had come to an end."[64] Only one breeding season was sampled during drought conditions at the project site.[65] Based on available information, it appears that the Project area and biological assessment area were not adequately surveyed in terms of both space and time—not all suitable breeding sites were surveyed and they were only surveyed during drought conditions. As a result, definitive statements made in the DEIR about baseline conditions for CTS occurrence or habitat suitability in the Project area are not supported.

12.A.16

According to USFWS and California Department of Fish and Game (2003) guidelines: "Biological field surveys should be conducted for all sites with potential CTS habitat.[66] Due to its unique life history, the CTS can be difficult to detect depending on weather and time of year. Aquatic sampling for larvae during spring months can be the most effective way to determine if CTS are present in a given area. However, especially if environmental conditions are unfavorable, CTS may not breed successfully in a given year."

The guidelines go on to say … "In years with little rainfall, upland emergence may be reduced and CTS may not breed. Field surveys conducted in years with at least 70% of average rainfall between September 1 and April 1, at the nearest National Oceanic and

[60] DEIR, p. 4.4-74.

[61] DEIR, Appendix E1, p. 97.

[62] Project EIR, section 4.4, pg. 106

[63] Project EIR, Appendix E.7, Aquatic Larval Surveys: California Tiger Salamander, California Red-legged Frog, pg. I, *See also* Biotic Report, Appendix E.1, pg. 7

[64] Project EIR, section 4.4, pg106

[65] Project EIR, Appendix E.7, *Aquatic Larval Surveys: California Tiger Salamander, California Red-legged Frog. See also* U.S. Department of Commerce, Annual Climatological Summary (2013), National Climatic Data Center National Oceanic & Atmospheric Administration (http://www.ncdc.noaa.gov/cdo-web/)

[66] USFWS and California Department of Fish and Game (2003) *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander*, pg. 3, (http://www.fws.gov/ventura/docs/species/protocols/cts/catigersalamander_survey-protocols.pdf)

Atmospheric Administration climate station are most reliable. Data from survey seasons not meeting this criterion will also be considered; surveyors should provide strong justification that their data are reliable including but not limited to local climate (e.g., daily rainfall totals, pond filling date, pond drying date) and biological survey data (e.g., other species captured during each sampling interval)."

In reference to vernal pools and brachiopods, the DEIR states that "Wet-season protocol surveys were conducted within the BSA during the 2012/2013 winter rainy season. Nine seasonal wetlands were sampled and no listed branchiopods were detected; however, the area received approximately 50% of the average precipitation recorded for the region containing the BSA."[67] and, "… rainfall totals during the 2011-2012 rain year were less than 60% of average, and during the 2012-2013 rain year were again lower than average, and areas providing suitable habitat for these species may not have ponded long enough for the species to be detected, even if they were present."[68]

12.A.16

California Tiger Salamander surveys would need to be conducted during normal precipitation years per survey protocol in order to make a supported determination on the likelihood of CTS occurrence. In addition, the "unlikely to occur on the project site" statement contradicts conclusions made in Table 4.4-4 of the DEIR about the potential occurrence of the species within the Project area (and likely confuse the reader of the document); the authors state - "Possible. Suitable upland habitat present on the project site. Four potential breeding ponds are located within 1.3 miles to the north and west of the project site. A neighboring landowner provided a photo of an apparent CTS taken at a pond located 1.8 miles from the project site. Although the photo appears to be of a CTS, the specimen was not field verified by a biologist and the photo was not taken during the course of a protocol-level survey or survey conducted by a biologist." The facts that the specimen was not field-verified by a biologist, and that the photo was not taken during the course of a protocol-level survey or survey conducted by a biologist, are entirely irrelevant to the contents of the photo. If the Applicant's consultants doubted the validity of the photo they could have asked the landowner for permission to conduct protocol-level surveys at the pond where the picture was taken.

The California Tiger Salamander sometimes migrates up to 2 km between breeding ponds and terrestrial habitat (see USFWS 2004) and according to Austin and Shaffer (1992), juveniles have been observed to migrate up to 1.6 km from breeding ponds to estivation areas.[69] Based on this literature, the Project area is within the range of mobility capabilities of the species from known detection sites. Again, based on these facts, the County's determination that species occurrence in the Project area is "unlikely" is not

[67] Project EIR, Section 4.4, pg. 76.

[68] Project EIR, Section 4.4, pg. 117.

[69] U.S. Fish and Wildlife Service (USFWS). 4 August 2004. Determination of threatened status for the California tiger salamander; and special rule exemption for existing routine ranching activities; final rule. Federal Register 69(149):47212-47248. *See also* Austin, C. C. and H. B. Shaffer 1992. Short, medium, and long-term repeatability of locomotor performance in the tiger salamander, *Ambystoma californiense*. Functional Ecology 6(2):145-153.

supported, especially when viewed in the context of habitat suitability over time (> 1 year and during normal precipitation years).

12.A.16

California Red-legged Frog (CRF or CRLF)

According to project documents – "On 16 August 2012, H. T. Harvey & Associates herpetologists Jeff Wilkinson and Kirk Setser conducted a single CRF survey of the Project site. They observed CRF in Cottonwood Creek and in one other drainage (Drainage 2) on the Project site."[70] Project documents go on to say that "Carpenter and Wilkinson conducted three CRF larval surveys: on 19–21 March, 29 and 30 April, and 14 May 2013."[71] Based on this description of the survey effort, the survey team appears to not have sampled the project and biological assessment area according to the USFWS protocol, which states: "This Guidance recommends a total of up to eight (8) surveys to determine the presence of CRF at or near a project site. Two (2) day surveys and four (4) night surveys are recommended during the breeding season; one (1) day and one (1) night survey is recommended during the non-breeding season. Each survey must take place at least seven (7) days apart. At least one survey must be conducted prior to August 15th. The survey period must be over a minimum period of 6 weeks (i.e., the time between the first and last survey must be at least 6 weeks). Throughout the species' range, the non-breeding season is defined as between July 1 and September 30."[72] Based the Project documents only 3 surveys were conducted and no night surveys were conducted. Additionally, the CRF surveys were completed during suboptimal drought conditions.[73] As a result, the full extent of CRF occurrence across the Project and biological assessment area was likely under represented and could result in unmitigated impacts to the species.

12.A.17

Western Pond Turtle

According to the project DEIR's "Biotic Report", protocol surveys for pond turtles were not conducted, even though established protocols for their detection exist.[74] Instead, the detection of this species (along with other amphibian and reptile species) was based on casual observations while conducting CRF, CTS or other reconnaissance-level surveys. As a result, the DEIR fails to establish the abundance and distribution of western pond turtles in the Project area. This precludes the public, natural resource agencies, and County from being able to assess the relative severity of Project impacts to the species. For example, few viable populations of pond turtles remain in the San Joaquin Valley, or

12.A.18

[70] Project EIR, Appendix E.7, *Aquatic Larval Surveys: California Tiger Salamander, California Red-legged Frog*, pg. 1

[71] Project EIR, Appendix E.7, *Aquatic Larval Surveys: California Tiger Salamander, California Red-legged Frog*, pg. 6

[72] USFWS (2005), *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog*, pg. 6

[73] Annual Climatological Summary (2013), National Climatic Data Center National Oceanic & Atmospheric Administration (http://www.ncdc.noaa.gov/cdo-web/)

[74] Appendix E.1, Section 2.5. *See also* U. S. Geological Survey. 2006. USGS western pond turtle (*Emys marmorata*) visual survey protocol for the southcoast ecoregion. U. S. Geological Survey protocol. San Diego, CA. 56 pp.

Salinas and Pajaro drainages (including tributaries).[75] The Project site appears to have a viable population of pond turtles.[76] Loss of that population due to habitat loss and fragmentation caused by the Project would have relatively severe consequences on conservation of the species. 12.A.18

San Joaquin Kit Fox

Surveys for special-status mammal species are inadequately documented in the DEIR. Figure 4.4-6 indicates known records of the San Joaquin kit fox, showing frequent occurrence to the south and east of the project area. In Table 4.4-4, which summarizes occurrence information on the kit fox, the DEIR itself acknowledges that the species occurs throughout the region and at least adjacent to the Project area. However, there is no indication in any of the documents if surveys were conducted to the north and west of the Project area. 12.A.19

In discussing the use of the project area as a wildlife movement corridor, page 81 states,

> Given the remote location of the project site, the low level of development in the vicinity, the relatively low degree of disturbance on the site and the presence of natural habitats on and adjacent to the project site, it is highly likely that wildlife move freely through the site; however the site is unlikely to serve as a distinct or important movement corridor or habitat linkage for any protected or managed species.

However, no scientific basis is provided for any conclusion made in this section, in particular that the Project area "is unlikely to serve as a distinct or important movement corridor". Given that the Project area "represents the northern target zone for kit fox connectivity through the Carrizo Plain", and that the kit fox occurs in and around the Project area, a conservative conclusion would be that: (1) the Project area is included within an established population of the kit fox, and/or (2) the Project area is serving as a frequently used movement corridor. 12.A.20

The issue of population status and movement is further confused by the following statements found on page 181:

> Based on an analysis of wildlife corridors conducted by Penrod et al. (2010) the project site does not occur within a kit fox satellite population or within an identified wildlife movement corridor. However, the project site is located within occupied San Joaquin kit fox habitat that lies to the west of a habitat linkage between the Western Kern core population and the Salinas Valley satellite population, a linkage identified as essential to the recovery of the San Joaquin kit fox according to the Recovery Plan…

[75] Jennings MR, MP Hayes. 1994. Amphibian and reptile species of special concern in California. Rancho Cordova, CA: California Dept. of Fish and Game, Inland Fisheries Division. p. 101. *See also* California Natural Diversity Database (CNDDB). 2014. RareFind 5 [Internet]. California Department of Fish and Wildlife [2014 September 2].

[76] DEIR, p. 4.4-76.

It is further stated, when discussing the Recovery Plan that "the project is located within the Palo Prieto/Cholame Valley target area." And again on page 182, the DEIR concludes that: "the project has the potential to interfere substantially with the movement of San Joaquin kit fox in an important habitat linkage." The DEIR gives completely contradictory information regarding the presence of, and Project impacts to, this special-status species. 12.A.20

Concerning mitigation activities, the DEIR is once again inconsistent within its own analysis and does not provide an adequate assessment on which to base mitigation activities. Although it is stated that "Mitigation: Implementation of MMs B-1(b, h, i and j) would reduce interference with the movement of San Joaquin kit fox in an important habitat linkage to less-than-significant levels…", this contradicts the fact and statements that the long-term and cumulative impacts on the kit fox are not known but could be substantial. Thus proposed mitigation measures would be inadequate. 12.A.21

The issue of use of the Project area by the kit fox is further confused by the statement found on page 89, "The BSA and Utility Corridor study area both comprise suitable home range and/or dispersal habitat for San Joaquin kit fox". If the Project area is a suitable home range, then the Project area is not simply a movement corridor at the northern end of the Carrizo Plain population. 12.A.22

Pages 89-90 summarize information from the California Valley Solar Ranch ("CVSR") that indicates kit fox will continue to inhabit a solar facility after development. It is also stated, "However, these data do not provide insight regarding the long-term effects of development of the project." In fact, on pages 91-92 they anticipate that longer-term negative impacts are likely (*italics* inserted).

> Although San Joaquin kit fox have potential to occur within the arrays and the interstitial habitats between the arrays and other infrastructure post-construction, habitat values within the project site are likely to change relative to the quality of the currently undeveloped habitat. Cypher et al. (2000) studied kit fox population dynamics in response to the development of oilfields in the southern San Joaquin Valley. They *initially found little effect* on the overall inter-annual variation in kit fox abundance within the developed areas, yet found variable rates of survival between adult and juvenile cohorts. Initially, adult survival rates were higher in the developed areas of the oilfield; however, the survival rates of juveniles were lower. *Over time, however, the capture rates of fox were lower in developed areas relative to undeveloped areas, a phenomenon attributed to degradation of habitat.*

12.A.23

Pages 90-91 list a multitude of negative impacts to the kit fox during construction but especially following full project development, including but not limited to: (1) death and injury by vehicles, (2) poisoning by chemicals, (3) increase in predation due to an altered predator community (including domestic animals), (4) altered prey community, (5) inhibition of movements by fencing, and (6) habitat degradation. As stated on page 91 of the DEIR: "Up to 2,086 acres of potential foraging and denning habitat for San Joaquin kit fox would be permanently altered on the project site."

San Joaquin Pocket Mouse

A glaring inconsistency in the DEIR is in regards to the San Joaquin pocket mouse, which the DEIR concludes on page 77 is a species that could occur on site, but implies none were located during kangaroo rat focused trapping. However, as detailed on page 95 of section 4.4, as well as on page 115 of Appendix E, adequate trapping was not conducted to determine the presence of special-status species.

Although buried in a lengthy phrase regarding the absence of San Joaquin pocket mice during other biological surveys, the DEIR confirms the presence of the San Joaquin pocket mouse in the Project area. DEIR page 95 states: "[n]o San Joaquin pocket mice were detected during the reconnaissance or full ground coverage mammal surveys and none were captured during 2013 trapping efforts; however, during small mammal trapping efforts on 6 August 2013, a single San Joaquin pocket mouse was observed foraging above ground."

Although the preparers of the DEIR state that the population is expected to be small based on little friable soil, no specific trapping effort was conducted to determine the distribution of the species in and around the Project area. Even though the DEIR records a sighting, it also states that "the nearest historical records for the species [pocket mouse] are about 14 miles east of the BSA (CNDDB, 2013)." This is an excellent example of why CNDDB data are not a substitute for site-specific surveys for all species. 12.A.24

When discussing negative impacts from Project development and operations, the DEIR states that the Project would only "reduce a relatively small amount of habitat that is regionally abundant for this species; consequently, this permanent habitat conversion would not substantially reduce the number of this species or restrict its range." What the DEIR fails to acknowledge is that if the pocket mice in the Project area represent part of a metapopulation structure, loss of this subpopulation could negatively impact overall species viability and diversity. None of this critical information informed the conclusions written in the DEIR.

Pages 95-96 conclude that few pocket mice likely exist in the Project area, and thus impacts would be minor to the overall species. However, this conclusion is based on speculation and not on a thorough and appropriate (protocol-level) survey of the species. In particular, no estimate of the lost acreage of pocket mouse habitat is made because no thorough surveys of their occurrence were conducted. Moreover, if the population *is* small, impacts to even a few individuals could cause extirpation.

Pronghorn

The past presence and abundance of pronghorn (*Antilocapra americana*) in Monterey County, California have long been established.[77,78,79,80,81,82] Although they became 12.A.25

[77] Caton, J. D. 1877. The antelope and deer of America. Forest and Stream Publishing Company, New York, USA.

locally extinct as a result of habitat fragmentation through conversion of native grasslands into agricultural areas, pronghorn were reintroduced, in part to reestablish an historic population but, more broadly, to help restore a native ecosystem.[83] Indeed, "The impact of insidious civilization developments appears deleterious to herds experiencing perilously low numbers south of San Francisco. The plight of these wild herds is apparently tied to the perpetuation of native grassland abundant with forbs. There is concern that if pronghorn are to remain a heritage on southern rangelands of the "Golden State," that native grasslands need to be perpetuated in healthy condition – then it may be feasible to perpetuate native pronghorn populations."[84] Pronghorn were translocated to Monterey County, and other nearby counties in 1990.[85]

12.A.25

The DEIR states: "pronghorn and Tule elk have not been observed with the project site."[86] This statement appears to conflict with information on the Applicant's website, which states: "A herd of approximately 100 antelope have flourished on the [Jack] ranch, since their original introduction by Fish and Game on neighboring land."[87] Moreover, pronghorn have been observed within the access road corridor[88] and reportedly in the southern end of the Project site.[89]

Implementation of the Project would impact pronghorn in several important ways.[90] Among these are temporary avoidance of construction sites, interference with movement patterns through increased traffic or anthropogenic obstructions (fences and other infrastructure), or both, and the direct impact of habitat no longer being available as a result of Project construction. In addition to the loss of habitat within fenced areas, pronghorn are likely to avoid remaining open areas in the northwest portion of the project

12.A.26

[78] Grinnell, J. 1933. Review of the recent mammal fauna of California. University of California Publications in Zoology 40:71-234.

[79] McLean, D. D. 1944. The prong-horned antelope in California. California Fish and Game 30:221-239.

[80] Gordon, B. L. 1979. Monterey Bay Area: natural history and cultural imprints. Second edition. The Boxwood Press, Pacific Grove, California, USA.

[81] Conway, J. D. 2003. Monterey: presidio, pueblo, and port. Tempus Publishing, Charleston, South Carolina, USA.

[82] Brown, D. E., J. Cancino, K. B. Clark, M. Smith, and J. Yoakum. 2006. An annotated bibliography of references to historical distributions of pronghorn in southern and Baja California. Bulletin of the Southern California Academy of Sciences 105:1-16.

[83] Western Ecological Research Center. 2012. [Internet] Tracking pronghorn antelope in California's Central Valley. Available from: http://www.werc.usgs.gov/outreach.aspx?RecordID=127

[84] Yoakum, J. D., and A. J. Koch. 2009. A review of literature pertaining to pronghorn in California from 1769 to 2009. Transactions of the Western Section of The Wildlife Society 45:21-26.

[85] California Department of Fish and Game. 2004. [Internet] Final environmental document regarding pronghorn antelope hunting. California Department of Fish and Game, Sacramento, USA. Available from: http://www.fgc.ca.gov/meetings/2014/apr/7_final_ED_Antelope.pdf

[86] DEIR, p. 4.4-81.

[87] Access: <http://www.hearstranch.com/about/>.

[88] California Flats Solar Project EIR. Page 4.4-183.

[89] Penrod, K., et al. 2010. Habitat connectivity planning for selected focal species in the Carrizo Plain. Science and Collaboration for Connected Wildlands, Idyllwild, California, USA.

[90] California Flats Solar Project EIR. Pages 4.4-183–4.4-184.

site because of their propensity to avoid small areas of even contiguous habitat.[91] The DEIR, however, concludes that pronghorn would continue to use corridors through the eastern portion of the Project site, and that movement through the access road and utility corridor would continue because no areas would be fenced.[92] Such a conclusion, however, cannot be stated with certainty, as pronghorn are sensitive and avoid areas of substantial disturbance.[93] Pronghorn must have suitable expanses of rangelands throughout which they can move to secure their annual life-history needs.[94] The DEIR is refreshingly honest in its assessment of impacts that will be incurred as a result of Project construction.

12.A.26

It is clear that project implementation will impact opportunities for movement by pronghorn between the Project area (i.e., the Cholame Valley) and the Carrizo Plain.[95] Moreover, construction along the access road will also interfere with birthing; unfortunately, the DEIR suggests that impacts to movements and degradation of birthing areas, although significant, are mitigable to a less-than-significant level.[96] I am not convinced that either is the case, and respond with the following as it relates to mitigation:

As indicated in the DEIR, surveys are to be conducted within the birthing area from 1 April to 30 June and, if fawns are detected, a buffer of 400 m (~0.25 mi) shall be established to "... ensure that does and calves [fawns] are not distressed."[97] The birthing season in an area proximate to the project site (Carrizo Plain, San Luis Obispo County) for a period of 3 years (2009–2011) has been determined to occur within the period between 25 April and 25 May, and during two of the three years, birth synchrony was statistically significant; further, only fawns born within the peak birthing periods survived.[98] In lieu of the proposed mitigation, a more appropriate mitigation measure to avoid impacts to parturient females and their offspring would be to conduct no construction during a period from 15 April to 30 May, based on field research in an area adjacent to the Project area. Thus, I suggest mitigation measure B4(a) be modified to read: "In order to ensure that does and calves are not distressed, no construction shall occur from 15 April to 30 May."

12.A.27

[91] Berger, J., K. M. Berger, and J. Beckmann. 2006. Wildlife and energy development: pronghorn of the upper Green River Basin—Year 1 Summary. Wildlife Conservation Society, Bronx, New York, USA.

[92] California Flats Solar Project EIR. Pages 4.4-184.

[93] Berger, J., K. M. Berger, and J. Beckmann. 2006. Wildlife and energy development: pronghorn of the upper Green River Basin—Year 1 Summary. Wildlife Conservation Society, Bronx, New York, USA.

[94] O'Gara, B. W., and J. D. Yoakum. The future. Pages 809-832 *in* B. W. O'Gara and J. D. Yoakum, editors. Pronghorn ecology and management. University Press of Colorado, Boulder, USA.

[95] California Flats Solar Project EIR. Pages 4.4-184.

[96] *Ibid.*

[97] *Ibid.*

[98] Johnson, D. R. 2014. Pronghorn (*Antilocapra americana*) offspring recruitment on the Carrizo Plain National Monument: evaluating the effects of low population density and marginal habitat quality. M.S. Thesis, University of Nevada, Las Vegas, USA.

Mitigation measure B4(b) includes the following provisions:

> ... new pronghorn-friendly fencing shall be installed to improve the movement of pronghorn both on and through mitigation sites where applicable. This requirement shall not apply to existing fencing or fencing installed to preclude cattle from sensitive resources such as restored or protected wetland or riparian habitats. The HMMP (mitigation measure B-1[b]) for these sites shall contain the following requirements: (1) Identification of likely and feasible pronghorn movement pathways on the mitigation sites; (2) Removal of nonessential fencing on the mitigation sites where not in conflict with adjacent land management practices; (3) Incorporation of measures to increase visibility of existing fencing (high-visibility wire, PVC covers, vinyl markers, flagging, etc.), as appropriate; (4) Incorporation of fencing modifications, where not in conflict with adjacent land management practices, such as replacing barbed wire with smooth wire on the lower (and possibly upper wires of the fence), designed to enable movement by pronghorn through the likely and feasible pathways on mitigation sites; (5) Placement of fencing at potential risk areas to encourage movement away from dangerous roads; and (6) A schedule for implementing the above measures and financial assurances to implement the required enhancement.[99]

12.A.28

Most of these stipulations are reasonable and well thought out. Nevertheless, there are flaws in the proposed mitigation. First, there must be some rationale stated to define "the likely and feasible pronghorn movement pathways on the mitigation sites," as noted in (1), above. In other words, simply saying it will be done is not adequate; the justification and methodologies used to determine "... likely and feasible pronghorn movement pathways on the mitigation sites..." must be included. In the absence of such, the reader is left no basis to determine how meaningful such mitigation will (or will not) be. Further, stipulation (3) above needs to be stated without the qualification, "as appropriate." It will be in the best interest of pronghorn and other species to mark all fences with highly visible flagging, wire, or other methods. With respect to stipulation (4), all such fences should be modified to enhance passage by pronghorn. Additionally, mitigation must include raising the bottom wire of the fence to a height that is compatible with the passage of pronghorn, while simultaneously meeting livestock control needs, for the proposed mitigation to be meaningful. The authors of the DEIR are referred to the literature addressing that subject.[100,101,102] Stipulation (5) must be clarified to indicate that placement of fencing is specifically to preclude access; as currently written, readers can conclude that because it encourages movement away from dangerous roads, it would also allow access to dangerous roads. Further, any such fencing must provide for the potential

[99] California Flats Solar Project EIR. Pages 4.4-187–4.4-188.

[100] Yoakum, J. D. 1980. Habitat management guidelines for the American pronghorn antelope. U.S. Bureau of Land Management Technical Note 347. U. S. Department of the Interior, Washington, D.C., USA.

[101] Yoakum, J. D. 2004. Management plans, environmental impact statements and guides. Pages 541-569 *in* B. W. O'Gara and J. D. Yoakum, editors. Pronghorn ecology and management. University Press of Colorado, Boulder, USA.

[102] Bleich, V. C., J. G. Kie, T. R. Stephenson, M. W. Oehler, and A. L. Medina. 2012. Managing rangelands for wildlife. Pages 74-94 in N. J. Silvy, editor. The wildlife techniques manual. Seventh edition. Volume 2: Management. Johns Hopkins University Press, Baltimore, Maryland, USA.

passage of pronghorn, which quite possibly would call for the incorporation of "pronghorn passes."[103,104,105,106]

12.A.28

The DEIR states: "No pronghorn or their sign were detected within the project site, but they have been observed foraging within the Access Road. Pronghorn have also been documented in the Cholame Valley on both sides of the Access Road and within the southern portion of the project site (Penrod et al. 2010).[107] A herd of approximately 40 to 50 pronghorn have been tracked by the CDFW within the Cholame Valley."[108] It further states: "Habitat suitability modeling identified the Cholame Valley as a Target Zone for pronghorn, indicating the area represents a known herd range that should remain connected to the Carrizo Plain herd to the south (Penrod et al. 2010).[109] Areas within the project site and Access Road are considered to be of medium, medium-high, and high suitability values for pronghorn."[110] Clearly, the value of the Project site to pronghorn is indisputable.

12.A.29

Mitigation measure B-1(j) is identified as offsetting Project impacts to pronghorn.[111] However, that measure addresses mitigation specifically for impacts to kit fox (*Vulpes macrotis*), *not* to pronghorn. While kit fox and pronghorn have overlapping distributions and, at least to some extent, use similar habitats, pronghorn have forage requirements that might not be supported if only the ecology of kit fox is considered when acquiring replacement habitat. Indeed, pronghorn are selective foragers, feeding selectively on forbs and grasses at certain times of the year, but do utilize "coarser" forages when more digestible feed is unavailable.[112,113] Alternatively, kit fox are opportunistic foragers, and consume a multitude of different foods, including insects, vertebrates (primarily leporids

12.A.30

[103] Spillett, J. J., J. B. Low, and D. Sill. 1967. Livestock fences—how they influence pronghorn antelope movements. Bulletin 470. Utah Agriculture Experiment Station, Logan, USA.

[104] Mapston, R. D., and R. S. ZoBell. 1967. Antelope passes: their value and use. Technical Note D-360. U.S. Bureau of Land Management, Department of the Interior, Washington, D.C., USA.

[105] Yoakum, J. D., W. P. Dasmann, H. R. Sanderson, C. M. Nixon, and H. S. Crawford. 1980. Habitat improvement techniques. Pages 329–403 in S. D. Schemnitz, editor. Wildlife management techniques manual. The Wildlife Society, Washington, D.C., USA.

[106] Howard, V. J., J. L. Holechek, and R. D. Pieper. 1983. Roswell pronghorn study. New Mexico State University, Las Cruces, USA.

[107] Penrod, K., et al. 2010. Habitat connectivity planning for selected focal species in the Carrizo Plain. Science and Collaboration for Connected Wildlands, Idyllwild, California, USA.

[108] *Ibid.*

[109] *Ibid.*

[110] California Flats Solar Project EIR. Pages 4.4-77.

[111] California Flats Solar Project EIR Page 4.4-188.

[112] Byers, J. A. 2003. Pronghorn. Pages 998–1008 *in* J. A. Feldhamer, B. C. Thompson, and J. A. Chapman. Wild mammals of North America. Biology, management, and conservation. Second edition. Johns Hopkins University Press, Baltimore, Maryland, USA.

[113] Yoakum, J. D. 2004. Foraging ecology, diet studies and nutrient values. Pages 447–502 *in* B. W. O'Gara and J. D. Yoakum, editors. Pronghorn ecology and management. University Press of Colorado, Boulder, USA.

or rodents), and plant materials.[114] Thus, kit foxes are more plastic in their foraging ecology than are pronghorn. As a result, it is imperative that the specific needs of pronghorn be considered simultaneously with those of kit fox, because the implied assumption that 'if it's good for kit fox, it's good for pronghorn' is a specious argument the reader is led, perhaps unwittingly, to accept if mitigation measure B-1(j) is incorporated as written.[115]

12.A.30

In the absence of documentation to ensure that habitat to replace that lost for kit fox is, indeed, suitable for pronghorn and meets their life-history needs, this mitigation measure cannot be considered acceptable for the loss of pronghorn habitat. As a result, the County must incorporate a mechanism that requires the Applicant to provide scientific evidence demonstrating lands proposed for kit fox mitigation also provide a conservation benefit to pronghorn.

DEIR Appendix E.8: Identification of Kangaroo Rats

Many flaws exist in the design, implementation and documentation of the processes involved in identifying the special-status species of kangaroo rats. Section 3.1 in the trapping survey report states: "A total of 1400 traps were set and monitored over 7 nights during the period of 5 August through 15 August 2013." However, the actual amount of time a trap (or trapping cluster) was operated in a location was not documented, nor did trapping follow USFWS protocols (2013) for special-status kangaroo rats (including Tipton, short-nosed, San Joaquin, and Fresno), and was not conducted for a sufficiently long duration at each trapping location (cluster of traps) to provide reliable capture probability (detection probability).[116]

Although not cited by H.T. Harvey, the USFWS (2013) trapping protocol for kangaroo rats indicates that: "traps should be set and monitored for a minimum of five consecutive nights. If the survey is for determining presence only, then the trapping will end upon the first capture of the target species." Due to the fact that H.T. Harvey was not skilled in species identification of the kangaroo rats being caught, they also could not know if they allowed sufficient trapping duration (number of nights) at a location to capture a special-status species. A complicating factor is that more common species usually occupy traps first and exclude rarer species.

12.A.31

The issue of trapping duration is especially problematic across most of the Project area because trap clusters were established at a relatively close spacing along portions of the road access corridor as well as along a portion of the west-central border of the Project area. Traps were sparsely set across the remainder of the Project site and therefore

[114] Cypher, B. L. 2003. Foxes. Pages 511–546 *in* J. A. Feldhamer, B. C. Thompson, and J. A. Chapman. Wild mammals of North America. Biology, management, and conservation. Second edition. Johns Hopkins University Press, Baltimore, Maryland, USA.

[115] California Flats Solar Project EIR Page 4.4-188.

[116] USFWS. 2013. Survey protocol for determining presence of San Joaquin kangaroo rats. U.S. Fish and Wildlife Service, Sacramento Field Office. March 2013.

cannot be considered a reliable sample, or full-coverage ground survey as suggested in H.T. Harvey's report. 12.A.31

DEIR Appendix E.14: Spotlight Surveys Report

2.2 Survey Methods

The survey methods used by H.T. Harvey did not meet USFWS kit fox survey protocol requirements (USFWS 1999) and therefore provide an inaccurate assessment of kit fox habitat and population dynamics. The protocol specifies "spotlighting of the project vicinity must be conducted for a minimum of 10 nights within a 15 day period (weather permitting). "Project vicinity" means the actual project site plus an area encompassing a 2-mile radius around the project site."

However, according to the DEIR in section 2.2.1, "Spotlight surveys were conducted during two sessions. The first survey session, focused on the Project site and access road corridor, was conducted on the nights of 26 November and 4 and 5 December 2012. The second survey session was conducted on the nights of 18–20 and 23–25 September 2013." Additionally, section 3.1 states, "spotlight surveys were conducted during nine nights in 2012 and 2013, for a total of ~102 survey hours. The 2012 winter surveys were conducted 5 hours each night by two teams during three nights (~30 hours), and the 2013 fall surveys were conducted 6 hours each night by two teams during six nights (72 hours)." The methodology followed by H.T. Harvey clearly does not conform with the USFWS standards for accurate field assessments for kit fox. 12.A.32

The spotlight surveys were not conducted across the specified 2-mile radius of the Project location. Appendix E.14, Figures 3 and 4, show that surveys outside of the Project site were limited to a few roads and did not cover the 2-mile radius. According to the protocol, an appropriate survey would consist of 10 nights for each period and not a total of 9 nights over a 2-year period.

The USFWS protocol also specifies: "spotlighting surveys cannot be conducted in the same area where camera and scent stations are in place." Scent stations were not even used in kit fox surveys conducted by H.T. Harvey, which in itself does not meet USFWS protocol. The adequacy of the spotlight surveys can also be challenged based on the results of the ground surveys of the project area. For example, on p. 4 of E.14, the report states [*italics inserted*]

> The full-coverage ground survey is an efficient and comprehensive means of detecting and identifying signs of wildlife, which for nocturnal mammals initially occurs through indirect evidence, such as potential dens, tracks, and scat. For example, full-coverage ground surveys of the Project site and access road revealed the *presence of 255 potential dens with characteristics typical of species such as the San Joaquin kit fox, American badger, or the relatively common coyote* (*Canis latrans*).

The spotlight surveys, however, identified only 7 badgers, 4 kit fox, and 28 coyotes. Other research has shown that spotlight surveys produce an inadequate understanding of

kit fox abundance. For example, Warrick and Harris (2001) compared the adequacy of spotlight and scent stations for monitoring San Joaquin kit fox populations.[117] They showed that although data collected during spotlight and scent-station surveys can track general trends in kit fox abundance over relatively large areas, both techniques lacked precision that limited their usefulness. They recommended that additional replication and increasing sampling intensity would probably make these indices more reliable. 12.A.32

4.1.1 San Joaquin Kit Fox

Section 4.1.1 of the report states, "No San Joaquin kit fox were detected at the 39 camera stations (390 camera station nights) distributed throughout the Project site at densities of more than eight cameras per square mile." However, H.T. Harvey did not fully apply the USFWS survey protocol for the species. Specifically, the USFWS kit fox protocol (1999) specifies that: "concurrently with camera stations, scent stations must be established within the project area at a minimum of eight per 640 acres and maintained for a minimum of 10 consecutive nights (weather conditions permitting)." Yet Section 2.6 of Appendix E.1 clearly states, "cameras were deployed without bait…". Scent stations are generally used to monitor mammals, including kit fox as documented in the 2001 Warrick and Harris study. 12.A.33

Further inconsistencies are documented on page 15 of section 4.1.3 (Suitability of the Project Site as a Corridor), which states, "As a consequence, the Project site does not support connection between the Cholame Valley population of San Joaquin kit fox and regional populations of kit fox within the Salinas Valley and the Ciervo-Panoche Natural Area." Yet this conclusion is at odds with statements made in Section 4.4, which as previously discussed concludes that the project area "represents the northern target zone for kit fox connectivity through the Carrizo Plain" and "the project has the potential to interfere substantially with the movement of San Joaquin kit fox in an important habitat linkage." 12.A.34

PROJECT IMPACT ISSUES

Botanical Resources

<u>Sensitive Natural Communities</u>

The DEIR addresses impacts to wildflower fields, but none of the other sensitive natural community types that could be affected by the Project.[118] As discussed above, this may be due to the consultant's failure to properly identify all sensitive natural community types within the Project area.[119] The County must analyze and disclose Project impacts 12.A.35

[117] Warrick, G.D., and C.E. Harris. 2001. Evaluation of spotlight and scent-station surveys to monitor kit fox abundance. Wildlife Society Bulletin 29:827-832.

[118] DEIR, p. 4.4-40.

[119] H.T. Harvey & Associates. 2014a. California Flats Solar Project, Monterey County, California, Biotic Report. *See also* H.T. Harvey & Associates. 2014b. California Flats Solar Project, Monterey and San Luis Obispo Counties, CA, 2013 Special Status Plant Pre-Construction and Project Vicinity Survey Report.

to: Yerba mansa (*Anemopsis california* alliance), alkali heath (*Frankenia salina* alliance), Willow-Cottonwood Riparian Woodland (*Populus fremontii-Salix laevigata* association), chairmakers's bulrush (*Scirpus americanus* alliance), Valley needlegrass grassland (*Stipa Pulchra Alliance*), Valley Oak Woodland (*Quercus lobata* alliance), and serpentine bunchgrass grassland.[120] The CDFW has indicated that any impacts to a state-listed sensitive natural community are significant.[121]

12.A.35

Impact B-1: Impacts to Species and their Habitat(s)

Although the DEIR (Table 4.4-5) provides population numbers for all special-status plants detected during the surveys, it fails to translate these numbers into "occurrences," which is the standard used by the CDFW and CNDDB. The CDFW defines an occurrence as a location record of a plant, that is a population or group of populations within 0.25 mile and not separated by significant habitat discontinuities. Describing how many occurrences/populations are represented in the BSA would indicate if the number of individuals represented in the table are one large population, or have habitat discontinuities that make certain populations more significant than others based on the habitat(s) they occupy and the species they co-occur with. Based on information currently in the CNDDB, no single populations of round-leaved filaree (*California macrophylla*) or shining navarretia (*Navarretia nigelliformis* subsp. *radians*) have come close to the level of abundance exhibited in the Project survey areas in 2013, a poor rainfall year.[122] If these are single populations, they are certainly imporant core populations that deserve protection from impacts. As CRPR 4 plants, demographic data for South Coast Range morning-glory (*Calystegia collina* subsp. *venusta*) and hogwallow starfish (*Hesperevax caulescens*) are not readily available in the CNDDB. However, the EIR needs to evaluate how population numbers for those two species relate to demographic data for all extant occurrences to determine whether the occurrences in the Project area are significant core populations. A discussion of how many extant versus extirpated occurrences of each of the special-status species found on the Project site should also be included to add context and assess the potential that the Project would impact core populations.

12.A.36

12.A.37

Additionally, the DEIR fails to discuss how the presence of the various special-status plants in the Project area relates to the statewide (or nationwide) range of each species. This precludes the ability to assess whether the Project would have a significant impact on a given species' range. For example, are the populations that occur in the Project area disjunctions, range extensions, or peripheral populations? Peripheral populations are

12.A.38

[120] California Department of Fish and Game. 2010. *List of Vegetation Alliances and Associations*. Vegetation Classification and Mapping Program, California Department of Fish and Game. Sacramento, CA. September.

[121] California Department of Fish and Game. 2009 Jun 10. Comments on the Palmdale Hybrid Power Plant Request for Incidental Take Permit for Mohave Ground Squirrel and Additional Comments Regarding Impacts to Biological Resources. CEC Docket 08-AFC-09. Letter from Edmund Pert, Regional Manager, to Sara Head, City of Palmdale. p. 4.

[122] California Department of Fish and Wildlife. 2014. California Natural Diversity Database Version 5

significant in terms of genetic variability, which leads to higher rates of speciation.[123] Furthermore, it is well documented that peripheral populations have evolutionary significance and conservation value; are at higher risk of extirpation; and are extremely important for the long-term conservation of genetic diversity and evolutionary potential, especially when considering the need to adapt to future climate change. For example, the presence of Temblor buckwheat (*Eriogonum temblorense*) in the Project area represents one of the westernmost occurrences (peripheral populations) of this taxon's overall range.[124]

12.A.38

Burrowing Owl

The DEIR allows the Applicant to "passively relocate" burrowing owls off the Project site.[125] Consistent with CDFW guidelines, passive relocation is a potentially significant impact under CEQA that must be analyzed.[126] Specifically, the temporary or permanent closure of burrows may result in: (a) significant loss of burrows and habitat for reproduction and other life history requirements; (b) increased stress on burrowing owls and reduced reproductive rates; (c) increased depredation; (d) increased energetic costs; and, (e) risks posed by having to find and compete for available burrows.[127]

12.A.39

The need for full analysis of potential impacts from passive relocation is further supported by research that indicates most translocation projects have resulted in fewer breeding pairs of burrowing owls at the mitigation site than at the original site, and that translocation projects generally have failed to produce self-sustaining populations.[128] Investigators attribute the limited success of translocation to: (a) strong site tenacity exhibited by burrowing owls, and (b) potential risks associated with forcing owls to move into unfamiliar and perhaps less preferable habitats.[129]

A high percentage (> 50%) of burrowing owl nests that are disturbed by human activities are abandoned.[130] Many of the burrows that remain following construction of the Project will be proximal to various sources of anthropogenic disturbance. Moreover, habitat adjacent to burrows is ecologically important to burrowing owls (especially habitat

[123] Leppig G & J. White. 2006. Conservation of peripheral plant populations in California. Madroño 53:264–274.

[124] Consortium of California Herbaria (CCH). 2014. Data provided by the participants of the Consortium of California Herbaria (ucjeps.berkeley.edu/consortium/).

[125] DEIR, p. 4.4-136.

[126] California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation, p. 10.

[127] *Ibid.*

[128] Smith BW, JR Belthoff. 2001. Burrowing owls and development: short-distance nest burrow relocation to minimize construction impacts. J. Raptor Research 35:385-391.

[129] *Ibid.*

[130] Klute DS, LW Ayers, MT Green, WH Howe, SL Jones, JA Shaffer, SR Sheffield, TS Zimmerman. 2003. Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States. U.S. Department of Interior, Fish and Wildlife Service, Biological Technical Publication FWS/BTP-R6001-2003, Washington, D.C. p. 69.

within 600 meters of the nest burrow).[131] The Project would fragment habitat for many of the owls that are not evicted from their burrows. Research has shown that habitat fragmentation causes local burrowing owl populations to decline.[132]

The DEIR briefly acknowledges some of the adverse effects that the Project would have on burrowing owls. For example, with respect to passive relocation it states: "the loss of habitat and exposure to predation during displacement from established home range may result in indirect impacts that include a potential long-term decline in reproductive success and population viability."[133] The DEIR subsequently acknowledges that Project impacts to burrowing owls would be a significant.[134] However, the County ultimately concludes that those impacts would be mitigable.[135] The County lacks the basis for this conclusion because the DEIR does nothing to ensure that the Project does not contribute to a "long-term decline in reproductive success and population viability." Furthermore, the DEIR provides minimization measures, but no actual mitigation to offset significant impacts associated with the displacement and mortality of individuals, or disturbances that cause owls to abandon their burrows—issues that the DEIR identified as significant impacts.[136] 12.A.39

Of great concern is the County's claim that all of numerous potentially significant impacts to burrowing owls can be mitigated—even though it does so without referencing scientific literature that demonstrates mitigation is possible or reasonably likely to succeed. To the contrary, scientific studies have shown that over the past 15+ years, mitigation measures intended to offset the loss of habitat and slow or reverse further decline of this species have **proven ineffective**.[137]

As a result of the issues identified above, the Project would have significant and unmitigated impacts to burrowing owls.

California Condor

The DEIR states without qualification that the condor could suffer fatalities due to the solar infrastructure, digestion of "microtrash," and accidents with vehicles.[138] The DEIR continues by discussing indirect impacts to this critically endangered species, which could include "the long-term decline in population viability for California condors. Since no roosting or nesting habitat will be affected, and since the project site comprises only a 12.A.40

[131] California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation. 36 pp. Available at: <www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>, pp. 21 and 22.
[132] *Ibid.*
[133] DEIR, p. 4.4-103.
[134] *Ibid.*
[135] *Ibid.*
[136] *Ibid.*
[137] California Department of Fish and Game. 2012 Mar 7. Staff Report on Burrowing Owl Mitigation. Available at: <www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>. p. 1.
[138] DEIR, p. 4.4-97.

very small area of foraging habitat relative to what is available in the region, no indirect impacts to California condors are expected."

Although at first the authors of the DEIR state that indirect impacts would include decline in population viability, this statement is immediately contradicted by saying there would be no indirect impacts. Any impact, either direct or indirect, to such a critically endangered species would have a high overall impact on the population. 12.A.40

Raptors and Other Special-Status Birds

The DEIR lumps the discussion of impacts to all other "Raptors and Other Special Status Birds", completely ignoring species-specific behaviors, habitat requirements and breeding patterns that can be significantly impacted in a variety of ways by Project activities. 12.A.41

Pages 103-104 make a sweeping statement concerning the impacts to other avifauna on the project area:

> The site also provides suitable foraging and/or breeding habitat for other special-status raptors and bird species, including Swainson's hawks, white-tailed kites, and northern harriers, short-eared owl, long-eared owl, loggerhead shrike, tricolored blackbird, mountain plover, Oregon vesper sparrow (wintering only), and grasshopper sparrow. Many other native bird species that are protected under state and federal law during nesting could occur and nest on-site. Based on the condition of the site and observations of avian activity in 2012 and 2013, there is a high likelihood of birds nesting within the project site. 12.A.42

While the DEIR mentions "[m]any other native bird species that are protected under state and federal law during nesting could occur and nest on-site", it neglects to mention that the Migratory Bird Treaty Act ("MBTA") generally prohibits negative impacts all native birds during the nesting season (typically February 1 through September 15). The DEIR subsequently admits that Project construction could result "in the destruction or abandonment of nests, eggs, or young."[139] However, without focused surveys for nests, no quantification of the impact caused by construction of the Project can be made.

The DEIR notes that "up to 2,188 acres of natural habitat that supports breeding or foraging habitat for raptors and other birds would be permanently affected by the project". It then alleges: "this is relatively small compared to the large areas of foraging and breeding habitat available in the region. The modification of approximately 2,188 acres of avian habitat represents just 1% of the rangelands inventoried in Monterey County." This rationale, however, assumes all rangelands inventoried in Monterey County provide suitable foraging and breeding habitat, which they do not. On rangelands, habitat suitability for raptors can be drastically affected by management practices and grazing regimes. For example, in much of the western United States overgrazing has reduced habitat quality for golden eagles by altering foraging habitat and 12.A.43

[139] DEIR, pp. 4.4-103 and -104.

reducing prey abundance.[140] In addition, numerous studies have demonstrated that overgrazing, haying, agricultural intensification, and the widespread use of rodenticides can degrade or eliminate habitat by reducing the numbers of small mammals (i.e., prey items for many raptor species).[141] The claim made in the DEIR also does not address the cumulative impact of the Project on habitat that has already been substantially reduced.

12.A.43

The DEIR Fails to Disclose, Analyze, or Minimize the Adverse Effects Associated with the Translocation or Relocation of Wildlife

The Project will require the translocation (or relocation) of burrowing owls, badgers, and potentially other wildlife species off of the Project site. The translocation of wildlife out of the Project area constitutes a potentially significant impact that has not been disclosed, analyzed, or mitigated in the DEIR.

Efforts to translocate (or relocate) animals often fail. Animals that are captured, handled, and/or forced to move from their territory often become stressed. This may lead to the increased production of lactic acid or "stress hormones" in the organism.[142] These physiological changes often cause a non-trivial amount of mortality. In addition, when an animal is moved to an unfamiliar location, it has no knowledge of the habitat resources essential for its survival (e.g., food, water, and cover). The lack of cover in an unfamiliar setting makes a prey species an easy target for predators. Moreover, many species exhibit an intrinsic homing response that is energetically taxing, and that may preclude procurement of food and cover.

12.A.44

Translocation can cause several other types of adverse effects to translocated individuals, and individuals at the recipient site. Even if the translocated animal is moved to an area with readily available resources, aggressive competitors may prevent the displaced animal from accessing the resources, and from mating. For example, research has demonstrated that translocating Tipton kangaroo rats to occupied habitats may cause territorial disputes with existing residents.[143] This often leads to detrimental effects on both the translocated and resident animals. In addition, translocation can spread disease by introducing diseased animals into a healthy population, or by translocating healthy animals into an afflicted area. Finally, if animals are moved into an area that is already at its carrying capacity the entire population can crash.

[140] Kirk, D.A. 1996. Updated status report on the golden eagle *Aquila chrysaetos* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa, ON, Canada.

[141] Shuford, W. D., and Gardali, T., editors. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

[142] Tracy C.R., K. E. Nussear, T. C. Esque, K. Dean-Bradley, C. R. Tracy, L. A. DeFalco, K. T. Castle, L. C. Zimmerman, R. E. Espinoza, and A. M. Barber. 2006. The importance of physiological ecology in conservation biology. Integrative and Comparative Biology. pp. 1–15.

[143] Goldingay RL, PA Kelly, DF Williams. 1997. The Kangaroo Rats of California: endemism and conservation of keystone species. Pacific Conservation Biology. Volume 3; p. 47-60. Sydney: Surrey Beatty & Sons.

Several studies have examined the fate of translocated animals. For example, Dodd and Seigel (1991) reviewed projects involving relocation, repatriation, and translocation ("RRT") of amphibians and reptiles. The authors concluded "[m]ost RRT projects involving amphibians and reptiles have not demonstrated success as conservation techniques and should not be advocated as if they are acceptable management and mitigation practices."[144] Efforts to translocate birds and mammals also have had a high failure rate.[145] Germano and Bishop (2009) concluded "[i]f the release habitat is not of high quality, then the chances of a positive outcome are low even when all other factors are taken into consideration. Although we could not evaluate habitat quality in the publications we reviewed, poor or unsuitable habitat was one of the most often reported reasons for translocation failure."[146]

Mitigation imposed in the DEIR includes having a biologist move animals "to an appropriate location outside the area of disturbance."[147] According to the DEIR: "[t]he candidate sites for relocation shall be identified before construction and shall be selected based on the size and type of habitat present, the potential for negative interactions with resident species, and the species' range."[148] The DEIR lacks any information on how these variables will be assessed. Furthermore, the DEIR does not identify the distribution, quantity, condition, and ownership of "replacement habitat" in the vicinity of the Project site. This precludes the ability to assess the probability that suitable receptor will be identified, and thus the anticipated fate of animals that are moved off the site. 12.A.44

Inferences on habitat value require consideration of many more factors than the three identified in the DEIR. Indeed, there are many biotic and abiotic factors that may influence habitat quality, and thus the likely fate of the translocated animal. The key focus of habitat evaluation should be determining limiting agents in species abundance, because habitat by itself does not guarantee long-term fitness of individuals and the viability of populations.[149]

These issues exemplify the need for the Applicant and County to develop thorough and well-crafted translocation (or relocation) plans for any species that may need to be moved off the Project site prior to construction. To minimize the adverse effects associated with translocation, it is essential that the resources agencies approve the translocation plans prior to implementation.

[144] Dodd CK Jr., RA Seigel. 1991. Relocation, repatriation, and translocation of amphibians and reptiles: Are they conservation strategies that work? Herpetologica 47(3):336-350.

[145] Dickens MJ, DJ Delehanty, LM Romero. 2009. Stress and translocation: alterations in the stress physiology of translocated birds. Proceeding: Biological Sciences 276(1664):2051-2056. *See also* Chipman R., D. Slate, C. Rupprecht, and M. Mendoza. 2007. Downside risk of wildlife translocation. Pages 223–232 in Dodet B., A. R. Fooks, T. Muller, N. Tordo, editors. Proceedings: towards the elimination of rabies in Eurasia. Joint OIE/WHO/EU International Conference, Paris, France.

[146] Germano, J.M. and Bishop, P.J. (2008) Suitability of amphibians and reptiles for translocation. Conservation Biology 23:(1) 7-15.

[147] *E.g.*, *See* DEIR, pp. 4.4-137 and -138.

[148] *Ibid.*

[149] Morrison ML, BG Marcot, and RW Mannan. 2006. Wildlife-Habitat Relationships: Concepts and Applications. 3rd ed. Washington (DC): Island Press. 493 p.

Avian Collisions

One hundred million to 1 billion birds are killed annually by daytime window collisions at low-level structures in the U.S. alone.[150] The visual system of birds is simply not capable of perceiving glass as a physical obstacle.[151] Whereas the extent of the threat remains unknown, the presence of dead and injured birds at solar facilities operating (or under construction) in California demonstrates that solar arrays present a collision hazard to birds.[152] At PV facilities, birds appear to mistake the broad reflective surfaces of the solar arrays for water, trees, and other attractive habitat.[153] When this occurs, the birds become susceptible to mortality by: (a) colliding with the solar arrays; or (b) becoming stranded (often injured) on a substrate from which they cannot take flight, thereby becoming susceptible to predation and starvation.[154]

The DEIR's analysis of the collision risk to birds is limited to the following:

> Solar facilities also present risk for bird collisions with solar panels. Birds migrating at night or moving between the perennial and ephemeral streams on the project site or the adjacent stock ponds would also be at an increased risk of collision with the solar panels as the panels might be mistaken for open sky or water. Based on the known distribution of the species in the project area, observations made during surveys, and fatality results emerging from other solar sites in California (Western EcoSystems Technology, Inc. 2014), some collision mortality is anticipated to occur.[155]

12.A.45

The collision risk posed by the Project's solar arrays *is not* limited to birds migrating at night or birds moving between water features. A recent study completed by the National Fish and Wildlife Forensics Laboratory (2014) reported: "solar facilities appear to represent "equal-opportunity" hazards for the bird species that encounter them. The remains of 71 species were identified [at three solar facilities], representing a broad range of ecological types. In body size, these ranged from hummingbirds to pelicans; in ecological type from strictly aerial feeders (swallows) to strictly aquatic feeders (grebes) to ground feeders (roadrunners) to raptors (hawks and owls). The species identified were equally divided among resident and non-resident species, and nocturnal as well as diurnal species were represented."[156]

[150] Evans Ogden LJ. 2002. Summary Report on the Bird Friendly Building Program: Effect of Light Reduction on Collision of Migratory Birds. Special Report for the Fatal Light Awareness Program (FLAP). Available at: http://www.flap.org/.

[151] Klem D Jr. 2009. Preventing Bird-Window Collisions. The Wilson Journal of Ornithology 121(2):314–321.

[152] Kagan RA, TC Viner, PW Trail, EO Espinoza. 2014. Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis. National Fish and Wildlife Forensics Laboratory. 28 pp.

[153] *Ibid.*

[154] *Ibid.*

[155] DEIR, p. 4.4-106.

[156] Kagan RA, TC Viner, PW Trail, EO Espinoza. 2014. Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis. National Fish and Wildlife Forensics Laboratory. 28 pp.

I concur with the County's conclusion that the Project will cause avian collision mortality. However, the level of mortality cannot even be estimated because the Applicant's consultant did not conduct any surveys to assess avian abundance in the Project area.[157] Without a defensible, quantitative estimate of likely mortality, the County does not have the basis to defend its conclusion that avian mortalities would be mitigated to a less-than-significant level.[158] Moreover, the DEIR does not contain any specific measures to mitigate avian collisions with the Project's solar arrays. As a result, the Project would have an unmitigated significant impact to special-status bird species, including species protected by Fish and Game Code and/or the Migratory Bird Treaty Act.

12.A.45

MITIGATION ISSUES

The DEIR Improperly Defers Details That Are Fundamental to Evaluating the Proposed Mitigation

The central components of the County's proposed mitigation are: (1) Nested Compensatory Mitigation; and (2) a Habitat Mitigation and Monitoring Plan ("HMMP"). With few exceptions, the County relies on these two mitigation measures to justify its conclusion that Project impacts to sensitive biological resources would be mitigated to a less-than-significant level.

The County fails to identify critical components of the compensatory mitigation package and HMMP. Instead, it defers that responsibility back onto itself (as the body responsible for approving anything proposed by the Applicant)—after the CEQA review process terminates. This precludes the public, resource agencies, and scientific community from being able to submit informed comments on the adequacy of the actual mitigation.

12.A.46

In order for mitigation measures to be effective, they must be specific, enforceable, and feasible actions that will improve environmental conditions.[159] The mitigation proposed in the DEIR lacks these components. Specifically, it fails to establish: (a) the location of potential mitigation sites, the status of the target species at those sites, and the feasibility of acquiring sites in the vicinity of the Project; (b) success standards for the proposed mitigation measures, and a definitive enforcement mechanism that ensures those standards are met; (c) the contingency or remedial action measures that will triggered if success standards are not achieved; (d) the measures that will be implemented to ensure the long-term protection and management of the target species at the mitigation sites; and (e) the required monitoring program, including the monitoring techniques, effort, and frequency. Because the DEIR lacks these fundamental details, the County has not ensured Project impacts to sensitive biological resource would be reduced to a less-than-significant level.

[157] DEIR, Appendix E1, p. 17.

[158] DEIR, p. 4.4-106.

[159] California Department of Fish and Game. 2012 Mar 7. Staff Report on Burrowing Owl Mitigation. Available at: <www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>. p. 8.

We have the following specific comments pertaining to County's proposed mitigation strategy:

1. The California Endangered Species Act requires "full mitigation" for any impacts to state listed species. Fully mitigating impacts generally requires measures to increase the carrying capacity of the species at a mitigation site. The EIR needs to describe what measures will be taken to increase carrying capacity or otherwise fully mitigate Project impacts to state listed species. 12.A.47

2. The DEIR indicates conservation easements (i.e., mitigation sites) shall allow livestock grazing when and where it is deemed beneficial for the habitat needs of impacted species. The County needs to identify the analysis that will be conducted to determine whether grazing is "beneficial" to the impacted species, who will be responsible for deeming it appropriate, and how the appropriate grazing levels and regime will be monitored and enforced. 12.A.48

3. According to the DEIR: "If suitable habitat is unavailable, or in lieu of acquiring already suitable special status animal species habitat, the applicant may enhance potential habitat…". Although the DEIR identifies "standards" for enhanced habitat, those standards are so low (e.g., consisting of annual grasslands after five years) that they do not require the Applicant to actually do anything to achieve the standards. Moreover, the mitigation measure was developed for kit fox, and while it may be feasible to enhance land for the benefit of that species, it is not possible for all of the species for which this is intended to cover. As a result, the County must explain the vetting process for approving habitat enhancements satisfactory for Nested Compensatory Mitigation. 12.A.49

4. The DEIR gives the example of "habitat is within 10 miles of known nesting golden eagles" as a performance standard for enhancement to create suitable foraging habitat. However, the Project would eliminate, degrade, and fragment foraging habitat for <u>numerous</u> pairs of eagles. As a result, the County needs to develop a means for ensuring the Nested Compensatory Mitigation is commensurate with Project impacts. Moreover, research has shown that most golden eagle foraging activities are limited to a fraction of the home range where prey items are most easily acquired.[160] Thus, the County cannot assume that all suitable all *suitable* foraging habitat within 10 miles of a nest site is of equal value to golden eagles. 12.A.50

5. The DEIR suggests the "success" of compensatory mitigation sites could be determined in as few as three years post-construction.[161] However, if "occupancy" of the animals is "success" (e.g., through colonization of the sites), then it is not successful until the animals occur (step 1), then become established for a few years (step 2), and then breed (given that it is appropriate for the location) (step 3). Three years is completely inadequate to have confidence that these steps have occurred. 12.A.51

[160] Marzluff JM, ST Knick, MS Vekasy, LS Schueck, TJ Zarriello. 1997. Spatial use and habitat selection of golden eagles in southwestern Idaho. The Auk 114(4):673-687.
[161] DEIR, p. 4.4-122.

6. The DEIR allows the Applicant to submit its HMMP and the associated success criteria 12 months after issuance of grading permits. This condition allows significant impacts to occur before the HMMP is implemented or even developed. The County cannot make conclusions on the insignificance of Project impacts based on its hope that the HMMP will accomplish the County's intent. 12.A.52

7. The compensatory mitigation requirements for individual species (e.g., burrowing owl, western spadefoot, California red-legged frog) include the clause that compensation lands shall be "managed and monitored under the HMMP as outlined in the above measure B-1(b)." This clause is relatively meaningless because measure B-1(b) does not include any specific requirements for managing and monitoring. Instead, it is limited to the information that the Applicant will need to include in the HMMP (e.g., performance criteria, monitoring methods, reporting requirements, etc.). 12.A.53

Botanical Resources

Compensatory Mitigation for List 4 Species

The DEIR states that compensatory mitigation for CRPR List 4 plants would be required "if more than 30% of the population occurring within the BSA, and/or known populations of the species within a 5-mile radius of the BSA (where such populations are known), would be affected."[162] However, this measure is not included in the DEIR's list of mitigation requirements. Furthermore, the DEIR does not justify why 30% was selected and why it is relevant to affected known populations of the species within the arbitrarily assigned 5-mile radius. Some of the plants that occur in the Project area (e.g., small-flowered morning glory) may already be at the minimum viable population size, meaning any impacts to the species would cause the population to drop below a sustainable level. In this case, impacts would be significant and remain unmitigated. Compensatory mitigation requirements for CRPR List 4 plant species should be based on the species' ecology, population size, and sustainability, and susceptibility to known threats. 12.A.54

Mitigation Measure B-1(a): Nested Compensatory Mitigation

The distribution of plants across the landscape is based on a variety of biotic and abiotic factors (e.g., soils, nutrients, precipitation, temperature, competition, disturbance). In most cases, special-status plant species require more specialized habitat, that is less understood, than animal habitat. If mitigation is to be nested as has been proposed in the DEIR, the County must establish a mechanism for ensuring the mitigation site(s) provide the microhabitat conditions required by the species for which habitat compensation is required. 12.A.55

Some of the special-status plants that occur in the Project area are extremely abundant. For example, the abundance and density of round-leaved filaree on the Project site (and in the greater region) appears to be one of the largest known concentrations of the species

[162] DEIR, p. 4.4-88.

throughout its range.[163] Similarly, the abundance of shining navarretia on the Project site (and to a lesser extent within the buffer zone) "is unprecedented for this species."[164] The DEIR concludes: "[t]hese abundances are likely the result of a *unique combination of conditions*, including heavy clay soils, flat topography, mild serpentine influence, and southern exposures."[165]

Despite the Project site's "unique combination of conditions," the County has concluded that direct impacts to special-status plants can be mitigated to a less-than-significant level through compensatory mitigation.[166] However, the DEIR provides no evidence that: (a) sizable populations of the target special-status plant species occur outside of the immediate Project area; or that (b) lands occupied by the target species are available for acquisition. To the contrary, existing information indicates some of the target special-status plant species have extremely limited distribution and populations sizes in California. As a result, the County's conclusion hinges on a mitigation measure that may be infeasible. 12.A.55

B-1(c): Pre-Construction Special Status Plant Surveys

Special-status plant surveys were not conducted for the Project's utility line corridor. The DEIR rationalizes this omission by requiring pre-construction surveys after Project approval.[167] This is not a reliable mitigation strategy for two main reasons. First, without reliable information on the species that occur—and as a result, the level and types of Project impacts to those species—the County cannot conclude the proposed mitigation would reduce Project impacts to less-than-significant levels. A conclusion of this nature would rely on the presumption that all impacts can be mitigated to a less than significant level. Such a presumption is unrealistic, especially because the forthcoming surveys may yield completely unexpected results that cannot be mitigated by standard conditions. Because the utility corridor contains habitat types that are not in other portions of the Project area, there is a relatively high potential that surveys of the utility corridor will result in "new" information and changed circumstances. 12.A.56

Second, the DEIR lacks a mechanism for disclosing the results of the surveys so they can be vetted by the public, resource agencies, and scientific community prior to Project construction. As a result, the DEIR lacks a mechanism for ensuring all potentially significant impacts to special-status plants are avoided, minimized, and mitigated; and that the Project complies with regulations governing sensitive botanical resources.

Due to these issues, protocol-level surveys of the utility line corridor need to be completed and included in a recirculated DEIR.

B-1(e): Compensatory Mitigation Ratios for Special Status Plant Species

[163] DEIR, p. 4.4-86 and Appendix E6, Table 8.
[164] DEIR, p. 4.4-86 and Appendix E6, Table 8.
[165] DEIR, p. 4.4-86. [emphasis added].
[166] DEIR, p. 4.4-89.
[167] DEIR, p. 4.4-122.

The justification behind the County's proposed compensation strategy for special-status plants is unclear and unsubstantiated. For example: 12.A.57

1. What significant thresholds are actually being proposed, and what are the specific methods that will be used to calculate those thresholds?
2. How will the County calculate the "known population within 5 miles of the project impact area?" What is the County's definition of "known population," and will the size of that population be based on an estimate or a census? If the population size is estimated, what confidence level will be applied? 12.A.58
3. How was the significance threshold of 10% (apparently) determined, and why would impacts to 10% of the regional population (defined in the DEIR as within 5 miles) of a CRPR Rank 1 species not be significant? By definition, Rank 1 species are considered rare or endangered under CEQA §15380(b) and (d). 12.A.59
4. What is the rationale for setting a threshold that includes plants outside of the area directly affected by the Project? What evidence does the County have that plants on other lands are, and will continue to be, managed for the conservation of botanical resources? 12.A.60

Regardless, the mitigation ratio should be increased to 3:1 (acres preserved:acre affected) to ameliorate the net loss of habitat impacted by the Project. 12.A.61

<u>B-2(a): Valley Needlegrass Grassland and Wildflower Field Habitat Mitigation</u>

All sensitive communities that will be permanently impacted by the project should be incorporated into this mitigation measure. Due to the rarity and difficulty of restoration and revegetation of some community types, mitigation ratios should be similar to valley needlegrass grassland at 2:1. These community types include Yerba mansa (*Anemopsis california* alliance), alkali heath (*Frankenia salina* alliance), and Valley Oak Woodland (*Quercus lobata* alliance). This ratio would ameliorate the net loss of sensitive communities impacted by the project. 12.A.62

For sensitive communities that are less rare in the region such as Willow-Cottonwood Riparian Woodland (*Populus fremontii-Salix laevigata* association) and chairmakers's bulrush (*Scirpus americanus* alliance), the mitigation ratio should be 1:1.

The mitigation ratio for wildflower field should be 3:1, not only to ameliorate the net loss of impacted habitat, but because many of the special-status plant populations were found as components of that habitat type. However, wildflower mitigation should not be allowed to count towards mitigation for special-status plants. This is because alliances nested within the wildflower field Holland type[168] are poorly understood and still under development as a part of the Manual of California Vegetation. Many of those alliances 12.A.63

[168] Holland, R. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, The Resources Agency. 156 pp.

have a high level of diversity that is yet to be described.[169] Furthermore, wildflower field species composition varies seasonally and from year to year, making identification problematic when trying to overlap occupied rare plant habitat as mitigation. For this reason, selection of mitigation sites for wildflower fields should be based on data collected via CNPS rapid assessment/releve methodology at the potential mitigation sites. 12.A.63

Burrowing Owl

According to the DEIR: [i]f suitable burrows for burrowing owls are identified during preconstruction surveys, mitigation measure B-1(m) shall be implemented."[170] The Avoidance and Mitigation Efforts in B-1(m) are discussed as, "[t]he appropriateness of using reduced buffer distances or burrow-specific buffer distances shall be established on a case-by-case basis by a qualified ornithologist *who may consult* with CDFW… [*italics inserted*]. If no suitable alternative natural burrows are available for the owls, then, for each owl that is evicted, at least two artificial burrows shall be installed in suitable nearby habitat areas."

No discussion, however, is provided on long-term maintenance of the artificial burrows. Nor does the DEIR provide measures to indicate that successful occupation of the artificial burrows by owls will be determined or is required. These mitigation efforts, therefore, are incomplete and do not qualify as acceptable measures to mitigate Project impacts on this special-status bird. 12.A.64

In a proceeding section on mitigation efforts the DEIR indicates compensatory habitat mitigation requirements are:

> …a minimum of 3:1 ratio (preserved habitat: affected habitat). The compensatory mitigation must provide equal or greater habitat value than the project site… to mitigate for the impacts to burrowing owl habitat within the SDAs, the project Proponent shall provide compensatory mitigation acreage, adjusted to reflect the final footprint of the SDAs in consultation with CDFW, but at a minimum of 2:1 ratio. All compensatory mitigation must comprise habitat of value equal to, or greater than, the project site.[171]

Yet the DEIR does not include any discussion of monitoring of success-failure of the mitigation measures, the possibility of adaptive management, nor are any other management plans discussed.

B-1(w): California Tiger Salamander and California Red-Legged Frog Relocation Sites

This mitigation measure states that "Prior to the initiation of any other protective measures, a qualified biologist (i.e., biologist approved by USFWS and/or CDFW to 12.A.65

[169] Jennifer Buck, CNPS Vegetation Ecologist, Personal communication with Heath Bartosh September 18, 2014.
[170] DEIR, p. 4.4-134.
[171] *Ibid*, p. 4.4-137.

translocate CTS and CRLF) shall, in consultation with USFWS and CDFW, identify appropriate relocation sites for any adult, juvenile, and larval CTS and CRLF that may be observed during the pre-construction survey or monitoring activities described below and need to be moved from within the limits of direct impact disturbance."[172] The DEIR provides no information about potential relocation sites or evidence that suitable relocation sites exist. Furthermore, the DEIR fails to require the studies needed to ensure relocation sites are indeed suitable for animals cleared from the Project area. As a result, it is not possible to evaluate the consequences that translocation will have on relocated and resident individuals, and thus the likelihood that the County's proposed mitigation will be successful. 12.A.65

B-1(bb): California Tiger Salamander Daily Pre-activity Surveys

Mitigation measure B-1(bb) states that "any individual detected during these pre-activity surveys shall be moved to a designated relocation sites identified under B-1(p)."[173] However, B-1(p) does not specifically identify and document the actual location(s) and habitat quality of designated relocation sites, but instead discusses wildlife-friendly fence design.[174] As a consequence, the DEIR lacks the evidence needed to demonstrate mitigation measure B-1(bb) will effectively mitigate impacts to the species. 12.A.66

B-2(f):Stream Channel Avoidance and Minimization

According to this mitigation measure, "To prevent high-velocity water flow from causing bank downcutting at downstream locations, any improvements related to road realignment, widening, or the ability of the road to convey heavy equipment for construction shall be designed to handle heavy storm flows (up to the 25-year flood event or more), such that undesirable velocities and channel destabilization downstream of the crossing shall be avoided." The design standard (i.e., up to 25-year flood event or more) associated with this mitigation measure is not consistent with the lifespan of the Project (at least 30 to 40 years).[175] Moreover, the design standard is not supported by literature, and probably is not sufficient to protect water quality (and thus habitat quality), especially during more severe/extreme 100-year storm events predicted with climate change.[176] 12.A.67

San Joaquin Kit Fox

The DEIR describes kit fox "Den Avoidance and Minimization Measures" that need to be applied during all phases of construction and facility operation. One of the stated 12.A.68

[172] Project EIR, Section 4.4, pg. 144

[173] Project EIR, Section 4.4, pg. 148

[174] Project EIR, Section 4.4, pg. 138

[175] DEIR, p. 2-87.

[176] National Research Council, 2010, "America's Climate Choices: Panel on Advancing the Science of Climate Change," ISBN 978-0-309-14588-6 (528 pages). *See also* U.S. Climate Change Science Program: Synthesis and Assessment Product 3.3, 2008, "Weather and Climate Extremes in a Changing Climate," (164 pages)

prescriptions is the implementation of buffers of 100-200 feet to avoid dens including natal dens, with up to 500 feet for natal dens during construction. However, these buffers are severely inadequate because, even during the pup-rearing season, nightly movements average greater than 6 miles (Zoellick et al. 1987b).

Additionally, evidence that a den is in use is often absent. Reese et al. (1992) found that 64% percent of the dens used by radio-collared kit foxes showed no sign of kit foxes.[177] Foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972).[178] Foxes on the Carrizo Plain Natural Area changed dens much more frequently than indicated by Morrell's study (White and Ralls 1993).[179]

Although mitigation activities are specified for habitat loss, the DEIR does not account for long-term degradation of the local population, or the potential negative impacts to the Project area as a dispersal and movement corridor, the latter of which cannot be mitigated for in any meaningful manner. 12.A.68

According to DEIR pages 181-182: "the project has the potential to interfere substantially with the movement of San Joaquin kit fox in an important habitat linkage. Therefore, this impact would be considered Class II, significant but mitigable." And according to page 182:

> Implementation of MMs B-1(b, h, i and j) would reduce interference with the movement of San Joaquin kit fox in an important habitat linkage to less-than-significant levels by avoiding and minimizing impacts on the species and its habitat and by compensating for unavoidable impacts through the preservation and management of suitable linkage habitat for the species consistent with mitigation measureB-1(j). No further mitigation is required.

However, the literature clearly shows that providing buffers of 100-500 feet are inadequate to ensure kit fox occupancy and allow movements given the home range size and nightly movements of the species. On- and off-site mitigation cannot eliminate degradation of the local kit fox population or compensate for loss of movement opportunities.

Nesting Birds

The Project site and surrounding habitat provide habitat for nesting birds. Most nesting bird species are protected by the Migratory Bird Treaty Act ("MBTA"), and in some cases the State and federal government. The DEIR requires pre-construction surveys for 12.A.69

[177] Reese, E.A., T.T. Kato, W.H. Berry, and T.P. O'Farrell. 1992. Ground penetrating radar and thermal images applied to San Joaquin kit fox (*Vulpes macrotis mutica*) at Camp Roberts Army National Guard Training Site, CA. U.S. Dept. of Energy Topical Report, No. EGG 10617-2162, EG&G/EM Santa Barbara Operations, National Technical Service, Springfield, VA.

[178] Morrell, S.H. 1972. Life history of the San Joaquin kit fox. California Fish and Game 58:162-174.

[179] White, P.J., and K. Ralls. 1993. Reproduction and spacing patterns of kit foxes relative to changing prey availability. Journal of Wildlife Management 57:861-867.

nesting birds.[180] However, it does not specify the sampling methods, which will determine the adequacy and efficacy of the surveys.

Nest finding is labor intensive and can be extremely difficult due to the tendency of many species to construct well-concealed or camouflaged nests.[181] As a result, most studies that involve locating bird nests employ a variety of search techniques. These include flushing an adult from the nest, watching parental behavior (e.g., carrying nest material or food), and systematically searching nesting substrates.[182] In addition, breeding birds are known to be most active and detectable early in the morning, and there is a strong positive correlation between survey effort and abundance of nests detected. Consequently, any mitigation imposed by the County needs to specify the techniques that should be applied to nest surveys, the expected level of effort (i.e., hours per unit area), the search area, the time of day surveys will be permitted, and the techniques that should be used to minimize human-induced disturbance. 12.A.69

To ensure compliance with the MBTA, many public agencies mandate habitat disturbance projects occur outside of the breeding season. As mitigation, I recommend the County require the Applicant to conduct ground disturbance activities outsides of the avian breeding season. If ground disturbance must occur during the breeding season, the mitigation measure needs to be revised to reflect the fact that some species of birds can build a nest and initiate egg-laying in less than 14 days (i.e., the mitigation measure should be revised to require pre-construction surveys no more than 14 days prior to construction).[183] 12.A.70

CONCLUSION

Based on the issues described in this letter, it is my professional opinion that the County needs to revise and re-circulate the Project's EIR.

Sincerely,

Scott Cashen, M.S.
Senior Biologist

[180] DEIR, pp. 4.4-139 and -140.

[181] DeSante DF, GR Geupel. 1987. Landbird productivity in central coastal California: the relationship to annual rainfall and a reproductive failure in 1986. Condor. 89:636-653.

[182] Martin TE, GR Geupel. 1993. Nest-Monitoring Plots: Methods for Locating Nests and Monitoring Success. J. Field Ornithol. 64(4):507-519.

[183] Baicich PJ, CJ Harrison. 1997. A guide to the nests, eggs, and nestlings of North American Birds. 2nd ed. London: Academic Press.

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Scott Cashen has 20 years of professional experience in natural resources management. During that time he has worked as a field biologist, forester, environmental consultant, and instructor of Wildlife Management. Mr. Cashen currently operates an independent consulting business that focuses on CEQA/NEPA compliance issues, endangered species, scientific field studies, and other topics that require a high level of scientific expertise.

Mr. Cashen has knowledge and experience with many taxa, biological resource issues, and environmental regulations. This knowledge and experience has made him a highly sought after biological resources expert. To date, he has been retained as a biological resources expert for over 40 projects. Mr. Cashen's role in this capacity has encompassed all stages of the environmental review process, from initial document review through litigation support and expert witness testimony.

Mr. Cashen is a recognized expert on the environmental impacts of renewable energy development. He has been involved in the environmental review process for 28 renewable energy projects, and he has been a biological resources expert for more of California's solar energy projects than any other private consultant. In 2010, Mr. Cashen testified on 5 of the Department of the Interior's "Top 6 Fast-tracked Solar Projects" and his testimony influenced the outcome of each of these projects.

Mr. Cashen is a versatile scientist capable of addressing numerous aspects of natural resource management simultaneously. Because of Mr. Cashen's expertise in both forestry and biology, Calfire had him prepare the biological resource assessments for all of its fuels treatment projects in Riverside and San Diego Counties following the 2003 Cedar Fire. Mr. Cashen has led field studies on several special-status species, including plants, fish, reptiles, amphibians, birds, and mammals. Mr. Cashen has been the technical editor of several resource management documents, and his strong scientific writing skills have enabled him to secure grant funding for several clients.

AREAS OF EXPERTISE

- CEQA, NEPA, and Endangered Species Act compliance issues
- Comprehensive biological resource assessments
- Endangered species management
- Renewable energy
- Forest fuels reduction and timber harvesting
- Scientific field studies, grant writing and technical editing

EDUCATION

M.S. Wildlife and Fisheries Science - The Pennsylvania State University (1998)
B.S. Resource Management - The University of California, Berkeley (1992)

PROFESSIONAL EXPERIENCE

Litigation Support / Expert Witness

As a biological resources expert, Mr. Cashen reviews CEQA/NEPA documents and provides his client(s) with an assessment of biological resource issues. He then prepares written comments on the scientific and legal adequacy of the project's environmental documents (e.g., EIR). For projects requiring California Energy Commission (CEC) approval, Mr. Cashen has submitted written testimony (opening and rebuttal) in conjunction with oral testimony before the CEC.

Mr. Cashen can lead field studies to generate evidence for legal testimony, and he can incorporate testimony from his deep network of species-specific experts. Mr. Cashen's clients have included law firms, non-profit organizations, and citizen groups.

REPRESENTATIVE EXPERIENCE

Solar Energy Facilities

- Abengoa Mojave Solar Project
- Avenal Energy Power Plant
- Beacon Solar Energy Project
- Blythe Solar Power Project
- Calico Solar Project
- Calipatria Solar Farm II
- Carrizo Energy Solar Farm
- Catalina Renewable Energy Project
- Fink Road Solar Farm
- Genesis Solar Energy Project
- Heber Solar Energy Facility
- Imperial Valley Solar Project
- Ivanpah Solar Electric Generating
- Maricopa Sun Solar Complex
- Mt. Signal and Calexico Solar
- San Joaquin Solar I & II
- Solar Gen II Projects
- SR Solis Oro Loma
- Vestal Solar Facilities
- Victorville 2 Power Project

Geothermal Energy Facilities

- East Brawley Geothermal
- Mammoth Pacific 1 Replacement
- Western GeoPower Plant and

Wind Energy Facilities

- Catalina Renewable Energy Project
- Ocotillo Express Wind Energy
- San Diego County Wind Ordinance
- Tres Vaqueros Repowering Project
- Vasco Winds Relicensing Project

Biomass Facilities

- Tracy Green Energy Project

Development Projects

- Alves Ranch
- Aviano
- Chula Vista Bayfront Master Plan
- Columbus Salame
- Concord Naval Weapons Station
- Faria Annexation
- Live Oak Master Plan
- Napa Pipe
- Roddy Ranch
- Rollingwood
- Sprint-Nextel Tower

Project Management

Mr. Cashen has managed several large-scale wildlife, forestry, and natural resource management projects. Many of these projects have required hiring and training field crews, coordinating with other professionals, and communicating with project stakeholders. Mr. Cashen's experience in study design, data collection, and scientific writing make him an effective project manager, and his background in several different natural resource disciplines enable him to address the many facets of contemporary land management in a cost-effective manner.

REPRESENTATIVE EXPERIENCE

Wildlife Studies

- Peninsular Bighorn Sheep Resource Use and Behavior Study: (*CA State Parks*)
- "KV" Spotted Owl and Northern Goshawk Inventory: (*USFS, Plumas NF*)
- Amphibian Inventory Project: (*USFS, Plumas NF*)
- San Mateo Creek Steelhead Restoration Project: (*Trout Unlimited and CA Coastal Conservancy, Orange County*)
- Delta Meadows State Park Special-status Species Inventory: (*CA State Parks, Locke*)

Natural Resources Management

- Mather Lake Resource Management Study and Plan – (*Sacramento County*)
- Placer County Vernal Pool Study – (*Placer County*)
- Weidemann Ranch Mitigation Project – (*Toll Brothers, Inc., San Ramon*)
- Ion Communities Biological Resource Assessments – (*Ion Communities, Riverside and San Bernardino Counties*)
- Del Rio Hills Biological Resource Assessment – (*The Wyro Company, Rio Vista*)

Forestry

- Forest Health Improvement Projects – (*CalFire, SD and Riverside Counties*)
- San Diego Bark Beetle Tree Removal Project – (*SDG&E, San Diego Co.*)
- San Diego Bark Beetle Tree Removal Project – (*San Diego County/NRCS*)
- Hillslope Monitoring Project – (*CalFire, throughout California*)

Biological Resources

Mr. Cashen has a diverse background with biological resources. He has conducted comprehensive biological resource assessments, habitat evaluations, species inventories, and scientific peer review. Mr. Cashen has led investigations on several special-status species, including ones focusing on the foothill yellow-legged frog, mountain yellow-legged frog, desert tortoise, steelhead, burrowing owl, California spotted owl, northern goshawk, willow flycatcher, Peninsular bighorn sheep, red panda, and forest carnivores.

REPRESENTATIVE EXPERIENCE

Avian

- Study design and Lead Investigator - Delta Meadows State Park Special-Status Species Inventory *(CA State Parks: Locke)*
- Study design and lead bird surveyor - Placer County Vernal Pool Study *(Placer County: throughout Placer County)*
- Surveyor - Willow flycatcher habitat mapping *(USFS: Plumas NF)*
- Independent surveyor - Tolay Creek, Cullinan Ranch, and Guadacanal Village restoration projects *(Ducks Unlimited/USGS: San Pablo Bay)*
- Study design and Lead Investigator - Bird use of restored wetlands research *(Pennsylvania Game Commission: throughout Pennsylvania)*
- Study design and surveyor - Baseline inventory of bird species at a 400-acre site in Napa County *(HCV Associates: Napa)*
- Surveyor - Baseline inventory of bird abundance following diesel spill *(LFR Levine-Fricke: Suisun Bay)*
- Study design and lead bird surveyor - Green Valley Creek Riparian Restoration Site *(City of Fairfield: Fairfield, CA)*
- Surveyor - Burrowing owl relocation and monitoring *(US Navy: Dixon, CA)*
- Surveyor - Pre-construction raptor and burrowing owl surveys *(various clients and locations)*
- Surveyor - Backcountry bird inventory *(National Park Service: Eagle, Alaska)*
- Lead surveyor - Tidal salt marsh bird surveys (*Point Reyes Bird Observatory: throughout Bay Area*)
- Surveyor – Pre-construction surveys for nesting birds (*various clients and locations)*

Amphibian

- Crew Leader - Red-legged frog, foothill yellow-legged frog, and mountain yellow-legged frog surveys *(USFS: Plumas NF)*

- Surveyor - Foothill yellow-legged frog surveys *(PG&E: North Fork Feather River)*
- Surveyor - Mountain yellow-legged frog surveys *(El Dorado Irrigation District: Desolation Wilderness)*
- Crew Leader - Bullfrog eradication *(Trout Unlimited: Cleveland NF)*

Fish and Aquatic Resources

- Surveyor - Hardhead minnow and other fish surveys *(USFS: Plumas NF)*
- Surveyor - Weber Creek aquatic habitat mapping (*El Dorado Irrigation District: Placerville, CA*)
- Surveyor - Green Valley Creek aquatic habitat mapping *(City of Fairfield: Fairfield, CA)*
- GPS Specialist - Salmonid spawning habitat mapping *(CDFG: Sacramento River)*
- Surveyor - Fish composition and abundance study (*PG&E: Upper North Fork Feather River and Lake Almanor*)
- Crew Leader - Surveys of steelhead abundance and habitat use *(CA Coastal Conservancy: Gualala River estuary)*
- Crew Leader - Exotic species identification and eradication *(Trout Unlimited: Cleveland NF)*

Mammals

- Principal Investigator – Peninsular bighorn sheep resource use and behavior study (*California State Parks: Freeman Properties*)
- Scientific Advisor –Study on red panda occupancy and abundance in eastern Nepal *(The Red Panda Network: CA and Nepal)*
- Surveyor - Forest carnivore surveys *(University of CA: Tahoe NF)*
- Surveyor - Relocation and monitoring of salt marsh harvest mice and other small mammals *(US Navy: Skagg's Island, CA)*
- Surveyor – Surveys for Monterey dusky-footed woodrat. Relocation of woodrat houses (*Touré Associates: Prunedale*)

Natural Resource Investigations / Multiple Species Studies

- Scientific Review Team Member – Member of the science review team assessing the effectiveness of the US Forest Service's implementation of the Herger-Feinstein Quincy Library Group Act.
- Lead Consultant - Baseline biological resource assessments and habitat mapping for CDF management units *(CDF: San Diego, San Bernardino, and Riverside Counties)*

- Biological Resources Expert – Peer review of CEQA/NEPA documents (*Adams Broadwell Joseph & Cardoza: California)*
- Lead Consultant - Pre- and post-harvest biological resource assessments of tree removal sites *(SDG&E: San Diego County)*
- Crew Leader - T&E species habitat evaluations for Biological Assessment in support of a steelhead restoration plan *(Trout Unlimited: Cleveland NF)*
- Lead Investigator - Resource Management Study and Plan for Mather Lake Regional Park *(County of Sacramento: Sacramento, CA)*
- Lead Investigator - Biological Resources Assessment for 1,070-acre Alfaro Ranch property *(Yuba County, CA)*
- Lead Investigator - Wildlife Strike Hazard Management Plan *(HCV Associates: Napa)*
- Lead Investigator - Del Rio Hills Biological Resource Assessment *(The Wyro Company: Rio Vista, CA)*
- Lead Investigator – Ion Communities project sites (*Ion Communities: Riverside and San Bernardino Counties*)
- Surveyor – Tahoe Pilot Project: Validation of California's Wildlife Habitat Relationships (CWHR) Model *(University of California: Tahoe NF)*

Forestry

Mr. Cashen has five years of experience working as a consulting forester on projects throughout California. Mr. Cashen has consulted with landowners and timber operators on forest management practices; and he has worked on a variety of forestry tasks including selective tree marking, forest inventory, harvest layout, erosion control, and supervision of logging operations. Mr. Cashen's experience with many different natural resources enable him to provide a holistic approach to forest management, rather than just management of timber resources.

REPRESENTATIVE EXPERIENCE

- Lead Consultant - CalFire fuels treatment projects *(SD and Riverside Counties)*
- Lead Consultant and supervisor of harvest activities – San Diego Gas and Electric Bark Beetle Tree Removal Project *(San Diego)*
- Crew Leader - Hillslope Monitoring Program *(CalFire: throughout California)*
- Consulting Forester – Forest inventories and timber harvest projects *(various clients throughout California)*

Grant Writing and Technical Editing

Mr. Cashen has prepared and submitted over 50 proposals and grant applications. Many of the projects listed herein were acquired through proposals he wrote. Mr. Cashen's clients and colleagues have recognized his strong scientific writing skills and ability to generate technically superior proposal packages. Consequently, he routinely prepares funding applications and conducts technical editing for various clients.

PERMITS

U.S. Fish and Wildlife Service Section 10(a)(1)(A) Recovery Permit for the Peninsular bighorn sheep

CA Department of Fish and Game Scientific Collecting Permit

PROFESSIONAL ORGANIZATIONS / ASSOCIATIONS

The Wildlife Society (Conservation Affairs Committee member)

Cal Alumni Foresters

Mt. Diablo Audubon Society

OTHER AFFILIATIONS

Scientific Advisor and Grant Writer – *The Red Panda Network*

Scientific Advisor – *Mt. Diablo Audubon Society*

Grant Writer – *American Conservation Experience*

Scientific Advisor and Land Committee Member – *Save Mt. Diablo*

TEACHING EXPERIENCE

Instructor: Wildlife Management - The Pennsylvania State University, 1998

Teaching Assistant: Ornithology - The Pennsylvania State University, 1996-1997

August 2014

MICHAEL L. MORRISON

PROFESSOR AND CAESAR KLEBERG CHAIR IN WILDLIFE ECOLOGY AND CONSERVATION
DEPARTMENT OF WILDLIFE AND FISHERIES SCIENCES
TEXAS A&M UNIVERSITY
COLLEGE STATION, TEXAS 77843-2258

979-204-3015 mlmorrison@tamu.edu

Graduate: Oregon State University, Corvallis (June 1982)
Degree: Ph.D., Wildlife Science
Thesis: Response of avian communities to herbicide-induced vegetation changes, western Oregon.

Graduate: Texas A&M University, College Station (Dec. 1977)
Degree: M.S., Wildlife Science
Thesis: Life history and status of the Olivaceous [Neotropic] Cormorant.

Undergraduate: Northern Arizona University, Flagstaff (May 1975)
Degree: B.S., Zoology (magna cum laude)

(See also Grants, Contracts, and Consulting)

(2005 to date): Professor and Caesar Kleberg Chair in Wildlife Ecology and Conservation, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station

2003 to 2005: Research Director, Great Basin Institute, University of Nevada, Reno

July 2001 to July 2003: Field Station Manager (Academic Administrator), University of California, White Mountain Research Station, Bishop, CA

Aug. 1993 to 2002: Adjunct Associate Professor of Wildlife Biology, School of Renewable Natural Resources, Univ. of Arizona, Tucson, AZ

May 1996 to June 2001: Adjunct Professor of Wildlife Biology, Department of Biological Sciences, California State University, Sacramento, CA

Aug. 1993 to Dec. 1995: Research Director, Appleton-Whittell Research Sanctuary, National Audubon Society, Elgin, AZ

July 1988 to July 1994: Associate Professor of Wildlife Biology, Department of Forestry

and Resource Management, University of California, Berkeley, CA

July 1988 to July 1992: Research Scientist (0.33 FTE), White Mountain Research Station, University of California, Los Angeles, CA (salary release for research).

Aug. 1982 to June 1988: Assistant Professor of Wildlife Biology, Department of Forestry and Resource Management, University of California, Berkeley, CA

Jan. 1979 to July 1982: Research Assistant, Oregon Cooperative Wildlife Research Unit, Oregon State University, Corvallis

Sept. 1977 to Dec. 1978: Assistant Curator, Western Foundation of Vertebrate Zoology, Camarillo, CA

Sept. 1978 to Dec. 1978: Biology Instructor, Glendale Community College, Glendale, CA

Sept. 1976 to Aug. 1977: Graduate Research Fellow, Welder Wildlife Foundation, Sinton, TX

Other Skills
Professional Packer, Rock Creek Pack Station, Bishop, California (Part-time, spring-summer 1993 to date); packing, guiding, horse shoeing, wrangling/roping, cooking, natural history instruction.

Permits and Certificates
Mine Safety and Health Administration (MSHA) 5000-23 Certificate of Training, Inexperienced Miner, Surface, Metal; Underground

Master Bander (No. 21755), USGS Bird Banding Laboratory

USFWS Recovery (Endangered Species) and State Permits (available upon request)

(U = undergraduate; G = graduate)

Texas A&M University
- Wildlife Study Design (G; WFSC 618), 2006-present (even years)
- General Ornithology (U; WFSC 402), 2006-present (yearly)
- Wildlife Restoration (U/G; WFSC 419/619), 2007-present (odd years)
- Fundamentals of Ecology Lab (U; RENR 215), 2013-present
- Fundamentals of Ecology (U; RENR 205), 2014
- Wildlife Conservation and Management (U; WFSC 201), 2005-2006

University of Nevada, Reno
- Seminar, Wildlife Restoration (G), 2003

White Mountain Research Station, University of California
- Research Experience for Undergraduates (U), 2002-04

California State University, Sacramento
Animal Biology (U), 1996
Biometrics (U), 1999
Conservation Biology (G), 1999

University of Arizona
Topics in Wildlife (study design, wildlife habitat)(G), 1993
Advanced Wildlife Management (G), 1995

University of California, Berkeley
American Wildlife: identification and conservation (U), 1982-92
Case Histories in Wildlife Management (U), 1983-91
Forestry Summer Camp (wildlife)(U), 1982-91
Wildlife Ecology (U), 1992
Wildlife-habitat Relationships (G), 1984-92

(U.C. Berkeley, 1982-1992; U. Arizona, 1993 to 2010; California State U., Sacramento, 1996 to 2003; University of Nevada, Reno, 2003 to 2010; Texas A&M University, 2005 to date

M.S.: 40 completed,
Ph.D: 18 completed,
Post doctoral: 5 completed,

Books

2014 Morrison, M.L., and H.A. Mathewson (editors). Wildlife habitat conservation: concepts, challenges, and solutions. The Wildlife Society, Wildlife Management and Conservation book series. The Johns Hopkins University Press, Baltimore, MD. (in press)

2009 Morrison, M.L. Restoring wildlife: ecological concepts and practical applications. Island Press, Washington, DC.

2008 Morrison, M.L., W.M. Block, M.D. Strickland, B.A. Collier, and M.J. Peterson. Wildlife study design. Second edition. Springer-Verlag, New York, N.Y.

2007 Morrison, M.L., L. Bies, and C. Nolden. 2007. The leadership workbook. a how-to guide on building leadership skills in your life and profession". The Wildlife Society, Bethesda, Maryland

2006 Morrison, M.L., B.G. Marcot, and R.W. Mannan. Wildlife-habitat relationships: concepts and applications. Third edition. Island Press, Washington, DC.

2002 Morrison, M.L. Wildlife Restoration: Techniques for habitat analysis and animal monitoring. Island Press, Washington, DC.

2001 Morrison, M.L., W.M. Block, M.D. Strickland, and W.L. Kendall. Wildlife study design. Springer-Verlag, New York, N.Y.

1998 Morrison, M.L., B.G. Marcot, and R.W. Mannan. Wildlife-habitat relationships: concepts and applications. Second edition. Univ. of Wisconsin Press, Madison.

1992 Morrison, M.L., B.G. Marcot, and R.W. Mannan. Wildlife-habitat relationships: concepts and applications. Univ. of Wisconsin Press, Madison. 343 pp.

1986, Verner, J., M. L. Morrison, and C. J. Ralph (editors). Wildlife 2000: Modeling habitat relationships of terrestrial vertebrates. Univ. of Wisconsin Press, Madison, WI.

Monographs

2013 Mathewson, H.A., M.L. Morrison, H.L. Loffland, and P.F. Brussard. Ecology of willow flycatchers in the Sierra Nevada, California: effects of meadow characteristics and weather on demographics. Ornithological Monographs No. 75.

1990, Scott, T.A., and M.L. Morrison. Natural history and management of the San Clemente Loggerhead Shrike. Proceedings of the Western Foundation of Vertebrate Zool.:4(2):23-60.

Proceedings Editor

2006 Morrison, M.L. (editor). The northern goshawk: a technical assessment of its status, ecology, and management. Studies in Avian Biology no. 31. 369pp.

2002 Scott, J.M., P.J. Heglund, M.L. Morrison, J.B. Haufler, M.G. Raphael, W.A. Wall, and F.B. Samson (editors). Predicting species occurrences: issues of scale and accuracy. Island Press, Washington, DC.

2000, Morrison, M.L. (editor). Developing multiple-species conservation reserves and habitat conservation plans. Environmental Management Volume 26, Supplement 1.

1999, Morrison, M.L., L.S. Hall, S.K. Robinson, S.I. Rothstein, D.C. Hahn, and T.D. Rich. (editors). Research and management of the brown-headed cowbird in western landscapes. Studies in Avian Biology 18:1-312.

1994, Block, W.M., M.L. Morrison, and M.H. Reiser (editors). The northern goshawk: ecology and management. Studies in Avian Biology no. 16:1-136.

1992, Carter, H.R., and M.L. Morrison (editors). Status and conservation of the Marbled Murrelet in North America. Proceedings of the Western Foundation of Vertebrate Zoology 5(1):1-133.

1990, Morrison, M.L., C.J. Ralph, J. Verner, and J.R. Jehl, Jr. (editors). Avian foraging: Theory, methodology, and applications. Studies in Avian Biology 13:1-515.

Papers

In press

Long, A. L., D. S. Finn, J. A. Grzybowski, M. L. Morrison, and H. A. Mathewson.. First documented observation of the federally endangered Golden-cheeked warbler in Oklahoma. Bulletin of the Oklahoma Ornithological Society

McFarland, T. M., J. A. Grzybowski, H. A. Mathewson, and M. L. Morrison. Presence-only species distribution models to predict suitability over a long-term study for a species with a growing population. Wildlife Society Bulletin.

Stuemke, L.A., C.E. Comer, M.L. Morrison, W.C. Conway, and R.W. Maxey. Roosts of Rafinesque's big-eared bats and southeastern Myotis in east Texas. Southeastern Naturalist.

2014

Melville, H.I.A.S., W.C. Conway, M.L. Morrison, C.E. Comer, and J.B. Hardin. Artificial nests identify possible nest predators of eastern wild turkeys. Southeastern Naturalist 13:80-91.

Stewart, L. R., M. L. Morrison, M. R. Hutchinson, D. N. Appel, and R. N. Wilkins. The effect of a forest pathogen on habitat selection and quality of the federally endangered golden-cheeked warbler. Wildlife Society Bulletin 38: 288–296.

Stewart, L. R., M. L. Morrison, D. N. Appel, and R. N. Wilkins. An estimation of the spatial distribution and temporal effects of oak wilt as it pertains to the federally endangered golden-cheeked warbler. Wildlife Society Bulletin 38: 279–287.

2013

Borgmann, K.L., C. J. Conway, and M.L. Morrison. Breeding phenology of birds: mechanisms underlying seasonal declines in the risk of nest predation. PLoS ONE 8(6): e65909. doi:10.1371/journal.pone.0065909

Campomizzi, A.J., H.A. Mathewson, M.L. Morrison, C.M. Lituma, T.J. Conkling, M.C. Cocimano, S.L. Farrell, R.N. Wilkins, and J.A. Butcher. Understanding nest success and brood parasitism in the endangered black-capped vireo: comparisons with two sympatric songbirds. Wilson Journal of Ornithology 125:709–719

Collier, B.A., S.L. Farrell, A.M. Long, A.J. Campomizzi, K.B. Hays, J.L. Laake, M.L. Morrison, and R.N. Wilkins. Modeling spatially explicit densities of endangered avian species in a heterogeneous landscape. Auk 13:666−676.

Farrell, S. L. , B. A. Collier, K. L. Skow, A. M. Long, A. J. Campomizzi, M. L. Morrison, K. B. Hays, R. N. Wilkins. Using LiDAR-derived vegetation metrics for high-resolution, species distribution models for conservation planning. Ecosphere 4:42. http://dx.doi.org/10.1890/es12-00352.1

Marshall, M. E., M. L. Morrison, and R. N. Wilkins. 2013. Tree species composition and food availability affect productivity of an endangered species: the golden-cheeked warbler. The Condor 115:882-892.

McFarland, T. M., H. A. Mathewson, J. E. Groce, M. L. Morrison, and R. N. Wilkins. A range-wide survey of the endangered black-capped vireo in Texas. Southeastern Naturalist 12:41-60.

Morrison, M.L. Wildlife restoration. Pages 246-261 *in* Wildlife management and conservation: contemporary principles and practices. P.R. Krausman and J.W. Cain III, editors. Johns Hopkins University Press, Baltimore, Maryland.

Pope, T. L., T. J. Conkling, K. N. Smith, M. R. Colon, M. L. Morrison, R. N. Wilkins. Effects of adult behavior and nest-site characteristics on black-capped vireo nest survival. Condor 115: 155-162.

Pope, T.L., M.L. Morrison, and R.N. Wilkins. Woodlands as quality breeding habitat for black-capped vireos. Journal of Wildlife management 77:994-1001.

Smith, K.N., A.J. Campomizzi, M.L. Morrison, and R.N. Wilkins. Managing brown-headed cowbirds to sustain abundance of black-capped vireos. Wildlife Society Bulletin 37:281-286.

2012

Campomizzi, A. J. , S. L. Farrell, T. M. McFarland, H. A. Mathewson, M. L. Morrison, R. N. Wilkins. Species conservation at a broad spatial scale: reproductive success of golden-cheeked warblers across their breeding range. Wildlife Society Bulletin 36: 440–449.

Campomizzi, A. J., M. L. Morrison, J. A. DeWoody, S. L. Farrell, and R. N. Wilkins. Win-stay, lose-switch and public information strategies for patch fidelity of songbirds with rare extra-pair paternity. *Scientific Reports*. 2(294).

Collier, B. A., J. E. Groce, M. L. Morrison, J. C. Newnam, A. J. Campomizzi, S. L. Farrell, H. A. Mathewson, R. T. Snelgrove, R. J. Carroll, and R. N. Wilkins. Predicting patch occupancy in fragmented landscapes at the rangewide scale for endangered species: an example of an American warbler. Diversity and Distributions 18:158-167

Conkling, T. J., T. L. Pope, K. N. Smith, H. A. Mathewson, M. L. Morrison, R. N. Wilkins, and J. W. Cain, III. Black-capped vireo nest predator assemblage and predictors for nest predation. Journal of Wildlife Management 76: on line. DOI:10.1002/jwmg.388.

Farrell, S. L., Morrison, M. L., Campomizzi, A. J. and Wilkins, R. N. Conspecific cues and breeding habitat selection in an endangered woodland warbler. Journal of Animal Ecology, 81: 1056–1064. doi: 10.1111/j.1365-2656.2012.01995.x

Klassen, J. A., M. L. Morrison, H. A. Mathewson, G. G. Rosenthal, and R. N. Wilkins. 2012. Canopy characteristics affect avian reproductive success of golden-cheeked warblers. Wildlife Society Bulletin 36: 54–60.

Lackey, M. A., M. L. Morrison, Z. G. Loman, B. A. Collier, and R. N. Wilkins. Experimental determination of the response of golden-cheeked warblers (*Setophaga chrysoparia*) to road

construction noise. Pages 91-100 in Ornithological Monographs No. 74. American Ornithologists' Union.

Lituma, C.M., M.L. Morrison, and J.D. Whiteside. Restoration of grasslands and nesting success of dickcissels (*Spiza americana*). Southwestern Naturalist 57:138-143

Marshall, M. E., A. M. Long, S. L. Farrell, H. A. Mathewson, M. L. Morrison, C. Newnam, and R. N. Wilkins. Using impact assessments study designs for addressing impacts to species of conservation concern. Wildlife Society Bulletin 36: 450–456.

Mathewson, H. A., J. E. Groce, T. M. McFarland, M. L. Morrison, J.C. Newnam, R. T. Snelgrove, B. A. Collier, and R. N. Wilkins. Estimating breeding season abundance of golden-cheeked warblers in Texas. Journal of Wildlife Management 76:1117–1128.

McFarland, T. M., H. A. Mathewson, J. Groce, M. L. Morrison, C. Newnam, T. Snelgrove, K. Skow, B. Collier, and R. N. Wilkins. Utilization of a species distribution model for management and conservation. Wildlife Society Bulletin 36: 432–439.

Morrison, M.L. The habitat sampling and analysis paradigm has limited value in animal conservation: a prequel. Journal of Wildlife Management 76:438-450.

Morrison, M. L., B. A. Collier, H. A. Mathewson, J. E. Groce, and R. N. Wilkins. The prevailing paradigm as a hindrance to conservation. Wildlife Society Bulletin 36: 408–414.

Morrison, M. L., and R. N. Wilkins. Introduction to the special section on golden-cheeked warbler conservation. Wildlife Society Bulletin 36: 400.

Smith, K.N., J.W. Cain III, M.L. Morrison, and R.N. Wilkins. A novel songbird nest predator: the greater arid-land katydid. American Midland Naturalist 167:201-212.

Smith, K.N., J.W. Cain, M.L. Morrison, and R.N. Wilkins. 2012. Nesting ecology of the black-capped vireo in southwest Texas. Wilson Journal of Ornithology 124:277–285.

Tegeler, A.K., M.L. Morrison, and J.M. Szewczak. Using extended-duration audio recordings to survey avian species. Wildlife Society Bulletin 36:21-29.

2011

Cocimano, M.C., M.L. Morrison, H.A. Mathewson, and L. Vormwald. Influence of meadow moisture levels on activity of small mammal nest predators in the Sierra Nevada, California. Northwestern Naturalist 92:50-56.

Laake, J.L., B.A. Collier, M.L. Morrison, and R.N. Wilkins. Point-based mark-recapture sampling. Journal of Agricultural, Biological, and Environmental Statistics 16:389-408.

Lackey, M.A., M.L. Morrison, Z.G. Loman, N. Fisher, S.L. Farrell, B.A. Collier, and R.N. Wilkins. Effects of road construction noise on the endangered golden-cheeked warbler. Wildlife Society Bulletin 35:15-19.

Lawson, A.L., M.L. Morrison, and R.D. Slack. Impacts of oil and gas development on wintering grassland birds at Padre Island National Seashore, Texas. Southeastern Naturalist 10:303-320.

Morrison, M.L., R.J. Young, and J.S. Romsos, and R. Golightly. Restoring forest raptors: influence of human disturbance and forest condition on northern goshawks. Restoration Ecology 19:273-279.

Strickland, M.D., E.B. Arnett, W.P. Erickson, D.H. Johnson, G.D. Johnson, M.L., Morrison, J.A. Shaffer, and W. Warren-Hicks. 2011. Comprehensive Guide to Studying Wind Energy/Wildlife Interactions. Prepared for the National Wind Coordinating Collaborative, Washington, D.C., USA.

Vormwald, L. M., M. L. Morrison, H. A. Mathewson, M. C. Cocimano, and B. A. Collier. Survival and movements of fledgling Willow and Dusky Flycatchers. Condor 113:834-842

2010
Block, G., and M.L. Morrison. Large-scale effects on bird assemblages in desert grasslands. Western North American Naturalist 70:19-25.

Borgmann, K.L., and M.L. Morrison. Factors influencing the frequency of nest parasitism by brown-headed cowbirds in the northern Sierra Nevada. Western North American Naturalist 70:137-143.

Butcher, J.A., M.L. Morrison, D. Ransom, Jr., R.D. Slack, and N. Wilkins. Evidence of a minimum patch size threshold of reproductive success in an endangered songbird. Journal of Wildlife Management 74:133–139

Collier, B. A., M. L. Morrison, S. L. Farrell, A. J. Campomizzi, J. A. Butcher, K. B. Hays, D. I. MacKenzie, and R. N. Wilkins. Monitoring golden-cheeked warblers on private lands in Texas. Journal of Wildlife Management 74:140-147.

Farrell, S.F., M.L. Morrison, R.N. Wilkins, R.D. Slack, and A.J. Campomizzi. Brown-headed cowbird parasitism on endangered species: relationships with neighboring avian species. Western North American naturalist 70:474-482.

Groce, J.E., and M.L. Morrison. Habitat use by saw-whet owls in the Sierra Nevada. Journal of Wildlife Management 74:1523–1532

Morrison, M.L., J. Groce, and K.L. Borgmann. Occurrence of bats in highly impacted environments: the Lake Tahoe basin. Northwestern Naturalist 91:87–91

Tegeler-Amones, A.K., M.L. Morrison, J.M. Szewczak, and C. Stermer. Assessing point count sampling in montane Meadows. California Fish and Game 96:201-212.

2009
Arnett, E.B., M.D. Strickland, and M.L. Morrison. Renewable energy resources and wildlife: impacts and opportunities. Transactions of the 72nd North American Wildlife and Natural Resources Conference 72:65-95.

Campomizzi, A. J., M. L. Morrison, S. L. Farrell, R. N. Wilkins, B. M. Drees, and J. M. Packard. Red imported fire ants can decrease songbird nest survival. Condor 111:534-537.

Morrison, M.L., and S. Fox. Bats associated with inactive mines in the western Great Basin. Western North American Naturalist 69:134-137.

Rognan, C.B., J.M. Szewczak, and M.L. Morrison. Vocal individuality of great gray owls in the Sierra Nevada. Journal of Wildlife Management 73:755-760.

Smallwood, K.S., L. Rugge, and M.L. Morrison. Influence of behavior on bird mortality in wind energy developments: the Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 73:1082-1098.

2008
Campomizzi, A.J., J.A. Butcher, S.L. Farrell, A.G. Snelgrove, B.A. Collier, K.J. Gutzwiller, M.L. Morrison, and R.N. Wilkins. Conspecific attraction is a missing component in wildlife habitat modeling. Journal of Wildlife Management 72:331-336.

2007
Arnett, E. B., D. B. Inkley, R. P. Larkin, S. Manes, A. M. Manville, J. R. Mason, M. L. Morrison, M. D. Strickland, and R. Thresher. Impacts of wind energy facilities on wildlife and wildlife habitat. Wildlife Society Technical Review 07-1. The Wildlife Society, Bethesda, Maryland, USA.

Kuenzi, A.J., M.L. Morrison, N.K. Madhav, and J.N. Mills. Brush mouse (*Peromyscus boylii*) population dynamics and hantavirus infection during a warm, drought period in southern Arizona. Journal of Wildlife Diseases 43:675-683

Kunz, T.H., E.B. Arnett, B.M. Cooper, W.P. Erickson, R.P. Larkin, T. Mabee, M.L. Morrison, M.D. Strickland, and J.M. Szewczak. Assessing impacts of wind-energy development on nocturnally active birds and bats: a guidance document. Journal of Wildlife Management 71:2449-2486.

Kuvlesky, Jr., W.P., L.A. Brennan, M.L.Morrison, K.K. Boydston, B.M. Ballard, and F.C. Bryant. Wind energy development and wildlife conservation: challenges and opportunities. Journal of Wildlife Management 71:2487-2498.

Morrison, M.L. Status of the northern goshawk in the Spring Mountains, Nevada. Great Basin Birds 9:69-72

Morrison, M.L., K.C. Sinclair, and C.G. Thelander. 2007. A sampling framework for conducting studies of the influence of wind energy developments on birds and other animals. Pages 101-116 *in* de Lucas, M., G.F.E. Janns, and M. Ferrer, editors. Birds and wind farms: risk assessment and mitigation. Servicios Informativos Ambientales/Quercus, Madrid, Spain.

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Editor, *Ornithological Monographs* (2008 to 2013)

Associate Editor, *Western North American Naturalist* ( )

Editor in Chief, *Journal of Wildlife Management*, volumes 69-71 (2004 to 2007)

Editorial Board, *Environmental Management* (2000 to 2003)

Editor, *Transactions of the Western Section of The Wildlife Society* (1997 to 1998).

Associate Editor, *Journal of Wildlife Management* (1989 to 1993; 2001 to 2003;).

Editor, Western Foundation of Vertebrate Zoology *Proceedings* (1987 to 1992).

Wildlife Habitat: improving wildlife habitat through restoration. 1-2-day workshops, sponsored by the Society for Ecological Restoration, for developing wildlife-habitat restoration plans (presented periodically 1997 to 2003, nationwide)

*Continuing studies are listed by year of initial funding and indicated

2014

2013
Department of Defense, Fort Sill—Black-capped Vireo Survey (2013-2014, $73.5K, co-PI)

East Wildlife Foundation—Monitoring Program: Phase I, Year 1 Monitoring Program Design and Pilot Evaluation (2013-2014, $387K, co-PI)

2012
Joint Fire Science Program (DOA/DOI)—Compatibility of Fire Management with Conservation of

Endangered Species, the Black-capped Vireo (2012-2014, $350K, co-PI)

Gulf Coast Prairie Landscape Conservation Cooperative (USFWS)—A Conservation Framework for Priority Species of Grassland-Shrubland Habitats of the Southern Great Plains (2012-2013, $118K, co-PI)

2011
U.S. Fish and Wildlife Service—Nontraditional Section 6 Habitat Conservation Planning Assistance Grant, Cooperative Endangered Species Conservation Fund, to develop a General Conservation Plan for Central Texas focused on the golden-cheeked warbler and black-capped vireo (2011-2012, $388K, co-PI)

2010
Texas Parks and Wildlife Department and the Endangered Species Program of the U.S. Fish and Wildlife Service—Traditional Section 6 grant to study the ecology of the black-capped vireo in Texas and Mexico; collaborative project with the Universidad Autonoma de Nuevo Leon (2010-2013, $166K, co-PI)

2009
Texas A&M University and the Consejo Nacional de Ciencia y Tecnología (CONACYT)—grant award for development of a collaborative research program on the black-caped vireo in Mexico with the Universidad Autonoma de Nuevo Leon (2009-2010, $24K, PI)

2008
Department of Defense—contract to determine the impact of troop maneuver activities on golden-cheeked warblers, Fort Hood, Texas. (2008-2012, $500K, co-PI)

Texas Parks and Wildlife Department—contract through USFWS Section 6 funding to develop status assessment of the golden-cheeked warbler (2008-2009, $43K; co-PI)

Texas Department of Transportation (TxDOT)—contract to determine response of golden-cheeked warbler and black-capped vireo to highway construction activities (2008-2011, $1,300,000; co-PI)

Texas Department of Transportation (TxDOT)—contract to determine the statewide distribution and abundance of black-capped vireo, and to develop and test a habitat occupancy model (2008-2011, $350K; co-PI)

2007
Texas Department of Transportation (TxDOT)—contract to determine the statewide distribution and abundance of golden-cheeked warblers, and to develop and test a habitat occupancy model (2007-2010, $700K; co-PI)

Texas Department of Transportation (TxDOT)—contract to determine response of golden-cheeked warbler and black-capped vireo to Highway construction activities (2007-2010, $600K;

co-PI)

Texas Parks and Wildlife Department—contract to quantify habitat use of golden-cheeked warblers on private lands (2007, $80K)

2006
Texas Parks and Wildlife Department—contract to evaluate implementation of the Landowner Incentive Program (LIP) in Texas (2006-2011, $165K)

Texas Parks and Wildlife Department—contract to determine the response of wildlife to grassland restoration (2006-2008, $90K)

Texas Parks and Wildlife Department—contract to determine habitat use and roost site selection in rare bats of eastern Texas (2006-2009, $110K; co-PI)

Texas Parks and Wildlife Department—contract to study the demography of the eastern turkey in relation to reintroductions and survival (2006-2011, $500K; co-PI)

Texas Parks and Wildlife Department—contract to study movements of migratory birds along the Texas lower Gulf Coast (2006-2009, $200K; co-PI)

USDA Forest Service, Rocky Mountain Research Station—contract to assist with analysis of data resulting from a study of the population ecology of secondary cavity nesting birds ($25K)

Texas Agricultural Experiment Station—Funded acquisition of equipment for the Texas Cooperative Wildlife Collection through the TAES “Support for research equipment and facilities upgrade” program (freeze drier purchased)

2005
Department of Energy—Project collaborator through TAMU-CESU to evaluate environmental issues associated alternative oil and gas drilling extraction methods (2005-2007; $80K for environmental portion of $1.5M total engineering project)

Department of Defense—Co-PI for Fort Hood Off-Site Conservation Program (2005-2009; $1,075,000)

California Department of Fish and Game (through University of California, Riverside subcontract)—Contract awarded to establish a monitoring protocol for vertebrates in montane meadows of the northern Sierra Nevada, California (2005-2007) $110,000

2004
California Department of Transportation—Principal collaborator (J. Szewczak, PI) on grant awarded for development of bird species identification and population estimation by computerized sound analysis (2004-07) $350,000

DOD, Strategic Environmental Research Defense Program—Principal collaborator (J. Szewczak, PI) on grant awarded for development of remote voice recording and species recognition software for bats and birds (2004-2007) $635,000

Tahoe Regional Planning Agency—Grant awarded to develop restoration needs assessment for the northern goshawk (2004-06) $50,000

Tahoe Regional Planning Agency—Contract awarded to serve on Pathway 2007 core science teams (wildlife and vegetation) (2004-2005) $40,000

US Forest Service, Lake Tahoe Basin Management Unit—Contract awarded to determine distribution and abundance of northern goshawks (2004-06) $25,000

US Navy, Concord Weapon Station—Contract awarded for surveying clapper rails and conducting habitat assessment (2004) $4,000

US Navy, Concord Weapon Station—Contract awarded for surveying California red-legged frogs and California tiger salamanders (2004-06) $70,000

US Navy, Concord Weapon Station—Contract awarded for surveying salt marsh harvest mouse and California clapper rail (2004-05) $24,000

US Navy, Skaggs Island—Contract awarded for managing salt marsh harvest mice during habitat restoration (2004) $12,000

US Navy, Naval Air Station, Lemoore—Contract awarded to conduct base-wide vertebrate surveys (2004-05) $65,000

USFWS, Region 2—Contract awarded to serve as technical editor for revision of the Mexican spotted owl recovery plan (2004-06) $40,000

2003

US Forest Service, Lake Tahoe Basin Management Unit—Contract awarded for assisting with development of restoration and monitoring plans, and data collection (2003 to 2008) $60,000-$285,000 annually

Tahoe Regional Planning Agency—Contract awarded to serve on Adaptive Management Framework Science Team, Phase I (2003-2004) $15,000

2002

National Science Foundation—Co-PI on award to establish Research Experience for Undergraduates (REU) program at White Mountain Research Station (2002-2004) $150,000

California Department of Fish and Game—Award to implement meadow monitoring and conduct surveys of willow flycatchers in Sierra meadow systems (2002-2005) $170,000

2001

US Navy, Naval Air Station Lemoore—Develop and implement restoration and monitoring plan for the endangered Fresno kangaroo rat (2000 to 2013) $40-60,000/year

Beale Air Force Base—Develop and implement monitoring plan to reduce birds as a strike hazard for military aircraft (BASH program) (2001) $35,000

2000
California Department of Transportation--contract to conduct a natural resource assessment of Highway 26, Calaveras Co. $9,000

1999
California Department of Transportation—contract to implement a monitoring program for elderberry survival and elderberry longhorn beetle activity on a restoration/mitigation bank, Merced Co. (Livingston), California (1999-2001) $30,000

California Department of Transportation—contract to develop monitoring program on restoration/mitigation bank, Carmel, Monterey Co., California (1999-2002) $197,000

California Department of Transportation--contract to conduct a natural resource assessment of the Highway 46 corridor, San Luis Obispo Co. (1999-2001) $125,000

1998
Beale Air Force Base--cooperative agreement for monitoring wildlife and wildlife habitat (1998-99) $5500

California Department of Fish and Game--contract to develop recovery plan for the greater sandhill crane (1998-01) $200,000

California Department of Transportation--contract to conduct a natural resource assessment of the Highway 16 corridor, Amador Co. (1998) $19,000

California Department of Transportation--contract to conduct a natural resource assessment, including red-legged frog survey, for the Sonora bypass project (1998) $5,000

Edison International (So. Calif. Edison), raptor-powerline interactions in the Owens Valley, California; consulting agreement for study design, project implementation, and data analyses (1998-99)

Edison International (So. Calif. Edison)--consulting agreement to develop a workshop and white paper for multiple-species conservation reserves and electric distribution facilities (1998-99) $35,000

Endangered Species Recovery Council--retained to assist with study design and monitoring, San Clemente Island wind power development (1998-99) $10,000

U.S. Navy, Concord Naval Weapons Station--cooperative agreement (with P. Gertin) to develop base-wide habitat characteristics of wildlife (1998-99) $125,000

Wildlands, Inc--retained to assist with design of mitigation plan for endangered wildlife

1997
Northern Territories, Inc., Sacramento--consulting agreement to assist with evaluation of, and development of alternatives to, the Natomas Basin Habitat Conservation Plan (1997-99)

Arizona Game and Fish, Heritage Program, Phoenix--grant to establish a cowbird control

program along the lower Colorado River (1997-99) $11,000

U.S. Fish and Wildlife Service, Southwest Region--cooperative agreement to establish a cowbird control program along the lower Colorado River (1997-99) $50,000/year

U.S. Bureau of Reclamation, Lower Colorado Region--cooperative agreement to establish a cowbird control program along the lower Colorado River (1997-99) $25,000

U.S. Fish and Wildlife Service, Sacramento Field Office--contract to assess the effects of mercury contamination on the distribution of the California red-legged frog (Santa Clara Co.) (1997-98) $45,000

U.S. Forest Service, Region 5--contract to determine distribution, habitat quality, and population dynamics of the willow flycatcher in the Sierra Nevada (1997 to 2011) $70-190K/year

1996

Centers for Disease Control, Atlanta--contract to study the temporal variation in hantavirus in rodents in southeastern Arizona (1996-2001) $55-75K/year

Arizona Game and Fish, Heritage Program, Phoenix--grant to determine distribution and abundance of birds in southeastern Arizona grasslands (1996-98) $11,000

1995

U.S. Air Force, Luke Air Force Base, Arizona--contract to expand inventory-monitoring program for neotropical birds on the Barry M. Goldwater Air Force Range (routed through Jones Tech.) (1995-96) $36,000

Consulting in the Public Interest, Islip, NY--assisting with analysis of potential influence of small mammals in the transport of buried nuclear waste (1995 to date)

National Audubon Society, New York, NY--wildlife ecology and study design consultant to assist with private forest-biodiversity initiatives in east and southeast US (1995 to date)

Arizona Department of Health Services, Phoenix--contract to study the temporal variation in hantavirus in rodents in southeastern Arizona (1995-96) $81,000

U.S. Air Force, Luke Air Force Base, Arizona--contract to continue and expand study of the ecology of small owls on the Barry M. Goldwater Air Force Range (1995-96) $24,000

U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Ft. Collins--coop. agreement to develop habitat restoration plans for southwestern grasslands (P.R. Krausman, co-PI)(1995-98) $62,000

1994

U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Ft. Collins--coop. agreement to develop a comprehensive status of knowledge and study design for research on the wildlife resources of the borderlands ecosystem management program area (P.R. Krausman, co-PI) (1994-95) $41,000

National Renewable Energy Laboratory (DOE), Golden, Colorado--ornithological and biostatistical consulting contract for work on avian-windpower interactions (1994 to date) $45-48,000/year

California Department of Fish and Game, Office of Oil Spill Prevention and Response, Sacramento--monitoring of listed and protected bird species during the beach excavation project, UNOCAL Guadalupe Oilfield, San Luis Obispo, California (1994-95) $8,000

U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Ft. Collins--coop. agreement to determine the distribution and abundance of Mexican spotted owl prey on the Manti-LaSal National Forest (1994-95) $15,000

Arizona Game and Fish, Heritage Program, Phoenix--grant to determine distribution and habitat ecology of the buff-breasted flycatcher (1994-96) $10,000

U.S. Air Force, Luke Air Force Base, Arizona--contract to determine the ecology of small owls on the Barry M. Goldwater Air Force Range (1994-96) $40,000

U.S. Navy, Office of Naval Research, Arlington, Virginia--competitive grant awarded to supplement studies on Cabeza Prieta National Wildlife Refuge, concentrating on Sonoran pronghorns (P.R. Krausman, co-PI) (1994-96) $50,000

Dames & Moore, Tucson, Arizona--as subcontractor for U.S. Air Force, Luke Air Force Base, to establish an inventory-monitoring program for neotropical migrant birds (1994) $18,000
U.S. Fish and Wildlife Service, Reno Field Office, Nevada--contract to determine the status of known Plecotus roosts and identification of critical bat habitat in Nevada (1994-95) $20,000

U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Ft. Collins--coop. agreement to determine the status and trends of neotropical migrant birds in riparian vegetation (R.W. Mannan, co-PI) (1994-95) $6,000

U.S. Forest Service, Coronado National Forest, Tucson--cost-share agreement to determine the status and trends of neotropical migrant birds in riparian vegetation (R.W. Mannan, co-PI) (1994-95) $22,000

U.S. Forest Service, Manti-LaSal National Forest--contract to conduct Mexican spotted owl prey study (1994-95) $78,000

U.S. Fish and Wildlife Service, Albuquerque--contract to conduct inventory and monitoring and ecological investigations of birds on the lower Colorado River refuges (1994-95) $70,000

1993
Department of the Navy, Western Division -- contract awarded to inventory sensitive plants and animals, Concord Naval Weapons Station (1993-94) $40,000

U.S. Fish and Wildlife Service, Pacific Islands Office, Honolulu--survey of the Hawaiian hawk (1993-94)

Uribe & Associates, Oakland--biological resources evaluation, NAS Fallon (1993-94)

Uribe & Associates, Oakland--biological resources evaluation, NAS Lemoore (1993-94)

U.S. Fish and Wildlife Service, Albuquerque -- contract awarded to establish an inventory-monitoring program for birds at the Bill Williams River National Wildlife Refuge, Arizona (1993) $9,000

U.S. Fish and Wildlife Service, Albuquerque -- contract awarded to inventory and conduct ecological investigations of wildlife using charcos (water holes) at the Cabeza Prieta National Wildlife Refuge, Arizona (1993-95) $80,000

1992

California Tahoe Conservancy -- contract awarded for study of distribution, abundance, and habitats of northern goshawks in the Tahoe Basin (5/92 to 8/94) $225,000

California Department of Fish and Game, Redding--data analysis and statistical consulting for the Cantara spill, Sacramento River (1992)

Department of the Navy, Southwestern Division -- contract awarded for study of endangered San Clemente Loggerhead Shrike (T.A. Scott, co-PI) (1992) $100,000

Department of the Navy, Western Division -- contract awarded for study of endangered Fresno Kangaroo Rat, NAS Lemoore (1992-93) $65,000

Department of the Navy, Western Division -- contract awarded for study of bird-habitat relationships and bird flight patterns (BASH program), NAS Lemoore (1992-93) $50,000

Department of the Navy, Western Division -- contract awarded for study of the distribution, abundance, and ecological interactions of ground squirrels, salamanders, and raptors at Concord Naval Weapons Station (D. VanVuren, co-PI) (1992-93) $75,000

U.S. Fish and Wildlife Service, Reno, NV -- contract awarded for study of distribution and abundance of birds along the Truckee River, California and Nevada (1992-93) $20,000

U.S.D.A. Forest Service, Region 5 -- contract awarded to establish a monitoring program for Neotropical migrant birds in the White Mountains, California (1992-93) $38,000

Department of the Army, Ft. Huachuca -- contract awarded to determine distribution, abundance, and habitat associations of amphibians and reptiles (1992) $10,000

University of California, Integrated Hardwood Range Management Program -- contract awarded to determine effects of hardwood removal on wildlife (W.M. Block, co-PI)(1992-95) $80,000

1991

California Dept. of Parks and Recreation -- contract awarded for study of distribution, abundance, and habitats of northern goshawks in the Tahoe Basin (4/91 to 7/92) $25,000

1990

Department of the Navy, Western Division -- contract awarded for study of birds as hazards to military aircraft, Naval Air Station, Alameda (1990-91) $15,000

Jones & Stokes, Sacramento--ecological assessment of the Mono Lake islands, California (1990-91)

San Diego County, California, Dept. of Parks and Recreation -- contract awarded for biological evaluation and habitat restoration of Guajome Regional Park (T.A. Scott, co-PI) (4/90 to 6/91; supplemented through 8/93) $50,000

San Diego County, California, Dept. of Parks and Recreation -- contract awarded for biological evaluation and habitat restoration of Sweetwater Regional Park (T.A. Scott, co-PI) (4/90 to 6/94) $50,000

1989

Department of the Navy, Western Division -- contract awarded for ecological studies of the endangered salt marsh harvest mouse (1 April 1989 to date; renewed annually through 1994) $425,000

Department of the Navy, Western Division -- contract awarded for study of bird-aircraft interactions on military airfields (1 Aug. 1989 to 30 Sept. 1991) $75,000

Pacific Southwest Forest and Range Experiment Station, USDA Forest Service -- cooperative agreement (PSW-89-0013CA) awarded for a comparison of bird communities in the pinyon-juniper and bristlecone pine habitats in the White-Inyo mountains (1989-1991) $20,000

1988

California Department of Forestry and Fire Protection -- Contract awarded for study of wildlife-habitat relationships in oak woodlands of California (15 April 1988 to 31 Dec. 1989) $80,000

University of California Cooperative Extension -- Renewable Resources Extension Act (RREA). Funding for a study of Wildlife-habitat relationships (WHR) validation (supplement to oak woodland wildlife study, FY 1988) $2,000

1987

California Department of Parks and Recreation -- contract awarded for study of wildlife use of eucalyptus trees on Angel Island State Park, San Francisco Bay (June 1987 to June 1988) $10,000

1986

Pacific Southwest Forest and Range Experiment Station, USDA Forest Service -- Cooperative Agreement (PSW-86-0006CA) awarded for study on predation of incense cedar scale insects by birds. (1 May to 31 Dec. 1986) $12,000

University of California, Cooperative Extension -- Grant awarded for study of wildlife-habitat relationships in oak woodlands of California (1 July 1986 - 31 Dec. 1988) $5,000

1985

Pacific Southwest Forest and Range Experiment Station, USDA Forest Service -- Cooperative Agreement (PSW-85-0011CA) awarded for development of models predicting the distribution and abundance of snags (1 March-30 June 1985) $10,000

California Department of Fish and Game -- contract (No. 85/86 C-1285) awarded for continuation of the "Ecological Analysis of the San Clemente Loggerhead shrike (7 October 1985-30 September 1986) $10,000

Pacific Southwest Forest and Range Experiment Station, USDA Forest Service -- contract (P.O. No. 43-9AEG-6-21) for report on "Winter foraging behavior and tree species preferences of birds in mixed-conifer forests of the western Sierra Nevada." (order date Dec. 1985; due date 31 March 1986) $10,000

1984

California Department of Fish and Game -- contract (No. 83/84 C-685) awarded for "Ecological Analyses of the San Clemente Loggerhead Shrike (contract period March 1984 to Sept. 1984). $15,000

Tahoe National Forest, USDA Forest Service -- contract (P.O. No. 43-9463-4-987) for report on establishment of study plots and preliminary survey of cavity-nesting birds at Sagehen Creek Field Station-UCB (order date 31 August 1984; due date 1 July 1985). $1,000

Western Division, Naval Facilities Engineering Command, Department of the Navy -- contract (Letter of Agreement N62474-84-LT4115) awarded for continued study of the San Clemente Loggerhead Shrike, with emphasis on predators and management options (1 August 1984 to 31 August 1985) $15,000

Pacific Southwest Forest and Range Experiment Station, USDA Forest Service -- Cooperative Agreement (PSW-84-0030CA) awarded for analysis of winter use of incense cedar as a foraging substrate by birds (contract period 24 September 1984 to 30 September 1985) $10,000

1983

Agricultural Experiment Station, University of California -- McIntire-Stennis project (CA-F*-FRU-4274-MS) awarded for development of models predicting the response of avian communities to habitat modification in a forest management context (contract period 1983-1989) $120,000

Pacific Southwest Forest and Range Experiment Station, USDA Forest Service -- Cooperative Agreement (PSW-83-0013CA) awarded for study of fuel wood removal and cavity nesting birds at Sagehen Creek Field Station (May 1983 to March 1984) $10,000

Endangered Species Office, U. S. Fish and Wildlife Service -- Cooperative Agreement (14-16-0001-83284) awarded for study of endangered subspecies of the Loggerhead Shrike (Lanius ludovicianus mearnsi) on San Clemente Island, California (9/83-9/84) $10,000

Tahoe National Forest, USDA Forest Service -- contract (P.O. No. 40-9A63-3-1114) for report on status of snag studies at Sagehen Creek Field Station-UCB (order date 21 Sept. 1983; due date 31 Nov. 1983) $1,000

1982
Frank M. Chapman Memorial Fund -- grant awarded Fall 1982 for continuation of work with *Dendroica* warblers (American Museum of Natural History) $500

1981
Alexander Wetmore Memorial Fund -- grant awarded April 1981 for analysis of hybridization between the Townsend's and Hermit warblers (American Ornithologists' Union) $500

1980
Frank M. Chapman Memorial Fund -- grant awarded Sept. 1980 for analysis of foraging behavior of western *Dendroica* (American Museum of Natural History) $500

1977
Bureau of Land Management -- subcontractor for assembling "Annotated Bibliographies of California Desert Birds," Oct. 1977 to Dec. 1978 (BLM, Riverside Office) $2,000

(Includes only those for which I presented the talk or poster)

2010
Morrison, ML., and N. Wilkins. Overview of research program on black-capped vireo and golden-cheeked warbler. Annual Conference, Texas Chapter of The Wildlife Society, Galveston, TX.

2009
Morrison, M.L. Conservation and management of the willow flycatcher. Willow Flycatcher and Great Gray Owl Workshop, Western Section, The Wildlife Society, Truckee (Northstar), 3-4 June 2009 (invited)

Morrison, M.L. Wind power development and wildlife: state of our knowledge. Texas Chapter, The Wildlife Society, Annual Conference, Lubbock, 27 February 2009. (Plenary speaker, invited).

2007
Morrison, M.L. Effects on wildlife: lessons learned from other states. Wind and Wildlife Conference, Texas Wildlife Association, Abilene, Texas, 25 October 2007 (invited)

Morrison, M.L. A review of impacts of offshore wind energy development on wildlife. Annual Conference, The Wildlife Society, Tucson, Arizona, 25 September 2007.

Morrison, M.L. Gaining reliable knowledge: monitoring and HCPs. Science and Multispecies Habitat Conservation Plans, University of California, Riverside, 15-16 May 2007 (invited)

2006
Morrison, M.L. Concepts and applications in wildlife restoration. Rangeland Ecology and Management, Texas A&M University, 31 January 2006. (invited)

2005
Morrison, M.L. Concepts and applications in wildlife restoration. School of Forestry, Northern Arizona University, Flagstaff, 16 November 2005 (invited)

2004
Morrison, M.L., and M. Hurt. An adaptive management framework for wildlife restoration: Lake Tahoe Basin. Annual Conference, California Society for Ecological Restoration, 16 October, Kings Beach, CA

Morrison, M.L., and M. Hurt. Developing desired conditions for wildlife restoration. Poster presented at the 2nd Biennial Conference on Tahoe Environmental Concerns, Nevada Water Resources Association, Lake Tahoe, NV

Smallwood, K.S., and M.L. Morrison. Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. Annual Conference, California Society for Ecological Restoration, 16 October, Kings Beach, CA

2003
Morrison, M.L. Demography and conservation of the willow flycatcher. Department of Biology, Ecology, Evolution, and Conservation Biology (EECB) Seminar, University of Nevada, Reno (invited).

Morrison, M.L. Concepts of animal ecology as applied to restoration. 2003 Arid Southwest Lands Habitat Restoration Conference, Palm Springs, California (invited).

2002
Morrison, M.L. Wind power—a clean source of renewable energy vs. avian mortality at wind turbines: are there bird problems? Presenter and panel member, American Bird Conservancy, Policy Council Meeting, Washington, D.C. (invited).

Morrison, M.L. Development of a renewable energy program at UC White Mountain Research Station. California Hydrogen Business Council, Quarterly Meeting, University of California, Riverside (invited)

2001
Lynn, S., A. Averill, and M.L. Morrison. Habitat management for selected neotropical migrant songbirds in cottonwood/willow patches, lower Colorado River. Riparian Habitat and Floodplain Conference, Sacramento, California.

2000
Morrison, M.L. Predicting and preventing hantavirus infections: temporal patterns of rodent populations and hantavirus in Arizona. Seminar presented to College of Ecosystem Science and Management, Northern Arizona University, Flagstaff (invited).

1999
Morrison, M.L., and L.S. Hall. Standard terminology: toward a common language to advance ecological understanding and applications. Symposium on Predicting Species Occurrences: issues of scale and accuracy, Snowbird, Utah (invited Plenary Speaker).

Morrison, M.L., and D.C. Hahn. Cowbird parasitism in eastern and western landscapes. 69th Annual Meeting, Cooper Ornithological Society, Portland, OR (invited symposium presentation).

1998

Morrison, M.L., K.H. Pollock, A.L. Oberg, and K.C. Sinclair. Predicting the response of bird populations to wind-energy related deaths. ASME Wind Energy Symposium, 36th American Institute of Aeronautics and Astronautics (AIAA) Meeting, Reno, NV.

1997

Morrison, M.L., and L.S. Hall. Habitat relationships of amphibians and reptiles in the Inyo-White Mountains, California and Nevada. Poster presented at the Symposium on the Ecology and Management of Pinyon-Juniper Communities within the Interior West.

Morrison, M.L. Status of the southeastern Arizona longitudinal hantavirus study. 1997 Vector-borne and zoonotic diseases conference, Arizona Department of Health Services, Phoenix, Arizona.

Morrison, M.L., A.J. Kuenzi, D.E. Swann, and L.S. Hall. Dynamics of hantavirus infection in rodents in southeastern Arizona. 4th Annual Conference, The Wildlife Society, Snowmass Village, Colorado.

1996

Morrison, and L.S. Hall. The habitat concept: misused centerpiece of restoration ecology. Fifth annual meeting, California Chapter, Society for Ecological Restoration (SERCAL), Yosemite, California

Morrison, M.L., W.M. Block, L.L. Christoferson, and L.S. Hall. Linking research and management: conceptual designs and case studies from the southwest. 61st North American Wildlife and Natural Resources Conference, Tulsa, Okla.

1995

Morrison, M.L. Monitoring resource management actions: conceptual framework. Plenary Session, 28th Annual Meeting, Arizona and New Mexico Chapters, The Wildlife Society, Gallup, NM.

1994

Morrison, M.L. Designing bird inventory and monitoring programs. Presentation to wildlife biologists, Prescott National Forest, Arizona.

Morrison, M.L. Ecosystem management: measuring biotic resources. Invited presentation to the School of Renewable Natural Resources, Univ. of Arizona; workshop-planning meeting for ecosystem management at the Santa Rita Experimental Range.

1993

Morrison, M.L., and T.A. Scott. Integration of wildlife inventory-monitoring in restoration plans. Northern California Chapter, Society of Ecological Restoration, Oakland.

Morrison, M.L. Design of inventory-monitoring programs for Forest planning. Presentation

to District, Forest, and Regional wildlife biologists, Region 5, U.S. Forest Service, Fresno, California.

1992
Morrison, M.L. The study of habitat: a critical look at concepts and future directions; and How we might study animal habitat: research design and analysis. Seminars presented at the Ecology Center, Utah State University, Logan (invited speaker).

1991
Morrison, M.L. Managing our forests for looks (structure) and not for birds (floristics). Western Section, The Wildlife Society, Annual Meeting, Sacramento, Calif. (Invited lecture).

Morrison, M.L., and T.A. Scott. Developing a methodology for wildlife habitat restoration plans. Society for Ecological Restoration, Annual Meeting, Orlando, Florida.

Morrison, M.L. Components and expressions of a healthy forest: wildlife and wildlife resource requirements. 40th Annual California Forest Pest Control Council, Sacramento, CA (invited speaker).

1990
Morrison, M.L. Can a single species be used as an indicator of environmental change? Theory and tools for managing species at risk. University Extension, Univ. California, Davis. (invited lecture).

1989
Morrison, M. L. Evolution in the Dendroica virens group: geographic variation in D. nigrenscens. 107th Annual Meeting of the American Ornithologists' Union, University of Pittsburgh, Pittsburgh, Penn.

Morrison, M.L., M.L. Morton, L.S. Hall, J.L. Harner, and J.J. Keane. Population biology of small mammals in the Inyo-White mountains. White Mountain Research Station Symposium III, Bishop, Calif.

Morrison, M.L. Natural history of vertebrates in the Inyo-White range. Fall Lecture Series, White Mountain Research Station, Bishop, Calif. (Invited lecture).

1988
Morrison, M. L. The design and importance of long-term ecological studies: analysis of vertebrates in the Inyo-White mountains, California. Symposium on Management of Amphibians, Reptiles, and Small Mammals in North America. Flagstaff, Ariz.

Morrison, M. L. Dilemmas in wildlife management: worthless trees and the birds that use them. Invited presentation, Special Lecture in Zoology, Southern Illinois University, Carbondale.

1987
Morrison, M. L. Design for a long-term ecological study: birds, small mammals, amphibians, and reptiles. Fall Lecture Series, White Mountain Research Station, Bishop, Calif.

1986

Morrison, M. L., D. L. Dahlsten, S. M. Tait, and D. L. Rowney. Prey availability and the impact of birds on scale insects during winter. 104th Annual Meeting of the American Ornithologists' Union, Mississippi State Univ., Mississippi State.

1985

Morrison, M. L. Seasonal use of tree species by forest birds. Museum of Vertebrate Zoology (invited presentation), University of California, Berkeley.

Morrison, M. L., I. C. Timossi, K. A. With, and P. N. Manley. Use of tree species by forest birds during winter and summer. Fourth Joint Meeting of the Wilson Ornithological Society and the Cooper Ornithological Society, University of Colorado, Boulder.

Morrison, M. L. Seasonal variations in habitat use and foraging behavior by forest birds. Division of Wildlife and Fisheries, Univ. California, Davis (invited presentation for Proseminar Series).

1983

Morrison, M. L., and E. C. Meslow. Impacts of forest herbicides on wildlife: toxicity and habitat alteration. 48th North American Wildlife and Natural Resources Conference, Kansas City, Missouri.

Morrison, M. L., and J. W. Hardy. Hybridization between the Townsend's and Hermit warblers. 53rd Annual Meeting of the Cooper Ornithological Society, Albuquerque, N.M.

1982

Morrison, M. L. Effects of the herbicide glyphosate on avian community structure. Northwest Section of the Wildlife Society, Juneau, Alaska.

Morrison, M. L., R. W. Mannan, and G. L. Dorsey. Effects of number and placement of circular plots on estimates of avian density and diversity. Symposium on Estimating the Numbers of Terrestrial Birds, Asilomar, Calif.

1978

Morrison, M. L., E. Shanley, Jr., and R. D. Slack. Reproductive success and nesting ecology of the Olivaceous Cormorant in Texas. 48th Annual Meeting of the Cooper Ornithological Society, Arizona State Univ., Tempe.

Morrison, M. L., and L. F. Kiff. Post-DDT shorebird eggshell thickness in North America. 5th Annual Meeting of the Pacific Seabird Group, Asilomar, Calif.

1977

Morrison, M. L., and R. D. Slack. The Olivaceous Cormorant: Its distribution and population trends. Texas Academy of Sciences, Baylor Univ., Waco.

1976

Morrison, M. L., and R. D. Slack. Status of the Olivaceous Cormorant in Texas. Texas Cooperative Fish-eating Bird Conference, Texas Parks and Wildlife Dept., Austin.

The Wildlife Society (National; Southwest Section; Texas Chapter)
Certified Wildlife Biologist

Society for Ecological Restoration

American Society of Mammalogists

Cooper Ornithological Society (Life Member)

American Ornithologists' Union (Elected Fellow)

Southwestern Association of Naturalists

2013 USDA Forest Service, Inyo National Forest, Certificate of Appreciation for assisting in conservation efforts for bat habitats

2011 USDA Forest Service, Rocky Mountain Research Station, Publication Award for "Technology Transfer Publication", *Wildlife Study Design*, Springer-Verlag.

2009 The Wildlife Society, Texas Chapter, Outstanding Technical Publication award for "Wind energy development and wildlife conservation: challenges and opportunities" (Kuvlesky, Jr., W.P., L.A. Brennan, M.L.Morrison, K.K. Boydston, B.M. Ballard, and F.C. Bryant. Journal of Wildlife Management 71:2487-2498)

2007 Ecological Society of America, Sustainability Science Award, for co-authorship on the paper, "The ecology and evolutionary history of an emergent disease: Hantavirus Pulmonary Syndrome" (Yates, T.L., J.N. Mills, C.A. Parmenter, T.G. Ksiazek, R.R. Parmenter, J.R. Vande Castle, C.H. Calisher, S.T. Nichol, K.D. Abbott, J.C. Young, M.L. Morrison, B.J. Beaty, J.L. Dunnum, R.J. Baker, J. Salazar-Bravo, and C.J. Peters, 2002, BioScience 52:989-998).

Best State and Local Project, Natural Resources Council of America, Washington, DC, for *Impact of Wind Energy Facilities on Wildlife and Wildlife Habitat* (The Wildlife Society); 2008, co-author on publication.

Certificate of Appreciation, The Wildlife Society, service as Editor-in-Chief, *Journal of Wildlife Management*, 2005-2007.

Certificate of Appreciation, USDA Forest Service, participation in Resource Core Groups for Lake Tahoe Basin (Pathways 2007), 2003-2006 (award 2007)

Fellow, American Ornithologists' Union; elected 2005

President, Western Section, The Wildlife Society (2000-2001)

President-elect, Western Section, The Wildlife Society (1999-2000)

Scholarly Achievement Award, School of Renewable Natural Resources, Univ. of Arizona, Tucson (for "Wildlife-habitat Relationships", 1992) (1995)

Elected to Board of Directors, Cooper Ornithological Society (term 1991-1993)

Best Edited Book Award for 1986 (with Jared Verner and C. John Ralph), "Wildlife 2000: modeling habitat relationships of terrestrial vertebrates," Univ. of Wisconsin Press; The Wildlife Society.

Secretary, Cooper Ornithological Society, (1985-1989)

Elective Member, American Ornithologists' Union (selected by Elected Members and Fellows, 1984)

President, San Francisco Bay Area Chapter, The Wildlife Society (1984)

President-elect, San Francisco Bay Area Chapter, The Wildlife Society (1983)

(Excludes University-level committees)

Member, Interagency Task Force on Economic Growth and Endangered Species, State of Texas (2011 to 2012)

Member, Scientific Review Committee, Altamont Pass Wind Resource Area (appointed by Alameda County, CA, Board of Supervisors; 2011 to date)

Chair, Cottam Student Award Committee, Texas Chapter of The Wildlife Society (2011)

Faculty Participant, Ph.D. component of the Alfred P. Sloan Foundation Minority Ph.D. Program (2008 to date)

Member, Endangered Species Act (ESA) Credit System Working Group, State of Texas (2006-2010)

Session Chair, 42nd Annual Meeting of the Texas Chapter of The Wildlife Society (2007)

Member, Resources Core Group, Pathways 2007, USDA Forest Service, Lake Tahoe Basin Management Unit, California (2004-2006)

Member, Strategic Planning Committee, The Wildlife Society (2006)

Member, Wind-energy Technical Review Committee, The Wildlife Society (2005-06)

Member, Wildlife Publication Awards Committee, The Wildlife Society (2004-06)

Chair, Program Committee, Annual Conference of The Wildlife Society, 2001 (Reno, NV)(2000-2001)

Member, San Clemente Loggerhead Shrike Recovery Team, appointed by US Fish and Wildlife Service, San Diego (1999 to 2001).

Co-leader, Greater Sandhill Crane Recovery Team, California Department of Fish and Game (1998 to 2001).

Member, Hawaiian Hawk ('Io) Recovery Team Working Group, appointed by US Fish and Wildlife Service, Hawaii (1997 to 2001).

Member, Sierra Nevada Willow Flycatcher Working Group, USDA Forest Service (1997 to 2010).

Member, Publications Awards Committee, The Wildlife Society, 1998.

Member, Scientific Program Committee, 1998 annual meeting, Western Section of The Wildlife Society, Sacramento, CA

Chair, committeees on local arrangements and scientific program, Partners In Flight conference, Cowbird management in western landscapes, Sacramento, CA (23-25 Oct. 1997)
Scientific Advisor, The Maya Project, The Peregrine Fund, Boise, Idaho (1995-1996)

Member, Financial Committee, Cooper Ornithological Society (1994 to 1996)

Co-chair, Committee on Local Arrangements, Annual Meeting of the Cooper Ornithological Society, Sacramento, CA (April 1993)

Member, Scientific Program Committee, 1st Annual Meeting of The Wildlife Society (1993-94)

Member, Oak woodland-rangeland advisory group, Calif. Dept. Forestry and Fire Protection (1991)

Member, Publications Committee, The Wildlife Society (1990 to 1992)

Member, Scientific Program Committee, and Chair, Symposium Committee, 1990 Joint American Ornithologists' Union-Cooper Ornithological Society Annual Meeting, Los Angeles, CA (27-30 June 1990)

Member, Snag Advisory Committee, Pacific Southwest Forest and Range Expt. Station, Fresno, Calif. (1989 to 1992)

Member, Conservation Committee, American Ornithologists' Union (1988 to 1993)

Chair, Scientific Program Committee, and Co-chair, Committee on Local Arrangements,

58th Annual Meeting of the Cooper Ornithological Society, Pacific Grove (Asilomar), CA (18-21 March 1988)

Member, Research Review Committee, Golden Gate Raptor Migration Observatory (sponsored by the Golden Gate National Park Assn. in cooperation with the National Park Service; 1987 to 1988)

Panel member, oak woodland-wildlife relationships, training session on hardwood-range management, U.C. Cooperative Extension, San Joaquin Experimental Range (21 May 1987)

Chair, Field Trip Committee, and Member, Program Committee, 56th Annual Meeting of the Cooper Ornithological Society, University of California, Davis (8-11 September 1986)

Member, Program Committee, 54th Annual Meeting of the Cooper Ornithological Society, Humboldt State University, Arcata, California (19-23 June 1984)

Session Chairman, 54th Annual Meeting of the Cooper Ornithological Society, Humboldt State University, Arcata, California (19-23 June 1984)

Member, California Interagency Wildlife Task Group (1983 to 1993); Chair, Model Validation Subcommittee (1986)

Publications Committee, Cooper Ornithological Society: Member, 1983 to 1989; Chair, 1983-85

Member, Steering Committee, Symposium--Wildlife 2000: modeling habitat relationships of terrestrial vertebrates. Lake Tahoe, California (1983-1984)

Session Chairman, 53rd Annual Meeting of the Cooper Ornithological Society, Albuquerque, NM (20-21 May 1983)

Curriculum Vitae

VERNON C. BLEICH

Eastern Sierra Center for Applied
Population Ecology (ESCAPE)

5546 Falconer Drive
Bismarck, ND 58504
701-751-3303 (O)
760-937-5020 (C)
vcbleich@gmail.com

Personal Interests:

Hockey (I am a former goaltender), family life, banjo, autoharp, gardening, hunting, and fishing.

Professional Goals:

To help ensure the persistence of populations of large mammals and their habitats through the study of their ecology and behavior, to apply that knowledge in meaningful conservation efforts, and to impart that knowledge through professional activities including publications, teaching, and other public contacts.

Education:

Ph.D. University of Alaska Fairbanks (Wildlife Biology, 1993). Thesis: "Sexual Segregation in Desert-Dwelling Mountain Sheep."

M.A. California State University, Long Beach (Biology, 1973). Thesis: "Ecology of Rodents at the Seal Beach Naval Weapons Station, Fallbrook Annex, San Diego County, California."

B.S. California State University, Long Beach (Zoology, 1970).

Professional Background:

Senior Conservation Scientist, Eastern Sierra Center for Applied Population Ecology (2007 – present). I provide expertise on natural resource conservation and management issues, particularly as they relate to large mammals in desert, mountain, and plains environments.

Senior Environmental Scientist, California Department of Fish and Game (2001 – 2008; now retired). I served as the project leader for the Sierra Nevada Bighorn Sheep Recovery

Program, a project to conserve mountain sheep in that range and restore them to formerly occupied habitats; I continued to function as the Regional Large Mammal and Desert specialist, with an emphasis on mountain sheep and mule deer in southeastern California. I also served as chair of the Sierra Nevada Bighorn Sheep Scientific Advisory Group, and served on the Peninsular Bighorn Sheep Recovery Team.

Senior Wildlife Biologist, California Department of Fish and Game (1999 – 2001). I served as the Regional Large Mammal and Desert Specialist, with an emphasis on mountain sheep and mule deer in southeastern California.

Senior Wildlife Biologist, California Department of Fish and Game (1993 – 1999). I served as the Regional Large Mammal Specialist and supervised the activities of 5 journeyman wildlife biologists in eastern California. Emphasis species included mountain sheep, mule deer, pronghorn, tule elk, and sage grouse in eastern California.

Associate Wildlife Biologist, California Department of Fish and Game (1986 – 1993). I served as the Regional mountain sheep specialist, and supervised the activities of 5 journeyman wildlife biologists in eastern California. Emphasis species included mountain sheep, mule deer, pronghorn, tule elk, and sage grouse in eastern California.

Project Leader, California Department of Fish and Game, Federal Aid in Wildlife Restoration Project W-26-D (1978 – 1986). I supervised 2 technicians, and planned and implemented habitat management projects designed to benefit waterfowl, sage grouse, mule deer, and mountain sheep in eastern California.

Assistant Wildlife Biologist, California Department of Fish and Game (1975 – 1978). I was an Area Biologist responsible for management of mule deer, mountain sheep, and the Endangered Stephens' kangaroo rat, as well as for environmental review activities in Riverside and San Bernardino counties, California.

Junior Aquatic Biologist, California Department of Fish and Game (1974 – 1975). I was responsible for fisheries management activities, with an emphasis on wild trout and the Endangered unarmored three-spined stickleback in Los Angeles and San Bernardino counties, California.

Park Ranger, Department of Recreation, City of Long Beach, California (1970 – 1973). I was responsible for public education activities, routine patrol, and coordination with other law enforcement agencies in El Dorado Regional Park, Long Beach, California.

Academic Appointments:

Research Professor, Department of Natural Resources and Environmental Science, University of Nevada, Reno (2007 – Present).

Affiliate Faculty, Department of Biological Sciences, Idaho State University, Pocatello, Idaho (2005 – Present).

Senior Research Associate, Institute of Arctic Biology, University of Alaska Fairbanks, Fairbanks, Alaska (1998 – Present).

Affiliate Assistant Professor of Wildlife Ecology, Department of Biology and Wildlife, University of Alaska Fairbanks, Fairbanks, Alaska (1993 – 1998).

Research Associate, Institute of Arctic Biology, University of Alaska Fairbanks, Fairbanks, Alaska (1993 – 1998).

Adjunct Assistant Professor of Natural Resource Science, Department of Natural Resource Science, University of Rhode Island, Kingston (1992 – 1994).

Instructor, Mt. San Jacinto College, San Jacinto, California (1976 – 1986).

Assistant Professor, Department of Biology, Rio Hondo College, Whittier, California (1973 – 1974).

Teaching Assistant, California State University, Long Beach (1972 – 1973).

Graduate Research Assistant, California State University, Long Beach (1970–1972).

Graduate Student Supervision:

Chair of Graduate Committee:

Kevin L. Monteith (Ph.D.), Reproductive ecology of migratory and resident mule deer in the eastern Sierra Nevada, California. Idaho State University, Pocatello. Graduated July 2011. Present position: Post-doctoral Researcher, Wyoming Cooperative Fish and Wildlife Research Unit. Co-chair with Dr. R. T. Bowyer.

Michael W. Oehler (M.S.), Ecology of mountain sheep: effects of mining and precipitation. University of Alaska Fairbanks. *Graduated December 1999*. Current position: Wildlife Biologist, National Park Service, Theodore Roosevelt National Park, Medora, North Dakota. Co-chair with Dr. R. T. Bowyer.

Becky M. Pierce (Ph.D.), Predator-prey dynamics between mountain lions and mule deer: effects on distribution, population regulation, habitat selection and prey selection. University of Alaska Fairbanks. *Graduated May 1999*. Current position: Associate Wildlife Biologist, California Department of Fish and Game, Bishop, California. Co-chair with Dr. R. T. Bowyer.

Graduate Committee Membership:

Cody J. McKee (M.S.), Ecology of mule deer in the eastern Mojave Desert, California. University of Nevada, Reno (Graduation expected December 2011).

Jeffrey T. Villepique (Ph.D.), Interactions between mountain lions and mountain sheep: an assessment of forage benefits and predation risk. Idaho State University, Pocatello (Graduation expected December 2011).

Sabrina Morano (Ph.D.), Reproductive biology of mule deer in the White Mountains, Inyo and Mono counties, California. University of Nevada, Reno (Graduation expected June 2012).

Jericho C. Whiting (Ph.D.), Behavior and ecology of reintroduced Rocky Mountain bighorn sheep. Idaho State University, Pocatello. *Graduated December 2008*. Current position: Wildlife Biologist, Idaho National Laboratory, Twin Falls.

Cody A. Schroeder (M.S.), Habitat selection by mountain sheep: forage benefits or risk of predation? Idaho State University, Pocatello. *Graduated September 2007*. Current position: Doctoral Student, University of Nevada, Reno.

Jason P. Marshal (Ph.D.), Foraging ecology and water relationships of mule deer in a Sonoran Desert environment. University of Arizona, Tucson. *Graduated May 2005*. Current position: Senior Lecturer, University of the Witwatersrand, South Africa.

Heather E. Johnson (M.S.), Antler breakage in tule elk in Owens Valley, California: nutritional causes and behavioral consequences. University of Arizona, Tucson. *Graduated January 2004*. Current position: Mammal Research Biologist, Colorado Division of Wildlife, Fort Collins.

Jennifer L. Rechel (Ph.D. [Geography]), Influence of neighborhood effects and friction surfaces on the spatial distribution and movement strategies of desert-dwelling mountain sheep (*Ovis canadensis*). University of California, Riverside. *Graduated August 2003*. Current position: Wildlife Biologist, U.S. Forest Service, Pacific Southwest Forest and Range Experiment Station, Riverside, California.

Holly B. Ernest (Ph.D.), Ecological genetics of mountain lions (*Puma concolor*) in California. University of California, Davis. *Graduated December 2001*. Current position: Research Geneticist, School of Veterinary Medicine, University of California, Davis.

Esther S. Rubin (Ph.D.), The ecology of bighorn sheep (*Ovis canadensis*) in the peninsular ranges of California. University of California, Davis. *Graduated December 2000*. Current position: Research Biologist, Arizona Game and Fish Department, Phoenix, Arizona.

Nancy G. Andrew (M.S.), Demography and habitat use of desert-dwelling mountain sheep in the East Chocolate Mountains, Imperial County, California. University of Rhode Island, Kingston. *Graduated May 1994*. Current position: Associate Wildlife Biologist, California Department of Fish and Game.

Awards and Honors:

Honorary Lifetime Membership, 2010 (in recognition of long and continuing service to the Society for the Conservation of Bighorn Sheep)

Wild Sheep Biologist Wall of Fame Award, 2009 (in recognition of significant contributions to the conservation of wild sheep in North America) (Wild Sheep Foundation)

Lifetime Achievement Award, 2008 (In recognition of contributions toward the conservation of mountain sheep in California) (California Chapter of the Foundation for North American Wild Sheep)

Honor Plaque, 2007 (Group Award, in recognition of outstanding contributions toward the recovery of mountain sheep in the Sierra Nevada) (Desert Bighorn Council)

State Statesman Award, 2006 (In recognition of outstanding contributions to the wild sheep of California) (Foundation for North American Wild Sheep)

Trail Blazer Award, 2004 (In recognition of efforts on behalf of mountain sheep conservation in California) (California Chapter of the Foundation for North American Wild Sheep)

Director's Achievement Award, 2004 (In recognition of editorial services for *California Fish and Game* (California Department of Fish and Game)

Annual Achievement Award, 2004 (In recognition of conservation of mule deer and their habitats) (Southern California Chapter, California Deer Association)

Alumni Achievement Award for Professional Excellence, 2002 (University of Alaska Alumni Association)

Outstanding Alumnus Award, 2002 (College of Science, Engineering, and Mathematics, University of Alaska Fairbanks)

Sustained Superior Accomplishment Award, 2002 (California Department of Fish and Game)

The Desert Ram Award, 2001 (Desert Bighorn Council)

Outstanding Publication Award for a Monograph, 1998 (The Wildlife Society)

Award of Appreciation, 1998 (San Fernando Valley Chapter of Safari Club International, CA)

Professional Membership, Boone and Crockett Club, 1998 (Boone and Crockett Club)

Certificate of Appreciation, 1997 (Society for the Conservation of Bighorn Sheep)

"Ol' Irongut" Award, 1996 (California Department of Fish and Game, Division of Air Services)

Resources Agency/University of California Fellowship, 1996 (Sponsored jointly by the California Resources Agency and the University of California, Davis)

Director's Achievement Award, 1992 (California Department of Fish and Game)

Outstanding Biology Department Alumnus, 1988 (California State University, Long Beach)

Professional of the Year, 1985 (Western Section of The Wildlife Society)

California Wildlife Officer of the Year, 1984 (Shikar-Safari Foundation)

Award of Honor, 1984 (Society for the Conservation of Bighorn Sheep)

Honorary Lifetime Membership, 1984 (Banning [California] Sportsman's Club)

Professional and Fraternal Memberships:

American Society of Mammalogists (Life Member)
The Boone and Crockett Club (Professional Member)
The Wildlife Society
Society for Conservation Biology
Southwestern Association of Naturalists
Wild Sheep Foundation
National Rifle Association
California Chapter, Foundation for North American Wild Sheep
Society for the Conservation of Bighorn Sheep
Minnesota-Wisconsin Chapter, Foundation for North American Wild Sheep

Licenses and Certifications:

California Community College Credential (# 45476, Lifetime)
State of California Blaster's License (# 2087)
Certified in Wildlife Capture Techniques (California Department of Fish and Game)
Certified Wildlife Biologist (1981 – The Wildlife Society)
California Hunter Safety Instructor (# 1984)
Flying in the Wire and Obstruction Environment (2010 - Utilities Aviation Specialists)

Other Professional Activities:

Editorial Activities:

Editor-in-Chief, *California Fish and Game* (2010 – present)

Associate Editor, *California Fish and Game* (1995 – 2009)

Editor, *Transactions of the Western Section of The Wildlife Society* (1988)

Associate Editor, *Transactions of the Western Section of The Wildlife Society* (1986–87)

Reviewer for Journals:

Conservation Biology, Journal of Wildlife Management, Wildlife Society Bulletin, Journal of Mammalogy, The Condor, California Fish and Game, Transactions of the Western Section of the Wildlife Society, Western North American Naturalist, Desert Bighorn Council Transactions, Southwestern Naturalist, Proceedings of the Northern Wild Sheep and Goat Council, Journal of Wildlife Diseases, Great Basin Naturalist, Bulletin of the Southern California Academy of Sciences, Journal of Zoology (London), Vida Silvestre Neotropical, Wildlife Biology, Wildlife Monographs, European Journal of Wildlife Research, Biological Conservation, Journal of Arid Environments (An average of about 12 reviews per year).

Other Activities:

2008 – Present: Member, Big Game Records Committee, Boone and Crockett Club

2007 – Present: Advisory Board Member, Texas Bighorn Society

2007 – Present: Science Advisor, Society for the Conservation of Bighorn Sheep

2006 – Present: Member, *Ad Hoc* Committee on Professional Membership, Boone and Crockett Club.

1998 – 2002: Coach and member of Board of Trustees, Sierra Roller Hockey League.

1995–96: Vice Chairman, The Desert Bighorn Council.

1994–98: Member, Board of Directors, The Wildlife Forensic DNA Foundation.

1993 – Present: Member, Professional Resource Advisory Committee, Foundation for North American Wild Sheep.

1991: Member, Committee on Support of Symposia and Conferences, The Wildlife Society.

1989–1993: Member, Board of Trustees, Friends of the Eastern California Museum; Vice–chairman, 1991–1992; Chairman, 1993.

1987–1988: Chairman, The Desert Bighorn Council.

1988: Co-chairman, Wildlife Water Development Symposium, Western Section of The Wildlife Society.

Refereed Publications:

Monteith, K. M., **V. C. Bleich**, T. R. Stephenson, B. M. Pierce, M. M. Conner, J. G. Kie, and R. T. Bowyer. *In review*. Life history characteristics of mule deer: effects of nutrition in a variable environment. Wildlife Monographs.

Holl, S. A., **V. C. Bleich**, and B. W. Callenberger. *In review*. Effects of fire regimes on the abundance of bighorn sheep in the San Gabriel Mountains. Journal of Fire Ecology.

Loft, E. R., and **V. C. Bleich**. *In review*. An historical perspective on deer ranges in California: terminology and its relevance to wildlife conservation. California Fish and Game.

Monteith, K. L., R. A. Long, **V. C. Bleich**, J. R. Heffelfinger, P. R. Krausman, and R. T. Bowyer. *In review*. Size of horn-like structures in trophy ungulates: effects of climate, culture, or harvest? Wildlife Monographs.

Grovenburg, T., R. Klaver, C. Jacques, T. Brinkman, C. Swanson, C. DePerno, K. Monteith, J. Sievers, **V. Bleich**, J. Kie, and J. Jenks. *In review*. Influence of landscape characteristics and ungulate demography on retention of expandable radiocollars. Wildlife Society Bulletin.

Johnson, H. E., M. Hebblewhite, T. R. Stephenson, D. W. German, B. M. Pierce, and **V. C. Bleich**. *In review*. Direct and indirect effects of predators on an endangered species: testing predictions of the apparent competition hypothesis. Oecologia.

Pierce, B. M., **V. C. Bleich**, R. T. Bowyer, and K. M. Monteith. *In review*. Top-down versus bottom-up forcing: evidence from mountain lions and mule deer. Ecosphere.

Holl, S. A., and **V. C. Bleich**. *In press*. Responses of large mammals to fire and rain in the San Gabriel Mountains, California. Proceedings of the Biennial Symposium of the Northern Wild Sheep and Goat Conference.

Marshal, J. P., **V. C. Bleich**, P. R. Krausman, A. Neibergs, M. L. Reed, and N. G. Andrew. *In press*. Habitat use and diets of mule deer and feral ass in the Sonoran Desert. Southwestern Naturalist.

Krausman, P. R., and **V. C. Bleich**. *In press*. Conservation and management of ungulates in North America. International Journal of Environmental Science.

Gibson, R. M., **V. C. Bleich**, C. W. McCarthy, and T. L. Russi. *In press*. Recreational hunting can lower population size in Greater Sage-grouse. Studies in Avian Biology.

Marshal, J. P., and **V. C. Bleich**. 2011. Evidence of relationships between El Niño Southern Oscillation and mule deer harvest in California. California Fish and Game 97:84–97.

Villepique, J. T., B. M. Pierce, **V. C. Bleich**, and R. T. Bowyer. 2011. Diets of cougars (*Puma concolor*) following a decline in a population of mule deer (*Odocoileus hemionus*): lack of evidence for switching prey. Southwestern Naturalist 56:187–192.

Monteith, K. M., **V. C. Bleich**, T. R. Stephenson, B. M. Pierce, M. M. Conner, R. W. Klaver, and R. T. Bowyer. 2011 Timing of seasonal migration in mule deer: effects of climate, plant phenology, and life-history characteristics. Ecosphere 2(4):art47. doi:10.1890/ES10-00096.1

Whiting, J. C., R. T. Bowyer, J. T. Flinders, **V. C. Bleich**, and J. G. Kie. 2010. Sexual segregation and use of water by bighorn sheep: implications for conservation. Animal Conservation 13:541–548.

Schroeder, C. A., R. T. Bowyer, **V. C. Bleich**, and T. R. Stephenson. 2010. Sexual segregation in Sierra Nevada bighorn sheep, *Ovis canadensis sierrae*: ramifications for conservation. Arctic, Antarctic, and Alpine Research 42:476–489.

Bleich, V. C., J. P. Marshal, and N. G. Andrew. 2010. Habitat use by a desert ungulate: predicting effects of water availability on mountain sheep. Journal of Arid Environments 74:638–645.

Bleich, V. C. 2009. Perceived threats to mountain sheep: levels of concordance among states, provinces, and territories. Desert Bighorn Council Transactions 50:32–39.

Krausman, P. R., D. E. Naugle, M. R. Frisina, R. Northrup, **V. C. Bleich**, W. M. Block, M. C. Wallace, and J. D. Wright. 2009. Livestock grazing, wildlife habitat, and rangeland values. Rangelands 31(5):15–19.

Bleich, V. C. 2009. Factors to consider when reprovisioning water developments used by mountain sheep. California Fish and Game 95:153–159.

Holl, S. A., and **V. C. Bleich**. 2009. Reconstructing the San Gabriel Mountains bighorn sheep population. California Fish and Game 95:77–87.

Clifford, D. L., B. A. Schumaker, T. R. Stephenson, **V. C. Bleich**, M. Leonard-Cahn, B. J. Gonzales, W. M. Boyce, and J. A. K. Mazet. 2009. Assessing disease risk at the wildlife–livestock interface: a study of Sierra Nevada bighorn sheep. Biological Conservation 142:2559–2568.

Bleich, V. C., J. H. Davis, J. P. Marshal, S. G. Torres, and B. J. Gonzales. 2009. Mining activity and habitat use by mountain sheep. European Journal of Wildlife Research 55:183–191.

Pease, K. M., A. H. Freedman, J. P. Pollinger, J. E. McCormack, W. Buermann, J. Rodzen, J. Banks, E. Meredith, **V. C. Bleich**, R. J. Schaefer, K. Jones, and R. K. Wayne. 2009. Landscape genetics of California mule deer (*Odocoileus hemionus*): the roles of ecological and historical factors in generating differentiation. Molecular Ecology 18:1848–1862.

Duffy, L. K., M. W. Oehler, R. T. Bowyer, and **V. C. Bleich**. 2009. Mountain sheep: an environmental epidemiological survey of variation in metal exposure and physiological biomarkers following mine development. American Journal of Environmental Sciences 5:296–303.

Marshal, J. P., J. W. Cain III, **V. C. Bleich**, and S. S. Rosenstock. 2009. Intrinsic and extrinsic sources of variation in the population dynamics of an arid-environment large herbivore. Canadian Journal of Zoology 87:103–111.

Villepique, J. T., **V. C. Bleich**, R. A. Botta, B. M. Pierce, T. R. Stephenson, and R. T. Bowyer. 2008. Evaluating GPS collar error: a critical evaluation of Televilt POSREC-Science™ Collars and a method for screening location data. California Fish and Game 94:155–168.

Bleich, V. C., H. E. Johnson, S. A. Holl, L. Konde, S. G. Torres, and P. R. Krausman. 2008. Fire history in a chaparral ecosystem: implications for conservation of a native ungulate. Rangeland Ecology and Management 61:571–579.

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Wehausen, J. D., and **V. C. Bleich**. 2007. Influence of aerial search time on survey results. Desert Bighorn Council Transactions 49:23–29.

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Bleich, V. C., T. R. Stephenson, B. M. Pierce, and M. J. Warner. 2007. Body condition of mule deer while injured and following recovery. Southwestern Naturalist 52:164–167.

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Bleich, V. C., N. G. Andrew, M. J. Martin, G. P. Mulcahy, A. M. Pauli, and S. S. Rosenstock. 2006. [Invited paper] Quality of water available to wildlife: comparisons among artificial and natural sources. Wildlife Society Bulletin 34:627–632.

Bleich, V. C., S. Nelson, P. J. Wood, H. R. Wood, and R. A. Noles. 2006. [Invited paper] Retrofitting gallinaceous guzzlers: enhancing water availability and safety for wildlife. Wildlife Society Bulletin 34:633–636.

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Rominger, E. M., **V. C. Bleich**, and E. J. Goldstein. 2006. [Letter] Bighorn sheep, mountain lions, and the ethics of conservation. Conservation Biology 20:1041.

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Bleich, V. C., B. M. Pierce, J. Jones, and R. T. Bowyer. 2006. Variance in survival rates among young mule deer in the Sierra Nevada, California. California Fish and Game 92:24–38.

Johnson, H. E., **V. C. Bleich**, and P. R. Krausman. 2005. Antler breakage in tule elk, Owens Valley, California. Journal of Wildlife Management 69:1747–1752.

Rosenstock, S. S., **V. C. Bleich**, M. J. Rabe, and C. Reggiardo. 2005. Water quality at wildlife water sources in the Sonoran Desert, United States. Rangeland Ecology and Management 58:623–627.

Marshal, J. P., P. R. Krausman, and **V. C. Bleich**. 2005. Rainfall, temperature, and forage dynamics affect nutritional quality of desert mule deer forage. Rangeland Ecology and

Management 58:360–365.

Bleich, V. C., J. T. Villepique, T. R. Stephenson, B. M. Pierce, and G. M. Kutliyev. 2005. Efficacy of aerial telemetry as an aid to capture specific individuals: a comparison of two techniques. Wildlife Society Bulletin 33:332–336.

Bleich, V. C. 2005. [Invited paper] In my opinion: politics, promises, and illogical legislation confound wildlife conservation. Wildlife Society Bulletin 33:66–73.

Wehausen, J. D., **V. C. Bleich**, and R. R. Ramey II. 2005. Correct nomenclature for Sierra Nevada bighorn sheep. California Fish and Game 91:216–218.

Oehler, M. W., **V. C. Bleich**, R. T. Bowyer, and M. C. Nicholson. 2005. Mountain sheep and mining: implications for conservation and management. California Fish and Game 91:149–178.

Marshal, J. P., P. R. Krausman, and **V. C. Bleich**. 2005. Dynamics of mule deer forage in the Sonoran Desert. Journal of Arid Environments 60:593–609.

Bleich, V. C., and S. G. Torres. 2004. [Guest Editorial] International involvement in wildlife conservation. Wildlife Society Bulletin 32:1013–1014.

Krausman, P. R., **V. C. Bleich**, J. W. Cain III, T. R. Stephenson, D. W. DeYoung, P. W. McGrath, P. K. Swift, B. M. Pierce, and B. D. Jansen. 2004. Neck lesions in ungulates from collars incorporating satellite technology. Wildlife Society Bulletin 32:987–991.

Marshal, J. P., **V. C. Bleich**, N. G. Andrew, and P. R. Krausman. 2004. Seasonal forage use by desert mule deer in southeastern California. Southwestern Naturalist 49:501–505.

Holl, S. A., **V. C. Bleich**, and S. G. Torres. 2004. Population dynamics of bighorn sheep in the San Gabriel Mountains, California, 1967–2002. Wildlife Society Bulletin 32:412–426.

Pierce, B. M., R. T. Bowyer, and **V. C. Bleich**. 2004. Habitat selection by mule deer: forage benefits or risk of predation? Journal of Wildlife Management 68:533–541.

Bleich, V. C., E. F. Cassirer, L. E. Oldenburg, V. L. Coggins, and D. L. Hunter. 2004. Predation by a golden eagle, *Aquila chrysaetos*, on a juvenile mountain sheep, *Ovis canadensis*. California Fish and Game 90:91–93.

Epps, C. W., D. R. McCullough, J. D. Wehausen, **V. C. Bleich**, and J. L. Rechel. 2004. Effects of climate change on population persistence of desert-dwelling mountain sheep in California. Conservation Biology 18:102–113.

Long, E. S., D. M. Fecske, R. A. Sweitzer, J. A. Jenks, B. M. Pierce, and **V. C. Bleich**. 2003. Efficacy of photographic scent stations to detect mountain lions. Western North American Naturalist 63:529–532.

Bleich, V. C. 2003. The potential for botulism in desert-dwelling mountain sheep. Desert Bighorn Council Transactions 47:2–8.

Epps, C. W., **V. C. Bleich**, J. D. Wehausen, and S. G. Torres. 2003. Status of bighorn sheep in California. Desert Bighorn Council Transactions 47:20–35.

Oehler, M. W., Sr., R. T. Bowyer, and **V. C. Bleich**. 2003. Home ranges of mountain sheep: effects of precipitation in a desert ecosystem. Mammalia 67:385–402.

Weckerly, F. W., **V. C. Bleich**, C.-L. B. Chetkiewicz, and Mark A. Ricca. 2003. Body weight and rumen-reticulum capacity in tule elk and mule deer. Journal of Mammalogy 84:659–664.

Ernest, H. B., W. M. Boyce, **V. C. Bleich**, B. M. May, S. J. Stiver, and S. G. Torres. 2003. Genetic structure of mountain lion (*Puma concolor*) populations in California. Conservation Genetics 4:353–366.

Bleich, V. C., T. R. Stephenson, N. J. Holste, I. C. Snyder, J. P. Marshal, P. W. McGrath, and B. M. Pierce. 2003. Effects of tooth extraction on selected biological parameters of female mule deer. Wildlife Society Bulletin 31:233–236.

Marshal, J., P. R. Krausman, **V. C. Bleich**, W. B. Ballard, and J. S. McKeever. 2002. Rainfall, el Niño, and dynamics of mule deer in the Sonoran Desert, California. Journal of Wildlife Management 66:1283–1289.

Stephenson, T. R., **V. C. Bleich**, B. M. Pierce, and G. P. Mulcahy. 2002. Validation of mule deer body composition using *in vivo* and post-mortem indices of nutritional condition. Wildlife Society Bulletin 30:557–564.

Swift, P. K., **V. C. Bleich**, T. R. Stephenson, A. E. Adams, B. J. Gonzales, B. M. Pierce, and J. P. Marshal. 2002. Tooth extraction from mule deer in the absence of chemical immobilization. Wildlife Society Bulletin 30:253–255.

Bleich, V. C., C. S. Y. Chun, R. W. Anthes, T. E. Evans, and J. K. Fischer. 2001. [Invited Paper] Visibility bias and development of a sightability model for tule elk. Alces 37:315–327.

Drew, M. L., **V. C. Bleich**, S. G. Torres, and R. G. Sasser. 2001. Early pregnancy detection in mountain sheep using a pregnancy-specific protein B assay. Wildlife Society Bulletin 29:1182–1185.

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Bleich, V. C. 2001. On wildlife management in national monuments. The Wildlifer 306:59 [letter].

Andrew, N. G., **V. C. Bleich**, A. D. Morrison, L. M. Lesicka, and P. Cooley. 2001. Wildlife mortalities associated with artificial water sources in the Sonoran Desert. Wildlife Society Bulletin 29:275–280.

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Bleich, V. C., and B. M. Pierce. 2001. Accidental mass mortality of migrating mule deer. Western North American Naturalist 61:124–125.

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Bleich, V. C., and M. W. Oehler. 2000. [Invited paper] Wildlife education in the United States: thoughts from agency biologists. Wildlife Society Bulletin 28:542–545.

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Bleich, V. C. 2001. Summer ranges, winter ranges, and migratory mule deer: putting the parts of a puzzle in place. Outdoor California 62(4):20–23.

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Bleich, V. C., B. M. Pierce, S. G. Torres, and T. Lupo. 2000. Using space age technology to study mountain lion ecology. Outdoor California 61(3):24–25.

Torres, S. G., and **V. C. Bleich**. 2000. Mountain lions — California's elusive predator. Outdoor California 61(3):4–6.

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Bleich, V. C. 1999. [Letter] America's wilderness. National Geographic Magazine 195(3):xv.

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Bleich, V. C., and S. G. Torres. 1995. The "book" rams are still out there. Tracks 12:9.

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Bleich, V. C. 1993. Mountain sheep habitat: using a geographic information system. Boone and Crockett Club News Journal 8(4):39–40.

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Bleich, V. C. 1990. Status of bighorn sheep in California: a brief synopsis. Wild Sheep 13(2):55.

Bleich, V. C. 1988. Distribution and early history of mountain sheep in California. Pages 1–3 *in* B. W. Wilson, editor. California desert bighorn sheep: a guidebook for the hunter. Society for the Conservation of Bighorn sheep, Los Angeles, California.

Bleich, V. C. 1988. Modern management of mountain sheep in California. Pages 4–6 *in* B. W. Wilson, editor. California desert bighorn sheep: a guidebook for the hunter. Society for the Conservation of Bighorn sheep, Los Angeles, California.

Bleich, V. C. 1983. Big game guzzlers and mountain sheep. Outdoor California 44(6):10.

Davis, J. H., and **V. C. Bleich**. 1980. Time-lapse photography: a new focus on wildlife. Outdoor California 41(4):7–9.

Coombes, L. J., and **V. C. Bleich**. 1979. Horizontal wells: the DFG's new slant on water for wildlife. Outdoor California 40(3):10–12.

Presentations at Professional Meetings

2011 Survival patterns of mule deer in an on-going habitat manipulation study in Mojave National Preserve. Annual Meeting of the Nevada Chapter of The Wildlife Society Symposium, Reno, Nevada. (With C. McKee and K. M. Stewart; *abstract published*)

Top-down versus bottom-up forcing: evidence from mountain lions and mule deer. Xx Annual Meeting of the American Society of Mammalogists, Portland, Oregon. (With Becky M. Pierce, R. Terry Bowyer, and Kevin L. Monteith; *abstract published*).

Timing of seasonal migration in mule deer: effects of climate, plant phenology, and life-history characteristics. Annual meeting of the American Society of Mammalogists, Portland, Oregon. (With L. L. Monteith, T. R. Stephenson, B. M. Pierce, M. M. Conner, R. W. Klaver, and R. T. Bowyer; *abstract published*).

Responses of bighorn sheep and mule deer to fire and rain in the San Gabriel Mountains. 58th Annual Meeting of the Western Section of The Wildlife Society, Riverside, California. (With S. A. Holl; *abstract published*).

Predicting body fat in bighorn sheep and assessing nutritional status of populations. 51st Meeting of the Desert Bighorn Council, Laughlin, Nevada. (With T. R. Stephenson, R. C. Cook, K. L. Monteith, D. Walsh, E. F. Cassirer, B.J. Gonzales, M. W. Overstreet, and D. G. Whittaker; *abstract published*).

How do we keep sheep on the mountain? Mitigating habitat loss, modification, and fragmentation [panel discussion]. 51st Annual Meeting of the Desert Bighorn Council, Laughlin, Nevada. (With B. Gonzales, K. Hurley, and R. Schweinsburg).

2010 Perceived threats to wild sheep: levels of concordance among western states, provinces, and territories. 17th Biennial Symposium of the Northern Wild Sheep and Goat Council, Hood River, Oregon. *Abstract published*.

Effects of water manipulation on mule deer in Mojave National Preserve, California. 17th Annual Conference of The Wildlife Society, Snowbird, Utah, October. (With C. J. McKee, K. M. Stewart, N. Darby, and D Hughson; *abstract published*).

Integrating ecology and epidemiology to assess the risk of disease transmission at the wildlife-livestock interface: the case of Sierra Nevada bighorn sheep. 46th Annual Meeting of The Western Section of The Wildlife Society, Visalia, California. (With D. L. Clifford, B. A. Schumaker, T. R. Stephenson, M. Leonard-Cahn, B. J. Gonzales, W. M. Boyce, and J. A. K. Mazet; *abstract published*).

Sexual segregation and use of water by bighorn sheep: implications for conservation. Utah Wildlife Society Meeting, Moab, Utah. (With J. C. Whiting, R. T. Bowyer, J. T. Flinders, and J. G. Kie).

Quantitative risk assessment: what to consider. Xx Annual Meeting, xx, xx. (With T. R. Stephenson, J. A. K. Mazet, D. L. Clifford, B. A. Shumaker, M. Leonard-Cahn, B. J. Gonzales, and W. M. Boyce).xx

Sexual segregation and use of water by bighorn sheep: implications for conservation. Presented at 17th Annual Conference of The Wildlife Society, Snowbird, Utah, October

2010. With J. C. Whiting, R. T. Bowyer, J. T. Flinders, and J. G. Kie; *abstract published*).

2009 Using ecosystem approaches to solve health problems at the livestock-wildlife interface. American Association of Zoo Veterinarians, Tulsa, Oklahoma. (With J. Mazet, D. Clifford, P. Coppolillo, J. Erickson, T. Stephenson, V. Bleich, W. Boyce, and R. Kazwala; *abstract published*).

The role of fire history in habitat selection in chaparral ecosystems: implications for the restoration of bighorn sheep populations. 51st Annual Meeting of the Desert Bighorn Council, Grand Junction, Colorado. (With H. E. Johnson, S. A. Holl, L. Konde, S. G. Torres, and P. R. Krausman; *abstract published*)

Effects of fire and rain on bighorn sheep in the San Gabriel Mountains, California. 51st Annual Meeting of the Desert Bighorn Council, Grand Junction, Colorado. (With S. A. Holl; *abstract published*).

Considerations when reprovisioning water developments for mountain sheep in desert ecosystems. 51st Annual Meeting of the Desert Bighorn Council, Grand Junction, Colorado. (With G. W. Sudmeier and G. C. Kerr; *abstract published*).

Do we need to survey every year? Using count data for bighorn sheep to project population size forward one year in California. 51st Annual Meeting of the Desert Bighorn Council, Grand Junction, Colorado. (With M. M. Conner, T. R. Stephenson, J. D. Wehausen, and S. G. Torres; *abstract published*).

Assessment of rangeland practices to enhance wildlife. 62nd Annual Meeting of the Society for Range Management, Albuquerque, New Mexico. (With P. R. Krausman, B. Block, D. Naugle, and M. C. Wallace; *abstract published*).

2008 The response of San Gabriel Mountains bighorn sheep to fire. Regional Conference of the Association for Fire Ecology, Tucson, Arizona. (With S. A. Holl and H. E. Johnson; *abstract published*).

The response of San Gabriel Mountains bighorn sheep to fire. 55th Annual Meeting of the Western Section of the Wildlife Society, Redding, California. (With S. A. Holl, and H. E. Johnson; *abstract published*).

Population Dynamics of a Sierra Nevada mule deer population: top-down or bottom-up regulation? Predator-Prey Symposium, Idaho State University, Pocatello, Idaho. (With B. M. Pierce, R. T. Bowyer, K. L. Monteith, and T. R. Stephenson; *abstract published*).

Using ecosystem approaches to solve health problems at the livestock-wildlife interface. International Ecohealth Forum 2008. Internatilal Associiation for Ecology and Health, Merida, Mexico. (With J. Mazet, D. Clifford, P. Coppolillo, J. Erickson, T. Stephenson, W. Boyce, and R. Kazwala; *abstract published*).

2007 Group dynamics and timing of mating in American bison: effects of large males. Research and Creative Activities Day, Idaho State University, Pocatello, Idaho. (With R. T. Bowyer, X. Manteca, J. C. Whiting, and K.M. Stewart; *abstract published*)

[Keynote Address] Ecology of mountain sheep: ramifications for disease transmission and population persistence. Workshop on Respiratory Disease in Mountain Sheep: Knowledge Gaps and Future Research. University of California, Davis. *Abstract published*.

Group dynamics and timing of mating in American bison: effects of large males. 14th Annual Conference of The Wildlife Society, Tucson, Arizona. (With R. T. Bowyer, X. Manteca, J. C. Whiting, and K. M. Stewart; *abstract published*).

Group dynamics and timing of mating in American bison: effects of large males. 87th Annual meeting of The American Society of Mammalogists, Albuquerque, New Mexico (With R. T. Bowyer, X. Manteca, J. C. Whiting, and K. M. Stewart; *abstract published*).

Group dynamics and timing of mating in American bison: effects of large males. Annual Meeting of the Idaho Chapter of The Wildlife Society, Pocatello, Idaho. (With R. T. Bowyer, X. Manteca, J. C. Whiting, and K. M. Stewart; *abstract published*)

Sex differences is space use and groups size of mountain sheep. Annual Meeting of the Idaho Chapter of The Wildlife Society, Pocatello, Idaho. (With C. Schroeder, R. T. Bowyer, and T. R. Stephenson; *abstract published*)

Progress report from California. 50th Annual Meeting of the Desert Bighorn Council, Las Vegas, Nevada.

2006 Can GPS collars be trusted? Evaluation of location error and a method for outlier identification. 68th Annual Meeting of The American Society of Mammalogists, University of Massachusetts Amherst, Amherst, Massachusetts. (With J. T. Villepique, R. T. Bowyer, R. A. Botta, B. M. Pierce, and T. R. Stephenson; *abstract published*)

Comparing GPS collar error: evaluation of Televilt POSREC collars and method for outlier identification. Annual Meeting of the Northwest Section of The Wildlife Society, Boise, Idaho. (With J. T. Villepique and R. T. Bowyer; *abstract published*).

Sex differences in space use and group size of mountain sheep. 13th Annual Conference of The Wildlife Society, Anchorage, Alaska. (With C. Schroeder, T. R. Stephenson, and R. T. Bowyer; *abstract published*)

2005 Quality of water available to wildlife: comparisons among artificial and natural sources. 48th Annual Meeting, The Desert Bighorn Council, Alpine, Texas. (With N. G. Andrew, M. Martin, G. P. Mulcahy, A. M. Pauli, and S. S. Rosenstock; *abstract published*).

Status of bighorn sheep in California. 48th Annual Meeting, The Desert Bighorn Council, Alpine, Texas. (With C. Epps, J. D. Wehausen, and S. G. Torres).

Evaluating errors in GPS-collar locations. 48th Annual Meeting, The Desert Bighorn Council, Alpine, Texas. (With J. T. Villepique, B. M. Pierce, and R. T. Bowyer; *abstract published*).

Responses of bighorn sheep to risk of predation by mountain lions: evaluation at multiple scales. 41st Annual Meeting, Western Section of The Wildlife Society, Sacramento, California. (With J. T. Villepique, B. M Pierce, R. T. Bowyer, and T. R. Stephenson; *abstract published*).

Modeling Sierra Nevada bighorn sheep habitat: applying resource selection functions to species recovery. 41st Annual Meeting, Western Section of The Wildlife Society, Sacramento, California. (With H. E. Johnson and T. R. Stephenson; *abstract published*).

Quality of water available to wildlife: comparisons among artificial and natural sources. 41st Annual Meeting, Western Section of the Wildlife Society, Sacramento, California. (With N. G. Andrew, G. P. Mulcahy, and A. M. Pauli; *abstract published*).

Mountain sheep in California: perspectives on the past, and prospects for the future. 41st Annual Meeting, Western Section of the Wildlife Society, Sacramento, California. *Abstract published*.

Evolutionary models for sexual segregation among ruminants: competition or polygyny? 85th Annual Meeting of the American Society of Mammalogists, Southwest Missouri State University, Springfield, Missouri. (With R. T. Bowyer, J. G. Kie, and P. S. Barboza; *abstract published*).

Evolutionary models for sexual segregation among ruminants: competition or polygyny? 41st North American Moose Conference, Whitefish, Montana. (With R. T. Bowyer, J. G. Kie, and P. S. Barboza; *abstract published*).

2004 Resource selection by mule deer in an arid environment. Wildlife Water Development Workshop: A Review of the Science, Policy, and Human Dimensions. Arizona College of Law, Tempe, Arizona. (With J. P. Marshal, P. R. Krausman, and N. G. Andrew; *abstract published*).

Retrofitting gallinaceous guzzlers: enhancing water availability and safety for wildlife. Wildlife Water Development Workshop: A Review of the Science, Policy, and Human Dimensions. Arizona College of Law, Tempe, Arizona. (With S. Nelson, P. J. Wood, H. R. Wood, and R. A. Noles; *abstract published*).

Quality of water available to wildlife: a comparison among artificial and natural sources. Wildlife Water Development Workshop: A Review of the Science, Policy, and Human

Dimensions. Arizona College of Law, Tempe, Arizona. (With N. G. Andrew, B. P. Mulcahy, and A. M. Pauli; *abstract published*).

Resource selection by mule deer in an arid environment. 9th Annual Meeting of The Wildlife Society, Calgary, Alberta. (With J. P. Marshal, P. R. Krausman, and N. G. Andrew; *abstract published*).

Responses of bighorn sheep to risk of predation by mountain lions: evaluation at multiple scales. 84th Annual Meeting of the American Society of Mammalogists, Arcata, California. (With J. T. Villepique, B. M. Pierce, R. T. Bowyer, and T. R. Stephenson; *abstract published*).

[Invited Paper] Illogical legislation: Personal perspectives on politics and promises, and the problems they've presented. Sonoran Pronghorn Workshop: Looking to the Future, Tucson, Arizona.

[Invited Paper and Keynote Address)] Mountain sheep in California: Perspectives on the past, and prospects for the future. 40th Annual Meeting, Idaho Chapter of The Wildlife Society, Moscow, Idaho; *abstract published*).

[Invited Paper] Status of recovery efforts for bighorn sheep in the Sierra Nevada. 27th Annual Convention of the Foundation for North American Wild Sheep, Reno, Nevada. (With B. M. Pierce and T. R. Stephenson).

[Invited Paper] Wildlife conservation and wilderness management are not necessarily compatible objectives. Wildlife water development and wilderness symposium. Nevada Department of Wildlife, Reno.

2003 Distribution of mule deer in relation to forage and water in the Sonoran Desert. 3rd International Wildlife Management Congress, Christchurch, New Zealand. (With J. P. Marshal, P. R. Krausman, and N. G. Andrew; *abstract published*).

[Invited Presentation] Sexual segregation among ungulates: a niche-based framework for resolving controversy. Annual Meeting of the Northwest Section of The Wildlife Society, Eugene, Oregon. (With R. T. Bowyer, J. G. Kie, and P. S. Barboza; *abstract published*).

Sexual segregation among ungulates: a niche-based framework for resolving controversy. Alaska Chapter of The Wildlife Society, Juneau, Alaska. (WithR. T. Bowyer, J. G. Kie, and P. S. Barboza; *abstract published*).

2002 Effects of forage and water on distribution of mule deer in the Sonoran Desert. 5th International Deer Biology Congress, Quebec City, PQ, Canada. (With J. P. Marshal, P. R. Krausman, and N. G. Andrew; *abstract published*).

Demographic and physiological responses of mule deer to highly variable resource abundance. 8th Annual Meeting, The Wildlife Society, Bismarck, North Dakota. (With J. P. Marshal and P. R. Krausman; *abstract published*).

Effects of climate change on population persistence of desert-dwelling mountain sheep in California. 46th Annual Meeting, Desert Bighorn Council, Palm Springs, California (With C. W. Epps, D. R. McCullough, J. D. Wehausen, and J. L. Rechel; *abstract published*).

Efficacy of photographic scent stations to detect mountain lions. Annual Meeting of the North Dakota Chapter of The Wildlife Society, Grand Forks, North Dakota (With E. S. Long, D. M. Fecske, J. A. Jenks, and B. M. Pierce).

2001 Population dynamics of mountain lions and mountain sheep in the San Gabriel Mountains, California. 8th Annual Meeting, The Wildlife Society, Reno, Nevada (With S. A. Holl and S. G. Torres; *abstract published*).

[Invited Paper] Translocating mountain sheep: might the methods matter? 37th Annual Meeting, Western Section of the Wildlife Society, Sacramento, California (With J. R. Thompson, S. G. Torres, and G. P. Mulcahy; *abstract published*).

[Invited Paper] Population dynamics of mountain lions and mule deer: top-down or bottom-up regulation? 37th Annual Meeting, Western Section of The Wildlife Society, Sacramento, California (With B. M. Pierce and R. T. Bowyer; *abstract published*).

2000 Population dynamics of mountain lions and mule deer: top-down or bottom-up regulation? Annual Meeting, Northwest Section of The Wildlife Society, Post Falls, Idaho (With B. M. Pierce and R. T. Bowyer; *abstract published*).

Predicting body fat using ultrasonography: are the cervids similar? 39th North American Moose Conference, Whitehorse, Yukon Territory (With T. R. Stephenson, B. M. Pierce, G. P. Mulcahy, K. J. Hundertmark, and J. A. Crouse; *abstract published*).

1999 Social organization of mountain lions (Puma concolor): does a land-tenure syste regulate population size? 79th Annual Meeting, American Society of Mammalogists, University of Washington, Seattle (With B. M. Pierce and R. T. Bowyer; *abstract published*).

Prey selection by mountain lions and coyotes: effects of hunting style, body size, and reproductive status. 6th Annual Conference, The Wildlife Society, Austin, Texas. (With B. M. Pierce and R. T. Bowyer; abstract published).

The role of mountain lions in shaping habitat selection by mule deer. Western States and Provinces Deer and Elk Workshop, Salt Lake City, Utah. (With B. M. Pierce and R. T. Bowyer; *abstract published*).

Development, characterization, and use of forensic-quality tetranucleotide microsatellite loci to develop a population profile of California mule/blacktail deer. 35th Annual Meeting, Western Section of the Wildlife Society, Monterey, California. (With G. Sadowsky, P. Bienvenue, K. Jones, K. Levine, J. Banks, R. Wayne, and B. Pierce; *abstract published*).

The role of mountain lions in shaping habitat selection by mule deer. Annual Meeting, Alaska Chapter of The Wildlife Society, Fairbanks, Alaska. (With B. M. Pierce and R. T. Bowyer; *abstract published*).

[Invited Paper] Predation and its implications for translocations of mountain sheep. 25th Annual Convention, Foundation for North American Wild Sheep, Reno, Nevada.

The role of mountain lions in shaping habitat selection by mule deer. Annual Meeting, Oregon Chapter of The Wildlife Society, Lincoln City, Oregon. (With B. M. Pierce and R. T. Bowyer; *abstract published*).

The role of mountain lions in shaping habitat selection by mule deer. Symposium on Women in Science, University of Alaska, Fairbanks, Alaska. (With B. M. Pierce and R. T. Bowyer; *abstract published*).

1998 [Invited Paper] Patterns of predator evasion in mountain ungulates: responses of mule deer and mountain sheep to encounters with coyotes. 2nd Annual Meeting, The Mule Deer Foundation, Sacramento, California.

Why would the world's largest population of Nelson's bighorn sheep suddenly collapse? 34th Annual Meeting, Western Section of The Wildlife Society, Sacramento, California. (With S. A. Holl and S. G. Torres; *abstract published*).

Patterns of predator evasion in mountain ungulates: responses of mountain sheep and mule deer to encounters with coyotes. 34th Annual Meeting, Western Section of The Wildlife Society, Sacramento, California; *abstract published*).

Reduced competition with mates and offspring: cause or consequence of sexual segregation in mountain sheep? 34th Annual Meeting, Western Section of The Wildlife Society, Sacramento, California. (With R. T. Bowyer and J. D. Wehausen; *abstract published*).

1997 [Invited Paper] Sexual segregation in mountain sheep: resources and predation! Special Symposium on Sexual Segregation in Ungulates, 4th Annual Meeting of The Wildlife Society, Snowmass, Colorado. (With R. T. Bowyer and J. D. Wehausen; *abstract published*).

Characteristics of mule deer preyed upon by mountain lions in the eastern Sierra Nevada. Western States and Provinces Deer and Elk Workshop, Nogales, Arizona. (With B. M. Pierce; *abstract published*).

[Invited Paper] Sexual segregation in ruminants: evolution, definitions, and competing hypotheses. Special Symposium on Sexual Segregation in Ungulates, 4th Annual Meeting of The Wildlife Society, Snowmass, Colorado. (With R. T. Bowyer and J. G. Kie; *abstract published*).

Mountain lion migration and territoriality in response to distribution of prey. 4th Annual Meeting of The Wildlife Society, Snowmass, Colorado. (With B. M. Pierce, R. T. Bowyer, and J. D. Wehausen; *abstract published*).

A weighted optimal path analysis to identify multiple movement corridors between populations of desert-dwelling mountain sheep (Ovis canadensis). 4th Annual Meeting of The Wildlife Society, Snowmass, Colorado. (With J. L. Rechel; *abstract published*).

[Invited Paper] Survivorship and cause-specific mortality among mule deer populations in the western Great Basin. Inaugural Annual Meeting, The Mule Deer Foundation, Sacramento, California.

[Invited Paper] Effects of mountain lions and other factors on selected deer populations in California and Nevada. Annual Meeting, California Central Coast Chapter of The Wildlife Society, San Luis Obispo, California.

1996 Error associated with aerial telemetry using LORAN-C: effects of geographic location and elevation. 77th Annual Meeting, American Society of Mammalogists, Grand Forks, North Dakota. (With M. W. Oehler, Sr., and R. T. Bowyer; *abstract published*))

A device to safely remove immobilized mountain lions from trees and cliffs. 5th Mountain Lion Workshop, San Diego, California. (With J. L. Davis, C. B. Chetkiewicz, G. Raygorodetsky, B. M. Pierce, J. W. Ostergard, and J. D. Wehausen; *abstract published*)).

Mortality of mule deer in the western Great Basin: the role of predation by mountain lions. 5th Mountain Lion Workshop, San Diego, California. (With T. J. Taylor and B. M. Pierce; *abstract published*)).

Feeding habits of mountain lions investigated using remote photography at cached prey sites. 5th Mountain Lion Workshop, San Diego, California. (With B. M. Pierce, C. B. Chetkiewicz, and J. D. Wehausen; *abstract published*)).

[Invited Paper] Visibility bias and tule elk: developing a sightability model for the Owens Valley. Workshop on Monitoring Wildlife Populations, 32nd Annual Meeting, Western Section, The Wildlife Society, Sparks, Nevada; *abstract published*).

An improved fence for wildlife water sources. 40th Annual Meeting, Desert Bighorn Council, Holtville, California. (With N. G. Andrew and L. M. Lesicka; *abstract published*)).

[Invited paper] Summary of translocations of *Ovis canadensis californiana* in California. 10th Biennial Meeting, Northern Wild Sheep and Goat Council, Silverthorne, CO. (With J. D. Wehausen, S. G. Torres, and T. A. Swank).

1995 [Invited Paper] Restoration of mountain sheep populations in California. Symposium on the Rehabilitation of Desert Ecosystems, Barstow, California; *abstract published*).

[Invited Paper] Metapopulation theory and mountain sheep: implications for conservation. 46th Arctic Division Science Conference, American Association for the Advancement of Science, Fairbanks, Alaska; *abstract published*).

Feeding habits of mountain lions investigated using remote photography at cached prey sites. 76th Annual Meeting, American Society of Mammalogists, Burlington, Vermont. (With B. M. Pierce, C. B. Chetkiewicz, and J. D. Wehausen; *abstract published*).

Metapopulation theory and its implications for the conservation of desert-dwelling mountain sheep. 39th Annual Meeting, Desert Bighorn Council, Alpine, Texas. (With J. D. Wehausen, R. R. Ramey II, and J. L. Rechel; *abstract published*).

Migration incentives for female mountain sheep. 39th Annual Meeting, Desert Bighorn Council, Alpine, Texas. (With J. R. Jaeger, J. D. Wehausen, and C. L. Douglas; *abstract published*).

1994 [Invited Paper] Metapopulation theory and desert-dwelling mountain sheep: implications for management and conservation. Inaugural Annual Meeting, The Wildlife Society, Albuquerque, New Mexico. (With J. D. Wehausen, R. R. Ramey II, and J. L. Rechel; *abstract published*).

A comparison of helicopter survey results with empirically derived population estimates of mountain sheep. 38th Annual Meeting, Desert Bighorn Council, Moab, Utah. (With J. D. Wehausen; *abstract published*).

Hunter harvest of mountain sheep in California (1987–1993): an analysis of population parameters, hunter harvest, and effort. 38th Annual Meeting, Desert Bighorn Council, Moab, Utah. (With S. G. Torres; *abstract published*).

An ecological profile of desert-dwelling mountain sheep in the Chocolate Mountains, California. 75th Annual Meeting, American Society of Mammalogists, Washington, D.C. (With N. G. Andrew and P. V. August; *abstract published*).

Power and peril at the crossroads of technology: use of GIS and radio telemetry for the study of wildlife ecology. Inaugural Annual Meeting, The Wildlife Society, Albuquerque, New Mexico. (With M. C. Nicholson, N. G. Andrew, and P. V. August; *abstract published*).

1993 Limits in the resolution of LORAN-C for aerial telemetry studies. 37th Annual Meeting, Desert Bighorn Council, Mesquite, Nevada. (With J. R. Jaeger, J. D. Wehausen, and C. L. Douglas; *abstract published*).

Preliminary tests of a mountain sheep habitat model using a geographic information system. 8th Biennial Conference, Northern Wild Sheep and Goat Council, Cody, Wyoming. (With M. C. Nicholson, A. T. Lombard and P. V. August; *abstract published*).

The use of geographic information systems to evaluate habitat models for mountain sheep. 36th Annual Meeting, Desert Bighorn Council, Bullhead City, Arizona. (With M. C. Nicholson, A. T. Lombard and P. V. August; *abstract published*).

1992 Bo-Peep revisited: what affects the responses of mountain sheep to helicopter surveys? 36th Annual Meeting, Desert Bighorn Council, Bullhead City, Arizona. (With R. T. Bowyer, A. M. Pauli, M. C. Nicholson and R. W. Anthes; *abstract published*).

Using geographic information system technology to evaluate mountain sheep habitat models. 28th Annual Meeting, Western Section of the Wildlife Society, San Diego, California. (With M. C. Nicholson, A. T. Lombard and P. V. August; *abstract published*).

Dominance and the distribution of Dipodomys: interspecific aggression in D. stephensi, an endangered species. 28th Annual Meeting, Western Section of the Wildlife Society, San Diego, California. (With M. V. Price; *abstract published*).

Using geographic information system technology to evaluate mountain sheep habitat use. 72nd Annual Meeting, American Society of Mammalogists, Kansas State University, Manhattan. (With M. C. Nicholson, A. T. Lombard, and P. V. August; *abstract published*).

1991 Managing mountain sheep: the costs of translocating Ovis canadensis. 27th Annual Meeting, Western Section of the Wildlife Society, Sacramento, California; *abstract published*).

Status of bighorn sheep in California, 1990. 35th Annual Meeting, Desert Bighorn Council, Las Cruces, New Mexico.

Effects of helicopter surveys on movements of mountain sheep. 35th Annual Meeting, Desert Bighorn Council, Las Cruces, New Mexico. (With R. T. Bowyer, A. M. Pauli, R. L. Vernoy and R. W. Anthes; *abstract published*).

[Invited Paper] What is a minimum viable population? 35th Annual Meeting, Desert Bighorn Council, Las Cruces, New Mexico. (With P. R. Krausman, J. A. Bailey, D. A. Armentrout, and R. R. Ramey II).

History of water development for managing wildlife habitat, Inyo and Mono counties, California. 4th Annual University of California White Mountain Research Station Symposium, Bishop; *abstract published*).

Costs associated with translocating mountain sheep, Ovis canadensis. Symposium on Managing Wildlife in the Southwest, Tucson, Arizona (*abstract published*).

Interagency coordination and the restoration of wildlife populations. Yosemite National Park Centennial Symposium, Concord, California (*abstract published*).

Responses of mountain sheep to helicopter surveys. 26th Annual Meeting, Western Section of the Wildlife Society, Sparks, Nevada (*abstract published*).

1989 Responses of mountain sheep to helicopter surveys: ramifications of the "Bo Peep" effect. 70th Annual Meeting, American Society of Mammalogists, University of Alaska, Fairbanks. (With R. T. Bowyer and M. C. Nicholson; *abstract published*).

1988 Managing mountain sheep on a metapopulation basis. 33rd Annual Meeting, Desert Bighorn Council, Needles, California. (With O. A. Schwartz and S. A. Holl; *abstract published*).

[Invited Paper] Horizontal wells for wildlife water development. Wildlife Water Development Symposium, Las Vegas, Nevada (*abstract published*).

Mechanical evaluation of artificial watering devices built for mountain sheep in California. Wildlife Water Development Symposium, Las Vegas, Nevada. (With A. M. Pauli; *abstract published*).

Affiliations of volunteers participating in California wildlife water development projects. Wildlife Water Development Symposium, Las Vegas, Nevada (*abstract published*).

Recommendations for the installation of telemetry collars on mountain sheep. 33rd Annual Meeting, Desert Bighorn Council, Needles, California. (With J. D. Wehausen, M. W. Berbach, J. A. Keay, and J. G. Stahmann; *abstract published*).

1987 Mountain sheep in California: a historical perspective on 108 years of full protection. 23rd Annual Meeting, Western Section of The Wildlife Society, Fresno, California. (With J. D. Wehausen and R. A. Weaver; *abstract published*).

1986 Genetics and the conservation of mountain sheep. 66th Annual Meeting, American Society of Mammalogists, University of Wisconsin, Madison. (With O. A. Schwartz and S. A. Holl; *abstract published*).

[Invited Paper] Genetics, habitat fragmentation, and the conservation of mountain sheep. 22nd Annual Meeting, Western Section of The Wildlife Society, Hilo, Hawaii. (With S. A. Holl and O. A. Schwartz; abstract published).

1985 Techniques of managing chaparral habitat for mule deer and mountain sheep. 29th Annual Meeting, Desert Bighorn Council, Las Vegas, Nevada. (With S. A. Holl).

1982 Volunteer participation in California wildlife habitat improvement projects. 26th Annual Meeting, Desert Bighorn Council, Borrego Springs, California.

Aging the lambs of mountain sheep. 26th Annual Meeting, Desert Bighorn Council, Borrego Springs, California.

1981 Horizontal wells for wildlife habitat improvement. 17th Annual Meeting, Western Section of the Wildlife Society, San Luis Obispo, California.

[Invited Paper] Review comments. Symposium on Dynamics and Management of Mediterranean-type Ecosystems, San Diego, California.

[Invited Paper] Management of chaparral habitat for mule deer and mountain sheep in southern California. Symposium on the Dynamics and Management of Mediterranean-type Ecosystems, San Diego, California. (With S. A. Holl).

1980 Ecological relationships between southern mule deer and California black oak. Symposium on the Ecology, Management and Utilization of California Oaks. Pomona College, Claremont, California. (With R. T. Bowyer).

1974 Thermoregulatory development in two species of woodrats (genus Neotoma). Annual Meeting, Southern California Academy of Sciences, California State University, Fullerton (*abstract published*).

1973 Home ranges of the desert woodrat in southwestern California. 53rd Annual Meeting, American Society of Mammalogists, Asilomar, California (*abstract published*).

Grants and Fellowships

Since 1973, I have competed successfully for and received project-specific funding in the amount of $1,636,247 from intramural and external sources of financial support. Documentation for each is available upon request.

###

ATTACHMENT B

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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September 19, 2014

Laura Horton
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

Subject: Comments on the California Flats Solar Project

Dear Ms. Horton:

We have reviewed the August 2014 Draft Environmental Impact Report (DEIR) for the California Flats Solar Project, a proposed 280-megawatt (MW) photovoltaic (PV) solar power facility in unincorporated southeastern Monterey County, approximately seven miles southeast of the community of Parkfield, California. The Project would be built and operated on a 3,000-acre portion of an existing 72,000-acre cattle ranch. 12.B.1

We have prepared comments on impacts from Project construction on hazards and hazardous waste, and air quality. A revised DEIR should be prepared and recirculated to adequately discuss these issues and to identify mitigation measures, where necessary.

Hazards and Hazardous Waste

The Hazards and Hazardous Waste section of the DEIR is not supported by a Phase I Environmental Site Assessment (ESA). Developers usually prepare Phase I ESAs for inclusion with CEQA documents to identify hazardous waste issues that may pose a risk to the public, workers, or the environment and which may require further investigation, including environmental sampling and cleanup. 12.B.2

Standards for performing a Phase I ESA have been established by the US EPA and the American Society for Testing and Materials Standards (ASTM).[1] Phase I ESAs are conducted to identify conditions indicative of releases of hazardous substances and include: (1) a review of all known sites in the vicinity of the subject property that are on regulatory agency databases for assessment and cleanup activities; (2) an inspection; (3) interviews with people knowledgeable about the property; and (4) recommendations for further actions to address potential hazards.

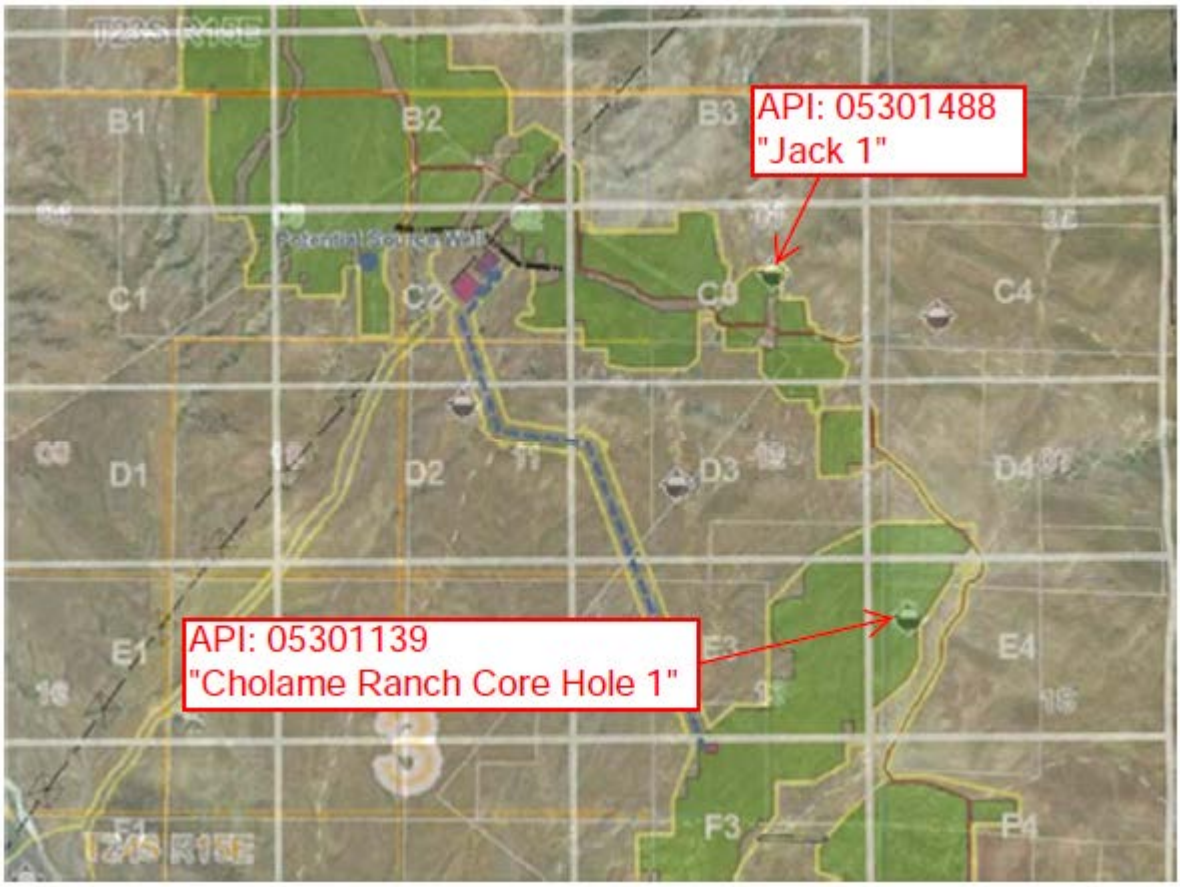
[1] http://www.astm.org/Standards/E1527.htm

Phase I ESAs conclude with the identification of any "recognized environmental conditions" (RECs) and recommendations to address such conditions. A REC is the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. If RECs are identified, then a Phase II ESA generally follows, which includes the collection of soil, soil vapor and groundwater samples, as necessary, to identify the extent of contamination and the need for cleanup to reduce exposure potential to the public. 12.B.2

Failure to prepare the Phase I ESA may have led to oversight of hazardous conditions at the Project site. Consequently, the DEIR failed to disclose potentially significant impacts. A revised DEIR should be prepared to assess the Project site for: (1) the presence of oil and gas wells; and (2) for use as an agricultural storage yard.

Oil and Gas Wells are Present on the Project Site

We prepared an overlay of the Project's site boundaries atop the California Department of Geology and Geothermal Resources (DOGGR) "Well Finder" website[2] (below). 12.B.3



[2] http://maps.conservation.ca.gov/doggr/index.html#

The overlay shows two oil and gas wells (API: 05301488 "Jack 1"and API: 05301139 "Cholame Ranch Core Hole 1") within the Project boundary. Both wells are identified as “dry holes” at the DOGGR Wellfinder website which includes no information about the completion date of the two wells, the date of well abandonment, or techniques used to abandon the wells. Prior well abandonment practices were not as rigorous as modern well abandonment practices regulated by the DOGGR.[3] Poorly abandoned wells may act as conduits for contamination[4] to move from the surface to deeper levels in the subsurface, including movement of surface contaminants to groundwater. Older abandonments may also allow for seepage of gas to the surface through poorly sealed wells.

The presence of the wells on the Project site is a significant impact. During construction of the Project, surface and near-surface features of the undisclosed wells could be damaged by construction equipment, potentially posing a fire hazard from natural gas that could seep to the surface. The wells, if left in their current condition, may pose health hazards to construction workers who may be installing Project infrastructure (solar modules and module supports) in close proximity to the undisclosed well. The workers may be unknowingly subject to a fire risk if a spark were to ignite seeping gas or to health hazards if they were to breathe petroleum vapors. Finally, any surface contamination that may result from construction activities -- including a release of gasoline, diesel or hydraulic fluid -- may travel down the abandoned wells to contaminate underlying groundwater. 12.B.3

A revised DEIR should be prepared to include disclosure of this significant impact and subsequent mitigation measures, including provisions for locating the wells in the field and documenting their locations, and documenting abandonment techniques. If well abandonment techniques cannot be verified, or if abandonment techniques are inadequate to protect water resources and worker safety, the wells should be re-abandoned to meet modern DOGGR requirements.

Inadequate Analysis of Potential for Pesticides

The DEIR states: The majority of site disturbance at the project site would not occur in an area historically used for croplands (p. 4.8-1). The DEIR concludes (p. 4.8-3):

> Based on historical and current land use in the project area, no residual pesticides or herbicides are anticipated to be found in the soil and/or groundwater. 12.B.4

The DEIR offers no conclusions by a qualified professional (i.e. licensed professionals who are required to author and sign a Phase I ESA, for example) who would be able to substantiate the claim that pesticides would not be found in Project site soils or groundwater. To bolster the claim that pesticides were not used, the DEIR only cites to reports filed with the Monterey County Agricultural Commissioner (p. 4.8-3) which include no documentation of pesticide use at the Project site. The DEIR does not cite the time period for which these reports have been filed; therefore, the potential exists for use of pesticides at the Project prior to submittal of the reports to the agency.

[3] ftp://ftp.consrv.ca.gov/pub/oil/publications/PRC04_January_11.pdf, Article 3, Section 1723
[4] http://www.epa.gov/region1/students/pdfs/gwc1.pdf

The evaluation of pesticide usage and the potential for pesticide residuals to be present in soil or groundwater is especially important because irrigated agriculture was practiced at the Project site. According to the DEIR, approximately 38.7 acres of irrigated cropland are present in the westernmost portion of proposed utility corridor (p. 4.8-4).

Agricultural activities at the Project site may have included the use of organochlorine pesticides, including Dieldrin, 4,4'-DDE, and 4,4'-DDT. The presence of these pesticides may persist in the soil for hundreds of years despite being banned in the 1970s.[5] The U.S. EPA has determined organochlorine pesticides, such as Dieldrin, 4,4'-DDE, and 4,4'-DDT, to be probable human carcinogens. DDT is also known to affect the nervous system.[6]

Workers who will contact soils at the project site during site grading and excavation activities may be exposed through inhalation and dermal contact with soil and dust that may be contaminated with hazardous pesticides. Nearby residents, some within 1000 feet of the project (DEIR, p. 4.11-11) may also be exposed to contaminated dust from construction activities.

A revised DEIR should be prepared for the Project that would include the collection of samples for the analysis of organochlorine pesticides and arsenic. The "Interim Guidance for Sampling Agricultural Properties" prepared by the Department of Toxic Substances Control (DTSC) recommends that soil samples at sites with an area of 39 acres (the size of the area used for irrigated cropland in in the westernmost portion of proposed utility corridor) should be collected at over 49 boring locations.[7] At the 49 locations, 13 composite (combined) samples should be submitted for organochlorine pesticide analysis and 13 discrete (individual) samples should be collected for arsenic analysis. 12.B.4

Sample results should be compared to regulatory screening levels, including the Department of Toxics Substances Control California Human Health Screening Levels[8] and the Regional Water Quality Control Board Environmental Screening Levels.[9] If sample results exceed the screening thresholds, a human health risk assessment should be conducted to better estimate health impacts to construction workers and those residents downwind of the project, some as close as 775 feet from the Project boundary (DEIR, p. 4.11-11) who may be exposed to fugitive dust. The DEIR does provide for mitigation of dust, but because the mitigation outlined in AQ-2(a) did not consider the specific need to address the potential for pesticides, the mitigation may fall short in protecting the public from health hazards.

[5] Toxicological Profile for DDT, DDE, and DDD, Agency for Toxic Substances and Disease Registry, http://www.atsdr.cdc.gov/toxprofiles/tp35.pdf, p. 3
[6] ToxFAQs, DDT, DDE, DDD, http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=80&tid=20
[7] Department of Toxic Substances Control, Interim Guidance for Sampling Agricultural Properties (Third Revision). http://www.dtsc.ca.gov/Schools/upload/Ag-Guidance-Rev-3-August-7-2008-2.pdf, Table 1.
[8] http://oehha.ca.gov/risk/chhsltable.html
[9] http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml

Air Quality

Construction Air Emissions are Inadequately Mitigated

NOX and PM10 emissions during construction, after mitigation, would be in exceedance of Monterey Bay Unified Air Pollution Control District (MBUAPCD) thresholds, a significant and unavoidable impact (AQ-2). The DEIR states "No other feasible measures are available that would further reduce construction emissions" (p. 4.3-1). Despite this claim, additional commonly used mitigation is available. A revised DEIR should be prepared to identify additional mitigation.

Mitigation for NOx emissions should include consideration of the following measures that have been proposed in other recent CEQA documents where NOx has been estimated to exceed air quality thresholds.[10]

- For grading and trenching activities, the project operator shall reduce exhaust emissions during construction and, in particular, emissions of NOx, when using construction equipment and vehicles by implementing the following measures:
    - Require the use of diesel haul trucks (e.g., material delivery trucks and soil import/export) that meet U.S. Environmental Protection Agency 2007 model year NOx emissions requirements.
    - During project construction, all internal combustion engines/construction, equipment operating on the project site shall meet U.S. Environmental Protection Agency-Certified Tier 3 emissions standards, or higher according to the following schedule:

      (i) January 1, 2012, to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emissions standards.

      (ii.) Post-January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with best available control technology devices certified by California Air Resource Board. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by California Air Resources Board regulations. In addition, all construction equipment shall be outfitted with best available control technology devices certified by California Air Resources Board. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy.

12.B.5

These measures are more stringent and prescriptive than those measures identified in the DEIR. For example, the DEIR states only that off-road construction equipment is to meet Tier 3 engine technology

[10] September 2013 Draft Environmental Impact Report Fremont Valley Preservation Project, http://www.co.kern.ca.us/planning/pdfs/eirs/fremont_solar/fremont_solar_deir_vol1.pdf, p. 4.3-33

(p. 4.3-1). On May 11, 2004, EPA signed the final rule introducing Tier 4 emission standards for off-road vehicles, which are being phase in from 2008-2015. The Tier 4 standards require that emissions of PM and NOx be further reduced by about 90% through the use of control technologies including advanced exhaust gas after treatment.[11] A wide variety of off-road equipment is commercially available.[12] The U.S. EPA has affirmed the use of Tier 4 engines, in commenting on a Draft Environmental Impact Statement prepared for a renewables project in Kern County.[13]

Additional feasible mitigation is available to reduce NOx emissions, contrary to what the DEIR claims. A revised DEIR should require the use of engines meeting Tier 4 emissions standards after January 1, 2014, consistent with other renewables projects. The DEIR should be revised require the use of Tier 4 engines according to the schedule (above) identified in other recent CEQA documents.

Mitigation for PM10 in a revised DEIR should also include consideration of all feasible measures. The measures listed below are complimentary to the mitigation measures and the APMs identified in the DEIR or are more rigorous. The measures below have been identified in the mitigation of emissions from renewable energy projects in other air districts[14] and should be considered to further reduce Project emissions: 12.B.5

- Prohibit visible dust from leaving the Project site property line during all construction activities, including trenching and pile-driving;
- Conduct simultaneous sampling (upwind and downwind of construction activities) with air sampling equipment to ensure that PM10 levels do not exceed 50 micrograms per cubic meter. This measure would be consistent with other California air district's rule (see for example, South Coast Air Quality Management District[15] and El Dorado County Air Pollution Control District[16];
- Prevent "track-out" of soil from construction equipment more than 25 feet onto paved roads; and
- Apply water once per hour to unpaved roads during high wind conditions.[17]

To further reduce PM10 emissions, the DEIR should require the use of Tier 4 diesel engine technology. In addition to reducing NOx emissions, use of such engines was cited by the US EPA as having the potential for reducing PM10 emissions by 90% as compared to using Tier 3 technology.[18]

Diesel Particulate Matter

The DEIR and supplemental air quality appendices (Appendix C.1 and Appendix C.2) do not adequately evaluate the potential for significant air quality impacts resulting from diesel particulate matter (DPM) 12.B.6

[11] https://www.dieselnet.com/standards/us/nonroad.php
[12] http://www.cat.com/en_US/support/operations/technology/tier-4-technology.html
[13] U.S. Environmental Protection Agency, Comments on the Alta East Wind Project, September 27, 2012 (attached).
[14] AVAQMD Rule 403(D), "Dust Control Plan," http://www.avaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=867
[15] http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4, p. 6
[16] file:///C:/Users/Matt/Downloads/Rule_223_Fugitive_Dust_General_Requirements.pdfm, p. 7
[17] AVAQMD Rule 403(C), *see* footnote 11, *supra*.
[18] U.S. Environmental Protection Agency, Comments on the Alta East Wind Project, September 27, 2012 (attached).

emissions generated during Project construction. Appendix C.1, the Project's Air Quality and Greenhouse Gas Assessment (AQA), was prepared in August of 2013 by Denise Duffy & Associates, Inc. and RBF Consulting (Duffy/RBF). Appendix C.2 is an amended emissions assessment prepared by AMBIENT Air Quality & Noise Consulting (AMBIENT) in February 2014 that addresses additional emissions to be generated from expansion of the solar array perimeter, increased earthmoving activities and widening of a private access road, and increased water usage during Project construction.

The Project's air quality assessment fails to fulfill the requirements set forth in the CEQA guidelines promulgated by the MBUAPCD and the San Luis Obispo County Air Pollution Control District (SLOCAPCD) with regards to diesel particulate matter, resulting in undisclosed and unmitigated significant impacts. The Project is situated within both of the air districts, and Appendix C.1 identifies that the AQA, "has been prepared pursuant to California Environmental Quality Act of 1970 and associated Guidelines… and in accordance with local, state and federal laws, including those administered by MBUAPCD, SLO County APCD, CARB, and the EPA." (Appendix C.1, p. 15). Despite asserting that the appropriate air quality guidelines were considered in characterizing air quality impacts, the DEIR and Appendix C.1 omitted an evaluation of the Project's total construction-related DPM emissions.

The SLOCAPCD maintains quarterly thresholds for construction DPM emissions associated with proposed development projects, identified in section 4.3.3 of the DEIR (p. 4.3-18). The Tier 2 threshold for DPM emissions is 0.32 tons/quarter and, by exceeding this threshold, a proposed project is required to implement a Construction Activity Management Plan (CAMP) and off-site mitigation efforts.[19] Table 4.3-7 (p. 4.3-39) in the DEIR presents worse-case annual indirect mobile source emissions within SCCAB, but only includes the emissions associated with the private access road expansion in comparison to the quarterly SLOCAPCD thresholds. Emissions of DPM from the totality of Project build-out have the potential to affect air quality in the SLOCAPCD as well as the MBUAPCD, and therefore should be evaluated and, if necessary, mitigated when addressing applicable air quality thresholds.

12.B.6

In accordance with CARB recommendations, the AQA utilized CalEEMod to characterize emissions of criteria air pollutants (CAPs) and toxic air contaminants (TACs) associated with Project construction and operation. CalEEMod generates maximum daily and annual emissions of these chemicals based on anticipated equipment usage and vehicle fleets that will be employed during a project's construction and operation. The following table was provided in the CalEEMod output files in Appendix C.1 and summarizes the emissions associated with Project construction over the expected 12-month duration (DEIR, p. 4.3-22).

[19] CEQA Air Quality Handbook, A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review. San Luis Obispo County Air Pollution Control District. July 2014. http://www.slocleanair.org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20July%202014%29%281%29.pdf

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Year	tons/yr									
2014	1.04	6.73	6.82	0.01	7.26	0.38	7.64	0.01	0.37	0.38
2015	5.04	30.97	31.60	0.06	29.00	1.84	30.84	0.02	1.83	1.85
Total	**6.08**	**37.70**	**38.42**	**0.07**	**36.26**	**2.22**	**38.48**	**0.03**	**2.20**	**2.23**

The estimated total exhaust DPM for Project construction is 2.22 tons, which averages to approximately 0.56 tons/quarter. The DEIR and AQA should be revised to address the magnitude of DPM emissions from Project construction, and disclose the significant and unavoidable impact of exceeding the SLOCAPCD quarterly Tier 2 threshold for DPM. The MBUAPCD acknowledges that, "temporary emissions of a carcinogenic TAC that can result in a cancer risk greater than one incident per 100,000 population are considered significant."[20] To address this potential additional impact from Project construction, we conducted a screening level health risk assessment to evaluate off-site impacts to nearby residential receptors.

There are two residences within 1,000 feet of the Project boundary (DEIR, p. 4.3-17), which is the screening distance set forth by the MBUAPCD and the SLOCAPCD. It is unclear why the DEIR refrained from adequately examining off-site concentrations of DPM that will be generated by Project construction, despite claiming that the CEQA guidelines for both air districts were adhered to in preparing the DEIR and supplemental air quality appendices. The MBUAPCD guidelines state that, "impact analyses for sources of TACs should include project level and cumulative impacts."[21] The revised DEIR and supplemental air quality assessment should include a Project-level analysis of DPM that is expected to be generated by construction and any necessary mitigation measures.

12.B.6

We utilized the EPA-promulgated screening model AERSCREEN to simulate downwind concentrations of DPM associated with Project construction. Since 2011, AERSCREEN has been the preferred regulatory screening model for predicting maximum off-site concentrations of air pollutants.[22] AERSCREEN allows the user to simulate emissions from a point, area, or volume source based on a limited amount of information available. If results of a screening model exercise indicate a potential air quality concern, then a more refined modeling approach should be undertaken.[23]

The AERSCREEN model relies on a continuous emission rate for an air pollutant. We calculated the average emission rate of DPM associated with Project construction by the following equation.

[20] CEQA Air Quality Guidelines. Monterey Bay Unified Air Pollution Control District. February 2008. http://mbuapcd.org/pdf/CEQA_full%20(1).pdf
[21] *Ibid.*
[22] MEMORANDUM: AERSCREEN Released as the EPA Recommended Screening Model. United States Environmental Protection Agency Air Quality Modeling Group. April 11, 2011. http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf
[23] Health Risk Assessments for Proposed Land Use Projects, CAPCOA Guidance Document. California Air Pollution Control Officers Association. July 2009. http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

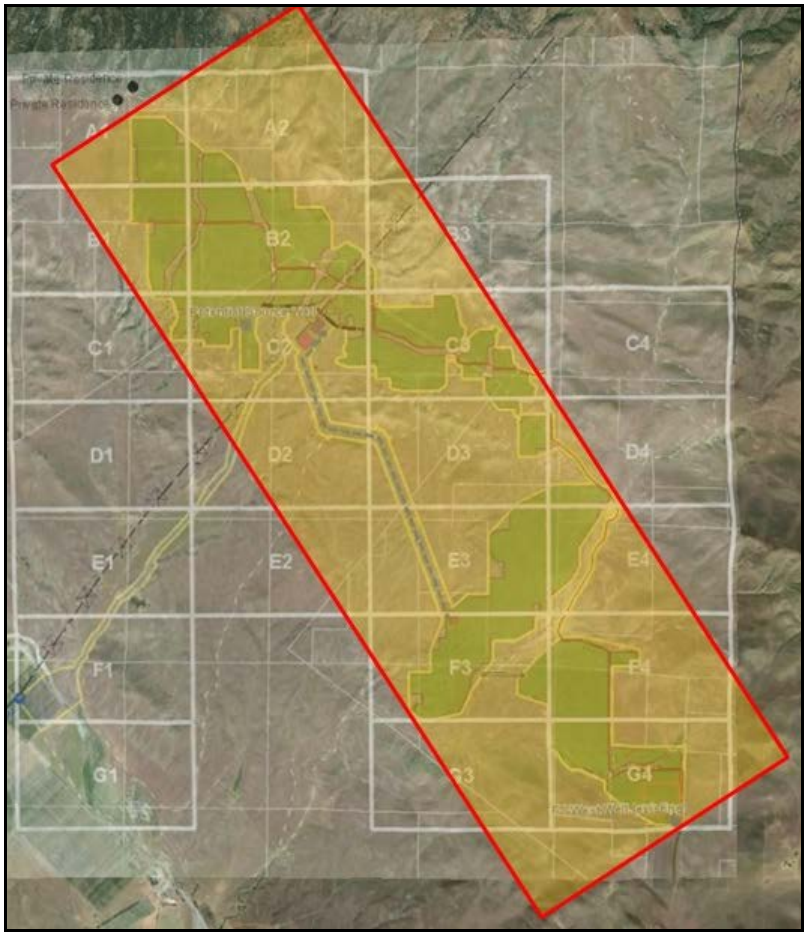
$$Emission\ Rate\left(\frac{grams}{second}\right) = \frac{2.22\ tons}{year} \times \frac{2{,}000\ lbs}{ton} \times \frac{453.6\ grams}{lb} \times \frac{1\ year}{365\ days} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds}$$

The average emission rate of DPM during Project construction from all equipment and fleet vehicles is approximately 0.0637 grams per second (g/s). This is the value of the continuous emission rate that we incorporated into our screening level health risk assessment.

The AERSCREEN model relies upon a simply defined point, area, or volume source to run its algorithms. Due to the geometric complexity of the Project boundary, we elected to be conservative and model DPM emissions from a larger area than the Project footprint. The conceptual Project boundary used for screening model purposes is shown on the figure below. It should be noted that by expanding the total area over which modeled emissions are occurring, maximum downwind concentrations are likely diluted by a small fraction as the actual emissions would be more heavily concentrated within the areas of greatest disturbance.

12.B.6

Expanded Site Boundary for Screening Health Risk Assessment



12.B.6

The continuous emission rate of 0.0637 g/s was modeled from the area depicted above with a conservative average release height of three meters to simulate exhaust stacks on construction equipment.

AERSCREEN generates maximum single-hour ground-level concentrations of the modeled pollutant at specific downwind distances. The off-site residential sensitive receptors are situated approximately 775 feet (235 meters) and 1,000 feet (300 meters) from the Project boundary (p. 4.3-29). The maximum DPM concentrations output by the AERSCREEN model at these distances were approximately 2.12 $\mu g/m^3$ and 2.14 $\mu g/m^3$, respectively. EPA's regulatory methodology for screening models recommends that the maximum annualized concentration of an emitted air pollutant may be estimated by multiplying the single-hour concentration by 10%, resulting in a concentration of 0.214 $\mu g/m^3$ DPM for our Project's screening-level health risk assessment.

Project construction is anticipated to take 12-24 months (p. 4.3-22). Even though the Project's construction will be of short duration, OEHHA recommends "that exposure from projects lasting more than 6 months be evaluated for the duration of the project. In all cases the exposure should be assumed to start in the third trimester [of an exposed individual's life] to allow for the use of the Age Sensitivity

Factors (OEHHA, 2009)."[24] Age Sensitivity Factors were developed by OEHHA to characterize the heightened susceptibility of children to the inhalation toxicity of carcinogens such as DPM. Therefore, the exposure was scaled by a factor of 10 in consideration of an infant's modeled exposure.

The following table presents the results of our screening-level health risk assessment for a child living 1,000 feet away from the Project boundary during construction. Our calculations indicate that the excess cancer risk to a child living at this location would be 18.7 in one million. This excess cancer risk constitutes a significant air quality impact by the MBUAPCD and SLOCAPCD CEQA guidelines. A comprehensive health risk assessment should be prepared in the revised DEIR and AQA to address the potential for the excess cancer risk threshold of significance to be exceeded and ensure that the health of nearby residents has been adequately considered and protected.

Parameter	Description	Units	Infant Exposure
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1
Cair	Concentration	ug/m^3	0.214
DBR	Daily breathing rate	L/kg-day	581
EF	Exposure Frequency	days/year	350
ED	Exposure Duration	years	1
AT	Averaging Time	days	25550
	Inhaled Dose		1.7E-06
ASF	Age Sensitivity Factor	-	10
	Cancer Risk		**1.87E-05**

12.B.6

The results of our analyses demonstrate that air quality impacts from construction-related DPM have not been adequately or appropriately evaluated or mitigated. DPM associated with Project construction may present a significant impact on air quality and warrants further investigation prior to the Project's approval.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Anders Sutherland

[24] Technical Support Document for Exposure Assessment and Stochastic Analysis, FINAL. Office of Environmental Health Hazard Assessment, August 2012. 11-5. http://oehha.ca.gov/air/hot_spots/tsd082712.html

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Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certification:

California Professional Geologist
California Certified Hydrogeologist
Qualified SSWPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – present;
- Senior Environmental Analyst, Komex H2O Science, Inc (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of numerous environmental impact reports under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions and geologic hazards.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a comunity adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.
- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the dischrge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt currently teaches Physical Geology (lecture and lab) to students at Golden West College in Huntington Beach, California.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

ANDERS SUTHERLAND

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EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES **B.S. ATMOSPHERIC, OCEANIC, & ENVIRONMENTAL SCIENCES** ***JUNE 2010***

PROJECT EXPERIENCE

SOIL WATER AIR PROTECTION ENTERPRISE ***SANTA MONICA, CA***

AIR QUALITY SPECIALIST, PROJECT DEVELOPMENT STAFF *MARCH 2009 - JUNE 2013*

PROJECT MANAGER: VOC EMISSIONS AT UNCONVENTIONAL NATURAL GAS FACILITIES ***SEPT 2011 - JUNE 2013***

- Coordinated air dispersion modeling of VOC emissions from thirty-five natural gas processing facilities using AERMOD.
- Evaluated locally cumulative modeled concentrations with respect to regulatory thresholds and peer-reviewed literature.
- Reviewed and organized emissions inventory data and emission factor development studies to define model source terms.
- Composed text of affidavits and organized supporting materials for use as Expert testimony in environmental litigation.
- Participated in meetings with clients to discuss project strategy and identify solutions to achieve short and long term goals.

SENIOR ANALYST: VOCS AND SO_2 IN AMBIENT AIR SURROUNDING A PETROLEUM REFINERY ***NOV 2010 - JUNE 2013***

- Analyzed air monitoring data from numerous stations during facility emission events to examine effectiveness of network.
- Produced tables, charts, and graphs to exhibit the relative contribution of petroleum refinery emissions to local air quality.
- Combined analyses of air monitoring data, emissions modeling, and peer-reviewed literature in Expert Witness reports.
- Addressed time-dependent requests of client to conduct statistical analyses of air monitoring and emissions inventory data.
- Examined regulatory studies on the chemistry of ozone formation to characterize air quality impacts from industrial flares.

SENIOR ANALYST: BAAQMD LAND USE REDEVELOPMENTS SCREENING & MODELING ***JAN 2011 - DEC 2011***

- Calculated roadway, permitted source, and cumulative impacts for risk and hazard analyses at proposed land use projects.
- Prepared presentations containing figures and tables comparing results of particulate matter analyses to CEQA thresholds.
- Composed summary texts of Risk and Hazard Screening Analyses conducted for several land use redevelopment projects.
- Utilized BAAQMD methodologies for surface streets screening analyses to interpolate impacts between receptor distances.

SENIOR ANALYST: ODOROUS COMPOUNDS EMANATING FROM A SMOLDERING LANDFILL ***APRIL 2013 - JUNE 2013***

- Conducted ambient air and landfill gas sampling using sorbent tubes and SUMMA canisters for an array of analytes.
- Prepared portions of Quality Assurance Project Plan and Sampling and Analysis Plan submitted to the Missouri DNR.
- Calculated dioxin TCDD Toxic Equivalency Values from air monitoring data results obtained during field work activities.
- Reviewed previously conducted air sampling events to determine potential contaminants of concern and odor thresholds.

PUBLICATIONS

Contributing author: Feng, L., Wu, C., Tam, L., **Sutherland, A.J.**, Clark, J.J., Rosenfeld, P.E. Dioxin furan blood lipid and attic dust concentrations in populations living near four wood treatment facilities in the United States. *Journal of Environmental Health*. 2011 Jan-Feb; 73(6): 34-46.

Contributing author: Gonzalez, J., Feng, L., **Sutherland, A.**, Waller, C., Sok, H., Hesse, R., Rosenfeld, P.E. PCBs and dioxins/furans in attic dust collected near former PCB production and secondary copper facilities in Sauget, IL. *Procedia Environmental Sciences* 4 (2011): 113-125.

Contributing author: Chen, J.A., Zapata, A.R., **Sutherland, A.J.**, Molmen, D.R., Chow, B.S., Wu, L.E., Rosenfeld, P.E., Hesse, R.C. Sulfur dioxide and volatile organic compound exposure to a community in Texas City, Texas evaluated using AERMOD and empirical monitoring data. *American Journal of Environmental Science* 8(6) 2012: 622-632.

ATTACHMENT C

September 18, 2014

Laura E. Horton
Adams Broadwell Joseph & Cardozo
601 Gateway Blvd., Suite 1000
South San Francisco, CA 94080
Subject: California Flats Solar Project – Review of DEIR Drainage Analysis

Dear Ms. Horton

I have reviewed the hydrologic aspects of the California Flats Solar Project Draft Environmental Impact Report (hereinafter DEIR) regarding rainfall, runoff, drainage, and erosion. In addition to reviewing the relevant parts of the DEIR, I have reviewed Appendices J.1 (RBF Consulting 2013) and J.2 (Campbell 2014) of the DEIR and a CEQA Impact Assessment (Duffy and RBF 2013) were reviewed. Additionally, I reviewed a peer review (Huff 2013) of an earlier version of the drainage study was also consulted.

My qualifications include a Ph.D. and M.S. in hydrology/hydrogeology from the University of Nevada, Reno, and 30 years of experience as a consultant, academic, or government hydrologist and engineer. I have consulted for 15 years in areas regarding hydrogeology and the estimation of the impacts due to groundwater pumping with regards to mine dewatering and water rights applications. I have published four peer-reviewed articles on hydrogeology and groundwater modeling. My Ph.D. work involved aspects of fluvial morphology, sedimentation, and interactions with land management. I have published a dozen peer-reviewed articles regarding the effects of land management on fluvial morphology. My curriculum vitae is attached to this letter.

12.C.1

Summary

The DEIR presents storm runoff and flow velocity estimates for the proposed 280-megawatt (MW) alternating current (AC) photovoltaic (PV) solar power facility in unincorporated southeastern Monterey County. The review below presents several reasons why the flow estimates may be too low, flow depths too high, and flow velocities too low. Although overestimating flow depth may seem conservative, it is not. Higher flow with lower depths will lead to much higher velocity. Higher velocity would lead to much higher erosion rates,

12.C.2

including an increased potential for the ephemeral drainages that cross the site to erode and move, potentially undercutting the solar arrays. This will increase the area considered to be hazard level 3. The underestimate of flows, flow velocities, and areas within hazard level 3 is inappropriate disclosure for the DEIR.

The construction of solar arrays and modules will exacerbate the problem because their footings will, if placed where water flows, have the effect of hardening the streambanks. This prevents erosion at the footing, but simply causes it to occur someplace else along the channel. The DEIR refers occasionally to the design-level drainage analysis that will be done prior to construction. Due to the uncertainties in the potential impacts, it is insufficient disclosure of the potential impacts to not include and analyze the final design in this DEIR. As a result, there is no substantial evidence that the impacts are less than significant. 12.C.2

Review

The project area is broken into three areas, 1, 2, and 3. Area 1 has runoff from 88 small watersheds that drain across Area 1, as shown on RBF Exhibit 3. Runoff from those watersheds collects at 23 concentration points that enter Area 1. Area 3 has 17 tributary watersheds as shown in RBF Exhibit 4. The runoff volume and rate from offsite watersheds is determined using the HEC-HMS rainfall/runoff model which applies NRCS flood hydrograph detailed in NRCS (1986). This is commonly known as the SCS Curve Number method. RFB calculates flows at points of inflow to the project area that were based on watercourses as determined from USGS maps. Area 2 has no offsite drainage.

Onsite runoff is that generated from rainfall directly on the project site. Generally, there are three forms of onsite runoff – sheet flow, shallow concentrated flow and channel flow. They used a program called FLO-2d to calculate runoff from each area and to estimate flow depths and velocities. Flow velocity for each type of runoff is used to determine the time for flow to travel the entire length along either specific pathway. The time for flow from the most distant point of the drainage basin to the outlet from the basin is the time of concentration (TOC). After runoff has been generated for a time period that exceeds the TOC, the entire drainage basin is contributing. Setting the critical rainfall period to the TOC causes the model to simulate the maximum runoff rate. Therefore, determining TOC accurately is essential to these runoff methods. 12.C.3

The modeler sets parameters in the model that control runoff, flow rates, and velocities. Most parameters like flow length and slope are measured from the digital elevation model used to input site topography to model, but the modeler chooses the roughness factors, the Manning's n value, and parameters controlling infiltration such as curve number, abstraction, and infiltration rates.

RBF's estimates of n and related parameters could cause the travel time, or TOC, for the tributary watersheds to be overestimated which would cause the flood flow peak to be underestimated.

RBF use n equal to 0.4 to account for "dense natural grasses and rough terrain" (RBF p 17), but TR-55 recommends n equal to 0.24 for dense grasses and 0.4 for light underbrush (NRCS 1986, Table 3-1). The lower n, which based on NRCS (1986) would be more appropriate, would allow faster runoff and a lower TOC and, therefore higher runoff rates. There are not sufficient photos of the upland watershed to make an alternative estimate as part of this review. RBF should ascertain they are using the correct n value because the apparent error could lead to an underestimate of runoff rates and velocities.

TR-55 also sets an upper limit for sheet flow at 300 feet (NRCS 1986, p 3-3). This means that after flowing for 300 feet, sheet flow would coalesce into more concentrated flow. In their appendix, RBF shows a table Area 1 Watershed Area Lag Time Computation. Several watersheds have flow length exceeding 300 feet which could cause the travel time to be overestimated which causes the TOC to be higher and the flow rate lower. 12.C.4

RBF uses an equation for shallow concentrated flow that varies only according to slope (RBF Equation 3). It appears to be based on n=0.05 and hydraulic radius of 0.4. It involves huge assumptions but according to TR-55, RBF has applied it properly. RBF should verify for the specific channels that roughness n equal to 0.05 is appropriate. This is particularly important in light of their using n=0.08 for channel flow. As a channel gets larger there should be less debris and vegetation slowing the flow, so the n value for the channel should be less than for the shallow concentrated flow. It is impossible to assess which is incorrect, but RBF should document the condition of the actual channels and selected n value. If n equal to 0.08 is too high, the simulated TOC will be too high and the estimated flow rate is too low.

All of these n estimates and sheet flow length estimates could cause the flow rates entering Area 1 to be estimated too low. RBF should better document the reasons for choosing the n values used. Considering these are ephemeral channels, documentation would be mostly photographic.

RBF does not describe which drainages above the concentration points combine to cause the calculated flows, so it is impossible to assess the accuracy of the flow calculation and routing.

The choice of initial abstraction for onsite runoff may significantly underestimate flood flow rates. 12.C.5

Onsite runoff is runoff from rainfall on the project site. Initial abstraction (Ia) is the amount of water stored before runoff can begin. In general, it is water that goes to wetting the surface, filling small depressions, and completely wetting the vegetation so that additional rainfall passes through the canopy. It includes infiltration and evapotranspiration that occurs while the storage components are being filled. The curve number represents the runoff potential of a watershed and is based on soils type and ground cover.

RBF established a grid over the onsite watersheds numerically to facilitate calculation of runoff at a small scale. RBF states (p 22) that a curve number of 89 and initial abstraction of 0.47 was applied over the grid system used to simulate onsite runoff. Either the curve number or Ia is incorrect. NRCS (1986) published Ia values for various curve number values. For CN=89, the Ia equals 0.247 inches. If the curve number is correct, there is an error of 0.23 inches which is effectively the amount of rainfall that would additionally become runoff. This error could cause the calculations to grossly underestimate runoff volume and rate. Because the runoff amount from the site is key to the calculations of onsite flow depth and velocity, it suggests that every estimate of depth and hazard zone presented in the DEIR is wrong (DEIR p 4-9.25). RBF needs to essentially redo every calculation of runoff and then flow depth and velocity and redo their hazard mapping. 12.C.5

RBF significantly underestimates erosion within Area 1. RBF calculates that there will be high flows, depths and velocities crossing Area 1. But the analysis completely neglects that ephemeral streams with occasional high flows have significant erosion potential.

From RBF:

> Results from the Area 1 FLO-2D models are presented in Exhibit 8 and Exhibit 9 (flow depth and hazard maps, respectively). Flow depths across the site vary depending primarily on location with respect to streams and flow breakout points. In general, much of the site experiences a flow depth of less than 0.1 feet, while those areas located in flow breakout paths experience flow depths of between 0.1 and 1 foot. Some regions on the floodplain experience flow depths on the order of 2.0 feet. Flow depths in or near channels are, in general, between 2.0 and 8.0 feet, while some isolated areas may have 100-year flow depths on the order of approximately 15.0 feet at locally narrow locations.
>
> Floodplain velocities remain, for the most part, between 0.1 and 1.0 ft/s. Areas where water breaks out of a channel experience flow velocities up to 2.0 ft/s, and areas near low flow channels see velocities on the order of 4.0 ft/s. Channel velocities are generally on the order of 2.0-10.0 ft/s, while some short, steep segments of channels indicate flow velocities of up to 16.0 ft/s. (RBF 2013, p 27)

12.C.6

If the n values are overestimated as discussed above, it is possible that the velocities will actually be much higher and depths lower. For much of the project site, high depth at a few locations in ephemeral channel is not a problem. However, high velocity flow causes erosion so the erosion that is likely even with flows as estimated by RBF will be even more significant with the necessary corrected estimates. Thus, in the absence of accurate calculations, the DEIR has not provided substantial evidence that the impacts are less than significant. 12.C.6

Erosion of channels within Area 1 from offsite runoff could endanger the solar arrays.

The proposed project would impact ephemeral watercourses that traverse the Project site. The previous paragraphs describe the high velocities that those watercourses will experience during run off events. Ephemeral drainages that occur at the project site often change course during high flow due to erosion and sediment transport; this will occur with time with or without the project. The project would affect the drainages around the site by placing solar array pilings in areas that will experience some runoff. If placed in an ephemeral watercourse, the pilings would create essentially armored sections in the channel overbank regions that would not erode. Whenever a portion of a channel becomes artificially armored, erosion will occur elsewhere. The DEIR does not contain detailed topography or grading plans for the ground surface near the proposed arrays, so detailed assessment has not been complete nor is it possible for a reviewer to make the assessment. It is virtually certain that the pilings will also alter the flow patterns and likely cause erosion and sedimentation in locations it would otherwise not occur. 12.C.7

Mitigations

The DEIR states that the proposed project would be required to comply with the recommendations in the Preliminary Drainage Report and the final design of the project would be required to be developed in accordance with a final, design-level, drainage analysis (DEIR, p 4.9-26). These recommendations include: 12.C.8

- No modules shall be placed in areas where the product of the flow depth and flow velocity is greater than 9 feet per second (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24- hour storm event, based on the results of a design-level drainage analysis;
- No transformers, substations, or inverters shall be placed in areas where the flow depth exceeds 2 feet (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24-hour storm event; and

- Solar modules, transformers, substations, or inverters constructed in areas where any inundation is expected to occur should be placed a minimum of 1 foot above the 100-year water surface elevation.

The review above indicates that it is possible that flow velocities and potential erosion has been significantly underestimated, and that Impact HYD-5 could result in a significant impact on the environment that would require mitigation. Therefore, there is no substantial evidence that the recommendations provided would reduce the impacts to less than significant as indicated in the DEIR. The impacts would need to be fully and properly mitigated based on accurate calculations. This could require an adjustment of the discussion regarding hazard areas for Impact HYD-5 (DEIR, p 4.9-25). If the calculations are not redone, the mitigations required for this hazard may be impossible to complete or may exacerbate the problem, as described below.

The current recommendations require that modules not be placed in areas with hazard level 3, wherein the product of depth and velocity due to the design storm exceeds 9 ft^2/s (DEIR, p 4.9-26). At the level of mapping currently used, it is simply impossible to define these zones with sufficient accuracy to keep the modules out of them. The needed calculation changes described above could expand the hazard zones as to significantly change the area available for development. The same applies for the recommendation preventing the placement of "transformers, substations, or inverters" (Id.) within any area where flow depth exceeds 2 feet; depth has not been sufficiently accurately determined. Finally, the requirement that "modules, transformers, substations, or inverters" be constructed "a minimum of 1 foot above the 100-year water surface elevation" could require the construction of pilings that will cause the velocities to be increased and cause erosion, as described above. This positive feedback could cause the final construction to not meet the requirements of the recommendations. 12.C.8

Sincerely,

Thomas Myers Ph.D.

Hydrologic Consultant

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Curriculum Vitae

Objective: To provide diverse research and consulting services to nonprofit, government, legal and industry clients focusing on hydrogeology specializing in mine dewatering, contaminant transport, natural gas development, groundwater modeling, NEPA analysis, federal and state regulatory review, and fluvial morphology.

Education

Years	Degree	University
1992-96	Ph.D. Hydrology/Hydrogeology	University of Nevada, Reno Dissertation: Stochastic Structure of Rangeland Streams
1990-92		University of Arizona, Tucson AZ Classes in pursuit of Ph.D. in Hydrology.
1988-90	M.S. Hydrology/Hydrogeology	University of Nevada, Reno Thesis: Stream Morphology, Stability and Habitat in Northern Nevada
1981-83		University of Colorado, Denver, CO Graduate level water resources engineering classes.
1977-81	B.S., Civil Engineering	University of Colorado, Boulder, CO

Professional Experience

Years	Position	Duties
1993-Pr.	Hydrologic Consultant	Completion of hydrogeology studies and testimony focusing on mine dewatering, groundwater modeling, natural gas development, contaminant transport, NEPA review, and water rights for nonprofit groups and government agencies.
1999-2004	Great Basin Mine Watch, Exec Director	Responsible for reviewing and commenting on mining projects with a focus on groundwater and surface water resources, preparing appeals and litigation, organizational development and personnel management.
1992-1997	Univ of NV, Reno, Res. Assoc.	Research on riparian area and watershed management including stream morphology, aquatic habitat, cattle grazing and low-flow and flood hydrology.
1990-1992	U of AZ, Res. and Teach. Assistant	Research on rainfall/runoff processes and climate models. Taught lab sections for sophomore level "Principles of Hydrology". Received 1992 Outstanding Graduate Teaching Assistant Award in the College of Engineering
1988-1990	U of NV, Reno Res. Asst	Research on aquatic habitat, stream morphology and livestock management.
1983-1988	US Bureau of Reclamation Hydraulic Eng.	Performed hydrology planning studies on topics including floodplains, water supply, flood control, salt balance, irrigation efficiencies, sediment transport, rainfall-runoff modeling and groundwater balances.

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Special Coursework

Years	Course	Sponsor
2011	Hydraulic Fracturing of the Marcellus Shale	National Groundwater Association
2008	Fractured Rock Analysis	MidWest Geoscience
2005	Groundwater Sampling Field Course	Nielson Environmental Field School
2004	Environmental Forensics	National Groundwater Association
2004 and -5	Groundwater and Environmental Law	National Groundwater Association

ATTACHMENT D

Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis

Rebecca A. Kagan, Tabitha C. Viner, Pepper W. Trail, and Edgard O. Espinoza
National Fish and Wildlife Forensics Laboratory

Executive Summary

This report summarizes data on bird mortality at three solar energy facilities in southern California: Desert Sunlight, Genesis, and Ivanpah. These facilities use different solar technologies, but avian mortality was documented at each site. Desert Sunlight is a photovoltaic facility, Genesis employs a trough system with parabolic mirrors, and Ivanpah uses a power tower as a focal point for solar flux.

FINDINGS

Trauma was the leading cause of death documented for remains at the Desert Sunlight and Genesis sites. Trauma and solar flux injury were both major causes of mortality at the Ivanpah site. Exposure to solar flux caused singeing of feathers, which resulted in mortality in several ways. Severe singeing of flight feathers caused catastrophic loss of flying ability, leading to death by impact with the ground or other objects. Less severe singeing led to impairment of flight capability, reducing ability to forage and evade predators, leading to starvation or predation. Our examinations did not find evidence for significant tissue burns or eye damage caused by exposure to solar flux.

12.D.1

Cause of Death	Ivanpah	Genesis	Desert Sunlight	Total
Solar Flux	47	0	0	47
Impact trauma	24	6	19	49
Predation trauma	5	2	15	22
Trauma of undetermined cause	14	0	0	14
Electrocution	1	0	0	1
Emaciation	1	0	0	1
Undetermined (remains in poor condition)	46	17	22	85
No evident cause of death	3	6	5	14
Total	141	31	61	233

These solar facilities appear to represent "equal-opportunity" hazards for the bird species that encounter them. The remains of 71 species were identified, representing a broad range of ecological types. In body size, these ranged from hummingbirds to pelicans; in ecological type from strictly aerial feeders

(swallows) to strictly aquatic feeders (grebes) to ground feeders (roadrunners) to raptors (hawks and owls). The species identified were equally divided among resident and non-resident species, and nocturnal as well as diurnal species were represented. Although not analyzed in detail, there was also significant bat and insect mortality at the Ivanpah site, including monarch butterflies. It appears that Ivanpah may act as a "mega-trap," attracting insects which in turn attract insect-eating birds, which are incapacitated by solar flux injury, thus attracting predators and creating an entire food chain vulnerable to injury and death.

			Foraging Zone			Residency Status	
SEB	No. Remains	Identifiable Remains	Air	Terr	Water	Resident	Migrant
Ivanpah	141	127	28	85	14	63	64
Genesis	31	30	12	12	6	20	10
Desert Sun	61	56	7	22	27	18	38
TOTALS	233	213	47	119	47	101	112

CONCLUSIONS AND RECOMMENDATIONS

In summary, three main causes of avian mortality were identified at these facilities: impact trauma, solar flux, and predation. Birds at all three types of solar plants were susceptible to impact trauma and predators. Predation was documented mostly at the photovoltaic site, and in many cases appeared to be associated with stranding or nonfatal impact trauma with the panels, leaving birds vulnerable to resident predators. Solar flux injury, resulting from exposures to up to 800° F, was unique to the power tower facility. Our findings demonstrate that a broad ecological variety of birds are vulnerable to morbidity and mortality at solar facilities, though some differential mortality trends were evident, such as waterbirds at Desert Sunlight, where open water sources were present; and insectivores at Ivanpah, where insects are attracted to the solar tower.

12.D.1

Specific hazards were identified, including vertically-oriented mirrors or other smooth reflective panels; water-like reflective or polarizing panels; actively fluxing towers; open bodies of water; aggregations of insects that attracted insectivorous birds; and resident predators. Making towers, ponds and panels less attractive or accessible to birds may mitigate deaths. Specific actions should include:

Monitoring/detection measures:

1) Install video cameras sufficient to provide 360 degree coverage around each tower to record birds (and bats) entering and exiting the flux

2) For at least two years (and in addition to planned monitoring protocol), conduct daily surveys for birds (at all three facilities), as well as insects and bats (in the condenser building at Ivanpah) around each tower at the base of and immediately adjacent to the towers in the area cleared of vegetation. Timing of daily surveys can be adjusted to minimize scavenger removal of carcasses as recommended by the TAC. Surveys in the late afternoon might be optimal for bird carcasses, and first light for bat carcasses.

3) Use dogs for monitoring surveys to detect dead and injured birds that have hidden themselves in the brush, both inside and outside the perimeter of the facility

4) To decrease removal of carcasses, implement appropriate raven deterrent actions

Bird Mortality Avoidance Measures:

1) Increase cleared area around tower at Ivanpah to decrease attractive habitat, at least out to fence

2) Retrofit visual cues to existing panels at all three facilities and incorporate into new panel design. These cues should include UV-reflective or solid, contrasting bands spaced no further than 28 cm from each other

3) Suspend power tower operation during peak migration times for indicated species

4) Avoid vertical orientation of mirrors whenever possible, for example tilt mirrors during washing

5) Properly net or otherwise cover ponds

12.D.1

6) Place perch deterrent devices where indicated, eg on tower railings near the flux field

7) Employ exclusionary measures to prevent bats from roosting in and around the condenser facility at Ivanpah.

It must be emphasized that we currently have a very incomplete knowledge of the scope of avian mortality at these solar facilities. Challenges to data collection include: large facilities which are difficult to efficiently search for carcasses; vegetation and panels obscuring ground visibility; carcass loss due to scavenging; rapid degradation of carcass quality hindering cause of death and species determination; and inconsistent documentation of carcass history.

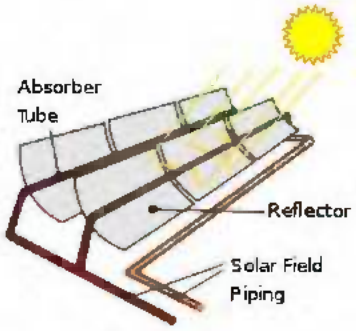
To rectify this problem, video cameras should be added to the solar towers to record bird mortality and daily surveys of the area at the base of and immediately adjacent to the towers should be conducted. At all the facilities, a protocol for systematic, statistically-rigorous searches for avian remains should be developed, emphasizing those areas where avian mortality is most likely to occur. Investigation into bat and insect mortalities at the power tower site should also be pursued.

Finally, there are presently little data available on how solar flux affects birds and insects. Studies of the temperatures experienced by objects in the flux; of the effects of high temperatures on feather structure and function; and of the behavior of insects and birds in response to the flux and related phenomena (e.g. "light clouds") are all essential if we are to understand the scope of solar facility effects on wildlife.

Introduction

The National Fish and Wildlife Forensics Laboratory was requested to determine cause of death for birds found at facilities that generate electricity from solar energy. Solar generating facilities can be classified into three major types: photovoltaic sites, trough systems and solar power towers. There is much written about these systems so this report will not include any technical details, but simply mention the differences and their potential impact on birds.

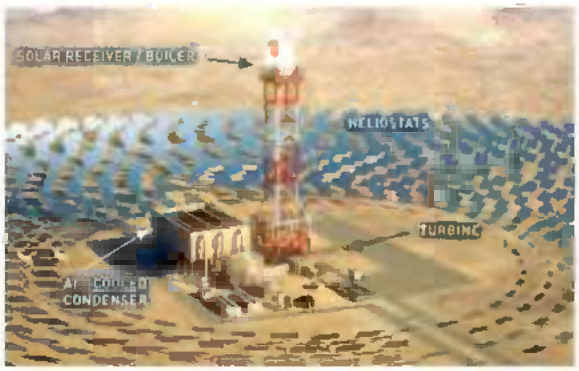
1) **Photovoltaic systems** directly convert the sun's light into electricity. The perceived threat to birds is associated with the presence of water ponds which attract birds and from traumatic impact with the photovoltaic cells. An example of this type of solar power plant is Desert Sunlight Solar Farm (AKA First Solar).



2) **Trough systems** are composed of parabolic mirrors which focus and reflect the sun to a tube that converts the heat from the sun into electricity. The perceived threat to birds is associated with the presence of water ponds which attract birds and from traumatic impact with the trough structures. An example of this type of solar power plant is Genesis Solar Energy Project.

12.D.1

3) **Solar power towers** use thousands of mirrors to reflect the solar energy to a tower, where water in a boiler is converted to steam, generating the electricity. The perceived threat to birds is associated traumatic impact with the mirrors and the danger associated with the heat produced by the mirrors. An example of this type of solar power plant is Ivanpah Solar Electric Generating System.



Methods

Carcasses were collected at the different solar power plant sites by either US Fish and Wildlife Service employees or by energy company staff. The collection of the carcasses was opportunistic; that is, not according to a pre-determined sampling schedule or protocol. There was no attempt to quantify the number of carcasses that scavengers or predators removed from the solar facilities' grounds, or to compare the distribution of carcasses inside and outside the boundaries of the solar facility sites.

Additionally, three USFWS/-OLE staff, including two Forensics Lab staff (EOE and RAK), visited the Ivanpah Solar plant from October 21 – 24, 2013. Their on-site observations are included in this report.

A total of 233 birds collected from three different facilities were examined: 141 from a solar thermal power tower site (Ivanpah, Bright Source Inc.). 31 from a parabolic trough site (Genesis, NextEra Energy Inc.) and 61 from a photovoltaic (PV) panel site (Desert Sunlight, First Solar Inc.). Nine of the Ivanpah birds were received fresh; 7 of those were necropsied during a site visit by a Forensics Laboratory pathologist (RAK). The rest of the birds were received frozen and allowed to thaw at room temperature prior to species identification and necropsy. Species determination was made by the Forensics Laboratory ornithologist (PWT) for all birds either prior to necropsy or, for those necropsied on-site, from photos and the formalin-fixed head. All data on carcass history (location of the carcass, date of collection and any additional observations) were transcribed, although these were not available for all carcasses.

12.D.1

As part of the gross pathological examination, whole carcasses were radiographed to help evaluate limb fractures and identify any metal foreign bodies. Alternate light source examination using an Omnichrome Spectrum 9000+ at 570 nm with a red filter helped rule in or out feather burns by highlighting subtle areas of feather charring (Viner et al., 2014). All birds or bird parts from Ivanpah without obvious burns were examined with the alternate light source, as well as any bird reportedly found near a power line and a random sub-sample of the remaining birds from Genesis and Desert Sunlight (Viner, T. C., R. A. Kagan, and J. L. Johnson, 2014. Using an alternate light source to detect electrically singed feathers and hair in a forensic setting. Forensic Science International, v. 234, p. e25-e29).

Carcass quality varied markedly. If carcasses were in good post mortem condition, representative sections of heart, lung, kidney, liver, brain and gastrointestinal tract as well as any tissues with gross lesions were collected and fixed in 10% buffered formalin. Full tissue sets were collected from the fresh specimens. Formalin-fixed tissues were routinely processed for histopathology, paraffin-embedded, cut at 4 µm and stained with hematoxylin and eosin. Tissues from 63 birds were examined microscopically: 41 from Ivanpah, 1 from Genesis and 21 from Desert Sunlight.

Birds with feather burns were graded based on the extent of the lesions. Grade 1 birds had curling of less than 50% of the flight feathers. Grade 2 birds had curling of 50% or more of the flight feathers. Grade 3 birds had curling and visible charring of contour feathers (Figure 1).

Figure 1: Three grades of flux injury based on extent and severity of burning. Grade 1 (top); Yellow-rumped Warbler with less than 50% of the flight feathers affected (note sparing of the yellow rump feathers). Grade 2 (middle); Northern Rough-winged Swallow initially found alive but unable to fly, with greater than 50% of the flight feathers affected. Grade 3 (bottom); MacGillivray's Warbler with charring of feathers around the head, neck, wings and tail.

Bird Species Recovered at Solar Power Facilities

Tables 1-4 and Appendix 1 summarize 211 identifiable bird remains recovered from the three solar facilities included in this study. These birds constitute a taxonomically diverse assemblage of 71 species, representing a broad range of ecological types. In body size, these species ranged from hummingbirds to pelicans, in ecological type from strictly aerial feeders (e.g. swifts and swallows) to strictly aquatic feeders (pelicans and cormorants) to ground feeders (roadrunners) to raptors (hawks and owls). The species identified were equally divided among resident and non-resident species. Nocturnal as well as diurnal species were represented.

12.D.1

In Tables 1-4 and Appendix 1, bird species are categorized into very general ecological types by foraging zone and residency status. Foraging Zones were "air" (a significant portion of foraging activity performed in the air), "terrestrial" (including foraging both in vegetation and on the ground), and "water" (foraging associated with water, including waders as well as aquatic birds). Residency Status was "resident" (for breeding or year-round residents) and "migrant" (for both passage migrants and non-breeding-season residents). For a number of species, the appropriate classification for residency status was uncertain, due to a lack of detailed knowledge of the sites. The present classification is based on published range maps, and is subject to revision as more information becomes available.

This dataset is not suitable for statistical analysis, due to the opportunistic and unstandardized collection of avian remains at the facilities, and the lack of baseline data on bird diversity and abundance at each site. Nevertheless, a few conclusions can be noted. First, these data do not support the idea that these solar facilities are attracting particular species. Of the 71 bird species identified in remains, only five species were recovered from all three sites. These five were American Coot, Mourning Dove, Lesser Nighthawk, Tree Swallow, and Brown-headed Cowbird, again emphasizing the ecological variety of birds vulnerable to mortality at the solar facilities. Over two-thirds (67%) of the species were found at only a single site

(Appendix 1). That being said, the Desert Sunlight facility had particularly high mortality among waterbirds, suggesting a need to render the ponds at that site inaccessible or unattractive to these species.

The diversity of birds dying at these solar facilities, and the differences among sites, suggest that there is no simple "fix" to reduce avian mortality. These sites appear to represent "equal-opportunity" mortality hazards for the bird species that encounter them. Actions to reduce or mitigate avian mortality at solar facilities will need to be designed on a site-specific basis, and will require much more data on the bird communities at each site, and on how mortality is occurring. Carefully-designed mortality studies might reveal significant patterns of vulnerability that are not evident in these data.

Table 1. Summary data on avian mortality at the three solar sites included in this study. See summary for discussion of Foraging Zone and Residency Status categories.

				Foraging Zone			Residency Status	
SITE	**No. Species**	**No. Remains**	**Identifiable Remains**	**Air**	**Terr**	**Water**	**Resident**	**Migrant**
Ivanpah	49	141	127	26	85	14	63	64
Genesis	15	31	30	12	12	6	20	10
Desert Sun	33	61	56	7	22	27	18	38
TOTALS	71	233	213	47	119	47	101	112

12.D.1

Table 2. Species identified from avian remains at the Desert Sunlight photovoltaic solar facility. MNI = minimum number of individuals of each species represented by the identifiable remains. In some cases (e.g. Cinnamon/Blue-winged Teal), closely related species could not be distinguished based on the available remains, but the Foraging Zone and Residency Status could still be coded, due to the ecological similarities of the species involved. Total identified birds = 56.

DESERT SUNLIGHT		Zone	Residency	MNI
Pied-billed Grebe	*Podilymbus podiceps*	water	migrant	1
Eared Grebe	*Podiceps nigricollis*	water	migrant	5
Sora	*Porzana carolina*	water	migrant	1
American Avocet	*Recurvirostra americana*	water	migrant	1
Cinnamon/Blue-winged Teal	*Anas discors/clypeata*	water	migrant	1
Western Grebe	*Aechmophorus occidentalis*	water	migrant	9
Brown Pelican	*Pelecanus occidentalis*	water	migrant	2
Double-crested Cormorant	*Phalacrocorax auritus*	water	migrant	2
Black-crowned Night-Heron	*Nycticorax nycticorax*	water	migrant	1
Yuma Clapper Rail	*Rallus longirostris*	water	resident	1
American Coot	*Fulica americana*	water	migrant	5
Mourning Dove	*Zenaida macroura*	terr	resident	3
White-winged Dove	*Zenaida asiatica*	terr	resident	1
Lesser Nighthawk	*Chordeiles acutipennis*	air	resident	2
Common Poorwill	*Phalaenoptilus nuttallii*	air	resident	1
Costa's Hummingbird	*Calypte costae*	air	resident	1
Ash-throated Flycatcher	*Myiarchus cinerascens*	air	resident	1
Black-throated/Sage Sparrow	*Amphispiza sp.*	terr	resident	1
Black Phoebe	*Sayornis nigricollis*	air	resident	1
Loggerhead Shrike	*Lanius ludovicianus*	terr	resident	2
Common Raven	*Corvus corax*	terr	resident	1
Horned Lark	*Eremophila alpestris*	terr	migrant	1
Tree Swallow	*Tachycineta bicolor*	air	migrant	1
Townsend's Warbler	*Setophaga townsendi*	terr	migrant	2
Common Yellowthroat	*Geothlypis trichas*	terr	migrant	1
Savannah Sparrow	*Passerculus sandwichensis*	terr	migrant	1
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*	terr	migrant	1
Wilson's Warbler	*Cardellina pusilla*	terr	migrant	2
Western Tanager	*Piranga ludoviciana*	terr	migrant	2
Black-headed Grosbeak	*Pheucticus melanocephalus*	terr	migrant	1
Great-tailed Grackle	*Quiscalus mexicanus*	terr	resident	2
Brown-headed Cowbird	*Molothrus ater*	terr	resident	1

12.D.1

Table 3. Species identified from avian remains at the Genesis trough system solar facility. Total identified birds = 30.

GENESIS		Zone	Residency	MNI
Eared Grebe	*Podiceps nigricollis*	water	migrant	2
Great Blue Heron	*Ardea herodias*	water	migrant	1
American Kestrel	*Falco sparverius*	air	resident	1
Ring-billed Gull	*Larus delawarensis*	water	migrant	2
California Gull	*Larus californianus*	water	resident	1
White-winged Dove	*Zenaida asiatica*	terr	resident	1
Lesser Nighthawk	*Chordeiles acutipennis*	air	resident	2
Say's Phoebe	*Sayornis saya*	air	resident	2
Tree Swallow	*Tachycineta bicolor*	air	migrant	2
Cliff Swallow	*Petrochelidon pyrrhonota*	air	resident	5
Hermit Warbler	*Setophaga occidentalis*	terr	migrant	1
Black-headed Grosbeak	*Pheucticus melanocephalus*	terr	migrant	1
Chipping Sparrow	*Spizella passerina*	terr	resident	1
Bullock's Oriole	*Icterus bullockii*	terr	resident	2
Brown-headed Cowbird	*Molothrus ater*	terr	resident	6

12.D.1

Table 4. Species identified from avian remains at the Ivanpah power tower solar facility. Total identified birds = 127

IVANPAH		Zone	Residency	MNI
Cinnamon Teal	*Anas cyanoptera*	water	migrant	4
Cooper's Hawk	*Accipiter cooperii*	air	migrant	1
Red-shouldered Hawk	*Buteo lineatus*	terr	migrant	1
American Kestrel	*Falco sparverius*	air	resident	1
Peregrine Falcon	*Falco peregrinus*	air	resident	1
American Coot	*Fulica americana*	water	migrant	7
Sora	*Porzana carolina*	water	migrant	1
Spotted Sandpiper	*Actitis maculatus*	water	migrant	2
Greater Roadrunner	*Geococcyx californianus*	terr	resident	6
Yellow-billed Cuckoo	*Coccyzus americanus*	terr	migrant	1
Mourning Dove	*Zenaida macroura*	terr	resident	11
Barn Owl	*Tyto alba*	terr	resident	1
Lesser Nighthawk	*Chordeiles acutipennis*	air	resident	3
Common Poorwill	*Phalaenoptilus nuttallii*	air	resident	1
White-throated Swift	*Aeronautes saxatalis*	air	resident	1
Allen's/Rufous Hummingbird	*Selasphorus sp.*	air	migrant	1
Northern Flicker	*Colaptes auratus*	terr	resident	1
Ash-throated Flycatcher	*Myiarchus cinerascens*	air	resident	1
Loggerhead Shrike	*Lanius ludovicianus*	terr	resident	3
Warbling Vireo	*Vireo gilvus*	terr	migrant	1
Common Raven	*Corvus corax*	terr	resident	2
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	air	migrant	2
Tree Swallow	*Tachycineta bicolor*	air	migrant	2
Verdin	*Auriparus flaviceps*	terr	resident	3
Blue-gray Gnatcatcher	*Polioptila caerulea*	terr	resident	1
Northern Mockingbird	*Mimus polyglottos*	terr	resident	1
American Pipit	*Anthus rubescens*	terr	migrant	4
Orange-crowned Warbler	*Oreothlypis celata*	terr	migrant	1
Lucy's Warbler	*Oreothlypis luciae*	terr	resident	1
Black-throated Gray Warbler	*Setophaga nigrescens*	terr	migrant	1
Yellow-rumped Warbler	*Setophaga coronata*	air	migrant	14
Townsend's Warbler	*Setophaga townsendi*	terr	migrant	2
Yellow Warbler	*Setophaga petechia*	terr	migrant	1
Black-and-white Warbler	*Mniotilta varia*	terr	migrant	1
Wilson's Warbler	*Cardellina pusilla*	terr	migrant	2
MacGillivray's Warbler	*Oporornis tolmei*	terr	migrant	1
Western Tanager	*Piranga ludoviciana*	terr	migrant	2
Lazuli Bunting	*Passerina amoena*	terr	migrant	1
Blue Grosbeak	*Passerina caerulea*	terr	resident	1
Green-tailed Towhee	*Pipilo chlorurus*	terr	migrant	1
Brewer's Sparrow	*Spizella breweri*	terr	resident	3
Chipping Sparrow	*Spizella passerina*	terr	resident	3
Black-throated Sparrow	*Amphispiza bilineata*	terr	resident	3
Savannah Sparrow	*Passerculus sandwichensis*	terr	migrant	2
White-crowned Sparrow	*Zonotrichia leucophrys*	terr	migrant	6

12.D.1

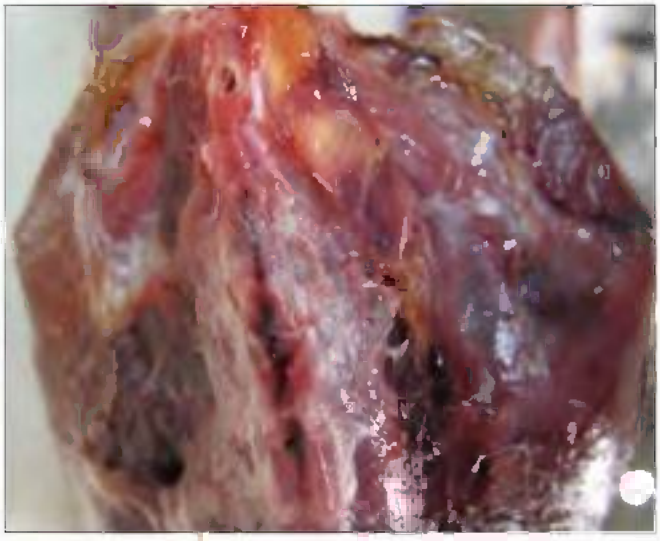
IVANPAH		Zone	Residency	MNI
Pine Siskin	*Spinus pinus*	terr	migrant	1
House Finch	*Carpodacus mexicanus*	terr	resident	13
Brown-headed Cowbird	*Molothrus ater*	terr	resident	1
Great-tailed Grackle	*Quiscalus mexicanus*	terr	resident	

Cause of Death of Birds Found at the Solar Power Plants

Photovoltaic facility (Desert Sunlight):

Sixty-one birds from 33 separate species were represented from Desert Sunlight. Due to desiccation and scavenging, a definitive cause of death could not be established for 22 of the 61 birds (see Table 5). Feathers could be examined in all cases, however, and none of the 61 bird remains submitted from the PV facility had visible evidence of feather singeing, a clear contrast with birds found at Ivanpah.

Blunt force impact trauma was determined to have been the cause of death for 19 Desert Sunlight birds including two Western Grebes (*Aechmophorus occidentalis*) and one each of 16 other species. Impact (blun force) trauma is diagnosed by the presence of fractures and internal and/or external contusions. In particular, bruising around the legs, wings and chest are consistent with crash-landings while fractures of the head and/or neck are consistent with high-velocity, frontal impact (such as may result from impacting a mirror).



Predation was the immediate cause of death for 15 birds. Lesions supporting the finding of predation included decapitation or missing parts of the body with associated hemorrhage (9/15), and lacerations of the skin and pectoral muscles. Eight of the predated birds from Desert Sunlight were

Figure 2: Predation trauma (top) resulting in traumatic amputation of the head and neck (American Avocet) and impact trauma (bottom) causing bruising of the keel ridge of the sternum (Brown Pelican).

12.D.1

grebes, which are unable to easily take off from land. This suggests a link between predation and stranding and/or impact resulting from confusion of the solar panels with water (see Discussion).

Parabolic trough facility (Genesis):

Thirty-one birds were collected from this site. There were 15 species represented. Those found in the greatest numbers were Brown-headed Cowbirds and Cliff Swallows, though no more than 6 individuals from any given species were recovered. Overall, carcass quality was poor and precluded definitive cause of death determination in 17/31 birds (Table 5). Identifiable causes of death consisted of impact trauma (6/31) and predation trauma (2/31). Necropsy findings were similar to those at Desert Sunlight with fractures and hemorrhage noted grossly. Predation trauma was diagnosed in two birds, a Cliff Swallow and a Ring-billed Gull.

Power tower facility (Ivanpah):

Ivanpah is the only facility in this study that produces solar flux, which is intense radiant energy focused by the mirror array on the power-generating tower. Objects that pass through this flux, including insects and birds, encounter extreme heat, although the extent of heating depends on many variables, including the duration of exposure and the precise location in the flux beam. 12.D.1

From Ivanpah, 141 birds were collected and examined. Collection dates spanned a period of one year and five months (July 2012 to December 2013) and included at least seven months of construction during which time the towers were not actively fluxing (2013). There were 49 species represented (Table 4). Those found in the greatest numbers were Yellow-rumped Warblers (*Setophaga coronata;* 14), House Finches (*Carpodacus mexicanus*; 13), Mourning Doves (*Zenaida macroura*; 11) and American Coots (*Fulica americana*; 7). Yellow-rumped Warblers and House Finches were found exclusively at the power tower site.

Solar flux injury was identified as the cause of death in 47/141 birds. Solar flux burns manifested as feather curling, charring, melting and/or breakage and loss. Flight feathers of the tail and/or wings were invariably affected. Burns also tended to occur in one or more of the following areas; the sides of the body (axillae to pelvis), the dorsal coverts, the tops and/sides of the head and neck and the dorsal body wall (the back). Overlapping portions of feathers and light-colored feathers were often spared (Figures 3 and 4).

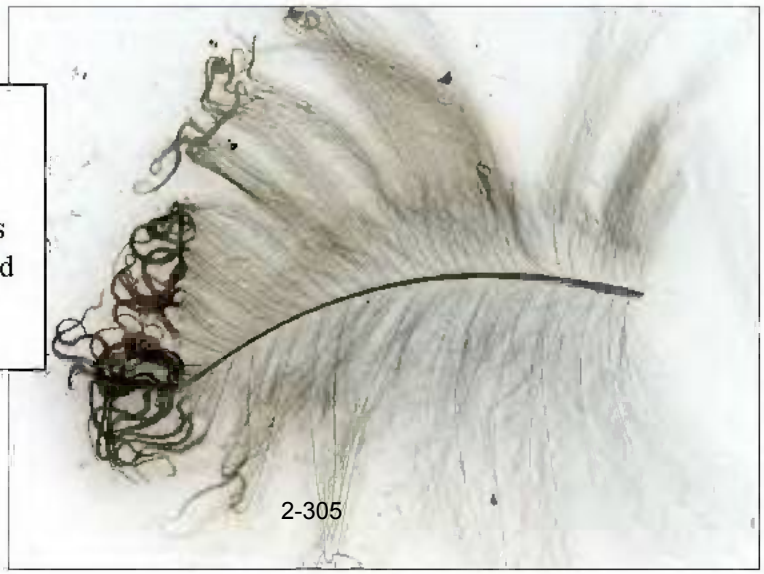


Figure 3: contour feather from the back of a House Finch with Grade 3 solar flux injury. The feather has curling and charring limited to the exposed tip.

Figure 4: Feather from a Peregrine Falcon with Grade 2 solar flux injury. Note burning of dark feather bands with relative sparing of light bands.

The yellow and red rumps of Yellow-rumped Warblers and House Finches respectively remained strikingly unaffected (See Figure 1). Charring of head feathers, in contrast, was generally diffuse across all color patterns. A pattern of spiraling bands of curled feathers across or around the body and wings was often apparent.

12.D.1

Table 5. Cause of death (COD) data

Cause of Death	Ivanpah	Genesis	Desert Sunlight	Total
Solar Flux	47	0	0	47
Impact trauma	24	6	19	49
Predation trauma	5	2	15	22
Trauma of undetermined cause	14	0	0	14
Electrocution	1	0	0	1
Emaciation	1	0	0	1
Undetermined (remains in poor condition)	68	17	22	85
No evident cause of death	3	6	5	14
Total	141	31	61	233

Eight birds were assigned a feather damage Grade of 1 with curling of less than 50% of the flight feathers. Six of these had other evidence of acute trauma (75%). Five birds were Grade 2, including three birds that were found alive and died shortly afterwards. Of these birds, 2 (the birds found dead) also had evidence of acute trauma. Twenty-eight birds were Grade 3; with charring of body feathers. Of these birds, 21/28

(28%) had other evidence of acute trauma. Remaining carcasses (6) were incomplete and a grade could not be assigned.

Twenty-nine birds with solar flux burns also had evidence of impact trauma. Trauma consisted of skull fractures or indentations (8), sternum fractures (4), one or more rib fractures (4), vertebral fractures (1), leg fracture (3), wing fracture (1) and/or mandible fracture (1). Other signs of trauma included acute macroscopic and/or microscopic internal hemorrhage. Location found was reported for 39 of these birds; most of the intact carcasses were found near or in a tower. One was found in the inner heliostat ring and one was found (alive) on a road between tower sites. The date of carcass collection was provided for 42/47. None were found prior to the reported first flux (2013).

12.D.1

Figure 5: The dorsal aspect of the wing from a Peregrine Falcon (the same bird as shown in Figure 4) with Grade 2 lesions. Note extensive curling of feathers without visible charring. This bird was found alive, unable to fly, emaciated and died shortly thereafter. These findings demonstrate fatal loss of function due to solar flux exposure in the absence of skin or other soft tissue burns.

Among the solar flux cases, a variety of bird species were affected though all but one (a raptor) was a passerine (Appendix 2). House Finches and yellow-rumped Warblers were most often represented (10/47 and 12/47 respectively). For the birds in which species could be determined (41/47), insects were a major

dietary component in all but two species. These were an unidentified hummingbird (*Selasphorus*) species (known to include insects in the diet) and a Peregrine Falcon (a species that feeds on small birds).

Four birds were reportedly found alive and taken to a wildlife rehabilitation center where they died one to a few days later (exact dates were not consistently provided). Three had Grade 2 feather burns and one had Grade 3 feather burns. None had other evidence of trauma. Body condition was reduced in all of the birds (two considered thin and two emaciated) based on a paucity of fat stores and depletion of skeletal muscling. The four birds were of four different species and consisted of three passerines and one raptor.

The second most commonly diagnosed cause of death at the Ivanpah facility was impact (or blunt force) trauma (24/141 birds). Necropsy findings were as previously described at the Desert Sunlight facility. Impact marks were reported on heliostat mirrors adjacent to the carcasses in 5 cases and mirrors were described as being vertically-oriented in 5 cases. Specific carcass locations were reported for 18 of the birds. Those birds were found in a variety of areas: below heliostats (8/18), in or near tower and powerblock buildings (4/18), on roads (2/18), below power lines (2/18), in the open (1/18) and by a desert tortoise pen (1/18).

Predation was determined to be the cause of death for five of the birds. A coot and a Mourning Dove were found with extensive trauma and hemorrhage to the head and upper body consisting of lacerations, crush trauma and/or decapitation. One of the birds (an American Coot) was found near a kit fox shelter site. One bird (Northern Mockingbird) was found near the fence line and the third (a Mourning Dove) in an alley way. Two more birds (an unidentified sparrow and an American Pipit) were observed being eaten by one of the resident Common Ravens.

12.D.1

Discussion of Cause of Death of Birds Found at the Solar Power Plants

Impact trauma:

Sheet glass used in commercial and residential buildings has been well-established as a hazard for birds, especially passerines (Klem 1990, 2004, 2006, Loss et al. 2014). A recent comprehensive review estimated that between 365-988 million birds die annually by impacting glass panels in the United States alone (median estimate 599 million, Loss et al. 2014). Conditions that precipitate window strike events include the positioning of vegetation on either side of the glass and the reflective properties of the window. Glass panels that reflect trees and other attractive habitat are involved in a higher number of bird collisions.

The mirrors and photovoltaic panels used at all three facilities are movable and generally directed upwardly, reflecting the sky. At the Ivanpah facility, when heliostats are oriented vertically (typically for washing or installation, personal communication, RAK) they appear to pose a greater risk for birds. Of the eight birds reported found under a heliostat, heliostats were vertically-oriented in at least 5 cases. (D Klem Jr., DC Keck, KL Marty, AJ Miller Ball, EE Niciu, and CT Platt. 2004. Effects of window angling, feeder placement, and scavengers on avian mortality at plate glass. Wilson Bulletin. 116(1):69-73; D Klem Jr. 2006. Glass: A deadly conservation issue for birds. Bird Observer 34(2):73-81; D Klem Jr. 1990.

Collisions between birds and windows: mortality and prevention. Journal of Field Ornithology 61:120–128; Loss, S.R., T. Will, S.S.Loss, and P.P. Marra. 2014. Bird-building collisions in the United States: Estimates of annual mortality and species vulnerability. Condor 116: 8-23). Studies with aquatic insects have found that vertically-oriented black glass surfaces (similar to solar panels) produced highly polarized reflected light, making them highly attractive (Kriska, G., P. Makik, I. Szivak, and G. Horvath. 2008. Glass buildings on river banks as "polarized light traps" for mass-swarming polarotactic caddis flies. Naturwissenschaften 95: 461–467).

A desert environment punctuated by a large expanse of reflective, blue panels may be reminiscent of a large body of water. Birds for which the primary habitat is water, including coots, grebes, and cormorants, were over-represented in mortalities at the Desert Sunlight facility (44%) compared to Genesis (19%) and Ivanpah (10%). Several factors may inform these observations. First, the size and continuity of the panels differs between facilities. Mirrors at Ivanpah are individual, 4 x 8' panels that appear from above as stippling in a desert background (Figure 6). Photovoltaic panels at Desert Sunlight are long banks of adjacent 27.72 x 47.25" panels (70 x 120 cm), providing a more continuous, sky/water appearance. Similarly, troughs at Genesis are banks of 5 x 5.5' panels that are up to 49-65 meters long.

12.D.1

Figure 6: The Ivanpah Solar Electric Generating System as seen via satellite. The mirrored panels are 5 x 8 feet.

There is growing concern about "polarized light pollution" as a source of mortality for wildlife, with evidence that photovoltaic panels may be particularly effective sources of polarized light in the environment (see Horvath et al. 2010. Reducing the maladaptive attractiveness of solar panels to polarotactic insects. Conservation Biology 24: 1644-1653, and ParkScience, Vol. 27, Number 1, 2010; available online at: http://www.nature.nps.gov/parkscience/index.cfm?ArticleID=386&ArticleTypeID=5; as well as discussion of this issue in the Desert Sunlight Final Environmental Impact Statement, Chapter 4, pp. 14-15).

Variables that may affect the illusory characteristics of solar panels are structural elements or markings that may break up the reflection. Visual markers spaced at a distance of 28 cm or less have been shown to reduce the number of window strike events on large commercial buildings (City of Toronto Green Development Standard: Bird-friendly development guidelines. March 2007). Mirrors at the Ivanpah facility are unobscured by structures or markings and present a diffuse reflective surface. Photovoltaic panels at Desert Sunlight are arranged as large banks of small units that are 60 x 90 cm. The visually uninterrupted expanse of both these types of heliostat is larger than that which provides a solid structure visual cue to passerines. Parabolic troughs at Genesis have large, diffusely reflective surfaces between seams that periodically transect the bank of panels at 5.5` intervals. Structures within the near field, including the linear concentrator and support arms, and their reflection in the panels and may provide a visual cue to differentiate the panel as a solid structure.

12.D.1

The paper by Horvath et al cited above provides experimental evidence that placing a white outline and/or white grid lines on solar panels significantly reduced the attractiveness of these panels to aquatic insects, with a loss of only 1.8% in energy-producing surface area (p. 1651). While similar detailed studies have yet to be carried out with birds, this work, combined with the window strike results, suggest that significant reductions in avian mortality at solar facilities could be achieved by relatively minor modifications of panel and mirror design. This should be a priority for further research.

Finally, ponds are present on the property of the Desert Sunlight and Genesis facilities. The pond at Genesis is netted, reducing access by migratory birds, while the pond at Desert Sunlight is open to flighted wildlife. Thus, birds are both attracted to the water feature at Desert Sunlight and habituated to the presence of an accessible aquatic environment in the area. This may translate into the misinterpretation of a diffusely reflected sky or horizonal polarized light source as a body of water.

Stranding and Predation:

Predation is likely linked to panel-related impact trauma and stranding. Water birds were heavily over-represented in predation mortalities at Desert Sunlight. Of the 15 birds that died due to predation, 14 make their primary habitat on water (coots, grebes, a cormorant, and an avocet). A single White-winged Dove was the only terrestrial-based predation mortality in the submitted specimens. This is in contrast to blunt trauma mortalities at Desert Sunlight in which 8 of the 19 birds determined to have died of impact trauma were water species.

Locations of the birds when found dead were noted on several submissions. Of the birds that died of predation for which locations were known, none were located near ponds. The physiology of several of

these water birds is such that locomotion on land is difficult or impossible. Grebes in particular have very limited mobility on land and require a run across water in order to take off (Jehl, J. R., 1996. Mass mortality events of Eared Grebes in North America. Journal of Field Ornithology 67: 471–476). Thus, these birds likely did not reach their final location intentionally. Ponds at the PV and trough sites are fenced. prohibiting terrestrial access by predators. Birds on the water or banks of the pond are inaccessible to resident predators. Therefore, it is unlikely that the birds were captured at the pond and transported by a predator into the area of the panels. Attempts to land or feed on the panels because of their deceptive appearance may have injured the birds to the point that they could not escape to safety, or inadvertently stranded the birds on a substrate from which they could not take flight. We believe that an inability to quickly flee after striking the panels and stranding on the ground left these birds vulnerable to opportunistic predators. At least two types of predators, kit foxes and ravens, have been observed in residence at the power tower and PV facilities and ravens have been reported at the trough site (personal communication and observation, RAK). Additionally, histories for multiple birds found at the tower site document carcasses found near kit fox shelters or being eaten or carried by a raven.

Solar Flux:

Avian mortality due to exposure to solar flux has been previously explored and documented (McCrary, M. D., McKernan, R. L., Schreiber, R. W., Wagner, W. D., and Sciarrotta, T. C. Avian mortality at a solar energy power plant. Journal of Field Ornithology. 57(2): 135-141). Solar flux injury to the birds of this report, as expected, occurred only at the power tower facility. Flux injury grossly differed from other sources of heat injury, such as electrocution or fire. Electrocution injury requires the bridging of two contact points and is, therefore, seen almost exclusively in larger birds such as raptors. Contact points tend to be on the feet, carpi and/or head and burns are often found in these areas. Electrocution causes deep tissue damage as opposed to the surface damage of fire or solar flux. Other sequelae include amputation of limbs with burn marks on bone, blood vessel tears and pericardial hemorrhage. Burns from fires cause widespread charring and melting of feathers and soft tissues and histopathologic findings of soot inhalation or heat damage to the respiratory mucosa. None of these were characteristics of flux injury. In the flux cases small birds were over-represented, had burns generally limited to the feathers and internal injuries attributable to impact. Flux injury inconsistently resulted in charring, tended to affect feathers along the dorsal aspects of the wings and tail, and formed band-like patterns across the body (Divincenti, F. C., J. A. Moncrief, and B. A. Pruitt. 1969. Electrical injuries: a review of 65 cases. The Journal of Trauma 9: 497-507).

12.D.1

Proposed mechanisms of solar flux-related death follow one or a combination of the following pathways:

- impact trauma following direct heat damage to feathers and subsequent loss of flight ability
- starvation and/or thermoregulatory dysfunction following direct heat damage to feathers
- shock
- soft tissue damage following whole-body exposure to high heat
- ocular damage following exposure to bright light.

Necropsy findings from this study are most supportive of the first three mechanisms.

Loss of feather integrity has effects on a bird's ability to take off, land, sustain flight and maneuver. Tail feathers are needed for lift production and maneuverability, remiges are needed for thrust and lift and feathers along the propatagium and coverts confer smoothness to the avian airfoil. Shortening of primary flight feathers by as little as 1.6 cm with loss of secondary and tertiary remiges has been shown to eliminate take-off ability in house sparrows further demonstrating the importance of these feathers (Brown, R. E., and A. C. Cogley. 1996. Contributions of the propatagium to avian flight: Journal of Experimental Zoology 276: 112-124). Loss of relatively few flight feathers can, therefore, render a bird unable or poorly-able to fly. Birds encountering the flux field at Ivanpah may fall as far as 400 feet after feather singeing. Signs of impact trauma were often observed in birds with feather burns and are supportive of sudden loss of function (Beaufrere, H., 2009. A review of biomechanic and aerodynamic considerations of the avian thoracic limb. Journal of Avian Medicine and Surgery 23: 173-185).

Birds appear to be able to survive flux burns in the short term, as evidenced by the collection of several live birds with singed feathers. Additionally, Forensic Lab staff observed a falcon or falcon-like bird with a plume of smoke arising from the tail as it passed through the flux field. Immediately after encountering the flux, the bird exhibited a controlled loss of stability and altitude but was able to cross the perimeter fence before landing. The bird could not be further located following a brief search (personal observation. RAK and EOE). Birds that initially survive the flux exposure and are able to glide to the ground or a perch may be disabled to the point that they cannot efficiently acquire food, escape predators or thermoregulate. Observations of emaciation in association with feather burns in birds found alive is supportive of debilitation subsequent to flux exposure. More observational studies and follow-up are required to understand how many birds survive flux exposure and whether survival is always merely short-term. As demonstrated by the falcon, injured birds (particulary larger birds), may be ambulatory enough to glide or walk over the property line, indicating a need to include adjacent land in carcass searches. 12.D.1

There was evidence of acute skin burns on the heads of some of the Grade 3 birds that were found dead. But interestingly, tissue burn effects could not be demonstrated in birds known to have survived short periods after being burned. Hyperthermia causing instantaneous death manifests as rapid burning of tissue, but when death occurs a day or later there will be signs of tissue loss, inflammation, proteinic exudate and/or cellular death leading to multisystemic organ failure. The beginnings of an inflammatory response to injury can be microscopically observed within one to a few hours after the insult and would have been expected in any of the four birds found alive. Signs of heat stroke or inhalation of hot air should have been observable a day or more after the incident. Rather, in these cases extensive feather burns on the body largely appeared to be limited to the tips of the feathers with the overlapping portions insulating the body as designed. This, in conjunction with what is likely only a few seconds or less spent in the flux, suggests that skin or internal organ damage from exposure to high temperatures in solar flux may not be a major cause of the observed mortality.

Ocular damage following light exposure was also considered but could not be demonstrated in the submitted birds. In the four birds that initially survived, there were no signs of retinal damage, inflammation or other ocular trauma. Given the small sample size, this does not preclude sight impairment as a possible sequela but clinical monitoring of survivors would be needed to draw more definitive conclusions.

Other/Undetermined:

Powerline electrocution was the cause of death for one bird (a juvenile Common Raven) at the Ivanpah facility. Electrocution at these solar facilities is a potential hazard but, thus far, appears to be an uncommon cause of death.

Smashed birds (13/233) were found at all three locations. Detailed carcass collection information was provided for 6; all were found on roads. Though poor carcass quality in all cases precluded definitive cause death determination, circumstances and carcass condition suggest vehicle trauma as the cause of deaths. The relatively low numbers of vehicle collisions may be attributed to slow on-site vehicle speeds and light traffic. Vehicle collisions, therefore, do not appear to be a major source of mortality and would be expected to decrease as construction ends.

There was a large number of birds (85/233) for which a cause of death could not be determined due to poor carcass condition. The arid, hot environment at these facilities leads to rapid carcass degradation which greatly hinders pathology examination. Results were especially poor for birds from the Genesis facility, where the cause of death(s) for 23/31 (74%) could not be determined. These results underscore the need for carcasses to be collected soon after death. More frequent, concerted carcass sweeps are advised.

Insect mortality and solar facilities as "mega-traps"

12.D.1

An ecological trap is a situation that results in an animal selecting a habitat that reduces its fitness relative to other available habitats (Robertson, B.A. and R.L. Hutto. 2006. A framework for understanding ecological traps and an evaluation of existing evidence. Ecology 87: 1075-1085; Robertson, B.A., J.S. Rehage, and Sih, A. 2013. Ecological novelty and the emergence of evolutionary traps. Trends in Ecology and Evolution 28: 552-560).

A wide variety of circumstances may create ecological traps, ranging from subtle (songbirds attracted to food resources in city parks, where they are vulnerable to unnaturally high populations of predators) to direct (birds are attracted to oil-filled ponds, believing it to be water, and become trapped). It appears that solar flux facilities may act as "**mega-traps,**" which we define as artificial features that attract and kill species of multiple trophic layers. The strong light emitted by these facilities attract insects, which in turn attract insect-eating birds, which are incapacitated by solar flux injury, thus attracting predators and creating an entire food chain vulnerable to injury and death.

OLE staff observed large numbers of insect carcasses throughout the Ivanpah site during their visit. In some places there were hundreds upon hundreds of butterflies (including monarchs, *Danaus plexippus*) and dragonfly carcasses. Some showed singeing, and many appeared to have just fallen from the sky. Careful observation with binoculars showed the insects were active in the bright area around the boiler at the top of the tower. It was deduced that the solar flux creates such a bright light that it is brighter than the surrounding daylight. Insects were attracted to the light and could be seen actively flying the height of the tower. Birds were also observed feeding on the insects. At times birds flew into the solar flux and ignited. Bird carcasses recovered from the site showed the typical singed feathers. The large populations of insects

may also attract indigenous bat species. which were seen roosting in structures at the base of the power tower.

Monarch butterflies in North America – both east and west of the Rocky Mountains – have been documented to be in decline (see the North American Monarch Conservation Plan, available at: http://www.mlmp.org/Resources/pdf/5431_Monarch_en.pdf). Proposed causes include general habitat loss and specific loss of milkweed, upon which the butterflies feed and reproduce. Considering the numerous monarch butterfly carcasses seen at the Ivanpah facility, it appears that solar power towers could have a significant impact on monarch populations in the desert southwest. Analysis of the insect mortality at Ivanpah, and systematic observations of bird/insect interactions around the power tower, is clearly needed.

Bird species affected by solar flux include both insectivores (e.g. swallows, swifts, flycatchers, and warblers) and raptors that prey on insect-feeding birds. Based on observations of the tower in flux and the finding of large numbers of butterflies, dragonflies and other insects at the base of the tower and in adjacent buildings it is suspected that the bright light generated by solar flux attracts insects, which in turn attracts insectivores and predators of insectivores. Waterbirds and other birds that feed on vegetation were not found to have solar flux burns. Birds were observed perching and feeding on railings at the top of the tower, apparently in response to the insect aggregations there.

Further, dead bats found at the Ivanpah site could be attracted to the large numbers of insects in the area. Nineteen bats from the condenser area of the power tower facility have been submitted to NFWFL for further evaluation. These bats belong to the Vespertilionidae and Molossidae families, which contain species considered by the Bureau of Land Management to be sensitive species in California. Preliminary evaluation revealed no apparent singing of the hair, and analysis is ongoing. 12.D.1

Solar flux and heat associated with solar power tower facilities

Despite repeated requests, we have been unsuccessful in obtaining technical data relating to the temperature associated with solar flux at the Ivanpah facility. The following summarizes the information we have gathered from other sources.

Figure 7 Ivanpah solar power facilities http://ivanpahsolar.com/about

The Ivanpah solar energy generating facility consists of mirrors that reflect sunlight to a tower. In the tower sits a boiler that generates steam which then powers a turbine.

At the top of a 459 foot tall tower sits a boiler (solar receiver) that is heated by the sun rays reflected by 300,000 mirrors, called solar heliostats. When the concentrated sunlight strikes the boiler tubes, it heats the water to create superheated steam. The high temperature steam is then piped from the boiler to a turbine where electricity is generated (http://ivanpahsolar.com/about visited on 01/20/2014).

If all the solar heliostats are focused on the solar tower the beams multiply the strength of sunlight by 5000 times, and this generates temperatures at the solar tower in excess of 3600° Fahrenheit (> 1982° Celsius). Since steel melts at 2750° Fahrenheit (1510° Celsius), only a percentage of heliostats are focused on the solar receiver so that the optimal temperature at the tower is approximately 900° Fahrenheit (~482° Celsius) ("How do they do it" Wag TV for Discovery Channel, Season 3, Episode 15, "Design Airplane Parachutes, Create Solar Power, Make Sunglasses" Aired August 25, 2009).

Figure 8: Seville solar power facility (http://inhabitat.com/sevilles-solar-power-tower)

A solar steam plant in Coalinga that also uses heliostat technology for extracting oil is on record stating that the steam generator is set to about 500° Celsius. (http://abclocal.go.com/kDSn/story?section=news%2Fbusiness&id=8377469 Viewed Jan 21, 2013)

Temperatures measured by the authors at the edge of the solar complex on the surface of a heliostat were approximately 200° Fahrenheit (~93° Celsius). Therefore, there is a gradient of temperature from the edge of the solar field to the tower that ranges from 200° to 900° Fahrenheit.

12.D.1

There is a phenomenon that occurs when the heliostats are focused on the tower and electricity is being generated. The phenomenon can be described as either a circle of clouds around the tower or, at times, a cloud formed on the side that is receiving the solar reflection. It appears as though the tower is creating clouds. Currently we propose two hypotheses of why this "cloud" is formed. The first hypothesis is simply the presumption that the high heat associated with towers is condensing the air, and forming the

Figure 9: Tower 1 (bright white) is shown under power. Tower 2 (black) is not operating.

clouds. The second hypothesis is that this phenomenon does not represent clouds at all rather it is a place in space where the heliostats that are not being used to generate heat are focused. Under this scenario, it is a place where the mirrors focus the excess energy not being used to generate electricity.

Ivanpah employees and OLE staff noticed that close to the periphery of the tower and within the reflected solar field area, streams of smoke rise when an object crosses the solar flux fields aimed at the tower. Ivanpah employees used the term "streamers" to characterize this occurrence.

When OLE staff visited the Ivanpah Solar plant, we observed many streamer events. It is claimed that these events represent the combustion of loose debris, or insects. Although some of the events are likely that, there were instances in which the amount of smoke produced by the ignition could only be explained by a larger flammable biomass such as a bird. Indeed OLE staff observed birds entering the solar flux and igniting, consequently becoming a streamer.

OLE staff observed an average of one streamer event every two minutes. It appeared that the streamer events occurred more frequently within the "cloud" area adjacent to the tower. Therefore we hypothesize that the "cloud" has a very high temperature that is igniting all material that traverses its field.
One possible explanation of this this phenomenon is that the "cloud" is a convergent location where heliostats are "parked" when not in use. Conversely it undermines the condensation hypothesis, given that birds flying through condensation clouds will not spontaneously ignite. 12.D.1

Temperatures required to burn feathers

Many of the carcasses recovered from the Ivanpah Solar plant after the plant became operational showed singing of feathers as shown in Figure 10.

Figure 10: Singed feathers from a Northern Rough-winged Swallow

In order to investigate at what temperature feathers burn/singe, we exposed feathers to different air temperatures. Each feather was exposed to a stream of helium and air for 30 seconds. The results indicate that at 400° Celsius (752° Fahrenheit) after 30 seconds the feather begins to degrade. But at 450° and

Figure 11: Results of exposing feathers to different temperatures (in degrees Celsius)

500° Celsius (842° and 932° Fahrenheit respectively) the feathers singed as soon as they made contact with the superheated air (Figure 11). Therefore, when singed birds are found, it can be inferred that the temperatures in the solar flux at the time a bird flew through it was at least 400° Celsius (752° Fahrenheit). This inference is consistent with the desired operating temperature of a power tower solar boiler (482° Celsius).

The fact that a bird will catch on fire as it flies through the solar flux has been confirmed by a Chevron engineer who works at the Coalinga Chevron Steam plant, a joint venture of Chevron and BrightSource Solar. (http://abclocal.go.com/kDSn/story?section=news%2Fbusiness&id=8377469 Viewed Jan 21, 2013)

12.D.1

Conclusions and Recommendations

In summary, three main causes of avian mortality were identified at these facilities: impact trauma, predation and solar flux. Birds at all three types of solar plants were susceptible to impact trauma and predators. Solar flux injury was unique to the power tower facility. Solar facilities, in general, do not appear to attract particular species, rather an ecological variety of birds are vulnerable. That said, certain mortality and species trends were evident, such as waterbirds at Desert Sunlight, where open water sources were present.

Specific hazards were identified, including vertically-oriented mirrors or other smooth reflective panels; water-like reflective or polarizing panels; actively fluxing towers; open bodies of water; aggregations of insects that attracted insectivorous birds; and resident predators. Making towers, ponds and panels less attractive or accessible to birds may mitigate deaths. Specific actions include placing perch-guards on power tower railings near the flux field, properly netting or otherwise covering ponds, tilting heliostat mirrors during washing and suspending power tower operation at peak migration times.

Visual cues should be retrofitted to existing panels and incorporated into new panel design. These cues may include UV-reflective or solid, contrasting bands spaced no further than 28 cm from each other. This arrangement has been shown to significantly reduce the number of passerines hitting expanses of windows on commercial buildings. Spacing of 10 cm eliminates window strikes altogether. Further exploration of panel design and orientation should be undertaken with researchers experienced in the field (Daneil Klem Jr. of Muhlenberg College) to determine causes for the high rate of impact trauma, and designs optimized to reduce these mortalities.

Challenges to data collection included rapid degradation of carcass quality hindering cause of death and species determination: large facilities which are difficult to efficiently search for carcasses: vegetation and panels obscuring ground visibility: carcass loss due to scavenging: and inconsistent documentation of carcass history. Searcher efficiency has been shown to have varying influences on carcass recovery with anywhere from 30% to 90% detection of small birds achieved in studies done at wind plants (Erickson et al., 2005). Scavengers may also remove substantial numbers of carcasses. In studies done on agricultural fields, up to 90% of small bird carcasses were lost within 24 hours (Balcomb, 1986; Wobeser and Wobeser, 1992). OLE staff observed apparently resident ravens at the Ivanpah power tower. Ravens are efficient scavengers, and could remove large numbers of small bird carcasses from the tower vicinity. (Erickson, W. P., G. D. Johnson, and D. P. Young, Jr., 2005, A summary and comparison of bird mortality from anthropogenic causes with an emphasis on collisions: U S Forest Service General Technical Report PSW, v. 191, p. 1029-1042; Balcomb, R., 1986, Songbird carcasses disappear rapidly from agricultural fields: Auk, v. 103, p. 817-820; Wobeser, G., and A. G. Wobeser, 1992, Carcass disappearance and estimation of mortality in a simulated die-off of small birds: Journal of Wildlife Diseases, v. 28, p. 548-554.) 12.D.1

Given these variables it is difficult to know the true scope of avian mortality at these facilities. The numbers of dead birds are likely underrepresented, perhaps vastly so. Observational and statistical studies to account for carcass loss may help us to gain a better sense of how many birds are being killed. Complete histories would help us to identify factors (such as vertical placement of mirrors) leading to mortalities. Continued monitoring is also advised as these facilities transition from construction to full operation. Of especial concern is the Ivanpah facility which was not fully-functioning at the time of the latest carcass submissions. In fact, all but 7 of the carcasses with solar flux injury and reported dates of collection were found at or prior to the USFWS site visit (October 21-24, 2013) and, therefore, represent flux mortality from a facility operating at only 33% capacity. Investigation into bat and insect mortalities at the power tower site should also be pursued.

ACKNOWLEDGMENTS

We wish to acknowledge the invaluable assistance and insights of S.A. Michael Clark and S.A. Ed Nieves.

Appendix 1. List of all 71 species recovered from the three solar energy sites. In this table, remains of closely related taxa that could not be definitively identified (e.g. Cinnamon/Blue-winged Teal and Black-throated/Sage Sparrow) are assigned to the biogeographically more likely taxon. In all such cases, the possible taxa are ecologically similar. All of these species are MBTA-listed.

SPECIES		Zone	Residency	Sites	MNI
Cinnamon Teal	*Anas cyanoptera*	water	migrant	DS,IV	5
Pied-billed Grebe	*Podilymbus podiceps*	water	migrant	DS	1
Western Grebe	*Aechmorphorus occidentalis*	water	migrant	DS	9
Eared Grebe	*Podiceps nigricollis*	water	migrant	DS,GN	5
Brown Pelican	*Pelecanus occidentalis*	water	migrant	DS	2
Double-crested Cormorant	*Phalacrocorax auritus*	water	migrant	DS	2
Great Blue Heron	*Ardea herodias*	water	migrant	GN	1
Black-crowned Night-Heron	*Nycticorax nycticorax*	water	migrant	DS	1
Cooper's Hawk	*Accipiter cooperii*	air	migrant	IV	1
Red-shouldered Hawk	*Buteo lineatus*	terr	migrant	IV	1
American Kestrel	*Falco sparverius*	air	resident	GN,IV	2
Peregrine Falcon	*Falco peregrinus*	air	resident	IV	1
American Coot	*Fulica americana*	water	migrant	DS, IV	12
Yuma Clapper Rail	*Rallus longirostris yumanensis*	water	resident	DS	1
Sora	*Porzana carolina*	water	migrant	DS,IV	2
American Avocet	*Recurvirostra americana*	water	migrant	DS	1
Spotted Sandpiper	*Actitis maculatus*	water	migrant	IV	2
Ring-billed Gull	*Larus delawarensis*	water	migrant	GN	2
California Gull	*Larus californianus*	water	resident	GN	1
Greater Roadrunner	*Geococcyx californianus*	terr	resident	IV	5
Yellow-billed Cuckoo	*Coccyzus americanus*	terr	migrant	IV	1
Mourning Dove	*Zenaida macroura*	terr	resident	DS, IV	14
White-winged Dove	*Zenaida asiatica*	terr	resident	DS,GN	2
Barn Owl	*Tyto alba*	terr	resident	IV	1
Lesser nighthawk	*Chordeiles acutipennis*	air	resident	DS,GN,IV	7
Common Poorwill	*Phalaenoptilus nuttallii*	air	resident	DS,IV	2
White-throated Swift	*Aeronautes saxatalis*	air	resident	IV	1
Costa's Hummingbird	*Calypte costae*	air	resident	DS	1
Allen's/Rufous Hummingbird	*Selasphorus sp.*	air	migrant	IV	1
Northern Flicker	*Colaptes auratus*	terr	resident	IV	1
Ash-throated Flycatcher	*Myiarchus cinerascens*	air	resident	DS,IV	2
Say's Phoebe	*Sayornis saya*	air	resident	GN	2
Black Phoebe	*Sayornis nigricollis*	air	resident	DS	1
Loggerhead shrike	*Lanius ludovicianus*	terr	resident	DS,IV	5
Warbling Vireo	*Vireo gilvus*	terr	migrant	IV	1
Common Raven	*Corvus corax*	terr	resident	DS,IV	3
Horned Lark	*Eremophila alpestris*	terr	migrant	DS	1
Tree Swallow	*Tachycineta bicolor*	air	migrant	DS,GN,IV	5

12.D.1

SPECIES		Zone	Residency	Sites	MNI
Cliff Swallow	*Petrochelidon pyrrhonota*	air	resident	GN	5
No. Rough-winged Swallow	*Stelgidopteryx serripennis*	air	migrant	IV	2
Verdin	*Auriparus flaviceps*	terr	resident	IV	3
Blue-gray Gnatcatcher	*Polioptila caerulea*	terr	resident	IV	1
Northern Mockingbird	*Mimus polyglottos*	terr	resident	IV	1
American Pipit	*Anthus rubescens*	terr	migrant	IV	4
Orange-crowned Warbler	*Oreothlypis celata*	terr	migrant	IV	1
Lucy's Warbler	*Oreothlypis luciae*	terr	resident	IV	1
Yellow-rumped Warbler	*Setophaga coronata*	air	migrant	IV	14
Black-throated Gray Warbler	*Setophaga nigrescens*	terr	migrant	IV	1
Hermit Warbler	*Setophaga occidentalis*	terr	migrant	GN	1
Townsend's warbler	*Setophaga townsendi*	terr	migrant	DS,IV	4
Yellow Warbler	*Setophaga petechia*	terr	migrant	IV	1
Black-and-white Warbler	*Mniotilta varia*	terr	migrant	IV	1
MacGillivray's Warbler	*Oporornis tolmei*	terr	migrant	IV	1
Wilson's Warbler	*Cardellina pusilla*	terr	migrant	DS,IV	4
Common Yellowthroat	*Geothlypis trichas*	terr	migrant	DS	1
Western Tanager	*Piranga ludoviciana*	terr	migrant	DS,IV	4
Black-headed Grosbeak	*Pheucticus melanocephalus*	terr	migrant	DS,GN	2
Lazuli Bunting	*Passerina caerulea*	terr	migrant	IV	1
Blue Grosbeak	*Passerina caerulea*	terr	resident	IV	1
Green-tailed Towhee	*Pipilo chlorurus*	terr	migrant	IV	1
Brewer's Sparrow	*Spizella breweri*	terr	resident	IV	3
Chipping Sparrow	*Spizella passerina*	terr	resident	GN,IV	4
Black-throated Sparrow	*Amphispiza bilineata*	terr	resident	DS,IV	4
Savannah Sparrow	*Passerculus sandwichensis*	terr	migrant	DS,IV	3
White-crowned Sparrow	*Zonotrichia leucophrys*	terr	migrant	IV	6
Pine Siskin	*Spinus pinus*	terr	migrant	IV	1
House Finch	*Carpodacus mexicanus*	terr	resident	IV	13
Great-tailed Grackle	*Quiscalus mexicanus*	terr	resident	DS,IV	5
Brown-headed Cowbird	*Molothrus ater*	terr	resident	DS,GN,IV	8
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*	terr	migrant	DS	1
Bullock's Oriole	*Icterus bullockii*	terr	resident	GN	2

Species recovered from one site: 47
two sites: 18
three sites: 5

12.D.1

Appendix 2. Species with solar flux burns

Common Name	Scientific name	
Yellow-rumped warbler	*Setophaga coronata*	12
House finch	*Carpodacus mexicanus*	10
Chipping sparrow	*Spizella passerina*	2
Unidentified warbler	*Parulidae*	2
Verdin	*Auriparus flaviceps*	2
Great-tailed grackle	*Quiscalus mexicanus*	2
Lucy's warbler	*Oreothlypis luciae*	1
Wilson's warbler	*Cardellina pusilla*	1
MacGillivray's warbler	*Oporornis tolmei*	1
Black-throated gray warbler	*Setophaga nigrescens*	1
Townsend's warbler	*Setophaga townsendi*	1
Orange-crowned warbler	*Oreothlypis celata*	1
Blue-gray gnatcatcher	*Polioptila caerulea*	1
Unidentified swallow	*Hirundinidae*	1
Northern rough-winged swallow	*Stelgidopteryx serripennis*	1
Warbling vireo	*Vireo gilvus*	1
Unidentified hummingbird	*Selasphorus sp.*	1
Unidentified passerine	Passeriformes	1
Unidentified finch	*Carpodacus sp.*	1
Lazuli bunting	*Passerina caerulea*	1
Unidentified sparrow	*Spizella species*	1
Unidentified blackbird	*Icteridae*	1
Peregrine falcon	*Falco peregrinus*	1

12.D.1

Letter 12

COMMENTER: Laura E. Horton, Adams Broadwell Joseph and Cardozo

DATE: August 22, 2014

Response 12.1

The commenter notes that they are commenting on behalf of the Monterey County Residents for Responsible Development. The comment is noted.

Response 12.2

The commenter provides a summary of the proposed project. The comment is noted.

Response 12.3

The commenter claims that the DEIR fails to comply with basic requirements of CEQA, but does not provide any evidence to support these assertions. Therefore, no specific response is feasible. Refer to responses 12.6 through 12.C.8 for responses to specific comments on the DEIR.

Response 12.4

The commenter refers to three attachments to the comment letter, and requests that the County respond to these comments separately and individually. Refer to responses 12.A.1 through 12.A.70 for responses to Attachment A; responses 12.B. through 12.B.6 for responses to Attachment B; and responses 12.C.1 through 12.C.8 for responses to Attachment C.

Response 12.5

The commenter describes the individuals and organizations that comprise the organization they represent (Monterey County Residents for Responsible Development) and describes the purpose of the organization. The comment does not raise environmental issues, or question the sufficiency of the environmental analysis in the DEIR; therefore, no further response is required.

Response 12.6

The commenter claims that the DEIR fails to include a complete and accurate project description. The State CEQA guidelines state that the project description shall contain a general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals, if any, and supporting public service facilities (CEQA Guidelines Section 15124(c)). CEQA also states that the project description should not supply extensive detail beyond that needed for evaluation and review of the environmental impact. It is atypical for detailed final project design features to be well-established for energy infrastructure projects prior to certification of an EIR. In order to adequately address impacts of all potential design specifications, the impact analyses presented in the DEIR assumed a

reasonable worst-case scenario of development for each issue area. In this way, the EIR conservatively estimated a reasonable worst-case scenario of impacts

Response 12.7

The commenter states that it is unclear who is constructing the proposed switching station and who would take ownership and operate the station after construction. As noted in Section 2.5.1 (Energy-Related Infrastructure) in Section 2.0, *Project Description,* "the project proponent would also construct a new 230kV interconnection switching station that would provide an interconnection to the existing Morro-Bay-Gates 230 kV transmission line and would be owned and operated by PG&E."

The commenter additionally states that it is unclear whether the project would require the construction of a new well. The *Water Infrastructure* discussion in Section 2.5.2 (Other Structures and Improvements) in Section 2.0, *Project Description,* describes three water sources for the proposed project: two existing wells and one potential new well. At this stage in the project design, the need for a third well is unknown. The anticipated location of the well is shown in Figure 2-4h. However, the project description appropriately recognizes that the final location of the new well (if needed) would depend on final design and operational efficiencies. As described in Impact HYD-3 in Section 4.9, *Hydrology and Water Quality,* the proposed project would have sufficient water supplies available from existing on-site groundwater wells and no new or expanded entitlements would be needed. If a third well is drilled, it would be constructed to serve panel washing or other operational or construction-related activities and would not increase water demand or otherwise impact the groundwater table.

Response 12.8

The commenter points out that the DEIR project description lists specific locations for park-and-ride facilities, while elsewhere it is stated that the exact location and size of the facilities is unknown. In response to this comment, the first paragraph under Section 2.6.2 (Access and Traffic) in Section 2.0, *Project Description,* has been revised as follows:

> …This shuttle service would transport approximately 95% of the anticipated construction work force (not including visitors, management, monitors/inspectors, etc.) on a daily basis from designated employee shuttle park-and-ride locations. Use of the shuttle program would be mandated as a condition of employment. Shuttle park-and-ride lots ~~would~~ are anticipated to be located west of the site on SR 46 in Paso Robles~~,~~ (Cuesta College North County Campus), northwest of the site on Highway 101 in King City (Wild Horse Café), and southeast of the project site near the intersection of SR 46 and SR 33 (Blackwell's Corner). The ultimate locations of the proposed park-n-ride facilities would be determined based on their proximity to SR 46 and SR 41, their ability to achieve the goal of 95% ridership, and their prior use for parking, including prior use for construction staging for other solar developments located in San Luis Obispo County. In addition, the locations of park-and-ride facilities would consist of previously disturbed and/or developed areas (paved or unpaved) that have historically been used for parking purposes. No new or expanded parking facilities would be constructed for the proposed project, although ~~These sites may require~~ temporary fencing and minor

surface improvements may be constructed. Each shuttle bus would have a capacity of approximately 46 passengers.

In addition, the discussion under Impact T-7 in Section 4.13, *Transportation/Traffic,* has been revised as follows:

Impact T-7 An employee shuttle service would provide transport to and from the site during the construction phase. The exact location, ~~and~~ size, and design of the proposed park and ride facilities are not known at this time; therefore, there is the potential for secondary impacts to the environment to occur. Impacts would be Class II, *significant but mitigable*. [Threshold: multiple]

As described previously, trip generation for the construction phase assumes that an employee shuttle service would transport 95% of the total construction workforce to and from the project site. Designated employee shuttle park and ride locations would provide parking for the construction workforce. As noted in Section 2.0, *Project Description,* shuttle park-and-ride lots would likely be located west of the site on SR 46 in Paso Robles (Cuesta College North County Campus), northwest of the site on Highway 101 in King City (Wild Horse Café), and southeast of the project site near the intersection of SR 46 and SR 33 (Blackwell's Corner). These sites may require temporary fencing and minor surface improvements. The ultimate locations of the proposed park-n-ride facilities would be determined based on their proximity to SR 46 and SR 41, their ability to achieve the goal of 95% ridership, and their prior use for parking, including prior use for construction staging for other solar developments located in San Luis Obispo County. However, further details regarding the park-and-ride facilities are not available at this time. ~~While the exact locations of the park and ride facilities have not been identified, one shuttle park and ride lot would be generally located west of the site on SR 46 in Paso Robles, the other park and ride lot will be located northeast of the project site approximately at the intersection of SR 41 and SR 33.~~ Given that the size, design, and exact location of the parking facilities is not known at this time, there is the potential for adverse impacts to occur in several issue areas including but not limited to aesthetics, biological resources, water quality and hydrology, noise and transportation and traffic. Impacts would therefore be potentially significant.

The above revisions to the impact statement have also been made to Table 4.13-1 (Impact and Mitigation Summary: Transportation/Traffic) and Table ES-1 in the *Executive Summary.*

Response 12.9

The commenter states that the DEIR lacks a consistent construction period. As stated in Section 2.6.1 (Schedule and Activities) in Section 2.0, *Project Description,* "Construction of the proposed project would take approximately 12 to 24 months, and is proposed to begin in 2015 and conclude in 2016." The analysis in Section 4.3, *Air Quality,* assumed that construction would occur over 12 to 24 months. Table 4.3-5 depicts construction years 2014 and 2015. This table is based on an air quality and greenhouse gas modeling provided by RBF Consultants (refer to Appendix C to the DEIR), and was prepared at a time when it was anticipated that construction would begin in 2014. While the timing of construction was subsequently revised, updating the

emissions calculations to utilize a later construction year would only serve to reduce emissions, due to the use of newer and more efficient construction equipment by the computer model. Thus, maintaining a construction years of 2014 and 2015 (rather than 2015 and 2016) provides a reasonable worst case analysis of construction emissions.

In response to this comment, a statement at the bottom of page 4.4-184 in Section 4.4, *Biological Resources*, has been revised as follows:

> Because construction is anticipated to occur for up to 24 ~~18~~ months, there is a high likelihood that pronghorn use along the Access Road and adjacent areas would be adversely affected.

It should also be noted that the traffic report evaluated a 12 month and an 18 month construction schedule. While construction of the proposed project is anticipated to occur over a 12 to 24 month period, the traffic impact analysis included an evaluation of potential traffic associated with a 12 month construction schedule as a conservative worst case traffic estimate since trip generation rates would be higher to accommodate construction of the project over a shorter period.

The commenter additionally states that the DEIR is silent on how many PV panels would be installed and on the type of panels that would be used. While the project description does not define a photovoltaic technology, it describes potential technologies that may be used [see Section 2.5.1 (Energy-Related Infrastructure) of the DEIR]. Because a specific technology was not chosen, the exact panel components, numbers of support structures, and number of panels is known only within a range of certainty. However, regardless of the precise number and configuration of panels, the total maximum potential area to be disturbed by the panels ("solar development area," or SDA) and associated energy-related infrastructure was used in the impact analyses presented in Section 4.0 of the DEIR.

Finally, the commenter notes that the DEIR fails to indicate the type, number, and locations of stream crossings. As noted in Section 2.0, *Project Description,* existing stream crossings would be constructed, modified or upgraded, as depicted on Figure 2-4a. In addition, the specific type of stream crossings would be determined at the time of project design, but may include low water crossings, low water crossings with culverts, and high capacity culvert crossings. As stated in Section 2.0, *Project Description,* because the precise configuration of panel arrays and other facilities within the 2,120-acre solar development area (SDA) may vary, environmental impacts – including those from stream crossings – were assessed for the entire SDA as a reasonable worst case scenario analysis.

Refer also to response 12.6.

Response 12.10

The commenter claims that the DEIR fails to provide a complete description of the decommissioning phase. Decommissioning is described in Section 2.8 (Decommissioning and Site Restoration/Revegetation). As noted therein, given the project's operating life cycle and distant timeframe for decommissioning activities, it is too speculative to provide details

describing specific decommissioning activities and potential impacts that could occur far into the future. Representative procedures for decommissioning are therefore provided, based on the applicant-provided Conceptual Restoration Plan for Project Decommissioning prepared for planning purposes, and current decommissioning practices. The analysis assumes a worst-case scenario that decommissioning impacts would be similar to environmental impacts associated with the construction phase. Nonetheless, a decommissioning would be subject to CEQA review prior to implementation, potential impacts would be assessed at that time consistent with applicable policies, thresholds and standards in place at the time.

The commenter additionally claims that it is inappropriate for the DEIR to provide generalized, programmatic-level evaluation of decommissioning impacts in a project-level CEQA review. The analysis of decommissioning can only be as detailed as the information available. As stated in CEQA Guidelines Section 15146: "the degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." As indicated above, it is too speculative to provide details describing specific decommissioning activities that could occur 30 to 40 years in the future. Correspondingly, assessing project-level impacts associated with such activities is not feasible, and would result in undue speculation.

Response 12.11

The commenter claims that the DEIR fails to adequately address the environmental baseline. The commenter then generally describes the requirements of CEQA pertaining to environmental setting. The comment does not specifically address the DEIR, other than to claim that the setting contained therein is incomplete. Because the commenter provides no evidence to support this claim, a specific response to this comment is not feasible. Refer to responses 12.12 through 12.30 for responses to specific comments related to this claim.

Response 12.12

The commenter provides an introduction to their biological comments and contends that the DEIR fails to provide an adequate description of the presence of special-status biological resources on the Project site against which to assess the Project's significant impacts.

The DEIR identifies those special-status biological resources likely to be present on the project site, with information derived from several scientific sources, including field surveys. Not all surveys were completed prior to issuance of the DEIR, and survey results from ongoing surveys are presented in response to the public comments on the DEIR. None of the ongoing surveys have identified any potential impacts that were not identified in the DEIR, and no additional mitigation would be required to address potential impacts to biological resources. The DEIR environmental setting is based on expert review of data contained within a number of biological resource databases, available literature on species know to occur in the project vicinity, a wide variety of surveys including reconnaissance-level surveys, protocol-level surveys and modified protocol surveys. The purpose of the database and literature review is to provide a reasoned analysis of the baseline environmental conditions on the project site; therefore, full and comprehensive protocol-level surveys are not required to evaluate potential impacts (refer to master response 1 for a discussion of survey adequacy). Surveys are ongoing to continue to evaluate resources and inform mitigation activity (including required pre-construction surveys) and therefore, not all surveys

were completed prior to issuance of the DEIR. Additional survey results are presented in this response to the public comments on the DEIR. The additional survey reports presented at this time include the following:

- *2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15)*
- *2012 CRLF Survey Memorandum (HTH 2012c; FEIR Appendix E.16)*
- *2013 Raptor Nest Survey Report (HTH 2013d; FEIR Appendix E.17)*
- *2014 Baseline Avian Activity Survey Report (HTH 2014i; FEIR Appendix E.18)*
- *2012 CTS Site Assessment (HTH 2012e; FEIR Appendix E.19)*
- *2013 Wet Season Branchiopod Survey Report (HTH 2013e; FEIR Appendix E.20)*
- *2012 CRLF Site Assessment (HTH 2012d; FEIR Appendix E.21)*

The above reports are included in Appendix E to the Final EIR (FEIR; Appendices E.15 through E.21). Because the DEIR was conservative in evaluating potential impacts to biological resources, none of the ongoing surveys have identified any potential impacts that were not identified in the DEIR, and no additional mitigation is recommended, or would be required as a result of data included in any of these reports. The survey effort completed for this project at the time of preparation of the DEIR was sufficient for evaluating potential impacts to biological resources under CEQA as described in master response 1. To include the new technical reports and revise minor clerical errors in the cited references, Section 9.0, *References and Preparers,* of the DEIR has been revised as follows:

H.T. Harvey & Associates, California Flats Solar Project, ~~Monterey and San Luis Obispo Counties, California,~~ Addendum to Biotic Resources Report and Biological Resources Impact Analysis, November 2013 Site Plan Update ~~Preliminary Delineation of Wetlands and Other Waters~~, 2014e.

H.T. Harvey & Associates, California Flats Solar Project Spotlight Surveys for San Joaquin Kit Fox and American Badger, April 2014f.

H. T. Harvey & Associates, ~~2014e.~~ California Valley Solar Ranch Project Avian and Bat Protection Plan Annual Postconstruction Fatality Report 16 August 2012 – 15 August 2013. Prepared for: HPR II, LLC California Valley Solar Ranch, San Luis Obispo, California. 2014g.

H. T. Harvey & Associates, 2014 Special-status Plant Survey Report for the California Flats Solar Project Monterey County, California. 2014h.

H. T. Harvey & Associates, Baseline Avian Activity Surveys for the Proposed California Flats Solar Project in Monterey County, California: March 2013–March 2014. 2014i.

H.T. Harvey & Associates, California Flats Solar Project, Aquatic Larval Surveys, California Tiger Salamander, California Red-legged Frog, 2013a.

H.T. Harvey & Associates, California Flats Solar Project, Identification of Kangaroo Rats through Morphometric, Ecological, and Genetic Analyses, October 2013b.

H.T. Harvey & Associates, California Flats Solar Project, Wet-season Branchiopod Survey Report, 2013c.

H.T. Harvey & Associates, Baseline Raptor Nest Surveys for the Proposed California Flats Solar Project in Monterey County, California: 2013. 2013d.

H.T. Harvey & Associates, California Flats Solar Project 2012 Wet-season Branchiopod Survey Report. 2013e.

H.T. Harvey & Associates, California Flats Solar Project, ~~Addendum to:~~ Monterey and San Luis Obispo Counties, California Preliminary Delineation of Wetlands and Other Waters, 2012a.

H.T. Harvey & Associates, California Flats Solar Project, Addendum to: Monterey and San Luis Obispo Counties, California Preliminary Delineation of Wetlands and Other Waters ~~Addendum to Biotic Resources Report and Biological Resources Impact Analysis, November 2013 Site Plan Update~~, 2012b.

H.T. Harvey & Associates, California Flats Solar Project: Results of California Red-legged Frog Survey. 2012c.

H.T. Harvey & Associates, California Red-Legged Frog Site Assessment. 2012d.

H.T. Harvey & Associates, California Tiger Salamander Site Assessment. 2012e.

Response 12.13

The commenter states that Mr. Cashen observed many errors in the rare plant surveys referenced in the DEIR and argues that due to a poor rainfall year, rare plant survey results should be considered inconclusive and the BSA should be resurveyed in order for the DEIR to properly assess all potentially significant impacts. Please refer to master response 2 for a detailed response to comments regarding the adequacy of rare plant surveys.

Response 12.14

The commenter states that the DEIR provides inaccurate information regarding the presence of Mason's neststraw, stating that the plant has no potential of occurring within the BSA. The commenter notes that the Biotic Report Addendum (HTH 2014e; DEIR Appendix E.13) indicated the species could occur within the project's utility corridor. The commenter also states that the DEIR and appendices do not indicate whether protocol-level surveys were conducted for this taxon during a time when it would have been evident and identifiable. The utility corridor was added to the project description after rare plant surveys and initial reporting were completed, and Table 4.4-4 in Section 4.4, *Biological Resources,* of the DEIR identifies those special status plant species with potential to occur in the utility corridor including Mason's neststraw. The reference to Mason's neststraw having no potential to occur in the BSA was a clerical error, and the DEIR has been revised accordingly (see response 16.173).

Response 12.15

The commenter argues that the DEIR is "misleading as to several of the target annual plant species being 'absent' from the survey areas" and states that "it is virtually impossible to prove a species' absence, especially within a survey area that encompassed either 4,361 acres (as reported in Table 4) or over 4,800 acres (as reported on p.31). This is especially true for annual plant species, which may have seed banks present in the soil, but the seeds do not germinate in a given year (e.g., due to drought)." The evaluation of occurrence potential is based on a suite of evidence including soil type, physiography, aspect, ground cover, and the vegetation community present at the site. Species were determined to be absent from the project site based on the lack of suitable habitat, lack of suitable microhabitat conditions (soil, aspect, physiography, etc.), lack of observations during surveys for species known to be in bloom (based on review of reference populations), or a combination of these factors. This provides a reasoned evaluation of the potential for occurrence. It should be noted that many special status species that were not observed have been considered as possible or likely to occur on the project site.

Response 12.16

The commenter states that the DEIR's survey report "lacks details regarding the number of personnel hours spent checking reference sites and conducting the regional contextual surveys," and argues that as a result, the DEIR and appendices "falsely inflate the amount of time dedicated to Project-specific surveys." See master response 2 for details on the level of effort involved in reference site and regional context surveys.

Response 12.17

The commenter argues that the deficiencies they describe and those highlighted in Mr. Cashen's letter "result in a DEIR that fails in establishing an accurate environmental baseline in violation of CEQA." An extensive level of analysis was undertaken for the evaluation of biological resources on the project site, including a wide variety of field surveys and extensive review of existing literature and databases. As presented in master response 1, these analyses meet the standards required for establishing an accurate environmental baseline for biological resources under CEQA.

Response 12.18

The commenter states that the DEIR indicates known records of the San Joaquin kit fox to the south and east of the project area; however, there is no indication whether surveys were conducted to the north and west of project area. The commenter also states that the DEIR is inconsistent in its assessment of whether the project area could be a wildlife corridor for the San Joaquin kit fox. Please refer to responses 12.A.19 and 12.A.20.

Response 12.19

The commenter states that adequate trapping was not conducted to determine the presence of the San Joaquin pocket mouse and argues that information based on the CNDDB is "not a substitute for site-specific surveys." The commenter also argues that the DEIR "fails to acknowledge that if the pocket mice in the project area represent part of a metapopulation structure, loss of this

subpopulation could negatively impact overall species viability and diversity." Please refer to response 12.A.24.

Response 12.20

The commenter argues that "the Project area was not adequately surveyed for the California tiger salamander because not all suitable breeding sites were surveyed and it was only surveyed during drought conditions" and states that as a result, "definitive statements made in the DEIR about baseline conditions for occurrence or habitat suitability at the Project area are not supported." Please refer to response 12.A.16.

Response 12.21

The commenter argues that the survey team did not sample the project and biological assessment area for California red-legged frog according to USFWS protocol. Specifically, the commenter argues that only three surveys were conducted, no night surveys were conducted, and the survey was completed during "suboptimal drought conditions." The commenter argues, that as a result, "the full extent of California red-legged frog occurrences across the Project and survey area was likely underrepresented and could result in unmitigated impacts to the species." Please refer to response 12.A.17.

Response 12.22

The commenter states that protocol surveys for the western pond turtle were not conducted despite the existence of established protocols and argues that the DEIR "fails to establish the abundance and distribution of western pond turtle in the Project area, which could cause 'severe consequences' for the conservation of the species." Please refer to response 12.A.18.

Response 12.23

The commenter states that no protocol-level surveys were conducted for Swainson's hawk nest sites and notes that CDFW sent a letter to the County indicating the need for protocol-level surveys in the project area. The commenter also states that "the Biotic Report recognized the existence of CDFW promulgated standards for locating nest sites, and it acknowledged surveys adhering to those standards have not been conducted for the Project." As such, the commenter argues that the DEIR fails to establish accurate baseline information regarding the Swainson's hawk. Please refer to response 12.A.13.

Response 12.24

The commenter notes an inconsistency in the descriptions of occurrences of the mountain plover within the vicinity of the project site. The commenter notes that the DEIR states that "there are no CNDDB records for mountain plover within 20 miles of the BSA, but small flocks have been reported in the Cholame Valley as close as four miles south of the Project site," however, "the mountain plover is indicted to occur on the 1-mile radius line on the southern side of the Project area, as documented in Fig. 4.4-6 (CNDDB records) of the DEIR." Please refer to response 12.A.14.

Response 12.25

The commenter states that surveys were not conducted for northern harrier nests on and around the project area, nor were nest searches conducted for any other species except the golden eagle, however, "[a]ccording to the Biotic Report, harriers are known to nest in Cholame Valley." Please refer to response 12.A.15.

Response 12.26

The commenter notes an inconsistency in the descriptions of occurrences of pronghorn within the project site. The commenter notes that the DEIR states that "pronghorn and Tule elk have not been observed with the Project site," however, the applicant's website states that pronghorn have been observed within the access road corridor and reportedly in the southern end of the project site. As such, the commenter states that the DEIR is "inaccurate and does not properly establish baseline conditions regarding the presence of pronghorn on the Project site." Please refer to response 12.A.25.

Response 12.27

The commenter, through a reference to Attachment B to their comment letter, claims that the hazardous materials baseline is inadequate because the DEIR did not rely on a Phase I Environmental Site Assessment (ESA). As described in response 12.B.2, a review of the Envirostor Hazardous Facility Database revealed that the proposed project site is not listed on the Cortese List, and furthermore that there are no known environmental sites of concern located within one mile of the project site. Therefore, the project site poses no significant risk of creating a hazard to personnel as a result of being located on a known site contaminated with hazardous materials. Further, review of a Phase I ESA prepared for the applicant in February 2014 and provided to the County in October 2014 (refer to FEIR Appendix N) confirms the analysis in the DEIR (refer to response 12.B.2).

Response 12.28

The commenter, through a reference to Attachment B to their comment letter, notes the presence of two oil and gas wells on the project site, and states that there is not enough information in the DEIR to determine the methods by which two existing wells were abandoned. As described in response 12.B.2, three petroleum wells have been drilled on the site; however, all three wells have been plugged and abandoned. Therefore, these wells would not impact the site in a manner that would result in the designation of a REC.

Response 12.29

The commenter claims that the DEIR does not adequately analyze the potential for pesticides in project site soils or groundwater. As noted under Impact HAZ-1 in Section 4.8, *Hazards and Hazardous Materials,* according to the Monterey County Agricultural Commissioner, no pesticide or herbicide use is reported on the project site or adjacent parcels (Monterey County Agricultural Commissioner, 2013). In addition, project-related improvements within the eastern portion of the proposed utility corridor (where irrigated crop production occurs) would be

limited to the installation of temporary and narrow water infrastructure. Based on historical and current land use on the project site, no residual pesticides, herbicides, or other contaminants are anticipated to be found in the soil and/or groundwater. The likelihood that construction workers, operational staff, and/or adjacent sensitive receptors could be exposed to substantial quantities of residual agricultural chemicals in on-site soils is remote.

Response 12.30

The commenter states that a Phase I ESA should be prepared for the project site. Refer to response 12.27.

Response 12.31

The commenter claims that the DEIR lacks substantial evidence to support its conclusions and fails to incorporate all feasible mitigation measures necessary to reduce such impacts to a level of insignificance. The commenter then generally describes the basic purposes of CEQA: to inform decision-makers and the public about environmental effects of a project, and to avoid or reduce environmental damage where possible through alternatives or mitigation measures. The comment does not specifically address the DEIR, other than to claim that it fails to achieve these basic purposes. Because the commenter provides no evidence to support this claim, a specific response to this comment is not feasible. Refer to responses 12.32 through 12.56 for responses to specific comments related to this claim.

Response 12.32

The commenter states that the DEIR's treatment of potentially significant impacts to biological resources does not comply with CEQA's mandate to analyze the project's impacts on the environment and that the County lacks substantial evidence to support a finding regarding the project's impacts on biological resources. Specifically, the commenter argues that there are deficiencies in the Biotic Report (HTH 2014b; DEIR Appendix E.1), Biological Resources Impact Analysis and Addendum to Biotic Resources Report and Biological Resources Impact Analysis (HTH 2014a; DEIR Appendix E.2, and HTH 2014e; DEIR Appendix E.13, respectively), and other documents the DEIR relies on and in the DEIR's assessment of the project's impacts on biological resources. The commenter contends that because Mr. Cashen based his opinion on facts specific to the proposed project, his opinion constitutes substantial evidence that the project may cause unmitigated significant impacts to biological resources. The commenter further argues that the surveys that were conducted do not constitute substantial evidence and the technical documentation excludes details regarding survey methodology.

The commenter makes general comments about the inadequacy of the biological evaluations and lack of sufficient information included in the technical reports based on the commenter's review of Mr. Cashen's specific comments, but does not identify any specific concerns regarding the biological evaluations. As such the County directs the commenter to the specific responses to Mr. Cashen's comments (see responses 12.A.1 through 12.A.70) as well as master response 1 and master response 2 in regards to the adequacy of the biological surveys and the evaluations of potential impacts to biological resources. As to the point that Mr. Cashen's opinion constitutes substantial evidence that the project may cause unmitigated significant impacts to biological

resources, the County has provided responses to all of Mr. Cashen's specific comments, and in so doing presents a differing expert opinion on the adequacy of technical studies and evaluation of potential impacts to biological resources. That is, the DEIR has based the impacts analysis on a reasonable and appropriate analysis of the existing biological conditions on the project site, and as such has appropriately identified potential impacts, and provided reasonable and appropriate avoidance and mitigation measures to reduce those impacts to a less than significant level.

Response 12.33

The commenter argues that "the DEIR is deficient because it ignores several species on CDFW's Special Animals list, including, but not limited to: Cooper's hawk, ferruginous hawk, horned lark, prairie falcon, Lewis's woodpecker, yellow-billed magpie, and Lawrence's goldfinch." Please refer to response 12.A.3.

Response 12.34

The commenter contends that the proposed mitigation measures for sensitive species are inadequate, and thus "the County has not ensured Project impacts to sensitive biological resource would be reduced to a less-than-significant level." This is a general comment on the efficacy of specific mitigation measures and the comments regarding the adequacy of mitigation measures provided by Mr. Cashen. As such, refer to responses 12.A.46 through 12.A. 70.

Response 12.35

The commenter raises concerns regarding Mitigation Measure B-1(w) in Section 4.4, *Biological Resources,* of the DEIR on size and quality of relocation sites for California tiger salamander and California red-legged frog relocation. Mitigation Measure B-1(w) states that sites appropriate for translocation of CRLF and/or CTS would be determined in consultation with CDFW and/or USFWS, as appropriate (based on species status with each agency). Take statements issued by CDFW and USFWS would provide specific guidance on relocation technique, habitat suitability, and reporting requirements. Relocation can only be conducted by authorized biologists with the requisite take authorizations from the relevant wildlife agencies. Identification of appropriate receiver sites requires agency input, and additionally the selection of one site over another among suitable sites identified through agency consultation may depend on specific conditions in the field at the time relocation is done, such as presence or absence of water, condition of vegetation, etc. To finalize these sites in the DEIR without agency consultation would be inappropriate and introduce constraints that may result in reduced efficacy of relocation sites. Please see also responses 3.14 and 16.68, in which Mitigation Measure B-1(w) has been clarified.

The commenter also noted a clerical error in the DEIR where Mitigation Measures B-1(bb) and B-1(y) state that "any individual detected during these pre-activity surveys shall be moved to a designated relocation sites identified under B-1(p)," whereas Measure B-1(p) does not identify and document the location(s) and habitat quality of designated relocation sites, but instead discusses wildlife-friendly fence design. Mitigation Measures B-1(bb) and B-1(y) have been revised to correctly refer to relocation sites identified under measure B-1(w) and deleted the incorrect reference to B-1(p).

Response 12.36

The commenter disputes the efficacy of Mitigation Measure B-1(m) and that the mitigation efforts "are incomplete and do not qualify as acceptable measures to mitigate Project impacts on this special-status bird."

The DEIR refers directly to guidance issued by the CDFW. Appendix E of the CDFG Staff Report on Burrowing Owl Mitigation includes the requirements of Artificial Burrow Location as well as requirements of Exclusion Plans (CDFG 2012). The requirements of Artificial Burrow Location include the requirement for a description of the monitoring that will take place during and after implementation as well as a burrow maintenance plan. Consultation with CDFW and the development of a burrowing owl exclusion plan with CDFW approval is required to conduct passive relocation of burrowing owls. The exclusion plan would require the inclusion of all necessary criteria as outlined in the CDFW Staff Report (CDFG 2012) and the inclusion of this requirement with the DEIR mitigation is appropriate and sufficiently specific to address mitigation of burrowing owl under CEQA. Mitigation Measure B-1(m) in Section 4.4, *Biological Resources,* has been revised for clarification as follows:

a) The artificial burrow design and installation shall be as described in the Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans per Appendix E of the *Staff Report on Burrowing Owl Mitigation* (CDFG, 2012).

Response 12.37

The commenter summarizes the DEIR analysis that the San Joaquin kit fox was detected on the project site. The commenter argues that there is no substantial evidence to support the DEIR's conclusion that "the site is unlikely to serve as a distinct or important movement corridor or habitat linkage for any protected or managed species." The commenter argues that "the Project area is included within an established population of the kit fox; and/or the Project area is serving as a frequently used movement corridor" and states that wildlife corridor monitoring is necessary for an adequate evaluation of the project's significant impacts on wildlife movement through the project area. The commenter further states that 100-200 foot kit fox den avoidance measures, described in the DEIR, are inadequate because "even during the pup-rearing season, nightly movements average greater than 6 miles." Please refer to response 12.A.20 regarding movement corridors.

Regarding buffer size, the buffer sizes are consistent with the USFWS 2011 Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance, which recommends minimum 100-foot buffer for known dens, and consultation with USFWS is required for all natal dens. Thus, buffer distances would have agency oversight, and CDFW and USFWS are expected to provide further guidance in any take authorizations issued for the project (USFWS 2011).

Response 12.38

The commenter summarizes project impacts to golden eagles and states that each of the impacts would constitute a take, as defined by the Federal Bald and Golden Eagle Protection Act (Eagle Act), and as a result would require an incidental take permit. The commenter concludes that the DEIR fails to assess the project's compliance with the Eagle Act, or establish a mechanism that ensures the applicant consults with the USFWS and as a result, "the Project would have a significant and unmitigated impact to golden eagles."

Please refer to response 12.A.12.

Response 12.39

The commenter states that the DEIR does not require protocol-level surveys for the Swainson's hawk prior to project construction and argues that as a result "Project impacts to the Swainson's hawk remain potentially significant and unmitigated."

Please refer to response 12.A.13.

Response 12.40

The commenter contends that the DEIR does not adequately address the potential for avian collisions, that the level of bird mortality due to collisions cannot be accurately estimated with the available data, and that the DEIR does not contain any specific measures to mitigate avian collisions with the project's solar arrays and as a result "the Project would have an unmitigated significant impact to special status bird species, including species protected by Fish and Game Code and/or the Migratory Bird Treaty Act." Refer to response 12.A.45 for a discussion on potential impacts to migratory birds protected under the MBTA and Fish and Game Code.

Response 12.41

The commenter states that the DEIR refers to the use of soil stabilizers, including chemicals that have the potential to cause adverse impacts to biological resources. The commenter states that the DEIR does not address potentially significant environmental impacts from the use of chemicals on the site and as such is "legally indefensible."

Mitigation Measure B-1(ff)(16) requires that "Use of chemicals, fuels, lubricants, or biocides shall be in compliance with all local, state, and federal regulations. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation." Chemical soil stabilizers would be subject to this measure and thus are already covered in existing analysis (also see response 12.48, below)

Response 12.42

The commenter describes CEQA requirements pertaining to significant effects and mitigation measures. The comment does not specifically address the DEIR; therefore, no response is feasible.

Response 12.43

The commenter summarizes the DEIR impact pertaining to flooding (Impact HYD-5 in Section 4.9, *Hydrology and Water Quality*). The commenter disagrees with the assessment that impacts would be less than significant "based on assurances that it will incorporate those measures and other unknown recommendations."

Refer to responses 16.4 and 16.121 in Comment Letter 16. The project description has been revised to incorporate Applicant Proposed Measure (APM) 11, which states that the applicant will prepare a design level drainage analysis that will ensure that project facilities are not placed in areas where they would be subject to significant flood or erosion hazards or affect the existing capacity of affected watercourses. This APM is generally consistent with the recommendations contained in the *Preliminary Drainage Report* (RBF 2013) and *Preliminary Drainage Analysis Addendum* (Wallace Group 2014), with the exception of the requirement that solar modules be placed a minimum of 1 foot above the 100- year water surface elevation. While this APM is considered part of the project, the performance measures listed in the analysis of Impact HYD-5 are also required to be incorporated into the final drainage report, which is required consistent with Section 16.12.060 and 16.12.070 of the Monterey County Code. In addition, the design level drainage analysis shall contain measures to ensure that any project-related improvements within 50 feet from the top of bank of on-site drainages will not result in significant erosion related hazards and that these improvements will not affect the existing capacity of the affected watercourse, as required by Chapter 16.16 of the Monterey County Code. As noted in Section 4.9, *Hydrology and Water Quality,* the Monterey County Water Resources Agency (MCWRA) will review and approve the design-level drainage analysis, thus ensuring that the drainage analysis incorporates the required measures. Because this is an existing requirement, and because meeting this requirement would ensure that impacts remain less than significant, additional mitigation is not required to reduce the impact.

The commenter further claims that the violation of MCC 16.16 by developing within 50 feet of the top of a watercourse must be evaluated as a potential significant impact to be avoided or mitigated. In contrast, MCWRA contends that the DEIR adequately evaluates development within 50 feet of the top of a watercourse by providing accurate hydraulic analysis for the project and requiring substantial compliance with MCC 16.16. As noted in their letter dated October 2, 2014 (Chardavoyne, 2014), the County has the discretion to permit proposed development within 50 feet of the bank of any watercourse. The hydraulic analysis prepared for the DEIR ensures acceptable technical information is available to assess development prior to construction. MCWRA will not approve development within 50 feet of the top of bank of a watercourse unless it can be proven the development would be safe from flow-related hazards and not significantly reduce the capacity of the drainage or watercourse. Compliance with MCC 16.16 would reduce the impacts to a less than significant level by establishing otherwise unknown watercourse velocities and depths for development and requiring compliance with local floodplain recommendations.

As a result of this response, the following has been added to Section 8.0, *References*:

Chardavoyne, David E., Monterey County Water Resources Agency. California Solar Flats (PLN 120294) DEIR response to comments on flooding hazards. October 2, 2014.

Response 12.44

The commenter claims that the flow estimates relied upon in the *Preliminary Drainage Report* and DEIR are inaccurate and flooding and erosion potential is significantly underestimated, citing the analysis provided by Thomas Meyers (Attachment C to the comment letter). Refer to responses 12.C.1 through 12.C.8 for specific responses to Attachment C.

MCWRA reviewed this comment and disagrees with the contention that calculations were inaccurate. According to MCWRA, the hydraulic analysis developed for the DEIR is acceptable for environmental review and design-level purposes (Chardavoyne, October 2, 2014). It is the determination of the Monterey County Floodplain Administrator that the DEIR provides accurate analysis of the potential flooding hazards, and that the DEIR evaluated Impact HYD-5 through sufficient hydraulic analysis and concluded the project would not expose structures to potential flood loss (*ibid*).

In addition, given that the property is absent of any FEMA Special Flood Hazard Areas (effective 4/2/2009) or State of California Department of Water Resources Awareness Floodplain Mapping efforts (effective 5/19/2003), the Monterey County Floodplain Administrator concludes the flood hazards for the project are very limited. It would be highly unlikely that by updating calculations, as recommended by the commenter, the new result would be a significant change to the area available for development (refer also to responses 12.C1 through 12.C.8). As stated by MCWRA General Manager David Chardavoyne (2014), the DEIR has provided substantial evidence that Impact HYD-5 is less than significant and has adequately provided technical information for the public to make an informed assessment.

Response 12.45

The commenter claims that the air quality section fails to disclose information necessary to evaluate the project's construction emissions. The comment does not specifically address the DEIR, other than to claim that it fails to disclose information. Because the commenter provides no evidence to support this claim, a specific response to this comment is not feasible. Refer to responses 12.46 through 12.48 for responses to specific comments related to this claim.

Response 12.46

The commenter suggests that additional mitigation measures are available to reduce the project's construction-related emissions to a less than significant level, citing the analysis provided by Mr. Hagemann and Mr. Sutherland (Attachment B to the comment letter). Refer to response 12.B.5. As noted therein, construction emissions, impacts, and mitigation are described in Impacts AQ-2 and AQ-9 of the DEIR, and revisions to strengthen the applicable Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c) are discussed in detail in response 4.2, response 4.13, response 9.2, response 16.22, response 16.23, and response 16.24. The revised construction mitigation measures incorporate the maximum feasible mitigation measures recommended by MBUAPCD and SLOAPCD, including Tier 3 construction equipment, limitations on visible dust emissions, Best Available Control Technology (BACT) to reduce ozone precursor emissions from construction equipment, dust suppression measures including watering, and provisions to minimize track-out soil.

Response 12.47

The commenter suggests that the DEIR failed to adequately evaluate the potential for significant air quality impacts resulting from diesel particulate matter emissions, citing the analysis provided by Mr. Hagemann and Mr. Sutherland (Attachment B to the comment letter). Refer to response 12.B.6. As noted therein, the DEIR addresses the potential impact associated with health risks from diesel PM during construction in Impact AQ-4, and finds that the health risk associated with construction emissions would be less than significant based on the duration and volume of proposed construction activity and distance between the project site and the nearest residential receptors.

Response 12.48

The commenter states that the DEIR fails to analyze the potential impacts associated with the use of dust suppressants to reduce fugitive dust. The twelfth bullet of Mitigation Measure AQ-2(a) includes chemical soil binders and dust suppressants among the available measures for reducing dust from unstabilized roads, structure pads, and other areas to be paved. The commenter states that the U.S. EPA has identified air quality and health impacts from some dust suppressants, and requests that the DEIR analyze potential impacts from the use of dust suppressants and soil stabilizers, such as impacts associated with a change in runoff from the project site.

MBUAPCD and SLOAPCD provide guidance for the selection of appropriate dust control technologies. The MBUAPCD *2008 CEQA Guidelines* (February 2008) provide example mitigation which recommends that projects requiring dust control:

- *Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).*
- *Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydro seed area.*

The SLOAPCD *CEQA Air Quality Handbook* (April 2012) states that: "Any chemical or organic material used for stabilizing solids shall not violate the California State Water Quality Control Board standards for use as a soil stabilizer. Any dust suppressant must not be prohibited for use by the U.S. Environmental Protection Agency, the California Air Resources Board, or other applicable law, rule, or regulation." The SLOAPCD *CEQA Air Quality Handbook* also includes a list of approved dust control suppressants in Technical Appendix 4.3.

Mitigation Measure AQ-2(a) in Section 4.3, *Air Quality,* has been revised as follows:

- All roads shall be stabilized using gravel, non-toxic chemical soil binders (e.g., latex acrylic copolymer), jute netting, or other methods approved in advance by the Monterey County RMA – Planning Department. If necessary, the Monterey County RMA – Planning Department may refer to the list of approved dust control suppressants in the SLOAPCD *CEQA Air Quality Handbook* Technical Appendix 4.3. For all structure pads and other areas to be paved, seeding or soil binders shall be used if construction or paving will not occur within 10 days of grading;

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.* Refer also to response 12.41, above.

Response 12.49

The commenter cites the CEQA Guidelines pertaining to reasonably foreseeable indirect environmental impacts. The comment does not specifically address the DEIR. Therefore, a specific response to this comment is not provided.

Response 12.50

The commenter summarizes the DEIR analysis of impacts to agricultural resources and expresses disagreement with the conclusion that impacts would be less than significant. The commenter specifically argues that the temporary nature of impacts to Prime Farmland and Unique Farmland within the proposed utility corridor does not render the impacts to these resources insignificant. However, as noted in Section 4.2, *Agricultural Resources,* improvements within the areas containing Prime and Unique Farmland would be limited to the installation of temporary water infrastructure, which would require minimal ground disturbance. Because of the temporary nature of the disturbance, the area would not be "converted" to a "non-agricultural use." As a result, the CEQA threshold for this issue [Threshold 1 in Section 4.2.3(a) (Methodology and Significance Thresholds)] is not met.

The commenter further argues that the analysis does not include permanent indirect impacts to agricultural uses. Impact AG-1 acknowledges that some permanent facilities would be located within the utility corridor (including an electrical distribution line and redundant communication line). However, these facilities would not be located on areas designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, which is the threshold being addressed in the impact in question (Impact AG-1). Indirect impacts to agriculture are addressed in Impact AG-3, and include the assessment of project operations (including vehicle operation and the generation of fugitive dust). As noted therein, such effects would not result in permanent conversion of "Farmland" to non-agricultural use.

Finally, the commenter expresses disagreement with the use of Best Management Practices (BMPs) to reduce impacts. The discussion in question, located in Impact AG-3, has been revised to specifically cite the Applicant Proposed Measure (APM) associated with each of the measures listed (refer to response 16.19). These APMs are outlined in Section 2.0, *Project Description,* and are considered part of the project being analyzed. Therefore, they need not be repeated as mitigation.

Response 12.51

The commenter generally describes the need for an EIR to present information in a manner that the foreseeable impacts of the project can be understood, and notes that EIRs have been found inadequate when mitigation depends on management plans that have not yet been formulated. The comment does not specifically address the DEIR. Therefore, a specific response to this comment is not provided.

Response 12.52

The commenter summarizes Impacts T-1 and T-3 in Section 4.12, *Transportation/Traffic,* and then criticizes the analysis because (1) there is no clear timeline for completion of the Caltrans SR 46 widening project, and (2) there is no attempt to mitigate these impacts through alternative means.

The DEIR indicates that Caltrans is currently widening SR 46 from two lanes to four lanes from West Centre Street – McMillan Canyon Road to the four lane expressway section at Branch Road, and that some portions of the widening project have been constructed or are currently under construction. In addition, the DEIR notes that the segment from West Center Drive through SR 41, and the segment immediately east of SR 41, are anticipated to be under construction by 2018, though funding for all sections has not yet been secured (Kimley-Horn, 2013). The DEIR indicates that this information has been validated by a review of Caltrans SR 46 Corridor Improvement Plan (CIP), as these improvements are both identified and included in an adopted funding program. The DEIR thus provides ample detail regarding the Caltrans widening project, and further acknowledges that the project would not likely be completed until after construction of the proposed project.

The DEIR identifies improvements that would mitigate the impact - the Caltrans widening project, as discussed above. The conclusion that impacts would be Class I, *significant and unavoidable,* derives from the fact that this improvement would not be completed until after construction of the project.

Response 12.53

The commenter claims that the DEIR does not provide an analysis of the potential impacts resulting from the development of the park-and-ride lots. Park-and-ride lots are addressed in Impact T-7 in Section 4.13, *Transportation/Traffic.* As noted under response to comment 12.8, available details regarding the locations of the park-and-ride lots have been added to the discussion of Impact T-1. Although some detail regarding the anticipated park-and-ride lot locations is available, the size, design, and exact location of the parking facilities is not known at this time. Therefore, there is the potential for adverse impacts to occur in several issue areas including but not limited to aesthetics, biological resources, water quality and hydrology, noise and transportation and traffic. Mitigation measure T-7 outlines siting and design criteria for park-and-ride lots that, when followed, when ensure that such impacts remain less than significant.

The commenter further states that concluding an impact is significant and unavoidable without attempting feasible mitigation violates CEQA. The park-and-ride lot impact in Section 4.13, *Transportation/Traffic,* was found to be Class II, *significant but mitigable*. Refer to response 12.52 for a discussion of feasible mitigation for Impacts T-1 and T-3, which were found to be significant and unavoidable.

Response 12.54

The commenter states that the mitigation for Impact PS-1 in Section 4.12, *Public Resources,* is uncertain because it fails to identify a source of funding. In response to this comment,

Mitigation Measure PS-1(c) has been revised to clarify that the applicant is responsible for funding. Note that this measure was also revised in response to comment 6.2 to clarify that the agreement would be with South Monterey County FPD/CAL FIRE (and not "Cal Fire"). Revised measure PS-1(c) and the associated *Significance After Mitigation* discussion is included below.

PS-1(c) **Fire Protection during Construction.** Prior to the issuance of a construction permit, the applicant shall enter into an agreement with ~~Cal Fire~~ South Monterey County FPD/CAL FIRE to provide sufficient fire protection services during the non-peak fire season for the duration of project construction via provision of sufficient funding (supplied by the applicant) and other measures necessary to keep the ~~Cal Fire~~ South Monterey County FPD/CAL FIRE Parkfield substation operational during the non-peak fire season. The measures to assure sufficient fire protection services in accordance with existing standards shall be subject to the review and approval of ~~Cal Fire~~ South Monterey County FPD/CAL FIRE and may include but not be limited to the following: funding (by the applicant) for provision for fire personnel, increasing engine availability in the area, and/or provision of a helicopter landing space in consultation with ~~Cal Fire~~ South Monterey County FPD/CAL FIRE, the use of which will be restricted to emergency use only. A copy of the final, executed agreement shall be submitted to the County prior to the issuance of a construction permit.

Significance After Mitigation. Compliance with existing County ordinances and implementation of Mitigation Measures PS-1(a) through PS-1(c) would reduce potential impacts relating to emergency access and provision of emergency services. As noted above, year round staffing at the local ~~Cal Fire~~ South Monterey County FPD/CAL FIRE station during the construction phase [as required by Mitigation Measure PS-1(c)] would address response times to the site. Impacts would therefore be less than significant.

Response 12.55

The commenter states that the DEIR fails to analyze impacts caused by decommissioning activities, and that a more complete description of decommissioning activities is required. Refer to response 12.10. As noted therein, it is too speculative to provide details describing specific decommissioning activities and potential impacts that could occur far into the future. Representative procedures for decommissioning are therefore provided, based on the applicant-provided Conceptual Restoration Plan for Project Decommissioning prepared for planning purposes, and current decommissioning practices. Based on this description, the DEIR provides a good-faith effort at assessing decommissioning impacts in each of the environmental impact sections based on a worst-case scenario that decommissioning impacts would be similar to environmental impacts associated with the construction phase. Refer to Sections 4.1 through 4.14 of the DEIR for a discussion of impacts resulting from decommissioning activities.

The commenter additionally states that the DEIR frames the project as a "temporary" displacement of agricultural resources, and suggests that a detailed restoration plan is required to assure that impacts are indeed temporary. It should be clarified that the only "temporary" agricultural impacts in the DEIR are those pertaining to Prime and Unique Farmland. As noted in Impact AG-1 in Section 4.2 *Agricultural Resources,* development activities associated with the proposed project that could affect Prime or Unique Farmland would be limited to the installation of temporary water infrastructure. Thus, these impacts would only occur during construction (a 12 to 24 month period) and would therefore be temporary. No other agricultural impacts – including those to off-site or adjacent agriculture – are described in the DEIR as temporary.

The commenter further states that the DEIR fails to adequately investigate and mitigate air quality impacts related to decommissioning. Refer to Impact AQ-7 in Section 4.3, *Air Quality,* for a discussion of air quality impacts from project decommissioning. As noted therein, the potential air quality impacts associated with decommissioning activities will depend upon then-current environmental conditions at the site and surrounding area, the duration of decommissioning activities, and then-current decommissioning practices, site conditions, and regulatory requirements. Despite the lack of available details, a good-faith effort of analyzing decommissioning impacts is provided. Based on this analysis, impacts related to temporary pollutant emissions and unmitigated exposure of sensitive receptors to potential health hazards associated with the Coccidioides fungus were determined to be potentially significant. Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c) would reduce fugitive dust and exhaust emissions associated with project decommissioning. These mitigation measures, or equivalent measures based on available technology at the time of project decommissioning, would be required during project decommissioning, if proposed.

The commenter argues that impacts related to decommissioning would not be similar to construction, because decommissioning would require excavation/removal rather than installation. It should be clarified that decommissioning is considered similar to construction in that effects would be temporary, and that ground disturbance would be limited to within the project site boundaries.

Refer to response 12.48 for a discussion of soil stabilizers/dust suppressants.

Response 12.56

The commenter states that the DEIR fails to adequately address odor impacts, and suggests that diesel exhaust odor can be objectionable to people. The commenter further notes that a 24-month construction period may not seem "short-term" to those living in nearby residences. Refer to Impact AQ-5 in Section 4.3, *Air Quality*. As noted therein, odor emissions from the project would include those associated with vehicle and engine exhaust and fueling during construction. There are two residences located within 1,000 feet of the project site, and prevailing winds would transport odors away from these residences. Further, despite a 12 to 24 month construction period, these residences would only be subject to nearby construction for a relatively short period, given their location at the northernmost end of the project site, away from the bulk of construction activities. Based on the analysis in the DEIR, short-term fueling odors during construction would not impact a substantial number of people and impacts would be less than significant.

Response 12.57

The commenter generally describes CEQA requirements for cumulative impacts, and suggests that while the DEIR does identify the size and location of other renewable energy projects in the region, it does not isolate those projects that would be constructed concurrently with the proposed project. Refer to Section 5.2.2 (Solar Projects Affecting Similar Resources) of the DEIR. The status of each of the cumulative solar projects is described therein, including construction details (where available). As described, construction of the California Valley Solar Ranch is complete; construction of Topaz Solar Farm is underway; Quinto Farms would be constructed from July 2014 to approximately late 2015; the Maricopa Sun Solar Complex is approved and the first to phases are planned; the Kern Solar Ranch is currently on hold; the Tranquility Solar Generating Facility is not yet under construction, pending completion of CEQA review; and the Westlands Solar Park is currently undergoing CEQA review. In addition, as stated on page 5-11 of the DEIR, "each cumulative project has its own implementation schedule, which may or may not coincide or overlap with the California Flats Solar Project schedule. However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the proposed California Flats Solar Project."

The commenter further criticizes the analysis in Section 5.0, *Cumulative Scenario and Methodology,* as being incomplete. This section includes a list of cumulative projects and describes the cumulative analysis methodology, but does not provide analysis. The cumulative analysis is provided at the end of each environmental impact section (Sections 4.1 through 4.12 of the DEIR).

The commenter disagrees with the statement in Section 5.0 that the "majority" of projects in Table 5-1 would be minor. As acknowledged in the text immediately preceding Table 5-1, "Many projects in the cumulative effects scenario are limited in their geographic extent and would result in minor construction plans and renovations. Other projects in Table 5-1, such as the solar projects, are expansive in nature and would have the potential to create cumulative impacts despite their distance from the proposed project. The more extensive solar projects in the vicinity of the project site are shown in Figure 5-1." Thus, although the statement that the majority of projects are minor is factual, the DEIR provides a complete picture of the types of projects included, and thus does not mislead the public, as suggested by the commenter.

Response 12.58

The commenter claims that the project would be inconsistent with several policies of the Monterey County 2010 General Plan, including LU-1.5 and OS-3.1, and the San Luis Obispo County General Plan.

Policy LU-1.5 requires that land uses be designated to achieve compatibility with adjacent uses. The commenter argues that the project would be inconsistent with this policy because agricultural impacts would not be temporary. As clarified earlier in response 12.50 and 12.55, the only "temporary" agricultural impacts in the DEIR are those pertaining to Prime and Unique Farmland within the utility corridor, as this is the only location of such resources and improvements in this area would be limited to the construction phase. Other agricultural impacts are not characterized in the DEIR as temporary. Further, as stated in Table 4.10-2, a

number of mitigation measures are included throughout the DEIR to address potential land compatibility impacts during construction and operation associated with aesthetics, air quality and noise, which would reduce land use compatibility impacts to less than significant and render the project consistent with Policy LU-1.5.

The commenter additionally disagrees with the analysis of consistency with Policy OS-3.1 (which requires BMPs to prevent and repair erosion damage), based on the DEIR's reliance on the hydrology analysis presented in Section 4.9, *Hydrology and Water Quality.* As stated earlier in their letter, the commenter disagrees with the hydrologic analysis, and thus disagrees that the project can be consistent with Policy OS-3.1. Refer to responses 12.43, 12.44, and 12.C.1 through 12.C.8 for responses to the commenter's claim that the DEIR hydrologic analysis is flawed. As stated therein, it is the determination of the Monterey County Floodplain Administrator that the DEIR provides accurate analysis of the potential flooding hazards, and that the DEIR evaluated Impact HYD-5 through sufficient hydrological analysis and concluded the project would not expose structures to potential flood loss. Therefore, the analysis of consistency with Policy OS-3.1 is appropriate.

Refer also to responses 12.59 and 12.60 below, which address the project's consistency with other General Plan policies highlighted by the commenter. It should be noted that, although the commenter states that the project would be inconsistent with County of San Luis Obispo General Plan policies, the commenter does not specify which policies nor provide evidence to support this statement. No further response regarding San Luis Obispo policies is therefore provided.

Response 12.59

The commenter states that the Monterey County 2010 General Plan included policies related to the protection of biological resources. The commenter argues that the DEIR is inadequate in its analysis on biological resources and that impacts are significant and unmitigated. The premise of this comment assumes that the DEIR's analysis of biological resources is inadequate and therefore is not consistent with the Monterey County General Plan. The adequacy of the biological evaluations has been addressed in master responses 1 and 2 and responses 12.A.1 through 12.A.70. The biological evaluations, impact analyses, and proposed avoidance and mitigation measures are reasonable and appropriate, and as such the project is generally consistent with the Monterey County General Plan policies to protect biological resources.

Response 12.60

Policy OS-10.9 requires that future development implement applicable MBUAPCD control measures. The commenter references comments provided by Mr. Hagemann and Mr. Sutherland (Attachment B to the comment letter) suggesting that there are several additional measures that the project could incorporate. Refer to responses 12.B.5 and 12.B.6 for responses to Mr. Hagemann's and Mr. Sutherland's comments in Attachment B. In addition, revisions to strengthen Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c) are discussed in detail in responses 4.2, 4.13, 9.2, 9.3, 16.22, 16.23, and 16.24.

Response 12.61

The commenter states that the EIR is inadequate for the reasons described earlier, and suggests that revisions to the DEIR in response to their comments will necessitate recirculation. Please refer to responses 12.1 through 12.60. Several revisions to the DEIR have been made in response to the commenter's letter. However, none of these revisions constitute a new significant environmental impact or a substantial increase in the severity of an environmental impact. Rather, the revisions outlined in responses 12.1 through 12.60 (and elsewhere in this FEIR document) merely clarify and/or amplify the DEIR. Therefore, recirculation is not warranted.

Response 12.A.1

The commenter provides a summary of the proposed project and the qualifications of the authors of the comment letter. The comment is noted.

Response 12.A.2

The commenter summarizes a list of surveys which the Biotic Report (HTH 2014b; DEIR Appendix E. 1) stated the project proponent would complete in 2013 and notes that only one of the seven listed survey reports was included in the DEIR. The commenter argues that "data from the surveys are required to fully assess existing conditions, analyze Project impacts, and formulate appropriate mitigation" and that "deferring the survey results until after completion of the CEQA review process prevents full disclosure of Project impacts." See response 12.12 for a discussion of ongoing surveys and master response1 for a discussion of the adequacy of biological surveys.

Response 12.A.3

The commenter quotes the CDFW's definition of "special animals" and states that the DEIR is deficient because it ignores several of the species on CDFW's Special Animals list, several of which were detected during surveys of the project site and BSA, including: Cooper's hawk, ferruginous hawk, horned lark, prairie falcon, Lewis's woodpecker, yellow-billed magpie, and Lawrence's goldfinch. These are all species with the lowest level of sensitivity (CDFW "Watch List"), and as such specific discussions of these species were not included. With the exception of horned lark, the project site does not support suitable nesting habitat for any of these species, although all species could forage on the project site. Impacts to all of these species are captured under the umbrella of *Raptors and Other Special Status Birds* in Impact B-1, and measures designed to avoid impacts to these species including preconstruction nest surveys and nest avoidance [Mitigation Measures B-1(r) and B-1(s)). For clarification, the *Raptors and Other Special Status Birds* discussion under Impact B-1 in Section 4.4., *Biological Resources,* of the DEIR has been revised as follows:

> Raptors and Other Special Status Birds. The open grassland and riparian areas of the BSA and Utility Corridor study area provide suitable breeding and foraging habitat for a variety of native birds, including golden eagles, bald eagles, California condors, and burrowing owls, which are discussed above. The site also provides suitable foraging and/or breeding habitat for other special-status raptors and bird species, including Swainson's hawks, white-tailed kites, and northern harriers, short-eared owl, long-eared owl, loggerhead shrike, tricolored blackbird, mountain

> plover, Oregon vesper sparrow (wintering only), and grasshopper sparrow, as well as several CDFW Watch List species including Cooper's hawk, ferruginous hawk, horned lark, prairie falcon, Lewis's woodpecker, yellow-billed magpie, and Lawrence's goldfinch. Many other native bird species that are protected under state and federal law during nesting could occur and nest on-site. Based on the condition of the site and observations of avian activity in 2012 and 2013, there is a high likelihood of birds nesting within the project site.

Response 12.A.4

The commenter describes the rainfall during the 2011-2012 and 2012-2013 rain years and states that local experts confirmed that germination rates and abundance of native plants in the region were low during 2013. The commenter argues that results of rare plant surveys should be considered inconclusive since they were conducted in such a low rainfall year and the BSA should be resurveyed. The commenter also provides a list of target plant species that project botanists could not locate during visits to reference populations in 2013. The commenter argues that negative results during reference population checks for species that have a potential to occur on the project site demonstrates that surveys were conducted when 20 percent of the species on the target list were not evident and/or identifiable and as a result, the project area needs to be resurveyed. The commenter specifically identifies 11 species that could not be located at reference populations, implying that surveys for these species must be conducted in advance of CEQA evaluation.

Please refer to master response 2 for a discussion of the adequacy of the botanical surveys for evaluation of potential impacts under CEQA. In regards to the 11 species specifically identified by the commenter, none of the identified species are state or federally listed and all have a CRPR rating of 1B.1 or lower. San Joaquin woolythreads were observed at reference populations, oval-leaved snapdragon and Lemon's jewel-flower were evaluated as possible for occurrence on the project site, and the potential for Mason's neststraw occurrence was eliminated based on the lack of suitable habitat. Because suitable habitat is present on the project site, and because no individuals were observed at reference populations for the remaining seven species, Rattan's cryptantha, Cottony buckwheat, diamond-petaled poppy, trumpet-throated gilia, Panoche pepper-grass, and Jared's pepper-grass have been revised in Table 4.4-4 of the DEIR from "absent" to "possible," and based on marginal habitat within the project site La Panza mariposa lily has been revised from "absent" to "unlikely." A number of non-listed special status plant species are considered to have some potential for occurrence on the project site as outlined in the impacts analysis for special status species (see Table 4.4-6 of the DEIR), and the above revisions do not substantially alter the impacts analysis or change the level of significant for impacts to special status species. Therefore, no further analysis is necessary to evaluate potential impacts to special status species, and the proposed mitigation (Mitigation Measures B-1[a] through B-1[e]) are sufficient to address potential impacts to these species.

Response 12.A.5

The commenter states that the DEIR provides inaccurate information regarding the presence of Mason's neststraw, stating that the plant has no potential of occurring within the BSA. Refer to response 12.14.

Response 12.A.6

The commenter contends that the DEIR is misleading in stating that several of the target annual plant species were absent from the survey areas Refer to response 12.15.

Response 12.A.7

The commenter questions the adequacy of plant survey days and seasonal timing to characterize occurrences on the site. Refer to master response 2.

Response 12.A.8

The commenter notes that a new tarplant species, Diablo Range hare-leaf (*Lagophylla diabolensis*) was published in 2013 and added to the CNPS Inventory January 2014 as a CRPR 1B.2 species. The commenter notes that the species is known to occur in the vicinity of the project site, and the project site provides suitable habitat for the species. As a result, the commenter argues that focused surveys for *L. diabolensis* should be conducted prior to project development.

In 2013, a publication by Dr. Bruce Baldwin resulted in revisions to the taxonomy of the genus *Lagophylla* (Baldwin 2013). The species formerly known as *Lagophylla dichotoma* (sensu lato) was divided into two species on the basis of morphological differences, resulting in a new species, *Lagophylla diabolensis*, and a more narrow description for the species *Lagophylla dichotoma* (sensu stricto). In this publication, Dr. Baldwin further states that the newly narrow description of *L. dichotoma* (sensu stricto) applies to plants of the Sierra Nevada foothills and eastern Great Central Valley, which are far removed from the BSA, while occurrences of *L. diabolensis* range into Monterey and San Benito Counties. Only *L. diabolensis* is reported to occur in Monterey County. Under the former taxonomy, potential for occurrence of *Lagophylla dichotoma* (sensu lato) was already analyzed, and *Lagophylla dichotoma* (sensu lato) was determined to have potential to occur in the Access Road area, though it was not documented on site. The EIR has been revised to reflect the change in taxonomy and range for *Lagophylla* as follows:

Table 4.4-4 was edited, and a footnote was added below the table explaining the updated taxonomy and range:

Lagophylla diaboloensis[1] *[Formerly included in L. dichotoma, s.l.]* ~~forked~~ Diablo Range hare-leaf	--/--/1B.2~~1~~	Known only from the Diablo Range. Sometimes clay substrate in cismontane woodland and valley and foothill grassland.

[1] In 2013, taxonomy of the genus *Lagophylla* was revised. *Lagophylla dichotoma* (sensu lato) was divided into two species. The newly narrow description of *L. dichotoma* (sensu stricto) applies to plants of the Sierra Nevada foothills and eastern Great Central Valley, and does not occur in Monterey County, while occurrences of the newly described *L. diabolensis* occur in the Diablo Range, in portions of Monterey, Fresno, and San Benito Counties (Baldwin 2013).

Table 4.4-6 was also updated, as follows:

Lagophylla ~~dichotoma~~ diabolensis ~~forked~~ Diablo range hare-leaf	--/--/1B.~~1~~2

Response 12.A.9

The commenter argues that the applicant's plant list also includes plant species that were not identified to the level necessary to determine rarity. The commenter specifically states that *Isocoma (menziesii)* and *Delphinium (gypsophilum)* should be positively identified to variety/subspecies to determine if the rare variety/subspecies occur in the project area. Refer to master responses 1 and 2. The specific identification of every plant on the project is not required to evaluate the potential impacts from project development under CEQA. The site has been appropriately evaluated for the potential to support special status plant species based on presence of suitable habitat and multiple surveys. Measures have been developed to avoid and/or mitigate potential impacts including preconstruction plant surveys (Measure B-1[c]), special status plant species avoidance and minimization measures (Measure B-1[d]), compensatory mitigation (Measure B-1[a]) and habitat restoration (Measure B-1[b]).

Response 12.A.10

The commenter argues that vegetation types were not sufficiently evaluated to determine their conservation status as sensitive natural communities. The DEIR states that "permanent impacts to these habitats would be significant under CEQA because they would substantially and adversely affect sensitive natural communities. Therefore, this impact would be considered *Class II, significant but mitigable*." Regardless of what alliances and associations are included within the wildflower field, serpentine bunchgrass grassland and valley needlegrass grassland habitat types, a detailed restoration plan will be developed and implemented using on-site baseline conditions as the guideline for in-kind mitigation to be accomplished. Evaluations of pollinator guilds is far beyond the typical scope of analyses conducted for CEQA review, and would add little to the evaluation of potential impacts to specific sensitive communities. The DEIR specifies and prescribes information that would be required to evaluate the specific characteristics of sensitive communities for which compensatory mitigation will be required as outlined in Mitigation Measure B-1(b). Comments regarding mitigation for wildflower fields are further addressed in response 13.6.

Response 12.A.11

The commenter disputes the characterization of habitat as Riparian Oak Woodland because it is dominated by valley oak, and as such, should be designated as Valley Oak Woodland, identifies four other vegetation types believed to occur in the project area, and that the DEIR failed to disclose, analyze, or mitigate potentially significant impacts to these sensitive natural communities. The County disagrees that Valley Oak Woodland and alkali heath herbaceous alliance are present on the project site; and bunchgrass grasslands and freshwater seasonal and perennial marshes were documented in the DEIR. HTH biologists conducted several surveys of the entire project site to map and characterize the vegetation communities on the project site. Because sensitive communities are known to occur within the region does not imply that these communities are

present on the project site. Additional discussion specific to communities named in this comment are provided in the following paragraphs.

Willow-Cottonwood Riparian Woodland: The project would avoid impacts to this habitat type, which does occur in the BSA and utility corridor study area (9.45 acres, as reported by the Addendum to Biotic Resources Report and Biological Resources Impact Analysis [HTH 2014e; DEIR Appendix E.13) and in the solar generating facility area (SGFA) (1.72 acres, as reported by the DEIR[2]). As described in the Table 4.4-8 of the DEIR, up to 0.09 acres of permanent impacts may occur to willow-cottonwood riparian woodland. This impact acreage was derived through spatial analysis: the impact would occur because slivers of mapped habitat intersect with road and array buffers generated in GIS, including one improved road crossing that would not remove any trees. None of these impacts would cause loss of, or impacts on, riparian canopy, or substantial modification of riparian habitat. Figure 2-1 displays the minor nature of these impacts over a nearly 2,700-acre impact area. Native riparian tree impacts would be largely avoided. Additionally, Mitigation Measure B-2(i) is required for any permanent impacts on any riparian habitat, and any trees that are damaged or imperiled by project activities would be protected by Mitigation Measure B-5(a) and, if unavoidable, mitigated by Mitigation Measure B-5(b).

[2] Note: the acreage was reported erroneously in Table 4.4-2 of the DEIR but has been revised to the correct acreage of 1.72; see response 16.169

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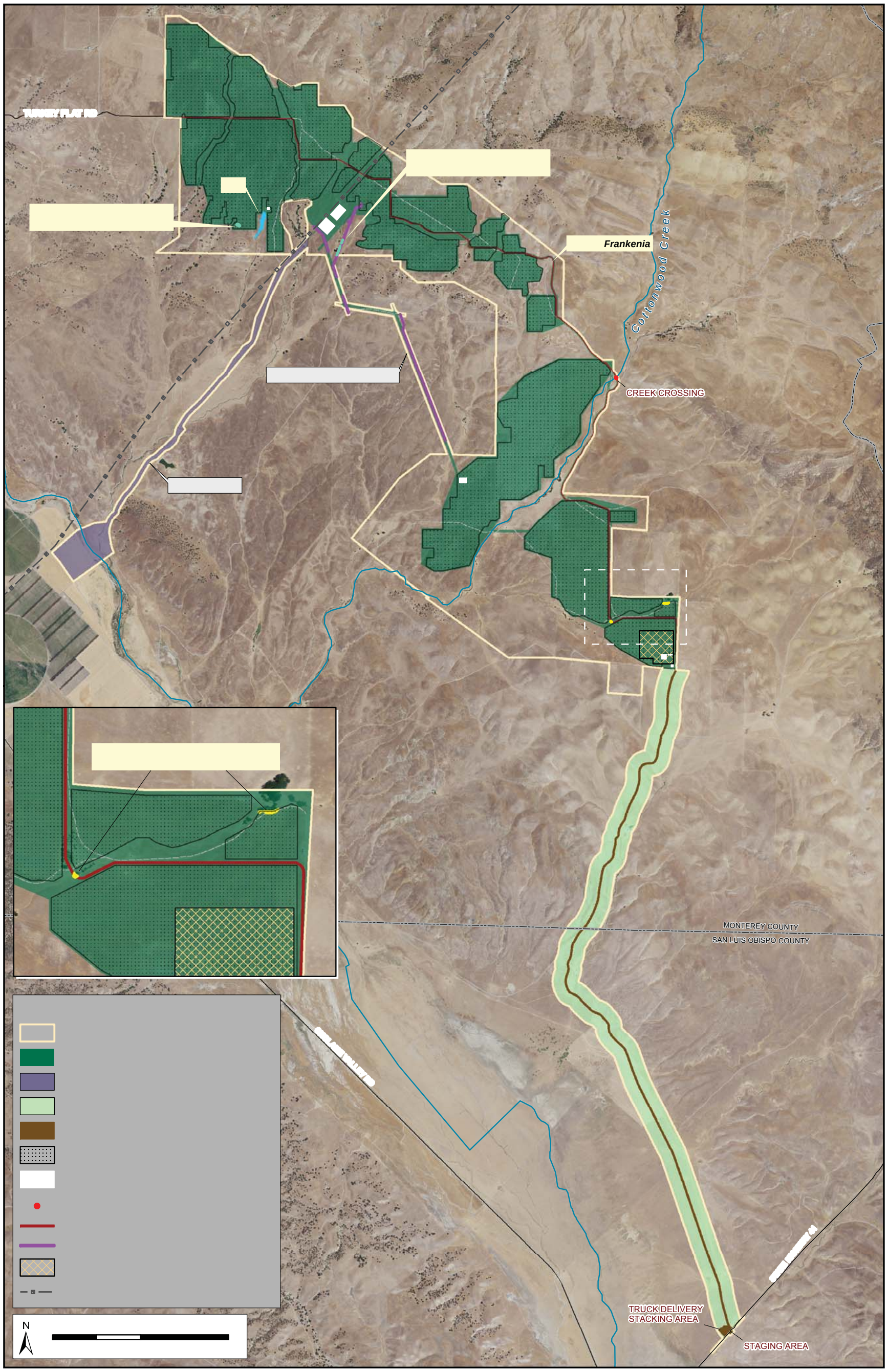

Source: Harvey & Associates, 2014.

Sensitive Community Impact Locations

Figure 2-1

County of Monterey

Alkali Heath: Alkali heath (*Frankenia salina*) occurs in low numbers in a very restricted area of the SGFA (see Figure 2-1 —this occurrence was also disclosed in the Biotic Report [HTH 2014b; DEIR Appendix E.1]). In the area immediately to the southwest of the northeast corner of the SGFA, scattered alkali heath occurs in some of the mapped wetlands. Alkali heath is not a rare species, but several vegetation associations containing alkali heath are considered sensitive because they have a State rank of S3 or lower (CDFG 2010). As noted in the Biotic Report (HTH 2014b; DEIR Appendix E.1), none of the areas in the SGFA can be considered an alkali heath alliance or an alkali heath dominated vegetation association. Except in a few extremely small areas (e.g., one square foot or smaller), smaller than a minimum habitat mapping unit, alkali heath was never observed to be present in sufficient cover to be considered dominant in the vegetation type. As a whole, these wetlands were dominated in cover by seaside barley and meadow barley, and were mapped as seasonal wetlands (also considered sensitive and a regulated habitat type). Impacts on seasonal wetlands were assessed in the DEIR and mitigated under Mitigation Measure B-3(d).

Chairmaker's Bulrush and Yerba Mansa: Chairmaker's bulrush (*Schoenoplectus americanus*) was identified in the BSA, but outside the SGFA, utility corridor, and access road. This species was observed only in stock ponds outside the project impact area and in the marsh labeled W19 (see Figure 2-1), and would not be impacted by the project. W19 is outside the project impact area, but the DEIR (and BRIA) noted that temporary impacts could occur there as a result of dewatering associated with placement of a well near this wetland. However, mitigation measures such as a well siting study and wetland monitoring (B-3[b] and B-3[c]) would prevent permanent impacts on this habitat if the well is required for project use. If the habitat is affected for a longer period, mitigation would be required. Regardless, it is expected that, even after temporary dewatering, these perennial species would reestablish and would not be impacted. W19 was also the only area of the BSA that contained yerba mansa (*Anemopsis californica*) in any numbers that could be affected by the project. Again, the project is not anticipated to affect this off-site wetland. The DEIR provides measures to require mitigation should impacts occur (Mitigation Measures B-3[b] through B-3[d]).

Purple Needlegrass: Purple needlegrass (*Stipa pulchra*) occurs on the project site, in the serpentine bunchgrass grassland and Valley needlegrass grassland habitats. The project would avoid all permanent impacts on serpentine bunchgrass grassland, as described in the DEIR. Up to 0.27 acre of permanent impacts would occur to Valley needlegrass grassland, specifically identified as a sensitive habitat in the DEIR. Mitigation for impacts on this habitat are required by Mitigation Measure B-2(a), and temporary impact restoration is discussed in Mitigation Measure B-2(b).

Response 12.A.12

The commenter summarizes the Fish and Game Code Section 3511, the federal Bald and Golden Eagle Protection Act ("Eagle Act"), and project impacts to golden eagles. The commenter argues that impacts to bald and golden eagles would constitute a take, as defined by the Eagle Act, and as a result would require an incidental take permit from the USFWS. Impacts to golden eagle such as mortality and disruption of nesting behavior were identified as *potential* impacts and avoidance measures such as speed limits, power line collision and electrocution avoidance measures, preconstruction nest surveys, and nest avoidance buffers are required to ensure avoidance of direct impacts, as identified in Mitigation Measure B-1(s). The applicant's biologists coordinated with and are continuing to coordinate with USFWS regarding the presence of golden eagle in the vicinity of the project site. To address any potential impacts to golden eagles, the applicant has proposed to

prepare a Bird and Bat Conservation Strategy (BBCS) in coordination with USFWS (included as APM-10) that would describe and outline management measures and monitoring protocols that would be implemented on the project site to reduce risk to eagles and other raptors, among other avian and bat species. Loss of foraging habitat would be offset with nested compensatory mitigation under Mitigation Measures B-1(a). Accounting for management measures to reduce potential impacts to nesting eagles (such as surveys and construction buffers from active nests), and analyses of eagle activity on and adjacent to the project site indicates a low level of eagle take risk; however, the applicant will continue to consult with USFWS regarding potential impacts to species, including golden eagle, subject to USFWS jurisdiction.

Response 12.A.13

The commenter argues that the DEIR's analysis of Swainson's hawk is misleading because no protocol-level surveys were conducted for Swainson's hawk nest sites. As discussed in master response 1, protocol-level surveys are not required and generally are not necessary to evaluate potential impacts under CEQA. In California, nesting by Swainson's hawks (*Buteo swainsoni*) occurs in the Central Valley, Great Basin, and Mojave and Colorado Deserts; regular nesting also occurs in the high desert between the Tehachapi Mountains and Lancaster. In the Central Valley, nest sites are associated with riparian forest vegetation and found in trees located in uplands. The BSA is 20 miles from the nearest CNDDB–documented Swainson's hawk nest, although moderately suitable nesting habitat is present in the riparian and oak woodland portions of Cholame Valley. As reported in the DEIR, according to recent reports, there has also been one active Swainson's hawk nesting territory approximately 13 miles southwest of the project site in San Luis Obispo County, potentially representing a recent return of Swainson's hawk nesting activity to San Luis Obispo County.

Raptor nest surveys were conducted in 2013 (HTH 2013d; see FEIR Appendix E.17). One of the main objectives of the raptor nest survey effort conducted by HTH in 2013 was to search for nesting Swainson's hawks within five miles of the project site. The 2013 nest survey consisted of two sets of site visits. During the surveys conducted in late March 2013, HTH biologists conducted aerial surveys in a helicopter over all habitats potentially suited to nesting Swainson's hawks within five miles of the project site and access road. The biologists flew at low speeds over all areas that included trees, rocky substrates, or electrical transmission towers of sufficient stature to support an eagle or Swainson's hawk nest, often making several passes at different altitudes to sufficiently cover complex terrain. During the second set of surveys conducted in mid-May 2013, all areas within five miles of the project site that were potentially suited to nesting Swainson's hawks were rechecked.

No Swainson's hawk individuals or nests were detected during the nest search effort. Overall, this species is expected to have a relatively low potential to occur on the project during the breeding season, because of the relative lack of quality nesting substrate. Data from the several hundred hours of avian surveys that have been completed to date support this conclusion of low use; this species was observed once in the spring during the 2013 avian use surveys (a migrant was seen flying at an altitude of over 492 feet); one individual Swainson's hawk was also observed incidentally as part of the ongoing 2014 eagle use surveys. The results of the nesting raptor survey report (HTH 2013d; FEIR Appendix E.17) are consistent with the findings of the DEIR. The DEIR accurately characterized the project site's potential to support nesting Swainson's hawks and has

included reasonable and standard measures to avoid impacts to nesting Swainson's hawks. The preconstruction nest surveys that would be conducted as part of Mitigation Measure B-1(r) would be designed to detect any raptor nest within one mile of construction disturbance, including a Swainson's hawk nest, in the unlikely event that a new nest is built in the area, and appropriate avoidance buffers would ensure no impacts to nesting Swainson's hawks.

Response 12.A.14

The commenter notes an inconsistency in the descriptions of occurrences of the mountain plover within the vicinity of the project site. The statement of no CNDDB records of Mountain Plover within 20 miles of the project site was a clerical error. Although there is one record of mountain plover within five miles of the project site, this does not substantively alter the analysis of potential impacts as the DEIR already identified suitable habitat on the project site and recognized mountain plover as potentially occurring on the project site (see Table 4.4-4 of the DEIR). The *Mountain Plover* discussion in Section 4.4.2(f) (Special Status Resources) of the DEIR has been revised as follows:

> *Mountain Plover*. Mountain plover do not breed in California; rather they migrate to the Central and Imperial valleys during the winter. There ~~are no~~ is one CNDDB record for mountain plover, an approximate location recorded centered within ~~20~~ five miles of the BSA, ~~but~~ and small flocks have been reported in the Cholame Valley as close as four miles south of the project site (NAS and CLO, 2012). Most observations have been in agricultural lands 10 to 15 miles east of the BSA. No mountain plovers have been observed within the BSA, but suitable foraging habitat is present.

Response 12.A.15

The commenter states that surveys were not conducted for northern harrier nests on and around the project area, nor were nest searches conducted for any other species except the golden eagle, however, according to the Biotic Report (HTH 2014b; DEIR Appendix E. 1), harriers are known to nest in Cholame Valley." As discussed in master response 1, specific focused surveys for many species, including northern harrier, are not required to evaluate the potential impacts under CEQA. The DEIR has identified the project site as containing potentially suitable breeding and foraging habitat for raptors including the northern harrier, and included mitigation and avoidance measures to address potential impacts to nesting raptors, including ground nesting birds such as northern harriers, if present at the time of construction activity as outlined in Mitigation Measures B-1(r) and B-1(s).

Response 12.A.16

The commenter disputes the methodology and conclusions related to surveys conducted for California tiger salamander (CTS). The commenter argues that the project area is within the range of mobility capabilities of the species from known detection sites and that "the County's determination that species occurrence in the Project area is "unlikely" is not supported." As discussed in master response 1, specific focused protocol surveys for all species is not necessary to evaluate impacts under CEQA. The commenter discusses at great length the specific details of USFWS and CDFW guidelines for CTS survey protocol noting such specifics as "Biological field surveys should be conducted for all sites with potential CTS habitat," and "surveyors

should provide strong justification that their data are reliable including but not limited to local climate (e.g., daily rainfall totals, pond filling date, pond drying date) and biological survey data (e.g., other species captured during each sampling interval)." This information is only necessary to support a negative finding for CTS on a project site. In this case, the project has excluded the potential for CTS breeding on the project site based on the lack of breeding habitat. Surveys to identify potential breeding habitat on the project site were thorough and sufficient. Protocol surveys for upland habitat are not required because the extensive surveys and habitat assessments were conducted for CTS to determine the potential for CTS to occur on upland habitat, and all areas within 1.3 miles of suitable breeding ponds were identified as suitable upland habitat for CTS.

Access was not granted to survey all potential CTS breeding ponds within 1.3 miles of the project; however, based on the facts that there was a CNDDB-recorded observation of the species in the project vicinity and full protocol surveys for the species were not conducted, the upland habitat on the project within 1.3 miles of the off-site potential breeding ponds was identified as potential CTS upland habitat. Thus all upland habitat on the project within 1.3 miles of off-site potential breeding ponds has been identified, and measures to avoid and minimize impacts to individuals of the species, if present in the identified upland habitat, have been incorporated into the DEIR. Additionally, compensatory mitigation has been proposed for permanent impacts to the potential CTS upland habitat.

Surveys conducted within the BSA were sufficient to determine that the project does not contain suitable breeding habitat for the CTS, and that all suitable breeding habitat for CTS within 1.3 miles of the project has been identified. During a reconnaissance-level survey in April 2012 (during a year of above-average rainfall), Dr. Jeff Wilkinson investigated all aquatic features in the BSA to determine whether they presented potential breeding habitat for CTS. He did not observe ponding in the BSA that was deep enough or maintained a hydroperiod long enough to provide breeding habitat for CTS. Ponds that provided such habitat consisted of nearby off-site ponds. All off-site ponds within 1.16 miles of the project site were identified using aerial photographs prior to, and then verified (when access was permitted) during, larval surveys for this species. Further surveys were conducted in spring 2013 at additional ponds during the aquatic larval surveys (Aquatic Larval Surveys Report, HTH 2013a; DEIR Appendix E.7). Those ponds to which access was not permitted were conservatively identified as potential breeding habitat.

Based on identification of all potentially suitable off-site breeding ponds, all upland habitat on the project site within 1.16 miles of these off-site ponds is considered potential upland dispersal and refugial habitat for this species, according to USFWS, CDFW, and current published research (e.g., Orloff, S. G. 2011).

As stated in the California Flats Solar Project 2013 Aquatic Larval Surveys, California Tiger Salamander, California Red-legged Frog report (HTH 2013; DEIR Appendix E. 7), HTH herpetologist Jeff Wilkinson, Ph.D., performed a reconnaissance-level survey to determine the potential for the California red-legged frog and California tiger salamander to be present in the BSA. The survey, conducted in April 2012, followed the Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog, issued by USFWS (2005), and the Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative

Finding of the California Tiger Salamander, issued by USFWS and CDFW (California Department of Fish and Game 2003). During the survey, Dr. Wilkinson investigated all aquatic features on the BSA to determine if they presented potential breeding habitat for California tiger salamanders. Based on the results of the survey, Dr. Wilkinson prepared site assessments documenting site conditions and the location of the BSA relative to known occurrences of California tiger salamanders. The site assessments were submitted to USFWS on November 5, 2012 for California tiger salamander, per protocol standards. In submitting the California tiger salamander site assessment, Dr. Wilkinson requested that California tiger salamander larval surveys be conducted during the breeding season at seven potential breeding ponds outside of the BSA but within 1.3 miles of the BSA. Additionally, Dr. Wilkinson requested, on May 1, 2013, that both California red-legged frog and California tiger salamander surveys be conducted in additional potential breeding ponds north of the BSA, and received concurrence from USFWS on May 15, 2013 that these ponds should be surveyed.

Dr. Wilkinson conducted the three spring larval surveys (in March, April, and May) per USFWS protocols, assisted by HTH herpetologist Steve Carpenter, B.S. In total, 17 ponds were sampled for California tiger salamander. Site conditions during the March surveys were clear with an early morning marine layer, during the April surveys were sunny, hot and windy, and during the May surveys were partly sunny with a marine layer and cool. No California tiger salamanders were observed in the ponds outside of the BSA for which they had access to survey.

Based on the negative findings of the California tiger salamander surveys, the presence of California tiger salamander on the project is unlikely. However, because full protocol-level surveys were not conducted for California tiger salamander, the County and applicant have taken a conservative approach to identifying and mitigating impacts on the species. No breeding habitat for California tiger salamander was detected on the BSA, access road, or utility corridor; and no breeding habitat will be impacted by the project. However, all upland habitat on the project within 1.18 miles of potential off-site breeding ponds has been identified, and measures to avoid, minimize, and mitigate potential impacts to individuals of the species, if present in the identified upland habitat, have been incorporated into the DEIR (see Mitigation Measures B-1[w], B-1[aa], B-1[bb], and B-1[cc] in Section 4.4, *Biological Resources*).

Response 12.A.17

The commenter disputes the methodology and conclusions related to the California red-legged frog (CRLF) surveys conducted for the DEIR. As discussed in master response 1, full protocol-level surveys are not required or necessary to evaluate potential impacts under CEQA. Full protocol-level surveys and supporting documentation are necessary only when defending negative findings for CRLF on a project site. The surveys for this project were conducted to evaluate the potential for the CRLF to occur on the project site, and to identify all suitable habitat that would require mitigation, and as such were appropriate and sufficient. During the reconnaissance-level survey in April 2012 (during a year of above-average rainfall), Dr. Jeff Wilkinson investigated all aquatic features on the BSA and two pods adjacent to the access road to determine whether they presented potential habitat for CRLF per the *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog,* issued by USFWS. He observed that several pools in the drainages on the BSA and the nearby off-site ponds provided both

aquatic breeding and foraging/dispersal habitat for this species. During the 2012 nonbreeding survey, CRLF were observed in Cottonwood Creek and one unnamed drainage, confirming presence of this species on the BSA. No further surveys were conducted in 2012, per the USFWS protocol, which states "[i]f CRF are identified at any time during the course of the surveys, no additional surveys will be conducted in the area, unless the surveying effort is part of a Service-approved project to determine actual numbers of frogs at a site." During the three 2013 spring larval surveys, Dr. Jeff Wilkinson and Mr. Steve Carpenter, B.S., surveyed these pools and ponds and observed calling CRLF adult males and CRLF egg masses in March, and CRLF tadpoles in April and May, within several pools of multiple drainages on the BSA, including Cottonwood Creek, and two unnamed drainages (HTH 2013; DEIR Appendix E. 7). They did not find CRLF adults, egg masses, or tadpoles in the nearby (within one mile of the project) off-site ponds that they had access to survey; however, CRLF were detected in one pond south of SR 46.

These extensive surveys for CRLF allow assessment of potential impacts of the project on the species, and facilitate development of appropriate avoidance, minimization and compensation measures. As stated in the *California Flats Solar Project 2013 Aquatic Larval Surveys, California Tiger Salamander, California Redlegged Frog* report (November 1, 2013), HTH herpetologist Jeff Wilkinson, Ph.D., performed a reconnaissance-level survey to determine the potential for the CRLF to be present on the BSA. The survey, conducted in April 2012, followed the *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog*, issued by USFWS (2005), and the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander*, issued by USFWS and CDFW (California Department of Fish and Game 2003).

During the survey, Dr. Wilkinson investigated all aquatic features on the BSA to determine if they presented potential breeding habitat for CRLF. Based on the results of the survey, Dr. Wilkinson prepared site assessments documenting site conditions and the location of the BSA relative to known occurrences of CRLF. The site assessments were submitted to USFWS on July 30, 2012 for CRLF, per protocol standards. In submitting the CRLF assessment, Dr. Wilkinson requested that CRLF surveys be conducted in the nonbreeding season to determine if this species was present on the BSA. He received concurrence from USFWS on August 10, 2012 that these surveys would be appropriate. He conducted the nonbreeding season survey of Cottonwood Creek, seven unnamed drainages on the BSA, and two ponds adjacent to the access road on August 16, 2012. CRLF were observed at six locations within Cottonwood Creek, and within one of the unnamed drainages, confirming presence of this species on the BSA within the previously identified aquatic features. No further surveys were conducted at this time per the USFWS protocol, which states"[i]f CRF are identified at any time during the course of surveys, no additional surveys will be conducted in the area, unless the surveying effort is part of a Service-approved project to determine actual numbers of frogs at a site." Dr. Wilkinson submitted the results of the survey to USFWS on September 5, 2012. In addition, Dr. Wilkinson requested, on May 1, 2013, that both CRLF and California tiger salamander surveys be conducted in additional potential breeding ponds north of the BSA. He received concurrence from USFWS on May 15, 2013 that these ponds should be surveyed.

Dr. Wilkinson conducted the three spring larval surveys (in March, April, and May) per USFWS protocols, assisted by HTH herpetologist Steve Carpenter, B.S. In total, 42 ponds, or in-stream

pools, both on the BSA and outside of the BSA were sampled for CRLF during the three surveys. Site conditions during the March surveys were clear with an early morning marine layer, during the April surveys were sunny, hot and windy, and during the May surveys were partly sunny with a marine layer and cool. Dr. Wilkinson and Mr. Carpenter observed CRLF breeding in seven pools within Cottonwood Creek and one unnamed drainage within the BSA, and in a pond just south of SR 46 outside of the BSA. Adult and/or juvenile CRLF were found in an additional nine pools in Cottonwood Creek and two unnamed drainages within the BSA. The surveys exceed the necessary level of evaluation to determine if the project may impact CRLF, and the DEIR has accurately identified potential impacts to the species and provided appropriate measures (including Mitigation Measures B-1[w], B-1[x], B-1[y] and B-1[z]) to avoid and/or mitigate the potential impacts to this species.

Response 12.A.18

The commenter disputes the methodology and conclusions related to surveys for the western pond turtle. The commenter notes that the project site appears to have a viable population of pond turtles and that loss of that population would have "relatively severe consequences on conservation of the species." As described in master response 1, protocol-level surveys are not required to evaluate potential impacts to special status species, and are generally only required to inform resource agencies on numbers of individuals if requested, or to support a determination that the species does not occur on the project site (see master response 1 for a more detailed explanation of the adequacy of biological surveys). The project site was evaluated for its potential to support western pond turtle, and the DEIR identified suitable habitat on the project site and potential impacts to this species. Mitigation Measure B-1(t) in Section 4.4, *Biological Resources,* provides avoidance and mitigation for western pond turtle.

Response 12.A.19

The commenter states that surveys for special-status mammal species are inadequately documented in the DEIR. Specifically, the DEIR indicates known records of the San Joaquin kit fox to the south and east of the project area; however, there is no indication whether surveys were conducted to the north and west of project area. SJKF surveys were not conducted to the north of the project area. However, spotlight surveys for the species were conducted west of the project area, along Turkey Flat Road and Cholame Valley Road (see Spotlight Survey Report, HTH 2014f; DEIR Appendix E.14). Further surveys and studies outside the BSA are not required to adequately assess impacts. The BSA was defined based on the applicant's property rights (in terms of a lease agreement). Where impacts on sensitive resources, such as special status plants, SJKF, golden eagles, and California tiger salamanders might extend beyond the BSA, studies were conducted and impacts assessed where access was granted. Thus, where species' home ranges or life histories could extend beyond the BSA, surveys were conducted in a larger area, where accessible, to accurately assess both direct and indirect impacts. In certain situations, where access was not granted, potential habitat was identified. When potential off-site habitat was identified, a conservative approach on the side of the resource was always taken. As described in master response 1, an exhaustive protocol survey for all species is not required for the evaluation of impacts under CEQA, and it is not necessary to identify the exact number of individuals of a species that may be present on and adjacent to a project site one or more years in advance of project impacts. Rather, what is required is an evaluation of the potential for special status species

to occur on the project site, and an evaluation of the potential or actual impacts to that species from project development.

Response 12.A.20:

The commenter argues that there is no scientific basis provided to support the DEIR's conclusion that "the site is unlikely to serve as a distinct or important movement corridor or habitat linkage for any protected or managed species." The commenter also cites various sections of text from the DEIR and states that the DEIR is inconsistent in its assessment of whether the project area could be a wildlife corridor for the San Joaquin kit fox..

As stated in the DEIR and in the California Flats Solar Project Spotlight Surveys for San Joaquin Kit Fox and American Badger Report (HTH 2014f; DEIR Appendix E.14), SJKF are known to occur in the BSA. The BSA is located on the northeastern edge of the Palo Prieto/Cholame Valley kit fox population area. The site is at the north (terminal) edge, but outside of a corridor that would connect Carrizo Plain populations of SJKF with the Palo Prieto/Cholame Valley satellite population(s) of SJKF. The DEIR clearly identifies that SJKF are present in the BSA and general vicinity and the site contains some areas of moderate to high suitability for movement of kit fox within the project site. The DEIR further acknowledges the CDFW recovery objectives that conservation of natural lands around edges of core and satellite populations could be affected by the project and that the project could contribute to cumulative threats to kit fox movement; these statements are not contradictory to the statement that the BSA itself is not a major movement corridor.

The comment overlooks the distinction between general movement patterns of SJKF and impacts to identified wildlife movement corridors or critical habitat linkages. The project is west of and outside identified kit fox habitat linkage between western Kern County core populations and Salinas Valley satellite populations (Penrod et al 2010) and outside of the potential Carrizo Plain - Palo Prieto/Cholame Valley corridors. The issue is not whether the project site is within an established population of kit fox - it is - or whether kit fox move through the project site – they do. The issue under evaluation is whether the project is located within a critical habitat linkage or significant kit fox movement corridor. Based on the analysis of wildlife corridors conducted by Penrod et al. (2010), the USFWS Recovery Plan, the most recent USFWS Five-Year Review of SJKF and the specific characteristics of the project site and surrounding region, there is no compelling evidence that the project site itself serves as a distinct, habitat linkage between known kit fox populations (core or satellite), or functions as a critical movement corridor that would be significantly disrupted by project development. The DEIR provides a complete analysis of existing data on SJKF habitat suitability and presence in the BSA, as well as current models for SJKF movement, and references available data on SJKF core and satellite populations (references included data and discussions from the USFWS Recovery Plan; the most recent USFWS Five-Year Review for SJKF; Penrod et al. (2010) Habitat Connectivity Planning Model; other sources as cited in the HTH Biotic Report [HTH 2014b; DEIR Appendix E.1]). This section of the EIR makes distinctions between suitable habitat for SJKF within which SJKF movement would be expected, and key SJKF movement corridors and habitat linkages connecting core and satellite populations, and concludes that while the project site consists of suitable habitat and the species is present on the project site, the site does not constitute a key movement corridor or critical habitat linkage connecting populations.

A typographical error was noted in the first paragraph under Impact B-4 in Section 4.4, *Biological Resources,* of the DEIR and has been corrected as follows:

> Penrod et al.'s (2010) regional corridor analysis identified three "target areas," or core areas identified as endpoints that connect core populations. In this instance, the endpoints identified are the Carrizo Plain (at the south end of the species' range) and three locations to the north. The three northern locations, which support stable populations of kit fox, are the Salinas River Watershed, the Palo Prieto/Cholame Valley, and Western Kern County (Antelope Valley) (see Figures ~~9 and 10~~ 12 and 13 in Appendix E.1). The project is located within the Palo Prieto/Cholame Valley target area.

Response 12.A.21

The commenter contends that the DEIR is inconsistent, stating that contradictions exist between proposed mitigation and the evaluation of cumulative impacts to SJKF. The cumulative impacts analysis correctly concludes that the required "compensatory mitigation has the potential to reduce potential cumulative impacts by offsetting project impacts on low quality habitat with conservation lands in high quality habitat and within critical regions for habitat connectivity, especially if compensatory mitigation is conducted consistent with the USFWS Recovery Plan for Upland Species of the San Joaquin Valley. By preserving lands specifically designed to provide critical migratory and dispersal corridors for species such as the San Joaquin kit fox, project mitigation can significantly reduce potential cumulative impacts to less than significant." The emphasis here is on the fact that potential cumulative impacts were identified, and that those impacts could be significant if not offset with compensatory mitigation. As stated, implementation of mitigation would reduce impacts to a less than significant level.

Response 12.A.22

The commenter cites the DEIR's description of use of the project area by the kit fox which states "the BSA and Utility Corridor study area both comprise suitable home range and/or dispersal habitat for San Joaquin kit fox" and argues that "if the Project area is a suitable home range, then the Project area is not simply a movement corridor at the northern end of the Carrizo Plain population." It is not clear what the issue of concern is in this comment. The DEIR does not state that the project area is simply a movement corridor at the northern end of the Carrizo Plain. The DEIR clearly identifies the project site as consisting of suitable home range and dispersal habitat for SJKF. The DEIR also distinguishes between suitable habitat and local dispersal from known or potential critical habitat linkages or wildlife movement corridors that connect regional populations (see response 12.A.20), and independently evaluates the potential impacts to local SJKF as distinct from potential impacts to SJKF movement corridors.

Response 12.A.23

The commenter notes that the DEIR summarizes information from the California Valley Solar Ranch that indicated kit fox will continue to inhabit a solar facility after development and states that longer-term negative impacts are likely. The commenter further summarizes negative impacts to the kit fox anticipated during construction and following full project development.

This comment reiterates the impact analysis already provided in the DEIR. The comment is noted.

Response 12.A.24

The commenter states that there are inconsistencies in the DEIR in regards to the San Joaquin pocket mouse and argues that adequate trapping was not conducted to determine the presence/absence of the species.

As stated in master response 1, an exhaustive protocol survey for all species is not required for the evaluation of impacts under CEQA, and it is not necessary to identify the exact number of individuals of a species that may be present on and adjacent to a project site one or more years in advance of project impacts. Rather, what is required is an evaluation of the potential for special status species to occur on the project site, and an evaluation of the potential or actual impacts to that species from project development.

The San Joaquin pocket mouse (*Perognathus inornatus inornatus*) is not specifically known from the BSA or the Cholame Valley, but it has been reported from locales to the east, south, and west of the BSA in the CNDDB. San Joaquin pocket mouse burrows, along with those of the California pocket mouse (*Chaetodipus californicus*), have a conspicuous but small burrow opening that is approximately two to three centimeters in diameter. Pocket mouse burrows are readily detected during full-coverage ground surveys such as were conducted for the project. Both species of pocket mouse are also regularly associated with Heermann's kangaroo rats (*Dipodomys heermanni*) (Best 1993), and they have been found in the excavated burrows of giant kangaroo rats (*Dipodomys ingens*) by HTH mammalogists. Pocket mouse burrows were not detected during the full-coverage ground surveys and, although this is not conclusive evidence that they are not present on the project site, it does indicate that they are not abundant. Furthermore, the San Joaquin pocket mouse and the California pocket mouse are regularly captured during trapping surveys focused on kangaroo rats. Neither species of pocket mouse was captured during trapping surveys of kangaroo rats conducted in and around the project site, as reported in the California Flats Solar Project Identification of Kangaroo Rats through Morphometric, Ecological, and Genetic Analyses report dated October 2013 (HTH 2013b; DEIR Appendix E.8). The DEIR provides a complete analysis of San Joaquin pocket mouse habitat and occurrences within the BSA, and sufficient field work and background literature/database review were conducted to evaluate the potential for this species to occur on the project site. Impacts at the metapopulations level are possible for all species, not just San Joaquin pocket mouse; however, a metapopulation analysis of non-listed special status species is far outside of the standard and accepted analyses required to evaluate potential impacts to special status species under CEQA.

Response 12.A.25

The commenter describes the pronghorn's history and abundance in Monterey County and notes an inconsistency in the descriptions of occurrences of pronghorn within the project site.

Table 4.4-4 in Section 4.4, *Biological Resources,* of the DEIR states that pronghorn have been documented adjacent to the access road and are considered present in the SFGA and access road areas, as well as likely to occur in the utility corridor area. It further states that tule elk are known from within six miles of the SGFA and utility corridor, and from within two miles of the access road, and have potential to occur in all three areas. Subsequent text in the DEIR indicates that pronghorn and elk were not seen in the project site during biologist surveys conducted for the project, but pronghorn have been documented by others in the southern portion of the project site, and no significant barriers to access by pronghorn and tule elk are present between documented

occurrences and the project site. To clarify sources of reported observations, the following revisions have been made to the *Pronghorn Antelope* discussion in Section 4.4.2(f) (Special Status Resources) in Section 4.4, *Biological Resources*:

> *Pronghorn Antelope.* No pronghorn or their sign were detected within the ~~project site~~SGFA during biological surveys conducted for the project, but they have been observed foraging within the Access Road (Biotic Report, HTH 2014b; DEIR Appendix E.1). Pronghorn have also been documented in the Cholame Valley on both sides of the Access Road and within the southern portion of the project site in previous reports (Penrod et al., 2010). A herd of approximately 40 to 50 pronghorn have been tracked by the CDFW within the Cholame Valley.
>
> The project site is on the northeastern fringe of the Cholame Valley kit fox population, which represents the northern target zone for kit fox connectivity through the Carrizo Plain (Penrod et al. 2010). In Penrod et al. (2010), populations between which movement paths are modeled are termed target zones because they are the end points of a habitat corridor. The results of the full coverage den surveys, camera stations, and spotlight surveys collectively indicate that the relatively small, moderately suitable grassland habitat patches comprising the project site are rarely used by San Joaquin kit fox, and pronghorn and Tule elk have not been observed with the project site. Pronghorn have been observed in the access road area, and were previously reported from other sources as occurring in the southern portion of the project site.

Response 12.A.26

The commenter disagrees with the DEIR conclusion that pronghorn would continue to use corridors through the eastern portion of the project site, and that movement through the access road and utility corridor would continue because no areas would be fenced.

The DEIR provides a complete analysis of potential impacts on pronghorn movement. Based on minimal anticipated impacts, retention of existing habitat, and no proposed fencing along the access road and utility corridor areas, pronghorn are likely to continue to move freely through these areas. The impact analysis provides a detailed assessment of expected changes to movement opportunities resulting from development within the project SGFA where fencing and project structures may modify pronghorn movement,. As a result of the analysis, the DEIR requires reasonable avoidance and mitigation (Mitigation Measures B-4[a] and B-4[b]) to address possible impacts to pronghorn movement. As such the DEIR appropriately identified possible impacts to pronghorn movement and provided mitigation to avoid and reduce those impacts where possible, and therefore no additional evaluation is necessary.

Response 12.A.27

The commenter disagrees with the DEIR's conclusion that impacts to movements and degradation of birthing areas of pronghorn, although significant, are mitigable to a less than significant level. The commenter states that the DEIR allows surveys to be conducted within the birthing area from April 1 to June 30 and, if fawns are detected, a buffer of 400 meters (approximately 0.25 mi) shall be established. The commenter suggests that Mitigation Measure B-4(a) be modified to read: "In order to ensure that does and calves are not distressed, no construction shall occur from 15 April to 30

May." Restricting construction during calving season is only necessary if calving is occurring within or adjacent to the project area, and a blanket restriction would result in limiting construction activity even if calving pronghorn are not present, which is not warranted. Preconstruction surveys to identify the presence of special status species is standard practice and is a reasonable and effective approach to identifying sensitive biological resources that require avoidance. Mitigation Measure B-4(a) as written would ensure that calving pronghorn are not disturbed by construction activity, through identification of calving areas, and implementation of avoidance buffers for any active pronghorn calving during the entire calving season.

Response 12.A.28

The commenter cites Mitigation Measure B-4(b) which describes pronghorn-friendly fencing and describes "flaws in the proposed mitigation." Mitigation Measures B-1(b) and B-4(b) relate to the development of the Habitat Mitigation and Monitoring Plan (HMMP) and include a thorough accounting of the specific details that must be included in the HMMP, including specific requirements for pronghorn friendly fencing in the mitigation areas. Evaluation of pronghorn movement pathways would be dependent on the location of mitigation lands, and would be developed as part of the HMMP, and reviewed by the County and CDFW, and as such is reasonable and appropriate mitigation for potential impacts to pronghorn movement. In regards to stipulations in Mitigation Measure B-4(b)(3) and B-4(b)(4), these stipulations have been included so as not to conflict with land management practices and ensure that the applicant is not required to modify property to which they have no ownership or right. The County cannot include mitigation that requires modifications to property that may belong to individuals not involved with the proposed project.

Response 12.A.29

The commenter cites the DEIR's analysis of pronghorn occurrence on the project site and within the vicinity of the project site and the conclusion that "areas within the project site and Access Road are considered to be of medium, medium-high, and high suitability values for pronghorn. The commenter states that "the value of the Project site to pronghorn is indisputable."

The comment is noted; no further response is necessary.

Response 12.A.30

The commenter states that Mitigation Measure B-1(j) is identified as offsetting project impacts to pronghorn, however, "that measure addresses mitigation specifically for impacts to kit fox (*Vulpes macrotis*), not to pronghorn." Typically, compensatory mitigation is not required for loss of habitat for a managed game species. The mitigation measures specific to pronghorn movement and calving (B-4[a] and [b]) provide reasonable and appropriate mitigation to address the CEQA significance threshold for Impact B-4 (i.e. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.). Pronghorn is a managed game species and is not "identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service" and as such specific mitigation for loss of habitat would not be required

under CEQA; however, the DEIR notes that because habitat characteristics for kit fox and pronghorn overlap in the region, compensatory mitigation for kit fox would also provide potential replacement of pronghorn habitat.

Response 12.A.31

The commenter disputes the methodology of surveys for kangaroo rats conducted for the project. Adequacy of the biological surveys in general has been addressed in master response 1 and response 12.12. Protocol-level surveys for kangaroo rats are not required to evaluate potential impacts to special status kangaroo rat species and the surveys completed were robust and appropriate for establishing baseline environmental conditions and evaluating potential impacts with regards to kangaroo rats. USFWS and CDFW do not provide survey protocol guidelines for all species of kangaroo rats (*Dipodomys* spp.). Consequently, HTH biologists followed procedures outlined in *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats U.S. Fish and Wildlife Service Sacramento Field Office March 2013* for trapping and identifying kangaroo rats. HTH biologists used additional survey methods that have been applied extensively in conjunction with a similar large-scale solar development on the northern Carrizo Plain and across more than 9,000 acres of conservation lands located on the northern and southern Carrizo Plain. All of these methods and the results of these surveys have been extensively reviewed by USFWS and CDFW, as well as by species experts who provided technical oversight. These additional survey methods included full-coverage ground surveys that involved 100 percent visual coverage at close range of the entire BSA—every burrow (or other sign, such as scat or tracks) that could be associated with special-status small mammals was examined, identified, and recorded.

To further confirm the identity of the kangaroo rat species occurring on the BSA, trapping surveys were conducted at seven locations in and around the BSA, where there were clusters of kangaroo rat burrows. A total of 42 kangaroo rats were trapped during the equivalent of 1,400 trap nights. HTH conducted genetic analysis of hair samples taken from these 42 specimens, and acquired a total of 474 base pairs of data for each sample. Of these 474 base pairs, 32 base pairs distinguish Heermann's kangaroo rats from giant kangaroo rats, 27 distinguish Heermann's kangaroo rats from narrow-faced kangaroo rats, and 28 distinguish giant kangaroo rats from narrow-faced kangaroo rats.

The phylogenetic tree produced by this analysis shows distinct genetic divisions between Heermann's kangaroo rat, narrow-faced kangaroo rat, and giant kangaroo rat, with 100 percent nodal support between species (HTH 2013b; DEIR Appendix E.8). All of the kangaroo rats from the BSA clustered with the Heermann's kangaroo rat reference samples, confirming the species identification of *D. heermanni* for all the kangaroo rats trapped and sampled on the BSA. HTH mammalogists are skilled in the identification of kangaroo rats. Full-coverage ground surveys, spotlight surveys, and camera surveys were conducted and overseen by Robert K. Burton, Ph.D., and Howard O. Clark, Jr., M.S., both of whom have extensive experience with the ecology of the region and have conducted these types of surveys throughout more than 10,000 acres of the Carrizo Plain between 2011 and 2013 alone. These previously conducted surveys were primarily focused on the San Joaquin kit fox, American badger, giant kangaroo rat, narrow-faced kangaroo rat, short-nosed kangaroo rat, and San Joaquin antelope squirrel.

Response 12.A.32

The commenter disputes the methodology of kit fox surveys conducted for the project. Please refer to master response 1. The first step of conducting the *U.S. Fish and Wildlife Service San Joaquin Kit Fox Survey Protocol for the Northern Range* (USFWS 1999) requires preparation of an early evaluation, followed by consultation with USFWS. Further, the protocol states that "once initiated, surveys conducted pursuant to this protocol may be suspended prior to completion if kit fox are positively identified within the project site or within 2 miles of the boundaries of the project site." Spotlight and camera station surveys were not requested by USFWS or CDFW for this project. However, HTH conducted spotlight and camera station surveys in conjunction with a suite of additional surveys, to provide a more comprehensive analysis of SJKF occurrence and use in the project region. This approach provided results that would not have been achieved had only the minimum requirements of SJKF protocol been followed. Spotlight surveys and camera station surveys were not used to specifically characterize the presence or absence of SJKF in and around the BSA. Rather, these surveys were conducted as part of a suite of survey methods designed to characterize potential for occurrence of SJKF and other special-status wildlife in and around the BSA, as a means for evaluating habitat suitability in these different areas and assessing impacts.

Any survey method has biases and limitations, and spotlight surveys may be only marginally effective because of environmental conditions or degree of surveyor expertise (USFWS 2010). Furthermore, the BSA and proposed conservation lands were surveyed using scent-detection dogs trained specifically to detect SJKF scat (see Results of the 2013 Scent Dog Surveys, HTH 2014; included as an attachment to comment letter 16). These dogs are able to detect very old scat, so old that some scats were bleached white. Results of these surveys supported the conclusion drawn from full-coverage grid surveys, spotlight surveys, and camera station surveys: all indicated that the occurrence of SJKF on the project site is known, but low, whereas occurrence near the access road is greater.

Response 12.A.33

The commenter argues that HTH did not fully comply with USFWS survey protocol for the San Joaquin kit fox because scent stations were not used with camera stations.
Please refer to master response 1, as well as response 12.A.32.

Response 12.A.34

The commenter disputes the consistency of conclusions in the Spotlight Surveys Report (HTH 2014f; DEIR Appendix E.14) and the DEIR's analysis of San Joaquin kit fox populations and movement corridors. The quoted references in the comment have been taken out of context, specifically the broader discussion of potential impacts to kit fox movement as a result of impacts to lands adjacent to identified habitat linkages, and potentially cumulative impacts to the species. The DEIR correctly characterizes the project site as outside of any identified or definable SJKF habitat linkage, but also takes the conservative approach that indirect impacts have the potential to affect kit fox movement in adjacent habitat linkages. Section 4.1.3 of the Spotlight Survey Report (HTH 2014f; DEIR Appendix E.14) characterizes the region for kit fox movement, and states that "…the landscape beyond the northwestern and western boundary of

the Project site is dominated by large expanses of oak and ponderosa pine woodlands, which are entirely unsuitable as either home range or dispersal habitat for kit fox." The report goes on to note that species identified in the woodland areas during spotlight surveys are "…not typically sympatric with San Joaquin kit fox, except within ecotonal boundaries between woodland and open grassland habitats" indicating that these areas do not provide suitable movement corridor areas for SJKF. Beyond the ecotonal boundaries adjacent to the project site lie expanses of montane habitats and woodland habitats that are highly unsuitable for kit fox, rendering the areas to the north and west of the project site unsuitable as corridor habitat. As a consequence, the project site does not support connection between the Cholame Valley population of San Joaquin kit fox and regional populations of kit fox within the Salinas Valley and the Ciervo-Panoche Natural Area. Refer to response 12.A.20 for additional discussions on SJKF habitat linkages and movement corridors. Although the project site is not within known habitat linkages, the site is adjacent to potentially important habitat linkages for this species, and as such, the DEIR includes mitigation to reduce impacts that could potentially indirectly impact SJKF movement within known habitat linkages.

Response 12.A.35

The commenter argues that the DEIR does not properly identify all sensitive natural community types within the project area and therefore does not address impacts to these sensitive natural communities. Please refer to response 12.A.11.

Response 12.A.36

The commenter argues that the DEIR does not translate population numbers for special status plants detected during the surveys into "occurrences" and states that this is the standard used by the CDFW and CNDDB. Please refer to master responses 1 and 2 and response 12.12. Further, the Biotic Report (HTH 2014b; DEIR Appendix E. 1) as well as subsequent completed technical reports such as the 2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15) provide detailed counts and boundaries of rare plant observations such that occurrences are easily inferred from figures. Translation of site-specific mapped boundaries into CDFW CNDDB occurrences is not a typical analysis conducted as part of protocol botanical surveys; rather, data are submitted to CDFW for comparison with existing data and assignment into occurrences as appropriate.

Response 12.A.37

The commenter disputes the methodology for evaluating whether some special status plants species should be considered significant core populations. Because CRPR species are not yet fully inventoried in the CNDDB, a complete inventory of extirpated versus extant populations statewide is not available. Complete and current population counts for all extant occurrences of all species reported from the BSA is also not available, and requiring a statewide analysis of all populations of these CRPR species is beyond the analyses required to evaluate potential impacts to non-listed special status plant species under CEQA. Estimated counts and patch size for local populations, including substantial survey areas outside the BSA are inventoried in the Biotic Report (HTH 2014b; DEIR Appendix E.1), the DEIR, and finalized in the 2014 Special Status

Plant Survey Report (HTH 2014h; FEIR Appendix E.15). This information is fully analyzed and the DEIR provides suitable measures to offset impacts to special status plants.

Response 12.A.38

The commenter states that the DEIR does not address "how the presence of the various special-status plants in the Project area relates to the statewide (or nationwide) range of each species." The commenter argues that "this precludes the ability to assess whether the Project would have a significant impact on a given species' range."

Table 4.4-4 in Section 4.4, *Biological Resources,* provides information on range and habitat requirements of special status plants known from the vicinity of the project site, and the DEIR directly refers to the Biotic Report (HTH 2014b; DEIR Appendix E.1) for more detailed discussion of range. The Biotic Report discusses elevation ranges within which each species has been documented, and lists counties in which each taxon has been documented. This information was considered in the analysis provided in the DEIR.

Response 12.A.39

The commenter argues that passive relocation of burrowing owls off the project site is a potentially significant impact under CEQA and must be analyzed, and disputes the DEIR conclusion that impacts on the species can be mitigated. Passive relocation is a standard measure for mitigating potential impacts to burrowing owls, and requires the development of a Burrowing Owl Exclusion Plan to address impacts resulting from passive relocation, and which must be approved by CDFW. Refer to response 12.36 for a complete discussion on burrowing owl impacts and passive relocation.

Response 12.A.40

The commenter states the opinion that the DEIR is inconsistent in its analysis of indirect impacts to the California condor. See responses 16.37 and 16.38 for clarifications made to assessment of impacts to California condor. The DEIR identified potential impacts to this highly imperiled species to ensure that even with the low potential for occurrence on the project site, suitable mitigation for controlling micro-trash [Mitigation Measure B-1(ff)(13)], speed limits [Mitigation Measure B-1(ff)(3)] and carcass removal [Mitigation Measure B-1(ff)(14)] would be incorporated in construction BMPs.

The DEIR identified a potential indirect impact to California condor, but did not identify a significant impact. The loss of potential foraging habitat from project development represents a tiny percentage of the total available potential foraging habitat in the region, thus the indirect impact would be negligible. Loss of a small amount of potential foraging habitat would not have a high impact on the population, particularly given that there is no evidence the site is currently used as foraging habitat by condors. Furthermore, conservation of SJKF lands for compensation to SJKF would also provide permanently protected condor foraging habitat in the region. For clarification on this issue, a portion of the *California Condor* discussion under Impact B-1 in Section 4.4, *Biological Resources,* of the DEIR has been revised as follows:

Indirect Impacts to California Condor. Indirect impacts could include the long-term decline in population viability for California condors; however, ~~. S~~since no roosting or nesting habitat will be affected, and since the project site comprises only a very small area of foraging habitat relative to what is available in the region, no significant indirect impacts to California condors are expected.

Response 12.A.41

The commenter states the opinion that the DEIR improperly combines the discussion of impacts to all other raptors and other special status birds. The DEIR provides separate discussions of special status (rare, listed or candidate species) birds by species and provides discussion of habitat present for each species within the BSA. The discussion of non-special status bird species (species protected under the MBTA) and CDFW Watch List species were combined to present in general birds that did not require a detailed evaluation but that have potential to nest and forage on-site. This is a standard and appropriate level of evaluation for these species under CEQA, and measures for addressing potential direct impacts to these species are covered in Mitigation Measure B-1(r).

Response 12.A.42

The commenter quotes text from the DEIR regarding the potential for native bird species that are protected under state and federal law to nest on-site and states that the DEIR does not mention that the Migratory Bird Treaty Act "generally prohibits negative impacts on all native birds during the nesting season (typically February 1 through September 15)." The commenter also argues that because no focused surveys for nests were conducted, no quantification of the impact caused by construction of the project can be made. Please refer to master response 1 and response 12.12 regarding adequacy of biological surveys.

Response 12.A.43

The commenter disputes the DEIR analysis of rangelands that provide suitable foraging and breeding habitat for raptors and other birds and argues that the DEIR does not address the cumulative impact of the project on habitat that has already been substantially reduced. With regards to the percent loss of rangeland in the region, the DEIR provides a measure of comparison for similar habitat to that present on the project site, and does not attempt to qualify the nature of rangeland habitat for nesting birds and foraging raptors. The project site consists of predominantly rangeland habitat, and the evaluation of the loss of the project site habitat in the light of the total acreage of this habitat in the region is a reasonable and appropriate method for assessing potential impacts to foraging and nesting habitat. Given the extent of rangeland in the region and the very small percentage that would be affected by project development, further evaluation of the specific characteristics of the rangeland in the context of birds protected under the MBTA is not necessary to characterize project or cumulative impacts under CEQA.

Response 12.A.44

The commenter states that the translocation of wildlife out of the project area constitutes a potentially significant impact that has not been disclosed, analyzed, or mitigated in the DEIR.

The mitigation measures have been designed such that in most cases, wildlife would be allowed to passively relocate out of harm's way. In the specific cases where relocation would be required, such as with CRLF and CTS, or where specific guidelines for passive relocation are available (e.g. burrowing owl), incidental take authorization would be required and relocation plans would be reviewed and approved by CDFW or USFWS (see responses 3.14 and 12.35) or relocation plans are already required in the DEIR [see Mitigation Measure B-1(m)].

Response 12.A.45

The commenter disputes the DEIR methodology and conclusions regarding avian collision risk posed by the project's solar arrays.

See master response 1 and response 12.12 regarding the general adequacy of biological surveys and response 16.65 which describes an applicant-proposed measure for bird and bat conservation. The DEIR and supporting biological technical reports assessed the potential for impacts to listed and special status avian species, raptors, and other nesting birds protected under the MBTA. These analyses were based on standard protocol for establishing existing environmental conditions and assessing potential impacts to these species. The DEIR includes a number of mitigation measures designed to reduce and avoid impacts to migratory birds including: preconstruction surveys; biological monitoring; and compensatory mitigation. Mitigation designed to reduce impacts to migratory birds is incorporated in part, or in whole, into Mitigation Measures B-1(m), B-1(n), B-1(r), B-1(s), B-1(ee), B-1(ff) and B-1(gg) in Section 4.4, *Biological Resources,* of the DEIR.

Regarding the potential for PV solar facilities to attract birds that will then collide with and be killed as a result of collision with those panels, little evidence is available to indicate that PV solar panels actually attract birds, no standard for analysis of this issue has been established, and no regulatory agency guidance has been published on this issue. Limited information on bird strikes at solar facilities is available, with the primary study (McCrary, et al, 1986) having been conducted at California's Solar One facility, which used highly reflective mirrors (heliostats) to concentrate sunlight at a centrally located boiler. That study concluded that the mortality effect on local bird populations at the approximate 80 acre site was minimal. It has been suggested that highly reflective panels create the illusion of a body of water that migrating birds may be attracted to, and inadvertently collide with; however, the McCrary study opined that it was the presence of large, man-made ponds and irrigated agricultural fields adjacent the facility that attracted birds to that location. Approximately 27 percent of the recorded bird facilities at Solar One were water-related species. West Inc. (2014) reviewed impacts at three California solar PV facilities, and concluded that preliminary data indicated that fatality rates for solar arrays are not high in relation to other anthropogenic mortality (e.g., wind projects) and that measurable proportion of the fatalities found at the project may be background and unrelated to the project.

The recent Kagan et al. (2014) study evaluated three solar facilities in southern California, only one of which (Desert Sunlight) consisted of the photovoltaic technology. A total of 61 avian deaths were recorded at the Desert Sunlight facility, and none of these species were state or federally listed. Deaths of birds protected under the MBTA are a misdemeanor offence and do not necessarily equate to a significant impact under CEQA. Impacts to birds protected under the

MBTA and/or considered to be special status by CDFW but which are not federally or state listed, would only be considered significant if those impacts were at the population-level. Loss of small numbers of non-listed birds would not in and of themselves be considered a significant impact under CEQA.

The deaths of species reported from the Desert Sunlight Solar Farm (Kagan et al. 2014) identified the cause of death for 39 of the 61 recorded deaths, and impact trauma was the cause of death in 19 of the deaths. Approximately 33 percent of the recorded bird facilities at Desert Sunlight were water-related species and approximately 60 percent were migrant species. It is noted that Desert Sunlight Solar Farm is located directly in the path between two major desert water bodies (the Salton Sea and Lake Havasu), which presents specific environmental conditions different from those present at the proposed project where no similarly important movement route is present. Furthermore, the number of reported bird mortalities at the Desert Sunlight facility is minor in relation to the numbers of birds that are present at these two lakes (numbering in the millions), and are likely to move between the lakes.

Spain and Germany have the largest amount of installed solar energy facilities in the world, yet no literature is available to indicate that excessive numbers of bird mortalities are occurring at these facilities. Furthermore, the Kobern-Gondorf PV facility (300 MW) in Germany is used as a nature reserve for endangered species of plants and animals (RSPB 2011). Because of the lack of scientific information regarding this issue and the minimal number of bird mortalities that have been contained in anecdotal reports as compared to bird populations, the impact to migratory birds from collisions with PV panels was considered speculative, and was not further analyzed.

Avian activity surveys have been ongoing at the site, and as presented in response 12.12, the Avian Activity Survey Report has been completed (HTH 2014i) and is included in the FEIR as Appendix E.18. HTH ecologists conducted modified point counts (bird use counts [BUC]) at eight sites chosen to represent the proposed project site, including the area proposed for installation of a new transmission line. The 800-meter (0.50mile) radius viewsheds of the eight survey areas collectively covered approximately 44 percent of the project site. Counts were conducted twice per month (one morning count and one evening count) from March 2013 through February 2014 and recorded all birds seen or heard following standard BUC data collection protocol. A total of 4,061 individual birds of 45 species were recorded during the surveys (one full year), including five special-status species: Swainson's hawk (State-listed as threatened), golden eagle (California fully protected), northern harrier (California species of special concern [CSSC]), burrowing owl (CSSC), and loggerhead shrike (CSSC). A full summary of the result is presented in HTH (2014i; FEIR Appendix E.18). The observed species constituted a diurnal assemblage typical of the open grassland, oak savanna woodland, and riparian habitats of the inner Coast Ranges of central California, with species representation varying by season. Based on these surveys, the species most likely to have their habitat modified by installation of the solar arrays in grassland habitat are horned larks, western meadowlarks, Savannah sparrows, and long-billed curlews, but each of these species is relatively common and abundant and unlikely to be substantially influenced by the habitat modification resulting from this project. For most of the species primarily associated with woodland habitats, development of this project is not expected to pose a substantial threat, because woodland habitat would not be directly affected by project activity. The results of this study do not substantially change the

evaluation of impacts to state or federally listed or other special status bird species, and no revisions to the DEIR have been made.

Response 12.A.46

The commenter states the opinion that the Nested Compensatory Mitigation and a Habitat Mitigation and Monitoring Plan (HMMP) are flawed. As a result, the commenter argues that "the County has not ensured Project impacts to sensitive biological resource would be reduced to a less-than significant level."

Please refer to response 16.48 for revisions to Mitigation Measure B-1(a) that clarify requirements for mitigation lands to be within local range of affected species, and where direct impacts to species occur, not just impacts to suitable habitat, that the sites are within known range of local occurrences. Please refer to response 13.2 for clarification of monitoring requirements for any remedial actions. Mitigation Measure B-1(a) identifies criteria through which proposed mitigation sites would be evaluated to determine if they are suitable to meet mitigation needs, and Mitigation Measure B-1(b) identifies the specific requirements that must be within the management plan for mitigation lands. The identification of suitable mitigation land, qualified land-management entities, and the development of appropriate HMMPs to be completed after CEQA review is a standard and reasonable practice. The DEIR must, and has, provided sufficient detail as to what components shall be included in the HMMP. The existing measures, with edits contained in other responses as stated above, are sufficient as written and no further revisions are required.

Response 12.A.47

The commenter recommends that the DEIR describe the measures that would be taken to increase the carrying capacity of the impacted species at the mitigation sites or otherwise fully mitigate project impacts to state listed species. The DEIR provides conditions that allow either the applicant to provide conservation easements or for the applicant to provide funds to another qualified easement holder, and outlines the minimum qualifications and standing to be considered a qualified easement holder. The DEIR with revisions included in responses 16.48 and 13.2 also outlines the minimum requirements for proposed compensatory mitigation, for nesting compensatory mitigation lands, and for monitoring of compensatory mitigation efficacy. Including further specifics as to the management of compensatory mitigation lands is not necessary to evaluate potential impacts, and would potentially constrain future management of mitigation lands with conditions not consistent with actual management needs.

Response 12.A.48

The commenter argues that the County needs to identify the analysis that would be conducted to determine whether livestock grazing is "beneficial" to the impacted species, who would be responsible for deeming it appropriate and how the appropriate grazing levels and regime would be monitored and enforced. The determination of how compensatory mitigation lands would be managed would be the responsibility of the qualified conservation easement holder. Including this condition allows the conservation easement holder flexibility to manage the lands in the most beneficial way possible. It does not require that grazing occur on mitigation lands,

and does not imply that it would be allowed, only that it can be used as a management tool if deemed necessary and appropriate by the qualified conservation easement holder

Response 12.A.49

The commenter disputes the conclusions in the DEIR's regarding standards for enhanced habitat to benefit multiple species. As required in Mitigation measure B-1(a) of the DEIR, habitat enhancement must meet or exceed the conditions of the habitat for which it is being enhanced. While nested compensatory mitigation may be included in these mitigation areas, the standards for nested compensatory mitigation as discussed in responses 12.46, 13.2 and 16.48 would still need to be met as specified in the DEIR.

Response 12.A.50

The commenter disputes the methodology for identifying the means to ensure that nested compensatory mitigation is commensurate with project impacts and notes specifically that the County cannot assume that all suitable foraging habitat within 10 miles of a nest site is of equal value to golden eagles. The DEIR provided the example that compensatory mitigation land should be within 10 miles of nesting golden eagle as an example of the kind of specific characteristics that shall be included in the evaluation of suitable mitigation lands, and did not specifically state that all land within 10 miles of an eagle nest is necessarily suitable foraging habitat. The DEIR also provided specific language for land acquisition requirements, suitable habitat, enhanced habitat and enhanced habitat standards, and how those measures would be monitored for efficacy. Nesting compensatory mitigation can only be used if these standards can be met, and the qualified easement holder can ensure preservation of suitable habitat for any species included in nested compensatory mitigation.

Response 12.A.51

The commenter argues that three years is not an adequate amount of time to determine the success of compensatory mitigation sites. The DEIR includes requirements that success criteria be outlined in the HMMP and has been revised to include development of a contingency plan should success criteria not be met. Mitigation Measure B-1(b) of the DEIR does not specify only three years of monitoring, rather it specifies *at least* three years of monitoring. For clarification Mitigation Measure B-1(b)(9) of the DEIR has been revised as follows:

> 9. a requirement that the applicant shall be responsible for monitoring, as specified in the HMMP, for at least three years post-construction or until success of the compensatory lands (especially enhanced habitats) as described in the HMMP can be shown; during this period, regular reporting shall be provided to the County;

Response 12.A.52

The commenter disputes the timing of submittal for the HMMP and the associated success criteria 12 months after issuance of grading permits. Development of the HMMP is highly dependent on the determination of compensatory mitigation lands, the selection of a qualified conservation

easement holder, and the need for and extent of any possible restoration enhancement lands. As such the HMMP would be developed in concert with the identification of compensatory mitigation lands under the review of the County, CDFW and USFWS as applicable. Because of the time involved and the integration of various organizations (including the applicant, the County, the resource agencies and potential conservation easement holders), it is standard practice to have compensatory mitigation land acquisition conducted concurrently with project activity, and to tie the completion of compensatory mitigation requirements to final project permit clearance. By requiring compensatory mitigation to be completed in advance of final project permit clearance, this allows the applicant and resource agencies sufficient time to properly identify and evaluate appropriate conservation lands, and ensures that this mitigation will be completed prior to the project being allowed to go on-line.

Response 12.A.53

The commenter states that the DEIR refers to Mitigation Measure B-1(b) for the management and monitoring of compensatory mitigation requirements; however, Mitigation Measure B-1(b) "does not include any specific requirements for managing and monitoring."

Mitigation Measure B-1(b) lays out the minimum criteria to be incorporated into a full HMMP for compensatory mitigation lands. The HMMP identifies 10 elements that must be included in the plan, including specifics of maintenance and management tasks, funding, monitoring criteria for each element for which habitat is offered as compensatory mitigation, and a contingency plan for all elements that are not successful within designated time frames. The HMMP must be approved by the County prior to implementation, and the County will verify the plan is implemented.

Response 12.A.54

The commenter disputes the methodology and conclusions for mitigating impacts to CRPR List 4 plant species. According to CNPS, few, if any, CRPR 4 species are eligible for state listing, and generally cannot be called rare from a statewide perspective, but may be locally rare. CNPS states that consideration of CRPR species during preparation of CEQA documents is particularly appropriate for "The type locality of a California Rare Plant Rank 4 plant; Populations at the periphery of a species' range; Areas where the taxon is especially uncommon; Areas where the taxon has sustained heavy losses, or Populations exhibiting unusual morphology or occurring on unusual substrates (CNPS, 2014)." The 30 percent threshold was selected to ensure that project impacts to CRPR 4 species do not result in heavy losses locally. In the EIR, the regional context data for special status plants was evaluated, but the impact analysis considered the direct impact of the project, not just the percentage of regional population affected. Consideration of regional context is consistent with CDFW guidelines for assessing impacts to special status plant species. The regional context provides important data in support of the use of offsite compensation through protection of existing rare plant populations as a feasible means of mitigation. It also supports the analysis that the project would directly impact many individuals of these special status species, but would not remove all individuals of these species from the region. All CRPR 4 species reported from the BSA are present outside the project site, and all but one species, Elegant buckwheat (*Eriogonum elegans*) were also documented in the vicinity but outside the BSA, therefore there is no evidence to suggest these species are restricted to the project footprint. Rare plant occurrences within the vicinity but outside the BSA were considered to evaluate numbers identified on the project site in the context of local distribution and abundance.

Although regional population estimates are an important consideration during impact assessment, impact thresholds above which mitigation is required are based on project impacts to the estimated populations within the BSA rather than regional population estimates. CDFW states that impact discussion should consider the statewide and regional context for each species, but does not indicate that impact determinations should be based on the percentage of a regional population that is affected by a project. Calculating impacts as a percentage of the regional abundance would not be appropriate because evidence is not available that documents the connection between populations within the BSA and regional populations. This evidence would need to include documentation of minimum viable population size, distance at which genetic exchange occurs between subpopulations in the region, and evidence that mitigation for impacts above a regional threshold would be sufficient to avoid imperiling subpopulations within the region. For many species, minimum viable regional population size is unknown and consequently cannot be found in peer-reviewed literature. Accordingly, determination of a percentage of the regional population below which impacts would not affect long term viability of each species locally is not feasible due to lack of sufficient data. I Impact thresholds above which mitigation is necessary to avoid imperiling local populations of these species are therefore based on BSA population estimates.

Several commenters noted that language identifying impact thresholds was lacking from the DEIR, and language clarifying the impact analysis was added. This clarification was not intended to indicate a change in the analysis. A brief summary of California Rare Plant Ranks and analysis under CEQA was included in the DEIR; an expanded explanation has been added to the Special Status Plants subsection of Impact B-1 to provide further clarity, as follows (see also responses 3.5, 12.A.45, 12.A.60, and 12.A.61 regarding special status plant impact thresholds and mitigation ratios).

> **Thresholds**
> CDFW standards state that species ranked 1A, 1B, 2A, and 2B may meet definitions of rare or endangered under CEQA Sections 15380 (b) and (d); (CDFW 2014). By CNPS standards, the plants of CRPR Ranks 1A, 1B, 2A and 2B meet the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code, and are eligible for state listing (CNPS 2014).
>
> According to CDFW,
>
> > "In general, CNPS List 3 plants (plants about which more information is needed) and List 4 plants (plants of limited distribution) may not warrant consideration under CEQA §15380. These plants may be included on special status plant lists such as those developed by counties where they would be addressed under CEQA §15380... Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a List 4 plant are significant even if individual project impacts are not."
>
> CRPR 1B plant species meet CEQA Section 15380 criteria as rare, and impacts would be significant without compensatory mitigation. Mitigation is required for all impacts over 10 percent of the population within the BSA to avoid impacts that could cause the regional population of any of these species to drop below self-sustaining levels, threaten to eliminate any plant community of which the species was a key part; or substantially reduce the number of occurrences or individuals or restrict the range of that species.

Due to the unusual large number of individuals and extent of CRPR 4 plant species in the vicinity compared with other records for these species, these populations are considered unique, with implications for the status of this species throughout its range; these populations would thus meet criteria for analysis as rare under CEQA Section 15380. Due to the regional significance of these populations of CRPR 4 plant species, ~~I~~impacts to CRPR ~~List~~ 4 plant species would be considered significant and require compensatory mitigation if more than 30% of the population occurring within the BSA ~~and/or known populations of the species within a 5-mile radius of the BSA (where such populations are known)~~, would be affected. In addition, the impact ~~may~~ would be considered significant if less than 30% of the population ~~or~~ within the BSA would be affected ~~but~~where the population exhibits unusual morphology, occurs on unusual substrates for that species, or if loss related to the project could reduce the species' range, as determined by a qualified botanist familiar with the population present in the impact area and the rare flora of the Central Coast Ranges.

Mitigation Measures B-1(a) through B-1(e) list compensatory mitigation for special status plant species in the summary table, and Mitigation Measure B-1(e) has been clarified as follows:

B-1(e) **Compensatory Mitigation for Special Status Plant Species.** Where direct impacts to special status plants cannot be avoided through redesign of project elements, ~~T~~to compensate for significant impacts on special status plant species, offsite habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acres preserved for each occupied acres affected) up to the significance threshold, that is more than 10% of the BSA population for CRPR 1B species, or more than 30% of the BSA population for CRPR 4 species. ~~(e.g.,~~ For example, for a CRP-ranked 1B species where 15% of the known BSA population ~~within 5 miles of the project impact area~~ is impacted, mitigation must be provided at 1:1 equivalent of 5% of that ~~regional~~ BSA population; for CRPR 4 species, all impacts beyond 30 percent of the known BSA population must be mitigated at a 1:1 ratio). Areas proposed for preservation and serving as compensatory mitigation for special status plant impacts must contain verified extant populations of the special status plant species, of similar size and quality, and equal or greater density to the populations that would be impacted by the project, and should be consistent with the USFWS Recovery Plan for Upland Species of the San Joaquin Valley (USFWS 1998) if possible.

Preservation of offsite local populations within 5 miles of the project site would ensure that although the project could impact many individuals of CRPR 1B and 4 species, the project would not result in extirpation of these species from the region, and conserved populations would benefit long-term survival of these species statewide.

Locations of suitable mitigation sites must be identified within 5 miles of the BSA, and a technical report must be submitted demonstrating that the same species, approximate number of individuals, and same acreage of suitable habitat as would be impacted would be preserved. Suitable sites must have similar associate species, soils, and lack extensive populations of noxious weeds. Because populations of annual plants can fluctuate from year to year and are difficult to census over large areas, estimated population of the target species at mitigation sites may vary by up to 10 percent from impacted population estimates, provided calculations are based on population estimates conducted following 2009 CDFW-approved botanical survey protocol. The technical report must identify a species-by-species accounting of individuals and acreage impacted; locations, acreages, and individuals at each proposed mitigation site; botanical survey dates, personnel, mapping and population estimation techniques used to demonstrate site suitability as mitigation for special status plant impacts.

If possible, compensatory mitigation areas shall be located as close to the project site as feasible, but must also be protected from Project-related ground disturbance by a species- and impact-specific buffer developed by a qualified plant ecologist familiar with the project actions and with the habitats and plant species present on the project site. This buffer must take into account the following potential indirect impacts that could occur to the preserved populations:

1. potential shading, or alteration of existing light regimes, by nearby infrastructure;
2. potential for alteration of drainage patterns that could affect the hydrology of habitat occupied by the preserved population;
3. potential for overspray of herbicides used during site vegetation management; *and*,
4. potential for ongoing dust deposition on the preserved population, sufficient to coat foliage or reproductive structures and substantially interfere with photosynthesis or pollination.

Compensatory mitigation areas for special status plants can be combined with mitigation for multiple species as outlined in measure B-1(a) for nesting mitigation. Compensatory mitigation for special status plants shall be consistent with the conditions outlined in the above measure B-1(a), and be managed and monitored under the HMMP as outlined in the above measure B-1(b).

If sufficient acreage of suitable quality as previously discussed cannot be protected to conserve CRPR 1B species at a minimum one to one ratio for individuals and acreage impacted, and to conserve CRPR 4 species impacted beyond the 30% threshold, the deficit between available suitable mitigation sites and required mitigation numbers

and acreage shall be made up through active restoration. A special status plant mitigation restoration plan will be prepared, if needed, to identify suitable locations, methods, and success criteria for special status plant mitigation through direct seeding and restoration of suitable unoccupied habitat. The plan must at a minimum require replacement through collection of seed and topsoil from impact sites, a monitoring and management component that outlines weed management and monitoring techniques, and success criteria that require successful establishment of the target species over the acreage and numbers impacted plants within five years.

If compensatory mitigation for special status plants will involve restoration, then the applicant shall scrape and collect topsoil and/or duff from impact areas that support rare plants, to be used in compensatory mitigation site restoration. Seed may also be collected from impact areas. Before project-related activities commence and once on-site special-status plants go to seed, areas of proposed site grading where special status plants have been recorded shall be scraped to collect the seeds and topsoil/duff for redistribution on compensatory lands. A qualified botanist shall determine the most suitable locations for the topsoil/duff to be distributed on the compensatory lands, which may include but not be limited to creation of "wetland" depressions for those plants associated with wetlands, seeps, vernal pools or other mesic sites with clay soils, and determining correct soil types or topographic aspect to support each plant species. Scraping will not be conducted for soils in vernal pools that could contain federally listed invertebrates unless permitted to do so by the United States Fish and Wildlife Service (USFWS).

Sites used for restoration can be located on suitable habitat as outlined in measure B-1(a) for nested mitigation. Compensatory mitigation for special status plants shall be consistent with the conditions outlined in the above measure B-1(a), and be managed and monitored under the HMMP as outlined in the above measure B-1(b).

Mitigation Timing: A technical report as described above that identifies ~~Identification of~~ the total number of plants and acreage impacted and required for mitigation, sites identified for mitigation through conservation, and the special status plant restoration plan, if applicable, must be submitted to the ~~c~~County prior to the issuance of grading permits or prior to the issuance of the grading permit for each phase of the project, should the project be phased. The applicant shall then obtain County approval of the restoration plan, if applicable, and the location of mitigation lands, the holder of conservation easements, and the restrictions contained in the easement(s) created for the permanent protection of these lands. All other timing shall be consistent with measure B-1(a).

Response 12.A.55

The commenter disputes the methodology and conclusions for mitigating impacts to special status plants through the proposed nested mitigation. The complete 2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15) provides additional information on the presence of sizable populations of target special status plant species that are present within the BSA outside the project footprint, and on surrounding lands outside the BSA. This report provides evidence that mitigation via conservation of local land supporting target species of rare plants is feasible. Furthermore, it is a required under Mitigation Measure B-1(e) that mitigation sites must consist of verified extant populations of the species for which impacts are being mitigated, necessarily ensuring that microhabitat conditions would be present to support the specific species of concern.

Response 12.A.56

The commenter disputes the methodology and conclusions for evaluating impacts to special status plants along the utility corridor. The adequacy of botanical surveys is specifically addressed in master response 2 (and addressed the adequacy of biological surveys in general in master response 1), and response 13.5. Specifically in regard to the utility corridor, this portion of the project was included after some of the initial surveys had been completed, and represents a relatively small addition to the project, with a comparatively small impact footprint. As such, the utility corridor was evaluated for its potential to support special status plants and animals based on a habitat assessment, reconnaissance surveys and other surveys that were ongoing when the utility corridor was added to the overall project design. All special status plants and animals that have potential to occur in this portion of the project have been identified, additional ongoing and preconstruction surveys will further evaluate presence status for species on site, and suitable mitigation has been incorporated for all species that may be impacted within the utility corridor, if it is determined that they are present. The results of the 2014 Special Status Plant Survey (HTH 2014h; FEIR Appendix E.15) do not provide any new or additional information that contradicts the results of the previous analysis or conclusions of the DEIR.

Response 12.A.57

The commenter disputes the methodology and conclusions special status plants and the identified significant thresholds. Please refer to responses 13.4 and 13.5 for discussions of the thresholds for CRPR 1B species.

Response 12.A.58

The commenter raises questions relating to the calculation of rare plant population sizes in the region. The 2014 Special Status Plant Survey (HTH 2014h; FEIR Appendix E.15) that has now been completed (see response 12.12) provides detailed estimates of population size using extrapolation from census along transect lines both within the BSA and in surrounding lands. Exact population size within five miles, particularly for annual plants, is not typically feasible. Known populations within five miles of the project impact area were evaluated where data exists to consider project impacts on special status plants within the regional context of other nearby populations. Impact thresholds for special status plants are based on impacts to known population within the BSA; as has been clarified in the EIR. See response 12.A.54 for clarification of impact thresholds.

Existing data on CRPR 4 plant occurrences within five miles of the BSA, with the understanding that access limitations prevented complete survey of all lands, provides context for the regional status of these plants and feasibility of mitigation through offsite conservation.

Response 12.A.59

The commenter states a concern regarding significance thresholds for CRPR Rank 1 species.

Clarifications were made to the significance thresholds and mitigation strategy for CRPR species in response to several comments. Please refer to response 12.A.45 for revised language clarifying significance thresholds, and responses 3.5, 12.A.60, and 12.A.61 regarding for additional discussion of CRPR impacts and mitigation.

Response 12.A.60

The commenter questions the rationale behind significance thresholds for rare plants.
With the clarification noted in responses 3.5 and 12.A.45, all direct impacts to CRPR 1B plant species beyond 10 percent of the population and acreage reported in the BSA would require mitigation. Impacts below 10 percent of the BSA population would not be expected to substantially reduce the habitat for that species; cause the regional population to drop below self-sustaining levels; threaten to eliminate any plant community of which the species was a part; or substantially reduce the number or restrict the range of that species. Though preservation of occupied habitat does not necessarily "make" additional plants to offset the plants lost due to impacts, this is not required under CEQA as long as the impacts, as mitigated, are not expected to substantially reduce the habitat for a rare species; cause a population of a rare species to drop below self-sustaining levels; threaten to eliminate a plant community; or substantially reduce the number or restrict the range of a rare species. Mitigation for impacts to CRPR 4 species is based on a 30 percent threshold. A higher threshold is considered for CRPR list 4 species because these species are generally not considered rare statewide. Therefore, the impact threshold in the case of CRPR list 4 species is based on a consideration of impacts that would specifically result in locally heavy losses that could impact CRPR 4 plant regional populations.

Response 12.A.61

The commenter argues that the compensatory mitigation ratio for special status plant species should be increased to 3:1. The commenter disagrees with the compensatory mitigation ratio for special status plant species. The compensatory mitigation for non-listed special status plant species purpose is to ensure impacts at the regional population-level are less than significant. The commenter doesn't provide any rationale for why the proposed increase of the mitigation ratio to 3:1 would be appropriate. By protecting occupied habitat of similar quality and equivalent acreage to impacts within the BSA, and providing for restoration via direct seeding in the event that sufficient acreage is not identified within the region, the mitigation strategy provides for conservation of self-sustaining populations, thus protecting regional occurrences of these special status plants.

Response 12.A.62

The commenter states the opinion that all sensitive communities that would be permanently impacted by the project should be incorporated into Mitigation Measure B-2(a), and recommends specific mitigation ratios for certain plant species.

Please refer to response 12.A.11 regarding the absence of Yerba mansa alliance, Alkali heath alliance, Valley Oak Woodland from within the BSA, and absence of chairmaker's bulrush alliance within the SFGA, utility corridor, and access road. Since these alliances would not be impacted, no mitigation is necessary. Please refer to response 12.A.11 for a discussion of impacts to Willow-Cottonwood Riparian Woodland. No impacts to riparian canopy would occur. Impact acreage reported for this habitat type is a function of the spatial analysis process, in which slivers at the edges of the mapped unit are within the impact boundary, but all riparian canopy would be completely avoided.

Response 12.A.63

The commenter disagrees with the proposed methods and mitigation ratios for mitigating impacts to wildflower fields. Please refer to response 13.6 for discussion of wildflower mitigation ratios and selection of mitigation sites.

Response 12.A.64

The commenter summarizes avoidance and mitigation efforts for burrowing owl presented in Mitigation Measure B-1(m) of the DEIR, and contends the approach for maintenance and monitoring of mitigation activity is insufficient. Please refer to response 12.36.

Response 12.A.65

The commenter raises concerns about the process for identifying relocation sites and the potential lack of relocation sites for CTS and CRLF. The county discussed CTS and CRLF relocation in response 12.35, and the commenter is here referred to that response..

Response 12.A.66

The commenter remarks on a typographical error in Mitigation Measure B-1(bb) that incorrectly refers to Mitigation Measure B-1(p) rather than B-1(w). As noted in response 12.35, this clerical error has been corrected.

Response 12.A.67

The commenter disagrees with the 25-year flood design standard required by Mitigation Measure B-2(f) in Section 4.4, *Biological Resources*. The commenter notes that this is inconsistent with the lifespan of the project (30 to 40 years). It should be noted that a 25-year flood refers to flood event that would have a statistical probability of occurring once every 25 years, which is unrelated to the lifespan of the project.

The commenter further suggests that this design standard is not sufficient to protect water quality, particularly during more severe 100-year storm events. Water quality impacts are addressed in Impact HYD-1 and flooding impacts are addressed in Impacts HYD-4 and HYD-5 in Section 4.9, *Hydrology and Water Quality.* Refer to responses 16.121 for further discussion regarding revisions made to Impacts HYD-4 and HYD-5. As noted therein, the project would be required to implement APM-11, which requires the preparation of a design level drainage study that contains measures that ensure that project facilities are not placed in areas where they would be subject to significant flood or erosion hazards. These measures, as outlined in Section 4.9, generally correspond to a 100-year storm event rather than a 25-year storm event. In addition, as noted in Impact HYD-1, compliance with existing federal, state, and local requirements would ensure that water quality impacts from erosion and sedimentation are less than significant.

Response 12.A.68

The commenter disputes the efficacy of 100 to 200 foot avoidance buffers for SJKF dens, with up to 500 foot buffers around natal dens during construction. Buffers are not designed to completely avoid home range areas; rather, buffers are designed to ensure potentially disruptive construction activity and noise does not occur sufficiently close to a natal den that the den become abandoned during pupping season. As addressed in response 12.37, these buffers are standard avoidance buffers for SJKF and are consistent with CDFW and USFWS guidance.

Response 12.A.69

The commenter suggests that Mitigation Measure B-1(r) for preconstruction nesting bird surveys is insufficient in detail. Specifics for conducting nesting bird surveys vary depending on the species and habitat present on a project site. While no specific guidelines are available for conducting nesting bird surveys, avian biologists can only be considered qualified if they are familiar with appropriate methodology for conducting the surveys required of them. The mitigation requires that qualified professionals must conduct appropriate surveys, and provides information on what shall be done in the case where active nests are identified during preconstruction surveys. Mitigation Measure B-1(r) includes reasonable and appropriate language for requiring qualified biologist to conduct preconstruction nesting bird surveys, and then specifies procedure when and if active nests are recorded during those surveys.

Response 12.A.70

The commenter disagrees with the proposed timing of preconstruction surveys for nesting birds. The 30-day window for preconstruction nesting bird surveys was intended to be specific for nesting raptors. The exclusion of a 14-day window for non-raptor nesting bird surveys was a clerical error and Mitigation Measure B-1(r) of the DER has been revised as follows:

> Not ~~less~~ more than 30 days prior to initiation of construction activities (incl. mobilization, staging and ESA fence installation) during the breeding season (1 February to 15 September), a qualified biologist shall conduct preconstruction surveys for nesting raptors. ~~and~~ Not more than 14 days prior to initiation of construction activities (incl. mobilization, staging and ESA fence installation) during the breeding season (1 February to 15 September), a qualified biologist shall conduct preconstruction surveys for nesting MBTA/state regulated birds.

Response 12.B.1

The commenter summarizes the project description and indicates that their comments focus on hazards and hazardous waste, and air quality. The comment is noted. Refer to responses 12.B.2 through 12.B.6 for responses to substantive comments pertaining to these issues.

Response 12.B.2

The commenter notes that the hazards and hazardous waste section of the DEIR is not supported by a Phase I Environmental Site Assessment (ESA). The commenter then generally describes the purpose and content of a Phase I ESA, but does not provide evidence to suggest that the DEIR analysis is inadequate.

As noted in Section 4.8.2(a) (Methodology and Significance Thresholds) of Section 4.8, *Hazards and Hazardous Materials,* the assessment of impacts is based on: 1) review of site information and conditions; 2) review of pesticide application records; 3) review of state maintained databases of hazardous materials; 4) review of infectious disease information; and 5) review of the Monterey County 2010 General Plan, the Monterey County Code, and other County information regarding hazards and hazardous materials issues. The presence of hazardous materials sites is addressed in Section 4.14, *Effects Found not to be Significant,* of the DEIR. As noted therein, a review of the Envirostor Hazardous Facility Database revealed that the proposed project site is not listed on the Cortese List, and furthermore that there are no known environmental sites of concern located within one mile of the project site. Therefore, the project site poses no risk of creating a hazard to personnel as a result of being located on a known site contaminated with hazardous materials. The project site and adjacent properties are not listed on the Cortese List of hazardous material sites compiled pursuant to Government Code Section 65963.6. The DEIR hazardous materials analysis is adequate without the support of a Phase I ESA.

It should also be noted that the applicant team had a Phase I ESA prepared in February 2014 and provided the report to the County in October 2014, after circulation of the DEIR. A review of the Phase I ESA, which is included in the FEIR as Appendix N, confirms that the site does not contain any Recognized Environmental Conditions (RECs). The Phase I report indicates that three petroleum wells have been drilled on the site; however, all three wells have been plugged and abandoned. Therefore, these wells would not impact the site in a manner that would result in the designation of an REC.

Response 12.B.3

The commenter identifies two abandoned wells on the project site, and states that the presence of these wells is a significant impact. Refer to response 12.B.2.

Response 12.B.4

The commenter argues that additional information is needed to support the conclusion that no residual pesticides or herbicides are anticipated to be found in the soil and/or groundwater. As noted under Impact HAZ-1 in Section 4.8, *Hazards and Hazardous Materials,* according to the Monterey County Agricultural Commissioner, no pesticide or herbicide use is reported on the

project site or adjacent parcels (Monterey County Agricultural Commissioner, 2013). In addition, project-related improvements within the eastern portion of the proposed utility corridor (where irrigated crop production occurs) would be limited to the installation of temporary and narrow water infrastructure. Based on historical and current land use on the project site, no residual pesticides, herbicides, or other contaminants are anticipated to be found in the soil and/or groundwater. The likelihood that construction workers, operational staff, and/or adjacent sensitive receptors could be exposed to substantial quantities of residual agricultural chemicals in on-site soils is remote.

The commenter additionally suggests that the DEIR offers no conclusions by a qualified professional. It should be clarified that the analysis in the DEIR was overseen by a licensed professional geologist and a qualified professional authorized to prepare and sign Phase I ESAs. To clarify this, the following additions have been provided in Section 8.0, *References and Preparers:*

In addition, as noted in response 12.B.2, a Phase I ESA was prepared for the project site, and is included as Appendix N to the FEIR. This report was prepared by Ken Taylor of KTA Associates, Inc., who is authorized to prepare and sign Phase I ESAs.

Response 12.B.5

The commenter notes that construction emissions of NO_X and PM_{10} would exceed MBUAPCD thresholds of significance, resulting in a significant and unavoidable impact (Impact AQ-2), and that the DEIR states that "No other feasible measures are available that would further reduce construction emissions." The commenter recommends additional mitigation for NO_X and PM_{10}, based on other recent CEQA documents for renewable energy projects, including haul trucks that meet the U.S. EPA 2007 model year NO_X emission requirements, construction equipment that meet Tier 3 or Tier 4 emissions standards, a prohibition against visible dust leaving the site during construction, sampling to ensure that PM_{10} levels do not exceed 50 $\mu g/m^3$, preventing track-out soil from construction equipment more than 25 feet onto paved roads, and applying water once per hour to unpaved roads during high wind conditions.

Construction emissions, impacts, and mitigation are described in Impacts AQ-2 and AQ-9 of the DEIR. These impact discussions incorporate the maximum feasible mitigation measures recommended by MBUAPCD and SLOAPCD. Revisions to strengthen the applicable Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c) are discussed in detail in response 4.2, response 4.13, response 9.2, response 16.22, response 16.23, and response 16.24. Mitigation Measures AQ-2(a), AQ-2(b), AQ-2(c), and AQ-9, including revisions to the DEIR made herein in response to other public comments, incorporate several of the recommendations made by the commenter, including Tier 3 construction equipment, limitations on visible dust emissions, Best Available Control Technology (BACT) to reduce ozone precursor emissions from construction equipment, dust suppression measures including watering, and provisions to minimize track-out soil. The required mitigation is consistent with the requirements and recommendations of both MBUAPCD and SLOAPCD, and would reduce the project's anticipated short-term construction emissions to the maximum extent feasible.

Response 12.B.6

The commenter states that Section 4.3, *Air Quality,* of the DEIR and supplementary air quality appendices (Appendix C.1 and Appendix C.2) do not adequately evaluate the potential for significant air quality impacts resulting from diesel particulate matter (diesel PM) emissions generated during project construction. Specifically, the commenter states that the DEIR does not disclose total construction-related emissions of diesel PM. The DEIR discloses total PM_{10} emissions (which include diesel PM emissions) within the NCCAB in Table 4.3-5 under Impact AQ-2, and total diesel PM emissions within the SCAB in Table 4.3-7 under Impact AQ-9. Together, the diesel PM within the NCCAP and SCAB comprise the project's total diesel PM emissions; however, they are appropriately disclosed under separate impact discussions, as emissions within each basin are analyzed according to the methodologies and thresholds of significance of the corresponding air district. Furthermore, total project diesel PM emissions are disclosed in the CalEEMod output files in Appendix C.1 to the DEIR. The commenter correctly notes that the DEIR indicates the project would result in significant impacts associated with diesel PM and PM_{10}, as shown in Impact AQ-2 and Impact AQ-9. It should be noted that both of these impacts incorporate the maximum feasible mitigation measures recommended by MBUAPCD and SLOAPCD. Revisions to strengthen the applicable Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c) are discussed in detail in response 4.2, response 4.13, response 9.2, response 16.22, response 16.23, and response 16.24.

The commenter notes that the analysis used in the DEIR utilized CalEEMod to characterize emissions of air pollutants associated with project construction and operation, including diesel PM. The commenter goes on to provide an estimate of the excess cancer risk for the residential receptor located closest to the project site's northern boundary based on the AERSCREEN dispersion modeling tool and Formula EQ 5.4.1 A from the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Risk Assessment Guidelines* (August, 2003), which is intended to provide a screening-level analysis potential health risks associated with diesel PM emissions during project construction. However, the commenter's analysis substantially overestimates potential health risks in several ways:

- The commenter's analysis is based on total exhaust diesel PM of 2.22 tons, which includes off-site emissions that would not contribute to health risks at the residential receptors north of the project site. Total on-site diesel emissions are estimated at a maximum of 2.0 tons/year, approximately 10 percent lower than used in the commenter's analysis.
- The emission rate calculated by the commenter is incorrect, since the 2.22 tons is to occur over a two year period, not one year as assumed in the comment. If using a two-year emission period for the duration period for the health risk equations, the emission rate should be half of that used by the commenter. Since the AERSCREEN concentration results are directly proportional to the emission rate (all other parameters remaining unchanged); this would result in the commenter calculated health risk being less than 10 in one million, and therefore not significant. If using the highest emissions of any one year (1.84 tons), then the emission rate would be reduced by more than 17%.
- The AERSCREEN concentration results are based on the geographical proximity of the area emission source to the receptor. The commenter's analysis assumes that the location of the emission source would be constant during the 12 to 24 month construction period. However, actual construction activity occurring within one mile of the residential receptors north of the project site would only be during a relatively short duration of the overall

construction period (approximately 10.3 percent of the solar generating facility area [279 out of 2,790 acres] is within one mile of the nearest residential receptor). A substantial reduction in pollutant concentration occurs as distance increases from the actual emission source.

- As noted by the commenter, actual construction emissions would be more heavily concentrated within the areas of greatest disturbance, such as the substations and switching station, which are located over two miles from the residential receptors north of the project site, rather than the solar modules, inverters, and collection system, which are the only project components that would be constructed within two miles of the residential receptors.
- The commenter's analysis assumes that a person's exposure to on-site diesel PM would occur between the third trimester of pregnancy and two years of age, and applies the highest age sensitivity multiplier . It should be noted that using either of the lower age sensitivity multipliers for children between two and 15 years of age, or for adults, would not result in an estimated cancer risk in excess of one in one million (even with all of the other conservative assumptions made herein), which would not constitute a significant impact.

The DEIR addresses the potential impact associated with health risks from diesel PM during construction. In Impact AQ-4, the DEIR states that:

> "While the project could potentially expose sensitive receptors to temporary health hazards associated with TACs due to the operation of construction equipment, there are only three residences located within a mile of the site, two north and up wind of the project site, and one approximately 4,000 feet east of the project site. These receptors are not located in an area that would be subject to on-going construction-related activities. Receptors would potentially be exposed to temporary emissions during the construction and installation of PV modules and other associated improvements along the project's northern boundary. The distance of construction related activities relative to the location of the two sensitive receptors will vary depending on the location of construction-related activities in relationship to these receptors; the majority of construction-related activities would not occur within close proximity to these receptors. Moreover, concentrations of mobile source diesel PM emissions are typically reduced by 70% at a distance of approximately 500 feet (ARB, 2005). Therefore, the health risk associated with construction emissions would be less than significant."

It should be noted that, in comment 4.3, above, the commenter provides a wind rose from Parkfield (2008-2010), which shows prevailing daytime winds during construction work hours from the southeast, which indicates that these residences would be located downwind of construction activity during the daytime hours when project construction is primarily expected to occur. As noted in response 4.3, the DEIR states that the prevailing winds of the Paso Robles area are westerly to northwesterly (meaning that winds generally blow west to east and northwest to southeast; National Oceanic and Atmospheric Administration, 2009), but notes that seasonal and local topographic conditions may alter the wind directionality.

In addition, the California Air Resources Board's *Air Quality and Land Use Handbook* (April 2005), which is commonly utilized to provide guidance when determining whether a health risk

assessment should be prepared, does not include short-term construction activity among the list of sources that may be incompatible with nearby sensitive land uses (refer to Tables 1-1 and 1-2 from the *Air Quality and Land Use Handbook*).

As a result of this response, the following references have been added to Section 8.0, *References*:

California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective, April 2005. Available: http://www.arb.ca.gov/ch/handbook.pdf

Office of Environmental Health Hazard Assessment. *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. August 2003. Available: http://oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf

Response 12.C.1

The commenter indicates the portions of the DEIR they reviewed, and highlights their qualifications. The comment is noted.

Response 12.C.2

The commenter summarizes the findings of their review. Refer to responses 12.C.4 through 12.C.8 for responses to specific comments.

Response 12.C.3

The commenter summarizes the hydrological analysis for the proposed project. The comment is noted.

Response 12.C.4

The commenter claims that the hydrological modeling estimate of "n" and related parameters could cause the peak flow rate to be underestimated.

To verify the validity of the flows presented in the DEIR *Preliminary Drainage Report* (RBF 2013), the Wallace Group prepared (and Rincon Consultants, Inc. peer reviewed) a comparative analysis of sample watersheds, with independently selected hydrologic parameters (Campbell, 2014; refer to Appendix Q to the FEIR). This comparative analysis – which considers all hydrologic parameters in combination, rather than the n-value in isolation – shows that the flows determined in the DEIR *Preliminary Drainage Report* (RBF 2013) are conservative.

It is also important to note that in the DEIR *Preliminary Drainage Report* peak runoff was calculated separately for the off-site watersheds (using HEC-HMS) and the project area and adjacent land (using FLO-2D). Approximately half of the modeled flow was calculated using HEC-HMS, while the other half was modeled as rainfall over the FLO-2D study area. The comments to n-values do not apply to the FLO-2D runoff rates, as the n-value is not a factor in peak flow calculated through the FLO-2D program.

The overall conclusions regarding flows are consistent with Wallace Group's field observations and are appropriate for the purposes of evaluating potential erosion related effects for the purposes of CEQA review. As described in the DEIR, additional modeling will be performed as part of a design-level drainage analysis, which would include further modeling based on project-level detail. The DEIR and *Preliminary Drainage Report* (RBF 2013) conservatively estimated potential flow rates and associated impacts for the purposes of identifying recommended mitigation measures to be incorporated into final design.

In response to this comment, the following has been added to Section 8.0, *References*:

> Campbell, Craig, Wallace Group. California Flats Solar Project Supplemental Hydrology Calculations. October 10, 2014.

Response 12.C.5

The commenter states that the choice of initial abstraction for on-site runoff may significantly underestimate flood flow rates. Similar to the n-value, as discussed in response 12.C.4 above, this variable should not be considered in isolation. Also, note that initial abstraction (the higher infiltration of initial rainfall) primarily affects runoff volume, and has a much smaller effect on the peak flowrate that occurs later in storm events. The effects of variations in initial abstraction are insignificant to peak flowrate. Refer also to response 12.C.5 and Appendix Q.

Response 12.C.6

The commenter states that erosion within Area 1 was underestimated. As described in response to comment 12.C.5, the DEIR *Preliminary Drainage Report* (RBF, 2013) channel n-values are not overestimated; the report used different n-values for channels than for sheet flow areas and the discussion in 12.C.4 is not applicable.

Response 12.C.7

The commenter states that erosion of channels within Area 1 from off-site runoff could endanger the solar arrays.

In accordance with APM-11, no modules (or their support posts) shall be placed in areas where the product of the flow depth and flow velocity is greater than 9 feet per second, which corresponds to a hazard level 3, as defined in the *Preliminary Drainage Report* (RBF 2013). This will ensure that module support posts are not located in areas where storm flows are deeper and faster. Locating posts outside of the deeper-faster flow zones avoids significant erosion impacts associated with the post installation.

The maximum pier scour to be expected ranges from 4 inches to 24 inches (refer to Appendix Q). This level would be reached incrementally over several very large storm events. In most locations of the project site, the maximum pier scour would be 6 inches or less. Pier scour of this magnitude is localized, and does not create significant region wide impacts.

It is also important to note that the site is comprised primarily of clay soils. Cohesive (clay) soils erode at a much slower rate compared to non-cohesive (sand) soils. The maximum predicted scour may not be reached during a flood or even over the life of the project (Campbell, 2014; refer to Appendix Q).

Response 12.C.8

The commenter claims that recommendations in the drainage analysis may be inadequate to mitigate the impact, given their previous comments. As noted in responses 12.C.4 through 12.C.7, flow velocities and potential erosion have not been underestimated, as suggested by the commenter. In addition, as noted in response 12.44, MCWRA disagrees with the contention that the calculations were inaccurate, and concluded that the hydraulic analysis developed for the DEIR is acceptable for environmental review and design-level purposes (Chardavoyne, October 2, 2014).

Response 12.D.1

The commenter provides a study of avian mortality at three solar energy facilities in southern California. The comment does not specifically address the DEIR. Therefore, a specific response to this comment is not feasible. The County of Monterey did, however, review the contents of this study in light of other public comments received on the DEIR related to potential avian mortality associated with solar energy facilities. While an individual response to this comment is not warranted under CEQA, detailed responses to comments related to potential impacts associated with avian mortality are addressed elsewhere in the FEIR. Refer also to response 16.65 for a discussion of collision mortality from birds mistaking solar panels for open sky or water, and response 16.112 for a discussion of radiant heat from solar panels.

Letter 13

Robert Hale
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22 Sept 2014

Delinda Robinson
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RE: California Flats Solar Project DEIR, PLN120294

On behalf of the Monterey Bay Chapter of the California Native Plant Society, I have the following comments regarding the DEIR for the California Flats Solar Project. In general the DEIR does not have adequate biological surveys to determine if mitigations are achievable and also lacks adequate mitigations for a project which has such a large impact in an area that contains significant populations of several special status plant species. An alternative location on more previously disturbed lands would be the superior alternative.

1) Inadequate Biological Surveys - With most of the special status plants being annual plants, then a survey for only one year is not adequate to capture the relative abundances and extent of the expression of the annual seed banks. Particularly when the year is the second year of a prolonged drought and where little rain fell after Jan 1 (1.77" jan-mar). While some species may have been abundant due to decreased competition, many others may have not germinated at all.

I request additional rare/sensitive plant surveys to include at least one year of above normal rainfall.

Surveys are incomplete for the regional context that was defined by sampling areas within 5 miles of BSA. Population estimates are provided, but no acreage for the special status plant species found. No acreage or identification of wildflower field communties is presented for the regional context outside of the BSA. Since mitigations require identification of populations/acreage in the BSA and regional context, it is critical that this information be presented in the DEIR in order to know if the mitigations are even feasible. The DEIR surveys are thus incomplete. 13.1

The BSA or biological study area also appears arbitrarily small and should include boundaries such as ridgetops and river channels.

2) Inadequate Mitigations – B-1(b) Habitat Mitigation and Monitoring

To ensure successful mitigation, the monitoring plan needs to assess the population numbers and habitat acreage for at least 5 years to ensure that targets for population and quality of replacement habitat for special status plants is actually met. Five years should allow for a wide enough variation of growing conditions to fully assess the seed bank/populations of 13.2

the species. If targets are not met then it will be required that additional lands be identified and conserved to meet the needed mitigation. 13.2

3) Inadequate Mitigations – B-1(c) Preconstruction Special Status Plant Surveys

Because of inadequate initial survey, it should be required that prior to construction the entire project site be resurveyed for special status plants to include a year with above normal rainfall. 13.3

4) Inadequate Mitigations – B-1(d) Special Status Plant Species Avoidance and Minimization

B-1(d) requires complete avoidance for listed species, of which none were noted. For sensitive plan speices the requirement is to avoid to the extent practicable. Given that two species, California macrophylla and Naveretia nigeliformis ssp radians, have population occurences of statewide exceptional numbers, avoidance must be required for populations of medium to high density or unusual numbers of all rare/sensitive plants. It is noted that Sections I and L of the project site have particularly high concentrations of special status plants – Priority must be given to strictly avoid impacts on medium to high quality/exceptional habitat for all special status species. For example the areas of Sections I, L that possess such unusual special status plant populations should be avoided by reconfiguring the solar array to avoid these areas. Lesser quality special status plants could still be mitigated. 13.4

5) Inadequate Mitigations – B-1(e) Compensatory Mitigations for Special Status Plant Species

B-1(e) requires mitigation at a 1:1 ratio for population numbers and acreage occupied up to a threshold significance. The DEIR does not define what the significance thresholds are for the noted special status plants. The example given is that is 15% of the known population within 5 miles is impacted then mitigation must be given 1:1 of 5% of that regional population. I can not understand what the mitigation will be in this case. The DEIR must provide 1) what is the required mitigation in numbers and habitat acreage for each species AND 2) it must provide evidence that such populations and acreage is available. Because neither of these is provided the DEIR must be reworked to fully document whether the impacts of the project can be mitigated. With annual species it will be very important to ensure seed bank potential is mitigated which includes quality (density of plants) and acreage combined. Because of the inherent variability with annual plants the mitigations, should be on order of a 3:1 replacement, especially for habitat acreage. 13.5

The DEIR should provice example for the 3 main special plants to include acreage and numbers impacted, and the corresponding numbers and acreage that can be protected. The three species are all CRP 1B - California macrophylla, Navaretia nigeliformis ssp radians and Calystegia collina ssp venusta - and had significant occurences. The population numbers for these on the project site appear to be significantly larger (several times larger) than the estimates for the numbers in the BSA and regional added together. How can this be a 1:1 mitigation?

There is no acreage presented for the regional area, so I don't know how the DEIR can conclude this mitigation is possible.

6) Inadequate Mitigations – B-2(a) Valley Needlegrass and Wildflower Habitat Mitigation

B-2(a) Requires a 1:1 mitigation for wildflower acreage and 2:1 for Needlegrass acreage impacted. The DEIR does not list any acreage of wildflower fields outside of the BSA. The DIER must provide some evidence and location of potential wildflower fields that would serve as mitigation sites. This mitigation can not be considered met, since there is no identification of possible mitigation sites. It is also important that identified sites have similar continuity and 13.6

quality as the impacted acreage. To ensure quality of the mitigation is met, a 3:1 ratio for both Needlegrass and wildflower habitats is required. 13.6

7) Inadequate Mitigations – B-2(b) Habitat Restoration and Revegetation Plan

Success would be best measured by monitoring for 5 years and to include at least 2 above normal rainfall years. 13.7

8) Incomplete Alternative Analysis

Section 7.1 lists alternative DOD sites of Fort Ord and Fort Hunter Liggett. I did not see any analysis of the Fort Hunter Liggett site at all in the DEIR. There was extensive discussion of Fort ord, but nothing for Hunter Liggett. Certainly, Fort Hunter Liggett would be inland and possess solar characters similar to the California Flats project site. Please provide some analysis. 13.8

An alternative that would avoid areas of medium to high density special status plant species, such as removing sections I and L solar arrays would greatly reduce the mitigation needs for impacts to special status plant species.

Thank you for your consideration,

Robert Hale,
Conservation Chair, Monterey Bay Chapter California Native Plant Society

Letter 13

COMMENTER: Robert Hale, Conservation Chair, Monterey Bay Chapter California Native Plant Society

DATE: September 22, 2014

Response 13.1

The commenter states that CNPS believes the 2013 biological surveys to be inadequate due to drought conditions and the annual life cycle of many of the special status plants known from the region. The commenter requests that rare plant/sensitive plant surveys should include at least one year of above normal rainfall. Please refer to master response 2 for a discussion regarding the adequacy of rare plant surveys. Additionally, the commenter indicates that acreage for special status species outside the project area and BSA are not provided. As noted in master response 2, the 2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15) is attached, and these data are included in Table 7 of that report.

The commenter also indicates that the BSA appears "arbitrarily small" and does not include natural boundaries such as ridgetops and river channels. As indicated in the 2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15) , the BSA included at least a 100-foot buffer around direct impact areas, and encompassed a 5,033-acre area, of which about 53 percent is the project site (2,707 acres). Site access to conduct on-site biological surveys on private properties adjacent to but outside project boundaries are at the discretion of the land owner(s) and cannot be required under CEQA. Context surveys beyond project site boundaries as represented in the 2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15) represent a good-faith effort to provide regional context and data, although context survey boundaries may be subject to access limitations that preclude the use of natural features such as ridgelines and creeks as survey boundaries.

Response 13.2

The commenter remarks on Mitigation Measure B-1(b) that within the Habitat Mitigation and Monitoring Plan, monitoring of mitigation sites should be required for at least five years rather than three to verify that population numbers and habitat acreage targets for special status plants are actually met. The commenter is directed to Mitigation Measure B-1(a) which requires that areas proposed for preservation and serving as compensatory mitigation for impacts to special status species must contain verified extant populations of the special status species that would be impacted by the project. Since areas proposed for compensatory mitigation for special status plant species must contain verified extant populations to be counted, by definition the acreage requirements must be met. Additionally, Mitigation Measure B-1(b) states that the HMMP must include a contingency plan for mitigation elements that do not meet performance or final success criteria within described periods. A site that failed to meet population and habitat criteria within the initial three years of monitoring required for all sites under the HMMP would be subject to this contingency. The measure has been clarified to identify the need for follow-up monitoring if remedial actions are necessary, as shown below:

8. a contingency plan for mitigation elements that do not meet performance or final success criteria within described periods; the plan shall include specific triggers for remediation if performance criteria are not met and a description of the process by which remediation of problems with the mitigation site (e.g., presence of noxious weeds) shall occur; this contingency plan shall identify associated follow-up monitoring needs beyond the initial three years post-construction if remedial actions are required;

Response 13.3

The commenter remarks on Mitigation Measure B-1(c) that the initial plant surveys were inadequate. Please refer to master response 2 above for a discussion regarding the adequacy of rare plant surveys.

Response 13.4

The commenter contends that large number of individuals of *California macrophylla* and *Navarretia nigelliformis* ssp. *radians* represent occurrences of statewide exceptional numbers, and thus that avoidance must be required for populations of medium to high density or unusual numbers of all rare/sensitive plants. The DEIR provides a discussion of the local abundance of these two species within the BSA. Mitigation Measure B-1(d) requires that impacts to non-listed special status plant species be avoided or minimized to the greatest extent feasible, and that avoidance would reduce the required mitigation area. Mitigation Measure B-1(e) requires that off-site habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acres preserved for each occupied acres affected). The measure further requires that sites proposed for compensatory mitigation for impacts to special status plants must contain verified extant populations of the species for which mitigation is proposed. Additionally, revisions to the project layout have been developed that relocate the substation and switching station to avoid direct impacts to the highest concentrations of *California macrophylla* and *Navarretia nigelliformis* ssp. *Radians* as depicted in the revised Figure 2-4h. Please refer to the Section 4.0, *Amendments to the EIR,* for this revised figure. See also responses 3.5, 12.A.45, 12.A.60, and 12.A.61 regarding special status plant mitigation.

Response 13.5

The commenter remarks on Mitigation Measure B-1(e) that the DEIR does not define the significance thresholds for special status plants, and that the mitigation example given is confusing. In the *Special Status Plants* subsection of Impact B-1, clarifying language was added; see response 12.A.45 for revised text. The threshold example in Mitigation Measure B-1(e) was clarified and additional language was added to further clarify the intent of the mitigation measure in response to this and other comments. See response 12.A.45 for revised Mitigation Measure B-1(e); see also responses 3.5, 12.A.45, 12.A.60, and 12.A.61 regarding impact thresholds and mitigation ratios.

The commenter goes on to discuss the need for a summary of population counts and habitat acreages for each species. As previously noted, this information is presented in the 2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15). Additionally, the commenter remarks on the significance of the large populations of *California macrophylla*, *Navarretia nigelliformis* ssp. *radians,* and *Calystegia collina* ssp. *venusta*, and describes these species as all CRP 1B, and states that the population estimates for these species outside the project site appear to be smaller than within the project site, making 1:1 mitigation infeasible. The first two species are currently ranked as CRPR 1B, but *Calystegia collina* ssp. *venusta* is correctly identified as being CRPR 4.3 in the DEIR and 2014 Special Status Plant Survey Report (HTHh; FEIR Appendix E.15). The commenter is directed to the special status plant impact analysis in the DEIR, subsection Special Status Plants under Impact B-1, that contains discussion of the local abundance of these plants as well as commentary that many project activities not requiring grading are not expected to impact all individuals within project site boundaries. Further, Table 7 of the 2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15) demonstrates a larger population outside project areas than within.

Response 13.6

The commenter remarks on Mitigation Measure B-2(a) that acreages of wildflower fields outside the BSA are not provided, and states that mitigation cannot be met if evidence of wildflower fields outside the BSA is not provided. The commenter further states that a 3:1 mitigation ratio is required for needlegrass and wildflower habitats to ensure quality. The impact discussion regarding valley needlegrass grassland and wildflower habitats in the DEIR indicates that wildflower fields are relatively common in the BSA, and approximately 262 acres of this habitat type within the BSA is outside the project footprint. Further, as noted in Section 4.4, *Biological Resources,* of the DEIR, a high affinity of regional occurrences of special status plants was noted in wildflower fields. Given the high numbers of special status plants reported from regional context surveys within five miles of the BSA, it is reasonable to conclude that wildflower fields of similar quality are present regionally, although vegetation mapping was not conducted for these off-site areas.

Mitigation through 1:1 conservation in-kind would meet CEQA requirements to offset impacts to a less than significant level. To ensure that mitigation for impacts to sensitive vegetation are mitigated in kind, Mitigation Measure B-2(a) has been clarified as follows:

B-2(a) **Valley Needlegrass Grassland and Wildflower Field Habitat Mitigation.** The applicant shall mitigate permanent impacts to these habitats caused by grading, construction of new road surface, array construction, and structure and building placement by preserving and managing valley needlegrass grassland at a 2:1 mitigation ratio and wildflower field at a 1:1 mitigation ratio (mitigation area: impact area) for total acreages of these habitats as presented in Table 4.4-8.

This compensatory mitigation may be fulfilled in conjunction with other mitigation requirements, such as those for special status plant or animal species affected by the project and should be consistent with

the conditions outlined in measure B-1(a), and shall be managed in accordance with the HMMP described in mitigation measure B-1(b).

Areas proposed for preservation and serving as compensatory mitigation for sensitive vegetation types must contain verified extant populations of the vegetation that would be impacted by the project. If existing floristic data has sufficient detail to classify and quantify wildflower fields to alliance level using currently accepted vegetation classification protocols outline in the Manual of California Vegetation, 2nd Edition (Sawyer et al. 2009) and the CDFW VegCAMP program, this data may be used to determine alliances and acreages required for compensatory mitigation. To demonstrate consistent quality and composition between mitigation sites and impacted sites, baseline plot data must be collected. Data collection must follow an accepted vegetation sampling methodology for cover, species composition, and species richness, and plot size must be appropriate for the community sampled. Guidance on minimum plot size is provided in the CDFW/CNPS Vegetation Rapid Assessment Method. Compensatory mitigation sites for sensitive vegetation must have similar or better native species cover, comparable species richness and composition, and meet alliance classification membership rules of the alliance, if any, for which mitigation is intended. The total number of baseline and mitigation site plots required to demonstrate consistency shall be determined by a qualified ecologist skilled in design of vegetation field sampling studies.

Mitigation Timing: The applicant shall obtain County approval of the location of mitigation lands, the holder of conservation easements, and the restrictions contained in the easement(s) created for the permanent protection of these lands in accordance with the timing outlined in measure B-1(a). **Monitoring**: Monitoring will be conducted in accordance with the conditions outlined in measure B-1(a).

Response 13.7

The commenter recommends that monitoring success of the Habitat Restoration and Revegetation Plan [required by Mitigation Measure B-2(b)] should be required for a minimum of five years and include at least two above average rainfall years. The comment is noted; however, item 4(b) of Mitigation Measure B-2(b) already addresses the need for monitoring to include normal rainfall years or demonstrate that restoration has succeeded in spite of low rainfall years. As stated in the measure:

> Both qualitative and quantitative monitoring shall be required in all restored areas for at least two years following construction. Failure to meet pre-defined success criteria after two years of at least average annual rainfall will trigger remedial actions; however, as vegetation growth is lower during below-average rainfall years failure to meet success

> criteria during years with lower than average rainfall will simply entail a longer monitoring duration until it can be determined that the restoration success requires remedial actions and the site is not simply being affected by below-average rainfall. Average rainfall is defined in this context as the 30-year average for the site (1981–2010), established by the Parameter-elevation Regressions on Independent Slopes Model (PRISM) Climate Group, or 13.12 inches per year (PRISM 2013). The actual annual rainfall must be measured using an onsite rain gauge, and if the actual measured precipitation does not meet this level by the end of the rainy season, these monitoring results will still be reported, but monitoring will continue until the monitoring data set includes at least two years in which this precipitation level is met or until success criteria are met in two monitoring years.

This measure provides for long term monitoring if warranted, in the event that the site under-performs, or if below average rainfall obscures progress of restoration efforts. By requiring success criteria to be met in two years with normal rainfall, the measure ensures that revegetation and restoration efforts have achieved stable vegetation conditions, and requires continued monitoring for as long as success criteria are not met. Two years of monitoring represents the minimum amount of monitoring, and would be accepted only if all success criteria are met in both years and rainfall is at least average for those years. Requiring additional monitoring in two above average rainfall years would not serve mitigation goals because it would not aid in determining if any poor performance is the result of deficiencies in restoration efforts that would require mitigation.

Response 13.8

The commenter states that the alternatives analysis is incomplete because Section 7.1 (Alternatives Considered But Rejected) lists alterative Department of Defense (DOD) sites of former Fort Ord and Fort Hunter Liggett but that Fort Hunter Liggett was not discussed. Fort Hunter Liggett is discussed in Section 7.1.2 (Alternative Site Locations), concurrent with the discussion of former Fort Ord. The commenter states that Fort Hunter Liggett has similar characteristics to the California Flats site, and requests additional analysis. As stated in Section 7.1, these sites were eliminated from further analysis. The development of a DOD brownfield site could result in similar, if not greater, impacts to biological and cultural resources. Moreover, this alternative could cause substantial impacts during construction and operation of the facility by disturbing existing hazards inherently found on brownfield sites. Both sites lack existing transmission lines which may require the construction of new transmission facilities; both sites also would require remediation before a project could be constructed; and therefore, are not readily available for development. Because these sites are not feasible for development at this time, further analysis is not warranted.

The commenter also reiterates a previous comment that removing solar arrays from portions of the SGFA would greatly reduce impacts, and thus mitigation needs, for special status plant species. As noted above, the EIR includes mitigation measures for impacts to special status plants, including Mitigation Measure B-1(d), which requires that impacts to non-listed special status plant species be avoided or minimized to the greatest extent feasible, and that avoidance would reduce the required mitigation area; and Mitigation Measure B-1(e), which requires that off-site habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acres preserved for each occupied acres affected).

Letter 14

Gonzales, Eva x5186

From: Don Romeka [dromeka@extreme-impact.com]
Sent: Monday, September 22, 2014 2:36 PM
To: Robinson, Delinda x5198; Ford, John H. x5158
Subject: Public Support for the California Flats Solar Project

September 22, 2014

Monterey County Planning Department

Dear Delinda and John:

I am a local business owner and employee about 30 people in Monterey County, property owner, father of two children, (Junior at Cal Poly SLO Engineering, and Freshman at LMU Business School).

I attended MIIS, and am very excited about our relationship with CSUMB, MPC, and the Sports Center. 14.1

I am emailing you today to show my support for the California Flats Solar Project.

I hope that the Monterey County Planning Department considers the many benefits of the California Flats Solar Project for both the environmental and economic impact.

Please call me directly if you have any questions.

Thanks,

Don Romeka | Extreme Impact, Inc. | CEO
Direct: (831) 521-5251
dromeka@extreme-impact.com
Like Intellievent on Facebook!
Like Master Repair on Facebook!

Letter 14

COMMENTER: Don Romeka, Chief Executive Officer, Extreme Impact, Inc.

DATE: September 22, 2014

Response 14.1

The commenter, a local business owner, expresses support for the proposed project. This comment is noted and will be forwarded to County decision-makers for their consideration.

Letter 15

California Native Plant Society | Defenders of Wildlife | Center for Biological Diversity | Audubon California | Monterey Audubon Society | Sierra Club Founded 1892

September 22, 2014

Delinda Robinson, Senior Planner
Monterey County Resource Management Agency
Planning Department
168 W. Alisal St., 2nd Floor
Salinas, California 93901

Delivered via email to: robinsond@co.monterey.ca.us

RE: **California Flats Solar Project EIR (PLN 120294 and SCH 2013041031)**

Dear Ms. Robinson:

Thank you for the opportunity to provide comments on the Draft Environmental Impact Report (DEIR) prepared for the California Flats Solar Project (Project). These comments are submitted on behalf of Audubon California, the Center for Biological Diversity, California Native Plant Society, Defenders of Wildlife, and Sierra Club (Conservation Organizations). Our organizations are dedicated to protecting all wild animals and plants in their natural communities. We also strongly support the emission reduction goals found in the Global Warming Solutions Act of 2006 (AB 32). The development of renewable energy is a critical component of efforts to reduce greenhouse gas emissions, avoid the worst consequences of global warming, and to assist California in meeting its required emission reductions and advancing future carbon reductions.

We strongly support the development of renewable energy production. We urge that in seeking to meet current and future renewable energy targets in California, renewable energy projects be designed sustainably, to minimize impacts to the environment. In particular, renewable energy projects, like other forms of development, should avoid impacts to our fragile landscapes—both agricultural and native—that support sensitive wildlife and native plant species. Only by maintaining high environmental standards with regard to impacts on species and habitat, can renewable energy production be truly sustainable. We believe that there are many excellent, lower impact sites within California that can fulfill California's energy goals when compared to the current siting of the California Flats Solar Project. 15.1

The proposed Project site is approximately 2,120-acres, which will develop a 280 MW solar photovoltaic (PV) power project located approximately 7 miles southeast of the community of Parkfield and 25 miles northeast of the city of Paso Robles. The proposed Project lies within the southern portion of the Coastal Ranges, in Cholame Valley. The project site is situated in close proximity to the convergence of Monterey, San Luis Obispo, Kings, and Kern counties.

The proposed Project site is designated by the Monterey County General Plan as Agriculture with the Project site zoned as Farmland. Current use of the proposed Project site is cattle ranching. The cattle ranching done on site is part of the 72,000 acre 'Jack Ranch' owned by the Hearst Corporation. Project site vegetation is primarily non-native annual grasslands with ~551 acres of sensitive wildflower fields within the proposed solar generating facility area containing high proportions and densities of native plant species. The Project site is surrounded primarily by undeveloped lands, along with small residential homes, and small farms to the south and east of the proposed Project site.

The proposed California Flats Solar Project would include the following components:

- Improvement and modification to 5.6 miles private access road;
- An unspecified number of miles of internal roadways;
- Undisclosed number of miles of security fencing
- SR 41/Private access road intersection improvements and modification;
- Undisclosed number of PV Solar tracker panel modules and components;
- Weather Stations
- Power Conversion Systems:
    - Direct current to alternating current power inverters
    - Step up transformers
- Collection systems
- 2 On-Site substations
- PG&E switching station
- 2.8 Mile 230kV overhead transmission line
- Approximate 3 Mile utility corridor
- Operations and Maintenance (O&M) facility
- Security lighting

15.1

The applicant proposes to construct the Project over a period of 12-24 months, beginning in 2015 and concluding in 2016.

The Conservation Organizations believe that the proposed Project is poorly sited **within an inappropriate area** given the biological resources and special status species that would be compromised and impaired as a result of this development. The proposed Project would entail the significant conversion of undeveloped grazing lands to industrial energy production and would directly result in the loss of habitat and displacement of a variety of species including State and Federally listed wildlife species such as San Joaquin kit fox (*Vulpes macrotis mutica*), California tiger salamander (*Ambystoma californiense*) , conservancy fairy shrimp (*Branchinecta conservation*), longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool fairy shrimp (*Branchinecta lynchi*), California red-legged frog (*Rana draytonii*), Swainson's hawk (*Buteo swainsoni*), Golden eagle (*Aquila chrysaetos*), and Bald eagle (*Haliaeetus leucocephalus*) that are known to occur on or directly adjacent to or have the potential to occur, at the proposed Project site and/or surrounding areas. The area within and surrounding the project also provides habitat for a suite of sensitive, list-candidate, grassland birds that are species of concern including, but not limited to, Mountain Plover *(Charadrius montanus),* Prairie Falcon *(Falco mexicanus)* (confirmed nesting, Roberson 1989, pers. comm), Ferruginous Hawk *(Buteo regalis),* Rough-legged Hawk (*Buteo lagopus*), Yellow-billed Magpie (*Pica nuttali*), Short-eared Owl (*Asio flammeus*),Loggerhead Shrike (*Lanius ludovicianus),* Northern Harrier (*Circus cyaneus*), Lewis's Woodpecker (*Melanerpes lewis),* Tricolored Blackbird (*Agelaius tricolor)* and American Badger (*Taxidea taxus*). One winter eBird survey in December 2013 counted dozens of Ferruginous Hawk near the project site, east of Cholame Valley Road, underscoring the importance of the area to wintering raptors.

Comments

These comments are in response to the County's DEIR for the proposed California Flats Solar Project. The Conservation Organizations have reviewed the DEIR and find that the siting of the proposed Project places many imperiled and declining species at an elevated risk for displacement, mortality, and morbidity. The proposed Project will result in the loss of foraging habitat, transmission line construction and operational impacts, and the potential impacts from construction and operation of PV arrays on special status species. Additionally, the EIR is deficient in its analysis of mitigation measures and alternatives. The proposed Project as described in the DEIR will cause potential illegal 'take' if adopted in its current form. 15.1

Biological Surveys and Information inadequately disclosed

Within the appendices of the DEIR there are referenced 7 additional surveys that were to take place in 2013 (California Flats Solar Project DEIR: Appendix E1 pg. 17):

- Focused special-status mammal trapping surveys (underway)
- Dry-season listed branchiopod surveys (underway, samples in analysis)
- Winter bird surveys
- Avian activity surveys (underway)
- Wildlife corridor analysis
- Scent dog surveys for kit fox
- Additional spotlighting surveys

15.2

These surveys are not attached to the DEIR, nor were any of the data that would have been collected through the surveys included in the appendices of the DEIR. This a fundamental failure to comply with the intent of CEQA and the purpose of an EIR to provide informed decision making per Public Resources Code Sections 21002.1(a), 21003.1(b), and 21005(a). The data these surveys would provide is required to identify the impacts of the proposed Project. It is inexcusable that the DEIR did not include these surveys and studies.. The DEIR must be revised and recirculated.

Inadequate Biological Survey Boundaries

The Biological Study Area (BSA) boundary shown throughout the DEIR and in the supporting biological studies in the Appendices does not adequately cover the proposed project's impact area. While some of the BSA boundary covers areas adjacent to the proposed Project to identify off-site impacts, the BSA appears to be contiguous with a considerable portion of the northeast and northwest boundaries of the proposed Project area. There is no explanation of why the BSA was limited in these areas. This limited BSA does not adequately identify off-site impacts from the proposed Project. The BSA must cover an area of, at the very least, ¼ mile outside of the entire proposed Project. Additional studies are required to identify the complete range of off-site impacts and the DEIR must be revised and recirculated. 15.3

Impacts Inadequately Addressed

San Joaquin Kit Fox

San Joaquin Kit Fox (SJKF) is one of the most critically imperiled species in California due to land use change that have occurred over the past century across the San Joaquin Valley floor and adjacent habitat areas. The species range boundaries delineated in 1969 show the species using and residing in areas from the southern Tehachapi Mountains north to areas west of Los Banos in Merced County, 15.4

including the Carrizo Plain and the Cholame areas (USFWS, 2010)[1]. The area that this proposed Project will impact is directly adjacent to a SJKF satellite recovery area in Kings County identified by the USFWS as crucial to the survival of the species. The proposed project area itself resides on medium to low suitability habitat for SJKF identified by Penrod et al. 2010, while also containing medium to high suitability habitat identified by the Endangered Species Recovery Program (Cypher et al. 2013)[2]. The Project area is highlighted in the appendices as important to SJKF, with the potential to interfere substantially with their movement in the area (California Flats Solar Project DEIR: Appendix E2, pg. 111). Unimpeded movement for kit fox (and other species) is a key concern in light of climate change impacts, which will require that species adapt and move to suitable habitat in the future.

The baseline surveys that were undertaken to determine presence of SJKF on the project site were inadequate given the acknowledgement of the high suitability of the land for the species, and the ample prey base that is present on the proposed Project site (occurrence of Heermann's kangaroo rats, Audubon's cottontail, and black-tailed jackrabbit). The surveys that were undertaken on the proposed Project site include: spotlight surveys in the winter of 2012 and the fall of 2013, general mammalian surveys, and camera traps. The surveys undertaken are commended, but it should be noted that spotlight surveys were specifically identified in the 5 year review of SJKF as 'marginally effective' even under optimal conditions in determining SJKF presence (USFWS, 2010, pg. 106). The fact that there were 4 confirmed sighting of SJKF from the spotlight surveys show that the project area is used for foraging and movement, if not denning for the species. Future focused surveys are alluded to in the Final Biotic Resources Report (pgs. 16 and 17) including scat detecting scent dog surveys. These surveys need to be undertaken and the results reported in order to determine the extent of occupation and use of the Project site and surrounding areas by SJKF in a revised and recirculated DEIR. 15.4

While the SJKF is a species known for its adaptability and use of varying landscapes, the species has also remained on the endangered species list since 1967 when the Endangered Species Act was passed. Since the time of listing, 47 years ago, the SJKF has had significant reductions in its range, increasing threats from development, and increasingly fragmented and isolated populations within the San Joaquin Valley (USFWS, 2010). Solar development and projects are identified as a major threat to the species' continued survival and population viability (USFWS, 2010 pg. 34). Not only do solar projects threaten the species habitat, movement and linkages, but they also may remove or limit future restoration activities that could occur on those lands. The viability of the species is a significant concern, with concerted efforts to focus future conservation on high suitability lands with existing populations of SJKF that can also serve as corridors or linkages for the species (Cypher et al. 2013). Of the three "core" habitat areas for kit fox, two have existing energy development in them and the third has a large-scale industrial energy project proposed in it. Because of this degradation, development on other habitat suitable for SJKF must be scrutinized carefully. 15.5

The proposed mitigation measures are inadequate to avoid significant impacts to the SJKF. A portion of the proposed Project is within San Luis Obispo County. San Luis Obispo County requires a minimum mitigation ratio of 4:1 when there are no SJKF present on the project site per

[1] San Joaquin Kit Fox (*Vulpes macrotis mutica*) 5-Year Review: Summary and Evaluation USFWS http://ecos.fws.gov/docs/five_year_review/doc3222.pdf

[2] Cypher, B.L., Philips, S.E. and Kelly, P.A. 2013. Quantity and distribution of suitable habitat for endangered San Joaquin kit foxes: conservation implications. Canid Biology & Conservation 16(7): 25-31. URL: http://www.canids.org/CBC/16/san_joaquin_kit_fox_habitat_suitability.pdf

existing county regulations and practices[3]. The lands that are proposed to be disturbed as part of the improvements to the private access road (to SR 41) must be mitigated at a minimum ratio of 4:1 within San Luis Obispo County. This project has recorded and documented SJKF presence. A ratio of no less than 5:1 should be required for all lands developed and disturbed on site that are of suitable habitat for SJKF given the species presence and probable use of the proposed Project Area. The mitigation lands that would need to be required to be purchased if this project were to move forward would need to be sited within high suitability areas (identified by Cypher et al. 2013) that contain existing populations of SJKF and serve as valuable corridor areas. Anything less would result in a significant impact to SJKF, which is unacceptable given the imperiled nature of the species and this proposed Project's cumulative and site specific impacts. 15.5

Eagles

Both Golden and Bald eagles have been identified as nesting very near the proposed project site (DEIR at 4.4-73). Both of these eagles are protected under the under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA) under federal law. The Golden Eagle is a fully protected species under California law. Comprehensive Golden Eagle population estimates are uncertain within California, but the species is believed to be declining across its range within the contiguous United States (Pagel et. al 2010)[4]. The Biotic Report within the DEIR states that there were at minimum 20 pairs of Golden Eagles within 10 miles of the proposed Project site (California Flats Solar Project DEIR: Biotic Report, pg. 95). One active nest is 0.4 miles from the proposed Project Site in addition to the possibility of 2 other pairs within 0.7 miles of the proposed Project site. There were 12 confirmed active nests shown within 10 miles of the site. The density of Golden Eagles at this site is very high and not unusual given the terrain and the prey availability of the area (black tailed jackrabbits and Audubon's cottontail), which can be large factors in territory selection and resulting densities (Pagel et. al 2010 & Crandall 2013[5]).

The biotic resources impact analysis from the DEIR states that the proposed Project would represent a significant impact to Golden Eagles within the area, and proposes mitigation lands of ~5000 acres (calculated from mitigation ratios referenced in the DEIR), and other mitigation measures to reduce the proposed solar development footprint impacts, which is identified to permanently remove 2088 acres of Golden Eagle foraging habitat (California Flats Solar Project DEIR: Biotic Resources Impact Analysis, pg. 57). This proposal, while well intentioned fails to account for many additional disturbance factors resulting from the proposed Project that negatively affect Golden Eagles. The DEIR fails to consider the impacts from the commotion and disturbance of construction activities and increased human activities to the Golden Eagle pairs within the proposed Project area. Human disturbance is a known threat to the species, with the likelihood that nest failures occur predominantly from human disturbance (Pagel et. al 2010). Clear line of sight of humans or human disturbance can cause a significant change in a raptor's habitat usage (Richardson and Miller 1997)[6]. The impacts on Golden Eagles from human disturbance can be very large with a suggested buffer of 800 meters for all human disturbances, extending to 1600 meters (Richardson and Miller 1997). This suggested buffer area calls into question whether the project will be able to reduce impacts to Golden Eagle to less than significant with a known pair nesting within 0.4 miles (643m) of the project and 2 known pairs nesting within 0.7 miles (1126m). Nest abandonment is considered 'take' under 15.6

[3] http://www.slocounty.ca.gov/planning/environmental/San_Joaquin_Kit_Fox.htm & http://www.sloplanning.org/gis/mapimagepdf/kitfox.pdf

[4] http://www.fws.gov/southwest/es/oklahoma/documents/te_species/wind%20power/usfws_interim_goea_monitoring_protocol_10march2010.pdf

[5] http://static.squarespace.com/static/528f911de4b01f2a31514e96/t/530d21a7e4b08ddcf7fe9a1f/1393369511313/Crandall%20MS%20Thesis%202013.pdf

[6] http://docketpublic.energy.ca.gov/PublicDocuments/09-AFC-07C/TN200071_20130729T152048_CBD's_Comments_on_PSA_Final__Attachment_15.pdf

BGEPA, which seems very likely given the area that will be under construction and the proximity to nesting pairs of Golden Eagles. The mitigation measures listed for Golden Eagle need to be bolstered, strengthened, and improved if this Project is to move forward. Anything less than 5:1 mitigation for the permanent development of 2088 acres of foraging habitat would not compensate the loss to the Golden Eagles that use the proposed Project site or nest in proximity to the proposed Project site. The disturbance to the birds alone may result in 'take' of Golden Eagle and the mitigation should be commensurate due to the high density of nesting pairs in the general area. Therefore, the proposed Project needs to acquire appropriate federal and state "take" permits – on the federal side, under the BGEPA, and on the California side, a Natural Communities Conservation Plan, which is currently the only mechanism that allows for the issuance of a "take" permit for fully protected species such as the golden eagle. 15.6

Insufficent Rare Plant Surveys

A drought year is not an appropriate time to determine the presence of sensitive plants or their distribution, especially for annual species. 2013 was a drought year. The DEIR's analysis of impacts to sensitive plant species on site is incomplete because the botanical conclusions based on drought-year surveys are incomplete.

We have concerns about the completeness of floral surveys, given the intensity of the drought that has gripped southeastern Monterey County. The DEIR's biological addendum lists the following plant species of concern: 15.7

- California androsace (*Androsace elongata ssp. acuta*)
- Crownscale (*Atriplex coronata var. coronata*)
- Round-leaved filaree (*California macrophylla*)
- South Coast Range morning-glory (*Calystegia collina ssp. venusta*)
- Potbellied spineflower (*Chorizanthe ventricosa*)
- Small-flowered morning glory (*Convolvulus simulans*)
- Hall's tarplant (*Deinandra halliana*)
- Protruding buckwheat (*Eriogononum nudum var. indictum*)
- Temblor buckwheat (*Eriogonum temblorense*)
- Hogwallow starfish (*Hesperevax caulescens*)
- Shining navarretia (*Navarretia nigelliformis ssp. radians*)

Members of the San Luis Obispo Chapter CNPS have been actively monitoring listed plant populations in eastern San Luis Obispo County, south and southeast of Highway 46 in very similar rangeland that been subject to the same drought conditions. Many of these populations, considered relatively abundant in normal to wet years, failed to germinate in 2013. In addition ephemeral wetlands such as vernal pools never contained any water. Therefore we conclude that many populations of the above-listed species would not have been evident during any survey made during the last three years of intensive drought, and also that grazing pressure would have been intensified on any plants that did germinate.

Additional surveys performed in a year of above normal rainfall will be necessary to document presence/absence of sensitive plant species and potential impacts to these species from the proposed Project.

The DEIR's wildflower field mitigation recommendations are insufficient in size to account for the net loss of impacted habitat, and insufficient in detail to ensure mitigation is commensurate with the type (plant and pollinator species composition) and quality (contiguous landscape) of wildflower 15.8

fields impacted. Additionally, the wildflower mitigation fails to address the identification and impacts to invertebrate pollinator guilds associated with the impacted habitat.

Appendix E.6 and p. 4.4-12 of the DEIR present habitat (vegetation) maps based on a combination of Holland vegetation types and the more detailed National Vegetation Classification System (NVCS) designations (DEIR at p. 4.4-12 -"Habitats"). The DEIR assigns the wildflower field habitat type based on the Holland classification types originally developed in the 1980's.

Wildflower field plant alliances classified under the NVCS, which is the current California state standard for vegetation classification, define naturally occurring assemblages of annual plants. These specific wildflower plant alliances are associated with specific invertebrate pollinator guilds. Classification of grassland and wildflower field NVCS alliances requires repeated surveying over time because plant species composition and dominance can vary both from season to season and from year to year at the same location. Thus the classification of wildflower field vegetation types is more complex than what is presented in the DEIR's analysis. Assigning mitigation through acquisition of additional "wildflower fields," a vegetation type based on the Holland classification, does not ensure the habitat acquired will be the same as the habitat destroyed. 15.8

Without more detailed information about which wildflower plant alliance occurs on the proposed Project site, assigning mitigation for "wildflower fields" elsewhere risks destroying one type of wildflower assemblage, along with its particular cohort of plant species and associated pollinator guilds, while acquiring another type of wildflower assemblage composed of different species and supporting different pollinators elsewhere. This would not mitigate the loss of the original existing natural resource.

Additionally, the 551 acres of wildflower fields on Jack Ranch occur across a contiguous landscape. Thus, any acquisition of habitat as mitigation must also occur across a contiguous landscape. Mitigation via acquisition of multiple, disjunct parcels would not represent mitigation of the existing natural resources.

Mitigation at 1:1 is not sufficient to account for the net loss of wildflower fields from development of the proposed Project. To establish a more appropriate mitigation ratio, the County should adopt the mitigation concepts embodied in the U.S. Army Corps of Engineers Mitigation Checklist, which bases mitigation ratios on criteria commensurate with loss of habitat. For example, the ACOE checklist calls for 1:1 mitigation when restoration of impacted habitat occurs. When mitigation involves only acquisition of "replacement" habitat, as is currently the case with CA Flats Solar, mitigation ratios increase to ameliorate the net loss of impacted habitat. We recommend adopting a 3:1 mitigation ratio for any loss of wildflower field habitat due to development of the proposed Project. 15.9

Swainson's Hawk

While the DEIR does not identify any nesting Swainson's hawks on the proposed project site, the DEIR does state the proposed project site is nesting and foraging habitat for the hawks (DEIR at 4.4-62). It is unclear if the required State survey protocols[7] for Swainson's hawk have been implemented. Indeed the DEIR states that "surveys have not yet been conducted during the breeding season" (DEIR at Appendix E1 at PDF pg. 110). We could not find any additional information on surveys for Swainson's hawks in the documents. 15.10

[7] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83990

Because the Swainson's hawk is a state listed threatened species and appears to still be a declining population, appropriate protocol level surveys need to be implemented with the results of those surveys reported in a revised and recirculated DEIR. 15.10

Burrowing Owl

The DEIR identifies that burrowing owl sign and owls "were observed within the project site and the Access Road during surveys in 2012" (DEIR at 4.4-73) but fails to identify the number of birds in the text of the DEIR or estimate of the number of territories that would be impacted by the proposed project. Over fifty owls are identified as being present on the proposed project site (DEIR at Figure 4.4-8). Burrowing owls are declining in California and the remaining stronghold for burrowing owls in California – the Imperial Valley – has a documented decline of 18% in 2011-2012 [8], resulting in an even more dire state for burrowing owls in California. Because of these continuing declines throughout California, the burrowing owls on this proposed project site (and on other projects) become even more important to species conservation efforts. 15.11

It is unclear if the protocol level surveys[9] for burrowing owls as required by CDFW were implemented on the proposed project site. For this reason, surveys need to be completed, the results of which need to be included in a revised and recirculated DEIR. The DEIR also does not appear to rely on the new guidance on burrowing owl avoidance, minimization and mitigation as identified by the State of California[10].

Migratory Birds

Large-scale energy facilities in California are having direct and indirect impacts on migratory birds[11] which are protected under the MBTA. The scale of the impacts and the significance to the overall population abundance and ecology of migratory bird species is potentially significant, yet due to a lack of standardized monitoring and analysis, remains unknown at this point in time. It is essential that standardized before-after-control-impact surveys of migratory birds are conducted when developing new projects, including the proposed project if it moves forward, in order to understand how solar projects and specifically photovoltaic projects are affecting our migratory bird populations and to ensure that projects are developed in accordance with federal law and international treaties. 15.12

Often, land developed for renewable energy projects is habitat used by migratory bird species as they migrate and periodically stopover at various sites. These areas are crucial for the viability of the migratory populations. At solar facilities in California that are either under construction or operational on public lands, individuals of over 40 species of migratory birds have been found injured or dead[12]. Avifauna impacted by these facilities includes multiple species of raptors, passerines, and water birds. Often, the mortalities do not reflect the on-site, pre-construction avian inventories.

Per the Migratory Bird Treaty Act, and related regulations, the USFWS has no framework to accept compensation to help mitigate a project's impact on migratory bird populations and habitats;

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[8] IID 2012 http://www.iid.com/Modules/ShowDocument.aspx?documentid=8171

[9] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83842

[10] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843

[11] Kagan et al. 2014. http://docketpublic.energy.ca.gov/PublicDocuments/09-AFC-07C/TN202538_20140623T154647_Exh_3107_Kagan_et_al_2014.pdf

[12] IBID

however, the County may accept mitigation in collaboration with USFWS. At this time, it is essential that the County and wildlife agencies focus on identification of the source of mortality and likely extent so that it can be analyzed, avoided completely, or minimized and mitigated. We are seriously concerned that birds of multiple species may perceive solar photovoltaic facilities as large bodies of standing water on which to land – the "lake effect". Because the project may actually create an "attractive nuisance" for migratory birds by creating the mirage of a lake or series of lakes, mitigation for migratory bird impacts should be separate from, and in addition to, mitigation for the loss of habitat for terrestrial species. As is well documented, this mitigation, to be effective, needs to involve riparian areas, additions to wildlife reserves and/or conservation and restoration of lands adjacent to riparian corridors or wildlife reserves. Consultation with the USFWS and CDFW will provide a ratio, which we suggest should be 3:1 due to the cumulative impacts of this project and others in the Pacific flyway.

With regard to the proposed Project, the County must require the project proponent to accumulate accurate and reliable information on the background mortality rate of migratory birds at the Project site and to establish protocols for mandatory standardized monitoring during and post-construction and commit to avoidance and mitigation measures. The Project design should take into account this risk and adopt measures that could protect avian species if possible. If the proposed Project is approved and constructed, then consistent monitoring must be put in place so that the agencies can assess the impacts to migratory birds and develop strategies to avoid, minimize and mitigate these impacts at this facility and use any information gleaned to help improve avoidance and minimization at other projects in the future. 15.12

Because the proposed Project has indirect impacts through loss of habitat for migratory birds, and since this loss is potentially significant, the revised DEIR must provide for mitigation lands for the indirect loss of migratory bird habitat in addition to other mitigation lands.

California Tiger Salamander

While no California tiger salamanders (CTS) were identified on site during the two seasons of protocol level surveys, it is still possible that this cryptic and declining species is present in the proposed Project area. While breeding habitat is of course crucial for the salamander's survival, extensive, contiguous upland habitat is as important as the breeding site in conserving a CTS population. Land use impacts from the proposed Project that reduce the size and availability of upland habitat will adversely affect populations. CTS need at least 300-350 acres of contiguous upland habitat around any breeding sites, which may occur off the actual proposed Project site but are still crucial for foraging, estivation, and over-wintering and to protect the breeding adult population. Habitat connections between such upland-aquatic sites are also crucial for long-term metapopulation stability. The DEIR fails to discuss any off-project CTS surveys and the potential for the CTS to use the proposed Project site for foraging, estivation, and over-wintering in order to protect any breeding adult population. 15.13

In addition, the CTS, like many amphibians may be vulnerable to the use of poison grain baits for rodents. When these poisonous baits get carried into burrows, they develop a cycle of condensation whereby any amphibian that walks over them is liable to be poisoned. For this and other reasons rodenticides must be banned from the Project site. 15.14

California Red-legged Frog

The federally threatened California red-legged frog is known from the proposed project site. The DEIR recognizes that "most of the project site is considered suitable dispersal habitat for CRLF" (DEIR at 4.4-108), in addition to the documented breeding habitat in Cottonwood Creek. The 15.15

development of this crucial habitat for the red-legged frog will decrease the recoverability of the species as it fails to "Protect known populations"[13] as recommended by U.S. Fish and Wildlife Service's Recovery Plan. The DEIR fails to identify the ongoing worldwide amphibian decline crisis, and downplays the impacts of this proposed project on California's own iconic amphibian species which is also in decline. Project evaluation in this manner leads to a "death by a thousand cuts" (or in this case, extinction by a thousand cuts) scenario. We believe significantly more safeguards need to be put in place to protect the red-legged frog population in this area from further declines. The DEIR is wholly inadequate in the impact analysis for this species. As mentioned above, the DEIR fails to address the direct impacts of rodenticides on the amphibians in the Project area, including the red-legged frog. 15.15

Other Sensitive Amphibians and Reptiles

The proposed Project site is noted to provide habitat for numerous other sensitive reptile species including at least forty-five southwestern pond turtles (DEIR at 4.4-115), western spadefoot (DEIR at 4.4-116), San Joaquin coachwhip (DEIR at 4.4-116), and the coast horned lizard (DEIR at 4.4-116). All of these species are in serious decline in California. The "boiler plate" language of the impact analysis fails to adequately evaluate the impacts to these species and how the "*significant but mitigable*" determination (DEIR at 4.4-116 and 117) was reached is unexplained. 15.16

Special Status Invertebrates

The DEIR indicates that cysts for vernal pool fairy shrimp were identified in several pools on the proposed Project site (DEIR at 4.4-78). As with many of the species discussed above, it is unclear if protocol surveys[14] required by the US Fish and Wildlife Service were implemented for these critically imperiled invertebrates. 15.17

American Badger

The American badger is protected under California law as a fur bearing mammal (California Code of Regulations, Title 14, section 460) and may not be "taken" at any time. The DEIR states "Abundant evidence of American Badgers was observed within the BSA and Utility Corridor study area" and goes on to state "The risk of mortality, injury, displacement, and disturbance or harassment of American badgers is an impact likely to occur throughout all phases of construction during the 12–18-month Project build-out. Increased vehicle traffic may increase the frequency of vehicle collisions with badgers, and individuals may also be injured or killed if they are hit or crushed by construction equipment (e.g., graders, scrapers, bulldozers, and trucks) or entombed in burrows as a result of soil compaction or grading." (DEIR at 4.4-96) As analyzed, illegal take of American badgers appears to be imminent if the proposed project moves forward. Clearly the County needs to carefully evaluate the impacts to this iconic grassland species in light of State protections. 15.18

Cumulative Scenario Impacts

Section 5.0 Cumulative Scenario and Methodology lists other projects within the central region of California that contain large-scale solar or oil development. The listing of the projects gives some understanding for decision makers as to the number of projects and what they entail, but does not give enough detail to determine the actual cumulative impacts of the combined projects on biological resources. Cumulative 15.19

[13] http://ecos.fws.gov/docs/recovery_plan/020528.pdf pg. v.

[14] http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/VernalPoolBranchiopods1996Protocol.pdf

impacts from solar developments on biological resources is discussed separately in Section 4.4 of the DEIR discussing impacts on San Joaquin Kit Fox, Blunt nosed leopard lizard and other special status species, stating that with proper site by site mitigation the impacts to the species cumulatively will be less than significant.

The cumulative impacts from this project and others like it are a result of the permanent or semi permanent transition from open grasslands/agriculture to the light industrial nature of a solar development. The projects identified within the DEIR that will affect similar resources, compared to the proposed project site, would result in solar development on ~28,000 acres, if all projects are developed.

15.19

Converting ~28,000 acres of open land within the region for energy development will have cumulative impacts to wildlife and special status species. Impacts to special status species need to be discussed thoroughly within this DEIR to give decision makers the proper information to analyze the impact of the proposed project within the context of its larger landscape. Mitigation site by site ***will not*** remove the cumulative impacts generated by these developments. The revised DEIR must include a cumulative impacts analysis sufficient to meet the requirements of CEQA.

Alternatives Analysis

The DEIR fails to provide an adequate alternatives analysis. Only three alternatives are addressed: 1) no project alternative, 2) alternate Jack Ranch site alternative and 3) reduced project alternative. The DEIR's alternative analysis unreasonably constrains the range of feasible alternatives and the County failed to establish an independent set of objectives to achieve the renewable energy goals required of this proposed Project. Several other feasible alternatives were identified during the scoping process (see Center for Biological Diversity's scoping comments dated 5/10/2013) and were inappropriately dismissed in the alternatives analysis. At a minimum, alternatives in the revised EIR need to include an alternative that looks at achieving the County's goal of renewable energy through distributed generation at the source of energy consumption, and a lower-impact alternative project site such the Westlands Solar Park[15] – a development area that has minimal rare species conflicts and low current agricultural value.

15.20

Distributed generation was considered but rejected by the DEIR preparers, with the reasoning given for not considering this alternative:

- (1) Complications resulting from a 'distribution framework [that] would have to be developed and constructed'
- (2) Factors including feed in tariffs and manufacturing and installation costs
- (3) Feasibility of acquiring areas that would generate 280MW of energy
- (4) Failure to meet 'meet many of the objectives related to solar resources and land use compatibility summarized above'

15.21

The reasons given for not considering distributed generation are not adequate or logical, but result from the unnecessary and narrow constriction that was constructed by the objectives listed in Section 2.0 of the DEIR. Addressing the arguments posed against distributed generation:

- (1) Any complications resulting from a distribution framework would be managed separately from the applicant and through an appropriate utility company within Monterey County that presently manages distributed generation from solar or other small-scale sources of energy.

[15] www.westlandssolarpark.com

- (2) These factors are impediments and added costs, but are only an assertion within the DEIR. This argument proposed is not supported by any documents.
- (3) Acquiring distributed areas to support 280MW of energy may be infeasible; but this assertion is not supported with arguments or documents.
- (4) The objectives of the document are constrained to favor development of the proposed Project Site specifically.

15.21

A project such as Westlands Solar Park needs to be analyzed in a revised DEIR alternative analysis. The siting of Westlands compared to the proposed Project site in Monterey County reduces many of the impacts to agricultural and biological resources. Additionally, the Westlands project is currently advancing in the permitting process and is increasingly viable. An alternatives analysis needs to consider 'reasonable' alternatives. Given the unreasonably constrained objectives in this DEIR, the alternatives analysis includes only sites that can be facilely and summarily rejected as unfeasible. The objectives should be revised to allow for proper assessment of the proposed Project site and the alternatives available.

15.22

Inadequate Mitigation Measures

If the proposed Project were to be considered for approval, numerous mitigation measures and alternatives must be improved significantly. The DEIR, as currently drafted, will expose the proposed Project to potential challenges if adopted in its current form. The Conservation Organizations request at a minimum that the following revisions and alternatives be included in a revised and recirculated DEIR:

15.23

MM B-1(a) Nested Compensatory Mitigation.

The applicant shall provide conservation easements or funds for acquisition of conservation easements as compensatory mitigation to offset impacts to vegetative communities and listed or special status plants and wildlife. The compensatory mitigation shall incorporate the conditions specified in incidental take permits that could be issued by CDFW and USFWS for this project, but shall meet the minimum standards specified in this measure. Compensatory mitigation shall be provided at a ratio of not less than those specified in mitigation measures B-1(e), B-1(j), B-1(n), B-1(v), B-1(z), and B-1(cc). Compensatory mitigation for multiple species may be combined to mitigate for impacts to multiple species simultaneously (i.e. nested compensatory mitigation). Areas proposed for preservation and serving as compensatory mitigation for special status species impacts must contain verified extant populations of the special status species that would be impacted by the project. Compensatory mitigation areas shall have a restrictive covenant prohibiting future development/disturbance and shall be managed in perpetuity to encourage persistence and enhancement of the preserved target species. Compensatory mitigation lands cannot be located on land that is currently held publicly for resource protection. The compensatory mitigation areas shall be managed by a conservation lands management entity or other qualified easement holder. <u>All pre-existing interests, rights and encumbrances, including subsurface mineral interests as shall be subordinated to the conservation easement.</u>

15.24

<u>In addition, nested mitigation is only appropriate if the mitigation lands actually support the same species that will be impacted at the proposed project site and at the same population levels that proposed project site supports them. For example, if occupied habitat for red-legged frog is present on the proposed mitigation lands, but no round-leaf filaree is present, then the mitigation could not be "nested".</u>

15.25

The applicant shall either provide conservation easements or provide funds for the acquisition of such easements to a qualified easement holder as defined below. The CDFW and organizations approved by CDFW that meet the criteria below may be considered qualified easement holders for those species for which the CDFW has regulatory authority. To qualify as a "qualified easement holder" a private land trust must at a minimum have:

1. Substantial experience managing conservation easements that are created to meet mitigation requirements for impacts to special-status species;
2. Adopted the Land Trust Alliance's Standards and Practices; ~~and~~
3. A stewardship endowment fund sufficient to pay for its perpetual stewardship obligations. The stewardship endowment fund for this project's mitigation shall be provided by the applicant; and
4. Accredited by the Land Trust Accreditation Commission or a member in good standing with the California Council of Land Trusts

15.26

Other specific conditions for qualified easement holders may be outlined in incidental take permits that could be issued by CDFW and USFWS for this project. The County shall determine whether a proposed easement holder meets these requirements. The applicant shall also be responsible for donating to the conservation easement holder fees sufficient to cover administrative costs incurred in the creation of the conservation easement (appraisal, documenting baseline conditions, etc.) and funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the conservation easement in perpetuity. The amount of these administrative and stewardship fees shall be determined by the conservation easement holder in consultation with the County.

The primary purpose of the conservation easement(s) shall be conservation of impacted species and habitats, but the conservation easement(s) shall also allow livestock grazing when and where it is deemed beneficial for the habitat needs of impacted species. Conservation easement(s) shall comply with California Civil Code 815 et seq and be held ~~in perpetuity~~ by a qualified easement holder (as defined above), be subject to the management requirements outlined in the HMMP (see measure B-1[b]), and ~~be subject to a legally binding agreement that shall: (1) Be recorded with the County Recorder(s); and (2)~~ contain a succession clause for a qualified easement holder if the original holder is dissolved.

15.27

Land Acquisition Requirements. The following factors shall be considered in assessing the quality of potential mitigation habitat: (1) current land use, (2) location (e.g., habitat corridor, part of a large block of existing habitat, adjacency to source populations, proximity to potential sources of disturbance), (3) vegetation composition and structure, (4) slope, (5) soil composition and drainage, and (6) level of occupancy or use by all relevant species. Lands that are already subject to land use restrictions (e.g. flood zones, avigation easements) which preclude development are not acceptable.

15.28

To meet the requirement that the mitigation habitat is of value equal to, or greater than, the habitat impacted on the project site, the mitigation habitat must be either "suitable habitat" or "enhanced habitat":

Suitable Habitat. To meet the requirements for suitable habitat that provides equal or greater habitat value for special status animal species than the impacted habitat, the habitat must:

1. provide habitat for special status animal species, such that special status animal species populations can regenerate naturally when disturbances are removed;

15.29

2. not be characterized by (or adjacent to areas characterized by) high densities of invasive species, such as yellow star-thistle, or species that might jeopardize habitat recovery and restoration;
3. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
4. not be located on land that is currently publicly held for resource protection.
5. provide habitat that is currently used by the special status animal species directly impacted by the project

15.29

Enhanced Habitat. If suitable habitat is unavailable, or in lieu of acquiring already suitable special status animal species habitat, the applicant may enhance potential habitat that:

1. is within an area with potential to contribute to habitat connectivity and build linkages between known San Joaquin kit fox populations;
2. consists of actively farmed land or other land containing degraded habitat that will support enhancement;
3. supports suitable soils, slope, and drainage patterns consistent with special status animal species requirements;
4. cannot be located on land that is currently held publicly for resource protection; and
5. does not contain hazardous wastes or structures that cannot be removed to the extent that the site could not provide suitable habitat.

15.30

Enhanced Habitat Standards. If the applicant wishes to use enhanced habitat in lieu of acquiring or providing suitable habitat that meets the requirements listed above, the mitigation acreage for enhanced habitat shall be provided at a minimum ratio of 2:1 (enhanced habitat mitigation acreage : suitable habitat mitigation acreage). For enhanced habitat conditions to equal or exceed habitat conditions on the project site, the enhanced habitat shall meet the following habitat criteria: After five years, these sites must consist of annual grasslands, other grassland vegetation, suitable aquatic habitat, suitable foraging habitat (e.g. habitat is within 10 miles of known nesting golden eagles) or other habitat characteristics (e.g. suitable burrows for burrowing owls, small mammal burrows in upland habitat for CTS, etc.) that are consistent with the known ecology of the special status animal species to which compensatory mitigation is being applied.

Mitigation Timing: Prior to issuance of grading permits ~~Documentation~~ documentation of recorded easement(s) shall be submitted to and approved by the County ~~prior to the first of the project's final inspections, or within 12 months after issuance of grading permits, whichever comes first. Verification of having met habitat mitigation requirements shall be reviewed and approved prior to final inspection.~~ The applicant shall calculate the total acreages required to meet all compensatory mitigation obligations and submit these totals to the County~~. prior to the issuance of grading permits.~~ The applicant shall ~~then~~ obtain County approval of the location of mitigation lands, the holder of conservation easements, and the restrictions contained in the easement(s) created for the permanent protection of these lands. **Monitoring**: The County shall review documentation of compensatory mitigation land acquisition and associated restrictive covenants for consistency with the conditions outlined in the measure. These lands ~~may~~ shall be identified through independent consultation with ~~by~~ CDFW and~~/or~~ USFWS.

15.31

The Conservation organizations have requested these changes to ***MM B-1(a) Nested Compensatory Mitigation*** *to address:*

- *Clarity that the conservation easement comply with State law.*

15.32

- *Certainty that mitigation occur prior to grading. As currently proposed the site could be graded with resulting impacts and then abandoned without mitigation.*
- *Any mineral interests and their extraction, and other industrial uses are inconsistent with mitigation lands and the conservation easements that are set aside for the conservation of impacted species and habitat*
- *Lands precluded from development should not be used for mitigation.*
- *Conservation easement holders that may not be fully accredited, have the experience, or be in a position to fully protect and control management to ensure conservation of impacted species and habitat in perpetuity*
- *Suitable habitat requirements that shall ensure impacted species and habitat are actually protected as opposed to protecting and setting aside lands that do not contain and will not contain impacted species*
- *Ambiguity regarding enhanced habitat requirements that do not fully explain what enhanced habitat is, while also providing no reasoning or support as to how 'enhancing' habitat will mitigate for impacts to species and habitat (habitat or ecological restoration are a common term used for 'enhancing' habitat and should be used if this is the intent, with requirements for who would be managing and monitoring the restoration project included in the Final EIR)*
    - *Enhanced habitat should be provided at a higher ratio compared to suitable habitat given that restoration projects can have a high failure rate*[16]
    - *This higher ratio will provide some assurance that mitigation lands are of equal value or greater value to impacted species and habitat*

15.32

MM B-1(g) American Badger Avoidance and Minimization.

If suitable American badger dens are identified within the disturbance footprint, the den openings shall be monitored with tracking medium or an infrared-beam camera for three consecutive nights to determine current use. If the den is not in use, it shall be excavated and collapsed to ensure that no animals are present in the den.

If the den is occupied during the non-maternity period and avoidance is not feasible, badgers shall be relocated by first incrementally blocking the den over a three-day period, followed by slowly excavating the den (either by hand or with mechanized equipment under the direct supervision of a qualified biologist, removing no more than 4 inches at a time) before or after the rearing season (15 February through 30 June). Any passive relocation of American badgers shall occur only under the direction of a qualified biologist. Any passive relocation of American badgers will only be undertaken after at least 2 unoccupied "escape dens" are located within 500 feet of the project site. American badger dens determined to be occupied during the breeding season (15 February through 30 June) shall be flagged, and ground-disturbing activities avoided, within 100 feet to protect adults and nursing young. Buffers may be modified by the qualified biologist, provided the badgers are protected, and shall not be removed until the qualified biologist has determined that the den is no longer in use.

15.33

If a potential den is located outside of the disturbance footprint but within 500 feet of ground disturbing activities (including staging areas), the dens shall be avoided by installation of highly visible orange construction fencing a minimum of 100 feet around the den, designating the area an ESA. No equipment, vehicles, or personnel are permitted within ESAs without clear permission from a qualified biologist. The fencing shall be maintained in good condition and shall remain in place until all construction activities are completed within 500 feet of the den.

[16] Suding, 2011, pg. 469; http://izt.ciens.ucv.ve/ecologia/Archivos/ECO_POB%202011/ECOPO7_2011/Suding%202011.pdf

Mitigation Timing: The applicant shall submit documentation that either no occupied American badger dens were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of active breeding dens prior to issuance of grading permits. **Monitoring**: The County shall ensure that the applicant is in compliance with American badger impact avoidance and minimization measures.

The Conservation organizations have requested these changes to ***MM B-1(g) American Badger Avoidance and Minimization*** *to address:*

- *Success of passive relocation on American badger; passively removing American badgers without a designated or known relocation area would increase the impact of the project on the species and would not reduce impacts to a less than significant level*

15.33

MM B-1 (j) Compensatory Habitat Mitigation for San Joaquin Kit Fox.

To mitigate for the loss of San Joaquin kit fox habitat from the installation of all new facilities~~, except the SDAs,~~ the applicant shall provide compensatory mitigation acreage, adjusted to reflect the final Project footprint in consultation with CDFW, but at a minimum of ~~3:1~~ 5:1 ratio (preserved habitat: affected habitat). ~~The compensatory mitigation must provide equal or greater habitat value than the project site. To mitigate for the impacts to San Joaquin kit fox habitat within the SDAs, the project Proponent shall provide compensatory mitigation acreage, adjusted to reflect the final footprint of the SDAs in consultation with CDFW, but at a minimum of 2:1 ratio.~~ All compensatory mitigation must comprise habitat of value equal to, or greater than, the project site. Compensatory mitigation areas for San Joaquin kit fox can be combined with mitigation for multiple species as outlined in measure B-1(a) for nesting mitigation. Compensatory mitigation for San Joaquin kit fox shall be consistent with the conditions outlined in the above measure B-1(a), and managed and monitored under the HMMP as outlined in the above measure B-1(b).

15.34

Mitigation Timing: Identification of the total acreage for mitigation of San Joaquin kit fox must be submitted to the county prior to the issuance of grading permits. All other timing shall be consistent with measure B-1(a).

The Conservation organizations have requested these changes to ***MM B-1 (j) Compensatory Habitat Mitigation for San Joaquin Kit Fox*** *to address:*

- *All impacts to the species from solar development (no reasoning is given for treating solar development areas differently than other areas on the Project site, with no justification for the mitigation ratios either)*
- *The lack of a reasonable mitigation ratio (San Luis Obispo county has practices and guidelines that recommend a 4:1 ratio with no SJKF present; the presence of SJKF on the site and the past use of the site by SJKF necessitate a 5:1 mitigation ratio, with the argument for such a ratio presented above under 'Impacts to San Joaquin Kit Fox')*

MM B-1(p) Wildlife-Friendly Fence Design.

~~The~~All perimeter and interior fencing ~~around the perimeter~~ of the project site and SDAs shall be raised five to seven inches above ground level ~~designed to allow passage by SJKF, American badger, and their prey species, by incorporating openings in the perimeter fence that are a minimum of 4-inch by 4-inch for SJKF, with additional 6-inch by 7-inch openings to allow permeability by~~

15.35

~~American badgers. The opening should be located at least every 500 feet along the perimeter fence. Interior fencing may be designed such that it is installed four to five inches above ground.~~ as measured from the top of the ground to the lowest point of the bottom of the fence. The bottom of the fence edges shall be knuckled (wrapped back to form a smooth edge) to allow wildlife to pass safely. Fencing of the Solar Facility shall not include electrified fencing or any fencing with slats that are opaque or non-transparent along the perimeter of the Facility.

Mitigation Timing: The Wildlife-friendly fence design plans shall be submitted by the applicant to the County, CDFW, and USFWS for review and approved by the County prior to issuance of grading permits. **Monitoring**: The County shall ensure that an approved wildlife-friendly fence design is included in final project design. 15.35

The Conservation organizations have requested these changes to ***MM B-1(p) Wildlife-Friendly Fence Design*** *to address:*

- *Special status species views of barriers within the landscape (large opaque or non-transparent fences will appear or seem a barrier to special status species rendering the wildlife friendly fencing unused, not mitigating for the impacts to special status species raising the impact above a less than significant level)*
- *Limited opening at 500' intervals would impede wildlife movement across the site and would increase impacts to special status species including San Joaquin kit fox and American badgers.*
- *Certainty and enforceability of the mitigation measure through language amendments*

MM B-1(ff) Special Status Animal Species General Avoidance Measures and Construction Best Management Practices. (16)

16. Use of chemicals, fuels, lubricants, or biocides shall be in compliance with all local, state, and federal regulations. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation. Use of rodenticides shall not be permitted ~~except for the limited use of zinc phosphide, or a rodenticide approved by the County, and only after other means of pest control (e.g. rodent traps) have proven to be ineffective~~ for use on any part of the project site. Herbicide application should shall be limited to areas where mowing is not possible (e.g., within fenced areas around buildings and beneath solar panels). Humane rodent traps shall only be used within buildings on the project on site. 15.36

The Conservation organizations have requested these changes to ***MM B-1(ff) Special Status Animal Species General Avoidance Measures and Construction Best Management Practices (16)*** *to address:*

- *The risks of rodenticide exposure to special status species and their prey base (SJKF are noted as susceptible to rodenticide exposure especially within this area of the state[17])*
- *Excessive application of herbicides on the Project site*

[17] Nogeire, T., J. Lawler, N. Schumaker, B. Cypher, and S. Phillips. In revision. Land use drives patterns of rodenticide exposure in modeled kit fox populations. Biological Conservation. Manuscript available. url: https://dl.dropboxusercontent.com/u/1360973/NogeireSCB2014.pptx

Conclusion

Clearly the number of rare, endangered and sensitive species that have been documented on the project site and the additional number of rare, endangered and sensitive species that have potential to occur on the site, makes this proposed project area unsuitable for solar development. In addition the numerous failures of the DEIR to fully identify the full project description, the baseline biological information or perform an adequate analysis of the impacts requires that the DEIR be revised and recirculated. A better alternatives analysis is also required. 15.37

Thank you for your consideration of these comments. In light of the many omissions in the environmental review to date, we urge the County to revise and re-circulate the DEIR before making any decision regarding the proposed project. Please feel free to contact us if you have any questions about these comments or the documents provided.

Sincerely,

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Letter 15

COMMENTER: Kim Delfino, California Director, Defenders of Wildlife; Greg Suba, Conservation Program Director, California Native Plant Society; Garry George, Renewable Energy Director, Audubon California; Ileene Anderson, Senior Scientist, Center for Biological Diversity; Blake Matheson, President, Monterey Audubon; and Rita Delassio, Conservation Chair, Sierra Club Ventana Chapter

DATE: September 22, 2014

Response 15.1

The commenter describes the organizations who are commenting and states that they support the development of renewable energy production and believe that renewable energy projects should be designed sustainably, to minimize impacts to the environments. The commenter provides a description of the project and its impacts and states that "the proposed Project is poorly sited within an inappropriate area given the biological resources and special status species that would be compromised and impaired as a result of this development." The commenter also argues that the DEIR is deficient in its analysis of mitigation measures and alternatives and that the proposed project as described in the DEIR would cause potential illegal 'take' if adopted in its current form. The comments summarized here represent the opening statement for this comment letter and do not provide any specific substantive comments. As such, the commenter is referred to the following responses 15.2 through 15.37. Regarding the siting of the project site, this comment pertains to the merit of the proposed project more so than the environmental analysis. The DEIR analyzed the project as proposed, and appropriately evaluated impacts compared to baseline biological conditions (refer to master responses 1 and 2 for overall adequacy of biological studies), and impacts to all the species indicated were appropriately evaluated. Refer also to Section 7.0, *Alternatives,* of the DEIR for a discussion of alternative sites for the proposed project.

Response 15.2

The commenter notes seven additional surveys listed in Appendix E of the DEIR that were to take place in 2013 and states that the surveys and their data were not attached to the DEIR. Please refer to response 12.12 for a discussion of additional surveys and appended reports.

Response 15.3

The commenter disputes that the extent of the BSA is appropriate and states that the DEIR does not adequately cover the proposed project's impact area. A biological study area is defined based on the specific characteristics of the biological resources being evaluated, the type and extent of suitable habitat, and the lands for which the applicant is authorized to enter. Many projects only require surveys of the project site, or only have access to lands within the project site, and surveys of just the project site can, and do, provide reasonable and appropriate evaluation of biological conditions and potential impacts to biological resources. In this case, given the size of the project site and the presence of a variety of vegetation communities, a larger area was evaluated to determine the potential for special status species to occur on the

project site, and evaluate the potential for impacts to those species in the context of adjacent and regional conditions. The survey area was designed with the specific variables of suitable habitats for special status species that may occur on the project sites (for example see responses 12.A.16 and 12.A.17 relating to CTS and CRLF survey areas). In addition, restrictions for access to privately owned land imposed limits to the area that could be surveyed (for example see response 12.A.19 in regards to SJKF). Surveys of the project area and associated BSA as conducted provided sufficient data to accurately assess the existing biological conditions on the project site and to evaluate potential impacts to special status species.

Response 15.4

The commenter contends that baseline surveys to determine presence of San Joaquin kit fox were inadequate given the high suitability of the land and prey base on the proposed project site, and that additional surveys that have been conducted must be reported. Refer to master response 1 for a discussion of the adequacy of biological surveys in general, to response 12.A.19 for a specific discussion on SJKF surveys, and response 12.12 for a discussion of additional survey reports included as new appendices.

Response 15.5

The commenter disputes the efficacy of proposed compensatory mitigation for San Joaquin kit fox and proposes higher mitigation ratios. Refer to master response 1 for a discussion of the adequacy of biological surveys in general, and to specific discussions of the adequacy of SJKF surveys and mitigation in responses 12.A.19, 12.A.20, 12.A.22, 12.A.32, 12.A.34, and 12.A.68.

Response 15.6

The commenter disputes the efficacy of proposed disturbance buffers for active nests of both golden and bald eagles protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act, and recommends higher mitigation ratios for loss of foraging habitat. Refer to response 12.A.12 for a discussion of the evaluation of impacts to eagles. Regarding increased mitigation ratios, it is unclear what evaluation the commenter used to determine that a mitigation ratio of 5:1 would be the minimum required to sufficiently mitigate for impacts to golden eagle foraging habitat. The proposed mitigation ratios and required minimum standards for compensatory mitigation and nested compensatory mitigation (as discussed and revised in response 16.48) provide reasonable and sufficient mitigation for impacts to golden eagle foraging habitat

Response 15.7

The commenter states that the floral surveys conducted for the project may not be complete due to drought, and requests that additional surveys be conducted in a year with above normal rainfall. Please refer to master response 2 for a detailed response to comments regarding the adequacy of rare plant surveys.

Response 15.8

The commenter remarks on use of the Holland classification "wildflower fields" as being outdated and lacking sufficient detail to effectively analyze impacts. Please refer to responses 12.A.10 and

13.6 which respond to similar comments and provide clarification of mitigation measures for wildflower fields.

Response 15.9

The commenter states that existing wildflower fields within the project site are on a contiguous landscape, and thus mitigation must also occur on a contiguous landscape. The EIR contains figures documenting wildflower field locations that demonstrate that while the habitat type is widespread, it consists of patches separated by other vegetation types and it is expected that this pattern is representative of vegetation in the region. Thus, preservation of completely contiguous wildflower fields is likely infeasible. Mitigation Measure B-2(a) indicates that lands acquired for compensatory mitigation of impacts to sensitive vegetation types must be consistent with criteria laid out for special status species mitigation lands identified in Mitigation Measure B-1(a): preservation lands must be within known ranges and known occurrences of local populations of the resource for which impacts are being mitigated. Further, Measure B-1(a) identifies the priority for locations within large blocks of existing habitat, adjacency to source populations, proximity to potential sources of disturbance, vegetation composition and structure, and level of occupancy or use by all relevant species in criteria for prioritizing acquisition of mitigation lands. These measures already identify the need for conservation of local wildflower fields with preference for larger contiguous blocks, thus no revisions to the DEIR were made in response to this comment.

The commenter also remarks on the mitigation ratio for wildflower fields, stating that mitigation must be consistent with the USACE mitigation checklist. The USACE checklist is specific to wetland habitats under federal jurisdiction. Currently, a standard mitigation ratio across the state does not exist for sensitive vegetation types that are not specifically regulated. The *Impact Significance for Grassland Habitats* discussion under Impact B-2 in the DEIR states that "permanent impacts to these habitats would be significant under CEQA because they would substantially and adversely affect sensitive natural communities. Therefore, this impact would be considered *Class II, significant but mitigable*." Regardless of what alliances and associations are included within the wildflower field, serpentine bunchgrass grassland, and valley needlegrass grassland habitat types, a detailed mitigation plan (HMMP) would be developed per Mitigation Measure B-1(b) and implemented using on-site baseline conditions as the guideline for in-kind mitigation to be accomplished. Evaluations of pollinator guilds is beyond the scope of CEQA review, and would add little to the evaluation of potential impacts to specific sensitive communities because it would provide no additional information as to the potential for occurrence or distribution of special status plant species on the project site. The DEIR specifies and prescribes information that would be required to evaluate the specific characteristics of sensitive communities for which compensatory mitigation would be required, as outlined in Mitigation Measures B-1(b). As noted in response 13.6, mitigation requirements for wildflower fields in Mitigation Measure B-2(a) have been clarified to provide detail on baseline data collection necessary to assure in-kind mitigation.

Response 15.10

The commenter states that the DEIR is unclear as to whether the required State survey protocols for Swainson's hawk have been implemented and contends that appropriate protocol level surveys need to be implemented with the results of the surveys reported in a revised and recirculated DEIR. Refers to master response 1 for a discussion of the adequacy of biological surveys in general,

and to response 12.A.13 for a specific discussion regarding the adequacy of Swainson's hawk surveys.

Response 15.11

The commenter disputes the methodology for evaluating impacts to burrowing owls and states that the DEIR does not appear to rely on the new guidance on burrowing owl avoidance, minimization and mitigation as identified by the State. Refer to master response 1 for a discussion of the adequacy of biological surveys in general, and to responses 3.9, 3.11, 12.36 and 12.A.39 for specific discussions and clarifications regarding impacts to and mitigation for impacts to burrowing owls. CDFW provides recommended guidelines for protocol surveys for burrowing owl to establish where and how specific mitigation may be required; however these are not required surveys and as discussed in master response 1, protocol surveys are not required to evaluate the potential for special status species to occur on a project site. Mitigation Measure B-1(m) requires preconstruction surveys following the guidelines within the CDFW Staff Report (CDFW 2012) to identify active burrowing owl burrows present at the time of construction, and the development of a burrowing owl exclusion plan as discussed and revised in responses 3.9 and 3.11.

Response 15.12

The commenter describes impacts of large-scale energy facilities on migratory birds and contends that the project must include additional measures to evaluate impacts to migratory birds and to mitigate impacts to migratory birds. Refer to response 12.A.45 for a discussion of the evaluation of impacts to migratory birds.

Response 15.13

The commenter disputes the conclusions and methodology for evaluating impacts to CTS. The DEIR has identified suitable upland habitat for CTS within the project site, included appropriate measures to avoid and mitigate potential impacts to CTS that may occur in upland habitat on the project site [see Mitigation Measures B-1(x), B-1(aa) and B-1(bb)]. Refer also to responses 3.14, 3.15, 12.12, 12.35 and 12.A.16 for additional discussions on the evaluation of impacts to and mitigation for CTS.

Response 15.14

The commenter argues that rodenticides need to be banned from the project site, as California tiger salamander may be vulnerable to poisoning. Appropriate restrictions on the use of the all chemicals and biocides have been included in Mitigation Measure B-1(ff), Item 16, requiring that the project adheres to all EPA, CDFA and other state and federal restrictions on the use of biocides. Because of the habitat function and value of the majority of the project site within the solar array areas, the use of rodenticides would be highly limited and restricted to specific situations where other non-rodenticide measures had failed, and only with County approval.

Response 15.15

The commenter contends that the DEIR is inadequate in the impact analysis of California red-legged frog and fails to address direct impacts of rodenticides on individuals in the project area.

The DEIR has appropriately identified suitable upland dispersal habitat within the project site and correctly identified those areas where project activity has the potential to impact CRLF. The project does not directly impact significant areas of suitable breeding habitat for the species, and standard measures for avoiding and reducing impacts to CRLF have been included in Mitigation Measures B-1(w) through B-1(z). Refer to response 3.14 for additional clarification on CRLF mitigation, and to responses 12.12, 12.35 and 12.A.17 for additional information on the adequacy of the CRLF surveys, impacts analysis and proposed mitigation.

Response 15.16

The commenter disputes the methodology and conclusions for impact analyses of southwestern pond turtle, western spadefoot, San Joaquin coachwhip, and the coast horned lizard. Southwestern pond turtle, western spadefoot, San Joaquin coachwhip, and the coast horned lizard are all non-listed California special status species, for which impacts must affect the species at the population-level to be considered significant (i.e. loss of individuals would not be considered a significant impact under CEQA). See master response 1 for a discussion of the adequacy of biological surveys in general. The DEIR identified the presence of suitable habitat for these species on the project site and correctly characterized the potential for impacts to these species from project development. The project would not permanently impact the entire project site, with the portions of the project site proposed for solar arrays being maintained as grassland habitat, and expected to continue to provide suitable habitat for these species and their prey. Potential direct impacts to these species related to project construction activity have been minimized and avoided through Mitigation Measures B-1(w), B-1(ee), B-1(ff) and B-1(gg).

Response 15.17

The commenter states that it is unclear if protocol level surveys required by USFWS were implemented for vernal pool fairy shrimp on the project site. Protocol level surveys are not required to evaluate potential impacts under CEQA (see master response 1). USFWS approved the survey approach for vernal pool branchiopods conducted from winter 2012 through spring 2013.

Response 15.18

The commenter contends that the County needs to carefully evaluate impacts to American badger in light of State protections (specifically California Code of Regulations, Title 14, section 460). Measures included in the DEIR to avoid and minimize potential direct impacts to American badger are expected to protect this species from the majority of potential impacts, and the DEIR does not consider take of American badger to be imminent. Furthermore, American badger is addressed in California Code of Regulations (CCR), Title 14, Section 461 where take is authorized during the defined season with no limit; however, the species is considered to be a species of special concern (SSC) by CDFW. CCR Title 14, Section 461 is applicable to intentional hunting and does not address incidental take during otherwise lawful activity. However, take of species protected or otherwise regulated under CCR Title 14 does not equate to a significant impact under CEQA, nor does loss of individuals of CDFW SSC species unless those losses represent a significant impact at the population-level. American badger occurs in relatively high abundance in the region and direct impacts at the project site are unlikely to result in significant

impacts to the regional population. Furthermore, Mitigation Measures B-1(f), B-1(g), B-1(p), B-1(ee), B-1(ff) and B-1(gg) would result in the minimization and avoidance of any direct impacts (including take) to American badger.

Response 15.19

The commenter contends that the cumulative analysis does not provide sufficient detail to determine the cumulative impacts of the combined projects on biological resources and that impacts to special status species need to be discussed thoroughly in order to analyze the impact of the proposed project within the context of its larger landscape, and disagrees that site by site mitigation addresses cumulative impacts. DEIR Section 5.0 *Cumulative Scenario and Methodology* outlines a wide range of active and potential development within a region that includes Monterey, Kings, Fresno and San Luis Obispo Counties, and identified a number of similar solar projects that are most likely to combine with California Flats Solar project to create cumulative impacts. These solar development projects in the project vicinity are further described in Section 5.2.2, and include:

- *California Valley Solar Ranch, San Luis Obispo County*
- *Topaz Solar Farm, San Luis Obispo County*
- *Quinto Farms, Merced County*
- *Maricopa Sun Solar Complex, Kern County*
- *Kern Solar Ranch, Kern County*
- *Panoche Valley Solar Farm, San Benito County*
- *Tranquillity Solar Generating Facility, Fresno County*
- *Westlands Solar Park, Fresno and Kings Counties*

The discussion therein describes each solar project at an adequate level of detail to facilitate an analysis of cumulative effects (refer also to response 12.57).

The commenter notes that the development of all of these solar projects would result in the conversion of roughly 28,000 acres of open land to light industrial use. The biological resources impacts of each of these projects could combine to result in significant cumulative impacts, including impacts on sensitive species and habitats. However, mitigation required for these impacts, consistent with mitigation and conservation practices that have been shown to be successful, and consistent with regional conservation plans (such as USFWS recovery plans) and conservation and resource protection policies contained in the General Plans of Monterey County and the counties noted above, the cumulative effects on these resources would be reduced. Regarding state and federally listed species, as discussed in DEIR Section 4.4.g *Regulatory Framework*, the USFWS and CDFW implement state and federal laws (i.e. ESA, CESA, MBTA, BGEPA) designed to protect biological resources and ensure avoidance of, or complete mitigation for impacts to protected and rare species. CDFW, RWQCB and USACE are responsible for implementing state and federal laws designed to ensure complete avoidance and/or mitigation of any impacts to Waters of the State, Waters of the U. S. and associated jurisdictional habitat. Furthermore, Monterey County and San Luis Obispo County provide specific ordinances and policies designed to ensure avoidance and reduction of potential impacts to biological resources. County policies are contained with the Conservation Element of each County's General Plan as outlined in DEIR Section 4.4.g *Regulatory Framework*. In whole, these laws, regulations, ordinances

and policies have been designed to ensure the avoidance of, or complete mitigation for project impacts to sensitive biological resources. The issuance of "take" permits by CDFW and/or USFWS necessarily includes sufficient avoidance measures and appropriate compensatory mitigation to ensure less than significant impacts to state and federally listed species. Non-listed species that are otherwise considered sensitive by CDFW, as well as sensitive vegetation communities and habitats, are protected under CEQA and require avoidance or mitigation to reduce impacts to less than significant, and numerous guidelines and standard procedures are in place to ensure impacts are appropriately avoided or mitigated for these non-listed biological resources.

Nevertheless, although the cumulative effects of these projects on biological resources may be significant, in accordance with State CEQA Guidelines Section 151064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable. The DEIR includes a multitude of mitigation measures designed to reduce the incremental impact of the project on biological resources, including through avoiding impacts to biological resources altogether, consistent with federal, state and local laws, regulations, ordinances and policies. These measures include extensive studies and preconstruction surveys to identify all sensitive biological resources present at the time of construction, appropriate avoidance buffers to ensure direct impacts to these species are completely avoided, daily preconstruction activity for specific species, biological monitoring of all construction activity (Mitigation measure B-1[ee]), as well as the numerous standard minimization and avoidance measures included in Mitigation Measure B-1(ff), and environmental awareness training for all construction staff (Mitigation Measure B-1[gg]). Resource agencies including CDFW, USFWS, USACE and RWQCB require various permits that will further ensure impact avoidance and mitigation for project impacts on sensitive biological resources and jurisdictional habitats. As discussed in response 12.A.12, where direct impacts cannot be avoided, mitigation measures include passive relocation to suitable adjacent habitat and the permanent conservation of compensatory mitigation lands. Conditions that must be met for compensatory mitigation and the preservation of conservation easement lands are consistent with USFWS and CDFW guidelines for compensatory mitigation and will be conducted in consultation with those resource agencies. Protection of permanently managed conservation lands will result in an overall increase in the quality of habitat available for sensitive biological resources, effectively reducing impacts from the proposed project to a less than significant level. Given the less than significant impacts of the project following mitigation, and the local, state, and federal regulatory framework in place to avoid or reduce impacts on biological resources, the incremental contribution of the project to cumulative biological resources impacts would not be cumulatively considerable.

Response 15.20

The commenter contends that the DEIR failed to analyze enough alternatives. CEQA Guidelines Section 15126.6 requires that an EIR "describe a range of reasonable alternatives" to a project, and specifies that "an EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation." A range of reasonable alternatives was considered and evaluated in the EIR. As noted by the commenter, three alternatives were analyzed in the DEIR. In addition, 11 additional alternatives were considered, but rejected from further consideration for the

reasons cited in Section 7.0, *Alternatives.* This included three alternative technologies, two Department of Defense (DOD) brownfield sites, and six small brownfield sites.

The commenter additionally suggests that the County should have established an independent set of objectives for the project. CEQA does not require that a Lead Agency prepare independent objectives for a project proposed by a private entity. However, the County of Monterey reviewed the project objectives presented in Section 2.0, *Project Description,* and determined that they were appropriate for the proposed project.

The commenter further suggests two alternatives: a distributed generation alternative, and an alternative location such as the Westlands Solar Park. Refer to responses 15.21 and 15.22 for discussions of these suggested alternatives.

Response 15.21

The commenter suggests a distributed generation alternative. This alternative was considered but rejected from further consideration in the DEIR. As described in Section 7.0, *Alternatives,* if a distributed generation alternative were implemented, end users would have to be identified and approve of the installation. The electric distribution network (e.g., "grid") is not designed to easily accommodate large numbers of distributed generation systems; thus, a new distribution framework would have to be developed and constructed. Other factors include feed-in tariffs and manufacturing and installation costs. A distributed generation alternative would generally result in fewer environmental impacts than the proposed project, given that end user systems would be installed on rooftops and in other already-developed areas. However, the applicant could not feasibly acquire control of a sufficient number of rooftops or other disturbed areas to install the infrastructure needed to generate up to 280 MW of distributed solar energy, nor would this alternative meet many of the objectives related to solar resources and land use compatibility summarized above. For these reasons, distributed energy was eliminated as an alternative to be evaluated in the EIR.

The commenter disagrees with the reasons given for rejecting such an alternative, as listed above. Specifically, the commenter suggests that a new distribution framework could be developed and constructed through an "appropriate utility company" that "presently manages distributed generation from solar or other small-scale sources of energy." The commenter does not identify a specific utility company, nor does the commenter indicate how a utility company would create a new distribution framework. Creation of a new distribution framework by a third party utility company is outside of the applicant's or the County's control and would therefore not be a feasible alternative.

Finally, the commenter suggests that the objectives of the document are constrained to favor the proposed project. As noted in response 15.20, the County of Monterey reviewed the project objectives presented in Section 2.0, *Project Description,* and determined that they were appropriate for the proposed project.

Response 15.22

The commenter states that the DEIR should analyze the Westlands Solar Park project. It is not appropriate for the DEIR to analyze a different project that is undergoing its own, separate

permitting and review process. The commenter notes that the Westlands Solar Park is advancing in the permitting process. Prior to approval, this project will require review under CEQA. The commenter is encouraged to review the Westlands Solar Park Project EIR when it becomes available.

Refer also to Section 7.0, *Alternatives,* for an analysis of an alternative site (Alternative 2: Alternate Jack Ranch Site).

Response 15.23

The commenter contends that mitigation measures and alternatives need to be improved and provides a series of recommended revisions. Refer to responses 15.24 through 15.37 for responses to specific recommended revisions.

Response 15.24

The commenter recommends that the following sentence be added to the end of the first paragraph of Mitigation Measure B-1(a): "All preexisting interests, rights and encumbrances, including subsurface mineral interests shall be subordinated to the conservation easement. Specific prohibition of uses for the conservation easement lands would be included in the conservation easement deed and would address the necessary restrictions to ensure the conservation of suitable and enhanced habitat in perpetuity." By definition, the conservation lands would not function as compensatory mitigation lands if they could be used for any kind of development in the future, therefore this additional language is superfluous.

Response 15.25

The commenter recommends that language regarding the need for mitigation lands to actively support populations of all species for which nested mitigation is being conducted. Refer to responses 12.A.46, 12.A.49, 12.A.50, 13.2, and 16.48.

Response 15.26

The commenter recommends additional requirements should be added to Mitigation Measure B-1(a) for a private land trust to qualify as a qualified easement holder. The measure as written includes reasonable and appropriate standards for the identification of qualified easement holders, what is required to be considered a qualified easement holder (including minimum standard of having adopted the Land Trust Alliances standards and practices), and specifically states that the applicant is responsible for funding the acquisition of conservation easements.

Response 15.27

The commenter recommends additional changes to Mitigation Measure B-1(a) regarding the details of the conservation easement. The changes requested by the commenter would not clearly improve the quality of the conservation easement or substantively change the mitigation. The measure as written addresses the specific details required to ensure that

conservation easements are managed by a qualified holder and an appropriate manner to mitigate impacts to habitat from project development.

Response 15.28

The commenter recommends that additional language be added to Mitigation Measure B-1(a) stating that land with existing land use restrictions precluding development should not be considered for compensatory mitigation. Mitigation Measure B-1(a) already includes language that restricts compensatory mitigation lands from being located on land that is currently held publicly for resource protection.

Response 15.29

The commenter recommends that additional requirements should be added to Mitigation Measure B-1(a) regarding the presence of special status species on mitigation lands. Mitigation Measure B-1(a) as written and as revised (see response 16.48) requires the compensatory lands to provide suitable and viable habitat and be within known ranges and occurrences of species for which mitigation is being provided. See responses 12.A.46 and 13.2 for additional discussion on the adequacy of compensatory mitigation.

Response 15.30

The commenter states that mitigation ratios should be increased for enhanced habitat compensatory mitigation. The proposed mitigation ratios provide appropriate and reasonable mitigation for potential impacts to habitat that would be predominantly impacted on only a temporary basis, and in which there is a reasonable expectation that habitat function and value for many species would continue during the operational phase of the project.

Response 15.31

The commenter recommends revisions to the *Mitigation Timing* for Mitigation Measure B-1(a) to be completed prior to issuance of grading permits. Because it is a lengthy process to identify and evaluate potential mitigation lands, it is standard practice to conduct compensatory mitigation concurrently with project development. Refer to response 12.A.52 for a more detailed discussion of the timing for compensatory mitigation and development of the HMMP.

Response 15.32

The commenter summarizes the requested changes to Mitigation Measure B-1(a). Refer to the previous responses 15.24 through 15.31 for specific responses to the recommended revisions.

Response 15.33

The commenter recommends additional conditions for passive relocation of American badger. Mitigation Measure B-1(g) as written provides standard and reasonable measures for avoiding impacts to American badger and for standard language for passive relocation of this non-listed CDFW species of special concern. The American badger is a managed game species, and impacts to individuals would not be considered a significant impact under CEQA. Based on the

lack of direct impacts to the majority of the project site and therefore the limited nature of potential impacts to badger burrows, and based on the extent of available badger habitat on and adjacent to the project site, standard passive relocation measures as written are reasonable and appropriate for mitigating potential impacts to the regional population of American badgers.

Response 15.34

The commenter recommends revisions and additional protections for impacts to SJKF habitat under Mitigation Measure B-1(j). The SGFA would not be developed in the same manner as infrastructure areas on the project site, and grassland habitat would be allowed to continue to provide habitat on the majority of the project site within the SGFA [see the discussion of the evaluation of long-term habitat function and value for the SGFA in the BRIA (HTH 2014b; DEIR Appendix E2)]. Therefore, compensatory mitigation for permanent impact areas (access roads, substations, and other permanent infrastructure) are mitigated at a different ratio than impacts within the SGFA where natural habitat would be allowed to remain intact, and where use by those areas is expected to continue.

Response 15:35

The commenter recommends revisions to the wildlife-friendly fence design included in Mitigation Measure B-1(p). Refer to response 3.12 for a discussion of the adequacy of project fencing.

Response 15.36

The commenter recommends revisions for pesticide use included in Mitigation Measure B-1(ff). Refer to response 15.14 for a discussion of the adequacy of MM B-1(ff) as regards the use of rodenticides.

Response 15.37

The commenter concludes their comments contending that the proposed project area is unsuitable for solar development due to the presence/potential for occurrence of rare, endangered, and sensitive species, and that analyses of impacts and alternatives was not adequate. As an area that has been under an active grazing regime for many years, the project site does not consist of specifically sensitive or high quality native habitat. The EIR provides an in-depth evaluation of the existing conditions for biological resources, fully evaluates and analyzes the potential for special status species to occur on the project, identifies those special status species that are present or have the potential to occur on the site, and includes appropriate measures to mitigate impacts to special status species that do or may occur on the project site.

Letter 16

Denise Duffy & Associates, Inc.

PLANNING AND ENVIRONMENTAL CONSULTING

TRANSMITTAL

DATE: September 22, 2014

TO: Delinda Robinson, Senior Planner, RMA – Planning Department

CC: John Ford, Planning Services Manager, RMA- Planning Department
Scott Dawson, Manager of Siting and Permitting, First Solar, Inc. (for California Flats Solar, LLC)
Koryn Kendall, Manager, Project Development, First Solar, Inc.
John Gaglioti, Senior Project Manager, Project Developer – Engineer, First Solar, Inc.
Denise Duffy, Principal, DD&A, Inc.
David Lazerwitz, Project Counsel, Farella Braun + Martel LLP

FROM: Tyler Potter, AICP, Project Manager

REFERENCE: California Flats Solar Project – PLN120294

ENCLOSED		SENT BY		FOR	
x	Reports	x	Hand	____	Approval/ Signature
x	Letter	____	Regular Mail	____	Per Your Request
____	CD	____	Express/Priority Mail	____	Review/Comment
____	Other	____	Overnight	x	For Your Records
ORIGINAL		____	Other	____	Other

REMARKS/COMMENTS:

Please find enclosed the following material prepared in support of the above referenced project:

- First Solar, Inc., California Flats Solar Project – PLN120294; SCH #2013041031 Draft Environmental Impact Report, Comment Letter & Attachments, September 22, 2014, including the following technical information:
  - HT Harvey & Associates, Results of the 2013 Scent Dog Surveys, California Flats Solar Project, January 2014
  - Western EcoSystems Technology, Inc., California Flats Solar Project, 2014 Eagle Nest Survey Report, August 12, 2014
  - Western EcoSystems Technology, Inc., California Flats Solar Project, Eagle Use Survey Interim Report, March 10- June 2014, September 5, 2014.

16.1

If you have any questions concerning the enclosed material, please feel free to contact me directly.

DD&A, Inc. ▪ 947 Cass Street, Suite 5 ▪ Monterey, CA 93940 ▪ (831) 373-4341

First Solar

September 22, 2014

Delinda Robinson
Monterey County Resource Management Agency
Planning Department
168 W. Alisal Street, 2nd Floor
Salinas, CA 93901
CEQAcomments@co.monterey.ca.us

Re: California Flats Solar Project – PLN120294; SCH#2013041031 Draft Environmental Impact Report

Dear Ms. Robinson:

California Flats Solar, LLC (Applicant), a wholly owned subsidiary of First Solar, Inc., hereby provides to the County of Monterey (County) its written comments on the Draft Environmental Impact Report (EIR) for the California Flats Solar Project (Project), issued by the County on August 6, 2014. Our written comments consist of both this letter and the documents contained in the attachments, each of which is incorporated herein by reference.

At the outset, we thank County staff and the County's consultant, Rincon Consultants, Inc. (Rincon), for their hard work in compiling and preparing this Draft EIR in support of the Project. We also appreciate the significant public outreach efforts and agency consultation that has been conducted for the Draft EIR by the County under the California Environmental Quality Act (CEQA).

We have provided our comments in the two attached tables, which are organized by chapter and section in the Draft EIR. The first table, "Table 1 – Comments," contains substantive comments on specific issues in the Draft EIR for the County's consideration. Please note that we have included three (3) figures as part of our comments that relate to certain comments in Table 1. The second table, "Table 2 – Errata," contains factual and typographical revisions that should be incorporated in the Final EIR. 16.2

We have also attached two golden eagle survey reports for 2014 which provide nest surveys and on-going survey data for golden eagle within a ten mile radius of the Project site, and a 2013 scent dog survey report assessing the presence of San Joaquin kit fox on the Project site. This updated survey data does not present any significant new information but, rather, confirms the data identified and analyzed in the Draft EIR as part of the Applicant's ongoing effort to track relevant environmental resource information.

We appreciate the considerable time and effort that the County and Rincon have devoted to the scoping process, data development, impact analysis, mitigation measure formulation and overall preparation of this Draft EIR. Our comments are intended to add transparency and further explain the findings contained in this draft document, so that the Final EIR accurately summarizes all of the relevant data, analysis and conclusions.

First Solar, Inc.
135 Main Street, 6th Floor
San Francisco, CA 94105

Telephone 415 935 2500
Facsimile 415 935 2501

www.firstsolar.com

Please feel free to contact us at any time if you have any questions or would like to discuss these comments.

Sincerely yours,

Koryn Kendall
Manager, Project Development

16.2

Attachments:

(1) Table 1 – Comments
(2) Table 2 – Errata
(3) California Flats Solar Project - 2014 Eagle Nest Survey Report
(4) California Flats Solar Project - Eagle Use Survey Interim Report, March 10 – June 24, 2014
(5) Results of the 2013 Scent Dog Surveys - California Flats Solar Project, Monterey County

cc: John Ford, Monterey County RMA – Planning Department
Scott Dawson , First Solar
Beth Deane, First Solar
David Lazerwitz, Farella Braun + Martel LLP

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
1.	Chapter 2 (Project Description)	2-15	**FIGURE 2.4a, 2.4e, 2.4h**	2.5.1, PG&E Switching Station, general comment: Based on discussions with PG&E, the location for PG&E switching station and, as a result, the proposed northern substation, has been revised as shown on the three attached site plans, "Site Plan – Index Map" – Figure 2.4a in the Draft EIR, "Site Plan – B2" – Figure 2.4e in the Draft EIR, and "Site Plan – C2" – Figure 2.4h in the Draft EIR, which are incorporated herein by reference, and which should replace the corresponding site plans in the Draft EIR. These changes are necessary based on more refined design information from PG&E and in order to further reduce potential impacts associated with the switching station. The proposed changes would not result in any additional environmental effects or cause an increase in severity of an identified effect and, in fact, would further reduce impacts to certain plant species. The extent of environmental effects would be consistent with or less than those evaluated in the Draft EIR. The overall size of the PG&E switching station and northern substation would remain the same and the new location for the switching station and substation is within the SDA. A small portion of the transmission line easement is located outside of the SDA; however, potential impacts within this area would be limited to transmission line improvements. The limited ground disturbance within the transmission line easement were previously described and evaluated in the Draft EIR. Overall, this change in layout would lessen the extent of impacts to sensitive plant species as compared to the current design. As currently proposed, the substation and switching station would directly impact both Navarretia nigelliformis and California macrophylia. The proposed revisions, as shown on the attached site plan, would completely avoid impacts to California macrophylia and significantly reduce the extent of impacts to Navarretia nigelliformis associated with current location of the substation and switching station. Overall, the proposed revision would lessen the extent of potential impacts associated with the proposed project. The proposed changes would not result in any additional adverse environmental effects, cause an increase in severity of an identified impact, or result in a substantial change to the project that would deprive the public meaningful opportunity to comment on the project or a significant environmental effect.	16.3
2.	Chapter 2 (Project Description)	2-91	**TABLE 2.4**	Add APM-10. The project proponent will prepare a Bird and Bat Conservation Strategy (BBCS) to identify conservation measures to minimize avian impacts, describe the avian use of the site, and describe a post-construction avian mortality monitoring program. This Avian Mortality Monitoring Program (AMMP) will monitor operational effects of the project on avian species. The AMMP will include the following elements: • Surveys of the solar arrays for bird mortality during the initial operations and maintenance phase;	16.4

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	**Document Chapter**	**Page Number**	**Figure or Table Number**	**Comment and/or Reference**	
				• Protocols for data collection, documentation, and reporting to the County; • Protocols to assess searcher efficiency and carcass removal; and • Minimum credentials of monitoring personnel and/or appropriate training.	
3.	Chapter 2 (Project Description)	2-91	**TABLE 2.4**	Add APM-11: The applicant shall prepare a design level drainage analysis that will ensure that project facilities are not placed in areas where they would be subject to significant flood or erosion hazards or affect the existing capacity of affected watercourses. The design level drainage study will incorporate the following flood-risk and erosion avoidance measures contained in the *Preliminary Drainage Report* (RBF 2013) and in the *Preliminary Drainage Analysis Addendum* (Wallace Group 2014): • No modules shall be placed in areas where the product of the flow depth and flow velocity is greater than 9 square feet per second (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24-hour storm event; • No transformers, substations, or inverters shall be placed in areas where the flow depth exceeds 2 feet (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24-hour storm event; • Transformers, substations, or inverters constructed in areas where any inundation is expected to occur should be placed a minimum of 1 foot above the 100- year water surface elevation; • Solar modules constructed in areas where any inundation is expected to occur should be placed a minimum of 6-inches above the 100- year water surface elevation; and • Tracker actuator motors constructed in areas where any inundation is expected to occur should be placed a minimum of 6-inches above the 100- year water surface elevation. In addition, the design level drainage analysis shall contain measures to ensure that any project-related improvements within 50 feet from the top of bank of on-site drainages will not result in significant erosion related hazards and that these improvements will not affect the existing capacity of the affected watercourse, as required by Chapter 16.16 of the Monterey County Code. Prior to the issuance of grading permits, the applicant shall submit the design-level drainage analysis to the Monterey County Water Resources Agency for review and approval.	16.4
4.	Section 4.1 (Aesthetics)	4.1-1	**TABLE 4.1.1**	Impact AES-1: The temporary construction effects associated with the proposed project do not rise to the level of significance warranting mitigation. The second sentence in the "Impact" column should be revised as follows: "Potential impacts during project construction would be temporary in nature and affected views would be limited. Impacts would be Class IV, less than significant [Threshold 1]II,	16.5

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				~~significant but mitigable. [Threshold 1]~~ " The "Mitigation Measures" column should be revised to state: "No mitigation measures are required." The "Residual Impact" column should be revised to state: "Impacts would be less than significant without mitigation."	16.5
5.	Section 4.1 (Aesthetics)	4.1-1	**TABLE 4.1.1**	Impact AES-2: The temporary construction effects associated with the proposed project do not rise to the level of significance warranting mitigation. The second sentence in the "Impact" column should be revised as follows: "Potential impacts during project construction would be temporary in nature and affected views would be limited. Impacts would be Class IV, less than significant [Threshold 3]~~II, significant but mitigable. [Threshold 3]~~ " The "Mitigation Measures" column should be revised to state: "No mitigation measures are required." The "Residual Impact" column should be revised to state: "Impacts would be less than significant without mitigation."	16.6
6.	Section 4.1 (Aesthetics)	4.1-1	**TABLE 4.1.1**	Impact AES-3: The requirement in the Mitigation Measure column, sixth sentence, that the Construction Lighting Plan "shall include the location, type, and wattage of all external light fixtures and include catalog sheets of each fixture" (emphasis added), is overbroad and goes beyond the standard lighting plan requirement. Moreover, the standard lighting plan requirement is tied to operational lighting and is a standard condition of approval (COA). The level of specificity called for by the sixth sentence is not necessary to achieve the minimization of nighttime lighting impacts intended by the mitigation measure. The mitigation measure contains performance standards that will ensure that the intended results are achieved. The sixth sentence should be deleted, as follows: "~~The Plan shall include the location, type, and wattage of all external light fixtures and include catalog sheets of each fixture.~~"	16.7
7.	Section 4.1 (Aesthetics)	4.1-3		Section 4.1.2.c, Proposed Project Viewshed, second full paragraph: The analysis should be clarified to demonstrate that it is unlikely that the construction of infrastructure improvements within the utility corridor would be perceptible from Cholame Valley Road, given the distance of the roadway relative to the proposed infrastructure improvements. Please revise the last sentence as follows: "The proposed project site is not visible from any roadways, with the exception of one location on Turkey Flat Road where the public road terminates into the project site. ~~and Cholame Valley Road, which,~~ Due to the surrounding topography and distance of the project site relative to other public roads, the project site is not visible from any other roadways. ~~generally have very limited views of the site, despite its size.~~ Views from Cholame Valley Road towards the project site would be obstructed by intervening topography and distance. Due to the distance of project, including the proposed utility corridor, relative to Cholame Valley Road, it is unlikely that any component of the project would be visible from this roadway."	16.8

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
8.	Section 4.1 (Aesthetics)	4.1-20		4.1.3.a, second to last paragraph: The Draft EIR does not acknowledge that the project includes APMs to address the potential environmental effects associated with project decommissioning. Please insert the following sentence before the last sentence in the paragraph: "As described in Section 2.0, Project Description, the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time."	16.9
9.	Section 4.1 (Aesthetics)	4.1-21		Section 4.1.3.b, Impact AES-1, first paragraph: The construction of improvements within the utility corridor would not be perceptible from Cholame Valley Road. Accordingly, the text should be revised as follows: "As noted in Section 4.1.2(c) (Proposed Project Viewshed), the project site is visible from Turkey Flat Road~~, Cholame Valley Road,~~ and SR 41. While the proposed utility corridor is located in proximity to Cholame Valley Road, the construction of infrastructure improvements within the utility corridor would generally not be visible from Cholame Valley Road and would be barely perceptible given the existing visual character of the area as perceived from Cholame Valley Road. "	16.10
10.	Section 4.1 (Aesthetics)	4.1-22		Section 4.1.3.b, Impact AES-1, second paragraph: The temporary construction effects associated with the proposed project do not rise to the level of significance warranting mitigation. Accordingly, the analysis at the end of the second paragraph should be revised as follows: "Temporary construction related effects associated with staging, vehicle queuing, and delivery would not substantially adversely affect a scenic vista. Temporary construction impacts would be limited in duration as perceived by vehicular traffic along SR 41. This would represent a less than significant impact for the purposes of this analysis. No mitigation is necessary. ~~Although construction of the proposed roadway improvements and the staging areas would be short-term and temporary, drivers traveling along SR 41, an eligible state scenic highway, would see this construction equipment for a short segment of SR 41. Therefore, impacts related to scenic vistas along SR 41 are potentially significant.~~" In addition, Mitigation Measure AES-1 should be deleted.	16.11
11.	Section 4.1 (Aesthetics)	4.1-23		Section 4.1.3.b, Impact AES-2, fourth paragraph: The temporary construction effects associated with the proposed project do not rise to the level of significance warranting mitigation. Accordingly, the last sentence should be revised as follows: "Temporary construction staging would be limited in duration. Views of construction staging, as perceived from vehicular traffic on SR 41, would be limited. Temporary construction related visual impacts are not considered significant for the purposes of CEQA. This represents a less-than-significant impact. No mitigation is warranted. ~~The temporary placement of construction equipment at these areas represents a potentially significant impact on visual character.~~"	16.12

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
12.	Section 4.1 (Aesthetics)	4.1-23		Section 4.1.3.b, Impact AES-2, last paragraph: In general, the construction of infrastructure improvements within the utility corridor would not be visible from Cholame Valley Road. The existing Morro-Bay Gates line is barely visible from this location and the construction of improvements associated with the project would be even less prominent. It is highly unlikely that these improvements would be perceptible from Cholame Valley Road given the intervening distance. Accordingly, the last paragraph should be revised as follows: "The KOP 4 represents a location from which the proposed utility corridor infrastructure could be ~~somewhat~~ visible from a public viewing location, although given the distance of the viewing location and proposed improvements it is unlikely that infrastructure improvements would be visible from this location. ... Therefore, the proposed utility corridor would not substantially degrade this viewshed and would be consistent with the existing visual character of the area, and the visual impacts related to the proposed utility corridor are less than significant."	16.13
13.	Section 4.1 (Aesthetics)	4.1-24		Section 4.1.3.b, Impact AES-3, second paragraph: Additional nighttime lighting may be needed on the site, depending on the nature of construction-related activities, although the extent of such lighting would be limited in duration. The following text should be inserted before the last sentence: "Additional nighttime lighting may be needed, on an as-needed basis, elsewhere on the site depending on the nature of construction-related activities. "	16.14
14.	Section 4.1 (Aesthetics)	4.1-26		Section 4.1.3.b, Impact AES-3, Mitigation Measure: The requirement in the sixth sentence of the mitigation measure that the Construction Lighting Plan "shall include the location, type, and wattage of all external light fixtures and include catalog sheets of each fixture" (emphasis added), is overbroad and goes beyond the standard lighting plan requirement. Moreover, the standard lighting plan requirement is tied to operational lighting and is a standard COA. The level of specificity called for by the sixth sentence is not necessary to achieve the minimization of nighttime lighting impacts intended by the mitigation measure. The mitigation measure contains performance standards that will ensure that the intended results are achieved. The sixth sentence should be deleted, as follows: "~~The Plan shall include the location, type, and wattage of all external light fixtures and include catalog sheets of each fixture.~~"	16.15
15.	Section 4.2 (Agriculture)	4.2-5		Section 4.2.2, Local, Monterey County Zoning Ordinance – Title 21, last paragraph: The text should indicate that the project is considered an allowable use with a permit under the County Zoning Ordinance. Insert the following text after the third sentence: "Projects considered "public and quasi-public uses, including public utilities," may be developed with a use permit under the site's existing	16.16

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				zoning (Monterey County Zoning Ordinance §21.30.050(b) and §21.34.050(d)).”	
16.	Section 4.2 (Agriculture)	4.2-8		Section 4.2.3.a, Methodology and Significance Thresholds, Evaluation Criteria, carry-over paragraph at top of page: The Draft EIR does not acknowledge that the project includes APMs to address the potential environmental effects associated with project decommissioning. Please insert the following sentence before the last sentence in the paragraph: “As described in Section 2.0, Project Description, the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.”	16.17
17.	Section 4.2 (Agriculture)	4.2-8		Section 4.2.3.b, Impact AG-1, second paragraph: The description of the temporary water facilities proposed in the utility corridor is incorrect. Please revise the first sentence as follows: “Development activities associated with the proposed project that could affect ‘Prime Farmland’ or ‘Unique Farmland’ would be limited to the installation of temporary water infrastructure (including pumping facilities and ~~an above-ground~~ water pipeline, portions of which would be above and below ground) associated with transporting water from existing Ag Well #2 (as shown in Figure 2-4s in Section 2.0, *Project Description*) to the project site.”	16.18
18.	Section 4.2 (Agriculture)	4.2-10		Section 4.2.3, Impact AG-3, last paragraph: The first and second sentence should be revised to more accurately describe the proposed project and associated APMs, as follows: “The proposed project contains design features (i.e., applicant proposed measures (APMs)) intended to minimize the potential temporary impacts associated with project construction and thereby limit potential secondary effects to adjacent agricultural uses. Applicable measures include the implementation of Best Management Practices (BMPs) during project construction, including providing on-going coordination with the adjacent property owners concerning construction activities (APM-2), installing mud shakers and/or rumble strips to limit the transport of invasive species (APM-3), implementing applicable SWPPP and erosion control measures (APM-7), implementing a dust control plan to minimize fugitive dust emissions (APM-4), developing a hazardous materials response plan (APM-6), and implementing a post-construction restoration and revegetation plan (APM-5).”	16.19
19.	Section 4.2 (Agriculture)	4.2-11		Section 4.2.3, Impact AG-3, Mitigation Measures: The second sentence should be revised to more accurately describe the proposed project and associated APMs, as follows: “Although the impact would be less than significant without mitigation, the implementation of proposed APMs, as well as measures AQ-2a ....”	16.20

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
20.	Section 4.3	4.3-1, 4.3-25	**TABLE 4.3-1**	Impact AQ-2: The "Residual Impact" column states that the air quality impact calculations with mitigation included mitigation measures typically required by CARB and MBUAPCD for NOx, particularly Tier III engines. However, the use of Tier III engines is not specifically identified as a mitigation measure for Impact AQ-2. The requirement to use Tier III engines is acceptable to the Applicant so long as there is a minimum horsepower threshold and flexibility for commercial availability of equipment with Tier III engines for use on the proposed project. We suggest adding a new sentence to AQ-2 that states: "The project applicant shall use Tier III engines in heavy construction equipment greater than 50 horsepower to the extent commercially available in the regional area."	16.21
21.	Section 4.3	4.3-1, 4.3-25	**TABLE 4.3-1**	Impact AQ-2(a): The third bulleted item in Mitigation Measure AQ-2(a) should be revised to provide additional flexibility to move water for dust control to areas where earth-disturbing work is being performed. In addition, the use of temporary pipelines will not reduce the fill time for water trucks, as pipelines do not affect flow-rate directly. Please revise the measure as follows: "In order to avoid long distances and associated travel time between source wells and the work area, the project applicant shall employ the use of on-site temporary pipelines, stand tanks or other measures to reduce water truck travel on unstable, disturbed surfaces~~to move water to the current work area and thereby reduce fill times for water trucks~~;"	16.22
22.	Section 4.3	4.3-2, 4.3-26	**TABLE 4.3-1**	Impact AQ-2(a): The eighth bulleted item in Mitigation Measure AQ-2(a) should be revised to focus on controlling dust generated when heavy construction equipment travels on roads that have not been stabilized rather than all dirt roads. Dirt roads that have been stabilized as part of project construction will not be sources of dust emissions and therefore would not need water trucks to mitigate dust emissions. Please revise the measure as follows: "Heavy construction equipment traveling on ~~dirt~~unstabilized roads on the project site shall be preceded by a water truck to dampen roadways and reduce dust from transportation along ~~on-site dirt~~such roads;"	16.23
23.	Section 4.3 (Air Quality)	4.3-2 to 3-3 & 4.3-26	**TABLE 4.3-1**	Impact AQ-2: The mitigation measure referred to in the tenth bulleted item should be revised to provide greater clarity as to when and where Restoration and Revegetation Plan should be implemented. In addition, schedules for conducting revegetation for habitat mitigation as compared to revegetation for dust mitigation may conflict. The Restoration and Revegetation Plan would contain the directions for when and where implementation would occur. Please revise the measure as follows: "Restoration and Revegetation Plan [refer to Biology Mitigation Measure B-2(b)] shall be implemented ~~as soon as possible following completion of any soil disturbing activities~~ to contribute to stabilization of disturbed soil surfaces."	16.24

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference
24.	Section 4.3 (Air Quality)	4.3-5 to 3-6 & 4.3-33 to 3-34	**TABLE 4.3-1**	Impact AQ-6, Mitigation Measure AQ-6(a): The proposed Valley Fever mitigation measure AQ-6(a) is overly protective relative to the level of potential impacts under Impact AQ-6. Monterey County is not a high-risk area for Valley Fever, as indicated by the Centers for Disease Control's designation of the County as a "suspected endemic" area, which is the lowest risk ranking that the agency assigns to areas that may have Coccidioides fungus present. Moreover, none of the recent EIRs prepared by the County identify Valley Fever as a potential impact from dust generated during construction of those projects, nor identify mitigation measures to lessen Valley Fever impacts that could result. The proposed revisions to measures that may be included in the VFMP incorporate the engineering controls that have been proven to be effective to reduce worker exposure to dust potentially containing Coccidioides spores at other solar facilities under construction in endemic areas in the State, including the Topaz Solar Project in San Luis Obispo County. The applicant proposes a number of engineering controls, such as phasing work schedules, stabilizing disturbed soil as soon as possible, and providing workers with respirators and/or suitable coveralls if needed after performing a job hazard analysis. The applicant also proposes a number of measures relating to ensuring that subcontractors working on the project implement the VFMP with respect to their workers. The applicant would regularly audit the subcontractors' compliance with the VFMP and report the results to the County Health Department and Planning Department. As proof of the effectiveness of these measures, not a single case of occupationally related Valley Fever has been reported by a worker at one of the applicant's parent company projects in California in the last 12 months, a period in which approximately 8.2 million man-hours of work has been performed at these sites. Therefore, revise measure AQ-6(a) as follows: "The project applicant shall identify and retain a licensed occupational medicine physician (M.D.) with significant pulmonary epidemiology experience to assist the applicant, in consultation with the Monterey County Health Department (Health Officer), ~~the MBUAPCD, and the California Occupational Safety and Health Administration (Cal/OSHA) Compliance Program~~ to develop a Valley Fever Management Plan (VFMP) that includes specific measures to reduce the potential for exposure to Valley Fever. Prior to issuance of grading permits, the applicant shall submit the VFMP~~Valley Fever Management Plan~~ to the Monterey County Health Department ~~RMA – Planning Department~~ for review and approval. The VFMP~~Valley Fever Management Plan~~ shall ~~include a program to evaluate the potential for exposure to Valley Fever from construction activities and to~~ identify appropriate dust

16.25

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference
				management and safety procedures that shall be implemented, as needed, to minimize worker~~personnel~~ and public exposure to ~~potential Valley Fever–containing~~ dust potentially containing the Coccidioides spore. Measures in the VFMP~~Valley Fever Management Plan~~ may include the following, which shall be implemented as applicable~~, may include the following~~: • Provide HEPA-filtered air-conditioned enclosed cabs on heavy equipment. Train workers on proper use of cabs, such as turning on air conditioning prior to using the equipment. • Provide communication methods, such as two-way radios, for use in enclosed cabs. • ~~Provide National Institute for Occupational Safety and Health (NIOSH)-approved respirators for workers.~~ • ~~Conduct a job hazard analysis in compliance with Cal/OSHA regulations for any worker that will be exposed to dust.~~ 16.25 • Require National Institute for Occupational Safety and Health (NIOSH)-approved half-face respirators equipped with N-100 or P-100 filters to be used during any worker collocation with surface disturbance activities~~digging~~ if determined to be needed~~warranted after conducting a~~ based upon the applicable job hazard analysis. • To the maximum extent practicable, phase work efforts to assure that site preparation work involving significant surface disturbance (i.e., grading, filling, trenching) and work that does not involve significant surface disturbance is not collocated to the extent that dust potentially generated by high winds coupled with disturbed soil instability will not impact workers or other receptors. • ~~Require employees to wear respirators when working near earth- moving machinery if determined to be warranted after conducting a job hazard analysis.~~ • ~~Cause employees~~Workers that are required to use respirators as determined by a job hazard analysis will~~to~~ be medically evaluated, fit-tested, and properly trained on the use of the respirators, and ~~implement a full~~ a respiratory protection program will be implemented in accordance with the applicable Cal/OSHA Respiratory Protection Standard (8 CCR 5144). • To the maximum extent practicable, ensure that areas involving significant

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference
				surface disturbance are stabilized as immediately as possible following all such activities. • ~~Provide separate, clean eating areas with hand-washing facilities.~~ • ~~Thoroughly clean construction tools, equipment, and vehicles with water before they are moved offsite to other work locations.~~ • ~~Wheel-washing facilities with water- recycling systems shall be provided at all site egress points. Vehicles leaving the site on a daily basis shall utilize wheel-washing facilities in order to reduce dust migration off the project site.~~ Equipment inspection and washing stations shall be established and manned at each construction equipment access/egress point. Spot examination of construction equipment for water washing via portable equipment in accordance with SWPPP BMPs will be performed in order to prevent track-out and transport of material potentially the Coccidioides spore. • ~~On-site workers shall be required to change clothes after work every day before leaving the work site, to prevent distribution of Coccidioides to non-endemic areas. As an alternative, disposable Tyvek® or equivalent work suits and work boots for use on-site shall be provided for workers.~~Suitable coveralls and change facilities shall be made available to workers performing work in areas where fresh ground disturbance present a risk of exposure to the Coccidioides spore, as determined to be needed based upon the applicable job hazard analysis. 16.25 • Establish sub-contract language clearly indicating that all subcontractors of their obligations to comply fully with the meaning and intent of Title 8 California Code of Regulations §§ 5141 and 5144, subject to audit and contract enforcement by the applicant. • Establish and execute auditing protocols to ensure subcontractor compliance with all provisions of the VFMP and provide monthly audit summary data, potential deviations noted and corrective actions implemented to the Monterey County Department of Health and the Monterey County RMA – Planning Department. • Each primary employer of contracted workers will be require by the terms and conditions of their contract for services to retain and consult with an Occupational Medicine Professional, licensed by either the Medical Board of California or the Osteopathic Board of California,~~Work with a medical professional~~ to develop a

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				protocol to medically evaluate <u>their</u> employees who develop symptoms of Valley Fever. Reporting of symptoms of Valley Fever and diagnosed cases of Valley Fever must occur consistent with <u>County and State</u>~~Cal/OSHA~~ requirements."	16.25
25.	Section 4.3-3 (Air Quality)	4.3-6 to 3-7 & 4.3-34	**TABLE 4.3-1**	Impact AQ-6, Mitigation Measure AQ-6(b): For the reasons cited in Comment 24 above, please revise the last sentence in measure AQ-6(b) as follows: "The Final Construction Management Plan shall be submitted to the County of Monterey RMA-Planning for review and approval ~~prior to the issuance of any grading permit~~<u>prior to commencing ground disturbing activities</u>."	16.26
26.	Section 4.3-3 (Air Quality)	4.3-7 to 3-8 & 4.3-35	**TABLE 4.3-1**	Impact AQ-6, Mitigation Measure AQ-6(d): For the reasons cited in Comment 24 above, please revise the fourth sentence in measure AQ-6(d) as follows: "Prior to initiating any grading, the project applicant shall provide the ~~Monterey County RMA – Planning Department and the County of Monterey Environmental Health Bureau~~ <u>Monterey County Health Department</u> with copies of all educational training material for review and approval. "	16.27
27.	Section 4.3-3 (Air Quality)	4.3-8 & 4.3-35	**TABLE 4.3-1**	Impact AQ-6, Mitigation Measure AQ-6(e): For the reasons cited in Comment 24 above, please revise the fourth sentence in measure AQ-6(d) as follows: "The applicant shall work with a medical professional, in consultation with the <u>Monterey</u> County Health Department, to develop an educational handout for on-site workers and surrounding residents within three miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for ~~exposure~~ <u>infection</u> is available. Prior to construction permit issuance, this handout shall have been created by the applicant and reviewed by the County. No less than 30 days prior to any <u>grading</u> work commencing, this handout shall be mailed to all existing residences within three miles of the project boundaries. "	16.28
28.	Section 4.3-3 (Air Quality)	4.3-21		Section 4.3.3.a, Decommissioning Emissions, second paragraph: The Draft EIR does not acknowledge that the project includes APMs to address the potential environmental effects associated with project decommissioning. Please insert the following sentence after the last sentence in the paragraph: "<u>As described in Section 2.0, Project *Description*, the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.</u>"	16.29

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
29.	Section 4.3-3 (Air Quality)	4.3-24		Section 4.3.3.b, Impact AQ-2, Total Short-Term Construction Emissions: This paragraph should contain a reference to the APMs the applicant has proposed to reduce temporary construction emissions. Please insert the following sentences after the first sentence in the last paragraph: "The proposed project includes a number of APMs intended to reduce potential environmental effects associated with construction of the proposed project, including temporary air quality emissions. Nevertheless, temporary construction-related emissions would still exceed applicable MBUAPCD thresholds of significance."	16.30
30.	Section 4.3-3 (Air Quality)	4.3-32		Section 4.3.3.b, Impact AQ-5, first paragraph: The analysis of potential odor-related impacts should be clarified to more clearly identify the nature of potential impacts to adjacent sensitive receptors. Please revise the second sentence as follows: "There are two residences located within 1,000 feet of the project site, and due to the proximity of these receptors to construction-related activities, ~~size of the project site,~~ these residences would only be exposed to construction activity for a relatively short portion of the total construction schedule."	16.31
31.				Section 4.3.3, Impact AQ-6, second paragraph: The cases of Valley Fever that occurred at the Topaz Solar Farm project were determined to be non-occupational. In other words, the constructions workers that contracted Valley Fever did not contract it as a result of working on the Topaz project. The reality is that every person that resides in or passes through an area with endemic Coccidioides fungus in the soil is going to be exposed to the Coccidioides spore as a result of breathing in dust particles, as these cases show. Please add the following sentence to the end of the second paragraph: "The reported cases at the Topaz Solar Project were determined to be non-occupational."	16.32
32.	Section 4.3-3 (Air Quality)	4.3-32		4.4.3.b, Impact AQ-6, last paragraph: The analysis should include references to applicable APMs that will reduce potential adverse environmental impacts. Please revise the second sentence as follows: "As described in Section 2.0, *Project Description*, ~~T~~the project would implement a variety of APMs to minimize the potential adverse environmental effects associated with the project, as well as BMPs throughout project construction, including rumble strips at the project site exit (for vehicles leaving the site on a daily basis), washing of large equipment, if warranted, before it is removed from the project site, internal watering of unpaved roadways, implementation of a dust control plan to minimize fugitive dust and potential erosion-related impacts, and post-construction revegetation that would reduce potential Valley Fever hazards."	16.33
33.	Section 4.3-3 (Air Quality)	4.3-36		4.4.3.b, Impact AQ-7, second full paragraph. The last sentence in the second paragraph states that decommissioning impacts could be significant due to impacts AQ-2 (emissions), AQ-4 (sensitive receptors), AQ-5 (odors) and AQ-6 (Valley Fever). However, this is inconsistent with Draft EIR's	16.34

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				conclusions that impacts AQ-4 and AQ-5 are less than significant without mitigation, and the conclusion that impact AQ-6 is not significant with mitigation. To correct this inconsistency, the last sentence should be revised as follows: "However, due the potential for decommissioning-related impacts to regional air quality, including temporary air pollutant emissions (as discussed in Impact AQ-2)~~, exposure of sensitive receptors to substantial pollutant concentrations (as discussed in Impact AQ-4), odors (as discussed in Impact AQ-5),~~ and unmitigated exposure of sensitive receptors to potential health hazards associated with the Coccidioides fungus (as discussed in Impact AQ-6), this impact would be potentially significant."	16.34
34.	Section 4.4 (Biology)	4.4-11		Section 4.4.2, first paragraph: The discussion in the fifth sentence of the first paragraph requires clarification to explain that the 155-acre UCSA overlaps with the SGFASA. The paragraph explains that acreages have had some discrepancies. If the acreages provided for the various cited parts of the BSA listed just before these statements are added up (4184, 698, and 155), it totals 5,037 acres, not 5,033 as stated. This is because 4 acres overlap between the original UCSA (provided by engineers and discussed in the Utility Corridor addendum) and the SGFASA. Please revise the text to state: The BSA is an area of approximately 5,033 acres consisting of an approximately 4,184-acre study area around the Solar Generating Facility Area, an approximately 698-acre study area around the Access Road and an approximately 155-acre study area around the ~~Utility Corridor~~USCA (151 acres of which do not overlap with the SGFASA)."	16.35
35.	Section 4.4 (Biology)	4.4-97		Section 4.4.3.b California Condors, first paragraph: The last sentence incorrectly suggests that the construction and operation of the project may increase the amount of carrion from grazing animals or other wildlife that may occur on the project site, which could attract condors to the site. To the contrary, there is no basis to conclude that construction and operation of the project would increase the amount of carrion on the project site over pre-existing baseline levels. Please revise the last sentence as follows: ". . . could attract condor to the site, although construction and operation of the project will not increase the amount of carrion that may be occur on the project over baseline levels."	16.36
36.	Section 4.4 (Biology)	4.4-97 to 4-98		Section 4.4.3.b, Direct Impacts to California Condors, carryover paragraph: The first sentence incorrectly states that direct impacts "would" include mortality of or injury to California condors. The statement that the project "would" cause these impacts is too definitive because it assumes that such impacts will occur, when in reality that is a speculative conclusion that is not based on facts. It is far from certain that such impacts will occur. Please revise the first sentence as follows: "Direct impacts ~~would~~ potentially could include mortality or injury of California condors, if present, and loss of foraging habitat."	16.37

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
37.	Section 4.4 (Biology)	4.4-98		Section 4.4.3.b, Indirect Impacts to California Condors: The first sentence contains unsupported statements referencing a long-term decline in condor population viability. These statements are in fact contradicted by the analysis later in the same paragraph (and by prior analysis in the discussion of condors), which concludes that the project would result in no indirect impacts to California condors. Therefore, the first sentence should be deleted.	16.38
38.	Section 4.4 (Biology)	4.4-98		Section 4.4.3.b, Direct Impacts to Golden Eagles: The statement that the project could disrupt golden eagle nesting behaviors is not supported by the facts. The site does not support nesting habitat or nesting golden eagles. The text should be revised as follows: "Direct impacts to golden eagles could include mortality or injury of individuals, as well as disruption of foraging ~~and nesting~~ behaviors and loss of foraging ~~and nesting~~ habitat~~, leading to reduced productivity and nestling survival~~. These impacts would primarily occur during construction of the project, though mortality and injury due to vehicle strikes and electrocution~~, and nest disturbance/disruption~~ could occur throughout the operational phase of the project."	16.39
39.	Section 4.4 (Biology)	4.4-107		Section 4.4.3.b, Indirect Impacts to California Tiger Salamander: The conclusion regarding indirect impacts is not supported. The paragraph should be revised as follows: "~~Indirect impacts to CTS include potential long-term decline in population viability within the project site over the life of the project.~~Indirect impacts to CTS are not expected to occur because no CTS have been detected on site, no breeding habitat will be impacted and upland impacts will not be severe enough to result in a long-term decline in population viability at the project site should CTS be present.	16.40
40.	Section 4.4 (Biology)	4.4-108		Section 4.4.3.b, California Red-legged Frog, fourth paragraph: The discussion of permanent impacts to CRLF within the SDAs requires clarification. The SDAs are considered to be part of the permanent impact area calculation, even though habitat value will remain after construction. This detail is unclear in the current text. Please revise the last sentence as follows: "~~However, those areas of the SDAs not permanently impacted (e.g., grassland habitat beneath the solar arrays)~~Although considered permanently impacted for the purposes of analysis, grassland habitat beneath the solar arrays will be available for CRLF use after construction."	16.41
41.	Section 4.4 (Biology)	4.4-115		Section 4.4.3.b, Indirect Impacts to California Red-legged Frog: The conclusion regarding indirect impacts is not supported. The paragraph should be revised as follows: "~~Indirect impacts to CRLF include potential long-term decline in population viability within the project site over the life of the project.~~Indirect impacts on CRLF could occur due to sedimentation of aquatic habitats or changes in water quality. Other indirect impacts may include changes to predation pressure or prey populations in upland dispersal habitat due to facility maintenance and management."	16.42

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
42.	Section 4.4 (Biology)	4.4-115		Section 4.4.3.b, Impact Significant for California Red-legged Frog: The statement that CRLF breeding habitat will be degraded and lost is incorrect. Breeding habitat will not be affected. The paragraph should be revised as follows: "Because of the regional rarity of this species, potential increased mortality of CRLF and degradation and loss of their ~~breeding and~~ non-breeding aquatic habitats and upland dispersal habitats would be considered *Class II, significant but mitigable*."	16.43
43.	Section 4.4 (Biology)	4.4-115		Section 4.4.3.b, Indirect Impacts to Western Pond Turtle: The conclusion regarding indirect impacts is not supported. The paragraph should be revised as follows: "~~Indirect Impacts to western pond turtles include long-term decline in population viability within the project site over the life of the project.~~ Indirect impacts on western pond turtle could occur due to sedimentation of aquatic habitats or changes in water quality, which could affect aquatic prey resources. Other indirect impacts may include changes to predation pressure due to facility maintenance and management."	16.44
44.	Section 4.4 (Biology)	4.4-116		Section 4.4.3.b, Western Spadefoot, San Joaquin Coachwhip, and Coast horned lizard, first paragraph: The Utility Corridor is missing from the description of potential habitat areas, although it is listed in Table 4.4-4. The first sentence should be revised as follows: "San Joaquin coachwhip has been observed in the project impact area, and western spadefoot and coast horned lizard have the potential to occur within the Solar Generating Facility Area and along the Access Road, and western spadefoot and coast horned lizard have the potential to occur within the Solar Generating Facility Area, along the Access Road, and in the Utility Corridor."	16.45
45.	Section 4.4 (Biology)	4.4-116		Section 4.4.3.b, Indirect Impacts to Western Spadefoot, San Joaquin Coachwhip, and Coast horned lizard: The conclusion regarding indirect impacts is not supported. The paragraph should be revised as follows: "~~Indirection impacts to western spadefoot, San Joaquin coachwhip and coast horned lizard include a potential long-term decline in population viability of these species within the project site over the life of the project. Increased predatory pressure due to the availability of addition raptor perches would also be an indirect impact to these species.~~ Indirect impacts on western spadefoot, San Joaquin coachwhip, and coast horned lizard could potentially occur due to increased predation pressure, facilitated by the installation of structures that can be used as raptor perches and lighting that illuminates nocturnal species. Human activities could result in the introduction of non-native ant species that displace native ant species, which are the primary prey of coast horned lizards. Indirect impacts on western spadefoot could occur if surface flows are disrupted such that they affect wetland hydrology or ponding. Erosion and sedimentation from construction could affect the water quality of western spadefoot breeding pools."	16.46

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
46.	Section 4.4 (Biology)	4.4-118		Section 4.4.3, Indirect Impacts to Vernal Pool Branchiopods: The conclusion regarding indirect impacts is not supported. The paragraph should be revised as follows: "~~Indirect impacts to vernal pool branchiopods would include the long-term decline in regional population viability due to loss of individuals and habitat.~~ Indirect impacts on vernal pool branchiopods would include changes in hydrology, the contributing watershed, and water quality, that could indirectly affect vernal pool habitat; but these impacts are expected to be minimal due to the extent and location of limited site grading."	16.47
47.	Section 4.4 (Biology)	4.4-118		Section 4.4.3.b, Mitigation Measure B-1(a), Nested Compensatory Mitigation: The requirement in the fifth sentence in the first paragraph of Mitigation Measure B-1(a) that conservation lands contain verified extant populations is in conflict with the mitigation measures for individual species and the Land Acquisition Requirements set forth in the Draft EIR and is not required by U.S. Fish and Wildlife Service and CDFW guidance. First, the compensatory mitigation measures for individual species make clear that, except in the context of certain special status plant species, compensatory habitat is required to be of equal or greater habitat value – not to contain verified extant populations. See, e.g., MM B-1(j) SJKF (compensatory mitigation must comprise "habitat of equal or greater value"); MM B-1(z) CRLF (compensatory mitigation must provide "equal or greater habitat value"). Second, the Land Acquisition Requirements specify that mitigation habitat must be of equal or greater value to the impacted area and provide that this may be met with "suitable habitat" or habitat that can be enhanced to provide suitable habitat (i.e., "enhanced habitat"). See 4.4-119-120. The Land Acquisition Requirements do not require occupied habitat. Requiring compensatory mitigation that has "verified extant populations" of the impacted species would also create a disproportionate requirement in relation to the project's impacts since populations of several species do not occur on the project site but, rather, the site serves only as potentially suitable habitat. See, e.g., SJKF impacts discussion (species may occasionally use project site but the site does not support a population of SJKF). Accordingly, the fifth sentence of Mitigation Measure B-1(a) should be deleted, as follows: "~~Areas proposed for preservation and serving as compensatory mitigation for special status species impacts must contain verified extant populations of the special status species that would be impacted by the project.~~"	16.48
48.	Section 4.4 (Biology)	4.4-119		Section 4.4.3.b, Mitigation Measures B-1(a) b), Nested Compensatory Mitigation: As written, the County is redundantly performing a determination that will be performed by the easement holder and reviewed for adequacy by the Wildlife Agencies. The last sentence of the second paragraph should be revised, as follows: ~~The amount of these administrative and stewardship fees shall be determined by~~	16.49

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				~~the conservation easement holder in consultation with the County.~~ The project proponent shall provide the County with documentation that the administrative and stewardship fees have been paid and that the conservation easement holder has determined the amount paid is sufficient.	16.49
49.	Section 4.4 (Biology)	4.4-121		Section 4.4.3.b, Mitigation Measures B-1(a) b), Nested Compensatory Mitigation: The standard Wildlife Agency timeframe to complete recording of a conservation easement is 18 months. The first complete sentence in the first paragraph should be revised, as follows: Documentation of recorded easement(s) shall be submitted to and approved by the County prior to the first of the project's final inspections, or within 18~~2~~ months after issuance of grading permits, whichever comes first.	16.50
50.	Section 4.4 (Biology)	4.4-125		Section 4.4.3.b, Mitigation Measures B-1(e), Compensatory Mitigation for Special Status Plant Species: The timing of the impact acreage calculation requires clarification to allow for phasing of project construction. The mitigation timing should allow for phasing of project construction, and, correspondingly, should allow for the total acreage of mitigation required for each phase of construction to be determined before the grading permit is issued for that phase. Please revise the first sentence of Mitigation Timing paragraph as follows: "~~Identification of the total number of plants and acreage for mitigation must be submitted to the county prior to the issuance of grading permits.~~Identification of the total number of plants and acreage for mitigation must be submitted to the County prior to the issuance of grading permits, or prior to the issuance of the grading permit for each phase of the project, should the project be phased."	16.51
51.	Section 4.4 (Biology)	4.4-126		Section 4.4.3.b, Mitigation Measures B-1(g), American Badger Avoidance and Minimization, first full paragraph: The current text does not allow for modification of potential den buffers within 500 feet of active construction. The current text may therefore cause buffers to intrude into active construction zones. The measure should be revised to allow flexibility in buffer width while ensuring adequate species protection. Please insert the following sentence at the end of the paragraph: "Buffers may be modified by the qualified biologist, provided the potential dens are protected."	16.52
52.	Section 4.4 (Biology)	4.4-128		Section 4.4.3.b, Mitigation Measure B-1(i), San Joaquin Kit Fox Den Avoidance and Minimization Measures, Construction Phase: The last sentence under item 7 establishes a timeframe for reporting to the USFWS and CDFW that may differ from that specified in the federal and state incidental take permits that the Applicant is seeking. This will create an added burden on the Applicant without adding any environmental benefit. The text should be revised to establish a reporting timeframe that is consistent with reporting to the USFWS and CDFW required under the federal and state incidental take permits. Please revise the last sentence under item 7 as follows: "All authorized reductions to restrictive buffer areas must be reported in writing to the USFWS and CDFW ~~within 24 hours of~~	16.53

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				~~implementing the change~~per the requirements in the federal and state incidental take permits, if applicable."	
53.	Section 4.4 (Biology)	4.4-131		Section 4.4.3.b, Mitigation Measure B-1(i), San Joaquin Kit Fox Den Avoidance and Minimization Measures, Operations Phase/Extended Activities: The sentence in the middle of the page above item 1 should be revised so that it is clear that the timing of the procedures to minimize impacts on known dens are applicable to all phases of project construction. Please revise this sentence as follows: "During all phases of the project, construction, operation, and decommissioning phases, ~~T~~the applicant shall minimize impacts on known dens through the following procedures:"	16.54
54.	Section 4.4 (Biology)	4.4-133		Section 4.4.3.b, Mitigation Measure B-1(i), San Joaquin Kit Fox Den Avoidance and Minimization Measures, Mitigation Timing: Surveys and implementation of avoidance measures should occur no more than 30 days prior to the start of ground disturbance, not prior to issuance of the grading permits. Active construction may not begin immediately upon issuance of the grading permits. Therefore, tying the preconstruction surveys to the permits instead of to active construction may allow SJKF to move into construction areas during offsite mobilization, causing impacts. Please revise the first sentence as follows: "~~The applicant shall submit documentation to the County that either no occupied SJKF dens were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of occupied or active breeding dens prior to issuance of grading permits.~~The applicant shall submit documentation to the County that either no occupied San Joaquin kit fox dens were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of occupied or active breeding dens prior to the start of active construction."	16.55
55.	Section 4.4 (Biology)	4.4-133		Section 4.4.3.b, Mitigation Measure B-1(j), Compensatory Habitat Mitigation for San Joaquin Kit Fox, Mitigation Timing: The timing of the impact acreage calculation requires clarification to allow for phasing of project construction. The mitigation timing should allow for phasing of project construction, and, correspondingly, should allow for the total acreage of mitigation required for each phase of construction to be determined before the grading permit is issued for that phase. Please revise the first sentence of the Mitigation Timing paragraph as follows: "~~Identification of the total acreage for mitigation of San Joaquin kit fox must be submitted to the county prior to the issuance of grading permits. All~~Identification of the total number of acreage for mitigation of San Joaquin kit fox impacts must be submitted to the County prior to the issuance of grading permits, or prior to the issuance of the grading permit for each phase of the project, should the project be phased."	16.56

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
56.	Section 4.4 (Biology)	4.4-134		Section 4.4.3.b, Mitigation Measure B-1(l), Preconstruction Surveys for Burrowing Owl, Mitigation Timing/Monitoring: Mitigation timing and monitoring requirement should be revised to tie the preconstruction surveys to initial ground disturbing activities, as detailed in the first paragraph of Mitigation Measure B-1(l), rather than to issuance of grading permits. Active construction may not begin immediately upon issuance of the grading permits. Therefore, tying the preconstruction surveys to the permits instead of to active construction may allow burrowing owl to move into construction areas during offsite mobilization, causing impacts. Please revise this paragraph as follows: "Mitigation Timing: The applicant will contract for preconstruction burrowing owl surveys to be conducted prior to construction of the project and shall submit documentation to the County that surveys have been completed prior to the start of initial ground-disturbing activities. Monitoring: The County shall ensure that the ~~surveys are completed prior to issuing grading permits~~applicant is in compliance with all burrowing owl impact avoidance and minimization measures."	16.57
57.	Section 4.4 (Biology)	4.4-137		Section 4.4.3.b, Mitigation Measure B-1(n), Compensatory Habitat Mitigation for Burrowing Owl: The compensatory mitigation specified in this measure should be revised to reflect the County's application of CDFW's guidance pursuant to the Staff Report on Burrowing Owl Mitigation (CDFW, 2012) and to set compensatory mitigation for all impacted project lands at a uniform 2:1 ratio. Under CDFW's guidance, mitigation should be required by the CEQA lead agency to address project-specific impacts or, in the alternative, the lead agency may consult with CDFW. Here, the applicant has proposed an overall mitigation ratio of 2:1 for the final Project footprint, which is well beyond prior CDFW guidance which recommended 6.5 acres for each impacted pair of burrowing owl. In addition, the mitigation timing language should be revised to allow project phasing, consistent with other compensatory mitigation measure revisions. Accordingly, we request the revision of to the first two paragraphs and the fourth paragraph of this mitigation measure as follows: "**Compensatory Habitat Mitigation for Burrowing Owl**. To mitigate for the loss of burrowing owl habitat from the installation of all new facilities, ~~except the SDAs,~~ the applicant shall provide compensatory mitigation acreage, adjusted to reflect the final Project footprint at a minimum of 3<u>2</u>:1 ratio (preserved habitat: affected habitat). The compensatory mitigation must provide equal or greater habitat value than the project site, and would compensate for any permanent loss of burrowing owl habitat, consistent with the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012). ~~To mitigate for the impacts to burrowing owl habitat within the SDAs, the project Proponent shall~~	16.58

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				~~provide compensatory mitigation acreage, adjusted to reflect the final footprint of the SDAs in consultation with CDFW, but at a minimum of 2:1 ratio. All compensatory mitigation must comprise habitat of value equal to, or greater than, the project site.~~ **Mitigation Timing**: Identification of the ~~total~~ acreage for mitigation of burrowing owl must be submitted to the county prior to the issuance of grading permits, or prior to the issuance of the grading permit for each phase of the project, should the project be phased. All other timing shall be consistent with measure B-1(a)."	16.58
58.	Section 4.4 (Biology)	4.4-138		Section 4.4.3.b, Mitigation Measure B-1(q), Bat Preconstruction Surveys and Avoidance, second paragraph: The second sentence specifying buffers around maternity roosts or hibernacula should be revised to provide greater construction flexibility and enhanced species protection. The ESA avoidance buffer should be determined based on species biology, the occurrence of nighttime work, disturbance levels, noise levels, and exhaust levels. Please revise the second sentence as follows: "A ~~minimum~~ 100-foot ESA avoidance buffer (or as designated by the qualified bat biologist based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the roost) shall be demarcated by highly visible orange construction fencing around active maternity roosts."	16.59
59.	Section 4.4 (Biology)	4.4-139		Section 4.4.3.b, Mitigation Measure B-1(q), Bat Preconstruction Surveys and Avoidance, Mitigation Timing: The mitigation timing requires revision to ensure adequate species protection. The current text states that surveys and avoidance measures must be completed prior to obtaining grading permits, but the mitigation measure requires that some surveys be conducted no more than 30 days before the start of construction. Active construction may not begin immediately upon issuance of the grading permits. Therefore, tying the preconstruction surveys to the permits instead of to active construction may allow bats to move into construction areas during offsite mobilization, causing impacts. Please revise the Mitigation Timing as follows: "The applicant shall submit documentation to the County that either no special status bats were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of impacts on special status bats prior to ~~issuance of grading permits~~ground disturbance."	16.60

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
60.	Section 4.4 (Biology)	4.4-139		Section 4.4.3.b, Mitigation Measure B-1(r), Preconstruction Surveys for Raptors and Other Special Status Bird Species, first paragraph: The timing of preconstruction surveys requires revision to ensure adequate species protection. Conducting breeding bird surveys "not less than 30 days prior to the initiation of construction," as called for in the first sentence, creates a high probability that surveyors will miss nesting birds because many avian species can build a nest and lay eggs in less than 30 days. Please revise the first sentence as follows: "Not ~~less~~more than 30 days prior to initiation of construction activities (incl. mobilization . . ."	16.61
61.	Section 4.4 (Biology)	4.4-140		Section 4.4.3.b, Mitigation Measure B-1(r), Preconstruction Surveys for Raptors and Other Special Status Bird Species: Criteria for reducing the buffer is already provided and as such, this consultation requirement is unnecessary. The first sentence of the first full paragraph should be revised as follows: "For golden eagle nests identified during the preconstruction surveys, an avoidance buffer of up to one mile shall be established on a case-by-case basis by a qualified ornithologist~~in consultation with the USFWS~~, and shall depend on the existing conditions and . . ."	16.62
62.	Section 4.4 (Biology)	4.4-140		Section 4.4.3.b, Mitigation Measure B-1(r), Preconstruction Surveys for Raptors and Other Special Status Bird Species, Mitigation Timing: The current text states that surveys and avoidance measures must be completed prior to obtaining grading permits, but the mitigation measure should require (see above Comment 60 that surveys be conducted no more than 30 days before the start of construction. Active construction may not begin immediately upon issuance of the grading permits. Therefore, tying the preconstruction surveys to the permits instead of to active construction may allow birds to move into construction areas during offsite mobilization, causing impacts. Please revise the Mitigation Timing as follows: "The applicant shall submit documentation to the County that either no raptors or other special status birds were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of impacts on raptors and other special status birds prior to ~~issuance of grading permits~~initiation of construction activities."	16.63
63.	Section 4.4 (Biology)	4.4-141		Section 4.4.3.b, Mitigation Measure B-1(s), Special Status Bird Species Impact Avoidance and Minimization: The description of grading permits and the timing of design in the paragraph above "Mitigation Timing" requires clarification and specificity to ensure adequate species protection. The APLIC guidelines should be tied to the project design plans that incorporate the guidelines, such as the construction plans and/or electrical plans. These plans may not be fully developed by the time the grading permits are issued; thus, the plans should not be tied to those permits. Please revise the second sentence in the paragraph as follows: "Details of design components shall be indicated on all construction plans. ~~The applicant shall monitor for new versions of the APLIC guidelines and update~~	16.64

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				~~designs or implement new measures as needed during Project construction, provided these actions do not require the purchase of previously ordered transmission line structures.~~The applicant shall submit documentation to the County that avian impact avoidance and minimization features have been incorporated into the project design prior to issuance of construction or electrical permits that incorporate the guidelines."	16.64
64.	Section 4.4 (Biology)	4.4-141		In response to feedback received from stakeholders regarding avian mortality, the Applicant has incorporated a new Applicant Proposed Measure (APM-10) (see Comment 2) to monitor avian use of the site, conduct post-construction avian mortality monitoring and identify conservation measures to minimize impacts. These efforts will be memorialized in a Bird and Bat Conservation Strategy (BBCS) prepared in collaboration with the U.S. Fish and Wildlife Service and will include an Avian Mortality Monitoring Program (AMMP) to monitor operational effects of the project on avian species. The additional of AMP-10 will further reduce potential operational impacts to avian species by providing additional data and additional conservation measures in response to that data.	16.65
65.	Section 4.4 (Biology)	4.4-142		Section 4.4.3.b, Mitigation Measure B-1(t), Preconstruction Surveys and Avoidance of Western Pond Turtle, Mitigation Timing: As discussed in prior comments above, the timing of preconstruction surveys should be tied to the commencement of construction rather than the issuance of permits to minimize the chance that aquatic special status species may move into the area after the preconstruction surveys have been completed. Please revise the Mitigation Timing as follows: "The applicant shall submit documentation to the County that no aquatic special status species were recorded on the project site, or that appropriate impact avoidance measures have been implemented to ensure avoidance of aquatic special status species prior to ~~issuance of grading permits~~the start of construction."	16.66
66.	Section 4.4 (Biology)	4.4-143		Section 4.4.3.b, Mitigation Measure B-1(u), Preconstruction Surveys and Avoidance of Western Spadefoot, Mitigation Timing: As discussed in prior comments above, the timing of preconstruction surveys should be tied to the commencement of construction rather than the issuance of permits to minimize the chance that western spadefoots may move into the area after the preconstruction surveys have been completed. Please revise the Mitigation Timing as follows: "The applicant shall submit preconstruction survey documentation to the County that no western spadefoots were recorded on the project site, or that appropriate impact avoidance measures have been implemented to ensure avoidance of western spadefoots prior to ~~issuance of grading permits~~the start of construction."	16.67

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
67.	Section 4.4 (Biology)	4.4-144		Section 4.4.3.b, Mitigation Measure B-1(w), California Tiger Salamander and California Red-Legged Frog Relocation Sites: California red-legged frog (CRLF) is a federally listed species, but is not a California listed species. Therefore, CDFW has no jurisdiction over CRLF mitigation, including relocation. This mitigation measure should be revised to clarify that CDFW consultation and approval regarding CRLF relocation sites is not required. Please revise this paragraph as follows: "Prior to the initiation of any other protective measures, a qualified biologist (i.e., biologist approved by USFWS and/or CDFW to translocate CTS and CRLF) shall, in consultation with USFWS regarding CRLF, and with CDFW and USFWS regarding CTS, identify appropriate relocation sites for any adult, juvenile, and larval CTS and CRLF that may be observed during the pre-construction survey or monitoring activities described below and need to be moved from within the limits of direct impact disturbance. **Mitigation Timing**: The applicant shall submit to the County documentation that CDFW- and USFWS-approved relocation sites for CTS and USFWS-approved relocation sites for CRLF have been identified prior to issuance of grading permits. **Monitoring**: The County shall ensure that CDFW- and USFWS-approved relocation sites have been identified by the applicant."	16.68
68.	Section 4.4 (Biology)	4.4-146		Section 4.4.3.b, Mitigation Measure B-1(y), Construction Timing, Preconstruction Surveys and Avoidance Measures for California Red-Legged Frog, first full paragraph: The first full paragraph should be moved in front of the prior paragraph that carries over from page 4.4-145 because the first full paragraph specifies requirements that cannot be carried out if applied to carryover paragraph from page 4.4-145. Specifically, the carryover paragraph specifies CRLF survey and relocation requirements during construction, whereas first full paragraph requires submission of a report that outlines the preconstruction survey results and identifies the number of animals moved prior to construction. Moving the first full paragraph on page 4.4-146 will harmonize the requirements.	16.69
69.	Section 4.4 (Biology)	4.4-146		Section 4.4.3.b, Mitigation Measure B-1(y), Construction Timing, Preconstruction Surveys and Avoidance Measures for California Red-Legged Frog, Mitigation Timing: As discussed in prior comments above, the timing of preconstruction surveys should be tied to the commencement of construction rather than the issuance of permits to minimize the chance that aquatic special status species may move into the area after the preconstruction surveys have been completed. Please revise the Mitigation Timing as follows: "The applicant shall submit documentation to the County that no aquatic special status species were recorded on the project site, or that appropriate impact avoidance measures have been implemented to ensure avoidance of aquatic special status species prior to	16.70

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				~~issuance of grading permits~~the start of construction."	
70.	Section 4.4 (Biology)	4.4-147		Section 4.4.3.b, Mitigation Measure B-1(z), Compensatory Mitigation for California Red-Legged Frog, Mitigation Timing: The mitigation timing language should be revised to allow for phasing of construction of the project. More specifically, the language should be revised so that the total acreage of mitigation required for each phase of construction to be determined before the grading permit is issued for that phase. Please revise the first sentence of the Mitigation Timing language as follows: "Identification of the total acreage for mitigation for California red-legged frog must be submitted to the county prior to the issuance of grading permits, or prior to the issuance of the grading permit for each phase of the project, should the project be phased."	16.71
71.	Section 4.4 (Biology)	4.4-147 to 4-148		Section 4.4.3.b, Mitigation Measure B-1(aa), California Tiger Salamander Construction Barriers, carryover paragraph: The Utility Corridor should be discussed in the context of work period restrictions for areas not fenced within 0.35 mile of potential CTS breeding ponds. Currently, the Utility Corridor is omitted from the description of project areas where a seasonal restriction will apply because the areas are not fenced; however, the corridor is listed on page 4.4-147 as an area without a barrier fence. Also, a potential breeding pond is located within 0.35 mile of the Utility Corridor. Please revise the second sentence of the carryover paragraph as follows: "... ground-disturbing construction activities along the access road, utility corridor, and transmission line shall be limited to the non-breeding season, to the extent practicable."	16.72
72.	Section 4.4 (Biology)	4.4-148		Section 4.4.3.b, Mitigation Measure B-1(bb), California Tiger Salamander Daily Pre-activity Surveys, Mitigation Timing: Mitigation timing and reporting are referenced in this paragraph are infeasible. The current language requires submitting documentation of daily pre-activity surveys during the winter and spring breeding season during construction in reports per Mitigation Measure B-1(u). However, Mitigation Measure B-1(u) reports must be submitted prior to the start of construction. The correct reporting measure appears to Mitigation Measure B-1(ee). Please revise the Mitigation Timing requirement as follows: "The applicant shall report results of daily pre-activity surveys within the biological monitoring reports required in measure B-1(~~u~~ee) and submit these reports to the County as described in measure B-1(~~u~~ee)."	16.73
73.	Section 4.4 (Biology)	4.4-149		Section 4.4.3.b, Mitigation Measure B-1(cc), Compensatory Mitigation for California Tiger Salamander, Mitigation Timing: The mitigation timing language should be revised to allow for phasing of construction of the project. More specifically, the language should be revised so that the total acreage of mitigation required for each phase of construction to be determined before the grading permit is	16.74

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				issued for that phase. Please revise the first sentence of the Mitigation Timing language as follows: "Identification of the total acreage for mitigation for California tiger salamander frog must be submitted to the county prior to the issuance of grading permits, or prior to the issuance of the grading permit for each phase of the project, should the project be phased."	16.74
74.	Section 4.4 (Biology)	4.4-150 to 4-151		Section 4.4.3.b., Mitigation Measure B-1(ee), Construction Biological Monitoring, Mitigation Timing: The current text calls for daily, monthly, and annual reporting. This is overly burdensome and is inconsistent with the frequency of biological monitoring reporting at other projects in Monterey County and at other project sites in the region. A less burdensome, yet equally comprehensive, approach would be to eliminate the daily reporting requirements and instead require that weekly reports be submitted to the Environmental Compliance Manager, and that monthly reports include all daily monitoring data. In addition, to clarify the contents and deadline for submitting the annual report, the text of Mitigation Measure B-1(ff)(19) should be incorporated into this measure. Please revise the second sentence of the Mitigation Timing paragraph as follows: "The applicant shall also report results of daily biological monitoring to the County (through the Environmental Compliance Manager) on a weekly basis, and prepare and submit monthly summary monitoring reports, and annual monitoring reports to the County. During construction, the annual written report shall describe the status of project construction, as well as the compliance and current implementation status of construction-related biological mitigation measures and general biological measures. The report shall be submitted to the County no later than 15 February of the following year."	16.75
75.	Section 4.4 (Biology)	4.4-154		Section 4.4.3.b., Mitigation Measure B-1(ff)(19), Special Status Animal Species General Avoidance Measures and Construction Best Management Practices: In Comment 74 above, the Applicant proposed that Mitigation Measure B-1(ff)(19) be incorporated into the Mitigation Timing measure in Mitigation measure B-1(ee). To the extent that the County makes the revision proposed in Comment 74 above, Mitigation Measure B-1(ff)(19) should be deleted.	16.76
76.	Section 4.4 (Biology)	4.4-154		Section 4.4.3.b., Mitigation Measure B-1(ff), Special Status Animal Species General Avoidance Measures and Construction Best Management Practices, Mitigation Timing: Mitigation timing and reporting are incorrectly cross-referenced. The current text refers to reporting per Mitigation Measure B-1(u); however, the correct reporting requirements to which the measure should refer to are in Mitigation Measure B-1(ee). Please revise the Mitigation Timing requirement as follows: "The applicant shall include details on special status animal species, general avoidance measures, and construction BMPs in biological monitoring status reports that are to be submitted to the County as outlined in B-1(~~u~~ee)."	16.77

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
77.	Section 4.4 (Biology)	4.4-157		Section 4.4.3.b, Impact B-2, Mixed Oak Woodlands, Temporary Impacts, carryover paragraph: The current text misstates the temporary impacts to mixed oak woodlands. The actual temporary impact to mixed oak woodland will be 0.31 acre, not 0.1 acre as written. In addition, the last sentence in this carryover paragraph incorrectly cites Table 4.4-7 (which concerns CTS acreages). The correct reference is Table 4.4-8. Please revise the last two sentences in the carryover paragraph as follows: "However, temporary impacts to up to 0.31 acres of oak woodlands could occur as a result of activities such as construction access by personnel or equipment, trampling of herbaceous vegetation, materials laydown, or utility trenching. No oak woodlands occur within the Access Road or Utility Corridor impact areas (Table 4.4-~~7~~8)."	16.78
78.	Section 4.4 (Biology)	4.4-160		Section 4.4.3.b, Impact B-2, Perennial Stream Impacts: The references in the first three sentences of this paragraph to the double box culvert should be revised to acknowledge that the double box culvert will not be used and instead a clear span bridge will be used, as discussed in the BRIA Addendum (November 2013 site plan) on page 4 of that document. Please revise the first three sentences as follows: "~~A new double box culvert is proposed for a crossing of Cottonwood Creek (a perennial stream that supports perennial marsh wetland vegetation [Figure 4.4-2b]) within the project site. Construction of this culvert would constitute a permanent impact to the stream in this location. Temporary impacts would be caused by the access and activities, including localized dewatering, required to construct this crossing.~~ A new clear-span bridge is proposed for a crossing of Cottonwood Creek (a perennial stream that supports perennial marsh wetland vegetation [Figure 4.4-2b]) within the project site. Construction of this bridge, which will require some rock slope protection on the streambanks associated with the bridge abutments, would constitute a permanent impact on the stream in this location. However, due to the clear-span design, the stream channel bottom will remain a native mud-bottomed habitat."	16.79
79.	Section 4.4 (Biology)	4.4-160		Section 4.4.3.b, Impact B-2, Perennial Stream Impacts: The discussion in the second half of this paragraph regarding the flow capacity of channel crossings should be clarified. The structures that would be needed to handle very large stormflows in this area would cause unnecessary impacts to aquatic resources and would have more capacity than what the current channels provide. Please revise the sixth sentence as follows: "In these areas, pipe culverts large enough to handle ~~storm flows and avoid scour, or channel downcutting,~~ stormflows to at least existing channel capacity, and to avoid scour and channel downcutting, would be installed, along with associated erosion control measures, such as rock weirs and cross vanes, where necessary. "	16.80
80.	Section 4.4 (Biology)	4.4-169		Section 4.4.3.b, Mitigation Measure B-2(c), Mitigation Timing: The requirement that PVIMP be submitted to USFWS and CDFW is not warranted, as neither agency has approval authority over the	16.81

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				PVIMP. The current text is also inconsistent with text on page 4.4-167, which states, "The PVIMP shall be submitted to the County prior to the notice to proceed, and shall address the entire project site." Please revise Mitigation Timing as follows: "The PVIMP shall be submitted by the applicant to the County~~, CDFW, and USFWS~~ for review and approv~~ed~~al by the County prior to issuance of grading permits."	16.81
81.	Section 4.4 (Biology)	4.4-170		Section 4.4.3.b, Mitigation Measure B-2(f), Stream Channel Avoidance and Minimization, first paragraph: The flood event requirements cited in this paragraph are out of date. Recent hydrologic analysis of the site determined that, in many cases, designing crossings for even a five-year event would result in unnecessary impacts to aquatic resources, because either the streams would need to be rechannelized or very large bridges or causeways would be needed. Please revise the paragraph as follows: "~~To prevent high-velocity water flow from causing bank downcutting at downstream locations, any improvements related to road realignment, widening, or the ability of the road to convey heavy equipment for construction shall be designed to handle heavy storm flows (up to the 25-year flood event or more), such that undesirable velocities and channel destabilization downstream of the crossing shall be avoided.~~Recent hydrologic analysis of the site determined that, in many cases, designing crossings for even a five-year event would result in unnecessary impacts to aquatic resources, because either the streams would need to be rechannelized or very large bridges or causeways would be needed."	16.82
82.	Section 4.4 (Biology)	4.4-170		Section 4.4.3.b, Mitigation Measure B-2(f), Stream Channel Avoidance and Minimization, last paragraph: The box culvert referenced in the first sentence of this paragraph is no longer part of the project design—see Comment 78 regarding the clear-span bridge (page 4.4-160). Please revise the first sentence as follows: "A single ~~crossing, including a new double box culvert or free-span bridge,~~new clear-span bridge shall be installed in Cottonwood Creek."	16.83
83.	Section 4.4 (Biology)	4.4-171 to 4-172		Section 4.4.3.b, Mitigation Measure B-2(g), Directional Boring Avoidance and Minimization, Mitigation Timing: The requirement that the Frac-out Plan be submitted to CDFW and USACE is unwarranted. If directional boring is found to be required, it will require LSAA approval and separate CDFW review; however, USACE does not regulate directional boring. Please revise the Mitigation Timing requirement as follows: "The Frac-out Plan shall be submitted by the applicant to the County~~, CDFW, and USACE~~ and approved by the County prior to issuance of grading permits."	16.84
84.	Section 4.4 (Biology)	4.4-188		Section 4.4.3.b, Mitigation Measure B-4(b), Pronghorn-Friendly Fence Design, Mitigation Timing: The current text requires the applicant to submit documentation to the County and CDFW that pronghorn-friendly fence designs has been incorporated into the HMMP prior to issuance of a grading permit.	16.85

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				However, per Mitigation Measure B-1(b), the HMMP does not need to be submitted and approved until prior to the first of the project's final inspections, or within 12 months after issuance of the grading permits, whichever comes first. In order to harmonize these requirements, please revise the Mitigation Timing as follows: "The applicant shall submit documentation that to the County and CDFW that pronghorn-friendly fence design has been incorporated into the HMMP prior to ~~issuance of a grading permit~~the first of the project's final inspections, or within 12 months after issuance of grading permits, whichever comes first."	16.85
85.	Section 4.4 (Biology)	4.4-193		Section 4.4.3.c, Cumulative Impact Analysis, second paragraph: The first sentence incorrectly states that project could contribute to cumulative impacts to blunt-nosed leopard lizard (BNLL). The project will not have any effect on the BNLL, and therefore cannot contribute to a cumulative impact to this species. The project also is not providing any BNLL mitigation, so the statement is misleading to suggest that it is, or would be necessary for the project to do so. Please revise the first sentence as follows: "Proposed solar development within the Carrizo Plain area combined with other solar development in the region (including the proposed project) does have the potential to result in cumulative impacts to sensitive species, especially high risk species such as the San Joaquin kit fox ~~and blunt-nosed leopard lizard~~, particularly if suitable mitigation were not employed to offset and mitigate potential impacts."	16.86
86.	Section 4.5 (Cultural Resources)	4.5-1 & 4.5-35	**TABLE 4.5-1**	Impact CR-1: The impact statement for Impact CR-1 incorrectly states that decommissioning could impact identified NRHP/CRHR-eligible prehistoric or historic archaeological resources. Decommissioning would not result in any new impacts to cultural and paleontological resources. Once the site has been disturbed for construction, the resource has been affected. There is no factual basis for concluding that previously undisturbed areas would be disturbed during decommissioning. Please revise the impact statement as follows: "Construction ~~and decommissioning~~ of the proposed project would involve surface excavation, which has the potential to unearth or adversely impact identified NRHP/CRHR-eligible prehistoric or historic archaeological resources."	16.87
87.	Section 4.5 (Cultural Resources)	4.5-1 & 4.5-36	**TABLE 4.5-1**	Mitigation Measure CR-1(a) incorporated text which unnecessarily provided the County with authority to determine the feasibility of avoiding impacts to known cultural resources despite the fact that the Impact Analysis identified known cultural resources within the project area and fully evaluated the sensitivity of those resources and the nature of likely impacts to those resources, and then set out mitigation measures to address those potential impacts. Please replace the existing text of this measure with the following which more appropriately describes the applicable mitigation: "NRHP/CRHR-eligible sites that will be avoided (not directly impacted) by the proposed project shall be	16.88

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				marked in the field by a Registered Professional Archaeologist prior to ground disturbance with exclusionary fencing, lath, flagging tape, or some other combination of material that is highly visible, durable, and which construction and management personnel can recognize as marking an exclusion zone where no earth disturbance or other activity shall occur. Exclusion zones shall be inspected weekly by an archaeological monitor or other environmental inspector to ensure that they are being honored, remain effective, and in place. When an NRHP/CRHR-eligible site will not be completely avoided, Mitigation Measures CR-1(b) or CR-1(c) shall apply."	16.88
88.	Section 4.5 (Cultural Resources)	4.5-4 & 4.5-38	**TABLE 4.5-1**	Impact CR-2: The impact statement for Impact CR-2 incorrectly states that decommissioning has the potential to unearth or adversely impact previously unidentified cultural resources. Decommissioning would not result in any new impacts to unidentified cultural resources because once the site has been disturbed for construction, the resource has been affected. There is no factual basis for concluding that previously undisturbed areas would be disturbed during decommissioning. Please revise the impact statement as follows: "Construction ~~and decommissioning~~ of the proposed project would involve surface excavation, which has the potential to unearth or adversely impact previously unidentified cultural resources."	16.89
89.	Section 4.5 (Cultural Resources)	4.5-4 & 4.5-39	**TABLE 4.5-1**	Impact CR-3: The impact statement for Impact CR-s incorrectly states that decommissioning has the potential to unearth or adversely impact previously unidentified cultural resources. Decommissioning would not result in any new impacts to unidentified cultural resources because once the site has been disturbed for construction, the resource has been affected. There is no factual basis for concluding that previously undisturbed areas would be disturbed during decommissioning. Please revise the impact statement as follows: "Construction ~~and decommissioning~~ of the proposed project would involve surface excavation, which has the potential to unearth or adversely impact previously unidentified human remains."	16.90
90.	Section 4.5 (Cultural Resources)	4.5-35		Section 4.5.3.a, Decommissioning: Without any factual basis, the Draft EIR assumes that decommissioning will require avoidance of the same resources that were required to be avoided during construction. In addition, the analysis implies that cultural resources that were not disturbed during construction could be disturbed during decommissioning. There is no factual basis for this implication either. Please delete the entire "Decommissioning" paragraph.	16.91
91.	Section 4.5 (Cultural Resources)	4.5-36		Section 4.5.3.b, Impact CR-1, second and fifth paragraphs: These paragraphs incorrectly state that decommissioning could impact identified NRHP/CRHR-eligible prehistoric or historic archaeological resources. As noted in Comment 86 above, decommissioning would not result in any new impacts to cultural and paleontological resources. Once the site has been disturbed for construction, the resource	16.92

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				has been affected. There is no factual basis for concluding that previously undisturbed areas would be disturbed during decommissioning. Accordingly, please revise the first sentence in the second paragraph as follows: "Construction ~~and decommissioning~~ activities associated with the proposed project could affect prehistoric archaeological resources, as well as historic sites within the project disturbance area." Similarly, please revise the second sentence of the fifth paragraph as follows: "Construction ~~and decommissioning~~ activities involving ground disturbance have the potential to damage these resources."	16.92
92.	Section 4.5 (Cultural Resources)	4.5-40		Section 4.5.3.b, Impact CR-4, carryover paragraph: This paragraph incorrectly states that decommissioning could unearth human remains. As noted in Comments 86 and 88-91 above, decommissioning would not result in any new impacts to cultural and paleontological resources. Once the site has been disturbed for construction, the resource has been affected. There is no factual basis for concluding that previously undisturbed areas would be disturbed during decommissioning. Accordingly, please revise the first sentence in the second paragraph as follows: "Thus, discovery of buried human remains is not likely to occur with construction ~~or decommissioning~~ of the proposed project."	16.93
93.	Section 4.6 (Geology)	4.6-1	**TABLE 4.6-1**	Section 4.6.1, Impact GEO-2: The use of the term "solar development area" in the first sentence of the "Impact" column is incorrect. The correct term to use in this discussion is "solar generating facility." The "solar development area" corresponds to a specific subset within the overall "solar generating facility area." It is important that the Draft EIR use accurate terminology in order to minimize confusion. Please revise the sentence as follows: "The ~~solar development area~~ solar generating facility area is relatively flat and is subject to low levels of landslide potential."	16.94
94.	Section 4.6 (Geology)	4.6-2	**TABLE 4.6-1**	Section 4.6.1, Impact GEO-3: The reference to the NPDES program in the second sentence in the "Impact" column should be revised to clarify that it is the construction storm water program. The sentence should be revised as follows: "However, compliance with the NPDES construction storm water program and implementation of measures promoting infiltration, as identified in a final, design-level drainage analysis, would minimize erosion. Impacts would be Class III, less than significant." The second sentence in the "Mitigation Measures" column should be revised to state that APMs will be implemented to reduce project impacts. In addition, the reference to a SWPPP should be clarified that it is for construction, not operation. Please revise the second sentence as follows: "In addition, compliance with recommendations in a required final, design-level drainage analysis, and compliance with the project's construction SWPPP, as described in Section 4.9, *Hydrology and Water Quality,* as	16.95

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				well as proposed project design features (i.e., APMs), would reduce erosion impacts to a less than significant level."	
95.	Section 4.6 (Geology)	4.6-3		Section 4.6.2.a, Geology, third paragraph: The use of the term "solar development area" in the first sentence is incorrect. The correct term to use in this discussion is "project site." The "solar development area" corresponds to a specific subset within the overall "solar generating facility area." It is important that the Draft EIR use accurate terminology in order to minimize confusion. Please revise the first sentence as follows: "The ~~solar development area~~project site is located within the U.S. Geological Survey (USGS) Cholame Valley and Dark Hole quadrangles."	16.96
96.	Section 4.6 (Geology)	4.6-4		Section 4.6.2.b, Faulting and Seismically Induced Ground Shaking, third paragraph: The use of the term "solar development area" in the first sentence is incorrect. The correct term to use in this discussion is "solar generating facility." The "solar development area" corresponds to a specific subset within the overall "solar generating facility area." It is important that the Draft EIR use accurate terminology in order to minimize confusion. Please revise the first sentence as follows: "The proposed approximately 155-acre utility corridor would cross the San Andreas Fault, while the proposed solar generating facility ~~proposed solar development area~~ would be located approximately two miles northeast of the fault trace."	16.97
97.	Section 4.6 (Geology)	4.6-6		Section 4.6.2.b, San Andreas Fault, carryover paragraph at top: The discussion should be revised to clarify that the proposed improvements within the utility corridor will be limited. This is necessary to accurately describe the project and associated impacts. Please add the following sentence at the end of the paragraph: "The extent of proposed infrastructure improvements within the utility corridor are, however, limited."	16.98
98.	Section 4.6 (Geology)	4.6-6		Section 4.6.2.b, Gold Hill Thrust Fault: The use of the term "solar development area" in the second sentence is incorrect. The correct term to use in this discussion is "solar generating facility." The "solar development area" corresponds to a specific subset within the overall "solar generating facility area." It is important that the Draft EIR use accurate terminology in order to minimize confusion. Please revise the second sentence as follows: "This fault is located approximately 0.25 miles southwest of the solar generating facility area ~~solar development area~~ and would cross the proposed utility corridor."	16.99
99.	Section 4.6 (Geology)	4.6-6		Section 4.6.2.b, Jack Ranch Fault: The use of the term "solar development area" in the second sentence is incorrect. The correct term to use in this discussion is "solar generating facility." The "solar development area" corresponds to a specific subset within the overall "solar generating facility area." It is important that the Draft EIR use accurate terminology in order to minimize confusion. Please revise the second sentence as follows: "This fault is located approximately 1.0 miles southwest of the	16.100

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				solar generating facility area ~~solar development area~~ and would cross the proposed utility corridor."	
100.	Section 4.6 (Geology)	4.6-12		Section 4.6.2.c, State, second paragraph: The use of the term "solar development area" in the fifth sentence is incorrect. The correct term to use in this discussion is "solar generating facility." The "solar development area" corresponds to a specific subset within the overall "solar generating facility area." It is important that the Draft EIR use accurate terminology in order to minimize confusion. Please revise the fifth sentence as follows: "The ~~solar development area~~ solar generating facility area is located in a "low" liquefaction area, while portions of the proposed utility corridor and access road are located in a "moderate" liquefaction area [refer to Section 4.6(b) (*Land Subsidence and Liquefaction*)].	16.101
101.	Section 4.6 (Geology)	4.6-14		Section 4.6.3.a, Impact GEO-1, first paragraph: use of the term "solar development area" in the first sentence is incorrect. The correct term to use in this discussion is "solar generating facility." The "solar development area" corresponds to a specific subset within the overall "solar generating facility area." In addition, the text later in the paragraph should be revised to more accurately identify potential impacts. Please revise the paragraph as follows: "The solar ~~development~~ generating facility area is located in a seismically active region and could be subject to fault rupture and strong seismic groundshaking during the project's design lifetime (anticipated to be 30 to 40 years). ... ~~As such,~~ The proposed project, due to its proximity to existing faults, ~~the site~~ is likely to experience significant surface rupture and groundshaking activity as a result of seismic activity along the San Andreas Fault during the life of the project. The proposed project would include the construction of PV modules, electrical transformers and other equipment, a transmission line, two substations, a switching station, security fencing, internal access roads and an operations and maintenance (O&M) building, in addition to the utility corridor (which crosses a portion of ~~that would cross~~ the San Andreas Fault trace)."	16.102
102.	Section 4.6 (Geology)	4.6-15		Section 4.6.3.a, Impact GEO-1, first full paragraph: The use of the term "solar development area" in the third sentence is incorrect. The correct term to use in this discussion is "solar generating facility." The "solar development area" corresponds to a specific subset within the overall "solar generating facility area." It is important that the Draft EIR use accurate terminology in order to minimize confusion. Please revise the third sentence as follows: "Furthermore, the ~~solar development area~~ solar generating facility area is located in an area mapped as having a low liquefaction potential, according to Exhibit 4.4.3 in the *Monterey County General Plan*."	16.103
103.	Section 4.6 (Geology)	4.6-16		Section 4.6.3.a, Impact GEO-2: The use of the term "solar development area" in the first sentence of the impact statement is incorrect. The correct term to use in this discussion is "solar generating facility." The "solar development area" corresponds to a specific subset within the overall "solar	16.104

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				generating facility area." It is important that the Draft EIR use accurate terminology in order to minimize confusion. Please revise the sentence as follows: "The ~~solar development area~~ solar generating facility area is relatively flat and is subject to low levels of landslide potential."	16.104
104.	Section 4.6 (Geology)	4.6-17		Section 4.6.3.a, Impact GEO-3, last paragraph: The reference to the NPDES program in the second sentence of the "Impact" description should be revised to clarify that it is the construction storm water program. The sentence should be revised as follows: "However, compliance with the NPDES construction storm water program and implementation of measures promoting infiltration, as identified in a final, design-level drainage analysis, would minimize erosion. Impacts would be Class III, less than significant."	16.105
105.	Section 4.6 (Geology)	4.6-18		Section 4.6.3.a, Impact GEO-3, second paragraph: The use of the term "solar development area" in the second sentence of the impact statement is incorrect. The correct term to use in this discussion is "solar generating facility." The "solar development area" corresponds to a specific subset within the overall "solar generating facility area." It is important that the Draft EIR use accurate terminology in order to minimize confusion. Please revise the second sentence as follows: "The operation of the project could also result in localized increases in erosion due to the introduction of new physical elements and impervious surfaces on the ~~solar development area~~ solar generating facility area."	16.106
106.	Section 4.6 (Geology)	4.6-18		Section 4.6.3.a, Impact GEO-3, last paragraph: The reference to a SWPPP in the first sentence should be revised to clarify that it is for the construction storm water program, as follows: "Implementation of a NPDES-compliant construction Stormwater Pollution Prevention Plan (SWPPP), as required by the Clean Water Act."	16.107
107.	Section 4.6 (Geology)	4.6-19		Section 4.6.3.a, Impact GEO-3, first paragraph: The Draft EIR does not acknowledge that the project includes measures (i.e., APM-1) to address the potential environmental effects associated with project decommissioning. Please make the following revision to the last sentence to provide additional clarification and amplify the analysis in the Draft EIR: "As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time. ~~However, mitigation is required to reduce erosion impacts to a less than significant level.~~"	16.108
108.	Section 4.6 (Geology)	4.6-19		Section 4.6.3.a, Impact GEO-3, Mitigation Measures: The second sentence should be revised to state that APMs will be implemented to reduce project impacts. In addition, the reference to a SWPPP should be that it is for construction, not operation. Please revise the second sentence as follows: "In addition, compliance with recommendations in a required final, design-level drainage analysis, and	16.109

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	**Document Chapter**	**Page Number**	**Figure or Table Number**	**Comment and/or Reference**	
				compliance with the project's <u>construction</u> SWPPP, as described in Section 4.9, *Hydrology and Water Quality,* <u>as well as proposed project design features (i.e., APMs),</u> would reduce erosion impacts to a less than significant level."	16.109
109.	Section 4.7 (Greenhouse Gas Emissions / Climate Change)	4.7-12		Section 4.7.3.a, Decommissioning Emissions: The Draft EIR does not acknowledge that the project includes measures to address the potential environmental effects associated with project decommissioning. The relevant APM should be referenced to provide additional clarification and amplify the analysis in the Draft EIR. Please insert the following sentence at the end of this paragraph: "<u>As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.</u>"	16.110
110.	Section 4.7 (Greenhouse Gas Emissions / Climate Change)	4.7-13		Section 4.7.3.b, Impact GHG-1, Operational GHG Analysis, first paragraph: The reference in parenthetical in the last sentence to "42 pounds of CO_2 per MWh" is incorrect. The correct value is 36 pounds of CO_2 per MWh. The source for this figure is "Sinha, P., Schneider, M., Dailey, S., Jepson, C., and M. de Wild-Scholten. 2013. Eco-Efficiency of CdTe Photovoltaics with Tracking Systems. 39th IEEE PVSC, Tampa, Florida. http://www.firstsolar.com/~/media/documents/white-papers/fs_technicalpaper_tracker_eco-efficiency_ieee_pvsc.ashx." Please revise the last sentence as follows: "Based on the CCAR emissions factors (630 pounds of CO2 per MWh minus ~~42~~<u>36</u> pounds of CO2 per MWh to account for the life cycle CO2 emissions for cadmium telluride [CdTe]) from fossil-fuel based power plants, the project would offset approximately 202,513 MT CO2E emissions annually."	16.111
111.	Section 4.7 (Greenhouse Gas Emissions / Climate Change)	4.7-13		Section 4.7.3.b, Impact GHG-1: In correspondence delivered to the County prior to the publication of the Draft EIR, certain adjacent property owners expressed concern that the heat absorbed by project components, such as PV modules, would increase local ambient temperatures. The Final EIR should include an evaluation of this potential impact. We note that a recent study of heat island effects utilized meteorological weather station data from the Sarnia Solar Power Plant ("Sarnia Plant"), an 80 MW PV facility in Ontario Canada that was constructed with First Solar technology. (First Solar 2010 [Sarnia Solar Power Plant Air Temperature Variation Analysis, Interim Results (2010)]). In this study, temperature and meteorological data was collected at a weather data station 30 meters adjacent to the Sarnia Plant and compared with background weather data stations located at least 1 kilometer from the Sarnia Plant. No statistically significant temperature differences were found between the two monitoring stations, regardless of wind direction, indicating that the ambient temperature in areas adjacent to the Sarnia Plant were comparable to background ambient temperatures. Accordingly, the proposed project is not expected to impact local ambient temperatures.	16.112

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
112.	Section 4.8 (Hazards and Hazardous Materials)	4.8-2	**TABLE 4.8-1**	Section 4.8.1, Impact HAZ-4(b) Emergency Access: The emergency access requirement in Mitigation Measure HAZ-4(b) is very similar to the emergency access maintenance requirement in Mitigation Measure HAZ-4(a). It is also very similar to standard County conditions of approval. We recommend that Mitigation Measures HAZ-4(a) and HAZ-4(b) be combined to eliminate redundancy. Having similar requirements as separate mitigation measures and conditions of approval can create confusion and consequent compliance challenges during post-approval implementation and construction.	16.113
113.	Section 4.8 (Hazards and Hazardous Materials)	4.8-3 & 4.8-21	**TABLE 4.8-1**	Section 4.8.1, Mitigation Measure HAZ-5: The requirement that the recycling or disposal plan be developed prior to construction is unwarranted. Defective PV modules discovered during construction are shipped back to the manufacturer. In other words, the recycling or disposal plan should only apply to operations and decommissioning. In addition, the requirement that the plan address "support structures" is unwarranted. The concern that the plan is intended to address is the abandonment of PV modules, not support structures. Moreover, the mitigation measure is unclear and may be duplicative with bonding requirements in the Development Agreement that is being negotiated with the County. As currently drafted, this measure could require the Applicant to post multiple bonds related to disposal, recycling and decommissioning. To address these deficiencies, please revise the Mitigation Measure as follows: "Prior to ~~construction permit issuance~~operation, the applicant shall submit a recycling or disposal plan for PV modules ~~and support structures~~ for County review and approval, in order that project structures not pose a risk to human health or the environment after project repowering and/or decommissioning. The plan shall specify how these project components shall be recycled or disposed of in a manner that will not pose a risk to human health or the environment, and the costs of such recycling or disposal. Prior to ~~grading or building permit issuance~~operation, the applicant shall post a long-term decommissioning bond to the County of Monterey, or other mutually acceptable financial obligation, in an amount consistent with these costs (plus County administrative costs) consistent with the requirements of the Development Agreement (if approved)~~, and which may also include any other project decommissioning obligations~~."	16.114
114.	Section 4.8 (Hazards and Hazardous Materials)	4.8-14		Section 4.8.3.a, Methodology, first full paragraph: The Draft EIR does not acknowledge that the project includes measures (i.e., APM-1) to address the potential environmental effects associated with project decommissioning. Please insert the following sentence before the last sentence in the paragraph to provide additional clarification and amplify the analysis in the Draft EIR: "As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is	16.115

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				proposed consistent with regulations in effect at that time."	
115.	Section 4.8 (Hazards and Hazardous Materials)	4.8-17		Section 4.8.3.b, HAZ-2, carryover paragraph at top of page: The last sentence of the paragraph contains a misleading statement regarding health risks associated with CdTe PV technology. Specifically, the last sentence discusses the results of the Lovric et al. (2005) study, which analyzed of the health risks associated with CdTe quantum dot technology. Quantum dot technology is unrelated to CdTe PV technology and, therefore, the Lovric et al. (2005) study is irrelevant to the analysis of potential impacts associated with the CdTe PV technology that may be used in the proposed project. The last sentence should be deleted, or at least revised to contain an accurate qualification as follows: "and cell nuclei ~~depending on the technology used~~ in quantum dot technology applications (Lovric et al., 2005), which is unrelated to the CdTe PV technology that may be used in the project ~~(Lovric et al., 2005)~~."	16.116
116.	Section 4.8 (Hazards and Hazardous Materials)	4.8-20		Section 4.8.3.b, Mitigation Measure HAZ-4(b): The emergency access requirement in Mitigation Measure HAZ-4(b) is very similar to the emergency access maintenance requirement in Mitigation Measure HAZ-4(a). It is also very similar to standard County conditions of approval. We recommend that Mitigation Measures HAZ-4(a) and HAZ-4(b) be combined to eliminate redundancy. Having similar requirements as separate mitigation measures and conditions of approval can create confusion and consequent compliance challenges during post-approval implementation and construction.	16.117
117.	Section 4.8 (Hazards and Hazardous Materials)	4.8-21		Section 4.8.3.b, Mitigation Measure HAZ-5: The disposal or recycling requirements of modules and support structures at decommissioning or repowering need to be explicit in order for the project to be commercially viable. Please revise the following text at the end of Mitigation Measure HAZ-5: . . . or other mutually acceptable financial obligation, in an amount consistent with these costs (plus County administrative costs)~~, and which may also include any other project decommissioning obligations~~.	16.118
118.	Section 4.9 (Hydrology and Water Quality)	4.9-1 & 4.9-18	**TABLE 4.9-1**	Impact HYD-2, Mitigation Measure HYD-2(a): The project includes an APM consisting of the preparation of a Hazardous Materials Response Plan (HMRP). The HMRP will include a spill response plan and a spill prevention, control, and countermeasure plan to address management of hazardous materials during construction. HYD 2-(a) creates a similar requirement and could create potential confusion as part of the condition compliance phase of the project. In order to prevent such confusion, the HMRP should incorporate all the spill response and spill prevention measures required by Mitigation Measure HYD-2(a). Please insert the following text at the end of Mitigation Measure HYD-2(a): "The HMRP proposed as part of the project (APM-6) shall incorporate all of the elements of this mitigation measure. The County of Monterey shall be responsible for reviewing the applicant's	16.119

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				proposed HMRP to confirm that it incorporates the requirements of this mitigation measure."	
119.	Section 4.9 (Hydrology and Water Quality)	4.9-2 to 9-3, 4.9-23 to 9.27	**TABLE 4.9-1**	Section 4.9.1, Impact HYD-4 and HYD-5: The applicant proposes new APM-11 to complete a final design drainage analysis to address potential drainage impacts of the proposed project and ensure that such impacts are less than significant, as noted in Comment 3 above. Because APM-11 will ensure that Impacts HYD-4 and HYD-5 are less than significant, the existing text in the "Mitigation Measures" column for HYD-4 and HYD-5 should be deleted entirely and replaced with the following: "No mitigation measures would be required."	16.120
120.	Section 4.9 (Hydrology and Water Quality)	4.9-24 & 4.9-26 to 9.27		Section 4.9.3.b, Impact HYD-4 and Impact HYD-5: The discussion of Impacts HYD-4 and HYD-5 correctly state that the applicant will prepare a design level drainage analysis that will ensure that project components are not subjected to significant flood-related or erosion-related damage, and that the capacity of watercourses would not be significantly reduced. In order to clarify the existing analysis, the applicant proposes new APM-11 that codifies the applicant's obligation to prepare and implement a design level drainage analysis (see Comment 3). In order to incorporate APM-11 into the analysis of Impacts HYD-4 and HYD-5, we propose the following text changes: Page 4.9-24, Section 4.9.3.b, Impact HYD-4, Mitigation Measures: "~~Mitigation Measures.~~ The final design of the project would be required to be developed in accordance with APM-11, in which the applicant shall prepare a final design level drainage analysis which would include a detailed evaluation of the potential drainage impacts associated with the project, including identification of measures to reduce runoff by promoting infiltration. As noted in the Preliminary Drainage Report (RBF, 2013) and in the *Preliminary Drainage Analysis Addendum* (Wallace Group 2014), measures to reduce runoff by promoting infiltration would be selected and configured as part of this final design considering local impacts from proposed improvements, detailed grading plans and maintenance requirements. The design level drainage analysis would ensure that increases in peak runoff flow rates and volumes due to the addition of impervious surfaces such as isolated buildings are mitigated so that post-project flow rates and volumes are no greater than pre-project flow rates and volumes for the 85th percentile storm event (NOAA Atlas 14) or a method acceptable by Monterey County and Regional Water Quality Control Board. In addition, the proposed project would be required	16.121

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference
				to comply with the NPDES program, including through preparation of a SWPPP and implementation of associated BMPs, as outlined in Impact HYD-1. Compliance with recommendations in the design-level drainage analysis and existing regulations would ~~reduce~~result in impacts related to increased erosion downstream that are~~to a~~ less than significant~~ level. No mitigation would be required.~~ Mitigation Measures. No mitigation is required. ~~Significance After Mitigation. Impacts would be less than significant.~~" Page 4.9-26, Section 4.9.3.b, Impact HYD-5, starting at first full paragraph: "The proposed project would be required to implement APM-11, which requires the preparation of a design level drainage study that contains measures that ensure that project facilities are not placed in areas where they would be subject to significant flood or erosion hazards. ~~comply with the recommendations in the Preliminary Drainage Report (RBF, 2013), and the final design of the project would be required to be developed in accordance with a final, design-level, drainage analysis. As outlined in the Preliminary Drainage Report, the final design-level drainage analysis would include the following requirements:~~ • ~~No modules shall be placed in areas where the product of the flow depth and flow velocity is greater than 9 feet per second (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24- hour storm event, based on the results of a design-level drainage analysis;~~ • ~~No transformers, substations, or inverters shall be placed in areas where the flow depth exceeds 2 feet (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24-hour storm event; and~~ • ~~Solar modules, transformers, substations, or inverters constructed in areas where any inundation is expected to occur should be placed a minimum of 1 foot above the 100- year water surface elevation.~~ The Monterey County Water Resources Agency would review and approve the design-level drainage

16.121

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	**Document Chapter**	**Page Number**	**Figure or Table Number**	**Comment and/or Reference**	
				analysis. Implementation of the recommendations contained therein~~, including the flood risk avoidance measures listed above,~~ would ensure that proposed facilities avoid significant flood or erosion hazards~~higher flow rates~~." Page 4.9-27, Section 4.9.3.b, Impact HYD-5, starting at carryover paragraph at top of page, beginning with first full sentence: "To ensure the improvements are consistent with the requirements of Chapter 16.16 of the Monterey County Code, the design-level drainage analysis prepared by the applicant in accordance with APM-11 (and discussed above in HYD-4~~described above~~) would ~~be required to address any development proposed within 50 feet from the top of the bank of on-site drainages and~~ prove, to the satisfaction of the Monterey County Water Resources Agency, that any improvements within 50 feet from the top of bank of on-site drainages will not result in significant flood- or erosion-related hazards, and that these improvements will not affect the existing capacity of the affected watercourse, as required by Chapter 16.16 of the Monterey County Code. Implementation of ~~Compliance with~~ the recommendations contained in the design-level drainage analysis would ensure that impacts are less than significant~~. the proposed development would be safe from flow-related hazards and would not significantly reduce the capacity of the existing watercourses. Upon compliance with the requirement so Chapter 16.16, impacts would be less than significant.~~ Mitigation Measures. No mitigation is required.~~As noted above, the applicant would be required to prepare a design-level drainage analysis that would ensure both that proposed facilities avoid higher flow rates, and that any improvements within 50 feet from the top of bank of on-site drainages would comply with the requirements of Chapter 16.16 of the Monterey County Code. Compliance with the recommendations contained in the design-level analysis would ensure that impacts are less than significant. No mitigation is required.~~ ~~Significance After Mitigation. Impacts would be less than significant.~~"	16.121
121.	Section 4.9 (Hydrology and	4.9-28		Section 4.9.3.c, Cumulative Impact Analysis, first paragraph: The second sentence in the paragraph incorrectly states the amount of water that the proposed project would require during construction.	16.122

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
	Water Quality)			Please revise the second sentence as follows: "The proposed project would require up to 494 acre-feet~~345 AFY~~ during construction and up to 5 AFY during operation."	16.122
122.	Section 4.10 (Land Use and Planning)	4.10-2		Section 4.10.2, Project Site Setting, second paragraph: The first sentence contains incorrectly describes the project site setting. Please revise the sentence as follows: "The proposed project site is located on a portion of an existing 72,000-acre cattle ranch, known as "Jack Ranch," ~~which is itself part of the larger, 152,000-acre Hearst Ranch.~~"	16.123
123.	Section 4.10 (Land Use and Planning)	4.10-2		Section 4.10.2, Project Site Setting, fourth paragraph: The text should be revised to provide further detail concerning the type of improvements that are allowable. Accordingly, the last sentence in the first bulleted item (Farmland) should be revised as follows: "The County of Monterey has, however, determined that solar components (e.g., PV modules, inverters, and other related infrastructure) of ground-mounted facilities will not be counted as building site coverage. (Monterey County Director Interpretation, August 2012)." In addition, the last sentence of the second bulleted item (Permanent Grazing) should be revised as follows: "As noted above, the County of Monterey has determined that solar components (e.g., PV modules, inverters, and other related infrastructure) of ground-mounted facilities will not be counted as building site coverage. (Monterey County Director Interpretation, August 2012)."	16.124
124.	Section 4.10 (Land Use and Planning)	4.10-8	**TABLE 4.10-2**	Section 4.10.2, Monterey County General Plan Policy LU-1.11: The discussion in the "Consistency Discussion" column should be revised to more accurately reflect what improvements are allowable and to clarify the types of improvements that are not counted towards building coverage. Please incorporate the following revisions: "The County of Monterey previously determined that the solar components of ground-mounted facilities ~~photovoltaic (PV) modules~~ do not constitute buildings as defined in Title 21 and therefore are not subject to the building coverage requirements (Monterey County, August 2012)."	16.125
125.	Section 4.10 (Land Use and Planning)	4.10-10 to 10-11	**TABLE 4.10-2**	Section 4.10.2, Monterey County General Plan Policy OS-3.1 and OS-4.2: The discussion of the consistency of the proposed project with these policies should be updated to reflect that the proposed project includes measures to address potential impacts related to erosion and water quality. The following text should be inserted in the "Consistency Discussion" column for both Policies OS-3.1 and OS-4.2: "The proposed project would implement on-going construction and operational BMPs to ensure that discharges of harmful substances into streams would not exceed state of federal standards consistent with the intent of this policy."	16.126
126.	Section 4.10 (Land Use and	4.10-11	**TABLE 4.10-2**	Section 4.10.2, Monterey County General Plan Policy OS-5.3: The discussion in the "Consistency Discussion" column incorrectly states that Section 4.4 (Biological Resources) indicates that the	16.127

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
	Planning)			proposed project could impact designated critical habitat. To the contrary, Section 4.4 consistently, and correctly, states that the project site is not located within designated critical habitat for any listed species. Accordingly, the text in the "Consistency Discussion" column should be revised as follows: "As described in Section 4.4, *Biological Resources*, no critical habitat ~~could~~ would be impacted by the proposed project. In addition, Mitigation Measures outlined in Section 4.4, *Biological Resources,* would ~~be required to ensure conservation and maintenance of such areas, as well as to reduce potential impacts to protected wetlands. These measures would~~ reduce any potential impacts to biological resources to less than significant levels and ensure consistency with this policy.	16.127
127.	Section 4.10 (Land Use and Planning)	4.10-18	**TABLE 4.10-2**	Section 4.10.2, Monterey County General Plan Policy C-1.11: The County previously determined that the project would not be subject to regional traffic fees. However, the findings in the Draft EIR associated with C-1.11 incorrectly state that the project would be required to pay County traffic impact fees under Policy C-1.8. Please correct the text in the "Consistency Discussion" column as follows: **"Potentially Consistent.** The proposed project would not be required to pay applicable fees in accordance with applicable County policies."	16.128
128.	Section 4.10 (Land Use and Planning)	4.10-21	**TABLE 4.10-2**	Section 4.10.2, Monterey County General Plan Policy S-3.1: The reference to a SWPPP in the "Consistency Discussion" column should be clarified that it is for construction, not operation. Please revise the first sentence as follows: "As described in Section 4.9, *Hydrology and Water Quality*, the proposed project would be required to comply with the construction storm water NPDES program, including through preparation of a SWPPP and implementation of associated BMPs, as well as implementation of an erosion control plan consistent with the County of Monterey standards as a condition of project approval."	16.129
129.	Section 4.10 (Land Use and Planning)	4.10-28	**TABLE 4.10-2**	Section 4.10.2, Monterey County General Plan Policy PS-13.2: The Draft EIR leaves the determination of feasibility of line undergrounding to the discretion of the Director of the RMA. Given the nature of the project, some lines will necessarily be above ground. It also creates uncertainty as to the ultimate scope and cost of the project. To eliminate these uncertainties, please delete the last sentence as follows: "~~Feasibility of line undergrounding would be at the discretion of the Director of the Resource Management Agency.~~"	16.130
130.	Section 4.10 (Land Use and Planning)	4.10-31	**TABLE 4.10-4**	Section 4.10.3, South County Area Plan Policy, Policy SC-1.2: Policy SC-1.2 is not relevant to the project because it concerns clustered development. Clustered development generally concerns residential and commercial development. The text in the "Consistency Discussion" should be revised as follows: "~~The project site is located in a remote area of Monterey County, and has direct access to existing transmission infrastructure. The proposed project's location adjacent to this existing transmission~~	16.131

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				~~infrastructure could be considered an efficient use of land despite the fact that non-irrigated agricultural land would be converted to accommodate the project as it would reduce the amount of new transmission infrastructure required to bring renewable energy to the grid. Section 4.2, *Agricultural Resources* provides additional detail regarding impacts related to farmland.~~ This policy is not applicable to the proposed project. This policy consists of a County directive to encourage specific types of commercial, residential, and industrial development. The project consists of a renewable energy facility."	16.131
131.	Section 4.11 (Noise)	4.11-1 & 4.11-13 to 11-14 and 4.11-15 to 11-16	**TABLE 4.11-1**	Table 4.11-1 and Section 4.11.3.b, Impact N-1 and N.2: The EIR should take a consistent approach throughout the document to analyze the impacts of decommissioning as a specific and separate impact in each resource section. The analysis of noise impacts in Impacts N-1 and N-2 combines the impacts of construction and decommissioning. The noise impacts associated with decommissioning should be treated as a separate impact.	16.132
132.	Section 4.11 (Noise)	4.11-9		Section 4.11.3.a, Methodology, third full paragraph: The Draft EIR does not acknowledge that the project includes measures (i.e., APM-1) to address the potential environmental effects associated with project decommissioning. Please insert the following after the last sentence in the paragraph to provide additional clarification and amplify the analysis in the Draft EIR: "As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time."	16.133
133.	Section 4.11 (Noise)	4.11-13		Section 4.11.3.b, Impact N-1, carryover paragraph: It is possible that it will be necessary to conduct some construction activities on weekends, depending on project scheduling, equipment and material delivery schedules, and other logistical considerations. However, the amount of weekend work would be limited to the extent practicable. Please insert the following sentence before the first full sentence on the page: "A limited amount of construction work on the weekends may be required, depending on project scheduling, equipment and material delivery schedules, and other logistical considerations. In addition, s~~S~~ome nighttime construction work ...."	16.134
134.	Section 4.11 (Noise)	4.11-13		Section 4.11.3, Impact N-1, 1st full paragraph: The discussion of noise impacts due to construction laydown areas and proximity to sensitive receptors should be revised to specify the relative distance between construction laydown areas and sensitive receptors. Please revise the paragraph by adding the following sentences at the end of the paragraph: "As described above, the proposed laydown areas are not located within close proximity to any sensitive receptors. The proposed 38-acre laydown area is located approximately 5 miles southeast of the nearest sensitive receptors. No sensitive	16.135

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				receptors are located in close proximity to the proposed staging areas located on the project entrance."	
135.	Section 4.11 (Noise)	4.11-14		Section 4.11.3.b, Impact N-1, carryover paragraph: The Draft EIR does not acknowledge that the project includes measures (i.e., APM-1) to address the potential environmental effects associated with project decommissioning. As noted above in Comment 131, the analysis of the noise impacts of decommissioning should be identified as a separate and distinct impact, rather than in Impact N-1 or N-2. However, if the County does not incorporate a new decommissioning-specific impact in the Section 4.11 (Noise), please replace the second-to-last sentence in the paragraph with the following text to provide additional clarification and amplify the analysis in the Draft EIR: "~~A final decommissioning plan, based on then-current technology, site conditions, and regulations, would be prepared prior to actual decommissioning.~~As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time."	16.136
136.	Section 4.11 (Noise)	4.11-16		Section 4.11.3.b, Impact N-2, carryover paragraph: The Draft EIR does not acknowledge that the project includes measures (i.e., APM-1) to address the potential environmental effects associated with project decommissioning. As noted above in Comment 131, the analysis of the noise impacts of decommissioning should be identified as a separate and distinct impact, rather than in Impact N-1 or N-2. However, if the County does not incorporate a new decommissioning-specific impact in the Section 4.11 (Noise), please revise the last sentence in the paragraph with the following text to provide additional clarification and amplify the analysis in the Draft EIR: "... be generally similar to the noise levels that would occur during project construction~~;t~~. As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time. Therefore, decommissioning of the project would result in less than significant transportation noise impacts."	16.137
137.	Section 4.12 (Public Services)	4.12-7		Section 4.12.3.a, Methodology, carryover paragraph: The Draft EIR does not acknowledge that the project includes measures (i.e., APM-1) to address the potential environmental effects associated with project decommissioning. Please insert the following after the last sentence in the paragraph to provide additional clarification and amplify the analysis in the Draft EIR: "As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time."	16.138

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
138.	Section 4.12 (Public Services)	4.12-9		Section 4.12.3.b, Impact PS-1, first full paragraph: Based on First Solar's discussions with Cal-Fire, firefighters would not require additional, specialized training to respond to a fire at the proposed project. Accordingly, please delete the first full paragraph, as follows: "~~Cal Fire identified additional hazards and access issues fire fighters would encounter with introduction of PV systems to the site, including electrical shock during and post fire incident, as well as concerns associated with the inhalation of unusual materials. Fire fighters would have to adapt to new firefighting procedures, strategies, tactics, and training. As such, the department would need to provide specialized training for existing staff to serve solar PV project sites.~~"	16.139
139.	Section 4.13 (Transportation/Traffic)	4.13-2 & 4.13-21	Table 4.13-1	Impact T-4, Mitigation Measure T-4: The Draft EIR includes mitigation for operational traffic impacts that would involve the use of a flag man to redirect traffic headed for eastbound SR 46. However, the traffic associated with the operational phase would be very light, as only 8-10 project employees would travel to the site daily during the operation phase. As such, the requirement to have a flagman at this intersection is overly burdensome and is not practical. Mitigation Measure T-4 should be deleted.	16.140
140.	Section 4.13 (Transportation/Traffic)	4.13-25		Section 4.13.3 Impact Analysis. Because many of the potential Park and Ride Facilities are existing unimproved parking lots in rural areas along existing transportation routes, restricting parking facilities to only improved lots severely limits the potential geographic distribution and functionality of a construction worker shuttle system. Additionally, improved lots are more likely to be closer to residential or developed areas, thereby increasing the likelihood of secondary traffic impacts. The T-7 MM Park and Ride Facility Siting should be revised as follows: "Any proposed park and ride facilities shall be sited in already developed parking lots designed to accommodate large numbers of vehicles (e.g. shopping center locations). All vehicles shall be required to park in designated parking spaces. ~~These lots shall be currently improved and have existing stormwater drainage infrastructure in place.~~ No permanent new lighting shall be installed."	16.141
141.	Section 4.13 (Transportation/Traffic)	4.13-13		Section 4.13.3.a, Methodology, third paragraph : The Draft EIR does not acknowledge that the project includes measures (i.e., APM-1) to address the potential environmental effects associated with project decommissioning. Please insert the following before the last sentence in the paragraph to provide additional clarification and amplify the analysis in the Draft EIR: "<u>As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.</u> The County may conduct additional CEQA review to ensure adequate traffic LOS during decommissioning."	16.142

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
142.	Section 4.13 (Transportation/Traffic)	4.13-20		Section 4.13.3.b, Impact T-3, first paragraph: The Draft EIR overstates the potential traffic-related effects associated with the operational phase of the proposed project. Kimley-Horn and Associates, Inc. previously determined that the level of potential operation-related traffic impacts would be similar to existing conditions. Accordingly, the operational phase-related traffic effects would be relatively insignificant in comparison to existing traffic levels. The EIR should be revised to reflect this important distinction and amplify and clarify the existing analysis. Please insert the following text at the end of the paragraph: "<u>According to Kimley-Horn and Associates, Inc., operational phase traffic is anticipated to be similar to existing conditions with project impacts less critical than project construction. The addition of operational phase-related traffic to the existing roadway network would be insignificant in comparison to existing traffic levels (Kimley-Horn and Associates, 2013).</u>"	16.143
143.	Section 4.13 (Transportation/Traffic)	4.13-2 & 4.13-21 to 13.23		Section 4.13.3, Impact T-5: The Draft EIR misinterprets the relevant CEQA threshold to conclude that a significant and unavoidable impact will occur due to existing traffic hazards associated with the SR 41/SR46 intersection. The analysis of Impact T-5 is not directly related to an established CEQA threshold of significance. The significance criteria that relates to potential traffic hazards is whether the proposed project would "substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)." The SR 41/46 intersection is an existing condition. The project does not include any design features or incompatible uses that would cause a significant impact. Accordingly, Impact T-5 should be deleted entirely.	16.144
144.	Section 4.13 (Transportation/Traffic)	4.13-26		Section 4.13.3.c, Cumulative Impact Analysis, last paragraph: The last paragraph misinterprets the relevant CEQA threshold to conclude that a significant and unavoidable cumulative impact will occur due to existing traffic hazards associated with the SR 41/SR46 intersection. This analysis is not directly related to an established CEQA threshold of significance. The significance criteria that relates to potential traffic hazards is whether the proposed project would "substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)." The SR 41/46 intersection is an existing condition. The project does not include any design features or incompatible uses that would cause a significant impact. Accordingly, the last paragraph should be deleted entirely.	16.145
145.	Section 4.13 (Transportation/Traffic)			Section 4.13 does not contain a decommissioning-specific impact. Although Section 4.13 does discuss decommissioning-related traffic impacts at pages 4.13-12, 13-16 and 13-23, the lack of a decommissioning-specific impact (e.g., T-8) is inconsistent with the approach to the analysis of decommissioning impacts in other sections (e.g., 4.3, Air Quality). For the purposes of consistency and clarifying the nature of decommissioning impacts, it is recommended that the Final EIR include a	16.146

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				decommissioning-specific traffic impact section to Section 4.13.	
146.	Chapter 6.0 (Long-Term Impacts)	6-1		Section 6.1.1, Construction Workforce last paragraph: The Draft EIR contains incorrect assumptions related to the amount of workers that would commute to the project and the amount of workers that would choose to live closer to the project. As provided in Section 4.12, *Transportation*, the project would implement a mandatory shuttle service that would transport 95% of the total construction workforce to and from the project site each day, whereas only 5% of the construction workforce would be issued permits to drive their own vehicles. Accordingly, the vast majority of the workforce is expected to rely on the shuttle service and would not be expected to relocate near the project. In addition, given the limited housing availability in Parkfield, Cholame and Shandon, the majority of the limited numbers of workers that do relocate would find housing in the City of Paso Robles or the City of Avenal. Please revise the last paragraph as follows: "<u>As a condition of employment, 95% of construction personnel would be required to commute to the project site via the proposed employee shuttle that would depart from specified park-and-ride lots. Only 5% of construction employees would be given permits to drive personal vehicles to the site.</u> While ~~some~~ <u>the majority</u> of the labor force would likely commute to the project park-and-ride lots from existing residences, ~~some~~ <u>a limited number</u> may elect to temporarily relocate near the project site.~~-~~Given the remote nature of the project site and the relatively limited availability of lodging in nearby rural communities (including Parkfield, Cholame, and Shandon), it is assumed that <u>the majority of</u> workers would find accommodation in the City of Paso Robles and/or the City of Avenal."	16.147
147.	Chapter 6.0 (Long-Term Impacts)	6-2		6.1.1, Construction Workforce, first paragraph and Mitigation Measure LT-1: The project would not create a level of demand for temporary accommodations during construction that would result in significant impacts to the housing supply. As noted in the previous comment, 95% of the construction workforce will be required to commute to the project using an employee shuttle departing from specified park and ride lots, and only 5% will be given permits to use personal vehicles to commute to the project. Accordingly, the majority of the construction workforce is expected to commute from their residences and utilize the shuttle. As such, only a limited number of construction workers would be expected to relocate closer to the project. Therefore, the demand associated with the limited number of construction workers that do choose to relocate will not create a significant impact on the existing housing supply. Please revise the last sentence in the first paragraph, as follows: "<u>However, because a limited number of construction workers are anticipated to relocate closer to the project, the demand for temporary accommodations during construction would not result in significant impacts to</u>	16.148

Table 1 – Comments
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				the existing housing supply.~~As such, demand for temporary accommodations during construction would result in significant impacts to the existing housing supply.~~"	
148.	Chapter 6.0 (Long-Term Impacts)	6-2		6.1.1, Mitigation Measures: As explained in Comment 147 above, the project will not result in a significant impact to the existing housing supply. Therefore, Mitigation Measure LT-1 is not warranted. Please revise this section to state: "No mitigation is necessary."	16.149
149.	Section 7.0 (Alternatives)	7-15		Section 7.3.2, Hydrology, second paragraph: The Draft EIR does not identify potential construction water requirements associated with the Alternative 2. Please revise the first sentence as follows: "Similar to the proposed project, this alternative would require water for dust suppression purposes during construction, as well as water to ~~potable water would be needed to~~ wash the modules and support overall operations at the site."	16.150
150.	Section 7.0 (Alternatives)	7-17		Section 7.3.2, Transportation/Traffic, second paragraph: The Draft EIR incorrectly states that a flagman mitigation measure (similar to Mitigation Measure T-2) would be applicable to this alternative. Alternative 2 would not require this type of measure during the Friday Peak hour because the significant impact associated with the proposed project is traffic making a right turn from the existing private access road onto SR 41 and then a left onto on eastbound SR 46. Under Alternative 2, project-related traffic would not make a left turn onto eastbound SR 46. Therefore, no mitigation would be required. Please revise the second paragraph as follows: "~~As with the proposed project, construction of this alternative would add trips to the intersection of SR 41/SR 46, which currently operates at LOS F during the Friday PM Peak Hour. This impact would be Class II, significant but mitigable, with implementation of Mitigation Measure T-2, similar to the proposed project.~~ This alternative would avoid potential impacts associated with the proposed project's addition of trips to the intersection of SR41/SR 46. The southbound left from SR 41 to SR 46 currently operates at an LOS F. This alternative would not add any trips traveling on SR 41 making a left onto eastbound SR 46. As a result, no mitigation would be warranted."	16.151
151.	Section 7.0 (Alternatives)	7-17 to 18		Section 7.3.2, Transportation/Traffic, carryover paragraph: For the reasons stated in Comment 150 above, the Draft EIR incorrectly states that a flagman mitigation measure (similar to Mitigation Measure T-4) would be applicable to Alternative 2. Under Alternative 2, project-related traffic would not make a left turn onto eastbound SR 46. Therefore, no mitigation would be required. Please revise the paragraph as follows: "Project generated traffic during the operation phase would add trips to the intersection of SR 41/ SR 46~~, similar to the proposed project~~. As discussed, ~~this~~ the southbound left at this intersection currently operates at LOS F during the Friday PM Peak Hour. This alternative would not contribute any traffic trips making a southbound left from SR 41 onto eastbound SR 46. As a result, this	16.152

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				alternative would avoid the potential significant impacts associated with the proposed project. ~~Alternative-related traffic would cause a Class II, significant but mitigable impact with implementation of Mitigation Measure T-4. As described for the proposed project, accident rates at the intersection of SR 41 / SR 46 are more than two times the statewide average. Addition of traffic to this intersection during construction and operation of the proposed project could exacerbate existing hazards. Implementation of Mitigation Measures T-2 and T-4 would reduce the impact but it would remain Class I, significant and unavoidable.~~"	16.152
152.	Section 7.0 (Alternatives)	7-18		Section 7.3.2, second full paragraph: The Draft EIR states that it is unknown whether an employee shuttle service would be necessary for Alternative 2 because it is possible that the construction of this alternative could be phased to accommodate construction worker vehicles and obviate the need for shuttles departing from park-and-ride lots. This conclusion is unwarranted, given that Alternative 2 contemplates constructing a 280 MW solar generating facility in12-24 months. This is the same MW-capacity facility as the proposed project, as is the construction timeframe. Therefore, it is not reasonable to conclude that it would be possible to phase construction in manner that would avoid the need to shuttle workers from park-and-ride lots. Please revise the second paragraph as follows: "~~Given the alternative site location,~~ Consistent with the proposed project, this alternative would include the use of an employee shuttle. This alternative would be constructed over 12 to 24 months consistent with the proposed project and an employee shuttle would be necessary to reduce the extent of construction traffic trips. As a result, this alternative would result in comparable secondary effects as the proposed project in terms of potential park and ride locations. ~~it is unknown whether an employee shuttle service would be needed to provide transport to and from the site during construction. It may be possible to phase construction to accommodate construction worker vehicles which would avoid the need for an off-site park and ride lot and related environmental impacts. If so, impacts associated with the proposed project would be avoided. If not, impacts would likely be similar to those described for the proposed project and Class II, significant but mitigable through implementation of Mitigation Measure T-7.~~"	16.153
153.	Section 7.0 (Alternatives)	7-18		Section 7.4.1, Description, last paragraph: The Draft EIR misrepresents the footprint of Alternative 3. The Draft EIR should use the solar development area as the metric for comparing Alternative 3 against the proposed project, not the approximately 3,000 acre site. Using the solar development area as the metric for comparison reveals that the relative size of the footprint of Alternative 3 is larger than represented in the Draft EIR. Please revise the last paragraph as follows: "This alternative would consist of constructing a solar energy facility on approximately 992 acres (approximately ~~33% of the~~	16.154

Table 1 – Comments California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014 California Flats Solar, LLC - September 22, 2014					
Comment	**Document Chapter**	**Page Number**	**Figure or Table Number**	**Comment and/or Reference**	
				~~proposed project site~~ 46% of the solar development area for the proposed project)."	
154.	Section 7.0 (Alternatives)	7-24		Section 7.4.1, Hydrology and Water Quality, second paragraph: The Draft EIR does not identify potential construction water requirements associated with the Alternative 2. Please revise the first sentence as follows: "Similar to the proposed project, this alternative would require water for dust suppression purposes during construction, as well as water to ~~potable water would be needed to~~ wash the modules and support overall operations at the site."	16.155
155.	Section 7.0 (Alternatives)	7-28	**TABLE 7-1**	Table 7-1. This table should be updated to reflect any changes in significance for each of the alternatives based on revisions made in response to the comments on Chapter 7 made above.	16.156

Revised Site Plan (December 2013) Project Data Summary Table	
Project Area	2,716.6 Acres
General Plan Land Use Designation	Farmlands/Permanent Grazing
Solar Development Area	2,119.73 Acres
Utility Corridor	151.1 Acres
230kVTransmission Line Corridor	135.5 Acres
New High-Capacity Collection System Line Corridor	3.4 Acres
Zoning Designation	F/160/PG/160
Lot (Building) Coverage	
Required	< 5%
Proposed	< 1%
Floor Area Ratio	
Required	N/A
Proposed	< 1%
Grading	
Cut	~880,000 Cubic Yards
Fill	~880,000 Cubic Yards
Import/Export	0 Cubic Yards
Tree Removal	
Number	0
Type	Oaks
Impervious Coverage	
Area Covered by Structures (O&M Building and Loading Dock)	~ 1 Acre
Area Covered by Major Electrical Equipment (Inverters, Transformers, Substation)	~ 11 Acres
Impervious Area	~ 12 Acres
Parking	
Required	N/A
Proposed	14

Private Residence
Private Residence
Turkey Flat Road
Chalome Road
Potential Source Well
Ag Well #2 (existing)
FJ-West Well (existing)

A1 A2
B1 B2 B3
C1 C2 C3 C4
D1 D2 D3 D4
E1 E2 E3 E4
F1 F3 F4
G1 G3 G4

- Wells
- Proposed 230kV Overhead
- Overhead Cable
- Existing Transmission Line
- Existing Paved Road
- Existing Unpaved Road
- New High-Capacity Collection System Line Corridor
- Access Road/Highway 41 Improvements
- Project Site Access Road
- Utility Corridor
- Solar Development Area
- Parcels
- Project Site

Facilities

- Leach-Field/Septic Tank
- Loading Dock
- O&M Facility
- Substation
- Switching Station
- T-Line Easement
- Water Storage
- Construction Laydown

NOTE: The new utility corridor identifies the general location where potential utility improvements would be located for preliminary planning and environmental review purposes. The actual location of site improvements would generally be located within an approximately 20' wide area within the utility corridor. The entire utility corridor would not be impacted as part of the project, but the actual siting and design of improvements within the corridor will be based on design-level detail. As a result, a larger corridor has been identified for planning purposes.

Title: Site Plan - Index Map

File: C:\GIS\GIS_Projects\2011-26 CA Flats Solar\Final Products\Booklet\Booklet Site Plan Index.mxd

Date: 9/17/2014
Scale: 1 in = 1 miles
Project: 2011-26

Monterey | San Jose
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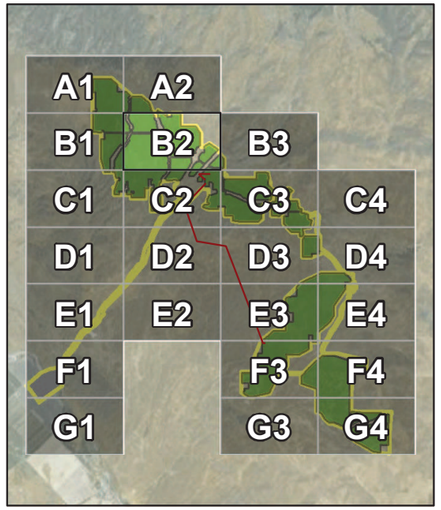


- Wells
- Proposed 230kV Overhead
- Overhead Cable
- Existing Transmission Line
- Existing Paved Road
- Existing Unpaved Road
- New High-Capacity Collection System Line Corridor
- Access Road/Highway 41 Improvements
- Project Site Access Road
- Utility Corridor
- Solar Development Area
- Parcels
- Project Site

Facilities

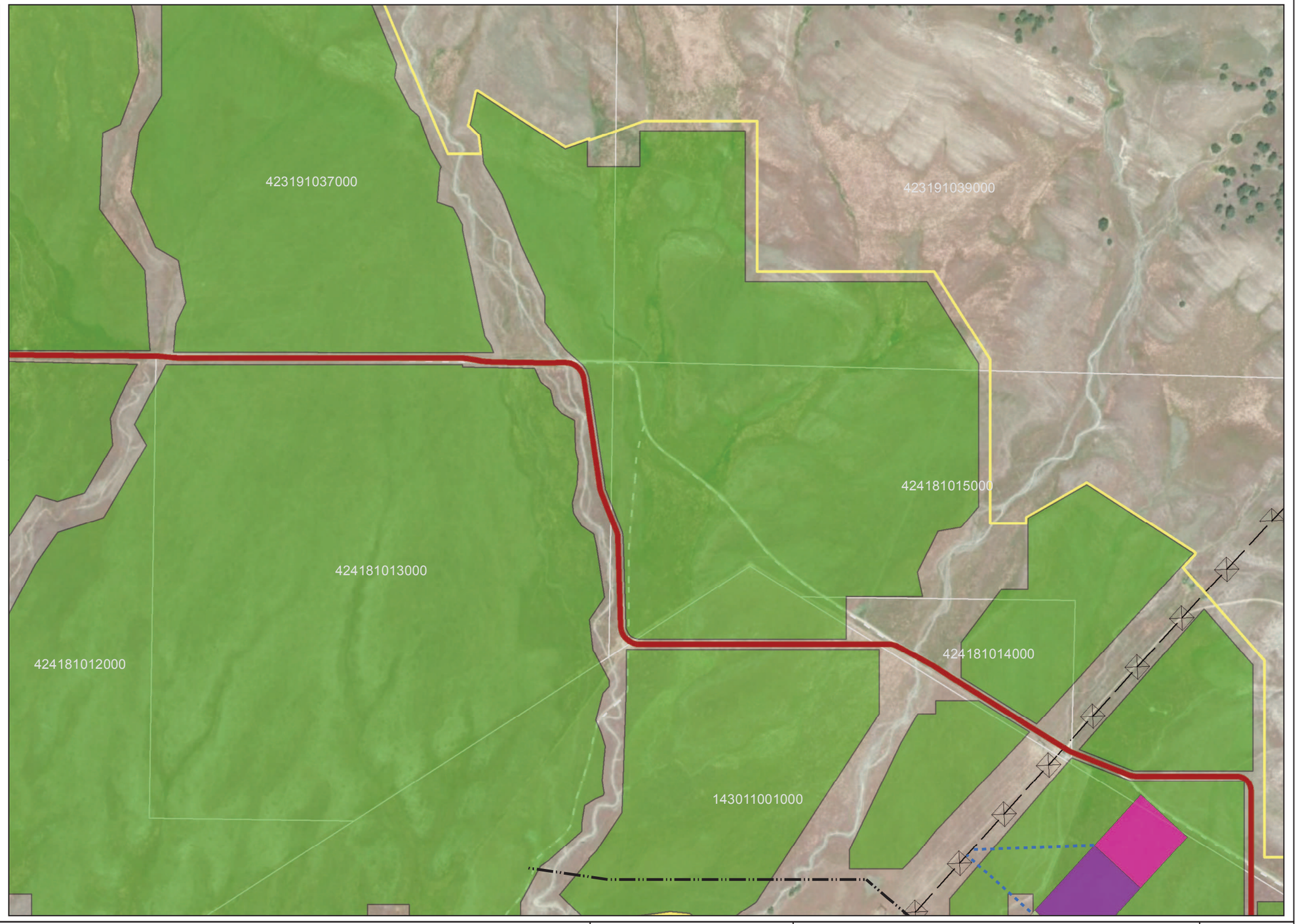
- Leach-Field/Septic Tank
- Loading Dock
- O&M Facility
- Substation
- Switching Station
- T-Line Easement
- Water Storage
- Construction Laydown

0 250 500 1,000
Feet

0 62.5 125 250
Meters

N

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP,



Title: Site Plan - B2

File: C:\GIS\GIS_Projects\2011-26 CA Flats Solar\Final Products\Booklet\Booklet Site Plan.mxd

2-483

Date: 9/17/2014

Scale: 1 in = 580 feet

Project: 2011-26

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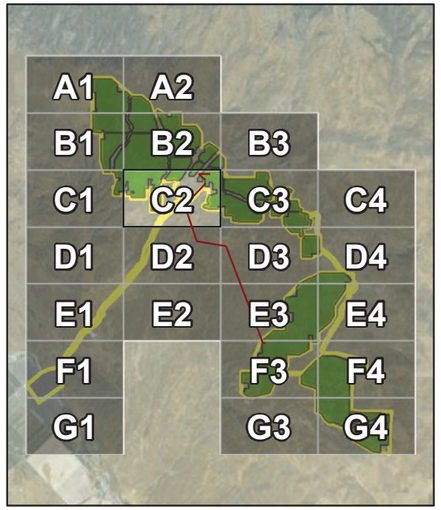

- Wells
- Proposed 230kV Overhead
- Overhead Cable
- Existing Transmission Line
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- Existing Unpaved Road
- New High-Capacity Collection System Line Corridor
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- Parcels
- Project Site

Facilities

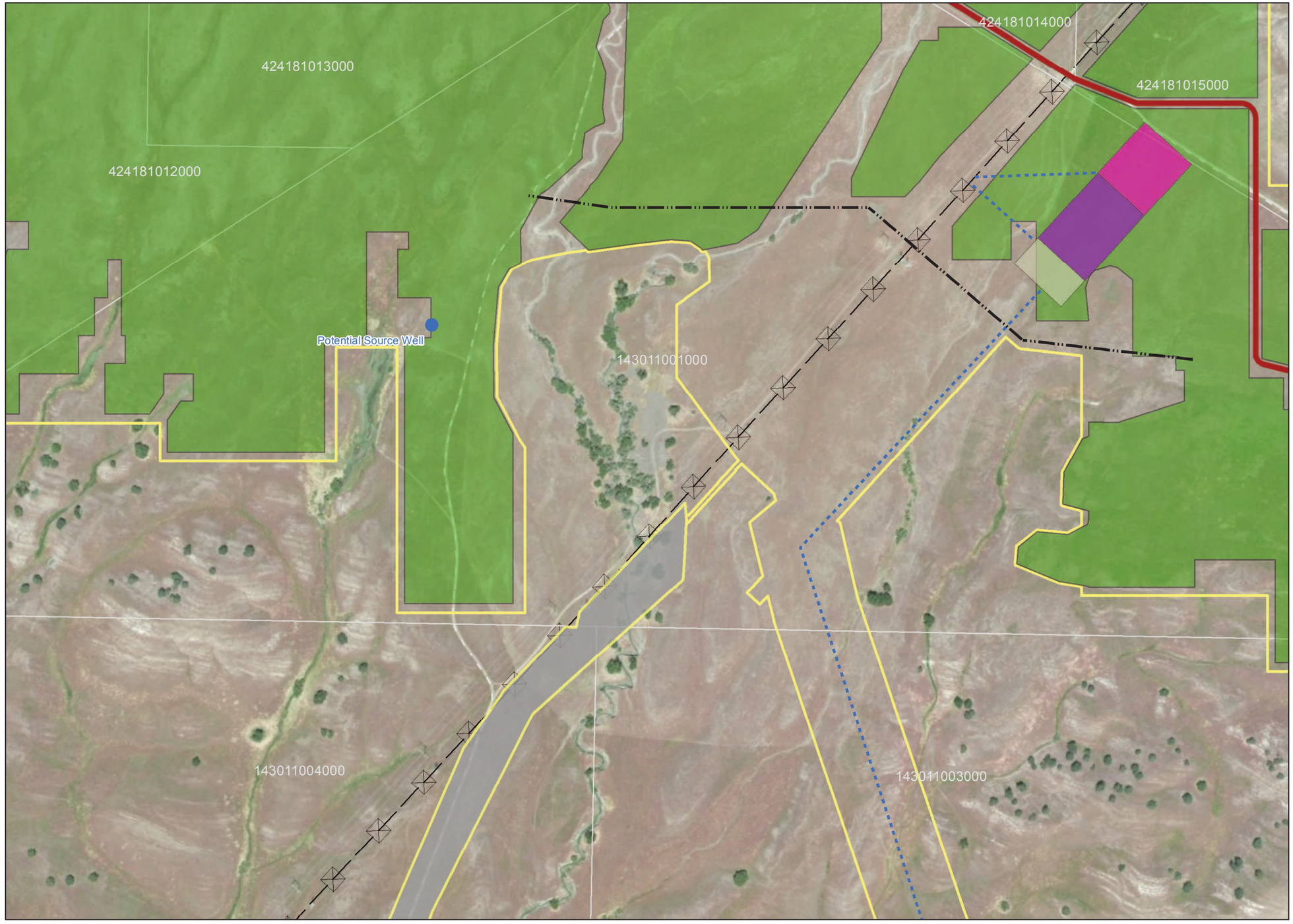
- Leach-Field/Septic Tank
- Loading Dock
- O&M Facility
- Substation
- Switching Station
- T-Line Easement
- Water Storage
- Construction Laydown

0 250 500 1,000
Feet

0 62.5 125 250
Meters

N

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP,



Title: Site Plan - C2

File: C:\GIS\GIS_Projects\2011-26 CA Flats Solar\Final Products\Booklet\Booklet Site Plan.mxd

2-484

Date: 9/17/2014

Scale: 1 in = 580 feet

Project: 2011-26

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First Solar

Table 2 – Errata
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
1.	Executive Summary	ES-4	Table ES-1	Please revise the summary of impacts and mitigation measures in Table ES-1 as necessary to ensure consistency with revisions that are made to specific chapters and sections of the EIR.	16.157
2.	Chapter 2 (Project Description)	2-3	Figure 2-2	On Figure 2-2, please replace "Turkey Flat Drive" with "Turkey Flat Road." It is necessary to correct this mistake to avoid confusion.	16.158
3.	Chapter 2 (Project Description)	2-5		Section 2.4, Project Location, second paragraph: Please add a figure that depicts each of the project's geographic characteristics that are discussed in the second paragraph, including the "project area," "solar generating facility area," "solar development area," and "utility corridor." The description provided in the second paragraph is confusing and a figure showing the geographic characteristics of the project would enhance clarity. In addition, the description of the "utility corridor" should be revised to clarify the nature of the project improvements that would be constructed within the corridor, as follows: "In addition, implementation of the proposed solar project would require the construction and operation of infrastructure improvements (e.g., temporary water lines, redundant communication lines, etc.), as more thoroughly described in Section 2.5.2, within ~~and operation of~~ an approximately 155-acre utility corridor…."	16.159
4.	Chapter 2 (Project Description)	2-13		2.5.1, Solar Modules, Collection Systems and Inverters, third paragraph: Because of the rolling terrain, more flexibility in the design height of the PV module arrays is required. Please revise the second sentence as follows: "Fixed-tilt modules would be up to ~~ten~~thirteen (13) feet off the ground surface at the highest point of the array depending on the terrain."	16.160
5.	Chapter 2 (Project Description)	2-14		2.5.1, Solar Modules, Collection Systems and Inverters, third paragraph: The voltage of the high capacity collection line is incorrectly identified as "34.5v" in the first and third sentences. Please revise the text to state the correct voltage of "34.5kV."	16.161
6.	Chapter 2 (Project Description)	2-15		2.5.1, On-Site Substation, second paragraph: The second sentence should be revised as follows to be consistent with Figure 2-7b: "The substations structures would range in height from approximately 20 to ~~90~~130 feet, as shown in Figure 2-7~~a~~b."	16.162
7.	Chapter 2 (Project Description)	2-16		2.5.2, Access Road Improvements, first paragraph: As currently stated, the third sentence states that the entire access road will be widened to 30 feet, which is not correct. Please revise the third sentence to state: "These improvements would include: widening the access road from 15 to up to 30 feet, ..."	16.163
8.	Chapter 2 (Project Description)	2-78		2.5.2, , first full paragraph: Text incorrectly states that APMs are set forth in section 2.6.5. Please revise as follows: "Best Management Practices (BMPs) for construction and maintenance of roads would be implemented, as ~~well as the Applicant Proposed Measures (APMs)~~ described in Section 2.6.5,	16.164

Table 2 – Errata
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				as well as the Applicant Proposed Measures (APMs) described in section 2.9."	
9.	Section 4.1 (Aesthetics)	4.1-23		Section 4.1.3.b, Impact AES-2, third paragraph: As currently stated, the third sentence states that the entire access road will widened to 30 feet, which is not correct. Please revise the third sentence to state: "Visible improvements would include: widening the access road up to 30 feet in all locations, ..."	16.165
10.	Section 4.3 (Air Quality)	4.3-2, 4.3-25	**TABLE 4.3-1**	Impact AQ-2, Mitigation Measure AQ-2(a): The requirement that all operators of buggy carts take a training course prior to the operation "of any vehicle on site" is overly broad. The requirement to take a training course should only be applied prior to operation of a cart on site, not any vehicle. In addition, the term "buggy" should be deleted because it is vague and could cause confusion when implementing the measure. Please revise the third sentence of this measure as follows: "As an additional measure, all of the cart operators shall be required to complete a ~~buggy~~ cart training course prior to operation of carts~~any vehicle~~ on site;"	16.166
11.	Section 4.3 (Air Quality)	4.3-3 to 3-4 & 4.3-26 to 3-27	**TABLE 4.3-1**	Impact AQ-2: The mitigation measure in the last bulleted item requiring each of the four dust monitors to file monthly reports is not practicable. The dust monitors should provide their reports to a "site dust manager" that would be responsible for collecting the reports from the dust monitors and providing a comprehensive report to the Monterey County RMA – Planning Department. Please revise this measure as follows: "The contractor or builder shall designate a site dust manager and up to four persons to monitor dust ...."	16.167
12.	Section 4.4 (Biology)	4.4-13 & 4.4-17 to 4-28	**FIGURES 4-4.1 & 4.4-2a to 4-2f**	Element Power is incorrectly attributed as having prepared the referenced figures. Please revise these figures to provide the correct attribution as follows: "Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014".	16.168
13.	Section 4.4 (Biology)	4.4-15	**TABLE 4.4-2**	Table 4.4.2 incorrectly states in the "Solar Generating Facility Area" column that the acreage for Willow-cottonwood riparian forest is 2.53 acres. The correct value is 1.72 acres. Please revise Table 4.4-2 accordingly.	16.169
14.	Section 4.4 (Biology)	4.4-33		Section 4.4.2, Aquatic / Wetland Habitats, first paragraph: The first sentence incorrectly uses the term "project site," when the intended meaning is the "project impact area." Please revise the first sentence as follows: "Aquatic and wetland features compose a small portion of the BSA, and combined are present on approximately 5.32 acres within the project ~~site~~impact area (Table 4.4-2; Figures 4.4-2a - 4.4-2d)."	16.170
15.	Section 4.4 (Biology)	4.4-36		Section 4.4.2, Seasonal Wetland, first full paragraph: The first sentence incorrectly references "Figure 3a". Please revise the first sentence with the correct reference as follows: ". . . watersheds to the northeast (Figure ~~3a~~4.4-2a)."	16.171

Table 2 – Errata
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
16.	Section 4.4 (Biology)	4.4-40 to 4-41		Section 4.4.2, Sensitive Plant Communities and Critical Habitat, carryover paragraph: The acreage of sensitive communities referenced in the second sentence in this paragraph have not been updated to match the BRIA addendum's project impact acreages. In addition, because "project site" is defined by the DEIR as an approximately 3000-acre area that encompasses the SGFA and the Utility Corridor and Access Road, the use of that term in this sentence is inaccurate and potentially confusing. Please revise the second sentence as follows: ". . . however, Wildflower Fields are present on ~~540.58~~551.87 acres within the ~~BSA~~Solar Generating Facility Area and~~,~~ 0.2~~1~~7 acres in the Access Road~~, and 0.13 acres within the Utility Corridor~~. This community was not detected within the Utility Corridor."	16.172
17.	Section 4.4 (Biology)	4.4-41		Section 4.4.2, Special Status Plants and Animals, first two paragraphs: Hoover's eriastrum and Mason's neststraw are said to have no potential to occur, which contradicts the determination in Table 4.4-4 for the Utility Corridor. Also, the description of 2013 rare plant survey coverage is incorrect. The 2013 rare plant surveys did not cover the Utility Corridor, because it was not part of the project at that time (which is correctly noted later in the Draft EIR). Please revise the third sentence in the first paragraph as follows: ". . . Table 4.4-4 have at least some potential to occur within the BSA except for the yellow warbler (Dendroica petechia), Indian valley spineflower (Aristocapsa insignis), Hardham's suncup (Camissonia harhamiae), ~~Hoover's eriastrum (Eriastrum hooveri),~~ delicate blue cup (Githopsis tenella), and San Antonio hill monardella (Monardella antonina ssp. antonina)~~, and Mason's neststraw (Stylocline masonii)~~." Please revise the first sentence in the second paragraph (entitled "Special Status Plants") as follows: "Special status plant surveys were conducted from March through July 2013 across the ~~BSA~~SGFASA and Access Road in accordance with protocols established by the U.S. Fish and Wildlife Service (USFWS), CDFW, and CNPS."	16.173
18.	Section 4.4 (Biology)	4.4-43	**FIGURE 4.4-3**	Figure 4.4-3 depicts an older, out-of-date site plan, which was does not show the Utility Corridor. HT Harvey has provided an updated figure to the County to use in the Draft EIR. Please attribute the new figure as follows: "Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014".	16.174
19.	Section 4.4 (Biology)	4.4-54	**TABLE 4.4-4**	Table 4.4-4 incorrectly states in the "Potential for Occurrence within Access Road" column that *Convolvulus simulans* is absent. The 2014 survey covered a wider corridor around the Access Road; the revision provides updated information. *Convolvulus simulans* was not detected during protocol rare plant surveys in 2013, so was considered absent from the Access Road. However, this species was detected in the Access Road during the 2014 surveys. Please revise the table as follows: "~~**Absent.** Not observed in Access Road corridor during 2013 protocol rare plant surveys.~~**Present.** Observed in Access	16.175

Table 2 – Errata
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
				Road corridor in 2014."	
20.	Section 4.4 (Biology)	4.4-64	**TABLE 4.4-4**	Table 4.4-4, bald eagle incorrectly states that "Species [bald eagle] nesting distribution is currently expanding." There is no factual support for this statement in the vicinity of the project and it should be removed from the table.	16.176
21.	Section 4.4 (Biology)	4.4-67	**TABLE 4.4-4**	Table 4.4-4, Coast-horned lizard. Potential for Occurrence within the Utility Corridor. Moderately suitable habitat present ~~o~~in the utility corridor~~project site~~. There is a record for the species within 3 miles to the south.	16.177
22.	Section 4.4 (Biology)	4.4-75		Section 4.4.2, Oregon Vesper Sparrow: The information in the Draft EIR contains out of date information with respect to the Utility Corridor. Please insert the following paragraph after the end of this paragraph: "Note that the Utility Corridor was added to the project description after the majority of avian surveys were completed. However, the potential for occurrence can be evaluated, and Table 4.4-4 identifies those special status avian species with potential to occur in the Utility Corridor."	16.178
23.	Section 4.4 (Biology)	4.4-77		Section 4.4.2, San Joaquin Pocket Mouse: The information in the Draft EIR contains out of date information with respect to the Utility Corridor. Please insert the following paragraph after the end of the second paragraph (and before "Special Status Invertebrates"): "Note that the Utility Corridor was added to the project description after the majority of mammal surveys were completed. However, the potential for occurrence can be evaluated, and Table 4.4-4 identifies those special status mammal species with potential to occur in the Utility Corridor."	16.179
24.	Section 4.4 (Biology)	4.4-77 to 4-78		Section 4.4.2, Special Status Invertebrates, carryover paragraph: The description of survey coverage is incorrect, given the Draft EIR's definition of the BSA. The 2012 and 2013 vernal pool branchiopod surveys did not cover the UCSA, because it was not part of the project at that time (which is correctly noted several pages later). However, prior text in the Draft EIR clearly included the UCSA in the BSA as defined. Please revise the second sentence in the paragraph as follows: "Protocol vernal pool branchiopod surveys were conducted within the ~~BSA~~SGFASA and ARSA to determine the presence or absence of listed vernal pool branchiopod species." In addition, please insert the following paragraph after the carryover paragraph: "Note that the Utility Corridor was added to the project description after the branchiopod surveys were completed. However, the potential for occurrence can be evaluated, and Table 4.4-4 identifies those special status branchiopod species with potential to occur in the Utility Corridor."	16.180

Table 2 – Errata
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
25.	Section 4.4 (Biology)	4.4-79	**FIGURE 4.4-7**	Figure 4.4-7 has a misleading title and incorrectly attributes Element Power as the source. The title is misleading because Figure 4.4-7 as depicted does not show impacts to habitats, rather it depicts wetland features that will not be impacted by the Project. The intent of Figure 4.4-7 was to: clearly depict survey coverage for the various surveys; what was considered to be potentially suitable habitat for branchiopods; and what wetlands had branchiopods detected within them within the SGFASA and ARSA. Please change the title to "Vernal Pool Branchiopod Survey Coverage and Occupied Habitat ~~Impacts~~." In addition, correct attribution for Figure 4.4-7 is: "Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014".	16.181
26.	Section 4.4 (Biology)	4.4-101 & 4.4-109 to 4-14	**FIGURES 4.4-8 to 4-11**	Element Power is incorrectly attributed as the source for Figures 4.4-8 to 4.4-11. Please revise each of these figures to correct the attribution as follows: "Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014".	16.182
27.	Section 4.4 (Biology)	4.4-107	**TABLE 4.4-7**	Table 4.4-7 incorrectly states the amount of California tiger salamander habitat impact acreage in the "0 – 1844 feet" row, under the "Solar Generating Facility Area, Total" column. Please correct the acreage as follows: "~~88.88~~85.88".	16.183
28.	Section 4.4 (Biology)	4.4-138		Section 4.4.3.b, Mitigation Measure B-1(p), Wildlife-Friendly Fence Design, Mitigation Timing: The requirement that wildlife-friendly fence design plan be submitted to USFWS and CDFW is not warranted, as neither agency has approval authority over the fence design. Please revise Mitigation Timing as follows: "The Wildlife-friendly fence design plans shall be submitted by the applicant to the County~~, CDFW, and USFWS~~ for review and approv~~ed~~al by the County prior to issuance of grading permits."	16.184
29.	Section 4.4 (Biology)	4.4-154 to 4-159		Section 4.4.3.b, Impact B-2: There are numerous incorrect references to Table 4.4-7 throughout the discussion of Impact B-2. The correct reference is to Table 4.4-8. Please revise this section accordingly.	16.185
30.	Section 4.4 (Biology)	4.4-156		Section 4.4.3.b, Impact B-2, Mixed Oak Woodlands, Permanent Impacts: The current text misstates the permanent impacts to mixed oak woodlands. The actual permanent impact to mixed oak woodland will be 0.1 acre, not 0.01 acre as written. Please revise this paragraph as follows: "The project has been designed to avoid oak woodland habitat where possible; however, project activity could result in permanent impacts to up to 0.~~0~~1 acres of oak woodland . . ."	16.186
31.	Section 4.4 (Biology)	4.4-158	**TABLE 4.4-8**	Section 4.4.3.b, Impact B-2, Table 4.4-8: No acreages are provided in Table 4.4-8 for three land cover types: Agricultural, Cottonwood Alluvial Woodland, and Alluvial Intermittent Stream. Please insert the acreages for these three land cover types to Table 4.4-8 or add note explaining why they are absent. All acreages can be found in Table 5 of the H.T. Harvey & Associates November 2013 Site Plan BRIA Addendum.	16.187

Table 2 – Errata
California Flats Solar Project, Draft Environmental Impact Report, County of Monterey, California, August 6, 2014
California Flats Solar, LLC - September 22, 2014

Comment	Document Chapter	Page Number	Figure or Table Number	Comment and/or Reference	
32.	Section 4.4 (Biology)	4.4-185	**FIGURE 4.4-12**	Element Power is incorrectly attributed as the source for Figure 4.4-12. Please correct the attribution as follows: "Source: Amy Sparks (H.T. Harvey ~~and~~& Associates~~,~~) ~~Element Power~~and First Solar, 2014."	16.188
33.	Section 4.9 (Hydrology and Water Quality)	4.9-2 & 4.9-24	**TABLE 4.9-1**	Impact HYD-4, Mitigation Measure HYD-4: The Mitigation Measure should be updated to reference an addendum to the Preliminary Drainage Report prepared by the Wallace Group. Please revise the second sentence in the Measure as follows: "As noted in the Preliminary Drainage Report (RBF, 2013), and in the *Preliminary Drainage Analysis Addendum* (Wallace Group 2014), measures to reduce runoff by promoting infiltration would be selected and configured as part of this final design considering local impacts from proposed improvements, detailed grading plans and maintenance requirements."	16.189
34.	Section 4.9 (Hydrology and Water Quality)	4.9-3		Section 4.9-2, Watershed: The discussion of impaired waterbodies in the Cholame Creek watershed should be clarified to provide additional background related to the status of the watershed and the environmental baseline. Please insert the following sentence before the last sentence in the paragraph: "The RWQCB is currently in the process of re-examining the impairment of waterbodies in the watershed, as well as the underlying causes of impairment."	16.190
35.	Section 4.9 (Hydrology and Water Quality)	4.9-14		Section 4.9.3.a, Methodology, second paragraph: The Draft EIR does not acknowledge that the project includes measures (i.e., APM-1) to address the potential environmental effects associated with project decommissioning. Please insert the following after the last sentence in the paragraph to provide additional clarification and amplify the analysis in the Draft EIR: "As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time."	16.191
36.	Section 4.9 (Hydrology and Water Quality)	4.9-25		Section 4.9.3.b, Impact HYD-5, first paragraph: The discussion in this paragraph and Impact HYD-5 analysis should be revised to reference an addendum to the Preliminary Drainage Report prepared by the Wallace Group. The first sentence in the paragraph should be revised to include the following text after: "The California Flats Solar Project Preliminary Drainage Report (RBF, 2013) included a preliminary hydraulic analysis to determine potential flood hazards relating to flow depths and velocities throughout the project site. The *Preliminary Drainage Analysis Addendum* (Wallace Group 2014) provided additional review and recommendations regarding flood hazards, and included the private access road in the review."	16.192

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

Results of the 2013 Scent Dog Surveys
California Flats Solar Project
Monterey County

Project # 3544-01

Prepared for:

California Flats Solar, LLC
135 Main Street, 6th Floor
San Francisco, CA 94105

Prepared by:

H. T. Harvey & Associates

January 2014

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Executive Summary

The California Flats Solar Project (Project) is a 280-megawatt photovoltaic solar power plant proposed for development in southeastern Monterey County, California. When approved, the solar facility and related infrastructure (Project site) will be built within an approximately 2562-acre site in southeastern Monterey County, California, near the borders of Monterey, San Luis Obispo, Kings, and Fresno counties (Figure 1). The overall development will include improvements to an existing access road and its connection to State Route 41 (Hwy 41). The 2562-acre Project site and access road are collectively termed the "Project impact area".

Numerous wildlife species are known to occur in the region, including the state- and federally listed endangered San Joaquin kit fox (*Vulpes macrotis mutica*; kit fox). To assess the occurrence of San Joaquin kit fox on the Project site and within the vicinity, H. T. Harvey & Associates conducted scent dog surveys during September and October 2013. The survey area included the Project site, a portion of the existing access road, and two locations within the surrounding region, Control Area A and Control Area B, considered to have the potential to support kit fox. This report summarizes the results of the scent dog surveys.

The scent dog team, comprising a dog, its handler, and a field assistant, conducted systematic surveys by walking a representative sample of the survey area along transects at either 0.50-mile or 0.25-mile intervals. The dog was trained to target and alert to San Joaquin kit fox scat. Predetermined transects were generally followed; however, transect spacing in certain areas was alerted to survey areas where kit fox typically defecate, such as on and around fence posts, along unpaved roads and other linear features, and around animal carcasses, cement objects, and trash.

The team collected all scat alerted to by the scent dog, and DNA analysis of the scat was attempted to confirm its species identity. As a control measure and to make use of opportunistic observations, the team collected potential carnivore and omnivore scats of a size comparable to kit fox scats from the survey area. These scats were categorized as a *pass* if the dog investigated and sniffed the scat directly and moved on, or as *opportunistic* if the dog did not investigate the scat or was never in a position to smell the scat (i.e., was never downwind of the scat). These scats were also analyzed for DNA species confirmation.

A single scat sample on the Project site was alerted to by the dog, one scat sample was alerted to on the southern portion of the existing access road, one was alerted to immediately west of the access road within Control Area B, and 14 scat samples were alerted to by the dog south of Hwy 41 in Control Area B. The dog did not alert to any scat samples in Control Area A. Of these 17 scat samples, 16 were subjected to DNA analysis. The remaining sample contained no fecal material suitable for DNA analysis. Four of the 16 analyzed samples were confirmed as San Joaquin kit fox scat, based on mitochondrial DNA (mtDNA) amplification and sequencing. One sample was confirmed through DNA analysis to be red fox (*Vulpes vulpes*) scat, and the remaining 11 samples failed DNA amplification, most likely due to DNA degradation, judging

from the aged and weathered condition of the scat. Two additional samples, observed and collected by the dog handler and a field assistant, also successfully amplified kit fox mtDNA, resulting in a total of six DNA-confirmed kit fox samples and 12 non-DNA-confirmed kit fox samples.

These data, as well as results from systematic burrow surveys, spotlighting surveys, and camera surveys (HTH 2013), indicate that occurrence of San Joaquin kit fox on the Project site is low. Similarly, the occurrence of San Joaquin kit fox within Control Area A appears to be low based upon the results of scent dog surveys. In contrast, the occurrence of San Joaquin kit fox within the southern portion of the existing access road and Control Area B is greater than within the Project site and Control Area A based upon the results of the scent dog surveys; 90% of the kit fox scats were found in Control Area B and its vicinity. Nuclear microsatellite analysis strongly supported the confirmation of three kit fox individuals in the study area. Of these three individuals, two individuals were detected south of Hwy 46 and one individual was detected along the existing access road. .

Table of Contents

List of Figures

List of Tables

List of Appendices

Section 1.0 Introduction

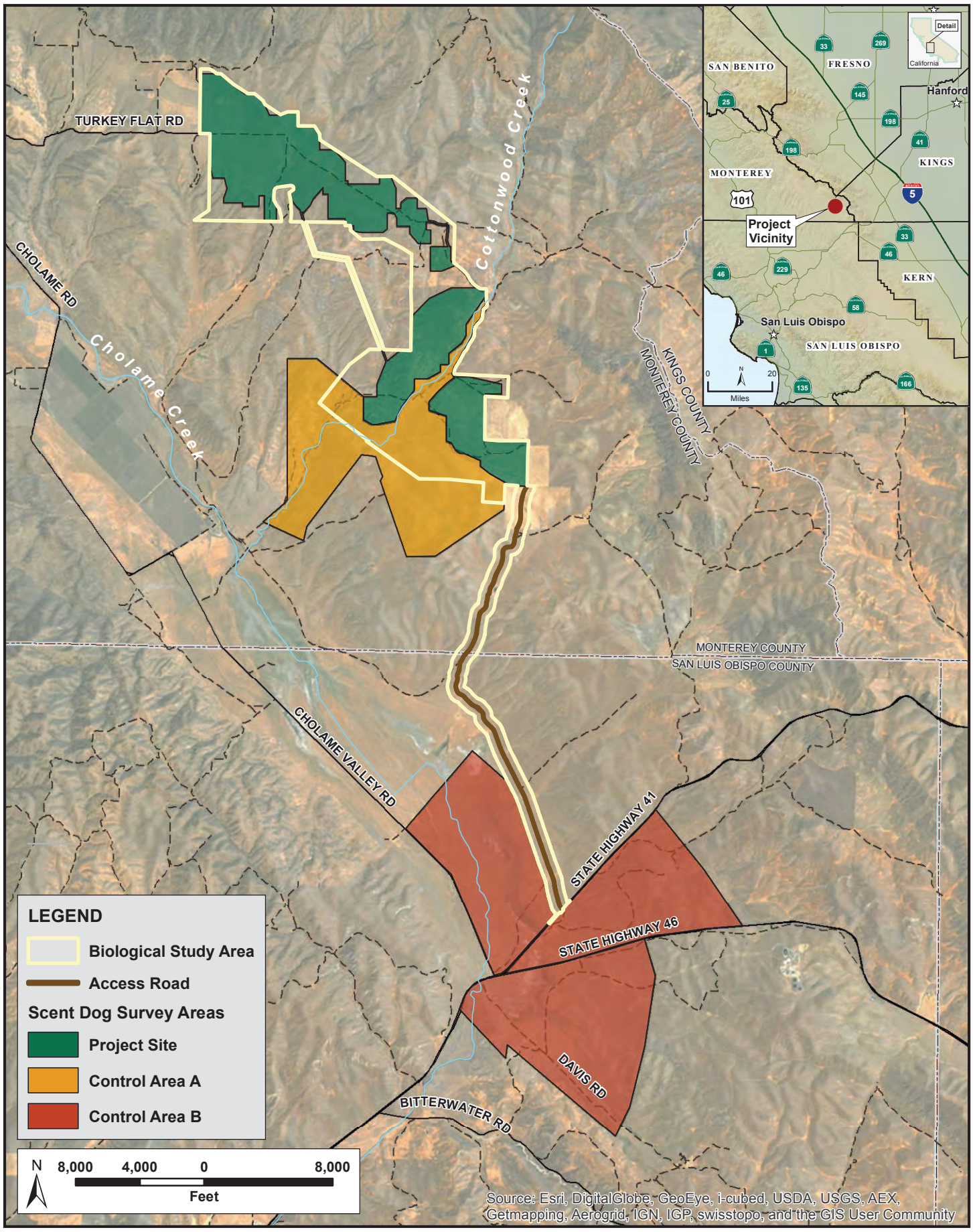
1.1 Project Description and Purpose of Scent Dog Surveys

The California Flats Solar Project (Project) is a 280-megawatt photovoltaic solar power plant proposed for development in southeastern Monterey County, California (Figure 1). When approved, the solar facility and related operational infrastructure (Project site) will be built on approximately 2562-acres in an unincorporated area of southeastern Monterey County and northeastern San Luis Obispo County, near the borders of Kings and Fresno counties.

The Project will include construction, installation, and operation of energy-related infrastructure (e.g., solar panels, inverters, substations, and new power poles and transmission lines) and improvements needed to operate and maintain facilities (e.g., buildings, internal roadways, access roads, fencing, and lighting). The Morro Bay–Gates 230-kilovolt transmission line crosses the Project site, with capacity sufficient to accommodate the new power plant. The overall development will also include improvements to an existing access road and its connection to State Route (Hwy) 41, approximately 5 miles south of the Project site. The access road/Hwy 41 improvement areas will encompass approximately 53 acres.

The Project site is located in a landscape dominated by gently rolling terrain and grasslands, interspersed with several, mostly ephemeral, riparian corridors and drainages. California annual grassland, dominated by non-native grasses and a healthy complement of native forbs, is the predominant habitat in the region. As part of a working cattle ranch, the Project site and surrounding lands also contain ranching infrastructure (water troughs, roads, and fencing).

This report summarizes the results of scent dog surveys conducted in September and October 2013 on the Project site and in its vicinity. The primary goal of the scent dog surveys was to assess the relative occurrence of the state- and federally listed endangered San Joaquin kit fox (*Vulpes macrotis mutica;* kit fox) within the Project impact area. The survey area included the 2562-acre Project site, 120-acres of the Hwy 41/access road improvement area, plus 7967-acres of land in the Project vicinity to provide a relative comparison. The 7967-acres represented two distinct control areas south of the Project site. Control Area A (2206-acres) is located in the vicinity of Cottonwood Creek and the proposed utility corridor for the Project, while Control Area B (5761-acres) surrounds the intersection of Hwy 41 and Hwy 46 (Figure 1). The *Habitat Connectivity Planning for Selected Focal Species in the Carrizo Plain* (Penrod et al. 2010) characterizes the habitats in the survey area as having medium to high suitability for the species and the *San Joaquin Kit Fox Demography, Ecology, and Conservation in the Northern Carrizo Plans* (Cypher and Fiehler 2013) characterized isolated areas within the survey area as having moderate to high suitability, with the majority of the survey area being characterized as low to moderate suitability for kit fox. H. T. Harvey & Associates (HTH) ecologists conducted reconnaissance assessments of the survey areas and confirmed that the habitats within the survey areas are capable of supporting kit fox (Figure 1).



J:\Reports\Wildlife Reports\2013 Wildlife Surveys\Scent Dog Surveys Report Dec 2013\Fig 1 Vicinity and Site Map1.mxd

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Figure 1: Vicinity and Site Map

California Flats Solar Project – Scent Dog Surveys (3544-01)

January 2014

San Joaquin kit fox are primarily nocturnal, active throughout the year, and typically occur in annual grassland or mixed shrub/grassland habitats throughout low, rolling hills and in valleys (Cypher et al 2000). Kit fox will use grazed grasslands and grasslands with scattered structures such as powerlines and wind turbines. They will also live adjacent to, and forage in, tilled and fallow fields and irrigated row crops. The majority of the Project site represents moderately suitable habitat for kit fox, comprising California annual grasslands on gently rolling hills. However, the Project site is somewhat isolated from the Cholame Valley floor by relatively steep, rugged slopes that are not suitable habitat, and which are generally avoided by kit fox because they would be more susceptible to predation, particularly by coyotes, in these areas (Warrick and Cypher 1998). Nonetheless, there are places between the Project site and the valley floor where drainages have formed relatively wide areas with gentler slopes that kit fox could use to access the uplands encompassing the Project site.

HTH ecologists reviewed California Natural Diversity Database (CNDDB) records in the vicinity of the Project site and confirmed 47 records of San Joaquin kit fox occurrences within approximately 20 miles of the Project site, with several sightings as recent as 2005. The nearest CNDDB-recorded observation of the species occurred approximately 3.5 miles south of the Project site and approximately 1.5 miles southwest of the existing access road. To further assess and document kit fox occurrence, HTH conducted surveys of the area in the summers of 2012 and 2013; these consisted of ground surveys for burrows and sign, camera station surveys, and spotlight surveys of the Project site and its vicinity. No San Joaquin kit fox or sign of their occurrence on the Project site was observed during the ground surveys for burrows or camera station surveys. Two San Joaquin kit fox were observed on the existing access road, and one kit fox was observed approximately 2.6 miles southeast of Control Area B during the spotlight surveys (Figure 2). No San Joaquin kit fox were observed on the Project site or in Control Area A during the spotlight surveys. The results of the spotlight surveys are summarized in detail in the *California Flats Solar Project Spotlight Surveys for San Joaquin Kit Fox and American Badger 2012–2013* (HTH 2013).

TURKEY FLAT RD

Cottonwood Creek

KINGS COUNTY

MONTEREY COUNTY

Cholame Creek

MONTEREY COUNTY

SAN LUIS OBISPO COUNTY

CHOLAME VALLEY RD

STATE HIGHWAY 41

STATE HIGHWAY 46

DAVIS RD

BITTERWATER RD

LEGEND

- Biological Study Area
- Access Road

Spotlight Survey Observations

- San Joaquin kit fox (2012)
- San Joaquin kit fox (2013)

Scent Dog Survey Areas

- Project Site
- Control Area
- Control Area B

N

4,600 2,300 0 4,600

Feet

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

J:\Reports\Wildlife Reports\2013 Wildlife Surveys\Scent Dog Surveys Report Dec 2013\Fig 2 Locations of San Joaquin kit fox Observed.mxd

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Figure 2: San Joaquin Kit Fox Observed during Spotlight Surveys 2012 - 2013

California Flats Solar Project – Scent Dog Surveys (3544-01)

January 2014

1.2 Overview of Scat Detection by Scent Dogs

Ecological detection dogs (*scent dogs*) are a powerful survey tool. With a properly trained dog and a skilled trainer and handler, a scent dog is highly effective and accurate in detecting animal species sign (usually scat), bird nests, carcasses, invasive plant or animal species, rare plants, and plant pests/diseases. Using trained dogs to detect scats of particular species is "a more systematic and efficient approach to scat detection" than relying on human surveyors, and is an effective way to confirm species presence in an area (MacKay et al. 2008). Scats are targeted because they can provide more information and be a more accessible source of DNA than materials such as hair, skin, feathers, nails, bones, or saliva (Kohn and Wayne 1997). By systematically sampling scats over a large geographic area, population characteristics such as sex ratio, relatedness, habitat, and home ranges may be estimated (Kohn and Wayne 1997; Kohn et al. 1999; Wasser et al. 2004). Scent dogs are more efficient than humans at finding these scats for demographic and population studies (Smith et al. 2003); for example, dogs searching for kit fox scats can regularly distinguish them from the scat of other species, such as coyote (*Canis latrans*), red fox (*Vulpes vulpes*), grey fox (*Urocyon cinereoargenteus*), domestic dog (*Canis lupus familiaris*), bobcat (*Lynx rufus*), and American badger (*Taxidea taxus*). Trained scent dogs are able to find up to four times more kit fox scats along transects than an experienced human, and even the worst detection rates by scent dogs in difficult scenting conditions was found to be as good as that of humans (Smith et al. 2001, 2003).

1.3 Environmental Factors Affecting Scent Dog Surveys

Air temperature, vapor pressure, and the direction and variability of wind currents all affect how scent disperses through the air (Syrotuck 2000; Snovak 2004) and influence the evaporation rate and the bacterial activity of the scent source. Heat increases bacterial activity, resulting in increased gas release from the scent source. Increased precipitation typically increases the decomposition rate.

Although heat increases the number of molecules released into the air from a target scent, if the scent dog is not properly cared for, excessive heat has the potential to hamper a scent dogs' olfactory senses, diminish stamina, and may limit its ability to work for extended periods. Dogs pant to decrease their body temperature. During pronounced panting, a majority of air intake is through the dogs' mouth, versus the nose where olfactory senses are located. The proportionate result is the scent dog will require more time to investigate a scent trail during excessive heat. In addition, dehydration caused by improper care during excessive heat causes dogs to have dry noses, which could further inhibit olfactory senses.

With the correct equipment, hydration, and breaks, scent dogs are able to tolerate high temperatures and continue to detect targets at high rates. To overcome potential heat-related environmental hindrances during the scent dog surveys described herein, the HTH scent dog wore protective equipment (Ruffwear® Swamp Cooler) that uses evaporative cooling to assist the dog in lowering its body temperature. Additionally, the team performed surveys during the coolest part of the day, generally from half an hour before sunrise until

temperatures reached the mid-80s. Frequent breaks were taken during the survey, especially when temperatures exceeded 75°F, to maintain hydration of the scent dog and allow it to rest in the shade.

Section 2.0 Methods

2.1 Scent Dog Training

Luna (the scent dog that performed the survey) is one of HTH's highly trained scent dogs. She is a shelter-rescued, black Labrador retriever/border collie/shepherd mix who was selected and trained during a six-month period through industry-accepted scent dog training methods (Smith et al. 2001; Wasser et al. 2004). Her handler used play motivation to reward the dog for sniffing a target scent; this method results in the dog being classically conditioned to recognize San Joaquin kit fox scat (i.e., the dog makes a positive association between the target scent of kit fox scat and playing with the ball). She was then trained to offer a passive alert (i.e. sit next to the target scent and remain sitting until the handler could confirm the target). Once a target is confirmed, she is rewarded with a 30 second play session. Training in detection of San Joaquin kit fox scats was conducted using samples known to belong to San Joaquin kit fox: the scat was either collected from captive San Joaquin kit fox at the California Living Museum (in Bakersfield) or from free-ranging San Joaquin kit fox observed defecating by HTH biologists. In addition, Luna was "trained off" of non-target scents that are potentially similar to San Joaquin kit fox scat (e.g., red fox, grey fox, and coyote scat). Non-target canid scats of all sizes and condition were collected from areas in San Luis Obispo and Creston, California, where red fox, grey fox, and coyote occur, but San Joaquin kit fox are absent.

2.2 Survey Methods

The scent dog surveys were conducted on 16 days between 12 September and 23 October 2013. Daily survey hours were selected by the handler according to the weather forecast, and depended on environmental factors that could affect the dog's performance, health, and safety. Surveys generally were not performed on days when temperatures were predicted to exceed 90°F, and surveys generally occurred only three days per week, to allow the scent dog to recover physically and to maintain its physical and mental condition.

The systematic surveys conducted by the scent dog team involved the handler covering a representative portion of the survey area by initially walking transect lines along a 0.25-mile interval. The survey effort began in the southern portion of the survey area, along the existing access road and in Control Area B (Figure 1). Due to the abundance of target scents (kit fox scat) in the survey area, the survey took longer during the first two days than anticipated; therefore, throughout the remainder of the survey, the team generally used 0.50-mile transect intervals. The total transect lengths for the Project site, existing access road, and control areas are shown in Table 1 below. The survey rate (transect miles per study area acreage) was approximately twice as much on the Project site, as within the control areas, because understanding occurrence within the Project site was of primary importance.

Table 1. Areas of the Project Site, Control Area A, and Control Area B, and Scent Dog Survey Transect Lengths

Location	Area (acres)	Total Transect Length (miles)
Project site	2562	19.57
Access Road/Hwy 41 Improvement Area	120	1.74
Control Area A	2206	7.85
Control Area B	5761	20.00
Total	**10,649**	**49.16**

While performing the surveys, the dog ranged and quartered ahead of the handler, searching for target scents. The survey tracks of both the handler and the dog were recorded using GPS units, to document the area covered (Figure 3). The handler carried one GPS unit, and another was inserted into the dog's working harness. Transect lines were generally followed; however, transect spacing in certain areas was altered to survey areas where kit fox often defecate, such as on and around fence posts; along unpaved roads, game trails, and other linear features; and on top of animal carcasses, cement objects, and trash.

When a target scent was detected, the dog would follow the scent to the source and offer a passive alert by sitting next to the target. Once the target was confirmed, the dog received a 30-second play session with the handler. After the play session, the handler and scent dog continued searching for target scents along the transect line while the field assistant documented the find and collected the sample.

As the team progressed through transects, each time the dog alerted to scat, the handler would place an orange cone over the sample located by the dog. Before continuing along the transect, the handler would contact the field assistant to provide a description of the find and its location. Approximately every 45 to 60 minutes, the handler would rest the dog under the shade of an umbrella, provide water to the dog, and allow time to regroup with the field assistant.

The location of each potential San Joaquin kit fox scat collected was georeferenced using GPS and assigned an identifying number. In addition to recording scat information, the team opportunistically recorded the GPS locations of mammalian excavations potentially used or excavated by American badgers, kit foxes, red foxes, or coyotes. Information regarding kit fox scat and potential dens was shared with HTH spotlight surveyors to the increase the probability of observing San Joaquin kit fox in these locations during future spotlight surveys.

TURKEY FLAT RD

Cottonwood Creek

KINGS COUNTY

MONTEREY COUNTY

Cholame Creek

MONTEREY COUNTY

SAN LUIS OBISPO COUNTY

CHOLAME VALLEY RD

STATE HIGHWAY 41

STATE HIGHWAY 46

DAVIS RD

BITTERWATER RD

LEGEND

- Biological Study Area
- Access Road
- Scent Dog GPS Tracks

Scat Samples

- "Passed" Scat Sample
- Scat Sample "Alerted to" by the Scent Dog
- Scat Sample Collected by Human Team Members

Scent Dog Survey Areas

- Project Site
- Control Area A
- Control Area B

N

4,600 2,300 0 4,600

Feet

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

J:\Reports\Wildlife Reports\2013 Wildlife Surveys\Scent Dog Surveys Report Dec 2013\Fig 3 Scat Locations and Scent Dog GPS Tracks.mxd

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Figure 3: Scat Sample Locations and Scent Dog GPS Tracks

California Flats Solar Project – Scent Dog Surveys (3544-01)

January 2014

2.2.1 Scat Sample Collection

San Joaquin kit fox scat can persist in the field for several months, with persistence time varying according to weather conditions and the composition of the scat. Collection of fresh scat that retains some moisture, as well as odor detectable by the human nose, is optimal for DNA analysis (Wasser et al. 2004; Vynne et al. 2011). Successful DNA amplification from degraded scat (e.g., scat with no odor detectable by the human nose) is more challenging (Wasser et al. 2004). However, scent dogs can accurately detect the scat of target species even when degradation precludes successful DNA amplification using current techniques. Many studies try to optimize collection of fresh scat in the field (e.g., Maldonado 2010); however, when a study is evaluating the presence/absence of a species where individuals occur in low numbers, even degraded samples detected by the scent dog must be collected to maximize the possibility of verifying that the species does or does not occur in the area. For this reason, all samples that the scent dog detected were collected, and DNA analysis was attempted even though most of the scat samples were highly degraded (dried completely throughout, with little or no odor to the human nose; also, most were exposed to full sunlight, resulting in maximal exposure to ultraviolet [UV] light, known to degrade DNA).

For each scat sample, data were recorded, the position georeferenced, and the sample photographed. The entire scat was then transferred into a sterile 50-milliliter conical centrifuge tube; all sealed tubes containing samples were stored separately in sealed plastic bags to prevent cross contamination. Within a week after collection, scat samples were transported to the Environmental Biotechnology Institute at California Polytechnic State University, San Luis Obispo, for genetic analysis by HTH genetics experts.

2.2.2 Data Collection

Multiple data points were gathered for each scat sample collected in the field. Data were recorded on an iPad™ using the computer program GIS Pro. The collected data for each scat sample included the following:

- Dog behavioral reaction—The handler noted the dog's behavior relative to any observed and collected potential canid scat (within the size range of kit fox scat). The dog's behavioral reaction was categorized as one of the following: 1) *alert*—dog investigated and alerted to the scat (sat next to the sample); 2) *pass*—dog investigated and sniffed the scat, then moved on; or 3) *no-behavior*—dog never investigated the scat at close range. The last type of behavior occurred when the dog either smelled the scat at a distance and recognized that it was not a target scent (and therefore never followed the scent to its source) or was never in position downwind of the scat to smell it. In the no-behavior cases, the field assistant found the sample. These are referred to in the remainder of the document as "*opportunistic*" samples.
- General location—A description of the location where the scat was found (e.g., along a road, adjacent to a water trough, or next to larger canid scat or rabbit pellets).
- Universal Transverse Mercator (UTM) location

- Time of collection
- Elevation
- Handler confidence—The handler was responsible for reading and interpreting the dog's body language and confirming an "alert" with a play reward. Therefore, the handler's confidence that the dog had alerted to a target sample or passed a non-target sample was recorded, based on the handler's interpretation of the dog's body language as well as the appearance of the scat sample.
- Condition of the scat—The condition of the scat was noted. Most potential kit fox scats were highly degraded, desiccated, and white/grey in color, suggesting that the scats were likely old, weathered, and/or exposed to high levels of UV light.
- Scat contents—Visible contents within the scat, such as hair, bones, and insects, were noted.
- Vegetation—The type, percent coverage, and height of vegetation were noted.
- Photograph—A photograph was taken of each sample collected.

In addition to collecting the data listed above, the field assistant recorded wind speed, temperature, and humidity approximately every 30 minutes throughout each survey. This information was used to observe the dog's reaction to environmental factors throughout the day. This dataset also allowed HTH ecologists to analyze how environmental factors influenced the dog's stamina and ability to work in a variety of environmental conditions.

Weather conditions experienced by the team on survey days varied throughout the survey period (12 September through 23 October). In September, temperatures reached the mid- to high 90s; therefore, the team began surveying at sunrise and surveyed until the temperature reached the low to mid-80s. In October, daily high temperatures cooled measurably (approximately 5–10°F), allowing surveys to begin and end later in the day. Wind conditions were very consistent throughout the survey period (excluding two non-precipitation storm events), with wind speeds generally around 1.1 mph in the morning, picking up to around 3.5 mph by midafternoon. Winds on 20 and 21 September were the exception, with speeds reaching 11.5 and 10.4 mph, respectively, by 1:00 PM.

2.3 DNA Testing

Genetic analysis of scat has become an important tool in the field of wildlife biology. The noninvasive sampling of scat allows biologists to monitor wildlife populations without physically interacting with target species, thus reducing time in the field and limiting effects on the species. Scat DNA analysis is now widely used in wildlife studies to identify the species of origin. Using DNA extracted from scat, wildlife biologists can accurately estimate local population size, the number of individuals using a specific area, and the sex distribution of these individuals.

DNA studies conducted as part of San Joaquin kit fox surveys of other energy project sites in California have used mtDNA fragment analysis to confirm species identity (Maldonado 2010; Smith 2011). In this study, HTH went a step further and used mtDNA sequence data, rather than fragment analysis, to confirm species

identity; this involved using multiple (200+) comparative points of data rather than the single point of data used in fragment analysis, thereby providing more robust species identification information. In comparison, fragment analysis data results can vary when analyzed by different individual pieces of equipment, making the data difficult to combine with other data sets or to share with other researchers.

2.3.1 Genetic Analysis Procedure

During genetic analysis performed in the laboratory, a small piece of the outside layer of each scat sample collected was removed using sterile tweezers and transferred for DNA extraction using a standard laboratory extraction protocol. Fecal material was taken from the outside of the scat to maximize the probability of extracting host DNA from intestinal epithelial cells and to minimize prey DNA (similar to Rutledge et al. 2009). Each batch of extractions included a negative control sample (non–kit fox DNA) to control for contamination. Following DNA extraction, the depositing species was identified by amplifying and sequencing mtDNA extracted from the scat. A 250-base-pair fragment of the mitochondrial control region of the mtDNA was amplified using polymerase chain reaction (PCR; a common biochemical technology that amplifies the DNA fragment, generating thousands to millions of identical DNA fragments), employing the primers KFSPID-F and KFSPID-R (Bozarth et al. 2010). Each amplification was tested for success using agarose gel electrophoresis, and each PCR run included a negative control to test for potential contamination and spurious amplification. Each successful amplification was sent to Sequetech Corporation (Mountain View, California) for PCR cleanup and Sanger sequencing in both directions, using the PCR primers.

Following sequencing, HTH scientists downloaded the sequence trace files into Genious R7 (Biomatters) and edited and aligned these files. Each successful sequence trace was aligned with its reverse complement sequence and linked together to produce a single consensus sequence. The consensus sequences were compared to known reference consensus sequences for kit fox, domestic dog, coyote, grey fox, red fox, American badger, and skunk (*Mephitis mephitis*), downloaded from GenBank, to identify the species of the depositing individual.

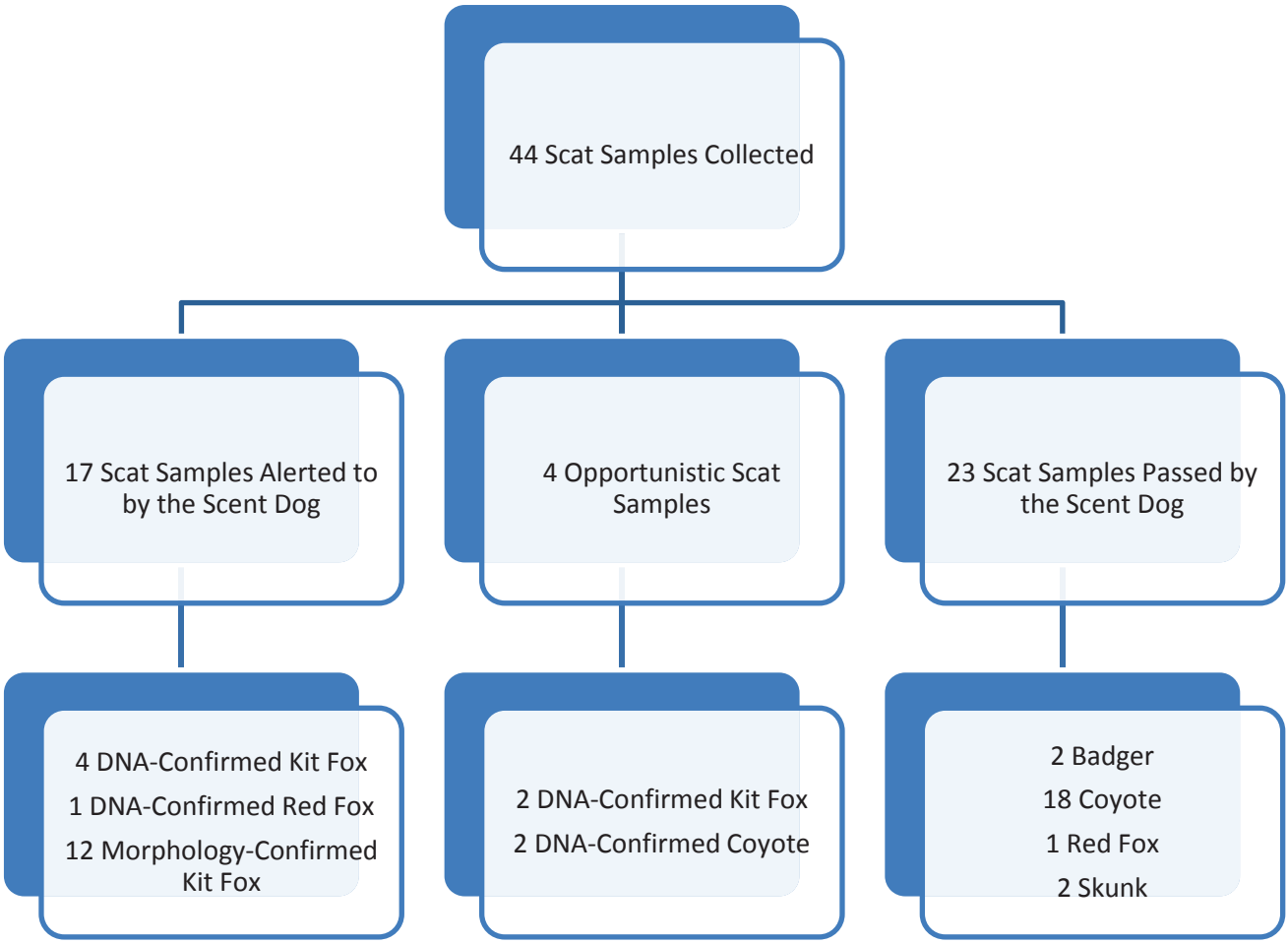
Section 3.0 Results and Discussion

3.1 Overview

The primary goal of the scent dog surveys was to determine the occurrence of San Joaquin kit fox on the Project site and to compare that finding with kit fox occurrence on the surrounding lands, specifically in the two Control Areas. The locations of identified target scat are congruous with what HTH anticipated based upon the results of prior survey efforts: San Joaquin kit fox occur infrequently and with low abundance on the Project site and within Control Area A compared to the southern portion of the existing access road and adjacent Control Area B.

HTH scientists analyzed all target scats, both those alerted to by the dog and those observed opportunistically by the dog handler and assistant, using both the DNA testing methods described above and scat morphology. This integrative approach helped confirm that the scent dog alerted appropriately, and did not pass, target scents. Furthermore, the collection and analysis of non-target scats in addition to target scats provided baseline information regarding mammalian predators found within the Project site and Control Areas. In total, 44 samples were collected by the scent dog team and analyzed (Figure 4): of the 44 samples, 17 scat samples were alerted to by the scent dog, 4 scat samples were opportunistically collected by the scent dog team, and 23 canid-like scat samples were collected after they were inspected and passed by the scent dog. Figure 3 depicts the locations of scats along the transect lines, indicates how each sample was identified (alerted to, passed, or opportunistically collected). Figure 5 identifies the depositing species of each scat sample.

Figure 4. Summary of Scat Samples Collected by the Scent Dog Team



TURKEY FLAT RD

Cottonwood Creek

KINGS COUNTY

MONTEREY COUNTY

Cholame Creek

MONTEREY COUNTY

SAN LUIS OBISPO COUNTY

CHOLAME VALLEY RD

STATE HIGHWAY 41

STATE HIGHWAY 46

DAVIS RD

BITTERWATER RD

LEGEND

- Biological Study Area
- Access Road

Scat Samples

- Badger
- Coyote
- Red Fox
- San Joaquin Kit Fox
- Skunk

Scent Dog Survey Areas

- Project Site
- Control Area A
- Control Area B

N

4,600 2,300 0 4,600

Feet

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

J:\Reports\Wildlife Reports\2013 Wildlife Surveys\Scent Dog Surveys Report Dec 2013\Fig 5 Scat Sample Locations by Species.mxd

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Figure 5: Scat Sample Locations by Species

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January 2014

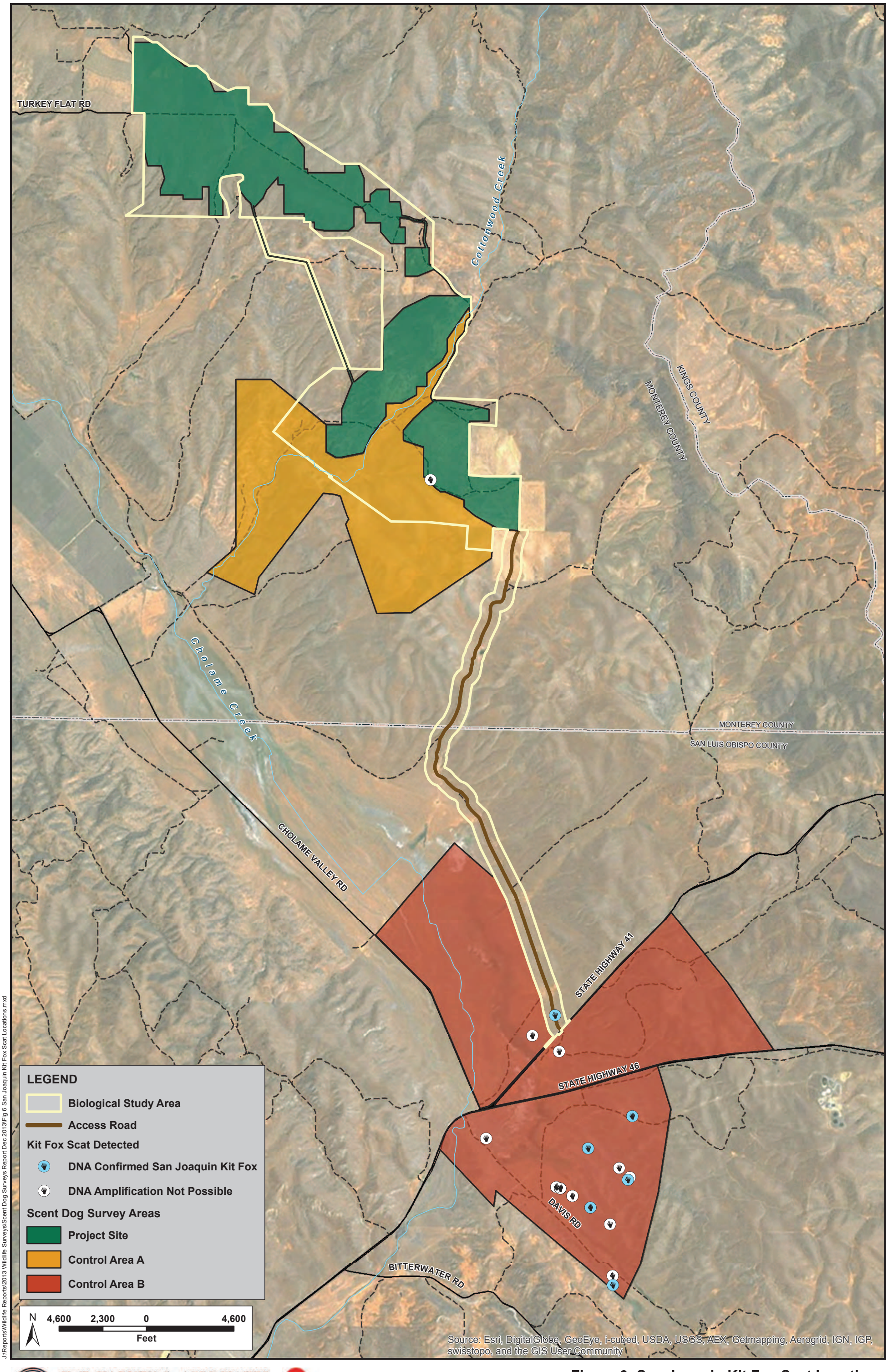
3.2 Analysis of Scent Dog–Identified Samples

3.2.1 DNA Analysis

The dog alerted the handler to 17 scat samples (Figure 6). One sample was detected on the proposed Project site (Sample 20130926-SH-01), one along the southern portion of the existing access road north of Hwy 41 (Sample 20131014-SH-01), and another immediately west of the access road (Sample 20131014-SH-02) within Control Area B. The other 14 scat samples were detected south of Hwy 41 in Control Area B. The dog did not alert to any scat in Control Area A.

Of the 17 samples, 16 were analyzed for mtDNA species confirmation. The 17th scat sample (collected in Control Area B; Sample 20131014-SH-02) was highly degraded: the fecal material had decayed around the prey contents, leaving only remnants of hair and bones visible. No visible fecal matter was available for collection and analysis.

All but one of the samples analyzed for DNA were highly degraded, based on appearance. They were desiccated, appeared grey in color, and contained little to no odor to the human nose, suggesting that the samples were old and/or exposed to high levels of UV light, known to degrade DNA. The single, fresher sample was brown in color and still carried an odor detectable to the human nose (see Appendices B through D). Five of the samples successfully amplified and returned clean sequence DNA (Table 2). Four of these samples returned San Joaquin kit fox sequence (Table 2), and one returned red fox sequence, indicating an 80% accuracy rate achieved by the scent dog, based on just the DNA-confirmed samples. The remaining 11 desiccated samples (including the one detected on the Project site) failed to amplify host mtDNA after two extraction attempts and 28 amplification attempts, and were considered "failed DNA amplifications of host DNA." Based on the 80% accuracy rate of DNA-confirmed samples, up to 9 of the failed DNA amplification samples would be San Joaquin kit fox scat. However, HTH ecologists believe that all 11 of these samples and the sample not submitted for testing are likely to have been deposited by San Joaquin kit fox; this assertion is discussed further in the following section.



J:\Reports\Wildlife Reports\2013 Wildlife Surveys\Scent Dog Surveys Report Dec 2013\Fig 6 San Joaquin Kit Fox Scat Locations.mxd

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Figure 6: San Joaquin Kit Fox Scat Locations

California Flats Solar Project – Scent Dog Surveys (3544-01)

January 2014

Table 2. DNA-Confirmed Scat Samples Alerted to by the Scent Dog

Sample ID	Location	Condition of Scat	Scat Contents	Species
20130912-SH-05	Control Area B	Desiccated and grey	None visible	San Joaquin kit fox
20130917-SH-01	Control Area B	Desiccated and grey	Bones	San Joaquin kit fox
20130917-SH-02	Control Area B	Desiccated and grey	None visible	San Joaquin kit fox
20131014-SH-01	Existing Access Road	Desiccated and brown/grey	Hair	San Joaquin kit fox
20130912-SH-01	Control Area B	Desiccated and grey	None visible	Red fox

3.2.2 Non-DNA-Confirmed Kit Fox Scat Samples

Based on the kit fox expertise of HTH ecologists, and considering the location, morphology, and contents of the scat samples, HTH considers that all of the 11 failed amplification samples and the single sample not submitted for DNA testing were deposited by San Joaquin kit fox (Figure 6). The reasons for this assertion are discussed below.

- Location—the general locations where 11 of the 12 non-DNA-confirmed kit fox scats were collected support San Joaquin kit fox preferred habitat, and not the mesic habitat (such as riparian areas) preferred by red fox. The two red fox samples that were collected (one detected by the dog and one passed by the dog) were both found near a riparian area in the southeast corner of Control Area B. Only one of the 12 non-DNA-confirmed kit fox scats was collected in this area. The other 11 scat samples were found in flat land or rolling hills with slopes less than 30%, containing California annual grassland habitat suitable for San Joaquin kit fox. Also, these 11 scat samples were found in areas that had few rock outcroppings or none, with limited tall shrubs or trees; these conditions are more typical of kit fox habitat than of red fox habitat. Finally, 10 of the 12 non-DNA-confirmed kit fox scats were found in close proximity to DNA-confirmed kit fox scats.

- Morphology and contents—Not all scat samples of a particular species are morphologically identical; however, 11 of the 12 non-DNA-confirmed kit fox scat samples appeared morphologically similar to known San Joaquin kit fox scat, which has an irregular shape, rounded on one side and pointed on the other, and generally contains hair and small bones broken by mastication (see Appendix B, "Scat Samples Alerted to by the Scent Dog"). The 12th scat sample, which did not contain enough fecal material for DNA testing, was not morphologically similar because it lacked fecal material.

In addition to these factors, the scent dog's success in alerting to or passing scat based on species identity supports the determination that the 12 scats in question are highly likely to be those of kit fox. The single red fox sample to which the dog alerted was the first scat she detected, doing so within minutes after the first survey was initiated on 12 September. Potential non-target scats collected by the team, that the dog passed, were used as a control to confirm that the dog correctly passed scat from non-target species. Of the 23 passed scat samples, the condition of 21 scat samples was sufficient for DNA analysis, confirming that all 21 samples were non–kit fox scats. One of these was confirmed to be red fox, and was collected later on the same day that the dog alerted to the initial red fox sample.

Dogs trained onto kit fox occasionally alert to red fox (Smith 2011), a species of the same genus that is genetically very similar. Dogs may generalize and key in on some element(s) of red fox scat scent molecules that are similar to kit fox scat scent molecules (Smith 2011). This may have been true in the case of Luna's error, especially because the sample in question was desiccated. As previously noted, the dog passed a fresher red fox sample later the same day, indicating that the dog can correctly differentiate between kit fox and red fox. More importantly, the dog did not pass any known kit fox scat: of all the passed scats confirmed to species by DNA, none were that of kit fox. A foundation of HTH's dog training program is the ongoing training of the scent dog using known non-target scats (red fox, grey fox, and coyote scat) and target scent (kit fox scat) when the dogs are not working in the field, to reinforce the dog's target repertoire and minimize alerts to non-target scents.

3.2.3 Passed Samples

In addition to the factors discussed above, the scent dog's success in passing scat based on species identity supports the determination that the 12 scat samples in question are highly likely to have been deposited by kit fox. As discussed previously, 23 potential non-target scats that the dog passed[1] (Figure 3) were collected by the team. Some of these samples were of a size, composition, and morphology similar to that of San Joaquin kit fox scat. Most of the passed scat samples were fresh in appearance, and DNA analysis confirmed that 21 of these samples were non–kit fox scats, including one skunk, two American badger, and 17 coyote scats (Table 3).

The two samples that failed DNA analysis likely did so because the scats were primarily composed of insect exoskeletons and contained very little fecal material. Upon inspection of these two scats, HTH mammalogists and San Joaquin kit fox experts concluded that scat Sample 20130916-OS-01 is coyote and that Sample 20130917-OS-02 is skunk, based on scat morphology, contents, and the scats' visual resemblance to DNA-confirmed scats of those species.

[1] The scent dog investigated these samples and moved on without alerting the handler to the scat, so these samples were categorized as passed.

In summary, DNA and expert analysis of the passed samples confirmed that the scent dog did not pass any San Joaquin kit fox scats, so the overall pass accuracy rate of non-target scents was 100%. This is especially important to note because the red fox scat that the dog alerted to was her only confirmed error. Taking into consideration all 40 scat samples that the scent dog inspected (17 alerted to and 23 passed, with only one error), the dog's overall accuracy rate for the survey is 97.5%.

Table 3. Scat Samples Passed but Collected and Analyzed for Species Identity

Species	Number of Scat Samples Collected	
	Project Site	Control Areas
American badger	0	2
Coyote	4	14
Red fox	0	1
Skunk	0	2
	Total: 23	

3.3 Analysis of Opportunistic Scat Samples

Four scat samples categorized as *opportunistic* were detected by the dog handler or assistant and collected in Control Area B (Figure 3). These samples appeared to the observers to be potential kit fox scats based on their morphology. The dog never investigated these scats or was never in a position to smell the scat (i.e., was never downwind of the scat).

All four opportunistic samples were DNA-analyzed to identify the depositing species. Two of these samples (Sample 20130916-OS-02 and 20130917-OS-04) returned San Joaquin kit fox sequence data (Table 4). When the dog's GPS survey track was compared to both sample locations and cross referenced with wind direction data collected in the field, it was apparent that the dog passed Sample 20130917-OS-04 on the upwind side; therefore, she never smelled this sample. The dog passed Sample 20130916-OS-02 on the downwind side, but no change of behavior by the dog was observed. This may have been because the scat was inside a California ground squirrel (*Otospermophilus beecheyi*) burrow, and the scat's scent did not travel far enough for the dog to pick up (i.e., the scent pooled in the burrow). The other two samples were genetically identified as coyote scats (Samples 20130916-OS-03 and 20130916-OS-05; Table 4). When the dog's GPS survey track was compared to these samples, the track showed changes in the dog's direction while she was traveling downwind of the sample, suggesting that she quickly smelled these samples, recognized them as non-targets, and moved on without demonstrating a strong change in behavior recognizable to the handler.

Table 4. Opportunistic Scat Samples

Sample ID	Location Found	Condition of Scat	Species
20130916-OS-02	Control Area B	Desiccated and grey	San Joaquin kit fox
20130917-OS-04	Control Area B	Desiccated and grey	San Joaquin kit fox
20130916-OS-03	Control Area B	Desiccated and grey	Coyote
20130916-OS-05	Control Area B	Desiccated and grey	Coyote

3.4 San Joaquin Kit Fox Genetic Lineages

The mtDNA sequence data analyzed show that six DNA-confirmed kit fox scats were deposited in Control Area B or on the existing access road. Based on available tissue, a subset of three of these scats were capable of additional analysis using five nuclear microsatellite markers. The nuclear microsatellite analysis strongly supported these three samples being derived from three kit fox individuals (Table 5). Of these three individuals, two individuals were detected south of Hwy 46 and one individual was located along the existing access road (Table 5).

The five kit fox samples detected south of Hwy 46 (Table 5) (Figure 6) are all derived from the same mtDNA Lineage 1, potentially indicating a sibling group in the area. However, the nuclear microsatellite analysis strongly suggests that at least two distinct kit fox individuals (Nuclear DNA lineages) were detected south of Hwy 46 within this potential sibling group (Table 5). The sample found on the existing access road (Nuclear DNA Lineage 3; Table 5) (Figure 6) has a sequence that differs by two base pairs. This scat sample appeared fresher (it still had some brown coloration), so it is likely that this individual was present more recently; in fact, the scat may have been deposited by the individual observed by HTH biologists in the same location during the September–October 2013 spotlight surveys (Figure 2).

Table 5. Genetic Lineages of San Joaquin Kit Fox Scat

Sample ID	Location	Species	mtDNA Lineage	Nuclear DNA Lineage
20130912-SH-05	South of Hwy 46	San Joaquin kit fox	1	1
20130917-SH-01	South of Hwy 46	San Joaquin kit fox	1	1
20130917-SH-02	South of Hwy 46	San Joaquin kit fox	1	2
20130916-OS-02	South of Hwy 46	San Joaquin kit fox	1	1
20130917-OS-04	South of Hwy 46	San Joaquin kit fox	1	1
20131014-SH-01	Existing Access Road	San Joaquin kit fox	2	3

3.5 Discussion

The results of the spotlight and scent dog surveys collectively confirm that San Joaquin kit fox occurrence within the Project site and Control Area A is low, whereas occurrence is moderate within Control Area B and the southern portion of the existing access road (Figure 7). During the spotlight survey, HTH ecologists observed San Joaquin kit fox twice along the existing access road, one individual south of Hwy 41 in Control Area B, one individual approximately 2.6 miles southeast of Control Area B, and no individuals on the Project site or in Control Area A. During the scent dog surveys, one San Joaquin kit fox scat sample was detected on the existing access road (Figure 9). Sixteen scat samples were detected in Control Area B, with the majority of those (15) detected south of Hwy 41 (Figure 7). Only one kit fox scat was detected in the southern portion of the Project site, and none was found within Control Area A (Figure 7). On the Project site, the canine species most frequently detected during the scent dog surveys was the coyote (Table 7).

Table 6. Locations of San Joaquin Kit Fox Detections (Individuals and Scats)

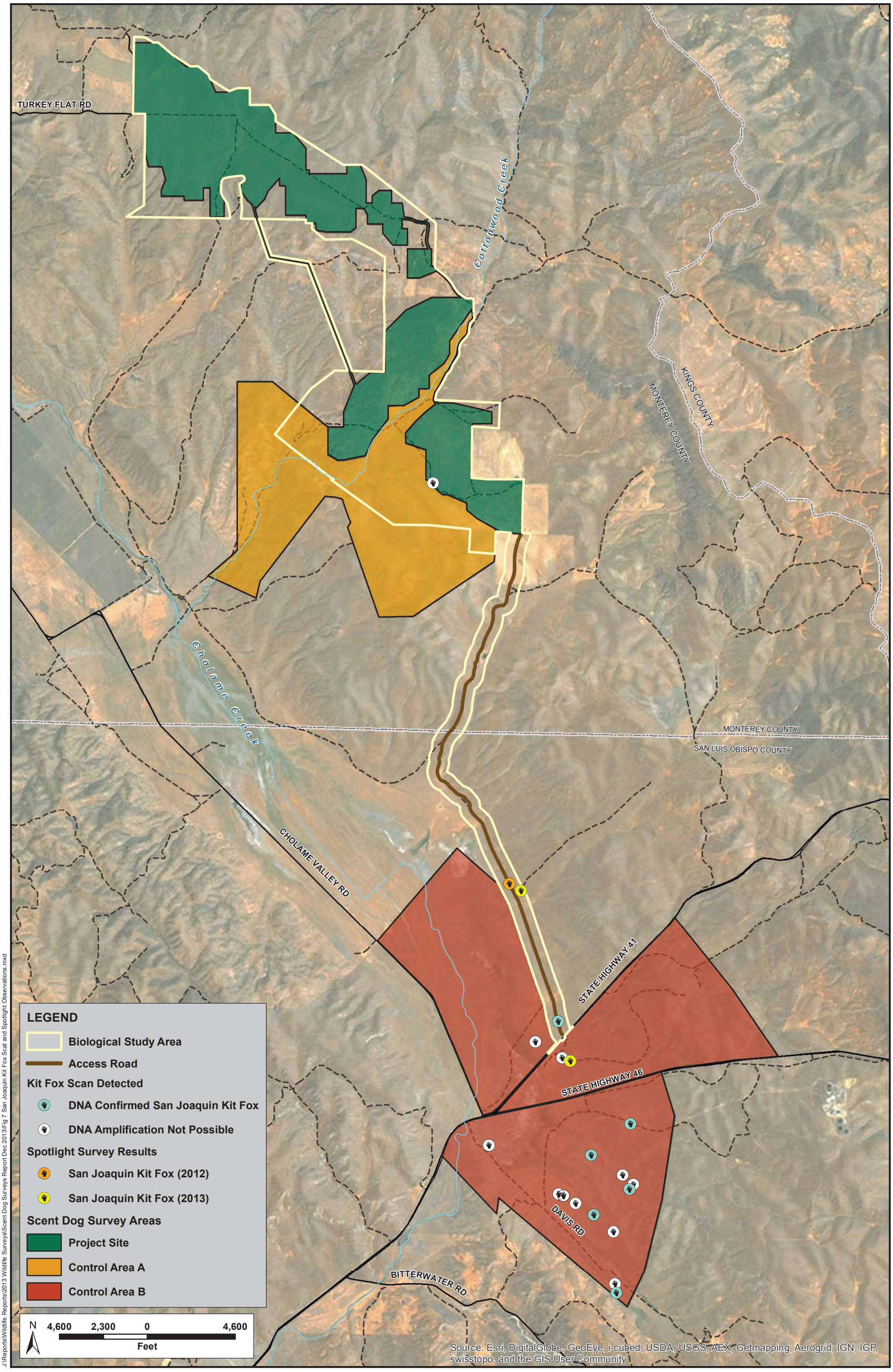
Detection Location	Number of San Joaquin Kit Fox Detections		Total
	Spotlight Survey	Scent Dog Survey	
Project site	0	1	1
Control Area A	0	0	0
Existing Access Road	2	1	4
North of Hwy 41 – Control Area B	0	1	1
South of Hwy 41 – Control Area B	1	15	16
Southeast of Control Area B	1	Area not surveyed	1

Table 7. Summary of All 44 Scat Samples Detected

Species	Number of Scat Samples			
	Project Site	Existing Access Road	Control Area A	Control Area B
San Joaquin kit fox	1	1	0	16
American badger	0	0	2	0
Coyote	4	0	4	12
Red fox	0	0	0	2
Skunk	0	0	1	1
Total: 44				

In Control Area B, linear features such as infrequently traveled/unpaved roads and game trails, as well as objects like water troughs, correlated with San Joaquin kit fox scat locations, a well-documented pattern for

kit fox and other carnivores (MacDonald 1980; Kohn et al. 1999; Koopman et al. 2001; Smith et al. 2005; Smith 2011). The single potential San Joaquin kit fox scat detected on the Project site was located near two of these features: approximately 180 feet east of the interior access road and 90 feet north of a cattle water trough.



J:\Reports\Wildlife Reports\2013 Wildlife Surveys\Scent Dog Surveys Report Dec 2013\Fig 7 San Joaquin Kit Fox Scat and Spotlight Observations.mxd

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Figure 7: San Joaquin Kit Fox Scat and Spotlight Observations

California Flats Solar Project – Scent Dog Surveys (3544-01)

January 2014

Based on our analysis, three individual kit fox were confirmed in the survey area. All confirmed mtDNA genetic lineages were from the existing access road and Control Area B, with two individuals active in the area south of Hwy 46, and one individual north of Hwy 41. It is not known whether the scat sample found on the Project site was deposited by a fox from one of these lineages; the Project site sample (confirmed to be kit fox based on HTH professional expertise) was too desiccated to yield mtDNA data. The kit fox that deposited the scat on the Project site is not likely the same individual that deposited scat along the access road because a distance of approximately five miles separates the two scats. Consequently, the scat found within the Project site is more likely to be a separate individual of the same genetic lineage (e.g., a maternal sibling), or another individual that is active in the study area.

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Appendix A. Scent Dog Team Resumes

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AREAS OF EXPERTISE

- Mammal Ecology and Behavior
- Conservation Physiology
- Non-invasive Sampling Methodology
- Detection Dog Training/Handling
- Construction monitoring

EDUCATION

- Ph.D. Biology, University of Washington, 2011.
- B.A. Biology, Pomona College, 2004.

PRIOR PROFESSIONAL EXPERIENCE

- Animal Behavior Consultant, Companion Animal Solutions LLC, 2010-present.
- Client Care Manager, Companion Animal Solutions LLC, 2010-present.
- Conservation Canine Handler, Conservation Canines, University of Washington, 2005-2006 and 2009.

KEY PROJECTS

- California Valley Solar Ranch Construction Monitoring
- California Flats Scent Detection Dog Surveys

KEY PUBLICATIONS

Ayres KL, Booth RK, Hempelmann JA, Koski K, Emmons CK, et al. (2012) Distinguishing the Impacts of Inadequate Prey and Vessel Traffic on an Endangered Killer Whale (Orcinus orca) Population. PLoS ONE 7(6): e36842. Doi::10.1371/journal.pone.0036842.

Complete list of publications available upon request

PROFESSIONAL PROFILE

Katherine is the lead dog trainer and handler for our scent detection dog program. Katherine has field, academic and applied experience in mammal ecology, behavior and physiology as well as extensive experience with applied animal behavior and scent detection dog training/handling.

Prior to her work at H.T. Harvey & Associates, Katherine completed her Ph.D. in Biology at the University of Washington's Center for Conservation Biology. Katherine used non-invasive physiological measures of hormones from killer whale scat to test anthropogenic and ecological pressures on the health of the endangered Southern resident killer whale population: a population of killer whales that is extremely important to the economy, ecology and culture of the Pacific Northwest and British Columbia. She also worked with Conservation Canines to apply the use of boat based scat detection dogs to killer whale fecal sampling to minimize any potential stress from sampling on the study animals and to decrease the bias of visual sampling by humans.

Katherine also received training as an Animal Behavior Consultant and Dog Handler with Companion Animal Solutions LLC in Seattle, WA. She specializes in Learning Theory and hands on behavior modification practices for companion and working animals that are both ethical and effective. These skills combined with her Conservation Biology background, allow her to be a highly trained consultant for both pet behavior issues and application of working domestic dogs to ecology and wildlife conservation projects.

Since joining H. T. Harvey & Associates, Katherine has been a Wildlife Ecologist and Biological Monitor on the California Valley Solar Ranch. She monitored construction activities for compliance with the project's NEPA and CEQA documents, as well as the various environmental permits, including the California Endangered Species Act Incidental Take Permit, the Federal Environmental Endangered Species Act biological opinion, Clean Water Act Section 401 permits, and the California Department of Fish and Game Streambed Alteration Agreement. Katherine also organized, coordinated and maintained data for burrowing owl nesting deterrence activities within the construction areas and assisted with weekly compliance reports to the client.

Additionally, Katherine selected, trained, and handled H.T. Harvey & Associates first detection dog, Luna. Katherine trained Luna to detect and alert to scat of the endangered San Joaquin kit fox as well as avian fatalities.

M. Murrelet Halterman, Ph.D.

Wildlife Ecologist

mhalterman@harveyecology.com

AREAS OF EXPERTISE

- Ecology of birds
- Bird survey protocols and protocol development

EDUCATION

- Ph.D., Ecology, Evolution, and Conservation Biology, University of Nevada, Reno, 2009
- M.S., Biology, California State University, Chico, 1991
- B.S., Wildlife Biology. University of California, Davis, 1985

PRIOR PROFESSIONAL EXPERIENCE

- Field Leader, Great Basin Bird Observatory, 2011-2012
- Golden Eagle Surveyor, BioResources, 2011-2012
- Project Director, Yellow-billed Cuckoo Research, Southern Sierra Research Station, 1999 to 2011
- Teaching Assistant, University of Nevada – Reno, 2002-2004
- Research Associate, Kern River Research Center. 1990-2000
- Instructor, Cerro Coso Community College, 1997-1999
- Field Assistant, Estacion Jatun Sacha, Ecuador, 1994
- Teaching Assistant, Department of Biological Sciences, California State University, Chico, 1987-1989
- Principal Investigator, California Department of Fish and Game, 1987

KEY PUBLICATIONS

Halterman, M.D., Gilmer, D.S., Laymon, S.A., and Falxa, G. 2004. Yellow-billed Cuckoo Survey Methodology in California: 1999-2000. In Proceedings of the 2000 CA Riparian Ecosystems Conference in Sacramento, CA. Editor: M.L. Morrison.

Halterman, M.D., D.S. Gilmer, S.A. Laymon, and G.A. Falxa. 2001. Status of the Yellow-billed Cuckoo in California: 1999-2000. Report to the USGS-BRD Dixon Field Station, Dixon, CA.

Complete list of publications available upon request

PROFESSIONAL PROFILE

Murrelet is a Wildlife Ecologist who joined H. T. Harvey & Associates after years of work studying birds throughout the western United States. She has worked extensively throughout the state of California for 30 years. She has studied Yellow-billed Cuckoos, Golden Eagles, and Southwest Willow Flycatchers.

Immediately prior to joining H. T. Harvey & Associates, Murrelet had worked with the Great Basin Bird Observatory. During this time she worked on Pinyon Jay research in southern Idaho, Yellow-billed Cuckoo surveys in Nevada, Elf Owl survey in southern California, and Golden Eagle nest survey on Bureau of Land Management properties throughout Nevada.

Murrelet also was the Project Director for Yellow-billed Cuckoo research for Southern Sierra Research Station for over ten years. Her responsibilities include grant writing, managing research projects, hiring and supervising field crews, making all logistical arrangements for projects, conducting field research, and preparing reports. This work also allowed her to act as the principal investigator for a status and distribution report on the Yellow-billed Cuckoo in California, 1999, and allowed her to conduct groundbreaking research on the species for her PhD.

Murrelet also has extensive teaching experience. She has taught Conservation Biology, Wildlife Ecology and Management, and general biology and zoology. Additionally, she has acted as a teaching assistant in general biology, botany, and ornithology classes.

During the last 25 years, Murrelet has designed and run point-count based bird surveys in CA, NV, and AZ. She has assisted with Spotted Owl surveys in the Sierra Nevada mountains, and Elf Owl research on the Lower Colorado River. She's traveled to the Amazon to volunteer on research on seasonal avian movement.

From 1999-2002 Murrelet interned with DogsHelp, a service dog organization in Chico California. She assisted with raising and training future service dogs using positive training methods. Following that experience, she furthered her understanding of canine behavior and training theory by reading and attending many seminars and workshops. She currently competes in dog agility, and has attended multiple national agility competitions.

Additionally, Murrelet was granted the honor of acting as a co-coordinator of the Yellow-billed Cuckoo symposium that was held at the 2003 Cooper Ornithological Society meeting.

Robyn M. Powers, M.S.

Wildlife Ecologist

rpowers@harveyecology.com

AREAS OF EXPERTISE

- Ecology of mammals
- Behavioral Ecology
- Conservation Biology
- Special-status species surveys

EDUCATION

- M.S. Biology, Behavior and Physiology, San Francisco State Univ., 2009
- B.S. Environmental Science, University of Denver, 2000

PRIOR PROFESSIONAL EXPERIENCE

- Biologist, North Wind Group, VAFB, CA 2010-2012
- Wildlife Biologist, Catalina Island Conservancy, Santa Catalina Island, CA 2006-2008
- Wildlife Biologist, Smithsonian Institution, San Nicolas Island, CA 2005-2006
- Wildlife Biologist, Institute for Wildlife Studies, Santa Catalina Island, CA 2004-2005
- Carnivore Technician, U.S. Forest Service, Lake Tahoe Basin, CA 2003-2004
- Research Assistant, Colorado Division of Wildlife, Montrose, CO 2003-2004
- Restoration Crew Leader, Bureau of Land Management, Las Vegas, NV 2002-2003
- Wildlife Research Assistant, University of Nevada Reno, Las Vegas, NV 2002
- Wildlife Crew Leader, U.S. Geological Survey BRD, Las Vegas, NV 2001-2002
- Wildlife Technician, U.S. Geological Survey BRD, Hawaii Volcanoes National Park, HI 2000-2001
- Research Assistant, Denver Botanic Gardens, Denver, CO 2000

PROFESSIONAL PROFILE

Robyn joined H.T. Harvey & Associates as a wildlife ecologist in our San Luis Obispo office. She has been responsible for monitoring the San Joaquin kit fox throughout the California Valley Solar Ranch Project site from May 2012 to present. This work requires the ability to identify dens of suitable size for occupation by kit foxes, recognize characteristics of natal dens, and also identify kit fox presence through sign, such as scat and typical features of actively-used dens. Robyn tracks the presence of kit foxes by monitoring potential and active dens with remote cameras, and mapping all known dens on the landscape. She also recognizes opportunities for atypical dens in stored construction materials, and suggests alternate storing configurations. In addition to identifying kit fox sign, Robyn recognizes sign of kit fox prey, such as giant kangaroo rat precincts, gopher mounds, and California ground squirrel burrows. She assisted in surveys on conservation lands, where sign of protected species and their prey were identified and mapped. As part of the relocation effort of giant kangaroo rats on the Project site, Robyn also assisted in excavating precincts.

Robyn is a member of H.T. Harvey & Associates' scent dog detection program. A strong interest in animal behavior led Robyn to focus her master's work on the behavioral ecology of canids, and the scent dog program has allowed her to deeply explore the field of behavior as it applies to training and working with domestic dogs. Since spring 2013, Robyn has worked closely with the in-house animal behavior expert and scent dog trainer on the principles of behavior theory and how they relate to dog training. Robyn participated in early and advanced scent recognition training of the current working dog, Luna, as well as four candidate dogs. She often boards scent dogs at her home, where she runs additional practice trials in scent dog handling. Robyn has gained additional experience by acting as a handler's assistant on assignments where Luna detected San Joaquin kit fox scat and avian carcasses.

Since 2000, Robyn has contributed to several research projects concerned with the conservation and management of wildlife populations and habitats. During this time, she gained valuable experience in research methods and field techniques, including rare and endangered wildlife and plant surveys, ground and aerial telemetry, mark-recapture techniques, wildlife rehabilitation, and track plate and remote camera surveys. Robyn's work experience has included a variety of species, ranging from reptiles to carnivores, and from invasive to endangered species. She participated in the recovery of the endangered Catalina island fox for several years, and her master's thesis dealt with the behavioral ecology of the endangered San Nicolas island fox. In the Mojave desert, she was a crew leader for a reproduction and density study on the desert tortoise. In addition to island foxes and desert tortoises, she has captured and handled mule deer, bald eagles, feral cats, feral pigs, and several species of small mammals and reptiles of the Mojave desert.

Robyn also has project experience in plant ecology. At the Denver Botanic Gardens in the Native Plants Research Department, she assisted in the production of a working herbarium for Rocky Mountain National Park and performed rare and endangered plant surveys. While working for the BLM, she led interns and groups from Nevada Conservation Core in desert restoration.

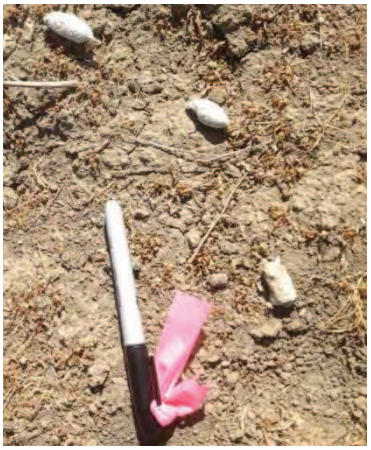
Appendix B. Scat Samples Alerted to by the Scent Dog

Scat Photograph	Sample Number	Species	DNA Confirmation Status	Location Found	UTM
	20130912-SH-05	San Joaquin Kit Fox	DNA Confirmed	Control Area B	10 S 747630 3955118
	20130917-SH-01	San Joaquin Kit Fox	DNA Confirmed	Control Area B	10S 747831 3957839
	20130917-SH-02	San Joaquin Kit Fox	DNA Confirmed	Control Area B	10S 747799 3956817
	20131014-SH-01	San Joaquin Kit Fox	DNA Confirmed	Control Area B	10S 746524 3959408
	20130912-SH-01	Red Fox	DNA Confirmed	Control Area B	10S 747568 3955329

	20130912-SH-06	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 747621 3955267
	20130916-SH-01	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 745502 3957386
	20130916-SH-02	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 746660 3956652
	20130916-SH-03	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 746724 3956632
	20130916-SH-04	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 746724 3956631
	20130916-SH-05	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 746922 3956517

	20130916-SH-06	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 747542 3956089
	20130916-SH-07	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 747829 3956857
	20130917-SH-03	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 747653 3957000
	20130921-SH-01	San Joaquin Kit Fox	DNA Amplification Not Possible	Control Area B	10S 746612 3958827
	20130926-SH-01	San Joaquin Kit Fox	DNA Amplification Not Possible	Project site	10S 744176 3967904
	20131014-SH-02*	San Joaquin Kit Fox	No visible fecal material for DNA analysis (only prey bones and hair	Control Area B	10S 746174 3959064

Appendix C. Scat Samples Collected by the Scent Dog Team

Scat Photograph	Sample Number	Species	DNA Confirmation Status	Location Found	UTM
	20130916-OS-02	San Joaquin Kit Fox	DNA Confirmed	Control Area B	10S 747219 3956347
	20130917-OS-04	San Joaquin Kit Fox	DNA Confirmed	Control Area B	10S 747139 3957296
	20130916-OS-03	Coyote	DNA Confirmed	Control Area B	10S 747476 3956124
	20130917-OS-05	Coyote	DNA Confirmed	Control Area B	10S 746971 3957396

Appendix D. Passed Scat Samples

Scat Photograph	Sample Number	Species	DNA Confirmation Status	Location Found	UTM
	20131009 -OS-02	American Badger	DNA Confirmed	Control Area A	10S 741547 3968706
(2nd scat in above photo for 20131009-OS-02)	20131009 -OS-03	American Badger	DNA Confirmed	Control Area A	10S 741547 3968706
	20130912 -OS-02	Coyote	DNA Confirmed	Control Area B	10S 747571 3955330
	20130912 -OS-03	Coyote	DNA Confirmed	Control Area B	10S 747363 3955259

	20130917 -OS-01	Coyote	DNA Confirmed	Control Area B	10S 747848 3957836
	20130917 -OS-03	Coyote	DNA Confirmed	Control Area B	10S 747243 3957223
	20130920 -OS-01	Coyote	DNA Confirmed	Control Area B	10S 746450 3958849
	20130921 -OS-01	Coyote	DNA Confirmed	Control Area B	10S 746408 3958742

	20130921 -OS-02	Coyote	DNA Confirmed	Control Area B	10S 746552 3958569
	20130926 -OS-01	Coyote	DNA Confirmed	Project site	10S 744246 3967776
	20130926 -OS-02	Coyote	DNA Confirmed	Project site	10S 744524 3968140
	20130930 -OS-01	Coyote	DNA Confirmed	Project site	10S 743103 3968523

	20130930 -OS-02	Coyote	DNA Confirmed	Project site	10S 742911 3968291
	20131002 -OS-01	Coyote	DNA Confirmed	Project site	10S 743020 3969049
	20131008 -OS-01	Coyote	DNA Confirmed	Control Area A	10S 744492 3967612
	20131008 -OS-02	Coyote	DNA Confirmed	Control Area A	10S 743835 3967357

	20131009 -OS-01	Coyote	DNA Confirmed	Control Area A	10S 741611 3967585
	20131014 -OS-01	Coyote	DNA Confirmed	Control Area B	10S 746381 3959892
	20131016 -OS-01	Coyote	DNA Confirmed	Control Area B	10S 747473 3956134
	20130912 -OS-07	Red Fox	DNA Confirmed	Control Area B	10S 747618 3955267

	20130916 -OS-04	Skunk	DNA Confirmed	Control Area B	10S 748056 3956684
	20130916 -OS-01	Coyote	DNA Amplification Not Possible	Control Area B	10S 745160 3957676
	20130917 -OS-02	Skunk	DNA Amplification Not Possible	Control Area B	10S 747491 3957059

California Flats Solar Project
2014 Eagle Nest Survey Report

Prepared for:

California Flats Solar, LLC

135 Main Street, 6th Floor
San Francisco, CA 94105
Attn: Scott Dawson

Prepared by:

Western EcoSystems Technology, Inc.
415 W 17th St, Suite 200
Cheyenne, WY 82001

August 12, 2014

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

California Flats Solar, LLC (California Flats) proposes to construct and operate a 280-megawatt (MW) photovoltaic (PV) solar generating facility referred to as the California Flats Solar Project in southeastern Monterey County, California. When approved, the solar facility and related operations infrastructure (Project site) will be built on approximately 2,562 acres (1,037 hectares) of the 72,000-acre (29,137-hectare) Jack Ranch, which is a working cattle ranch.

Under the direction of California Flats, Western EcoSystems Technology, Inc. (WEST) prepared the following report summarizing the results of the 2014 aerial (helicopter based) eagle nest survey conducted for the proposed Project.

2.0 METHODS

WEST conducted the aerial eagle nest survey following survey recommendations provided by the U.S. Fish and Wildlife Service (USFWS; USFWS 2013, Pagel et al. 2010). The nest survey was conducted within the California Flats project boundary and a 10-mile (mi; 16.1 kilometer [km]) buffer (hereafter: survey area; Figure 1). An intensive search of suitable nesting substrates was conducted during the eagle nest survey and all nests considered potentially suitable for supporting eagles were documented. In addition to conducting a full eagle-nest search of the survey area, nest locations from the 2013 nest survey for the Project were visited (see H.T. Harvey 2013).

Basic nest use was categorized consistent with Steenhof and Newton (2007). Nests were classified as occupied if any of the following were observed at the nest structure: (1) an adult eagle in an incubating position, (2) eggs, (3) nestlings or fledglings, (4) occurrence of a pair of adult eagles (or, sometimes subadults), (5) a newly constructed or refurbished stick nest in the area where territorial behavior of an eagle had been observed early in the breeding season, or (6) a recently repaired nest with fresh sticks (clean breaks) or fresh boughs on top, and/or droppings and/or molted feathers on its rim or underneath. A nest that is not occupied is termed unoccupied. Occupied nests were further classified as active if an egg or eggs had been laid or nestlings were observed, or inactive if no eggs or chicks were present.

WEST conducted the 2014 aerial survey on three days in April (April 15, 16, and 17). Nests found to be potentially active in April were checked again on May 23 to further assess whether the nest failed or successful fledged young. WEST flew the aerial survey using two observers and one pilot in a Robinson R44 Raven I single-engine helicopter. During the surveys, observers scanned suitable habitats (including trees, rocks, cliffs, transmission line poles, etc.) for new nests. When a nest structure was observed, the helicopter was moved to a position where nest status and species, if active, could be determined. A tablet computer with Global Positioning System (GPS) software was used to record nest locations and

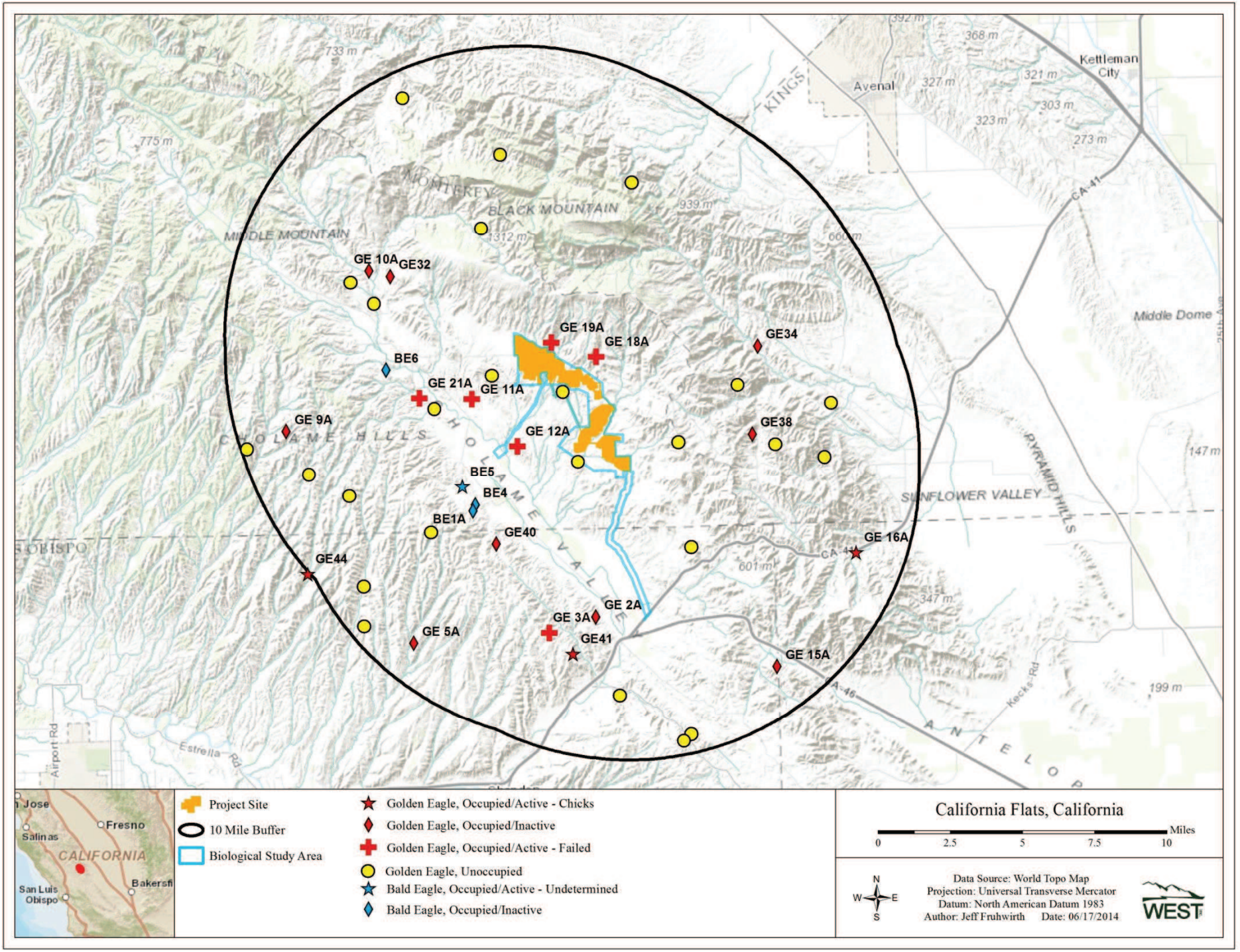


Figure 1. Eagle nest monitoring results from 2014 surveys at the proposed California Flats Solar Project

the flight paths flown by the helicopter during the survey. To minimize disturbance to nesting eagles, the helicopter maintained a maximum distance from the nests from which the nest status could still be ascertained.

3.0 RESULTS

During the April 2014 survey, WEST visited all 29 previously identified golden eagle nests and one previously identified bald eagle nest (Table 1). In addition to the previously identified eagle nests, an additional 18 previously unidentified golden eagle nests and an additional three previously unidentified bald eagle nests were encountered during the April survey (Table 1). Nine golden eagle nests and one bald eagle nest were found to be occupied and active during the April survey. Six nests found to contain eggs were tentatively recorded as having failed as these nests should have contained chicks at the time of the survey; however, to be sure that an adult had not flushed unseen by the surveyors from one of these nests as the helicopter approached, the nests were revisited during the May follow-up flight. Another 10 golden eagle nests were categorized as occupied-inactive due to the presence of one or more adult golden eagles in the immediate vicinity of an otherwise inactive nest.

During the follow-up nest check flight in May, the six nests that had been found to contain eggs but were tentatively recorded as having failed in April appeared to have indeed failed and the eggs were gone from the nests in all but one case. The remaining nest (GE21A) still contained two eggs, but no adults were again seen in the area. Three golden eagle nests that contained nestlings during the April survey were found to contain maturing nestlings (> 51 days old) during the May follow-up flight and these nests were therefore recorded as having successfully fledged young (USFWS 2013). One additional nest, that of a bald eagle, that contained an adult sitting tight in incubating/brooding posture during the April survey, was found to contain a maturing nestling (approximately 45 days old) during the May follow-up flight. As the age of the bald eagle nestling was less than the 51 days recommended by the USFWS to make a determination of nest success (USFWS 2013), the fate of this nest was recorded as undetermined. However, the bald eagle nestling appeared healthy and was attended by at least one adult so it is likely that this nest will prove successful.

3.1 Nest-Site Characteristics

WEST located the single active bald eagle nest in a large gray pine in an area of mixed pines, oaks, and various shrubs, interspersed with open grassy areas grazed by cattle. Among the nine active golden eagle nests documented in 2014, four (44%) were located in oaks (*Quercus douglassii or Q. lobata*), four (44%) in gray pines (*Pinus sabiniana*), and one (11%) in a black cottonwood (*Populus trichocarpa*; Table 1). Although cliff nesting is more common elsewhere, tree nesting is common in central California (Hunt et al. 1995, Kochert et al. 2002). Most of the other confirmed or potential golden eagle nests were located in oaks or gray pines, but several were located in cliff potholes (Table 1). The most common habitat association for nesting golden eagles throughout most of the survey area was a low-elevation, hillside oak or pine/oak

woodland adjacent to open grassland, with a large riparian oak or cottonwood adjacent to open grassland also occasionally used.

3.2 Nesting Territories

One-half the mean inter-nest distance has been used as a coarse estimate for the territory boundary in a number of raptor studies (e.g., Soutullo et al. 2013). As such, the USFWS (2012, 2013) recommends using nearest-neighbor distances among occupied nests to estimate approximate territory size in the vicinity of a project. Typically, this involves measuring the distances between occupied nests and calculating a mean inter-nest distance, with half this value being the radius of an eagle territory. For this Project, both occupied bald eagle and golden eagle nests were used to calculate this distance, since it appears that the bald eagles in the Project are using similar foraging and breeding habitat as the golden eagles, and would therefore be assumed to affect the territory of adjacent breeding golden eagles. Nearest-neighbor distances among occupied nests (active and inactive) ranged from 0.38 to 7.71 km (0.24 – 4.79 mi) with a mean inter-nest distance of 3.42 km [2.12 mi]). Note that two of the occupied-inactive bald eagle nests (BE1A and BE4) are located 0.38 km from each other; based on field observations it is assumed that both of these nests and nest BE5 are all occupied by the same bald eagle pair. Therefore, the overall range and mean is likely conservative (i.e., indicating a smaller/denser territory size than is actually the case). In comparison, in 2013, the nearest-neighbor distances for occupied eagle nests (active and inactive) had a mean of 4.9 km (3.0 mi; HTH 2013).

Understanding that eagle territories are not perfectly circular, the nearest-neighbor calculations for this study population nevertheless suggest that the typical distance that nesting eagles are defending is on the order of 1.05 to 1.5 miles from the nest. This range of values suggests that the territories of eagles that nest within 1.5 miles could overlap the Project site.

In other areas of the country where golden eagles are relatively common, the 3.42 to 4.9 km (2.12 – 3.0 mi) mean internest distances recorded at the California Flats Project area in 2013 and 2014 appear comparable. For example, in 12 areas of Wyoming, mean distances between adjacent occupied golden eagle nests ranged from 3.1 to 8.2 km (1.9 – 5.1 mi, mean 5.3 km [3.3 mi]; Phillips et al. 1984). In Denali National Park, Alaska, among 72 golden eagle pairs, nearest-neighbor distances ranged from 1.5 to 8 km (0.9 – 5.0 mi, mean 6 km [3.7 mi]), and among 56 golden eagle pairs in southwest Idaho, nearest-neighbor distances were 0.8 to 16 km (0.5 – 9.9 mi, mean 4.3 km [2.7 mi]; Kochert et al. 2002).

One of the greatest densities of nesting golden eagles in California was documented in a radio-telemetry study conducted in Central California's oak savannah and woodland habitat near the Altamont Wind Resource Area near the northern end of the Diablo Mountain range (Hunt et al. 1995, 1999; Hunt 2002, Hunt and Hunt 2006). In this study area near Altamont, extensive radio-telemetry research demonstrated minimum densities of about 1 golden eagle pair per 30 square kilometers (Hunt 2002). While the data collected in the California Flats project area does not provide for a direct comparison, it appears habitats and likely eagle nesting densities (and

presumably territory sizes) in the Cholame Valley and the southern Diablo Range is roughly comparable to that found in similar habitats in the northern Diablo Range.

The relatively high density of occupied golden eagle territories recorded at the Project (2.12 to 3.0 mile mean inter-nest distance compared to 2.7 – 3.7 mile for other studies in the western U.S.) is likely in part due to the abundance of high quality foraging habitat located throughout the area. Preferred habitats include mountainous canyon land, rim-rock terrain of open desert and grassland areas, particularly those areas that are greater than 457 m (1,499 ft) in elevation (Kochert et al. 2002). In central California, the species nests primarily in open grasslands and oak savanna and to a lesser degree in oak woodland and open shrublands (Hunt et al. 1995, 1999), all habitats to be found in abundance surrounding the Project. In addition, golden eagles are common in grazed areas and much of the remaining habitat in central and southern California is found in patches of relatively inaccessible mountainous country, primarily livestock ranches (Thelander 1974) like those found within and surrounding the Project.

3.3 Nest Success and Productivity

The single bald eagle nest was last checked on 23 May when it was found to have one maturing nestling approximately 6–7 weeks old. While the nestling was too young to definitively state that this nest was successful, at 6–7 weeks old, the nestling was well on its way to fledging and the nest likely succeeded.

Six of the nine active golden eagle nests definitely failed prior to fledging (Table 3). Nests 3A, 11A, 12A, 18A, 19A, and 21A failed during incubation. At the time of the May survey, three other nests (16A, 13, and 19) each had raised one (16A) or two (13 and 19) chicks to at least 80% of fledging age (8 weeks).

If all three golden eagle nests with live chicks in May 2014 successfully fledged chicks, then the estimate of apparent nesting success would be 33% of nest starts fledged, and the estimates of productivity would be 0.55 fledglings per nest start and 1.7 fledglings per successful nest. In comparison, if all nine nests with live chicks in May 2013 successfully fledged two chicks, then the estimate of apparent nesting success would have been 75% of nest starts fledged, and the estimates of productivity would have been 1.5 fledglings per nest start and 2.0 fledglings per successful nest (HTH 2013). As was the case in 2013 (HTH 2013), it is likely that as many as 40–50% of the pairs present in the survey area either did not nest or nested but failed quickly, before surveys began. Only one golden eagle nest (16A) successfully fledged young in both 2013 and 2014. Golden eagle nest 16A is located high in a cottonwood on private property just south of Highway 41 southeast of the Project.

California is in the midst of a severe drought and it is possible this has had some impact upon golden eagles residing in the Project vicinity. However, golden eagle prey resources, particularly ground squirrels, appeared abundant during aerial surveys conducted in April and May 2014. While possibly related to the recent drought conditions, it is unclear why reproducing eagles fared better in 2013 than they did in 2014. However, it must be noted that these are rough

estimates of nest success as it is unknown whether any nests that appeared to be relatively well maintained but did not contain eggs or young at the time of surveys, may have failed before surveys began.

Table 1. Eagle nests monitored during the 2014 survey for the California Flats Solar Project.

Nest ID	2014 Species	Substrate	2014 Status	2014 No. Eggs	2014 No. Young	2014 notes
BE1A[a]	BAEA	Gray Pine	Occupied/Inactive	-	-	Likely same pair as BE14, BE15
GE1A	GOEA	Oak	Unoccupied	-	-	Nest looked very old – poor condition
GE2A	GOEA	Oak	Occupied/Inactive	-	-	GOEA close to nest.
GE3A	GOEA	Oak	Occupied/Active/Failed	2	-	No GOEA seen
GE4A	GOEA	Oak	?			Could not locate
GE5A	GOEA	Oak	Occupied/Inactive	-	-	2 adult GOEA nearby
GE6A	GOEA	Oak	Unoccupied	-	-	Nest too small for eagle
GE7A	GOEA	Transmission tower	Unoccupied			Nest too small for eagle – ravens occupying
GE8A	GOEA	Gray Pine	Unoccupied	-	-	Appears too small for eagle – poor condition
GE9A	GOEA	Gray Pine	Occupied/Inactive	-		Adult GOEA perched near nest
GE10A	GOEA	Gray Pine	Occupied/Inactive	-		2 adult GOEA close by
GE11A	GOEA	Gray Pine	Occupied/Active/Failed	3	-	2 nests, adult GOEA present
GE12A	GOEA	Oak	Occupied/Active/Failed	1	-	No GOEA seen
GE13A	GOEA	Oak	Unoccupied	-	-	No GOEA seen
GE14A	GOEA	Oak	Unoccupied	-	-	Nest very old – very poor condition
GE15A	GOEA	Oak	Occupied/Inactive	-	-	Adult flying above nest
GE16A	GOEA	Cottonwood	Occupied/Active/Fledged	-	1	Nestling @60 days old May 23rd – standing in nest
GE17A	GOEA	Oak	-			Nest apparently blown out of tree or collapsed
GE17B	GOEA	Oak	Unoccupied	-	-	No GOEA seen
GE18A	GOEA	Gray Pine	Occupied/Active/Failed	1		No GOEA seen
GE19A	GOEA	Oak	Occupied/Active/Failed	1		No GOEA seen
GE20A	GOEA	Oak	Unoccupied	-	-	Nest appeared old – poor condition
GE21A	GOEA	Gray Pine	Occupied/Active/Failed	2	-	No GOEA seen
GE22A	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen
GE23A	GOEA	Cliff	Unoccupied	-	-	3 nests – no GOEA in area
GE24A	GOEA	Oak	Unoccupied	-	-	No GOEA seen
GE25A	GOEA	Oak	Unoccupied	-	-	No GOEA seen

Table 1. Eagle nests monitored during the 2014 survey for the California Flats Solar Project.

Nest ID	2014 Species	Substrate	2014 Status	2014 No. Eggs	2014 No. Young	2014 notes
GE26A	GOEA	Cliff	?			Could not locate
GE27A	GOEA	Cliff	?			Could not locate
GE28A	GOEA	Oak	Unoccupied	-	-	Nest in very poor condition
GE29[b]	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen – nest in good condition
GE30	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen
GE31	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen
GE32	GOEA	Gray Pine	Occupied/Inactive	-	-	1.5 km east of GE10A
GE33	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen
GE34	GOEA	Cliff	Occupied/Inactive	-	-	Nest tucked in cave - adult nearby
GE35	GOEA	Oak	Unoccupied	-	-	No GOEA seen
GE36	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen
GE37	GOEA	Oak	Unoccupied	-	-	No GOEA seen
GE38	GOEA	Oak	Occupied/Inactive	-	-	Adult GOEA close to nest
GE39	GOEA	Oak	Unoccupied	-	-	No GOEA seen
GE40	GOEA	Gray Pine	Occupied/Inactive	-	-	Eagle close to nest
GE41	GOEA	Oak	Occupied/Active/Fledged	-	2	Nestlings @55 days old May 23rd – one in nest one perched on branch
GE42	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen
GE43	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen
GE44	GOEA	Gray Pine	Occupied/Active/Fledged	-	2	Nestlings @55 days old May 23rd – adult feeding in nest
GE45	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen
GE46	GOEA	Gray Pine	Unoccupied	-	-	No GOEA seen
BE4	BAEA	Gray Pine	Occupied/Inactive			Likely same pair as BE1A, BE15
BE5	BAEA	Gray Pine	Occupied/Active/Undetermined	-	1	Nestling @45 days old May 23rd – looked healthy – will likely fledge
BE6	BAEA	Gray Pine	Occupied/Inactive	-	-	Adult at nest but nothing in it

[a] Nest ID numbers followed by a letter (A or B) are nests that were identified in 2013 or earlier.
[b] Nest numbers not followed by a letter are nests that were first identified during the April 2014 survey.

Table 2. Success and Productivity of the Eagle Nests Monitored Within a 10-mile Buffer of the California Flats Solar Project in 2013.[a]

Nest ID	Status First Check	Nest Fate	Dead Eggs	Nestlings	Nestling Age (weeks)	80% Fledglings
GE2A	Nestlings	Nestlings	0	2	4	?
GE3A	Incubating	Nestlings-Failed	0	1 – 2	5 – 7	0
GE4A	Incubating	Nestlings	0	2	6	?
GE9A	Incubating	80% Fledglings	0	2	8	2
GE10A	Incubating	Nestlings	0	2	6	?
GE11A	Incubating	Failed	?	0	-	0
GE12A	Incubating	Nestlings	0	2	4	?
GE13A	Incubating	Nestlings	0	2	2 – 3	?
GE14A	Incubating	Nestlings	0	2	4 – 5	?
GE15A	Incubating	Nestlings	0	2	4	?
GE16A	Nestlings	80% Fledglings	0	2	7 – 8	2
GE23A	Incubating	Failed	?	0	-	0

[a] From HTH 2013.

Table 3. Success and Productivity of the Eagle Nests Monitored Within a 10-mile Buffer of the California Flats Solar Project in 2014.

Nest ID	Status First Check	Nest Fate	Dead Eggs	Nestlings	Nestling Age (weeks)	80% Fledglings
GE3A[a]	Eggs in nest	Failed	2	0	-	0
GE11A	Eggs in nest	Failed	3	0	-	0
GE12A	Egg in nest	Failed	1	0	-	0
GE16A	Nestlings	80% Fledgling	0	1	8	1
GE18A	Egg in nest	Failed	1	0	-	0
GE19A	Egg in nest	Failed	1	0	-	0
GE21A	Eggs in nest	Failed	2	0	-	0
GE41[b]	Nestlings	80% Fledglings	0	2	8	2
GE44	Nestlings	80% Fledglings	0	2	8	2
BE5	Brooding	Nestling	0	1	6 – 7	0

[a] Nest ID numbers followed by the letter A are nests that were identified in 2013 or earlier.
[b] Nest numbers not followed by a letter are nests that were identified during the April 2014 survey.

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California Flats Solar Project
Eagle Use Survey Interim Report
March 10 une 24, 2014

Prepared for:

California Flats Solar, LLC

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Attn: Scott Dawson

Prepared by:

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September 23, 2014

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

California Flats Solar, LLC (California Flats) proposes to construct and operate a 280-megawatt (MW) photovoltaic (PV) solar generating facility referred to as the California Flats Solar Project in southeastern Monterey County, California. When approved, the solar facility and related operations infrastructure (Project site) will be built on approximately 2,562 acres (1,037 hectares) of the 72,000-acre (29,137-hectare) Jack Ranch, which is a working cattle ranch.

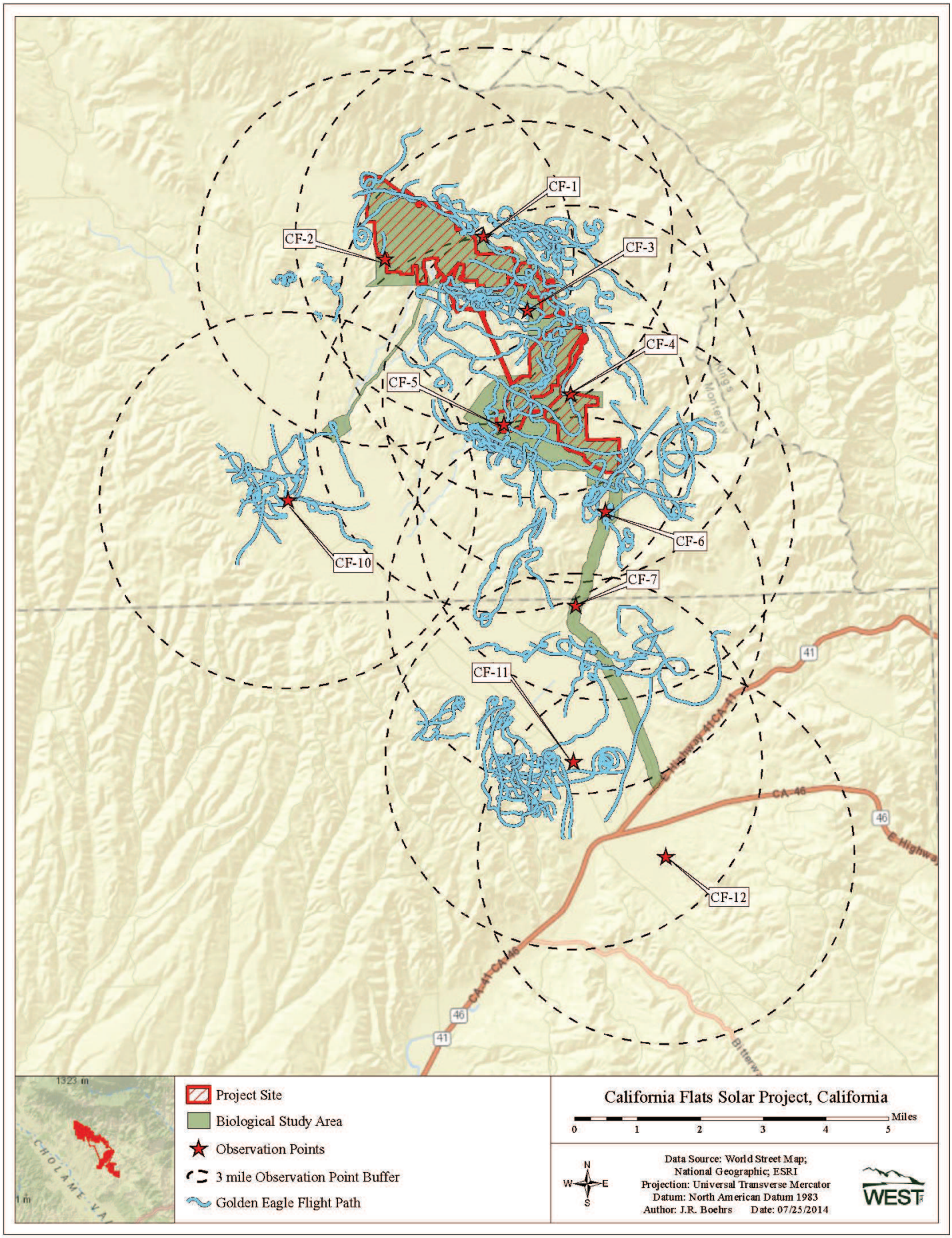
Under the direction of California Flats, Western EcoSystems Technology, Inc. (WEST) is conducting surveys in order to better understand eagle use at the Project site. Eagle use surveys began at the site in March 2014 and are scheduled to continue through December 2014. This interim report summarizes the results of the eagle use surveys conducted between March 10 and June 24, 2014.

2.0 METHODS

Eagle use/activity surveys were initiated by WEST in March 2014 and are scheduled to continue through December 2014. The purpose of the surveys is to characterize use of the Project site and surrounding landscape by golden eagles, particularly the foraging habits of locally breeding, migrant, and wintering eagles. Surveys are conducted every two weeks from 10 observation points including six points located within or adjacent to the Project site, and four points located in areas to the west and south of the Project site (Figure 1). Observation points were established in locations that afford broad overviews of the Project site and surrounding landscape and allow for effective documentation of the activity patterns and home-range dynamics of resident breeders, as well as use of the region by migrant and wintering eagles. Documentation of flight paths and identification of potential high activity areas (foraging, perching, roosting) or seasons is the primary focus of the survey effort. Each observation point is surveyed every two weeks for a continuous 3-hour period, with surveys scheduled such that observation periods cover most daylight hours (approximately 9:00 am to 6:00 pm) over the course of the 10-month study.

Although the focus of the surveys is eagles (particularly golden eagles), all raptors and other sensitive avian species seen or heard during each survey are recorded, as well as observations of these species made while in-transit between points. Data collected during each 3-hour survey include: date, start and end time of the observation period, plot number, species or best possible identification, number of individuals, sex and age class, distance from plot center when first observed, direction of flight, height above ground, activity, and habitat. Additionally, for each individual eagle observed during the survey period, the above data are recoded for each minute that eagle is in view.

Figure 1. Eagle Use Survey Locations and Digiti ed Golden Eagle Flight Paths, March 10 un 24, 2014



3.0 RESULTS

As stated above, WEST began the eagle use/activity surveys in March 2014 and will continue them through December 2014. A final report will be prepared once the full survey has been completed; the results presented in this section represent data gathered from March 10 through June 24, 2014. Eagle flight paths mapped during this time period are shown on Figure 1.

Between March 10 and June 24, 2014, 122 golden eagles were seen over 219 hours of observation, for an average golden eagle use of 0.56 eagles observed per hour (obs/hr). Among the twelve points surveyed, the use ranged from 0.06 eagles obs/hr (CF12) to 1.08 eagles obs/hr (CF3). Points CF11 and CF10 had the second and third highest eagle use numbers, at 0.89 and 0.78 eagles obs/hr, respectively.

Over the 219 hours of the use survey, 776 minutes of golden eagle flight were observed, for an average activity of 3.54 eagle flight minutes per hour (flight min/hr); these numbers exclude the time that eagles were observed perching. Among the twelve points surveyed, the flight activity ranged from 0.28 golden eagle flight min/hr (CF 12) to 11.00 flight min/hr (CF11). Points CF3, CF10 and CF4 also had relatively higher use at 5.71, 5.11 and 4.43 golden eagle flight min/hr, respectively. The remaining points ranged from 1.46 to 2.79 eagle min/hr.

As the preliminary data shows, the highest use survey points to date are CF11 (highest flight minute/hr; second highest eagles obs/hr), which is located approximately 4.75 miles south of the Project site and one mile west of the access road, and CF3 (highest eagles obs/hr; second highest flight min/hr), which is located adjacent to the west-central edge of the Project site. CF10, located approximately three miles west of the Project site, is the third highest use point from both the eagles obs/hr and flight min/hr perspective.

Additionally, the mapped flight pathways indicate that golden eagles flying in the Project site vicinity from March through June are not using the landscape consistently and/or evenly. This may be due to a combination of factors that seem to attract higher levels of eagle use such as prey availability (based on the HTH burrowing animal survey, ground squirrel burrows appear particularly concentrated along the edge of drainages) and/or areas of steeper topography creating wind patterns conducive to efficient soaring. Additionally, a substantial amount of the activity that was observed near point CF1 on the northeast edge of the Project site was associated with golden eagle activity in the vicinity of the two active (failed) nests (GE19A and GE18A), while activity near points CF3 and CF5 on the west and southwest edge of the Project site was associated with golden eagles traveling to and from trees in the ravines outside of the Project site, which they used as temporary perching points.

Figures 2 and 3 provide a similar illustration of eagle flight activities as shown in Figure 1. In the case of Figures 8 and 9, the 100 m x 100 m grids are color coded based on the number of flight paths that cross a particular grid – thus providing a “heat index” of eagle activity. Figure 2 shows eagle flights from March 10 through April 6, 2014; Figure 3 shows eagle activity from April 7

through June 24, 2014. The maps were split between the two sets of dates because points CF10 – CF12 were not added to the survey until April 7; therefore each map shows a comparison of flights across the observed area in a date range where each survey point has equal hours of observation. As with Figure 1, these figures illustrate that over extended periods of observation of the Project site during the spring and early summer of 2014, eagles did not appear to be consistently using substantial portions of the Project site – particularly in some of the flatter areas where panels would be constructed.

An examination of the flight height and type of activity indicates that the majority (56%) of observed golden eagle flight minutes were eagles soaring over 200 m. Overall, the majority (73%) of activity observed was soaring at various heights, with flapping/gliding activities occurring for approximately 17% of the minutes, eagles being mobbed by other birds occurring for approximately 8% of the minutes, and stooping/diving at prey, antagonist stooping/diving at other eagles or birds, and other activities each taking up less than 2% of the minutes. No hunting or kiting/hovering activities were recorded during this time period. The majority (66%) of all activities occurred at heights over 200 m, followed by 100 – 200 m (11%), 0 – 20 m (9%), and 20 – 50 m and 50 – 100 m (7% each). Figure 4 shows the height/activity breakdown for flights recorded between March 10 and June 24, 2014.

Figure 2. Golden Eagle Flights, March 10 April , 2014, Survey Points CF1 CF .

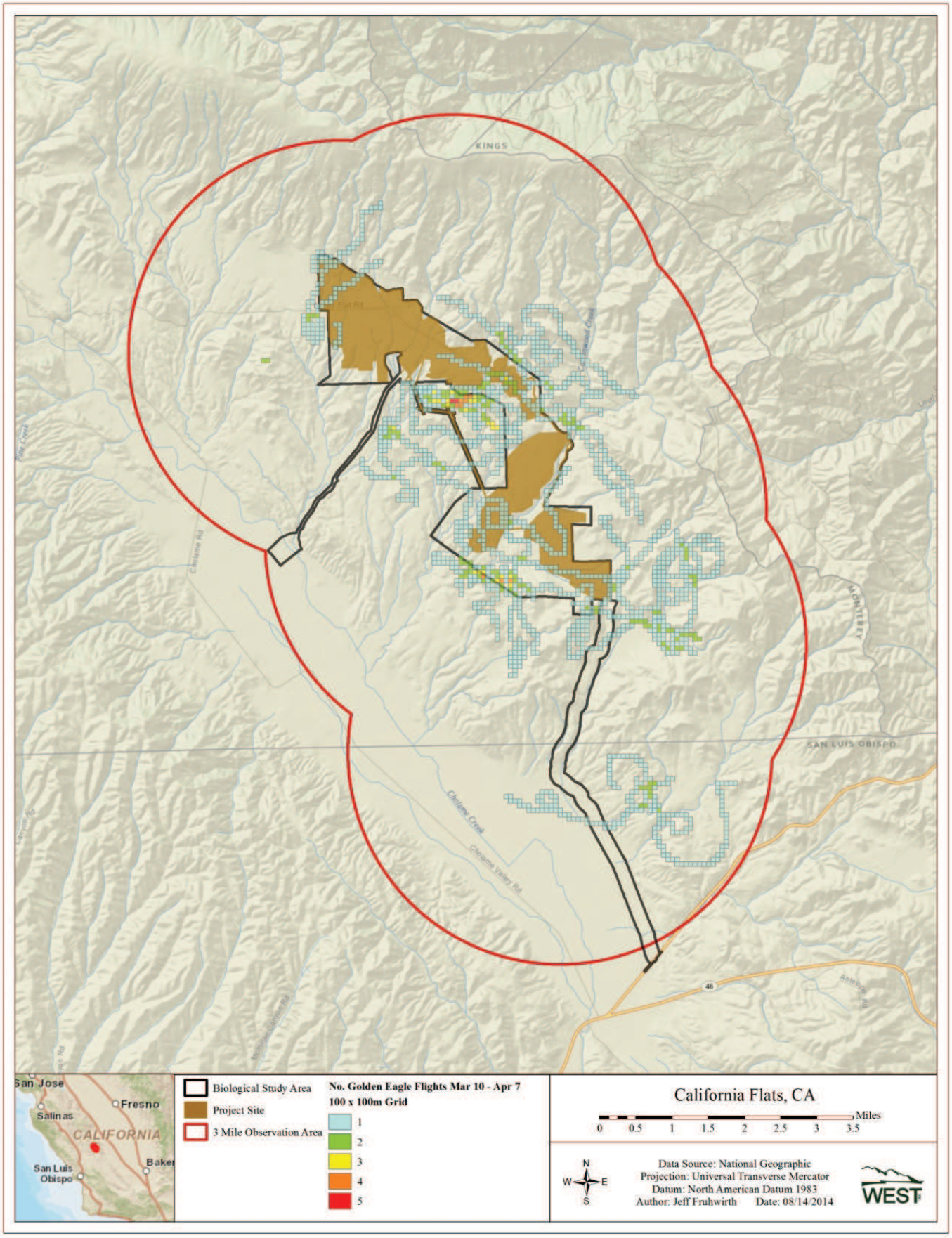


Figure 3. Golden Eagle Flights, April une 24, 2014, Survey Points CF1 CF12

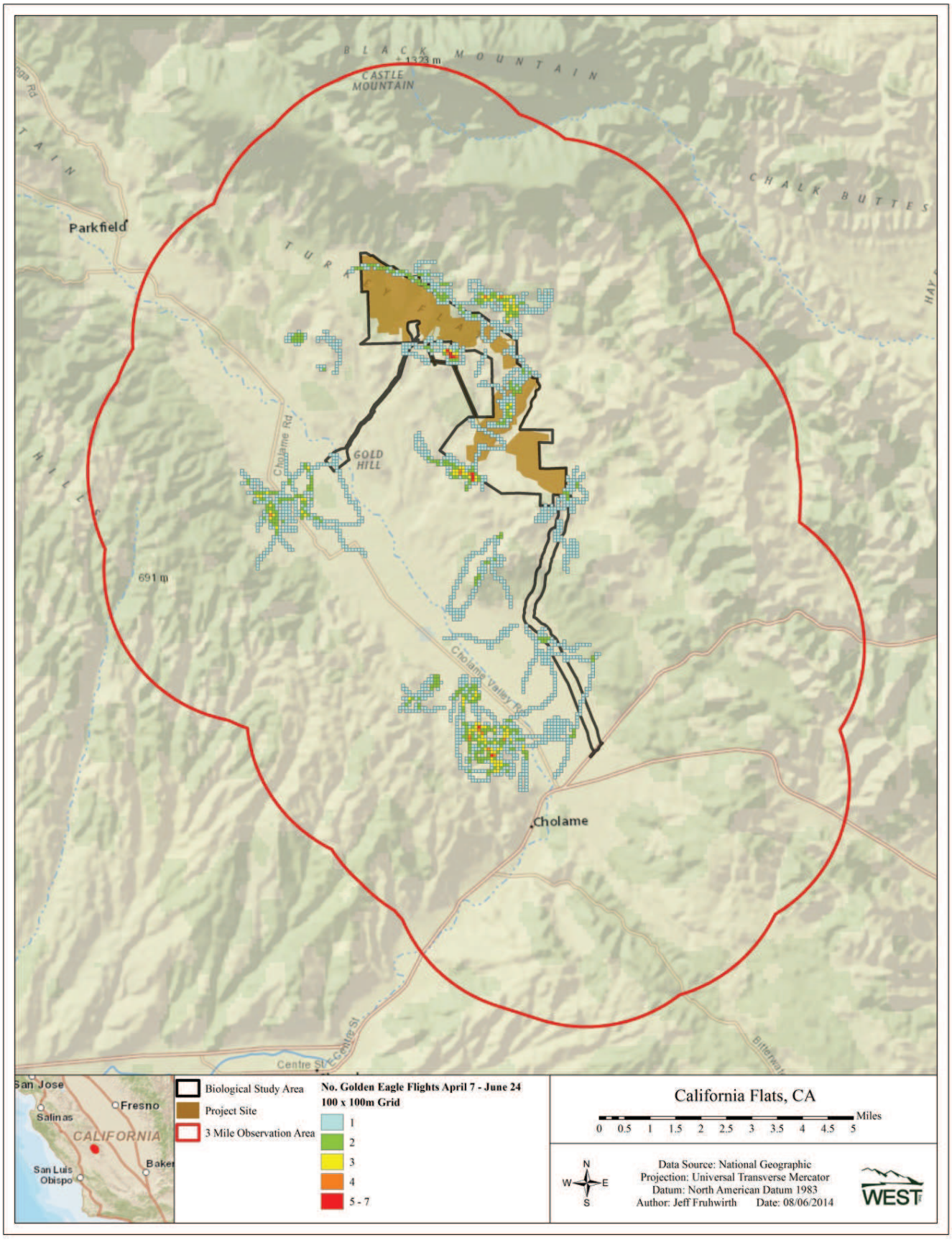
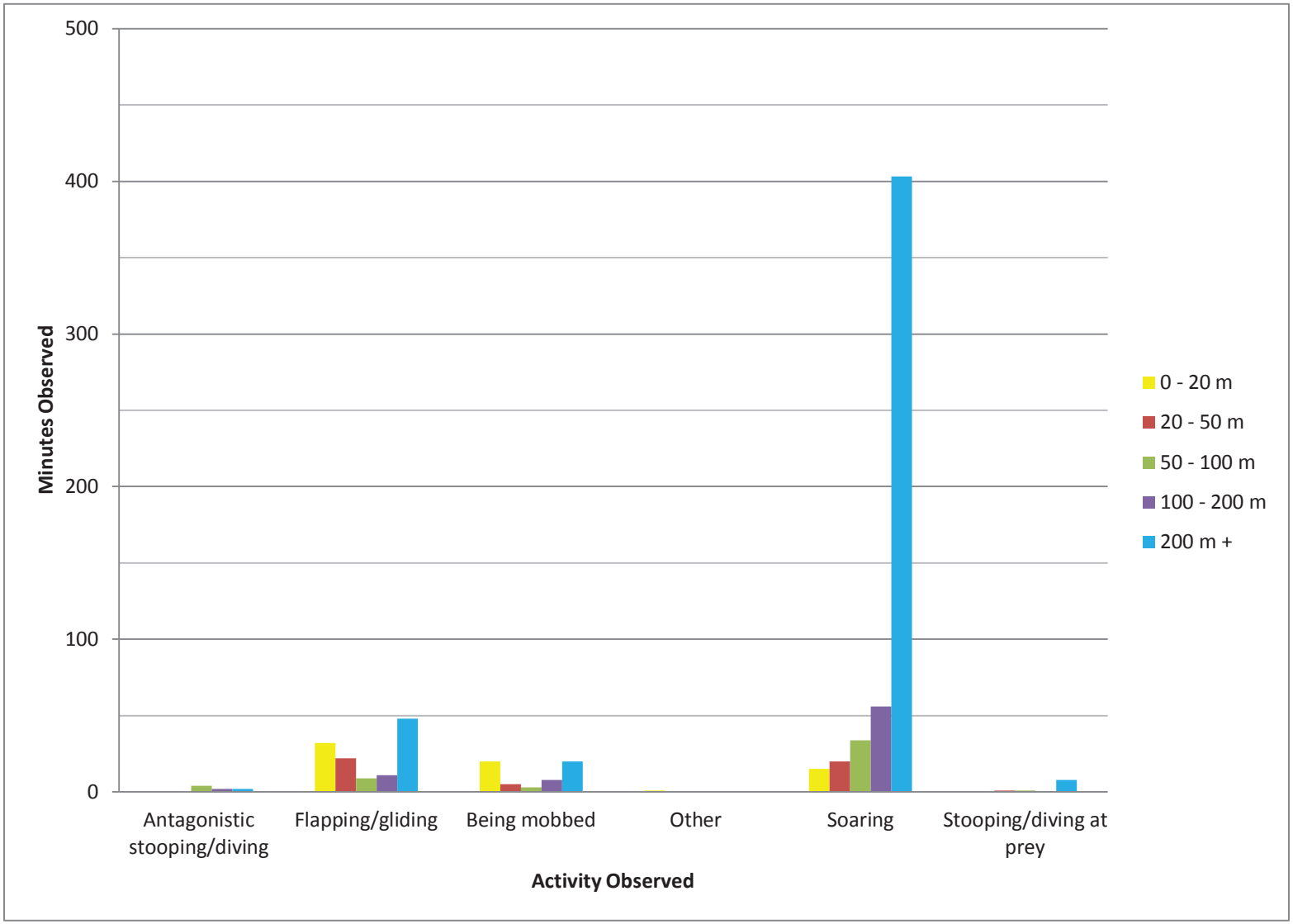


Figure 4. Golden Eagle Activity and Flight Height, March 10 une 24, 2014



Biologists also noted any other raptors or sensitive avian species seen during the eagle use surveys or during transit. Between March 10 and June 24, 2014, ten such species were noted (along with two unidentified raptors), as shown in Table 1.

Table 1. Raptors and Sensitive Avian Species Noted During Eagle Use Surveys

Common name	Scientific name	Groups	Individuals
American kestrel	Falco sparverius	6	8
Burrowing owl	Athene cunicularia	2	3
Common raven	Corvus corax	2	3
Ferruginous hawk	Buteo regalis	1	1
Northern harrier	Circus cyaneus	1	1
Osprey	Pandion haliaetus	2	2
Peregrine falcon	Falco peregrinus	1	1
Prairie falcon	Falco mexicanus	4	5
Red-tailed hawk	Buteo jamaicensis	75	105
Swainson's hawk	Buteo swainsoni	1	1
Unidentified raptor	n/a	2	2

As Table 1 shows, very few raptors or other sensitive avian species were noted during the 219 hours of surveys that occurred in this time period. With the exception of red-tailed hawks (105 individuals in 75 groups), these species were not observed frequently, with most being documented only once or twice. Three special-status species were noted: the burrowing owl (3 individuals in 2 groups; state species of special concern [SSC]), northern harrier (1 individual; SSC), and Swainson's hawk (1 individual; state threatened). No other state or federal listed species were noted during the eagle use surveys.

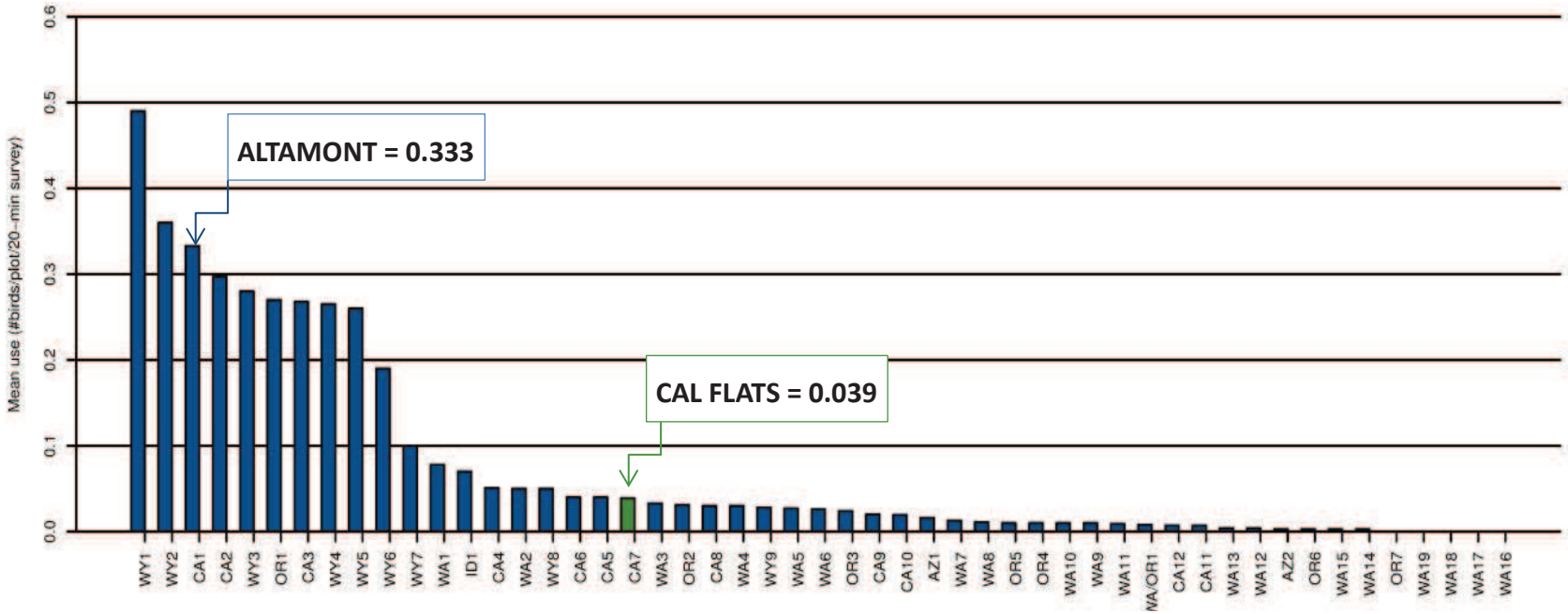
4.0 DISCUSSION CONCLUSIONS

The observed flight paths shown on Figures 1 through 3 indicate golden eagles are clearly using the general Project area (while bald eagles were observed in Cholame Valley, they were not seen during surveys of the Project site). To compare the level of golden eagle use observed to date at the California Flats site to that of other projects in the western U.S., the eagle obs/hr use rate was examined for those eagles that were observed within 800 m of the survey points per 20 minutes of observation (whereas the use rates discussed in Section 5.4.2 include all eagle observations out to any distance where they are identifiable, and are shown per one hour of observation). This was done to provide a similar basis for comparison, since most publicly available eagle use information is limited to 800-m radius survey plots for 20 minute survey periods. Figure 5 shows that the mean eagle use rate for California Flats (0.039 obs/20-min) is within the lower range of mean use rates compared to other Projects; it is lower than the use found at six other sites in California, and higher than five California sites.

As discussed above, it does not appear that golden eagles are relying relatively more on the Project site for foraging than on any of the surrounding landscape; in fact two of the highest use points are located more than 3 miles from the proposed solar arrays and eagles have not been observed using large portions of the Project site.

Once the surveys are completed, the eagle use analysis and discussion will be updated and a final report will be produced.

Figure . Comparison of Golden Eagle Use (Obs 20-min Survey 800 m) between California Flats and Other Projects in the Western U.S.



Letter 16

COMMENTER: Koryn Kendall, Manager, Project Development, First Solar, Inc.

DATE: September 22, 2014

Response 16.1

The commenter references several enclosed materials, including a comment letter on the DEIR and three attachments. Refer to responses 16.3 through 16.195 for responses to these referenced materials.

Response 16.2

The commenter explains that they are the applicant for the proposed project and provides a summary of the materials provided in their comment letter package. The comment is noted. Refer to responses 16.3 through 16.195 for responses to these referenced materials.

Response 16.3

The commenter notes that the locations of the PG&E switching station and proposed northern substation have been revised. The overall size of both facilities would remain the same; only the location within the solar development area would change. The commenter claims that the proposed changes would not result in any additional adverse environmental effects, cause an increase in severity of an identified impact, or result in a substantial change to the project that would deprive the public meaningful opportunity to comment on the project or a significant environmental effect.

In accordance with these applicant-proposed changes, Figures 2-4a, 2-4e and 2-4f have been revised and replaced with the figures provided following Table 1 in their comment letter. Refer to Section 4.0, *Amendments to the EIR,* for these revised figures.

Because the PG&E switching station and northern substation would only be relocated approximately 1,300 feet and 2,400 feet, respectively, the descriptions of both features contained in Section 2.5.1 (Energy-Related Infrastructure) in Section 2.0, *Project Description,* do not require revision.

As stated on page 2-14 in Section 2.0, *Project Description,* "The precise configuration of the panel arrays within the 2,120-acre solar development area (SDA) may vary to avoid environmental constraints identified over the course of environmental review. For the purpose of this analysis, environmental impacts are assessed for the entire project site, as shown in Figure 2-4a." Because the new proposed locations for the PG&E switching station and northern substation are still located within the SDA, impacts associated with their placement have already been assessed in the DEIR. Therefore, the proposed changes would not result in any additional environmental effects or cause an increase in severity of an identified effect. The commenter additionally claims that the new locations would completely avoid impacts to California macrophylia and significantly reduce the extent of impacts to Navarretia. A review of the revised site plan and

Figures 7a, 8, and 9 in Appendix E.6 to the DEIR indicates that this is an accurate statement; however, because impacts to special status plant species are analyzed at the population level, rather than the species-specific level, no revisions to the DEIR are necessary.

Response 16.4

The commenter proposes to add two new applicant proposed measures (APMs) to the project description. These APMs have been added to Table 2-4 in Section 2.0, *Project Description,* as follows:

Table 2-4
Applicant Proposed Measures

APM Number	Proposed Measure
APM-10	The project proponent will prepare a Bird and Bat Conservation Strategy (BBCS) to identify conservation measures to minimize avian impacts, describe the avian use of the site, and describe a post-construction avian mortality monitoring program. This Avian Mortality Monitoring Program (AMMP) will monitor operational effects of the project on avian species. The AMMP will include the following elements: • Surveys of the solar arrays for bird mortality during the initial operations and maintenance phase; • Protocols for data collection, documentation, and reporting to the County; • Protocols to assess searcher efficiency and carcass removal; and • Minimum credentials of monitoring personnel and/or appropriate training.
APM-11	The applicant shall prepare a design level drainage analysis that will ensure that project facilities are not placed in areas where they would be subject to significant flood or erosion hazards or affect the existing capacity of affected watercourses. The design level drainage study will incorporate the following flood-risk and erosion avoidance measures contained in the Preliminary Drainage Report (RBF 2013) and in the Preliminary Drainage Analysis Addendum (Wallace Group 2014): • No modules shall be placed in areas where the product of the flow depth and flow velocity is greater than 9 square feet per second (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24-hour storm event; • No transformers, substations, or inverters shall be placed in areas where the flow depth exceeds 2 feet (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24-hour storm event; • Transformers, substations, or inverters constructed in areas where any inundation is expected to occur should be placed a minimum of 1 foot above the 100- year water surface elevation; • Solar modules constructed in areas where any inundation is expected to occur should be placed a minimum of 6-inches above the 100- year water surface elevation; and • Tracker actuator motors constructed in areas where any inundation is expected to occur should be placed a minimum of 6-inches above the 100- year water surface elevation. In addition, the design level drainage analysis shall contain measures to ensure that any project-related improvements within 50 feet from the top of bank of on-site drainages will not result in significant erosion related hazards and that these improvements will not affect the existing capacity of the affected watercourse, as required by Chapter 16.16 of the Monterey County Code. Prior to the issuance of grading permits, the applicant shall submit the design-level drainage analysis to the Monterey County Water Resources Agency for review and approval.

Response 16.5

The commenter states the opinion that the summary of Impact AES-1 in Table 4.1-1 in Section 4.1, *Aesthetics,* should be revised to indicate that the impact should be Class III, *less than significant,* rather than Class II, *significant but mitigable.* The analysis for Impact AES-1, as presented on pages 4.1-21 to 4.1-22, does not support this conclusion. Mitigation Measure AES-1 (Temporary Fencing at SR 41 Staging Areas) is required to reduce the impact to a less than significant level. Therefore, no revisions to the DEIR text will be made.

Response 16.6

The commenter states the opinion that the summary of Impact AES-2 in Table 4.1-1 in Section 4.1, *Aesthetics,* should be revised to indicate that the impact should be Class III, *less than significant,* rather than Class II, *significant but mitigable.* The analysis for Impact AES-3, as presented on pages 4.1-22 to 4.1-24, does not support this conclusion. Mitigation Measure AES-1 (Temporary Fencing at SR 41 Staging Areas) is required to reduce the impact to a less than significant level. Therefore, no revisions to the DEIR text will be made.

Response 16.7

The commenter states the opinion that the requirement in Mitigation Measure AES-3 (Minimize Construction Lighting) that "The [Construction Lighting] Plan shall include the location, type, and wattage of all external light fixtures and include catalog sheets for each fixture" should be removed. This information is considered critical to the County's review and approval process of the Construction Lighting Plan, and will therefore remain part of the mitigation requirement.

Response 16.8

The commenter states that the proposed utility corridor would likely not be visible from Cholame Valley Road and provides suggested language to clarify this point in Section 4.1.2(c) (Proposed Project Viewshed) of the DEIR. The recommended text has not been inserted as provided by the commenter, however the following clarifying revisions have been made to the first paragraph of Section 4.1.2(c):

> The proposed project site is not visible from any roadways, with the exception of one location on Turkey Flat Road where the public road terminates into the project site. The proposed utility corridor area is also within the viewshed of ~~and~~ Cholame Valley Road~~,~~ ~~which, due to the surrounding topography, generally have very limited views of the site, despite its size~~; however, due to the distance of the utility corridor from this roadway and intervening topography, it is unlikely that this project component would be visible from this roadway.

Response 16.9

The commenter points out that the DEIR does not acknowledge that the project includes APMs to address the potential environmental effects associated with project decommissioning. In

accordance with the commenter's suggestion, the following text has been added to the second to last paragraph in Section 4.1.3(a) (Methodology and Significance Thresholds):

> As stated in Section 2.0, *Project Description*, project decommissioning, which would occur in 30 years or more, could potentially result in other environmental effects, depending on site-specific environmental conditions and the specific actions that would occur as part of decommissioning. The County may conduct additional CEQA review to ensure compliance with future aesthetic requirements during decommissioning. As described in Section 2.0, *Project Description*, the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

Response 16.10

The commenter argues that the proposed utility corridor would likely not be visible from Cholame Valley Road. As with response 16.8, the commenter-provided language to account for this opinion has not been added. However, the first paragraph under Impact AES-1 in Section 4.1, *Aesthetics,* has been revised as follows:

> As noted in Section 4.1.2(c) (Proposed Project Viewshed), the project site is visible from Turkey Flat Road~~, Cholame Valley Road,~~ and SR 41. The proposed utility corridor area is also within the viewshed of Cholame Valley Road; however, due to the distance of the utility corridor from this roadway and intervening topography, it is unlikely that this project component would be visible from this roadway.

Response 16.11

The commenter argues that Impact AES-1 in Section 4.1, *Aesthetics,* should be considered Class III, *less than significant,* rather than Class II, *significant but mitigable.* The analysis in the DEIR does not support this conclusion. Mitigation Measure AES-1 (Temporary Fencing at SR 41 Staging Areas) is required to reduce the impact to a less than significant level. Therefore, no revisions to the DEIR text will be made.

Response 16.12

The commenter argues that Impact AES-2 in Section 4.1, *Aesthetics,* should be considered Class III, *less than significant,* rather than Class II, *significant but mitigable.* The analysis in the DEIR does not support this conclusion. Mitigation Measure AES-1 (Temporary Fencing at SR 41 Staging Areas) is required to reduce the impact to a less than significant level. Therefore, no revisions to the DEIR text will be made.

Response 16.13

The commenter argues that the proposed utility corridor would likely not be visible from Cholame Valley Road. This is generally consistent with the findings of the DEIR. However, to

clarify, the fourth paragraph of the *KOP Analysis* discussion in Impact AES-2in Section 4.1, *Aesthetics,* has been revised as follows:

> KOP 4 represents a location from which the proposed utility corridor infrastructure could be ~~somewhat~~ visible from a public viewing location, although given the distance between the viewing location and proposed improvements it is unlikely that infrastructure improvements would be visible from this location. Figure 4.1-5 depicts pre- and post-project conditions as viewed from KOP 4. The proposed three-mile utility corridor is not included in the post-project visual simulation. The proposed utility corridor would generally be located to the southeast of the existing 230 kV Morro Bay Gates overhead transmission line. Because of the current visibility of the transmission line, this area is not a pristine view. The proposed overhead utilities in this corridor would be located along a similar path as the existing Morro Bay Gates infrastructure. Therefore, the proposed utility corridor would not substantially degrade this viewshed and would be generally consistent with the existing visual character of the area. Accordingly, ~~and~~ the visual impacts related to the proposed utility corridor are less than significant.

Response 16.14

The commenter notes that additional nighttime lighting may be needed on the site, depending on the nature of construction-related activities, although the extent of such lighting would be limited in duration. The DEIR states that "Temporary construction lighting would be limited to the 38-acre construction laydown area, an approximately 4 acre- temporary construction and material staging area northwest of SR 41, a 0.5-acre temporary construction staging area south of SR 41, and the project entrance." The following clarifying statement has been added to the second paragraph under Impact AES-3 in Section 4.1, *Aesthetics*:

> Temporary construction lighting would be limited to the 38-acre construction laydown area, an approximately 4 acre- temporary construction and material staging area northwest of SR 41, a 0.5-acre temporary construction staging area south of SR 41, and the project entrance. Additional temporary nighttime lighting may be needed, on an as-needed basis, elsewhere on the site depending on the nature of construction-related activities. This lighting would be used on an as needed basis to accommodate nighttime deliveries and/or for security purposes.

It should be noted that this additional lighting would not increase the severity of Impact AES-3, which states that "the proposed project would introduce new sources of lighting that could adversely affect the existing visual resources in the area. Impacts would be Class II, *significant but mitigable."* Mitigation Measure AES-3 (Minimize Construction Lighting) would still apply, including to additional lighting outside of the previously identified areas.

Response 16.15

The commenter argues that the requirement in Mitigation Measure AES-3 (Minimize Construction Lighting) that "The [Construction Lighting] Plan shall include the location, type, and wattage of all external light fixtures and include catalog sheets for each fixture" should be

removed. This information is considered critical to the County's review and approval process of the Construction Lighting Plan, and will therefore remain part of the mitigation requirement.

Response 16.16

The commenter points out that the project is considered an allowable use with a permit under the County Zoning Ordinance. Accordingly, the following text has been added to the bottom of page 4.2-5 in Section 4.2, *Agricultural Resources*:

> *Monterey County Zoning Ordinance – Title 21.* According to Title 21 of the Monterey County Code, the project site, including the utility corridor and the northern half of the existing private access road, are zoned Permanent Grazing/160 (PG/160 and Farmland/160 (F/160). The southern half of the access road, within San Luis Obispo County, is designated Agriculture. Chapter 21.34 (Regulations for Permanent Grazing Zoning Districts or "PG" Districts) of the Monterey County Code is intended to preserve, protect, and enhance those productive exclusive grazing lands in the County of Monterey. Projects considered "public and quasi-public uses, including public utilities," may be developed with a use permit under the site's existing zoning [Monterey County Zoning Ordinance §21.30.050(b) and §21.34.050(d)].

Response 16.17

The commenter points out that the DEIR does not acknowledge that the project includes APMs to address the potential environmental effects associated with project decommissioning. In accordance with the commenter's suggestion, the following sentence has been added to the last paragraph of Section 4.2.3(a) (Methodology and Significance Thresholds) in Section 4.2, *Agricultural Resources*:

> …this EIR evaluates decommissioning based on current standard decommissioning practices, which include dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements, and site restoration. As described in Section 2.0, *Project Description*, the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time. The County may conduct additional CEQA review to ensure adequate protection of agricultural resources during decommissioning.

Response 16.18

The commenter requests a clarification in the text regarding temporary water facilities proposed in the utility corridor. Accordingly, the following clarifying revision has been made in the second paragraph of Impact AG-1 in Section 4.2, *Agricultural Resources*:

> Development activities associated with the proposed project that could affect "Prime Farmland" or "Unique Farmland" would be limited to the installation of temporary water infrastructure (including pumping facilities and ~~an above-ground~~ water pipeline, portions of which would be above and below ground) associated with transporting

water from existing Ag Well #2 (as shown in Figure 2-4s in Section 2.0, *Project Description*) to the project site.

It should be noted that this text change is consistent with the project description, which states in the *Utility Corridor* discussion in Section 2.5.2 (Other Structures and Improvements) that the "approximately three-mile utility corridor would be used to locate an above and below-ground temporary water pipeline."

Response 16.19

The commenter requests revisions to clarify that project design features are formalized as applicant proposed measures (or APMs). Accordingly, the following revisions have been made to the last paragraph under Impact AG-3 in Section 4.2, *Agricultural Resources*:

> The proposed project contains design features (i.e., applicant proposed measures or APMs) intended to minimize the potential temporary impacts associated with project construction and thereby limit potential secondary effects to adjacent agricultural uses. Applicable measures include the implementation of Best Management Practices (BMPs) during project construction, including providing ongoing coordination with the adjacent property owners concerning construction activities (APM-2), installing mud shakers and/or rumble strips to limit the transport of invasive species (APM-3), implementing applicable SWPPP and erosion control measures (APM-7), implementing a dust control plan to minimize fugitive dust emissions (APM-4), developing a hazardous materials response plan (APM-6), and implementing a post-construction restoration and revegetation plan (APM-5). These measures would minimize the extent of potential indirect impacts to adjacent agricultural uses.

Response 16.20

The commenter requests revisions to acknowledge the use of proposed APMs. The following clarifying revision has been made to the mitigation measures discussion under Impact AG-3 in Section 4.2, *Agricultural Resources*:

> Mitigation Measures. No mitigation measures are required. Although the impact would be less than significant without mitigation, the implementation of proposed APMs, as well as measures AQ-2a (Dust Control measures), BIO-2(b) and BIO-2(c), and HYD-2a through HYD-2c would further minimize impacts related to fugitive dust, invasive weeds, and accidental releases of contaminants that could degrade water quality.

Response 16.21

The commenter notes that the residual impacts under Impact AQ-2 indicate that the use of Tier 3 engines was included in the mitigation calculations, and suggests that the use of Tier 3 engines be specifically included in the required mitigation. As discussed in detail in response 4.2, Mitigation Measure AQ-2(c) has been added to require the project to use Tier 3 or equivalent construction equipment.

Response 16.22

The commenter recommends revising the third bullet of Mitigation Measure AQ-2(a) to provide additional flexibility to move water for dust control to areas where earth-disturbing work is being performed. This mitigation measure has been revised as follows:

- In order to avoid long distances and associated travel time between source wells and the work area, the project applicant shall employ the use of on-site temporary pipelines, stand tanks or other measures to reduce water truck travel on unstable, disturbed surfaces ~~to move water to the current work area and thereby reduce fill times for water trucks~~;

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 16.23

The commenter recommends revising the eighth bullet of Mitigation Measure AQ-2(a) to focus on controlling dust generated when heavy construction equipment travels on roads that have not been stabilized, rather than all dirt roads. The commenter states that dirt roads that have been stabilized as part of project construction would not be a source of dust emissions and therefore would not require water trucks to mitigate dust emissions. In order to ensure that dust is controlled to the extent feasible, while limiting unnecessary water use during construction, this mitigation measure has been revised as follows:

- Heavy construction equipment traveling on unstabilized ~~dirt~~ roads on the project site shall be preceded by a water truck to dampen roadways and reduce dust from transportation along such ~~on-site dirt~~ roads;

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 16.24

The commenter recommends revising the tenth bullet of Mitigation Measure AQ-2(a) to provide greater clarity as to when and where the Restoration and Revegetation Plan should be implemented. The commenter also states that schedules for conducting revegetation for habitat mitigation as compared to revegetation for dust mitigation may conflict, but notes that the Restoration and Revegetation Plan would contain the directions for when and where implementation would occur (refer to Mitigation Measure B-2[b] in Section 4.4, *Biological Resources*, of the DEIR). As stated in Mitigation Measure AQ-2(a) in Section 4.3, *Air Quality,* "Permanent dust control measures identified in the proposed Habitat Restoration and Revegetation Plan [refer to Biology Mitigation Measure B-2(b)] shall be implemented as soon as possible following completion of any soil disturbing activities."

Response 16.25

The commenter states that Mitigation Measure AQ-6(a) is overly protective, based on the claim that Monterey County is not a high-risk area for Valley Fever, and that other recent EIRs prepared by the County do not identify Valley Fever as a potential impact from dust generated during construction activity. The commenter suggests revisions to components of the Valley Fever Management Plan required by Mitigation Measure AQ-6(a) based on controls that have been found effective at other solar facilities under construction in endemic areas of the State, including the Topaz Solar Project in San Luis Obispo County.

As noted in the DEIR, Monterey County is within an area where Valley Fever is suspected endemic by the Centers for Disease Control and Prevention (CDC, 2013), and cases of Valley Fever have recently been reported by construction personnel working at two solar energy facilities in the Carrizo Plains, San Luis Obispo County.

Mitigation Measure AQ-6(a) has been revised to reflect some – but not all – of the commenter's recommended changes. The revisions to Mitigation Measure AQ-6(a) consist of clarifications of roles and responsibilities with regard to Valley Fever prevention measures, but do not reduce or eliminate any provisions intended to prevent Valley Fever. Mitigation Measure AQ-6(a) has been revised as follows:

AQ-6(a) **Valley Fever Management Plan**. The project applicant shall identify and retain a licensed occupational medicine physician (M.D.) specializing in pulmonary epidemiology, subject to approval by the ~~consult with~~ the Monterey County Health Department (Health Officer), ~~the MBUAPCD, and the California Occupational Safety and Health Administration (Cal/OSHA) Compliance Program~~ to assist with the ~~to~~ development and implementation of a Valley Fever Management Plan (VFMP). The VFMP shall ~~that~~ includes ~~s~~ a job hazard analysis [in compliance with California Occupational Safety and Health Administration (Cal/OSHA) regulations] for any worker that will be exposed to dust. The VFMP shall further include specific measures to reduce the potential for exposure to Valley Fever. The project applicant and the Monterey County Health Department may consult with MBUAPCD and the Cal/OSHA Compliance Program as needed in identifying a specialist M.D. and in developing the VFMP.

Prior to issuance of grading permits, the applicant shall submit the ~~Valley Fever Management Plan~~ VFMP to the Monterey County ~~RMA – Planning~~ Health Department for review and approval. The ~~Valley Fever Management Plan~~ VFMP shall ~~include a program to evaluate the potential for exposure to Valley Fever from construction activities and to~~ identify appropriate dust management and safety procedures that shall be implemented, as needed, to minimize ~~personnel~~ worker and public exposure to ~~potential Valley Fever-containing~~ dust potentially containing the *Coccidioides* spore. Measures in the ~~Valley~~

~~Fever Management Plan~~ VFMP~~, which shall be implemented as applicable~~ may include the following:

- Provide HEP-filtered air-conditioned enclosed cabs on heavy equipment. Train workers on proper use of cabs, such as turning on air conditioning prior to using the equipment.
- Provide communication methods, such as two-way radios, for use in enclosed cabs.
- ~~Provide National Institute for Occupational Safety and Health (NIOSH)-approved respirators for workers.~~
- ~~Conduct a job hazard analysis in compliance with Cal/OSHA regulations for any worker that will be exposed to dust.~~
- Require National Institute for Occupational Safety and Health (NIOSH)-approved-half-face respirators equipped with N-100 or P-100 filters to be used during ~~digging~~ any worker collocation with surface disturbance activities if determined to be ~~warranted after conducting a~~ needed based upon the applicable job hazard analysis. ~~Require employees to wear respirators when working near earth-moving machinery if determined to be warranted after conducting a job hazard analysis.~~
- ~~Cause employees to~~ Workers that are required to use respirators as determined by a job hazard analysis shall be medically evaluated, fit-tested, and properly trained on the use of the respirators, and ~~implement~~ a ~~full~~ respiratory protection program shall be implemented in accordance with the applicable Cal/OSHA Respiratory Protection Standard (8 CCR 5144).
- Provide separate, clean eating areas with hand-washing facilities.
- Thoroughly clean construction tools, equipment, and vehicles with water before they are moved offsite to other work locations.
- ~~Wheel-washing facilities with water-recycling systems shall be provided at all site egress points. Vehicles leaving the site on a daily basis shall utilize wheel-washing facilities in order to reduce dust migration off the project site.~~ Equipment inspection and washing stations shall be established and manned at each construction equipment access/egress point. Spot examination of construction equipment for water washing via portable equipment in accordance with SWPPP BMPs shall be performed in order to prevent track-out of transport of material potentially carrying the *Coccidioides* spore.
- Suitable coveralls and change facilities shall be made available to all on-site workers. ~~On-site workers~~ Workers performing work in areas where fresh ground disturbance presents a risk of exposure to the Coccicioides spore shall be required to change clothes after work every day before leaving the work site, to prevent distribution of *Coccidioides* to non-endemic areas, as determined to be needed based upon the applicable job hazard analysis. ~~As an alternative, disposable Tyvek® or equivalent work suits and work boots for use on-site shall be provided for workers.~~

- Establish sub-contract language clearly indicating that all subcontractors are obligated to comply fully with the meaning and intent of Title 8 California Code of Regulations Sections 5141 and 5144, subject to audit and contract enforcement by the applicant.
- Establish and execute auditing protocols to ensure subcontractor compliance with all provisions of the VFMP and provide monthly audit summary data, potential deviations noted and corrective actions implemented to the Monterey County Department of Health and County of Monterey RMA-Planning Department.
- ~~Work with a medical professional~~ Each primary employer of contracted workers shall be required by the terms and conditions of their contract for services to retain and consult with an Occupational Medicine Professional, licensed by either the Medical Board of California or the Osteopathic Board of California to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever. Reporting of symptoms of Valley Fever and diagnosed cases of Valley Fever must occur consistent with ~~Cal/OSHA~~ County and State requirements.

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 16.26

The commenter requests that, for the reasons cited in comment 16.25, Mitigation Measure AQ-6(b) be revised for clarification. Mitigation Measure AQ-6(b) has been revised as follows (refer also to response 4.6):

AQ-6(b) Additional Valley Fever Dust Suppression Measures. If peak daily wind speeds exceed 15 mph or peak daily temperatures exceed 95 degrees Fahrenheit for three consecutive days, additional dust suppression measures (such as additional water or the application of additional soil stabilizer) shall be implemented prior to and immediately following ground disturbing activities. The additional dust suppression shall continue until winds are 10 mph or lower and outdoor air temperatures are below a peak daily temperature of 90 degrees for at least two consecutive days. The additional dust suppression measures shall be incorporated into the Final Construction Management Plan. The Final Construction Management Plan shall be submitted to the County of Monterey RMA-Planning Department for review and approval prior to ~~the issuance of any grading permit~~ commencing ground disturbing activities (e.g., grading, filling, trenching).

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 16.27

The commenter requests that, for the reasons cited in comment 16.25, Mitigation Measure AQ-6(d) be revised for clarification. Mitigation Measure AQ-6(d) has been revised as follows (refer also to response 7.6):

AQ-6(d) **Valley Fever Worker Training Program and Safety Measures**. Prior to any project grading activity, the primary project construction contractor shall prepare and implement a worker training program that describes potential health hazards associated with Valley Fever, common symptoms, proper safety procedures to minimize health hazards, and notification procedures if suspected work-related symptoms are identified during construction, including the fact that certain ethnic groups and immune-compromised persons are at greater risk of becoming ill with Valley Fever. The objective of the training shall be to ensure the workers are aware of the danger associated with Valley Fever. The worker training program shall be included in the standard in-person training for project workers, and shall identify safety measures to be implemented by construction contractors during construction, including all safety measures included in the Valley Fever Management Plan prepared pursuant to Mitigation Measure AQ-6(a). Prior to initiating any grading, the project applicant shall provide the Monterey County RMA – Planning Department and the ~~County of~~ Monterey ~~Environmental~~ County Health ~~Bureau~~ Department with copies of all educational training material for review and approval. No later than 30 days after any new employee or employees begin work, the project applicant shall submit evidence to the Monterey County RMA – Planning Department that each employee has acknowledged receipt of the training (e.g., sign-in sheets with a statement verifying receipt and understanding of the training).

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 16.28

The commenter requests that, for the reasons cited in comment 16.25, Mitigation Measure AQ-6(e) be revised for clarification. Mitigation Measure AQ-6(e) has been revised as follows:

AQ-6(e) **Valley Fever Information Handout**. The applicant shall work with a medical professional, in consultation with the Monterey County Health Department, to develop an educational handout for on-site workers and surrounding residents within three miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing

> these symptoms, and where testing for ~~exposure~~ infection is available. Prior to construction permit issuance, this handout shall have been created by the applicant and reviewed by the County. No less than 30 days prior to any surface disturbance (e.g., grading, filling, trenching) work commencing, this handout shall be mailed to all existing residences within three miles of the project boundaries.

The above revisions have also been made to Table 4.3-1 (Impact and Mitigation Summary: Air Quality) and Table ES-1 in the *Executive Summary.*

Response 16.29

The commenter suggests the addition of language to Section 4.4.3(a) (Methodology and Significance Thresholds) of Section 4.4, *Air Quality,* to indicate that the project includes APM-1 to address the potential environmental effects associated with project decommissioning. The discussion in question is intended to present the methodology for the analysis of impacts from decommissioning. The applicant-suggested language would more appropriately be located in the impact analysis. APM-1 is already described in the discussion for Impact AQ-7, which describes decommissioning. Therefore no revisions are necessary to acknowledge this APM.

Response 16.30

The commenter states that Impact AQ-2 should include a reference to the APMs the applicant has proposed to reduce temporary construction emissions. The *Total Short-Term Construction* Emissions discussion under Impact AQ-2 in Section 4.3, *Air Quality,* has been modified to discuss APM-2 through APM-5, as follows:

> *Total Short-Term Construction Emissions*. As described above and shown in Table 4.3-5, temporary emissions during construction would exceed MBUAPCD thresholds for PM_{10} and NO_X. As described in Section 2.0, *Project Description*, the project includes APM-2 through APM-5, which would reduce temporary emissions associated with construction of the proposed project…

Response 16.31

The commenter states that Impact AQ-5 should be clarified to identify the nature of potential odor impacts to adjacent sensitive receptors. The third paragraph under Impact AQ-5 in Section 4.3, *Air Quality,* has been revised to more clearly explain why potential odor impacts during construction activity would be less than significant, as follows:

> Construction-related odors would be short-term, and would cease upon completion. There are two residences located within 1,000 feet of the project site, and due to the proximity of these receptors to construction-related activities and overall size of the project site, these residences would only be exposed to construction activity for a relatively short portion of the total construction schedule. Therefore, short-term fueling odors during construction would not impact a substantial number of people. During construction activities, only short-term, temporary odors from vehicle exhaust and construction equipment engines

would occur. The project does not include any known sources of objectionable odors for the long-term operations phase.

Response 16.32

The commenter states that the three cases of Valley Fever that occurred at the Topaz Solar Farm project described in the DEIR were determined to be non-occupational, and requests that the DEIR be revised to reflect this. The commenter does not provide evidence for this statement. In addition, the suggested revision would not result in a change to the environmental analysis, impacts, or mitigation. Therefore, no changes have been made to the DEIR in response to this comment.

Response 16.33

The commenter requests that the DEIR be revised to include references to applicant-proposed measures (APMs) that would reduce the potential for environmental impacts associated with Valley Fever. The last paragraph of Impact AQ-6 in Section 4.3, *Air Quality,* has been revised to reflect this information, as follows:

> The project applicant and all construction contractors operating on the site would be required implement all of California Title 8 safety and health regulations necessary to protect employees. As described in Section 2.0, *Project Description*, the project includes APM-3 through APM-5, which would reduce fugitive dust emissions associated with construction of the proposed project. Standard construction Best Management Practices (BMPs) to minimize fugitive dust emissions, as well as standard erosion control measures, would minimize potential hazards associated with the release of fungal spores and are consistent with the recommendations of the California Department of Public Health…

Response 16.34

The commenter notes that the DEIR states that decommissioning impacts could be significant due to impacts associated with criteria pollutant emissions, exposure of sensitive receptors to substantial pollutant concentrations, odors, and Valley Fever, and that this statement is inconsistent with the DEIR's conclusions that Impact AQ-4 and Impact AQ-5 are less than significant without mitigation, and the conclusion that Impact AQ-6 is less than significant with mitigation. The second paragraph under Impact AQ-7 in Section 4.3, *Air Quality,* has been revised to clarify that exposure of sensitive receptors to substantial pollutant concentrations, odors, and exposure of sensitive receptors to potential health hazards associated with the Coccidioides fungus would not result in potential decommissioning-related impacts to regional air quality, as follows:

> Before the proposed project site is decommissioned, pursuant to APM-1, the project proponent would prepare a decommissioning plan that identifies the specific plan and process that would be implemented during decommissioning, as well as the site-specific environmental, regulatory, and technological conditions at the time of decommissioning (See APM-1 in Table 2-4). As stated in Section 2, *Project Description*,~~,~~ at least 90 days prior to initiating any decommissioning activities, the project proponent shall submit design-level information (e.g., grading plans, demolition plans, etc.) to the County of Monterey for

review. All design-level information shall be consistent with then-current County of Monterey planning and building requirements that may be necessary for the issuance of any grading, demolition, use or other necessary permit from the County of Monterey. The County may conduct additional CEQA review to ensure adequate prevention and/or mitigation of air quality impacts during decommissioning. However, due the potential for decommissioning-related impacts to regional air quality, including temporary air pollutant emissions (as discussed in Impact AQ-2)~~, exposure of sensitive receptors to substantial pollutant concentrations (as discussed in Impact AQ-4), odors (as discussed in Impact AQ-5),~~ and unmitigated exposure of sensitive receptors to potential health hazards associated with the Coccidioides fungus (as discussed in Impact AQ-6), this impact would be potentially significant.

Response 16.35

The commenter notes a four-acre discrepancy in the total acreage of the BSA (5,033 acres) and the sum of acreages of the three study areas (Solar Generating Facility Study Area [SGFASA], Utility Corridor Study Area [UCSA] and Access Road Study Area [ARSA]; 5,037 acres), and notes that this is a result of overlap of the UCSA and SGFASA. To clarify this discrepancy, the first paragraph of Section 4.4.2 (Setting) has been revised as follows:

…and an approximately 155-acre study area around the Utility Corridor (of which four acres overlap with the SGFASA).

Response 16.36

The commenter remarks on the discussion of California condor in Section 4.4.3(b) (Project Impacts and Mitigation Measures) and argues that the last sentence of first paragraph incorrectly suggests that the construction and operation of the project may increase the amount of carrion from grazing animals or other wildlife that may occur on the project site, which could attract condors to the site, and concludes that to the contrary, there is no basis to conclude that construction and operation of the project would increase the amount of carrion on the project site over pre-existing baseline levels. The commenter requests revisions to state that the project would not result in increased levels of carrion. The sentence in question reads as follows: "However, carrion from grazing animals or other wildlife that may occur on the project site during the construction or operation phases of the project could attract condor to the site." This statement does not suggest that the project may increase the amount of carrion on the project site, only noting that whatever carrion may occur on the site could attract condors. The EIR does not specifically state that project construction or operation would increase the level of carrion on the project site.

Response 16.37

The commenter notes that in the first sentence in Section 4.4.3(b) (Project Impacts and Mitigation Measures) under *Direct Impacts to California Condor* the term "would" should be replaced with "could." The comment is noted and the discussion under *Direct Impacts to California Condor* in Impact B-1 has been revised as follows:

Direct Impacts to California Condor. Direct impacts ~~w~~could include mortality or injury of California condors, and loss of foraging habitat.

Response 16.38

The commenter remarks on the *Indirect Impacts to California Condors* discussion under Impact B-1 and notes that the first sentence contains unsupported statements referencing a long-term decline in condor population viability. These statements are in fact contradicted by the analysis later in the same paragraph (and by prior analysis in the discussion of condors), which concludes that the project would result in no indirect impacts to California condors. The referenced discussion has therefore been revised as follows:

Indirect Impacts to California Condor. Indirect impacts could include the long-term decline in population viability for California condors~~. Since~~however, no roosting or nesting habitat will be affected, and since the project site comprises only a very small area of foraging habitat relative to what is available in the region, no indirect impacts to California condors are expected.

Response 16.39

The commenter remarks on the *Direct Impacts to Golden Eagles* discussion under Impact B-1 and suggests that the statement that the project could disrupt golden eagle nesting behaviors is not supported by the facts because the site does not support nesting habitat or nesting golden eagles. Based on the presence of the 12 active golden eagle nests recorded within five miles of the site (one within 0.4 miles) and recommended avoidance buffers for impacts to nesting golden eagles that range up to three miles (Richardson and Miller 1997; Pagel et al 2010), project effects on nesting golden eagles represent a potential impact. However, because the project site itself does not include suitable nesting habitat, there would be no loss of nesting habitat. Therefore, the referenced discussion has been revised as follows:

Direct Impacts to Golden Eagle. Direct impacts to golden eagles could include mortality or injury of individuals, as well as disruption of foraging and nesting behaviors and loss of foraging ~~and nesting~~ habitat,…

Response 16.40

The commenter suggests that the conclusion under *Indirect Impacts to California Tiger Salamander* in Impact B-1 regarding indirect impacts is not supported, and recommends striking this impact entirely. The potential for long-term decline in population viability was included because there is no information on the long-term (20 years) effects of solar panels and ongoing operations and maintenance activity on CTS habitat within a project site. Therefore it is impossible to exclude the possibility that CTS that may occur within the identified suitable upland CTS habitat on the project site, and therefore could experience these indirect impacts in the future.

Response 16.41

The commenter remarks that the discussion of permanent impacts to CRLF within the SDAs (Impact B-1, *California Red-legged Frog*, fourth paragraph) is unclear on how habitat value would

remain after construction, and thus requires clarification. The fourth paragraph under *California Red-legged Frog* in Impact B-1 has been revised for clarification as follows:

> Any permanent or temporary areas of impact within these polygons were identified, and acreages were calculated as impacts to California red-legged frog upland dispersal habitat. ~~However, those areas of the SDAs not permanently impacted (e.g., grassland habitat beneath the solar arrays) will be available for CRLF use after construction.~~ Although considered permanently impacted for the purposes of analysis mitigation, grassland habitat beneath the solar arrays is expected to be available for CRLF use after construction.

Response 16.42

The commenter suggests that the DEIR conclusion regarding indirect impacts to California red-legged frog is not supported and recommends revising to include indirect impacts that include changes in water quality, sedimentation of aquatic habitats, and changes in predation pressure and prey populations. The *Indirect Impacts to California Red-legged Frog* discussion under Impact B-1 has been revised as follows to address the specific factors that could result in a potential decline in CRLF population viability on the project site:

> *Indirect Impacts to California Red-Legged Frog.* Indirect impacts to CRLF could occur due to sedimentation of aquatic habitats or changes in water quality. Other indirect impacts may include changes to predation pressure or prey populations in upland dispersal habitat due to facility maintenance and management which may result in a potential for ~~include the~~ long-term decline in population viability within the project site over the life of the project.

Response 16.43

The commenter claims that the statement that CRLF breeding habitat would be degraded and lost is incorrect, because breeding habitat would not be affected. The comment is noted and the *Impact Significant for California Red-Legged Frog* discussion under Impact B-1 in the DEIR has been revised as follows:

> *Impact Significant for California Red-Legged Frog*. Because of the regional rarity of this species, potential increased mortality of CRLF and degradation and loss of their ~~breeding and~~ non-breeding aquatic habitats and upland dispersal habitats would be considered *Class II, significant but mitigable*.

Response 16.44

The commenter suggests that the DEIR conclusion regarding indirect impacts to western pond turtle is not supported and recommends revising to include indirect impacts that include changes in water quality, sedimentation of aquatic habitats, and changes in predation pressure and prey populations. The *Indirect Impacts to Western Pond Turtle* discussion under Impact B-1 has been revised as follows to address the specific factors that could result in a potential decline in western pond turtle population viability on the project site:

Indirect Impacts to Western Pond Turtle. Indirect Impacts to western pond turtles could occur due to sedimentation of aquatic habitats or changes in water quality. Other indirect impacts may include changes to predation pressure or prey populations in upland dispersal habitat due to facility maintenance and management which may result in a potential for ~~include~~ long-term decline in population viability within the project site over the life of the project.

Response 16.45

The commenter remarks that San Joaquin coachwhip and coast horned lizard can also occur within the utility corridor. The first paragraph of the *Western Spadefoot, San Joaquin Coachwhip, and Coast Horned Lizard* discussion under Impact B-1 has been revised for this clarification as follows:

Western Spadefoot, San Joaquin Coachwhip, and Coast Horned Lizard. San Joaquin coachwhip has been observed in the project impact area, and western spadefoot and coast horned lizard have the potential to occur within the Solar Generating Facility Area, ~~and~~ along the Access Road and within the utility corridor.

Response 16.46

The commenter remarks that the conclusion regarding indirect impact of a potential long-term decline in population viability on the project site for western spadefoot, San Joaquin coachwhip, and coast horned lizard cannot be supported, and should be revised to address increased predation, lighting, non-native ant species, disruption of wetland hydrology, and water quality issues. The specific potential indirect impacts noted by the commenter are reasonable and would potentially result in a long-term decline in population viability on the project site. Therefore, the *Indirect Impacts to Western Spadefoot, San Joaquin Coachwhip, and Coast horned lizard* discussion in Impact B-1 has been revised as follows

Indirect Impacts to Western Spadefoot, San Joaquin Coachwhip, and Coast horned lizard. Indirect impacts to western spadefoot, San Joaquin coachwhip and coast horned lizard could potentially occur due to increased predation pressure, facilitated by the installation of structures that can be used as raptor perches and lighting that illuminates nocturnal species. Human activities could result in the introduction of non-native ant species that displace native ant species, which are the primary prey of coast horned lizards. Indirect impacts on western spadefoot could occur if surface flows are disrupted such that they affect wetland hydrology or ponding. Erosion and sedimentation from construction could affect the water quality of western spadefoot breeding pools. As a result there may be ~~include~~ a potential long-term decline in population viability of these species within the project site over the life of the project. ~~Increased predatory pressure due to the availability of addition raptor perches would also be an indirect impact to these species.~~

Response 16.47

The commenter states that the indirect impact to the long-term decline in population viability of vernal pool branchiopods is not supported. The commenter agrees with other indirect impacts

including changes in hydrology and water quality. The specific indirect impacts resulting from changes to hydrology and water quality could potentially result in long-term decline in population viability on the project site. Therefore, no changes to the DEIR have been made.

Response 16.48

The commenter contends that the requirement outlined in Mitigation Measure B-1(a) that require conservation lands contain verified extant populations is in conflict with other conditions of this measure and is not required by USFWS and CDFW guidance. The DEIR as written does not include conflicting conditions, but rather provides minimum standards and alternative methods for reaching those minimum standards to allow flexibility to conservation easement managers for the appropriate management and or enhancement of available mitigation lands. To clarify the requirements for special status species versus special status animals, Mitigation Measure B-1(a) has been revised as follows:

> …Areas proposed for preservation and serving as compensatory mitigation for special status plant species impacts must contain verified extant populations of the special status plant species that would be impacted by the project. Areas proposed for preservation and serving as compensatory mitigation for special status wildlife species impacts must contain habitat value and function consistent with the conditions necessary to support viable populations of the special status species for which impacts are being mitigated (i.e. suitable vegetation communities, suitable breeding and nesting habitat and microhabitat conditions, including appropriate aquatic habitat for impacts to aquatic species or disturbances to aquatic habitat). Preservation lands must also be within known species ranges and known occurrences of local populations of the species for which impacts are being mitigated. Compensatory mitigation areas shall have a restrictive covenant prohibiting future development/disturbance and shall be managed in perpetuity to encourage persistence and enhancement of the preserved target species…

Response 16.49

The commenter states that Mitigation Measures B-1(a) and B-1(b) are redundant and proposes alternative language that allows the project proponent to provide the County with documentation that the administrative and stewardship fees have been paid and that the conservation easement holder has determined the amount paid is sufficient. The County requires assurance that the conditions of Mitigation Measure B-1(a) and B-1(b) have been fulfilled, and retains the responsibility to participate in determining the appropriate amount of the administrative and stewardship fees.

Response 16.50

The commenter notes that the standard wildlife agency timeframe to complete recording of a conservation easement is 18 months, and suggests that the timing cited in Mitigation Measure B-1(a) revised from 12 months to 18 months. The *Mitigation Timing* discussion of Mitigation Measure B-1(a) has been revised as follows:

> **Mitigation Timing**: The applicant shall calculate the total acreages required to meet all compensatory mitigation obligations and submit these totals to the County prior to the issuance of grading permits. The applicant shall then obtain County approval of the location of mitigation lands, the holder of conservation easements, and the restrictions contained in the easement(s) created for the permanent protection of these lands. Documentation of recorded easement(s) shall be submitted to and approved by the County prior to the first of the project's final inspections, or within ~~12~~ 18 months after issuance of grading permits, whichever comes first. Verification of having met habitat mitigation requirements shall be reviewed and approved prior to final inspection.

Response 16.51

The commenter contends that the timing for calculation of impact acreages in Mitigation Measure B-1(e) requires clarification. To clarify the timing of acreage calculations in the context of a phased project, the *Mitigation Timing* discussion of Mitigation Measures B-1(e) of the DEIR has been revised as follows:

> **Mitigation Timing**: Identification of the total number of plants and acreage for mitigation must be submitted to the county prior to the issuance of grading permits or prior to the issuance of the grading permit for each phase of the project, should the project be phased. All other timing shall be consistent with measure B-1(a).

Response 16.52

The commenter states the opinion that Mitigation Measures B-1(g) does not allow for modification of potential den buffers within 500 feet of active construction. The current text may therefore cause buffers to intrude into active construction zones. The commenter requests revisions to allow buffers to be reduced by the qualified biologist. This measure does not require a 500 foot buffer; rather, it requires a 100 foot buffer area, designated as an Environmentally Sensitive Area (ESA), be demarcated around any potential burrows that occur outside of the disturbance footprint but within 500 feet of an active construction zone. This measure does allow for access into the ESA with the express permission of the qualified biologist.

Response 16.53

The commenter notes that the timeframe for reporting to the USFWS and CDFW may differ from that specified in the federal and state incidental take permits. To ensure that the FEIR does not include language that is in contradiction to language that may be included in resource agency permits, Mitigation Measure B-1(i) has been revised as follows:

> …All authorized reductions to restrictive buffer areas must be reported in writing to the USFWS and CDFW per the requirements of the federal and/or state take authorizations if specified, or within 24 hours of implementing the change if not specified in the take authorization(s).

Response 16.54

The commenter recommends clarifying the language and the timing of the procedures to minimize impacts on known SJKF dens in Mitigation Measure B-1(i) to be clear that it is applicable to all phases of project construction. To provide clarification on this matter, Mitigation Measure B-1(i) has been revised as follows:

> e) The fewest number of personnel and only equipment or vehicles essential to the work to be done will approach a den. Work will be completed, and personnel will leave the area, as quickly as possible.
>
> **All Project Phases**
> The applicant shall minimize impacts on known dens through the following procedures:
> 1. Protect in place if construction would not directly affect the known den on the project site as follows…

Response 16.55

The commenter recommends clarification on timing of preconstruction surveys and avoidance measures for SJKF in Mitigation Measure B-1(i). To clarify the timing and ensure that avoidance measures occur at the appropriate times relative to construction activity, the *Mitigation Timing* discussion of Mitigation Measure B-1(i)has been revised as follows:

> **Mitigation Timing**: The applicant shall submit documentation to the County that either no occupied SJKF dens were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of occupied or active breeding dens prior to ~~issuance of grading permits~~ the start of active construction.

Response 16.56

The commenter notes that timing of the impact acreage calculation requires clarification to allow for phasing of project construction. To ensure mitigation timing is consistent with a phased project, the *Mitigation Timing* discussion of Mitigation Measure B-1(j) has been revised as follows:

> **Mitigation Timing**: Identification of the total acreage for mitigation of San Joaquin kit fox must be submitted to the county prior to the issuance of grading permits or prior to the issuance of the grading permit for each phase of the project, should the project be phased. All other timing shall be consistent with measure B-1(a).

Response 16.57

The commenter recommends revisions to Mitigation Measure B-1(l) for the timing of preconstruction survey to be completed prior to ground disturbing activities rather than to issuance of grading permits. To ensure the correct timing of preconstruction surveys for burrowing

owl, the *Mitigation Timing* and *Monitoring* discussions of Mitigation Measure B-1(l) has been revised as follows:

> **Mitigation Timing**: The applicant will contract for preconstruction burrowing owl surveys to be conducted prior to construction of the project and shall submit documentation to the County that surveys have been completed prior to the start of initial ground-disturbing activities.
> **Monitoring**: The County shall ensure that applicant is in compliance with all burrowing owl impact avoidance and minimization measures ~~the surveys are completed prior to issuing grading permits~~.

Response 16.58

The commenter remarks on Section 4.4.3.b, Mitigation Measure B-1(n), Compensatory Habitat Mitigation for Burrowing Owl: The compensatory mitigation specified in this measure should be revised to reflect the County's application of CDFW's guidance pursuant to the Staff Report on Burrowing Owl Mitigation (CDFW, 2012) and to set compensatory mitigation for all impacted project lands at a uniform 2:1 ratio. The required compensatory mitigation ratios were set to be consistent with mitigation ratios for other species, so as to allow for nested compensatory mitigation. Therefore, consistent with the ratios for kit fox compensatory mitigation, impacts are to be mitigated at a ratio of 3:1 for all permanent impacts areas not including the SDAs, and at a ratio of 2:1 for impacts within the SDAs.

Response 16.59

The commenter recommends revising Mitigation Measure B-1(q) for buffers around maternity roosts or hibernacula to provide greater construction flexibility and enhanced species protection . To allow for reasonable adjustments to avoidance buffers for cases in which 100 foot buffers may be in excess of the necessary minimum buffer distance, Mitigation Measure B-1(q) has been revised as follows:

> A minimum 100-foot ESA avoidance buffer shall be demarcated by highly visible orange construction fencing around active maternity roosts. No construction equipment, vehicles, or personnel shall enter the ESA without clear permission from the qualified biologist. Reduced avoidance buffers can be established through consultation with CDFW. ESA fencing shall be maintained in good condition for the duration of the maternity season.

Response 16.60

The commenter recommends revising the mitigation timing in Mitigation Measure B-1(q) to ensure adequate species protection. So as to ensure that preconstruction surveys are properly timed to coincide with actual construction activity, the *Mitigation Timing* discussion of Mitigation Measure B-1(q) has been revised as follows:

> **Mitigation Timing**: The applicant shall submit documentation to the County that either no special status bats were recorded on the project site, or that appropriate avoidance measures have been implemented to

ensure avoidance of impacts to special status bats prior to ~~issuance of grading permits~~ the start of construction activity.

Response 16.61

The commenter remarks on Section 4.4.3.b, Mitigation Measure B-1(r), Preconstruction Surveys for Raptors and Other Special Status Bird Species, first paragraph, noting that the measure requires nest survey not less than 30 days prior to construction when this should read not "more" than 30 days prior to construction. This was a clerical error in the DEIR; the *Mitigation Timing* discussion of Mitigation Measure B-1(r) has therefore been revised as follows:

Preconstruction Surveys for Raptors and Other Special Status Bird Species. Not ~~less~~ more than 30 days prior to initiation of construction activities (incl. mobilization, staging and ESA fence installation) during the breeding season (1 February to 15 September), a qualified biologist shall conduct preconstruction surveys for raptors and MBTA/state regulated birds.

Response 16.62

The commenter remarks on Section 4.4.3.b, Mitigation Measure B-1(r), Preconstruction Surveys for Raptors and Other Special Status Bird Species, noting that the criteria for reducing golden eagle buffers has already been provided and as such, the USFWS consultation requirement is unnecessary. The general conditions to be considered when establishing golden eagle nest buffers have been specified in the DEIR, but no specific criteria as to level of disturbance, activity level, noise intensity, or duration of activity, and no specific details on how existing conditions would be applied to the size of the buffer have been specifically outlined in the DEIR; therefore, consultation with USFWS on buffers for specific nests is a reasonable expectation. If eagle nest avoidance buffers are identified within the applicant proposed Bird and Bat Conservation Strategy (BBCS; see comment 16.65) to be developed through consultation with USFWS, these would represent USFWS authorized buffers and no additional consultation would be required. The comment is noted with no revisions to the DEIR.

Response 16.63

The commenter recommends revisions in Mitigation Measure B-1(r) to the mitigation timing for preconstruction surveys for raptors and other special status birds. To ensure that the timing of preconstruction surveys is appropriate to address potential impacts from construction activity, the *Mitigation Timing* discussion of Mitigation Measure B-1(r)has been revised as follows:

Mitigation Timing: The applicant shall submit documentation to the County that either no raptors or other special status birds were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of impacts to raptors and other special status birds prior to ~~issuance of grading permits~~ the start of construction activity.

Response 16.64

The commenter recommends revising the timing for the incorporation of APLIC guidelines so that it is tied to the project design plans that incorporate the guidelines and not specifically to grading permits. To ensure that APLIC guidelines are correctly and appropriately incorporated into the applicable design plans, the *Mitigation Timing* discussion of Mitigation Measure B-1(s) has been revised as follows:

> **Mitigation Timing**: The applicant shall submitted documentation to the County, that avian impact avoidance and minimization features have been incorporated into the project design prior to issuance of ~~grading~~ construction or electrical permits that incorporate the guidelines permits.

Response 16.65

The commenter notes that in response to feedback received from stakeholders regarding avian mortality, the applicant has incorporated a new Applicant Proposed Measure to monitor avian use of the site, conduct post-construction avian mortality monitoring and identify conservation measures to minimize impacts. These efforts would be memorialized in a Bird and Bat Conservation Strategy (BBCS) prepared in collaboration with USFWS and would include an Avian Mortality Monitoring Program (AMMP) to monitor operational effects of the project on avian species. The development of a BBCS would further reduce potential operational impacts to avian species by providing additional data and additional conservation measures in response to that data. The DEIR has been revised to include information on the applicant proposed BBCS, including the last paragraph under the *Raptors and Other Special Status Birds* discussion under Impact B-1 which has been revised as follows:

> Solar facilities also present risk for bird collisions with solar panels. Birds migrating at night or moving between the perennial and ephemeral streams on the project site or the adjacent stock ponds would also be at an increased risk of collision with the solar panels as the panels might be mistaken for open sky or water. Based on the known distribution of the species in the project area, observations made during surveys, and fatality results emerging from other solar sites in California (Western EcoSystems Technology, Inc. 2014), some collision mortality is anticipated to occur. Applicant Proposed Measure (APM) 10 is proposed to monitor avian use of the site, conduct post-construction avian mortality monitoring, and identify conservation measures to minimize impacts. These efforts would be memorialized in a Bird and Bat Conservation Strategy (BBCS) prepared in collaboration with USFWS and would include an Avian Mortality Monitoring Program (AMMP) to monitor operational effects of the project on avian species. The development of a BBCS would further reduce potential operational impacts to avian species by providing additional data and additional conservation measures in response to that data.

Response 16.66

The commenter recommends revisions to the mitigation timing in Mitigation Measure B-1(t) to ensure surveys are correctly timed to with construction activity. To ensure that surveys are

correctly timed to coincide with construction activity, the *Mitigation Timing* discussion of Mitigation Measure B-1(t) has been revised as follows:

> **Mitigation Timing**: The applicant shall submit documentation to the County that no aquatic special status species were recorded on the project site, or that appropriate impact avoidance measures have been implemented to ensure avoidance of aquatic special status species prior to ~~issuance of grading permits~~ the start of construction activity.

Response 16.67

The commenter recommends revisions to the mitigation timing in Mitigation Measure B-1(u), so that preconstruction surveys are tied to the commencement of construction rather than the issuance of permits. To ensure the correct timing for preconstruction surveys, the *Mitigation Timing* discussion of Mitigation Measure B-1(u)has been revised as follows:

> **Mitigation Timing**: The applicant shall submit preconstruction survey documentation to the County that no western spadefoot were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of impacts to western spadefoot prior to ~~issuance of grading permits~~ the start of construction activity.

Response 16.68

The commenter notes an inconsistency on the authority of CDFW over CRLF. The implication that CDFW must be consulted regarding CRLF is a clerical error and Mitigation Measure B-1(w) has been revised as follows:

> **B-1(w)** **California Tiger Salamander and California Red-Legged Frog Relocation Sites.** Prior to the initiation of any other protective measures, a qualified biologist (i.e., biologist approved by USFWS and/or CDFW to translocate CTS and CRLF) shall, in consultation with USFWS and/or CDFW as applicable, identify appropriate relocation sites for any adult, juvenile, and larval CTS and CRLF that may be observed during the pre-construction survey or monitoring activities described below and need to be moved from within the limits of direct impact disturbance. Relocation or other take (e.g. entrapment) of CTS and CRLF can only be conducted by an authorized biologist and the project must have been issued the requisite take authorizations from CDFW and/or USFWS as applicable before any relocation activity can commence.
>
> **Mitigation Timing**: The applicant shall submit to the County documentation that CDFW and/or USFWS approved relocation sites for CTS and CRLF have been identified prior to issuance of grading permits. **Monitoring**: The County shall ensure that CDFW- and USFWS-approved relocation sites have been identified by the applicant.

Response 16.69

The commenter contends there are inaccuracies in Mitigation Measure B-1(y) regarding timing and sequence of required conditions. This represents a misunderstanding on the part of the commenter regarding the distinction between preconstruction surveys and compliance monitoring. One paragraph is referring to required preconstruction survey, while the following paragraph is referring to required construction monitoring, and they are not in conflict with one another. The comment is noted with no changes to the DEIR.

Response 16.70

The commenter recommends revisions to the timing of preconstruction surveys to be tied to the commencement of construction rather than the issuance of permits. To ensure proper timing for preconstruction surveys and the *Mitigation Timing* discussion of Mitigation Measure B-1(y)has been revised as follows:

> **Mitigation Timing**: The applicant shall submit documentation to the County that no aquatic special status species were recorded on the project site, or that appropriate impact avoidance measures have been implemented to ensure avoidance of aquatic special status species prior to ~~issuance of grading permits~~ the start of construction activity.

Response 16.71

The commenter recommends revisions to Mitigation Measure B-1(z) to allow for phasing of construction of the project. To ensure that the measures allows for project phasing, the *Mitigation Timing* discussion of Mitigation Measure B-1(z)has been revised as follows:

> **Mitigation Timing**: Identification of the total acreage for mitigation for California red-legged frog must be submitted to the county prior to the issuance of grading permits, or prior to the issuance of the grading permit for each phase of the project, should the project be phased. All other timing shall be consistent with measure B-1(a).

Response 16.72

The commenter remarks on Mitigation Measure B-1(aa) regarding CTS Construction Barriers in the utility corridor. The exclusion of the utility corridor from this section was a clerical error; therefore, the second paragraph of Mitigation Measure B-1(aa) has been revised as follows:

> Within 0.35 mile of the identified suitable breeding habitat of the project site, where installation of a silt fence is not feasible, ground-disturbing construction activities shall be limited to the non-breeding season to the extent practicable, and nighttime construction activities shall be minimized during the breeding season. In particular, to minimize impacts to California tiger salamanders that are dispersing to and from breeding sites during the breeding season (October through March),

ground-disturbing construction activities along the access road, utility corridor, and transmission line shall be limited to the non-breeding season, to the extent practicable…

Response 16.73

The commenter identifies language in Mitigation Measure B-1(bb) requiring submission of documentation of daily pre-activity surveys during the winter and spring breeding season during construction in reports, per Mitigation Measure B-1(u). The reference to Mitigation Measure B-1(u) was a clerical error and the DEIR should reference Mitigation Measure B-1(ee) at this location. The *Mitigation Timing* discussion of Mitigation Measure B-1(bb) has therefore been revised as follows:

Mitigation Timing: The applicant shall include details on special status animal species general avoidance measures and construction BMPs in biological monitoring status reports that are to be submitted to the County as outlined in B-1(~~u~~ee).

Response 16.74

The commenter recommends revisions to mitigation timing in Mitigation Measure B-1(cc) to provide for phasing of construction of the project . To ensure mitigation accounts for possible phasing of the project the *Mitigation Timing* discussion of Mitigation Measure B-1(cc)has been revised as follows:

Mitigation Timing: Identification of the total acreage for mitigation for California tiger salamander must be submitted to the county prior to the issuance of grading permits or prior to the issuance of the grading permit for each phase of the project, should the project be phased. All other timing shall be consistent with measure B-1(a).

Response 16.75

The commenter remarks on Section 4.4.3.b., Mitigation Measure B-1(ee), Construction Biological Monitoring, Mitigation Timing, noting that the current text calls for daily, monthly, and annual reporting, and that this is overly burdensome and inconsistent with the frequency of biological monitoring reporting at other projects in Monterey County and at other project sites in the region. The DEIR does not require daily reporting; rather, it specifies that daily monitoring activity shall be reported to the County through monthly and annual reports. For clarification, the *Mitigation Timing* discussion of Mitigation Measure B-1(ee) has been revised as follows:

Mitigation Timing: The applicant shall submit documentation to the County demonstrating that the applicant has contracted qualified biologists to conduct biological monitoring and that these biologists have been approved by CDFW and USFWS (as required) prior to issuance of a grading permit. The applicant shall also report results of daily biological monitoring activity to the County (through the Environmental Compliance Manager) on a monthly and annual basis

through the preparation and submission of ~~and prepare and submit~~ monthly summary monitoring reports, and annual monitoring reports ~~to the County~~. During construction, the annual written report shall describe the status of project construction, as well as the compliance and current implementation status of construction-related biological mitigation measures and general biological measures. The report shall be submitted to the County no later than 15 February of the following year.

Response 16.76

The commenter recommends the removal of Mitigation Measure B-1(ff) Item 19 if revisions to Mitigation Measure B-1(ee) so warrant. As a result of revisions to Mitigation Measure B-1(ee) regarding required reporting and timing, Item 19 of Mitigation Measure B-1(ff) is now redundant and has been deleted from the DEIR as follows:

~~1. During construction, an annual written report shall be prepared describing the status of Project construction, as well as the compliance and current implementation status of construction-related biological mitigation measures and general biological measures. The report shall be submitted to the County no later than 15 February the following year.~~

Response 16.77

The commenter notes an incorrect cross-reference in Mitigation Measure B-1(ff). The reference to Mitigation Measure B-1(u) was a clerical error, which has been corrected as follows:

Mitigation Timing: The applicant shall include details on special status animal species general avoidance measures and construction BMPs in biological monitoring status reports that are to be submitted to the County as outlined in B-1(~~u~~ee).

Response 16.78

The commenter identifies typographical errors in Impact B-2related to the temporary impact value for mixed oak woodlands and a table reference that should refer to Table 4.4-8. Table number references throughout the EIR have been checked and corrected as appropriate. The typographical error has been corrected in the *Mixed Oak Woodlands: Temporary Impacts* discussion under Impact B-2 as follows:

…However, temporary impacts to up to 0.31 acres of oak woodlands could occur as a result of activities such as construction access by personnel or equipment, trampling of herbaceous vegetation, materials laydown, or utility trenching. No oak woodlands occur within the Access Road or Utility Corridor impact areas (Table 4.4-~~7~~8).

Response 16.79

The commenter recommends revising Impact B-2 to be consistent with revised plans for a clear span bridge that is a change in crossing types for Cottonwood Creek as was outlined in the November 2013 site plan updates. It was a clerical error that the revised creek crossing design discussed in the Addendum to Biotic Resources Report and Biological Resources Impact Analysis (HTH 2014e; DEIR Appendix E.13) did not get incorporated into the DEIR; therefore, the *Perennial Stream Impacts* discussion under Impact B-2 has been revised as follows:

> *Perennial Stream Impacts.* A new double box culvert clear-span bridge is proposed for a crossing of Cottonwood Creek (a perennial stream that supports perennial marsh wetland vegetation [Figure 4.4-2b]) within the project site. Construction of this culvert bridge, which would require rock slope protection on streambanks associated with bridge abutments, would constitute a permanent impact to the stream in this location. However, due to the clear-span design, the stream channel bottom would remain a native mud-bottomed habitat. Temporary impacts would be caused by the access and activities, including localized dewatering, required to construct this crossing…

Response 16.80

The commenter suggests that flow capacity of channel crossings listed in Impact B-2 should be clarified because structures needed to handle very large stormflows in this area would cause unnecessary impacts to aquatic resources and would have more capacity than what the current channels provide. The commenter suggests revised language stating that pipe culverts must be large enough to handle storm flows to at least existing channel capacity. In response to this suggestion, the *Perennial Stream Impacts* discussion under Impact B-2 has been clarified as follows:

> …In these areas, pipe culverts large enough to handle storm flows to at least existing channel capacity and avoid scour, or channel downcutting, would be installed, along with associated erosion control measures, such as rock weirs and cross vanes, where necessary. Permanent impacts related to these improvements would be confined to the area affected by the wider road and culvert, as well as any erosion control improvements such as weirs. Temporary impacts would be restricted to the areas where construction access is needed to install the improvements.

Response 16.81

The commenter states that the requirement that the Project Vegetation and Invasive Species Management Plan (PVIMP) required by Mitigation Measure B-2(c) be submitted to USFWS and CDFW is not warranted, as neither agency has approval authority over the PVIMP. However, vegetation management activities described by the applicant include possible herbicide use, grazing, and mowing, as well as management activities to control spread of non-native snails, and these activities could require work in areas that support SJKF. Because SJKF are both state and federally listed, vegetation and invasive species management activities must be compatible with CDFW and USFWS requirements for protection of SJKF. The measure states that copies would be provided to CDFW and USFWS for review. This review is intended to ensure management activities are not in conflict. The County is identified as the approving authority for this measure.

The commenter also notes that earlier in the measure, submittal is specified to the County only. In response to this comment, the fourth paragraph of Mitigation Measure B-2(c) has been revised for consistency, as follows:

> The PVIMP shall be submitted to the County, CDFW, and USFWS prior to the notice to proceed, and shall address the entire project site. This submittal shall further describe the process by which the PVIMP shall be implemented (e.g., the entity responsible for implementing it, funding mechanisms, and reporting procedures). The PVIMP shall include, but is not limited to, the following…

Response 16.82

The commenter recommends revisions to Mitigation Measure B-2(f) based on recent hydrologic analysis of the site that determined designing crossings for even a five-year event would, in many cases, result in unnecessary impacts to aquatic resources, because either the streams would need to be rechannelized or very large bridges or causeways would be needed. In accordance with the *Preliminary Drainage Analysis Addendum* (Wallace Group, February 2014) and *California Flats Solar Project 404-b1 Drainage Crossings* (Wallace Group, March 2014), the following revision has been made to Mitigation Measure B-2(f) in Section 4.4, *Biological Resources:*

> **B-2(f)** **Stream Channel Avoidance and Minimization.** To prevent high-velocity water flow from causing bank downcutting at downstream locations, any improvements related to road realignment, widening, or the ability of the road to convey heavy equipment for construction shall be designed to ~~handle heavy storm flows (up to the 25-year flood event or more), such that undesirable velocities and channel destabilization downstream of the crossing shall be avoided~~ minimize alterations to natural flow patterns and capacity, consistent with the design-level drainage analysis.

Also in response to this revision, the following has been added to Section 8.0, *References and Preparers:*

> Wallace Group, California Flats Solar Project, 404-1b Drainage Crossings, March 28, 2014.

Response 16.83

The commenter recommends revisions to Mitigation Measure B-2(f) to specify that the box culvert is no longer part of the project design and to identify use of a new clear-span bridge over Cottonwood Creek. The inclusion of the box culvert was a clerical error, and to ensure consistency with the change in project design, the fourth paragraph of Mitigation Measure B-2(f) has been revised as follows:

> A single ~~crossing, including a~~ new ~~double box culvert or free~~clear-span bridge~~,~~ shall be installed ~~in~~over Cottonwood Creek…

Response 16.84

The commenter suggests removing the requirement that the frac-out plan required by Mitigation Measure B-2(g) be submitted to CDFW and USACE. The inclusion of USACE in this measure was an oversight. Additional language has been added to the Impact B-2 *Riparian Habitat and Streams Temporary Impacts* as follows:

> If directional drilling is included in project construction activity, the applicant would be required to acquire a CDFW Streambed Alteration Agreement (SAA) for potential impacts to jurisdictional features in the event of a frac-out, and conditions of the SAA would be designed to address those potential impacts.

Revisions to the *Mitigation Timing* section of Mitigation Measure B-2(g) have also been made to clarify that review of frac-out plans by CDFW would be in conjunction with the LSAA approval process, as follows:

> **Mitigation Timing.** The Frac-out Plan shall be submitted by the applicant to the County~~, CDFW, and USACE and approved by the County~~ for approval prior to issuance of grading permits.

Response 16.85

The commenter recommends clarification to Mitigation Measure B-4(b) on the timing requirements for submitting wildlife –friendly fence design components of the HMMP. To clarify the appropriate timing for pronghorn-friendly fence design, and the following clarification has been made to the *Mitigation Timing* section of Mitigation Measure B-4(b):

> **Mitigation Timing:** The applicant shall submit documentation that to the County and CDFW that pronghorn-friendly fence design has been incorporated into the HMMP ~~prior to issuance of a grading permit~~ concurrently with submittal of the HMMP as noted in Measure B-1(b) (prior to the first of the project's final inspections, or within 12 months after issuance of grading permits, whichever comes first).

Response 16.86

The commenter states that the cumulative impact analysis in Section 4.4, *Biological Resources,* incorrectly states that the project could contribute to cumulative impacts to blunt-nosed leopard lizard. This error in the fourth paragraph of Section 4.4.3(c) (Cumulative Impacts) has been revised as follows:

> Proposed solar development within the Carizzo Plain area combined with other solar development in the region (including the proposed project) does have the potential to result in cumulative impacts to sensitive species, especially high risk species such as the San Joaquin kit fox~~ and blunt-nosed leopard lizard~~, particularly if suitable mitigation were not employed to offset and mitigate potential impacts…

Response 16.87

The commenter states the opinion that no cultural resource impacts would occur as a result of decommissioning. Although it is unlikely that decommissioning activities would disturb known resources, given the same area of disturbance as construction, such activities would still have the potential to disturb resources not impacted by construction. Specifically, resources that required avoidance measures during construction would require avoidance measures during decommissioning to ensure impacts do not occur. Therefore, mitigation measures outlined in Section 4.5, *Cultural and Paleontological Resources,* would still be required. Specifically, the exclusion zone marking and monitoring of NRHP/CRHR-eligible sites as described in CR-1(a) would be required.

Response 16.88

The commenter argues that Mitigation Measure CR-1(a) unnecessarily provides the County with authority to determine the feasibility of avoiding impacts to known cultural resources. Mitigation Measure CR-1(a) has been revised as follows:

CR-1(a) **Archaeological Site Avoidance**. Wherever feasible, direct impacts on NRHP/CRHR-eligible archaeological sites shall be avoided. Avoidance shall be accomplished by preventing any direct ground disturbance of the resource. If impacts to all or any of these resources cannot be avoided, as determined by the applicant with concurrence from RMA – Planning Department, the boundaries of the NRHP/CRHR-eligible sites shall be marked in the field by a Registered Professional Archaeologist prior to ground disturbance with exclusionary fencing, lath, flagging tape, or some other combination of material that is highly visible, durable, and which construction and management personnel can recognize as marking an exclusion zone where no earth disturbance or other activity shall occur. ~~If avoidance of any direct disturbance is determined feasible by RMA – Planning based on the sensitivity of the resource relative to the severity of impact, the boundaries of the NRHP/CRHR-eligible sites shall be marked in the field by a Registered Professional Archaeologist prior to ground disturbance with exclusionary fencing, lath, flagging tape, or some other combination of material that is highly visible, durable, and which construction and management personnel can recognize as marking an exclusion zone where no earth disturbance or other activity shall occur.~~ Exclusion zones shall be inspected weekly by an archaeological monitor or other environmental inspector to ensure that they are being honored, remain effective, and in place. If complete avoidance is not feasible, Mitigation Measures CR-1(b) or CR-1(c) shall apply.

The above revisions have also been made to Table 4.5-1 (Impact and Mitigation Summary: Cultural Resources) and Table ES-1 in the *Executive Summary.*

Response 16.89

The commenter argues that no cultural resource impacts would occur as a result of decommissioning. Refer to response 16.87. Although it is unlikely that decommissioning activities would disturb known resources, given the same area of disturbance as construction, such activities would still have the potential to disturb resources not impacted by construction.

Response 16.90

The commenter argues that no cultural resource impacts would occur as a result of decommissioning. Refer to response 16.87. Although it is unlikely that decommissioning activities would disturb known resources, given the same area of disturbance as construction, such activities would still have the potential to disturb resources not impacted by construction.

Response 16.91

The commenter argues that no cultural resource impacts would occur as a result of decommissioning. Refer to response 16.87. Although it is unlikely that decommissioning activities would disturb known resources, given the same area of disturbance as construction, such activities would still have the potential to disturb resources not impacted by construction.

Response 16.92

The commenter argues that no cultural resource impacts would occur as a result of decommissioning. Refer to response 16.87. Although it is unlikely that decommissioning activities would disturb known resources, given the same area of disturbance as construction, such activities would still have the potential to disturb resources not impacted by construction.

Response 16.93

The commenter argues that no cultural resource impacts would occur as a result of decommissioning. Refer to response 16.87. Although it is unlikely that decommissioning activities would disturb known resources, given the same area of disturbance as construction, such activities would still have the potential to disturb resources not impacted by construction.

Response 16.94

The commenter requests clarification regarding project site terminology. Accordingly, the following revision has been made to Impact GEO-2 in Table 4.6-1 in Section 4.6, *Geology/Soils*:

> **Impact GEO-2** The solar ~~development~~ generating facility area is relatively flat and is subject to low levels of landslide potential…

The same revision has been made in the impact statement in Section 4.6.3(b) (Project Impacts and Mitigation Measures), as well as within Table ES-1 of the *Executive Summary*.

Response 16.95

The commenter suggests that a reference to the NPDES program in Section 4.6, *Geology/Soils*, should be revised to clarify that it is the construction stormwater program. In accordance with the commenter's suggestion, the following clarifying revision has been made to Impact GEO-3 in Table 4.6-1:

> **Impact GEO-3** Project construction, operation, and decommissioning could result in soil erosion or loss of topsoil. However, compliance with the NPDES construction stormwater program and implementation of measures promoting infiltration, as identified in a final, design-level drainage analysis, would minimize erosion. Impacts would be Class III, less than significant. [Threshold 2]

The same revision has been made in the impact statement in Section 4.6.3(b) (Project Impacts and Mitigation Measures), as well as within Table ES-1 of the *Executive Summary*.

The commenter additionally suggests revisions to the mitigation discussion for this impact to clarify that SWPPP requirements are for the construction phase, and to acknowledge that APMs would be implemented to reduce impacts. Consistent with these suggestions, the following revision has been made to the mitigation discussion in Table 4.6-1:

> In addition, compliance with recommendations in a required final, design-level drainage analysis, and compliance with the project's construction SWPPP, as described in Section 4.9, *Hydrology and Water Quality*, as well as proposed project design features (i.e., APMs), would reduce erosion impacts to a less than significant level. No mitigation is required.

The same revision has been made in the mitigation discussion for Impact GEO-3 in Section 4.6.3(b) (Project Impacts and Mitigation Measures), as well as within Table ES-1 of the *Executive Summary*.

Response 16.96

The commenter requests clarification regarding project site terminology. Accordingly, the following revision has been made to the last paragraph on page 4.6-3:

> The ~~solar development area~~ project site is located within the U.S. Geological Survey (USGS) Cholame Valley and Dark Hole quadrangles.

Response 16.97

The commenter requests clarification regarding project site terminology. Accordingly, the following revision has been made to the *San Andreas Fault* discussion in Section 4.6.2(b) (Geologic Hazards) in Section 4.6, *Geology/Soils*:

> The proposed approximately 155-acre utility corridor would cross the San Andreas Fault, while the proposed solar ~~development~~ generating facility area would be located approximately two miles northeast of the fault trace.

Response 16.98

The commenter suggests adding a statement to the setting in Section 4.6, *Geology/Soils,* to clarify that the proposed improvements within the utility corridor would be limited. This statement is more appropriate for the impact analysis, rather than the setting, which is intended to describe the San Andreas Fault and not assess impacts of the project. Impact GEO-1 assesses the effects of the San Andreas Fault and other nearby faults on the project, and the discussion appropriately characterizes the level of development proposed. Therefore, no revisions will be made in response to this comment.

Response 16.99

The commenter requests clarification regarding project site terminology. Accordingly, the following revision has been made to the *Gold Hill Thrust Fault* discussion in Section 4.6.2(b) (Geologic Hazards) in Section 4.6, *Geology/Soils*:

> This fault is located approximately 0.25 miles southwest of the solar ~~development~~ generating facility area and would cross the proposed utility corridor.

Response 16.100

The commenter requests clarification regarding project site terminology. Accordingly, the following revision has been made to the *Jack Ranch Fault* discussion in Section 4.6.2(b) (Geologic Hazards) in Section 4.6, *Geology/Soils*:

> This fault is located approximately 1.0 mile southwest of the solar ~~development~~ generating facility area and would cross the proposed utility corridor.

Response 16.101

The commenter requests clarification regarding project site terminology. Accordingly, the following revision has been made to the *State* discussion in Section 4.6.2(c) (Regulatory Setting) in Section 4.6, *Geology/Soils*:

> The solar ~~development~~ generating facility area is located in a "low" liquefaction area, while portions of the proposed utility corridor and access road are located in a "moderate" liquefaction area [refer to Section 4.6(b) (*Land Subsidence and Liquefaction*)]. However, the entire project area is located in a "low" landslide hazard area according to Monterey County resource maps [refer to Section 4.6(b) (*Landslides*)].

Response 16.102

The commenter requests clarification regarding project site terminology. In addition, the commenter recommends minor wording changes to further clarify Impact GEO-1. Consistent with these recommendations, the following revisions have been made to the first paragraph under Impact GEO-1 in Section 4.6, *Geology/Soils*:

> The solar ~~development~~ generating facility area is located in a seismically active region and could be subject to fault rupture and strong seismic groundshaking during the project's design lifetime (anticipated to be 30 to 40 years).As shown in Figure 4.6-1, the proposed utility corridor would cross three fault lines, including the active San Andreas Fault and two inactive faults. It is thought that this particular section of the San Andreas Fault is likely to have a major earthquake in the next 30 years (2007 Working Group on California Earthquake Probabilities, 2008). ~~As such~~The proposed project, due to its proximity to existing faults, ~~the site~~ is likely to experience significant surface rupture and groundshaking activity as a result of seismic activity along the San Andreas Fault during the life of the project. The proposed project would include the construction of PV modules, electrical transformers and other equipment, a transmission line, two substations, a switching station, security fencing, internal access roads, and an operations and maintenance (O&M) building, in addition to the utility corridor (which crosses a portion of ~~that would cross~~ the San Andreas Fault trace).

Response 16.103

The commenter requests clarification regarding project site terminology. Accordingly, the following revision has been made to the second paragraph under Impact GEO-1 in Section 4.6, *Geology/Soils*:

> Furthermore, the solar ~~development~~ generating facility area is located in an area mapped as having a low liquefaction potential, according to Exhibit 4.4.3 in the *Monterey County General Plan*.

Response 16.104

The commenter requests clarification regarding project site terminology. This change was made in response to comment 16.94.

Response 16.105

The commenter requests clarification regarding project site terminology. This change was made in response to comment 16.95.

Response 16.106

The commenter requests clarification regarding project site terminology. Accordingly, the following revision has been made to the second paragraph under Impact GEO-3 in Section 4.6, *Geology/Soils*:

> The operation of the project could also result in localized increases in erosion due to the introduction of new physical elements and impervious surfaces on the solar ~~development~~ generating facility area.

Response 16.107

The commenter suggests text edits to clarify that SWPPP requirements would be implemented during the construction phase of the project. To clarify this point, the following revision has been made to the fourth paragraph under Impact GEO-3 in Section 4.6, *Geology/Soils*:

> Implementation of a NPDES-compliant construction Stormwater Pollution Prevention Plan (SWPPP), as required by the Clean Water Act…

Response 16.108

The commenter points out that the DEIR does not acknowledge that the project includes APMs to address the potential environmental effects associated with project decommissioning. In accordance with the commenter's suggestion, the following text has been added to the fifth paragraph under Impact GEO-3. The revision below has also been made to remove an erroneous statement suggesting that mitigation is required to reduce Impact GEO-3. This impact is Class III, *less than significant,* and no mitigation is required.

> ~~However, mitigation is required to reduce erosion impacts to a less than significant level.~~ As described in Section 2.0, *Project Description*, the project includes APM-1 to ensure that potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

Response 16.109

The commenter suggests revisions to the mitigation discussion for Impact GEO-3 to clarify that SWPPP requirements are for the construction phase, and to acknowledge that APMs would be implemented to reduce impacts. This revision was made in response to comment 16.95.

Response 16.110

The commenter suggests the addition of language to Section 4.7.3(a) (Methodology and Significance Thresholds) of Section 4.7, *Greenhouse Gas Emissions/Climate Change,* to indicate that the project includes APM-1 to address the potential environmental effects associated with project decommissioning. The discussion in question is intended to present the methodology for the analysis of impacts from decommissioning. The commenter-suggested language would more appropriately be located in the impact analysis. Therefore, the following modification has instead been made to the last paragraph under Impact GHG-1:

> However, based on current decommissioning practices, as a reasonable-worst case, GHG emissions generated during future decommissioning would be similar to GHG emissions generated during the construction phase of the proposed project. Therefore, the potential to add approximately 229 MT CO_2E per year during decommissioning would result in a slight decrease to the overall GHG emissions reduction benefit attributable to the proposed project. It should also be noted that, as described in Section 2.0, *Project Description*, the project includes APM-1 to ensure that potential future

environmental effects associated with project decommissioning – including GHG emissions – would be addressed at the time decommissioning is proposed consistent with regulations in effect at the time. Because the solar energy produced by the proposed project would off-set the GHG emissions generated by the facility, the project would result in a beneficial impact on GHG emissions and climate change.

Response 16.111

The commenter states that a parenthetical reference in the Impact GHG-1 ("42 pounds of CO_2 per MWh") is incorrect, and suggests a revision based on the applicable data source (Sinha, P., Schneider, M., Dailey, S., Jepson, C., and M. de Wild-Scholten 2013). In response to this comment, the *Operational GHG Analysis* discussion in Impact GHG-1 of the DEIR has been revised as follows:

Operational GHG Analysis. The project would require a negligible amount of energy for security and monitoring systems during non-daylight hours. The project would not result in a substantial amount of mobile source GHG emissions, as the project would require a minimal amount of employees traveling to and from the site. In addition to these new sources of emissions, the project would introduce a non-fossil fuel-based energy source, which would have the indirect effect of displacing emissions otherwise occurring at natural gas and coal-fired power plants.[3] Based on the CCAR emissions factors (630 pounds of CO_2 per MWh minus ~~42~~ 36 pounds of CO_2 per MWh to account for the life cycle CO_2 emissions for cadmium telluride [CdTe]) from fossil-fuel based power plants, the project would offset approximately 202,513 MT CO_2E emissions annually.

Response 16.112

In response to the concerns of adjacent property owners that the heat absorbed by project components, such as PV modules, would increase local ambient temperatures, the commenter requests that the Final EIR evaluate this potential impact. As a reference, the commenter notes interim results from a 2010 study of heat island effects at the Sarnia Solar Power Plant, an 80 MW PV facility in Ontario, Canada, that was constructed with First Solar technology. Section 4.7, *Greenhouse Gas Emissions/Climate Change*, has been updated as follows to discuss the potential for local climate change due to radiant heat from solar panels and the results of the Sarnia study:

Property owners adjacent to the project site also have raised concerns about the potential of PV panels to cause local climate change by emitting radiant heat and raising the ambient temperature of surrounding areas. It should be noted that PV arrays are designed to maximize the absorption of solar radiation and its conversion to electricity and to minimize the loss of solar energy as heat to the atmosphere (Massachusetts Department of Energy Resources, et al., 2012).

[3] *MBUAPCD staff stated that they did not believe that the project would directly offset emissions in the North Central Coast Air Basin (NCCAB), but that it could potentially offset emissions on a statewide level as older fossil fuel energy facilities are taken offline, including the Morro Bay facility, and that the project would provide a renewable source of energy production that would otherwise be provided by new fossil fuel-fired facilities (California Flats Solar Project Air Quality and Greenhouse Gas Assessment, August 2013).*

> Furthermore, because solar panels are thin and light, they do not store a large amount of heat.
>
> Although scientific research on this topic is limited, researchers at Columbia University and the Brookhaven National Laboratory have conducted detailed three-dimensional simulations of the effects of a large-scale solar power plant on the local microclimate (Fthenakis and Yu, n.d.). Using weather data provided by First Solar from the 80 MW Sarnia Solar Power Plant in Ontario, Canada, the simulations showed that mean annual air temperatures in the center of a PV array, at a height of 2.5 meters, can reach up to 1.9 degrees Celsius above the ambient temperature; however, this thermal energy was found to completely dissipate at heights of 5 to 18 meters. Heat produced by the solar array also was found to dissipate with distance from the solar plant, with air temperatures within 0.3 degrees Celsius of the ambient temperature approximately 300 meters away from the facility's perimeter. Moreover, an analysis of 18 months of data showed that an increase in ambient temperature of surrounding areas was unlikely due to cooling of the solar array at night.

The concerns of adjacent property owners about microclimate effects also might arise from recent reports of intensely focused solar rays scorching birds at the Ivanpah Solar Electric Generation System in the Mojave Desert. It should be clarified that the Ivanpah solar plant uses mirrors to concentrate and focus solar radiation, which can generate substantial amounts of heat above the facility. The proposed project would not use such technology, and the solar modules would be non-reflective, thus minimizing potential off-site glare.

Consistent with the above revision, the following text has been added to Section 4.14.7 (Greenhouse Gas Emissions/Climate Change) in Section 4.14, *Effects Found Not to Be Significant*, to note that radiant heat from the proposed solar facility is expected to have a less than significant impact on the local climate:

> In addition, the proposed project would have a less than significant impact on the local climate. Based on the available research discussed in Section 4.7, *Greenhouse Gas Emission/Climate Change*, utility-scale PV arrays do not substantially increase ambient temperatures on adjacent sites. Thus, there will be no further discussion herein of the radiant heat effect of solar facilities.

In addition, the following references have been added to Section 8.0, *References and Preparers:*

> First Solar, Sarnia Solar Power Plant Air Temperature Variation Analysis: Interim Results, March 15, 2010.
>
> Fthenakis, V.M. and Y. Yu, Analysis of the Potential for a Heat Island Effect in Large Solar Farms, 39th IEEE Photovoltaic Specialists Conference, Tampa, Fl., June 17-23, 2013Available online at http://www.clca.columbia.edu/13_39th%20IEEE%20PVSC_%20VMF_YY_Heat%20Island%20Effect.pdf

Massachusetts Department of Energy Resources, Massachusetts Department of Environmental Protection, and Massachusetts Clean Energy Center. Questions & Answers: Ground-Mounted Solar Photovoltaic Systems. December 2012. Available: http://www.mass.gov/eea/docs/doer/renewables/solar/solar-pv-guide.pdf

Response 16.113

The commenter recommends combining Mitigation Measures HAZ-4(a) and HAZ-4(b), noting that the two measures are similar, and also similar to a standard County condition of approval (COA). Mitigation Measure HAZ-4(a) (Final Fuel Management Plan) requires the preparation of a Final Fuel Management Plan, prepared in consultation with the Fire Protection District and/or CAL FIRE. Among its requirements, the Final Fuel Management Plan would identify emergency access routes and road maintenance requirements. Mitigation Measure HAZ-4(b) (Emergency Access) requires that the applicant maintain adequate emergency access, and includes specific measures such as providing gate lock codes to the Monterey County Emergency Operations Dispatch. Although the maintenance of emergency access would be in compliance with the Final Fuel Management Plan, Mitigation Measure HAZ-4(b) contains additional specific requirements that are pertinent to the mitigation of the impact. Therefore, the measures are appropriately presented as separate mitigation.

The commenter does not specify which standard County COA is similar to these mitigation measures. Therefore, no specific response to this claim is possible.

Response 16.114

The commenter notes that the requirement that the recycling or disposal plan be developed prior to construction is unwarranted, as defective PV modules discovered during construction would be shipped back to the manufacturer. Further, the commenter argues that the measure should be concerned only with PV modules, and not support structures. Finally, the commenter notes that Measure HAZ-5 may be duplicative with bonding requirements in the Development Agreement that is being negotiated with the County. In accordance with this comment, Mitigation Measure HAZ-5 has been revised as follows:

HAZ-5 Disposal of PV Modules and Support Structures. Prior to ~~construction permit issuance~~ operation, the applicant shall submit a recycling or disposal plan for PV modules ~~and support structures~~ for County review and approval, in order that project structures not pose a risk to human health or the environment after project repowering and/or decommissioning. The plan shall specify how these project components shall be recycled or disposed of in a manner that will not pose a risk to human health or the environment, and the costs of such recycling or disposal. Prior to ~~grading or building permit issuance~~ operation, the applicant shall post a long-term decommissioning bond to the County of Monterey, or other mutually acceptable financial obligation, in an amount consistent with these costs (plus County

> administrative costs) consistent with the requirements of the Development Agreement (if approved)~~, and which may also include any other project decommissioning obligations~~.

These revisions have also been made to Mitigation Measure HAZ-5 as listed in Table 4.8-1 and Table ES-1 in the *Executive Summary.*

Response 16.115

The commenter suggests the addition of language to Section 4.8.3(a) (Methodology and Significance Thresholds) of Section 4.8, *Hazards and Hazardous Materials,* to indicate that the project includes APM-1 to address the potential environmental effects associated with project decommissioning. The discussion in question is intended to present the methodology for the analysis. The applicant-suggested language would more appropriately be located in the impact analysis. Therefore, the following modification has instead been made to the second paragraph under Impact HAZ-5:

> As discussed in Section 2.0, *Project Description*, the proposed project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time. In addition, the project includes a conceptual decommissioning plan that describes the general types of measures that may be implemented at the time of decommissioning…

Response 16.116

The commenter provides clarifications regarding health risks associated with CdTe PV technology. Consistent with these clarifications, the following revisions have been made to the third to last paragraph of Impact HAZ-2:

> CdTe appears to be less toxic than elemental cadmium in terms of acute exposure (Zayed and Philippe, 2009; Kaczmar, 2011), but the highly reactive oxidizing surface of CdTe can damage cell membranes, mitochondria, and cell nuclei ~~depending on the technology used~~ in quantum dot technology applications (Lovric et al., 2005), which is unrelated to the CdTe PV technology that may be used for the project.

Response 16.117

The commenter recommends combining Mitigation Measures HAZ-4(a) and HAZ-4(b). This comment is addressed in response 16.113.

Response 16.118

The commenter recommends a revision to Mitigation Measure HAZ-5. This comment is addressed in response 16.114.

Response 16.119

The commenter notes that the requirements of Mitigation Measure HYD-2(a) are similar to APM-6, which includes the preparation of a Hazardous Materials Response Plan (HMRP). To avoid confusion during condition compliance, as suggested by the commenter, the following text has been added to the end of measure HYD-2(a) in Table 4.9-1 in Section 4.9, *Hydrology and Water Quality*:

> …A monitoring program shall be implemented to ensure that the plans are followed during all construction, operations, and maintenance activities. The Hazardous Materials Response Plan (HMRP) proposed as part of the project [applicant proposed measure (APM) 6] shall incorporate all of the elements of this mitigation measure. The County of Monterey shall be responsible for reviewing the applicant's proposed HMRP to confirm that it incorporates the requirements of this mitigation measure.

The same revision has been made to the mitigation measure where it is listed in Section 4.9.3(b) (Project Impacts and Mitigation Measures), as well as within Table ES-1 of the *Executive Summary*.

Response 16.120

The commenter suggests deleting the *Mitigation Measures* discussions for Impacts HYD-4 and HYD-5 in Section 4.9, *Hydrology and Water Quality,* noting that the new APM-11 would ensure that both of these impacts remain less than significant. It should be noted that both of these impacts are already considered Class III, *less than significant,* in the DEIR.

Refer to response 16.121 below. Based on the revisions shown therein, the following edits have been made to Table 4.9-1 and Table ES-1 in the *Executive Summary:*

Impact HYD-4 The proposed project could alter the existing drainage pattern of the project area, and would introduce impervious surfaces into an area that is currently undeveloped. The project may therefore increase runoff, potentially resulting in flooding or increased erosion downstream. Impacts would be Class III, less than significant. [Thresholds 3, 4, 5]	~~The final design of the project would be required to be developed in accordance with a final, design level, drainage analysis which would include a detailed evaluation of the potential drainage impacts associated with the project, including identification of measures to reduce runoff by promoting infiltration. As noted in the *Preliminary Drainage Report* (RBF, 2013), measures to reduce runoff by promoting infiltration would be selected and configured as part of this final design considering local impacts from proposed improvements, detailed grading plans and maintenance requirements. In addition, the proposed project would be required to comply with the NPDES program, including through preparation of a SWPPP and implementation of associated BMPs, as outlined in Impact HYD-1. Compliance with recommendations in the design level drainage analysis and existing regulations would reduce impacts~~	Impacts would be less than significant.

	~~related to increased erosion downstream to a less than significant level.~~ No mitigation ~~would be~~ is required.	
Impact HYD-5 The project site contains numerous drainage channels, some of which contain flow depths and velocities that could expose proposed structures to potential flooding hazards. Impacts would be Class III, less than significant. [Threshold 9]	~~The applicant would be required to prepare a design-level drainage analysis that would ensure both that proposed facilities avoid higher flow rates, and that any improvements within 50 feet from the top of bank of on-site drainages would comply with the requirements of Chapter 16.16 of the Monterey County Code. Compliance with the recommendations contained in the design-level analysis would ensure that impacts are less than significant.~~ No mitigation is required.	Impacts would be less than significant.

Response 16.121

The commenter recommends revisions to the *Mitigation Measure* discussion for Impacts HYD-4 and HYD-5 based on the newly proposed APM-11. In accordance with these suggestions, the *Mitigation Measure* discussion under Impact HYD-4 has been revised as follows:

> ~~Mitigation Measures.~~ The final design of the project would be required to be developed in accordance with APM-11, in which the applicant shall prepare a final, design-level, drainage analysis which would include a detailed evaluation of the potential drainage impacts associated with the project, including identification of measures to reduce runoff by promoting infiltration. As noted in the *Preliminary Drainage Report* (RBF, 2013) and in the *Preliminary Drainage Analysis Addendum* (Wallace Group, 2014), measures to reduce runoff by promoting infiltration would be selected and configured as part of this final design considering local impacts from proposed improvements, detailed grading plans and maintenance requirements. The design level drainage analysis would ensure that increases in peak runoff flow rates and volumes due to the addition of impervious surfaces such as isolated buildings are mitigated so that the post-project flow rates and volumes are no greater than pre-project flow rates and volumes for the 85th percentile storm event (NOAA Atlas 14) or a method acceptable by Monterey County and Regional Water Quality Control Board. In addition, the proposed project would be required to comply with the NPDES program, including through preparation of a SWPPP and implementation of associated BMPs, as outlined in Impact HYD-1. Compliance with recommendations in the design-level drainage analysis and existing regulations would ~~reduce~~ result in impacts related to increased erosion downstream that are ~~to a~~ less than significant ~~level~~. ~~No mitigation would be required.~~
>
> Mitigation Measures. No mitigation is required.

Although APM-11 includes similar requirements as identified in the *Preliminary Drainage Report* (RBF 2013) and *Preliminary Drainage Analysis Addendum* (Wallace Group 2014), they differ in that the *Preliminary Drainage Report* and *Addendum* require solar modules, transformers, substations,

and inverters to be placed a minimum of 1 foot above the 100-year water surface elevation, whereas APM-11 proposes to place solar modules and tracker actuator motors a minimum of 6 inches above the 100-year water surface elevation. To account for APM-11 and maintain consistency with the *Preliminary Drainage Report* (RBF 2013) and *Preliminary Drainage Analysis Addendum* (Wallace Group 2014), the discussion under Impact HYD-5 has been revised as follows, beginning with the fourth full paragraph of the analysis:

> The proposed project would ~~be required to~~ implement APM-11, which requires the preparation of a design level drainage study that contains measures that ensure that project facilities are not placed in areas where they would be subject to significant flood or erosion hazards. Flood-risk and erosion avoidance measures outlined in APM-11 are generally consistent with the *Preliminary Drainage Report* (RBF 2013) and *Preliminary Drainage Analysis Addendum* (Wallace Group 2014), ~~comply with the recommendations in the *Preliminary Drainage Report* (RBF, 2013), and the final design of the project would be required to be developed in accordance with a final, design-level, drainage analysis. As outlined in the *Preliminary Drainage Report*, the final design-level drainage analysis~~ and would include the following requirements:
>
> - No modules shall be placed in areas where the product of the flow depth and flow velocity is greater than 9 feet per second (corresponding to a hazard level 3, as defined in the *Preliminary Drainage Report*) during a 100-year, 24-hour storm event, based on the results of a design-level drainage analysis~~;~~
> - No transformers, substations, or inverters shall be placed in areas where the flow depth exceeds 2 feet (corresponding to a hazard level 3, as defined in the *Preliminary Drainage Report*) during a 100-year, 24-hour storm event~~; and~~
>
> In addition, in accordance with the *Preliminary Drainage Report* (RBF 2013) and *Preliminary Drainage Analysis Addendum* (Wallace Group 2014), the final design level drainage analysis would include the following additional requirement:
>
> - Solar modules, transformers, substations, or inverters constructed in areas where any inundation is expected to occur should be placed a minimum of 1 foot above the 100- year water surface elevation.
>
> The Monterey County Water Resources Agency would review and approve the design-level drainage analysis. Implementation of the recommendations contained therein~~, including the flood-risk avoidance measures listed above,~~ would ensure that proposed facilities avoid significant flood or erosion hazards ~~higher flow rates~~.
>
> … To ensure the improvements are consistent with the requirements of Chapter 16.16 of the Monterey County Code, the design-level drainage analysis prepared by the applicant in accordance with APM-11 and consistent with the requirements outlined in the *Preliminary Drainage Report* (RBF 2013) and *Preliminary Drainage Analysis Addendum* (Wallace Group 2014) ~~described above)~~ would be required to ~~address any development proposed within 50 feet from the top of the bank of on-site drainages and~~ prove, to the

satisfaction of the Monterey County Water Resources Agency, that any improvements within 50 feet from the top of bank of on-site drainages would not result in significant flood- or erosion-related hazards, and that these improvements would not affect the existing capacity of the affected watercourse, as required by Chapter 16.16 of the Monterey County Code. Implementation of the recommendations contained in the design-level drainage analysis would ensure that impacts are less than significant. ~~the proposed development would be safe from flow-related hazards and would not significantly reduce the capacity of the existing watercourses. Upon compliance with the requirement so Chapter 16.16, impacts would be less than significant.~~

Mitigation Measures. ~~As noted above, the applicant would be required to prepare a design-level drainage analysis that would ensure both that proposed facilities avoid higher flow rates, and that any improvements within 50 feet from the top of bank of on-site drainages would comply with the requirements of Chapter 16.16 of the Monterey County Code. Compliance with the recommendations contained in the design-level analysis would ensure that impacts are less than significant.~~ No mitigation is required.

The above revisions have also been made to Table 4.9-1 (Impact and Mitigation Summary: Hydrology and Water Quality) and Table ES-1 in the *Executive Summary,* as applicable.

Response 16.122

The commenter points out an error in the cumulative impact analysis. The following revision has been made within the first paragraph of the *Cumulative Impact Analysis* in Section 4.9, *Hydrology and Water Quality*:

The proposed project would require up to ~~345 AFY~~ 494 acre-feet during construction and up to 5 AFY during operation.

Response 16.123

The commenter suggests the removal of the statement that the project site is part of the larger Hearst Ranch. This statement provides context to the reader regarding the project site setting. The commenter-suggested revision has not been made.

Response 16.124

The commenter suggests clarification regarding the types of improvements that are allowable in the Farmland and Permanent Grazing zoning designations. In accordance with this comment, the following revision has been made to the first bullet in Section 4.10.2(b) (Project Site Setting) in Section 4.10, *Land Use and Planning*:

- *Farmlands (F)* designated zones are typically 40 acre minimum parcels and allow a range of uses to conserve and enhance the use of the important farmlands in the County while also providing opportunity to establish necessary support and ancillary facilities for those agricultural uses. The extent of use of land for this

> designation is limited to building coverage of 5% of the subject property, except for commercial greenhouse operations, which are permitted coverage of 50%. The County of Monterey has, however, determined that solar components (e.g., PV modules, inverters, and other related infrastructure) of ground-mounted facilities will not be counted as building site coverage. (Monterey County Director Interpretation, August 2012).

Response 16.125

The commenter suggests clarification regarding the types of improvements that are allowable in the Farmland and Permanent Grazing zoning designations. In accordance with this comment, the second paragraph of the discussion for Policy LU-1.11 in Table 4.10-2 has been revised as follows:

> …The County of Monterey previously determined that the solar components of ground-mounted facilities ~~photovoltaic (PV) modules~~ do not constitute buildings as defined in Title 21 and therefore are not subject to the building coverage requirements (Monterey County, August 2012)…

Response 16.126

The commenter suggests adding language to the consistency discussion for General Plan Policies OS-3.1 and OS-4.2 indicating that the proposed project would implement on-going construction and operational BMPs to ensure that discharges of harmful substances into streams would not exceed state or federal standards consistent with the intent of the policy. The commenter-suggested language is not an Applicant Proposed Measure (APM), nor is it specifically required by a mitigation measure contained in the DEIR. The existing discussion notes that the project would comply with the NPDES program, including implementation of associated BMPs, as well as implement an erosion control plan consistent with the County of Monterey standards as a condition of project approval.

Response 16.127

The commenter suggests revisions to the consistency discussion for General Plan Policy OS-5.3 to clarify that the project would not impact critical habitat. Consistent with this comment and the analysis contained in Section 4.4, *Biological Resources,* the following revision has been made within Table 4.10-2:

OS-5.3: Development shall be carefully planned to provide for the conservation and maintenance of critical habitat.	**Potentially Consistent.** As described in Section 4.4, *Biological Resources*, no critical habitat ~~could~~would be impacted by the proposed project. In addition, Mitigation Measures outlined in Section 4.4, *Biological Resources*, would ~~be required to ensure conservation and maintenance of such areas, as well as to reduce potential impacts to protected wetlands. These measures would~~ reduce any potential impacts to biological resources to less than significant levels and ensure consistency with this policy.

Response 16.128

The commenter claims that the project applicant would not be required to pay traffic impact fees.

Response 16.129

The commenter suggests that a reference to the NPDES program in Section 4.10, *Land Use and Planning*, should be revised to clarify that it is the construction stormwater program. In accordance with the commenter's suggestion, the following clarifying revision has been made to the consistency discussion for General Plan Policy S-3.1 in Table 4.10-2:

> In addition, the proposed project would be required to comply with the construction stormwater NPDES program, including through preparation of a SWPPP and implementation of associated BMPs.

Response 16.130

The commenter suggests removing the following statement from the consistency discussion for General Plan Policy PS-13.2: Feasibility of line undergrounding would be at the discretion of the Director of the Resource Management Agency. Such feasibility will be at the discretion of the Director of the Resource Management Agency, however. Therefore, the suggested revision is rejected.

Response 16.131

The commenter argues that the consistency discussion for South County Area Plan Policy SC-1.2 should be removed from Section 4.10, *Land Use and Planning,* because it is not relevant to the proposed project. Policy SC-1.2 does not specify the types of development that should be clustered, but rather states that "Clustered development shall be encouraged in all areas where development is permitted in order to make the most efficient use of land and to preserve agricultural land and open space." The County interprets this policy as applying to the proposed project. Therefore, the referenced discussion will remain in the EIR.

Response 16.132

The commenter suggests that noise impacts associated with decommissioning be treated as separate impacts, based on the notion that the approach to decommissioning impacts should be consistent throughout the DEIR. The DEIR consistently analyzes impacts of decommissioning alongside construction and operation impacts. The exceptions are Impact HAZ-5, which is specifically related to hazardous waste associated with repowering or decommissioning, and therefore is not relevant to the construction and operation phases, and AQ-7. The assessment of noise from decommissioning is therefore appropriate, and no revisions will be made to the analysis.

Response 16.133

The commenter suggests the addition of language to Section 4.11.3(a) (Methodology and Significance Thresholds) of Section 4.11, *Noise,* to indicate that the project includes APM-1 to

address the potential environmental effects associated with project decommissioning. The discussion in question is intended to present the methodology for the analysis. The commenter-suggested language would more appropriately be located in the impact analysis. Therefore, the following modification has instead been made to the last paragraph under Impact N-1:

> Similar to the noise generated during construction of the proposed project, decommissioning activities would be conducted in accordance with all applicable requirements in effect at the time of project termination. As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time. A final decommissioning plan, based on then-current technology, site conditions, and regulations, would be prepared prior to actual decommissioning. Therefore, decommissioning of the project would result in less than significant noise impacts.

In addition, the last paragraph under Impact N-2 has been revised as follows:

> In addition, as described in Impact N-1, project decommissioning activities would be generally similar to project construction and be completed in 12 to 24 months. Assuming that the facility would be torn down and the materials present recycled or disposed, temporary traffic noise associated with such actions are assumed to be generally similar to the noise levels that would occur during project construction. In addition, as described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that potential environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.~~;~~ ~~t~~Therefore, decommissioning of the project would result in less than significant transportation noise impacts.

Response 16.134

The commenter notes that some weekend work may be necessary, and suggests a revision to Impact N-1 to clarify this point. As noted in Section 2.6.1 of Section 2.0, *Project Description,* "Some earlier or later hours and weekend work may also be required to maintain the project construction schedule and accommodate deliveries." Consistent with the project description and this comment, the following revision has been made to first paragraph below Table 4.11-6 has been revised as follows:

> …Due to hot weather, between June 1 and September 30, construction activities may begin as early as 5:00 AM and continue to 9:00 PM, Monday through Friday. A limited amount of construction work on the weekends may be required, depending on project scheduling, equipment and material delivery schedules, and other logistical considerations. In addition, ~~S~~some nighttime construction may be required to finish construction activities that cannot be readily stopped at the end of the regular construction day or to maintain the construction schedule…

It should also be noted that the extent of potential traffic-related impacts on weekends would be limited, since weekend construction activities would occur outside of regular weekday peak

periods. The evaluation of potential traffic related effects is generally focused on peak periods of travel when the volume of traffic is greatest and therefore would be most sensitive to additional traffic associated with project construction. Since weekend construction activities would occur outside of the typical peak hour periods, potential impacts would be less than significant.

Response 16.135

The commenter suggests that the analysis of construction noise impacts be more specific about the distances between proposed laydown areas and sensitive receptors. The first paragraph under Impact N-2 in Section 4.11, *Noise,* has been revised as follows:

> Construction activity at these sites may result in noise associated with equipment loading and off-loading and vehicle trips; however, no sensitive noise receptors are located within one mile of these locations. The proposed 38-acre laydown area is located approximately five miles southeast of the nearest sensitive receptors, and no sensitive receptors are located in close proximity to the proposed staging areas located at the project entrance. Therefore construction activity associated with the proposed laydown areas would not result in a significant noise impact.

Response 16.136

The commenter requests that the DEIR acknowledge APM-1 to address potential environmental effects associated with project decommissioning. Refer to response 16.133; the commenter-suggested language has been added to Impact N-1.

The commenter additionally references a previous comment suggesting that decommissioning be considered as a separate impact for noise. Refer to response 16.132. The DEIR consistently analyzes impacts of decommissioning alongside construction and operation impacts. The exception is Impact HAZ-5, which is specifically related to hazardous waste associated with repowering or decommissioning. The assessment of noise from decommissioning is therefore appropriate, and no revisions will be made to the analysis.

Response 16.137

The commenter requests that the DEIR acknowledge APM-1 to address potential environmental effects associated with project decommissioning. Refer to response 16.133; the commenter-suggestion language has been added to Impact N-2.

Response 16.138

The commenter suggests the addition of language to Section 4.12.3(a) (Methodology and Significance Thresholds) of Section 4.12, *Public Services,* to indicate that the project includes APM-1 to address the potential environmental effects associated with project decommissioning. The discussion in question is intended to present the methodology for the analysis. The commenter-suggested language would more appropriately be located in the impact analysis.

Therefore, the following modification has instead been made to the second to last paragraph of Impact PS-3:

> …Waste disposed to landfill during project decommissioning would be distributed to landfills in existence at the time. Similar to the construction phase, a demolition waste diversion program would be required by the SVSWA and San Luis Obispo County IWMA. In addition, as described in Section 2.0, *Project Description*, the project includes APM-1 to ensure that potential future environmental effects associated with project decommissioning – including those related to solid waste – would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

Response 16.139

The commenter suggests deletion of a full paragraph under Impact PS-1 in Section 4.12, *Public Services,* based on the applicant's discussions with CALFIRE. The paragraph is concerning the requirement for additional, specialized training to respond to a fire at the proposed project site. In their comments on the DEIR, CAL FIRE indicated that not only should this paragraph not be removed, but noted that the obligation for funding this specialized training lies with the project proponent, not CAL FIRE (refer to response 6.6). Therefore, the paragraph has not been removed from the DEIR.

Response 16.140

The commenter suggests that Mitigation Measure T-4 in section 4.13, *Transportation/Traffic,* should be deleted. As described in the analysis for Impact T-4, the project would add 28 daily trips (10 in the AM peak hour and 10 in the PM peak hour) to the roadway network during operation, including at the SR 41/SR 46 intersection. The intersection of SR 41/46 southbound left movement currently operates at unacceptable LOS F during Friday PM peak hour conditions. Therefore, although the project's contribution to traffic at this intersection is relatively small (10 trips in the PM peak hour), *any* addition of traffic to this intersection during the Friday PM peak hour would be considered a potentially significant short term impact in light of planned Caltrans widening improvements identified for the SR 41/46 intersection. Mitigation Measure T-4 is required to reduce the impact to less than significant.

It should also be noted that this is a temporary impact. At such time as planned improvements to the intersection are completed, the impact would no longer occur and a flagman, as required by Mitigation Measure T-4, would no longer be necessary.

Response 16.141

The commenter suggests removing the requirement that park and ride facilities be already improved and have existing stormwater drainage infrastructure in place, as currently required by Mitigation Measure T-7 in Section 4.13, *Transportation/Traffic.* As noted in response 12.8, the following detail has been added to Section 2.0, *Project Description*: "…the locations of park-and-ride facilities would consist of previously disturbed and/or developed areas (paved or unpaved) that have historically been used for parking purposes." The requirement in Mitigation Measure T-7 that lots be improved and have existing stormwater drainage infrastructure in

place is generally consistent with this project description language. However, to ensure that parking facilities comply with this design requirement, the mitigation measure will remain as worded.

Response 16.142

The commenter suggests the addition of language to Section 4.13.3(a) (Methodology and Significance Thresholds) of Section 4.13, *Transportation/Traffic,* to indicate that the project includes APM-1 to address the potential environmental effects associated with project decommissioning. The discussion in question is intended to present the methodology for the analysis. The commenter-suggested language would more appropriately be located in the impact analysis. Therefore, the following modification has instead been made to the fourth full paragraph under Impact T-1:

> … decommissioning would likely involve construction truck trips and construction vehicle trips to transport employees to the site to dismantle the facility. Truck trips may also be required to transport the dismantled facility to a waste processing facility or recycling facility. The number of construction truck trips, construction vehicles, and travel routes are unknown at this time. As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that potential environmental effects associated with project decommissioning – including those related to traffic and circulation – would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

Response 16.143

The commenter argues that the DEIR overstates the potential traffic-related effects associated with the operational phase of the proposed project, and recommends adding language to suggest that the impact would be similar to existing conditions. As described under Impact T-3 in Section 4.13, *Transportation/Traffic,* the proposed project would add 28 daily trips to the roadway network. While this amount of traffic is relatively small, the roadway segment of SR 46 between SR 41 and Branch Road currently operates at an unacceptable LOS E based on Caltrans LOS standards. Therefore, *any* addition of traffic to this segment would be considered a potentially significant impact.

The DEIR analysis further acknowledges that Caltrans is currently widening SR 46 from two lanes to four lanes from West Centre Street – McMillan Canyon Road to the four lane expressway section at Branch Road. The completion of this widening project would eliminate the significant operational impact. However, the segment from West Center Drive through SR 41 and the segment immediately east of SR 41 are not anticipated to be constructed until 2018 (Kimley-Horn, 2013) – after the project is anticipated to be operating. Until such time as the widening along SR 46 is complete, the addition of project generated traffic to this roadway segment would result in a significant impact to roadway operations.

The DEIR appropriately characterizes this impact as temporary, and does not overstate the level of impact but rather quantifies the number of trips added to the roadway network (28 daily

trips, including 10 in the AM peak hour and 10 in the PM peak hour). Therefore, no revisions have been made to the DEIR in response to this comment.

Response 16.144

The commenter argues that Impact T-5 in Section 4.13, *Transportation/Traffic,* should be deleted because it misinterprets the relevant CEQA threshold to conclude that a significant and unavoidable impact will occur due to existing traffic hazards. As indicated in the impact statement for Impact T-5, the impact relates to threshold 4: "Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)." Although the SR 41/46 intersection is an existing condition, it has an accident rate of more than two times the statewide average, and is therefore considered an existing hazard. The project would increase this hazard through the addition of new trips through the intersection. The focus of this threshold relates to the "increase in hazards to a design feature" which in this case is an intersection with a higher than normal incidence of accidents. "Incompatible uses" in threshold 4 identifies farm equipment in relation to higher speed vehicles as an example, but in this situation the addition of new trips to a hazardous intersection is considered an incompatible use for the purposes of this DEIR. The application of threshold 4 to this condition is appropriate for purposes of disclosing and analyzing the safety impact.

Response 16.145

Refer to response 16.144.

Response 16.146

The commenter recommends the addition of a decommissioning-specific impact to improve consistency among DEIR sections. As noted in response 16.132, the DEIR consistently analyzes impacts of decommissioning alongside construction and operation impacts. The exceptions are Impact HAZ-5, which is specifically related to hazardous waste associated with repowering or decommissioning, and AQ-7. The assessment of traffic from decommissioning is therefore appropriate, and no revisions will be made to the analysis.

Response 16.147

The commenter suggests minor text revisions related to the amount of workers that would commute to the project and the amount of workers that would choose to live closer to the project, based on the fact that 95% of the construction workforce would be shuttled to the site. Similar to the commenter's suggestion, the following revision has been made to the third paragraph of the *Construction Workforce* discussion in Section 6.1.1 (Economic and Population Growth):

> As a condition of employment, 95% of construction personnel would be required to commute to the project site via the proposed employee shuttle that would depart from specified park-and-ride lots. Only 5% of employees would be given permits to drive personal vehicles to the site. While ~~some~~ the majority of the labor force would likely

commute to the project park-and-ride lots from existing residences, some may elect to temporarily relocate near the project site. Given the remote nature of the project site and the relatively limited availability of lodging in nearby rural communities (including Parkfield, Cholame, and Shandon), it is assumed that the majority of workers would find accommodation in the City of Paso Robles and/or the City of Avenal.

Response 16.148

The commenter contends that, because 95% of construction personnel would be shuttled to the site, demand for temporary accommodations during construction would not result in an impact to existing housing supply. Although the majority of the labor force would likely commute to the project park-and-ride lots from existing residences, some may still elect to temporarily relocate, as noted in the revision shown in response 16.148. Further, as noted in Section 6.0, *Long-Term Impacts,* temporary housing of this workforce would occur at the exclusion of other travelers and seasonal residents. Additionally, many of the accommodations available, such as recreational campsites, are not designed for long-term temporary residents and such use would deteriorate or degrade the facilities. As such, demand for temporary accommodations during construction would result in significant impacts to the existing housing supply.

Response 16.149

The commenter suggests removing Mitigation Measure LT-1 in Section 6.0, *Long-Term Impacts.* Refer to response 16.148. Mitigation is required to alleviate the temporary direct and indirect population growth impacts resulting from worker relocation.

Response 16.150

The commenter suggests a minor clarification associated with the *Hydrology and Water Quality* discussion for Alternative 2 (Alternate Jack Ranch Site) in Section 7.0, *Alternatives.* Accordingly, the following revision has been made:

Similar to the proposed project, this alternative would require water for dust suppression purposes during construction, as well as water to ~~potable water would be needed to~~ wash the modules and support overall operations at the site.

Response 16.151

The commenter points out that project-related traffic for Alternative 2 would not be required to make a left turn onto eastbound SR 46 from SR 41. Therefore, Mitigation Measure T-2 would not apply to this alternative. Accordingly, the following revisions have been made to the second and fourth paragraphs of the *Transportation/Traffic* discussion for Alternative 2 (Alternate Jack Ranch Site) in Section 7.0, *Alternatives*:

~~As with the proposed project, construction of this alternative would add trips to the intersection of SR 41/SR 46, which currently operates at LOS F during the Friday PM Peak Hour. This impact would be Class II, *significant but mitigable,* with implementation of Mitigation Measure T-2, similar to the proposed project.~~ This alternative would avoid

potential impacts associated with the proposed project's addition of trips to the intersection of SR41/SR 46. The southbound left turn movement from SR 41 to SR 46 currently operates at an LOS F. This alternative would not add any trips traveling on SR 41 making a left onto eastbound SR 46. As a result, no mitigation would be warranted.

… Project generated traffic during the operation phase would add trips to the intersection of SR 41/ SR 46~~, similar to the proposed project~~. As discussed, ~~this~~ the southbound left at this intersection currently operates at LOS F during the Friday PM Peak Hour. This alternative would not contribute any traffic trips making a southbound left from SR 41 onto eastbound SR 46. As a result, this alternative would avoid the significant impacts associated with the proposed project (Impacts T-2 and T-4). ~~Alternative related traffic would cause a Class II, *significant but mitigable* impact with implementation of Mitigation Measure T-4. As described for the proposed project, accident rates at the intersection of SR 41 / SR 46 are more than two times the statewide average. Addition of traffic to this intersection during construction and operation of the proposed project could exacerbate existing hazards. Implementation of Mitigation Measures T-2 and T-4 would reduce the impact but it would remain Class I, *significant and unavoidable*.~~

Response 16.152

Refer to response 16.151 above.

Response 16.153

The commenter points out that, due to the similarities between the proposed project and Alternative 2, it is unlikely that Alternative 2 could be phased so as to avoid the need for a shuttle service. Therefore, the following revisions have been made to the sixth paragraph of *Transportation/Traffic* discussion for Alternative 2 (Alternate Jack Ranch Site) in Section 7.0, *Alternatives*:

Given that this alternative would construct a 280 MW solar generating facility over 12 to 24 months, similar to the proposed project, it is assumed that ~~the alternative site location, it is unknown whether~~ an employee shuttle service would be needed to provide transport to and from the site during construction. ~~It may be possible to phase construction to accommodate construction worker vehicles which would avoid the need for an off-site park and ride lot and related environmental impacts. If so, impacts associated with the proposed project would be avoided. If not,~~ As a result, impacts related to the secondary effects of park and ride lots would ~~likely~~ be similar to those described for the proposed project and Class II, *significant but mitigable* through implementation of Mitigation Measure T-7.

Response 16.154

The commenter suggests that the description of Alternative 3 should compare the footprint of the alternative to the solar development area of the proposed project, rather than the entire project site. The current comparison is of the total footprint of the alternative with the total

footprint of the project, which is appropriate because the solar development area (of both the alternative and the proposed project) is smaller than the total project site (refer to Figure 2-4a in Section 2.0, *Project Description*, and Figure 7-3 in Section 7.0, *Alternatives*).

Response 16.155

The commenter suggests a minor clarification associated with the *Hydrology and Water Quality* discussion for Alternative 3 (Reduced Project) in Section 7.0, *Alternatives.* Accordingly, the following revision has been made:

> Similar to the proposed project, ~~potable water would be needed to~~ this alternative would require water for dust suppression purposes during construction, as well as water to wash the PV modules and support overall operations at the site.

Response 16.156

The commenter suggests updating Table 7-1 to reflect any changes in significance for each of the alternatives based on revisions made in response to their comments on the alternatives analysis. The transportation/traffic row for Alternative 2 has been modified to indicate that the alternative would have both greater impacts and equivalent impacts to the proposed project, rather than just equivalent impacts, as follows: +/=

Response 16.157

The commenter suggests revising Table ES-1 in the *Executive Summary* as necessary to ensure consistency with revisions made in response to previous comments. These revisions have been made. Refer to responses 16.22, 16.23, 16.25-16.28, 16.88, 16.94, 16.95, 16.114, 16.119, 16.120, 16.121, 16.166, and 16.167.

It should be noted that, where mitigation measures in Section 4.4, *Biological Resources,* were updated, no revisions to Table ES-1 *Executive Summary* is required, as only the mitigation numbers and titles are listed and no revisions to the numbers or titles were made. Refer to responses 16.51, 16.53 through 16.57, 16.59-16.61, 16.63, 16.64, 16.66-16.68, 16.70-16.75, 16.77, 16.84, 16.85, and 16.184 for responses that revised mitigation language in Section 4.4.

Response 16.158

The commenter requests a revision to Figure 2-2 in Section 2.0, *Project Description,* to correct a typographical error. The revised figure is included in Section 4.0, *Amendments to the EIR,* as Figure 2-2a (refer also to response 16.159, below).

Response 16.159

The commenter suggests adding a figure depicting each of the project's geographic characteristics (or boundaries). A new figure (Figure 2-2b) has been added to Section 2.0, *Project Description.* In addition, the second paragraph under Section 2.4 (Project Location) has been revised as follows:

> …In addition, implementation of the proposed solar project would require construction and operation of an approximately 155-acre utility corridor and improvements to an existing private access road within an approximately 60-acre area. The various project boundaries are shown in Figure 2-2b, and tThese proposed project features are described in more detail under Section 2.5, Project Characteristics.

Response 16.160

The commenter clarifies that arrays would be 13 feet off the ground at the highest point, rather than 10 feet. The following revision has therefore been made to the third paragraph of the *Solar Modules, Collection Systems, and Inverters* discussion in Section 2.5.1 (Energy-Related Infrastructure) in Section 2.0, *Project Description*:

> …With a fixed-tilt system, the modules would be fixed at an angle between 20 to 25 degrees to the south and would not move. Fixed-tilt modules would be up to ~~ten~~ 13 feet off the ground surface at the highest point of the array depending on the terrain…

It should be noted that this modification is not anticipated to increase impacts related to aesthetics or glare. As noted in Section 4.1, *Aesthetics,* glint and glare from solar panels would primarily depend on the angle of the panel, the height and location of the sun, and the direction and proximity of off-site sensitive receptors. In addition, the only off-site receptors are two residences located approximately 775 feet north of the project site, and solar modules would be tilted at an angle between 20 to 25 degrees to the south to achieve maximum sun exposure. If any exposure occurred at these receptors, the duration would be expected to be relatively short, and the height of the solar modules would not substantially influence the length of exposure.

Response 16.161

In accordance with the commenter's suggestion, a minor typographical edit has been made to the seventh paragraph of the *Solar Modules, Collection Systems, and Inverters* discussion in Section 2.5.1 (Energy-Related Infrastructure) in Section 2.0, *Project Description*:

> A high-capacity 34.5 Kv collection system line would collect power in the northern and southern areas of the project site…The southern portions of the project site would also be linked by a high-capacity 34.5 Kv collection system line corridor…

Response 16.162

In accordance with the commenter's suggestion, the second paragraph of the *On-Site Substations* discussion in Section 2.5.1 (Energy-Related Infrastructure) in Section 2.0, *Project Description,* has been revised as follows:

> The substations areas would be improved with compacted materials and concrete pads to support electrical equipment and supporting infrastructure. The substations structures would range in height from approximately 20 to ~~90~~ 130 feet, as shown in Figure 2-7~~a~~b…

It should be noted that this increase in height is not anticipated to result in greater aesthetic impacts. As noted in Section 4.1, *Aesthetics,* the nearest sensitive receptors are two residences located approximately 775 feet north of the project site. In addition, the only public right-of-way from which the project site is visible is the end of Turkey Flat Road, near these residences. The substations would be located on either end of the 230 kV overhead transmission line corridor, in the central and southern portions of the site (refer to Figure 2-4a in Section 2.0, *Project Description*). These facilities would not be visible from these residences or any public right-of-way.

Refer also to response 17.3.

Response 16.163

In accordance with the commenter's suggestion, a minor typographical edit has been made to the *Access Road Improvements* discussion in Section 2.5.2 (Other Structures and Improvements) in Section 2.0, *Project Description*:

> …These improvements would include: widening the access road from 15 to up to 30 feet, resurfacing with aggregate material…

Response 16.164

In accordance with the commenter's suggestion, a minor typographical edit has been made to the last paragraph of the *Internal Roadways* discussion in Section 2.5.2 (Other Structures and Improvements) in Section 2.0, *Project Description*:

> Best Management Practices (BMPs) for construction and maintenance of roads would be implemented, as ~~well as the Applicant Proposed Measures (APMs)~~ described in Section 2.6.5, as well as the Applicant Proposed Measures (APMs) described in Section 2.9.

Response 16.165

In accordance with the commenter's suggestion, a minor typographical edit has been made to the third paragraph of Impact AES-2 in Section 4.1, *Aesthetics*:

> …Visible improvements would include: widening the access road up to 30 feet in all locations, resurfacing with aggregate material, widening the existing culverts to accommodate the 30-foot width of the access road, and creating turnouts to accommodate emergency vehicle access…

Response 16.166

The commenter argues that the requirement that all operators of buggy carts take a training course prior to operation of any vehicle on the site is overly broad. In response to this comment, Mitigation Measure AQ-2(a) in Section 4.3, *Air Quality,* has been revised as follows:

- The project applicant shall maintain a 15 mph speed limit on roads where water application is the sole form of dust control, and shall post signs to remind workers throughout the work areas. The project applicant shall monitor to ensure compliance with the speed limit. As an additional measure, all of the cart operators shall be required to complete a ~~buggy~~ cart training course prior to operation of ~~any vehicle~~ carts on site;

The above revision has also been made to Mitigation Measure AQ-2(a) in Table 4.3-1 and Table ES in the *Executive Summary.*

Response 16.167

The commenter suggests that dust monitors should provide their reports to a site dust manager. In response to this comment, the following revision has been made to the last bullet of Mitigation Measure AQ-2(a) in Section 4.3, *Air Quality:*

- The contractor or builder shall designate a site dust manager and up to four persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite…

The above revision has also been made to this mitigation measure in Table 4.3-1 and Table ES-1 in the *Executive Summary.*

Response 16.168

The commenter requests an update to the source information for Figures 4.4-1 and 4.4-2a through 4.4-2f. These figures have been revised to indicate the following source: Amy Sparks (H.T. Harvey & Associates and First Solar, 2014). The revised figures are included in Section 4.0, *Amendments to the EIR*.

Response 16.169

The commenter remarks on Table 4.4-2 that the Solar Generating Facility Area column incorrectly states the acreage for willow-cottonwood riparian forest as 2.53 acres, rather than the corrected area of 1.72 acres. This was a clerical error and Table 4.4-2 has been revised accordingly as shown below. The total acreage presented in Table 4.4-2 for Solar Generating Facility Area did not require revision.

Habitat	Solar Generating Facility Area	Access Road	Utility Corridor
Tree Dominated Habitats			
Willow-Cottonwood Riparian Woodland	~~2.53~~1.72	--	--
Cottonwood Alluvial Riparian Woodland	--	--	--

Response 16.170

The commenter suggests the use of the term "project impact area" rather than "project site." The term "project site" is defined in Section 2.5 (Project Characteristics) and reiterated in Section 4.4.2 (Setting) as "the combined impact areas that include the Solar Generating Facility Area, the Access Road and the Utility Corridor. " This term is used appropriately and consistently throughout Section 4.4.2(b) (Habitats). Therefore, no revision is necessary.

Response 16.171

The commenter points out that Section 4.4.2(b) (Habitats) contains an erroneous reference to Figure 3a. This error has been revised in the third paragraph of the *Seasonal Wetland* discussion, as follows:

> The alkali wetlands on the BSA are concentrated in the northeastern corner where alkaline minerals have accumulated in the foothills and valley floor, forming a wetland complex where surface and subsurface water drains into the BSA from watersheds to the northeast (Figure ~~3a~~4.4-2a).

Response 16.172

The commenter remarks on Section 4.4.1 subsection Sensitive Plant Communities and Critical Habitat that the acreage of Wildflower Fields have not been updated to match the Addendum to Biotic Resources Report and Biological Resources Impact Analysis (HTH 2014e; Appendix E.13) report's project impact acreages, and that clarification is needed regarding location and extent within project impact areas such that there is no apparent overlap in acreages presented. The following clarifications were made to the *Sensitive Plant Communities and Critical Habitat* discussion in Section 4.4.2(f) (Special Status Resources):

> Sensitive Plant Communities and Critical Habitat. Three sensitive plant communities are known to occur within the vicinity of the BSA: Wildflower Fields, Great Valley Mesquite Scrub and Valley Sink Scrub. Neither Great Valley Mesquite Scrub nor Valley Sink Scrub plant communities were documented within the BSA; however, Wildflower Fields are present on ~~540.58~~551.87 acres within the Solar Generating Facility Area ~~project site~~, and 0.271 acres in the Access Road, and 0.13 acres within the Utility Corridor. This community was not detected within the Utility Corridor…

Response 16.173

The commenter remarks on rare plant survey coverage in Section 4.4.1, pointing out that the 2013 rare plant surveys did not cover the utility corridor, because it was not part of the project at that time. Additionally, the commenter remarks on a discrepancy between the findings in Table 4.4-4 in the DEIR for potential occurrence of Hoover's eriastrum and Mason's nest straw in the utility corridor versus the text of Section 4.4.1 (Summary). Clarifications to survey areas have been provided in Section 4.4.2(f) (Special Status Resources) to address these clerical errors, as follows:

> Special Status Plants and Animals. Special status plants and animals, their listing status, habitats, and potential to occur within the BSA are presented in Table 4.4-4. Figures

4.4-4 -4.4-6 depict the distribution of CNDDB (2013) records of special status plant, reptiles and amphibians, and other wildlife species and critical habitat (respectively) in the vicinity of the BSA. Most of the 53 special status plants and 32 special status animal species known from the region and listed in Table 4.4-4 have at least some potential to occur within the BSA except for the yellow warbler (*Dendroica petechia*), Indian valley spineflower (*Aristocapsa insignis*), Hardham's suncup (*Camissonia hardhamiae*), ~~Hoover's eriastrum (*Eriastrum hooveri*),~~ delicate blue cup (*Githopsis tenella*), and San Antonio hill monardella (*Monardella antonina* ssp. *antonina*)~~, and Mason's neststraw (*Stylocline masonii*)~~.

Special status plant surveys were conducted from March through July 2013 across the BSA, except in the Utility Corridor area which was not part of the project at the time of these botanical surveys, in accordance with protocols established by the U.S. Fish and Wildlife Service (USFWS), CDFW, and CNPS. A variety of surveys were conducted including surveys focused on the direct impact areas for the project plus a 100-foot buffer, except in the Utility Corridor area as noted above;…

Response 16.174

The commenter points out that Figure 4.4-3 depicts an older, out-of-date site plan, which does not show the proposed utility corridor. This figure has been revised. Refer to Section 4.0, *Amendments to the EIR,* for these revised figures.

Response 16.175

The commenter remarks on discovery of *Convolvulus simulans* within the access road corridor during 2014 surveys subsequent to 2013 botanical rare plant surveys. The results of these surveys are included in the 2014 Rare Plants Survey Report (HTH 2014h; FEIR Appendix E. 15), and the results of that surveys did not substantially alter the evaluation of impacts to special status species or require any additional mitigation. Table 4.4-4 has been revised based on the new information from the 2014 surveys as follows:

Scientific Name **Common Name**	**Potential for Occurrence within the Access Road**
Convolvulus simulans small-flowered morning glory	~~**Absent.** Not observed in Access Road corridor during 2013 protocol rare plant surveys.~~ **Present.** Detected in the Access Road corridor during surveys in 2014.

Response 16.176

The commenter remarks on a statement in Table 4.4-4 that indicates bald eagle nesting distribution is currently expanding, questioning whether there is factual support for this statement in the vicinity of the project. This statement is directly quoted from the Biotic Report (HTH 2014b; DEIR Appendix E.1). Expansion of bald eagle nesting distribution, including expansion in central California counties, is well documented from the late 1990s onward as species recovery from DDT

impacts progressed. As stated in the Final Biotic Report (HTH 2014b; DEIR Appendix E.1), "Between 1993 and 2012 the number of nesting territories known in the central coast region increased from one to 29 (Ventana Wildlife Society 2012). As of the 2012 nesting season, Monterey County contained six, known occupied nesting territories and San Luis Obispo County contained nine occupied territories (Ventana Wildlife Society 2012)." Aerial surveys performed by HTH identified one active nest and one potential inactive nest not previously known from the region, supporting the statement that bald eagle nesting distribution is expanding in the vicinity of the project.

Response 16.177

The commenter remarks on a statement in Table 4.4-4, suggesting that a statement regarding suitability for coast horned lizard be clarified to identify that suitable habitat is within the utility corridor rather than more generically, the project site. Table 4.4-4 identifies suitable habitat in the solar generating facility area, the access road, and the utility corridor. The use of "project site" in these table entries is redundant. Therefore, the following revisions to Table 4.4-4 have been made:

Scientific Name *Common Name*	**Potential for Occurrence within the Solar Generating Facility Area**	**Potential for Occurrence within the Access Road**	**Potential for Occurrence within the Utility Corridor**
Phrynosoma blainvillii coast horned lizard	**Possible.** Moderately suitable habitat present ~~on the project site~~. There is a record for the species within 3 miles south of the project site.	**Possible.** Moderately suitable habitat present. There is a record for the species within 2 miles west of the Access Road.	**Possible.** Moderately suitable habitat present ~~on the project site~~. There is a record for the species within 3 miles to the south.

Response 16.178

The commenter suggests that the *Oregon Vesper Sparrow* discussion in Section 4.4.1 should clarify that the utility corridor was added to the project description after the majority of avian surveys were completed, but that potential for occurrence of special status species in the utility corridor can be evaluated, as identified in Table 4.4-4. To clarify this point, the following statement was added to the end of the *Special Status Birds* discussion in Section 4.4.1:

> *Special Status Birds.* Six special status bird species were detected within the BSA: tricolored blackbird (*Agelaius tricolor*), golden eagle (*Aquila chrysaetos*), short-eared owl (*Asio flammeus*), burrowing owl (*Athene cunicularia*), bald eagle (*Haliaeetus leucocephalus*), and loggerhead shrike (*Lanius ludovicianus*). Another six special status bird species have the potential to occur on-site: grasshopper sparrow (*Ammodramus savannarum*), long-eared owl (*Asio otus*), mountain plover (*Charadrius montanus*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and Oregon vesper sparrow (*Pooecetes gramineus affinis*). The Utility Corridor was added to the project description after the majority of avian surveys were completed. However, the potential for occurrence can be evaluated, and Table 4.4-4 identifies those special status avian species with potential to occur in the Utility Corridor.

In addition, the discussion of *Oregon Vesper Sparrow* in Section 4.4.1 was also clarified, as follows:

> …While this subspecies has not been observed on-site, suitable wintering habitat is present within the Solar Generating Facility Area, ~~project site and the~~ Access Road, and Utility Corridor.

Response 16.179

The commenter remarks on a statement in Section 4.4.1 subsection San Joaquin Pocket Mouse, noting that this section should clarify the utility corridor was added to the project description after the majority of mammal surveys were completed, but that potential for occurrence of special status species in the utility corridor can be evaluated, as identified in Table 4.4-4. To clarify this point, the following statement was added to the *Special Status Mammals* discussion in Section 4.4.1:

> *Special Status Mammals.* Two special status mammal species were detected on-site: San Joaquin kit fox (*Vulpes macrotis mutica*) and American badger (*Taxidea taxus*). Another three special status mammals have the potential to occur on-site: Pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), and San Joaquin pocket mouse (*Perognathus inornatus inornatus*). The Utility Corridor was added to the project description after the majority of mammal surveys were completed. However, the potential for occurrence can be evaluated, and Table 4.4-4 identifies those special status mammal species with potential to occur in the Utility Corridor.

In addition, the discussion of *San Joaquin Pocket Mouse* in Section 4.4.1 was also clarified, as follows:

> *San Joaquin Pocket Mouse*. The nearest CNDDB record for San Joaquin pocket mouse is approximately 14 miles east of the BSA. Though none were detected within the Solar Generating Facility Area, ~~the project site or~~ Access Road, or Utility Corridor, San Joaquin pocket mice could occur where suitable friable soils are present in grasslands and blue oak woodlands.

Response 16.180

The commenter recommends clairfication that 2012 and 2013 vernal pool branchiopod surveys did not cover the utility corridor, because it was not part of the project at that time. In response to this comment, the following revisions have been madeto the *Special Status Invertebrates* discussion in Section 4.4.2(f) (Special Status Resources):

> *Special Status Invertebrates.* Critical habitat for vernal pool fairy shrimp (*Branchinecta lynchi*) is located approximately 10 miles to the west of the BSA. Protocol vernal pool branchiopod surveys were conducted within the BSA, except in the Utility Corridor area which was not part of the project at the time of these surveys,…
>
> Wet-season protocol surveys were conducted within the BSA, except in the Utility Corridor area as noted above, during the 2012/2013 winter rainy season. Nine seasonal wetlands were sampled and no listed branchiopods were detected; however, the area received approximately 50% of the average precipitation recorded for the region containing the BSA. Please refer to the Wet-Season Branchiopod report in Appendix E.9 for more details.
>
> Note that the Utility Corridor study area was added to the project after dry-season and wet-season sampling was completed; and, therefore, was not subject to vernal pool branchiopod surveys. However, the potential for occurrence can be evaluated, and Table

4.4-4 identifies those special status branchiopod species with potential to occur in the Utility Corridor.

Response 16.181

The commenter recommends minor typographical edits to Figure 4.4-7 in Section 4.4, *Biological Resources.* This figure has been revised to have the title "Vernal Pool Branchiopod Survey Coverage and Occupied Habitat" and indicate the following source: Amy Sparks (H.T. Harvey & Associates and First Solar, 2014. The revised figure is included in Section 4.0, *Amendments to the EIR.*

The updated figure title has also been modified in the *Table of Contents.*

Response 16.182

The commenter requests an update to the source information for Figures 4.4-8 through 4.4-11. These figures have been revised to indicate the following source: Amy Sparks (H.T. Harvey & Associates and First Solar, 2014. The revised figure is included in Section 4.0, *Amendments to the EIR.*

Response 16.183

The commenter identifies a clerical error in Table 4.4-7 that incorrectly states the amount of California tiger salamander habitat impact acreage in the"0 – 1844 feet" row, under the "Solar Generating Facility Area, Total" column. This error has been corrected to replace the incorrect acreage with the corrected value of 85.88.

Distance from Breeding Pond	Solar Generating Facility Area			Access Road			Utility Corridor		
	Temp	Perm	Total	Temp	Perm	Total	Temp	Perm	Total
0 – 1,844 feet	24.34	61.54	885.88	14.14	8.5	22.64	2.4	0.2	2.6
1,844 – 4,925 feet	83.25	659.32	742.57	21.72	12.11	33.83	3.5	0.3	3.8
4,925 – 6,125 feet	72.07	314.77	386.84	1.39	0.83	2.22	0.8	0.1	0.9

Response 16.184

The commenter suggests that the requirement for a wildlife-friendly fence design plan to be submitted to USFWS and CDFW is not warranted, as neither agency has approval authority over the fence design. However, this measure regarding wildlife friendly fencing specifically discusses SJKF passage. Because SJKF are both state and federally listed, fencing intended to allow SJKF passage must meet CDFW and USFWS requirements. The measure states that copies of the plan would be provided to CDFW and USFWS for review. This review is intended to ensure fencing activities are not in conflict with other measures protecting SJKF. The County is identified as the approving authority for this measure. No changes have been made in response to this comment. However, a typographical error was corrected in the measure as follows:

> **Mitigation Timing:** The Wildlife-friendly fence design plans shall be submitted by the applicant to the County, CDFW, and USFWS for review and approval~~ed~~ by the County prior to issuance of grading permits.

Response 16.185

The commenter identifies a clerical error in Impact B-2 that incorrectly refers to Table 4.4-7 (Impact Acreages for Upland Habitat within Four Distance Intervals from Potential California Tiger Salamander Breeding Ponds) rather than Table 4.4-8 (Summary of Impacts on Natural Communities in the Project Impact Area). The clerical error has been addressed throughout this section to correctly reference Table 4.4-8. Additionally, other table references that incorrectly referred to the wrong table number due to insertion of additional tables into the report section were also corrected (Tables 4.4-6, 4.4-7, 4.4-8, and 4.4-9).

Response 16.186

The commenter identifies a typographical error in which permanent impacts to mixed oak woodland were reported as 0.01 acre rather than the correct value of 0.1 acre. The error has been corrected in the *Mixed Oak Woodland: Permanent Impacts* discussion in Impact B-2, as follows:

> …project activity could result in permanent impacts to up to 0.0~~1~~ acres of oak woodland from potential linear.

Response 16.187

The commenter identifies a clerical error in which acreages for three land cover types(Agricultural, Cottonwood Alluvial Woodland, and Alluvial Intermittent Stream) were omitted from Table 4.4-8. This error has been corrected by adding these types and acreages to the table, and re-checking totals. These revisions are shown on the following page.

Response 16.188

The commenter requests an update to the source information for Figure 4 4-12. This figure has been revised to indicate the following source: Amy Sparks (H.T. Harvey & Associates and First Solar, 2014. The revised figure is included in Section 4.0, *Amendments to the EIR.*

Response 16.189

The commenter suggests a minor typographical edit to the mitigation discussion for Impact HYD-4 in Table 4.9-1 in Section 4.9, *Hydrology and Water Quality.* Refer to response 16.120; as noted therein, the discussion in question has been removed and replaced with the statement that "No mitigation is required."

Response 16.190

The commenter suggests adding a statement to Section 4.9, *Hydrology and Water Quality,* indicating that the Regional Water Quality Control Board (RWQCB) is in the process of re-examining the impairment of waterbodies in the watershed, as well as the underlying causes of

impairment. The Central Coast RWQCB was contacted regarding the impairment status of the Cholame Creek watershed. Based on this inquiry, the discussion of impairment of the Cholame Creek watershed in Section 4.9, *Hydrology and Water Quality,* has been updated as follows:

> The waterbodies in the Cholame Creek Watershed are impaired ~~due to exceedance of~~with high levels of boron, chloride, fecal coliform, sodium, and ~~water quality objectives and United States Environmental Protection Agency (USEPA) recommended criteria for~~ *E. Coli*, low levels of dissolved oxygen, and electrical conductivity outside of levels supporting healthy fisheries (Hamilton, Personal Communication, October 28, 2014). Fecal coliform are shed by all warm-blooded animals including humans, pets, livestock, birds, and other wildlife.

	Total Project Impact Area		Access Road		project site		Utility Corridor	
Habitat Types	**Permanent Impacts**	**Temporary Impacts**	**Permanent Impacts**	**Temporary Impacts**	**Permanent Impacts**	**Temporary Impacts**	**Permanent Impacts**	**Temporary Impacts**
Agricultural	**0.06**	**0.63**	0	0	0	0	0.06	0.63
Alluvial Intermittent Stream	**0**	**0.1**	0	0	0	0.0	0	0.1
California Annual Grassland	**1674.95**	**346.87**	3.88	32.41	1670.43	306.27	0.64	8.19
Cottonwood Alluvial Riparian Woodland	**0**	**0**	0	0	0	0	0	0

RWQCB staff also noted that a total maximum daily load (TMDL) has been approved for fecal indicator bacteria in Cholame Creek. To reflect this information, the following modification has been made to the description of the *Federal Clean Water Act* discussion in Section 4.9.2(d) (Regulatory Setting) of Section 4.9, *Hydrology and Water Quality*:

> The Central Coast RWQCB has established and certified ~~a~~ TMDLs for boron in streams of the Estrella River Basin~~, which was approved by the Board~~ in December 2013 and for fecal indicator bacteria in the Cholame Creek Watershed in May 2011 (CCRWQCB, 2014).

Although RWQCB staff are in the process of reviewing recent data and providing updated recommendations on the impairment of water bodies, staff are not aware of any new data from Cholame Creek included in this assessment and therefore do not anticipate any changes to the current listed impairment for Cholame Creek (Hamilton, Personal Communication, October 28, 2014). Accordingly, the commenter's suggested textual addition has not been included in the FEIR.

As a result of this response, the following has been added to Section 8.1.2 (Agencies/Individuals Contacted) in Section 8.0, *References and Preparers,* of the DEIR:

> Hamilton, Mary. Environmental Scientist. Central Coast Regional Water Quality Control Board. Email Communication. October 28, 2014.

Response 16.191

The commenter suggests the addition of language to Section 4.9.3(a) (Methodology and Significance Thresholds) of Section 4.9, *Hydrology and Water quality,* to indicate that the project includes APM-1 to address the potential environmental effects associated with project decommissioning. The discussion in question is intended to present the methodology for the analysis. The commenter-suggested language would more appropriately be located in the impact analysis. Therefore, the following modification has instead been made to the second to last paragraph under Impact HYD-1:

> Decommissioning would be required to comply with the standards in place at the time of decommissioning, which are anticipated to be similar or more stringent than the requirements currently placed on construction activities. In addition, as described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

Response 16.192

The commenter suggests that the discussion of Impact HYD-5 should reference an addendum to the Preliminary Drainage Report. In accordance with the commenter's suggestion, the following text has been added to the first paragraph under Impact HYD-5 in Section 4.9, *Hydrology and Water Quality*:

> The *California Flats Solar Project Preliminary Drainage Report* (RBF, 2013) included a preliminary hydraulic analysis to determine potential flood hazards relating to flow depths and velocities throughout the project site. The *Preliminary Drainage Analysis Addendum* (Wallace Group, 2014) provided additional review and recommendations regarding flood hazards, and included the private access road in the review…

Response 16.193

The commenter provides a new biological report covering the proposed project site: HT Harvey & Associates, Results of the 2013 Scent Dog Surveys, California Flats Solar Project, January 2014. This report was not previously received or reviewed by the DEIR consultant. This report has been reviewed as necessary to respond to specific comments that cite the report. This comment does not specifically address the DEIR. Therefore, a specific response to this comment is not feasible.

Response 16.194

The commenter provides a new biological report covering the proposed project site: Western EcoSystems Technology, Inc., California Flats Solar Project, 2014 Eagle Nest Survey Report, August 12, 2014. This report was not previously received or reviewed by the DEIR consultant. This report has been reviewed as necessary to respond to specific comments that cite the report. This comment does not specifically address the DEIR. Therefore, a specific response to this comment is not feasible.

Response 16.195

The commenter provides a new biological report covering the proposed project site: Western EcoSystems Technology, Inc., California Flats Solar Project, Eagle Use Survey Interim Report, March 10- June 2014, September 5, 2014. This report was not previously received or reviewed by the DEIR consultant. This report has been reviewed as necessary to respond to specific comments that cite the report. This comment does not specifically address the DEIR. Therefore, a specific response to this comment is not feasible.

Letter 17

Pacific Gas and Electric Company

Greg Parker, Principal Land Planner
Environmental Planning and Permitting

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September 22, 2014

Delinda Robinson
Monterey County Resource Management Agency
Planning Department
168 W. Alisal St., 2nd Floor
Salinas, CA 93901
Phone: (831) 755-5198

RE: Comments on the Draft Environmental Impact Report for the Proposed California Flats Solar Project (PLN120294; SCH#2013041031)

Dear Ms. Robinson:

Thank you for the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the California Flats Solar Project. While the County does not have approval authority over PG&E's facilities associated with the project, which are under the sole discretionary jurisdiction of the California Public Utilities Commission (CPUC), the County's DEIR properly includes an assessment of the direct and reasonably foreseeable indirect physical changes resulting from the solar generating facility, including the switching station and related construction along PG&E's existing Morro Bay-Gates 230 kV transmission line.

PG&E has completed, and is in the process of completing, further engineering work on the interconnection facilities, including the power line as well as the switching station and related facilities that PG&E will ultimately own, and is providing the following updates to the information contained in the DEIR related to PG&E facilities. These additional updates provide specific design details and features, and are within the scope of the PG&E facilities description and related analysis set forth in the DEIR. 17.1

Switching Station. As indicated in the DEIR, the project will require a switching station, which will cover approximately 6 acres, and will connect to the Morro Bay-Gates 230 kV transmission line for transmission to California Independent System Operator (CAISO) transmission system. This switching station will be constructed by California Flats Solar, LLC (CFS) and may be purchased by PG&E upon completion of the switching station to PG&E standards. In addition, CFS will install approximately eight-foot chain link fencing topped with barbwire around the perimeter of the new switching station to provide security fencing for the facility. 17.2

Transmission Line (T-Line) Construction: PG&E will need to reconfigure the Morro Bay-Gates 230 kV transmission line to accommodate the California Flats Solar project, and will construct approximately five to seven steel monopole structures or lattice structures approximately 130 17.3

feet high to connect the transmission line to the proposed CFS switching station. The actual size and location of the tower line reconfiguration will be determined upon final engineering, but will be located within the project study area analyzed in the DEIR. 17.3

Temporary Shoo-fly Line: A shoo-fly line is a temporary line built to allow changes to be made to existing lines. PG&E will need to install a temporary shoo-fly to support the Templeton Gates 230 kV circuit when reconfiguring the PG&E Morro Bay-Gates 230 kV line. This shoo-fly will require approximately ten wood poles, which will be removed upon securing the interconnection to the switching station (typically 3-6 months). The actual size and location of the shoo-fly reconfiguration will be determined upon final engineering, but will be located within the project study area analyzed in the DEIR. 17.4

Trenched Fiber Line: CFS will install two trenched fiber line conduits from the switching station to the PG&E Morro Bay-Gates 230 KV line within the project study area in the vicinity of the T-Line. PG&E will construct a switching station fiber tap and the fiber tap located on the PG&E Morro Bay-Gates 230 KV transmission line. The fiber lines are needed for electric system protection. 17.5

Decomissioning: The DEIR states that the PG&E facilities will be decommissioned along with the California Flats Solar Project once it has reached its useful life. This is not correct. PG&E facilities will not be decommissioned at the end of the useful life of the California Flats Solar project, but will remain associated with the Morro Bay-Gates 230 KV line. As a result, references to decommissioning of the proposed project should not include the PG&E facilities. 17.6

CPUC Permitting: The DEIR states that the PG&E facilities are subject to a separate discretionary review process through the CPUC. To clarify, although it is true that the CPUC has discretionary authority over PG&E's project and could require discretionary permitting for PG&E's interconnection facilities in this case, the project appears likely to qualify for an exemption from formal permitting. If exempt, PG&E would comply with a noticing process under the CPUC's General Order 131-D that affords CPUC review and public comment, but not a discretionary approval. As a responsible agency, the CPUC will be given the opportunity to review the CEQA document to confirm whether impacts associated with the PG&E facilities are less than significant and whether the interconnection work qualifies for exemption from the formal permitting requirements in order to determining whether a discretionary permit will be needed. 17.7

Mitigation Measures: CFS will construct the switching station and will implement all of the mitigation measures related to the proposed project, including construction of the switching station, which ultimately may be owned and operated by PG&E. The remaining portions of PG&E's interconnection facilities (T-line and shoo-fly) will be constructed by PG&E. While the County of Monterey does not have siting, design or construction authority over PG&E's electrical facilities or jurisdiction to impose mitigation measures on PG&E for facilities it constructs, PG&E will incorporate applicant-proposed measures and standard construction best management practices (e.g., temporary erosion control, worker educations, staging construction equipment outside of sensitive resource areas, etc.) into the T-Line and shoo-fly construction consistent with the measures established in the DEIR. These measures would be comparable in nature to the measures described in the DEIR to avoid or minimize potential impacts associated with project construction. 17.8

As indicated above, the CPUC has exclusive jurisdictional authority over the siting, design and construction of PG&E's facilities. Accordingly, all plans referenced in the mitigation measures that will be subject to review and approval by Monterey County will be submitted by CFS only. PG&E would not be subject to County inspection and or notification for the installation of PG&E facilities. As a final note, we anticipate that CFS will be implementing all avoidance and minimization measures associated with the construction of the project, including biological monitors and pre-construction surveys for the whole of the project, which would include the PG&E facilities. 17.9

It appears that the DEIR adequately evaluates potential environmental effects of PG&E's interconnection work and supports the conclusion that the environmental effects associated specifically with PG&E's facilities (the switching station, the T-Line and the shoo-fly), which cover approximately 7.5 acres (approximately 6 acres for the switching station and approximately 1.5 acres for the T-Line) of the approximately 2,720-acre solar project, will not be significant. The County's confirmation of this fact would assist PG&E in efficiently complying with the CPUC permitting requirements. 17.10

Thank you for the opportunity to provide these comments.

Sincerely,

Greg Parker
Principal Land Planner, Environmental Planning and Permitting

Letter 17

COMMENTER: Greg Parker, Principal Land Planner, Environmental Planning and Permitting, Pacific Gas and Electric

DATE: September 22, 2014

Response 17.1

The commenter states that PG&E is completing further engineering work on the interconnection facilities for the proposed project, including the power line as well as the switching station and related facilities that PG&E will ultimately own, and is providing updates on the specific design details and features of these facilities. This comment is acknowledged.

Response 17.2

In addition to the DEIR's description of the proposed switching station, the commenter states that the project applicant will install approximately eight-foot chain link fencing topped with barbwire around the perimeter of the new switching station to provide security for the facility. The discussion of the PG&E switching station in Section 2.0, *Project Description*, has been updated as follows to reflect this information (refer also to response 17.3). It should also be noted that PG&E submitted a supplemental letter on October 28, 2014, clarifying that the transmission structures would be 140 to 150 feet in height, rather than 130 feet (refer to Appendix P). The following text has also been modified to reflect this change:

> PG&E Switching Station. Near the location of the proposed northern substation, the project proponent would also construct a new 230kV interconnection switching station that would provide an interconnection to the existing Morro Bay-Gates 230kV transmission line and would be owned and operated by PG&E. The PG&E-owned switching station would include an approximately ~~six to~~ eight foot chain link fence with barbwire for security, electrical equipment and control building, and ~~two to four~~ five to seven transmission structures approximately ~~130~~ 140 to 150 feet in height to reroute the existing 230 kV transmission line into the new switching station.

Response 17.3

The commenter notes that PG&E will need to reconfigure the Morro Bay-Gates 230kV transmission line to accommodate the proposed project, and will construct approximately five to seven steel monopole structures or lattice structures to connect the transmission line to the proposed switching station. The second paragraph of the *On-Site Substations* discussion and the *PG&E Switching Station* discussion in Section 2.0, *Project Description*, has been updated to reflect this information. It should also be noted that PG&E submitted a supplemental letter on October 28, 2014, clarifying that the transmission structures would be 140 to 150 feet in height, rather than 130 feet (refer to Appendix P). The following text has also been modified to reflect this change:

> The substations areas would be improved with compacted materials and concrete pads to support electrical equipment and supporting infrastructure. The substations

structures would range in height from approximately 20 to ~~90~~ 130 feet, as shown in Figure 2-7~~a~~b. Security fencing consisting of six to eight foot chain link fencing with barbwire would be installed around the perimeter of the new substations. Approximately ~~three to~~ five to seven steel monopole structures or lattice structures would be constructed between the northern substation and the PG&E Switching Station (described below) to tie the project into the PG&E system. These poles would be approximately ~~130~~ 140 to 150 feet in height.

PG&E Switching Station. Near the location of the proposed northern substation, the project proponent would also construct a new 230kV interconnection switching station…The approximately ~~Three to~~ five to seven steel monopole structures or lattice structures that would be constructed between the northern substation and the switching station would be approximately ~~130~~ 140 to 150 feet in height~~, as shown in Figure 2-7b~~. PG&E would be responsible for inspecting and maintaining the switching station.

It should be noted that the addition of more monopole or lattice structures, and the increase in height of those structures, is not anticipated to result in greater aesthetic impacts. As noted in Section 4.1, *Aesthetics,* the nearest sensitive receptors are two residences located approximately 775 feet north of the project site. In addition, the only public right-of-way from which the project site is visible is the end of Turkey Flat Road, near these residences. The PG&E switching station would be located on northern end of the 230 kV overhead transmission line corridor, in the central portion of the site (refer to Figure 2-4a in Section 2.0, *Project Description*). These facilities would not be visible from these residences or any public right-of-way.

Refer also to response 16.162.

Response 17.4

The commenter states that PG&E will need to install a temporary shoo-fly line to support the Templeton Gates 230 kV circuit when reconfiguring the PG&E Morro Bay-Gates 230 kV line. This shoo-fly would require approximately ten wood poles, which would be removed upon securing the interconnection to the switching station (typically 3-6 months). The discussion of PG&E's switching station in Section 2.0, *Project Description*, has been updated as follows to reflect this information:

When reconfiguring the PG&E Morro Bay-Gates 230 kV line, PG&E also would need to install a temporary shoo-fly line to support the Templeton Gates 230 kV circuit. This shoo-fly would require approximately ten wood poles, which would be removed.

Further, it should be noted that the temporary shoo-fly line and other new facilities that PG&E would install would not result in new environmental impacts because these facilities would be located within the solar development area, which the DEIR analyzed as a whole, and would not enlarge the overall footprint of the switching station.

Response 17.5

The commenter notes that the project applicant will install two trenched fiber line conduits from the switching station to the PG&E Morro Bay-Gates 230 kV line within the project site in the vicinity of the T-Line. The commenter adds that PG&E will construct a switching station fiber tap and a fiber tap located on the PG&E Morro Bay-Gates 230 kV line. The description of the PG&E switching station in Section 2.0, *Project Description*, has been updated as follows to reflect this information:

> A relay station would be constructed within an existing disturbed area to provide microwave relay to the Gates substation. In addition, the project applicant would construct two trenched fiber line conduits ~~approximately 200 feet of underground fiber would be constructed~~ from the switching station to a Morro Bay-Gates 230kV transmission line tower to connect to the optical ground wire on that transmission line tower to provide a communication path to the Gates substation.

Further, it should be noted that the fiber line conduits and other new facilities that PG&E would install would not result in new environmental impacts because these facilities would be located within the solar development area, which the DEIR analyzed as a whole, and would not enlarge the overall footprint of the switching station.

Response 17.6

The commenter clarifies that PG&E facilities would not be decommissioned along with other project facilities at the end of the project's useful life, but would remain associated with the company's Morro Bay-Gates 230 kV line. The discussion of decommissioning in Section 2.0, *Project Description*, has been updated as follows to reflect this correction:

> Overhead electrical collection lines, poles and associated components would be disassembled and removed, and reprocessed, sold, salvaged or otherwise disposed of in an appropriate manner. PG&E facilities constructed in association with the proposed project would not be decommissioned, but rather would remain associated with the Morro Bay-Gates 230 kV line.

Response 17.7

The commenter provides a clarification that although the California Public Utilities Commission (CPUC) has discretionary authority over PG&E's project and could require permitting for PG&E's interconnection facilities, the project appears likely to qualify for an exemption from formal permitting. If exempt, the commenter adds that PG&E would comply with a noticing process under the CPUC's General Order 131-D that affords CPUC review and public comment, but not discretionary approval. This comment is noted. Consistent with this comment, DEIR Section 2.0, *Project Description*, states that the proposed project may require a discretionary permit from CPUC authorizing construction of the switching station.

Response 17.8

The commenter states that the County of Monterey does not have siting, design, or construction authority over PG&E's electrical facilities for the proposed project, including the T-line and shoo fly, and does not have jurisdiction to impose mitigation measures on PG&E for facilities it constructs. Nevertheless, the commenter says that PG&E will incorporate applicant-proposed measures and standard best management practices for construction (e.g., temporary erosion control, worker education, staging construction equipment outside of sensitive resource areas) into construction of the T-line and shoo-fly, consistent with measures established in the DEIR. This comment is noted. As discussed in DEIR Section 2.0, *Project Description*, the applicant would be responsible for constructing the switching station, and PG&E would own and operate the facility.

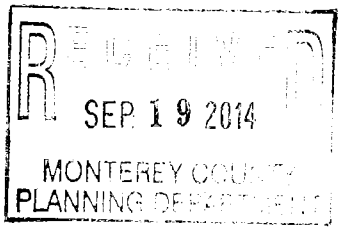
Response 17.9

The commenter states that PG&E would not be subject to County inspection and/or notification for the installation of PG&E facilities. PG&E also anticipates that the project applicant would implement all mitigation measures associated with the project, including biological monitors and pre-construction surveys, for the whole project including the PG&E facilities. This comment is noted.

Response 17.10

The commenter concludes that it appears that the DEIR adequately evaluates the potential environmental effects of PG&E's interconnection work. The commenter adds that the DEIR adequately supports the conclusion that these environmental effects would not be significant. This comment is acknowledged.

Letter 18



From: Van Boxtel Family

Sent: Thursday, September 18, 2014

TO: Delinda Robertson

Monterey County Resource Management Agency

168 W. Alisal Street 2nd Floor

Salinas, California 93901

E-Mail – CEQAcomments@co.monterey.ca.us

Enclosed, please find our comments to the DEIR PLN 120294 California Flats Solar Project with one enclosure (The Expose'). We are sending this U. S.Mail. Also letter sent by e-mail to above e-mail address w/o enclosure.

Thank you for your consideration.

W. J. Van Boxtel

90681 Turkey Flat Road, San Miguel,California 93451

805-463-2500-----rosevan36@gmail.com

Table of Contents

Nowhere in America is a non-participant (the Van Boxtel Family) so negatively impacted by a solar field as we will be.

PREFACE

This pleading and the reasoning on subject matter found under the Table of Contents will expose the impacts the approval of the California Flats Solar project will have on us, the Van Boxtel Family and its ranch holdings. A consideration of the agencies will hopefully address the financial impacts of diminished property value both short and long term.

The negative environmental effects, emotional, visual and economic impacts resulting from the possible agency approval of the California Flats Solar project are real and have been felt since 2012 when we were informed of its consideration. For the past two years we have been trying to live with the possibility that our visual and economic world may be drastically altered forever. 18.1

There is no way to mitigate for approximately 2500 acres of metal, glass, buildings and overhead power lines built literally in our front yard. The solar field is right in the center of a 13,000 acre grass valley. The solar field footprint ranges from 2.9 miles wide to 8.7 miles long. Open space, supposedly of human value, and supposedly protected by Agricultural zoning, yet obviously disposable for speculative causes. The footprint of the proposed solar field covers all of the flattest areas of thirteen directly affected sections of land. We enclosed a reduced map of the proposed solar field. Evidence exists that it's the same habitat the Yokut and Salinas Indians resided on for hundreds of prior years. The footprint of their wigwams is still evident along some of the many creeks that run through the property.

Neither trees nor fencing, both very limited in height, can begin to shield our view from our residences on the ranch from 100 to 3600 feet above the development. The solar field view from our south facing ranch is 8.25 miles wide by 3 miles to the north. A total of 6,720 acres with elevations ranging from 100 feet to 3600 feet, above the solar field. 18.2

Entering and leaving our ranch we will have to drive past over 3000 lineal fee of solar panels, just mere feet off our driveway.

In summary, it would seem to be within the purview of Monterey County regulatory agencies to exact financial mitigation for the solar fields negative financial and visual impacts, both long and short term. As we see it, it's going to cost us millions of dollars of lost financial value. That, while the developers and future owners and operators make a gigantic profit. 18.3

**

1) THE SITE

From a personal, multi-generational family standpoint, the California Flats Turkey Flat valley is our open space which is highly revered. Our main residence and two other family houses are 18.4

designed to capture the beauty and serenity of the subject valley. The main house has over 350 square feet of glass doors and windows overlooking the Flats, giving us valley views from almost the entire house. The residences look down on the entire project, every panel. The main residence is 100 to 300 feet above the solar panels making them all visible. From other locations on the ranch up 1200 feet above the solar panels it will look like a black glass lake on aluminum posts over laid by power poles. 18.4

Reference the "Contrary Exposé in the binder attached with biological, Indian culture and other background information. The exposé's were provided to the Monterey County Planning Department in early 2013 to give them a feeling for our dilemma. 18.5

Once the valley has been mutilated, covered with solar panels, there is no going back. The solar field is estimated to remain operational for 30 to 40 years. There is every reason to believe it will be replaced when obsolete, for them to sell to agencies will be simple, a valley with no redeeming emotional or environmental value, only a metal and glass junk yard that can be replaced by an updated but still infeasible new solar field. Yes, once this naturally, beautiful valley has been degraded, it will remain so forever. There is no physical mitigation for the negative, visual and economic, impacts the eradication of this beautiful valley will have on our family's lives, forever. To us, the visual open space, natural beauty of the California Flat, Turkey Flat Valley, is at the heart of why we are here, on the Oropesa Ranch. 18.6

An adjunct impact of the solar field is the negation of our Make-A-Wish fishing pond and campground a mere 10 feet from the northwest corner of the proposed solar field property. I cannot envision trying to justify bringing handicapped children to a site that is visually impacted by a metal and glass, industrial field, crisscrossed with power lines.

If you begin to rationalize where to place an unmitigated industrial site, why wouldn't the vast California deserts, with high voltage transmission lines running in every direction come to mind? Millions of acres open to unrelenting sunshine almost every day of the year, no fog, no haze and most importantly, no people to be adversely impacted. The monotonous, endless rows of panels, all facing south, the construction noise and dust impacts no one. There are supposedly less valley fever and anthrax spores in the desert so the dust will travel miles to the south over unoccupied desert 18.7

So what about the specific site at California Flats. All of the above impacts are present including spores causing valley fever. People, near and distant, will experience the degradation of their environment and lie in the pathway of the northerly wind-driven dust as far away as Paso Robles, Atascadero and San Luis Obispo.

The proposed site is a pristine, natural open space valley as it was for the Yokut and Salinas Indians hundreds of years in the past. Open space was considered to have human value in the 18.8

past with the enactment of the Williamson Act during the 1960's, later came the scenic highways and save the natural environmental movements. According to the U. S. Department of Energy and printed in the Wall Street Journal and exposé by Leslie Stahl of 60 Minutes Television on Jan. 5, 2014, 20/20 and Fox News Megan Kelly, all exposing the failures of government, erroneous leadership and misinformation that has supported failing businesses, failed concepts and theories and billions of dollars in bad loans and subsidies, make for an unthinkable picture of waste. Accordingly the cost of solar energy approaches four (4) times as much as fossil fuels.

18.8

In California, with the legislature's mandate that 33 percent of electric energy must come from renewable sources, that mandate along with the cost of tax payer subsidies and utility company subsidies, paid directly to the utilities company via higher rates, the real cost of renewable energy could be in excess of five times what fossil fuels could provide us.

**

2) ENVIRONMENTAL ISSUES

Environmental concerns must address human, animal, bird and plant issues such as health, water, dust, and noise disturbances of the status quo whether it be soil, water courses, trees or vegetation in general. Solar panels, particularly in vast numbers, will raise the temperature above the panels and to some degree laterally whenever the sun shines. As discussed in Section #1, THE SITE, dust and therefore the diseases potential of dust laden with valley fever and anthrax spores is of great concern. San Luis Obispo County experienced a sharp increase in valley fever cases during the construction phase of the Carissa Plains Topaz solar project. They will definitely see additional upswings in reported cases when northerly winds get compressed by the inductive louver effect of the panels which will literally scoop up the spore laden dust that will be delivered far to the south of the Topaz facility. California flats solar will duplicate that hazard.

18.9

The abnormal use of water and draw down of the valley aquifers may be devastating to our aquifers. No one really understands the hydraulics of aquifers.

18.10

It is of great concern to us that the dust problem for the two year process of construction may be so hazardous to our health that we may have to physically leave the ranch residences. The prevailing winds in the valley are from the west and southwest. However, the valley experiences winds from all directions, notably the south. Winds from the south and southwest are problematic. The noise issue of growling heavy equipment cannot be mitigated so it will make our lives miserable for the two year construction phase also.

18.11

The draft EIR addresses the endangered, threatened and animals of special concern and birds. After fifteen years of operating and shepherding our ranch land and species, we are very concerned that the welfare of all wild species is being protected. We have not just tolerated the animals and birds, we have been pro-active in an effort to protect and enhance their populations. Our populations of endangered and threatened species are linked physically to the respective populations on the solar site. 18.12

The effort to convert a magnificent scenic valley to an industrial junk yard is irrational, uneconomical and the national farce of the 21st century. It's like a train, owned by Warren Buffet, paid for by American taxpayers, rolling down the tracks with seemingly no rational way to stop a totally irrational concept. 18.13

Suppose that Americans economic follies continue and we spend ourselves out of existence, gone broke. All the irrational environmentalists, who almost worship a climate change (there is no proof it exists) because it helps push their agenda for green energy at the expense of taxpayers.

**

3) VISUAL IMPACTS

Some negative impacts of the California Flats Solar Field have already been vented in the site discussion. I will elaborate and perhaps repeat some of the impacts to codify the visual impact rationale. A previously constructed verbal and pictorial presentation prepared in early 2013 and a copy presented to the Monterey County Planning Department is enclosed herewith. Appendix "A" to the Draft Environmental Impact Report (DEIR) includes a few pages of that presentation named "A Contrary Exposé in opposition to the proposed California Flats Solar Field.

In the spiral-bound presentation booklet, we have included numerous 8 ½ x 11 photographs of the solar field site as it exists today. Some of the photographs have been "doctored" to show the outline or footprint of the proposed solar field. The real relevance of the pictures is self evident. Photos taken of the proposed site from our residence reveal the impacts the field would have on us and our family ranch. The fact that our residences are above the entire proposed solar field will give us an almost birds-eye view of the entire facility. I state again, there is no physical way to mitigate for the devastation of a view that comes from a minimum of 100 feet to as much as 300 feet at the east end of the proposed project. You may respond without thinking; plant trees. Imagine planting perhaps a thousand or more 100- foot tall trees. Anything less will take 30 years to partially obscure the field of panels, buildings and power lines. 18.14

Leafing through the presentation booklet you will note such facts, as we border on the subject site for 8.25 miles. Our ranch is on a south-facing slope making it possible to see from 4000 acres of the ranch, the entire Cholame Valley which includes California Flats and including seeing Highway 46 and Cholame Valley Road. 18.14

The ranch vistas will be transformed from a Wyoming big sky, mountain valley view, to looking down on a 2000 plus acre man-made glass and metal aesthetic catastrophe, gone will be the heart of the valley's lowlands, creeks and ponds that is the hatchery for a vast number of endangered, threatened or species of special interest. It is not just us, they too will be forever negatively impacted. There is an old saying, "we don't get sick, we make ourselves sick".

**

4) ECONOMIC IMPACTS

We have touched on the intrinsic lack of the feasible economics of solar energy in earlier areas. It is an economic square pig in a round hole.

Here we will try to illustrate (expose) the financial catastrophe a solar field would have on us, the Van Boxtel multi-generational family. We have asked a realtor and appraiser how to quantify the financial impacts a solar field in California Valley would have. Not surprising, they end up saying the same thing. There are no comparables to compare our case with. They know of no one on any solar project where there is the magnitude of impact we may experience if the project goes through. Almost all large commercial solar projects have occurred on a portion of land owned by a rancher living somewhat remotely from the solar field and all projects place the rancher's residence and ranch headquarter buildings on a level the same as the solar field. Therefore, the rancher is at eye-level with the solar field on essentially level ground. They are not looking down on the project as we are. The financial reward of a 30-year lease on a portion of their ranch makes the deal workable. The realtor suggests we would have to put the ranch on the market to find out what the current market value might be and you have to disclose that a solar field is in the process of possible approval. So what do you think its worth? A whole lot less than it was before you heard about the solar field. 18.15

The ranch was intended to be a forever family home whether we all live here at any one time is unimportant. When we have done what we set out to do in our youth or after college, the eventual home will always be the ranch.

That concept and promise is now in jeopardy. The ranch is still here but it will never be the same if the commanding view of the Cholame Valley, including the California Flats and Turkey Flat is not only removed aesthetically and physically, it may be replaced by an unsightly, inhuman conglomeration of millions of pieces of glass, metal posts and frames along with

attendant buildings, overhead power lines and poles and a surrounding stockade type fence. To humanize the solar field is beyond trees and fences. There is no way to mitigate or humanize the physical nature of the proposed solar field.

What are our financial impacts – staggering – not only for future value which will not appreciate enough to offset the annual and long term depreciation of the dollar; on average 2 to 3 percent per year. 18.15

If it is looked at as an investment, that it was, the return on investment (ROI) over the 30 or 40 year life of the solar field (maybe forever if it is replaced after 30 or 40 years), the ROI would likely be Zero. In other words we would be lucky to get our original, but depreciated, investment back less inflated depreciation. Our investment over time is dwindling yearly by the amount of depreciation (caused by inflation) of the American dollar and its purchasing power.

**

5) MITIGATION

Some things are physically unmitigated onsite. Some physically unmitigated impacts are the loss of view and visual impacts, and the real value of your property as a result of the negative impacts the solar field will have on the market value of our ranch and others experiencing impacts. Another is for off-site habitat "set aside" of land to permanently establish habitats where propagation and protection of threatened species can occur. 18.16

Physical mitigations that can be achieved by modifying procedures, setting aside like habit offsite. The DEIR properly addresses mitigations necessary to assist in the protection and propagation of endangered and threatened species onsite. It is assumed that under Monterey County's, California Department of Fish and Wildlife and Federal Dept of Fish and Wildlife's guidance and supervision, the special species will be protected and hopefully supplemented. 18.17

We, the Van Boxtel Family Limited Partnership, can provide and if the project is approved in any form, we will seek to provide a conservation easement for the protection of the many endangered and threatened species for which the proponent will have to mitigate. We processed a conservation bank application for three years with the CDFW between 2010 and 2013 for numerous species including all the species identified by biologists in the DEIR for the solar site.

**

A CONTRARY EXPOSE'

IN OPPOSITION OF THE

PROPOSED CALIFORNIA FLATS SOLAR FIELD

A PRESENTATION OF MAPS, PHOTOGRAPHS AND WRITTEN RATIONALE BY THE HIGHLY IMPACTED OROPESA RANCH OWNED BY THE VAN BOXTEL FAMILY LIMITED PARTNERSHIP ON THE SOUTH- FACING SLOPE OVERLOOKING THE PROPOSED CALIFORNIA FLATS SOLAR FIELD. THE OROPESA RANCH BORDERS ON 8.5 MILES OF JOINT PROPERTY LINE ON TWO SIDES OF THE PROPOSED PROJECT.

18.18

VAN BOXTEL FAMILY LIMITED PARTNERSHIP

90681 Turkey Flat Road

San Miguel, California 93451

805-463-2500

W. J. & R. S. VAN BOXTEL, General Partners

DEC 2013

INTRODUCTION

We, W. J. and ROSEANN S. VAN BOXTEL, as General Partners of the Van Boxtel Family Limited Partnership, present herewith the following collection of maps, photographs and written exposes' on the impacts the proposed California Solar Flats will have on us, our extended families and descendants. The following Table of Contents sets out the categories of NEGATIVE impacts.

The industrialization of the pristine, sculptured pasture land of the California Flats, also known as Turkey Flats, and all parts of the Cholame Valley should be unthinkable to the Master Plan framers and future planners who established and are responsible for the preservation of the rangeland of southern Monterey county as open space F-160 (one residential living unit per 160 acres of open space).

In 1999 when we built a new house on our ranch, the Monterey County Building Dept. wanted assurances that the house would not be visible to neighbors or road traffic. The proposed solar field is in the center of a 20,000- acre meadow, where anyone and everyone for miles in all directions can look down on and see the 2675 acres of black glass panels.

We, our family and friends will be able to see every square inch of the panels every daylight hour for the thirty-year life of the solar field.

VISUAL AND EMOTIONAL IMPACTS: The visual and emotional impacts on our way of life will be gigantic. Our three residences are oriented to oversee the Cholame Valley. The close-up view of the California Flats area lies mere feet from our ranch headquarters building and area. You might say within a stone's throw. Overlooking 3000 acres of metal frames and black glass that is the industrial nature of a solar field will be an ominous ever- presence condition. The impractical, uneconomical, financially infeasible ink- spill design almost 9 miles long and varying in width to almost 3 miles wide is an abortion to say the least. Reference Map A under Index A. Square or rectangular structural designs are always the most economical and efficient. The solar field is the absolute antithesis of good design. Sadly, we all know or should know that green energy is an economic farce. 18.18

FINANCIAL IMPACTS: The financial impacts will be unthinkable. As much or more than fifty percent of our ranch investment will be painfully severed. For the life of the solar field and perhaps its future replacement with a second and third solar project, we will lose our asset base and prevent us from borrowing operation funds in the future. Needless to say we will never be able to sell the ranch and recoup our investment as long as the solar cloud exists.

ENDANGERED AND THREATENED SPECIES HABITAT: Grading and leveling the entire solar field and its surrounding area will permanently destroy habitat of known endangered species. Reference Index E and Map C of the Oropesa Ranch Conservation Bank. Many of the species on the Oropesa are known to exist on the California Flats

RADIATED HEAT FROM PANELS: The prevailing winds on the Oropesa and California Flats is from the South and West. The radiant heat rising from the 3000-acre solar field will definitely increase the ambient heat level at the ranch headquarters area during the summer months. The increased heat level will affect our comfort level and also increase our air-conditioning costs.

STORM-WATER RUNOFF: Approximately 6700 acres of the Oropesa Ranch is on south-facing slopes. The heavy rain drainage from the hillsides all flows onto and across the California Flats solar field area. The proposed theory and design of the panels is to bridge over the creeks with the panel framework. There is great potential of framework failure and obstructed water flow and flooding. Reference Index D for a storm water assessment.

INDIAN CULTURES: Indian artifacts and remnants are in evidence over our entire ranch. Village sites, home sites, ceremonial sites with attendant arrowheads, spear blades, cooking and food processing tools abound. There are as many as one hundred food milling holes in large rocks, mortars, some with the pestles (pulverizing rock hammers), in the mortar holes. There is a large ceremonial site 30 feet north of the solar field property line on our ranch. A ten-foot diameter pit that remains full of ashes. Shortly after purchasing the ranch in 1994, Louis Madina, a Yohut Indian pointed the site out to us. We immediately fenced the sacred site to prevent defacement or destruction. Louis Medina frequented our ranch once a year for an 8 to 10 day walk about during which he mapped ancestor remnants and photographed relics. See Index F- Map G for one of his maps he drew in 2001. One of fourteen such maps he penned. Map G is the northwestern corner of the solar field. The Make-A-Wish pond and ceremonial site on our ranch is also shown.

18.18

The grading and disturbing of the entire solar field area's soil will forever destroy and bury all the Yokut Indian relics from hundreds of years prior to the arrival of homesteaders in the late eighteen hundreds. The Yokut Indians were a mixture of Salinas and Chumash Indians.

CONSTRUCTION DUST IMPACTS: Dust created during the grading and construction periods, at least one and a half years, will cause airborne dust laden with indigenous valley fever spores to drift over to our ranch, particularly the residence compound. The hazards are significant.

VISUALLY OFFENSIVE ILLUMINATION: There seems to be a propensity for developers and regulatory agencies to light up developments everywhere including remote natural environments, like the California Flats; call it the stadium syndrome. There are no stationary man-made lights in the entire Cholame Valley that destroy the views of the starry skies. We use motion detection exterior lights on our ranch in keeping with the beauty of nature even at night.

WILDLIFE HABITAT: Provision must be made to provide access routes to permit pronghorn antelope, tule elk and black bear to migrate from the foothills of the Oropesa to the Cholame Valley and Cholame creek. We have black bears most winters, antelope and elk primarily during the spring and early summer. Reference Exhibit #3, pronghorn antelope, 50 feet beyond the fence along our driveway and on the northwest corner of the proposed solar field.

Please review the attached maps and legend of indexed photos that help clarify our position.

Table of Contents

Index A

(a) Vicinity Map
(b) Site Plan Map A

Index B

(a) Plate A, B, C, D, E, F
Current Photos, Existing Visuals, Photos taken from the Van Boxtel's home sites
(b) Exhibit A, B, C, D
Photos taken from Turkey Flat Road, the entrance gate to the Van Boxtel's Ranch (Oropesa)

Index C

Plate Ax, Bx, Cx, Dx
Index B Plate A, B, C, D modified to simulate solar panels

Index D

(a) Map B
Identifies creeks that run from the south facing slopes of the Oropesa Ranch onto the proposed solar field below. There are 10 such creeks.
(b) SEC #1
A vertical section showing the grade changes from Table Mountain plateau to the solar panel valley below.
(c) EXHIBIT #1
Shows the flooding course from creek entering the northwest corner of the proposed solar field area.

18.18

Index E

(a) Map C
A map showing endangered species present and confirmed on the Oropesa Ranch. Many of the species are known to exist on the solar property.
(b) Map C, Plate A and Ax
The Make-A-Wish fishing pond camp grounds with a wheel chair friendly floating dock and ramp. Its future use is sought if the solar field is built 10 feet to the south.

Index F

Indian Artifacts and Remnants
Map G and Plate G indentify residual remnants of early American culture.

Index G

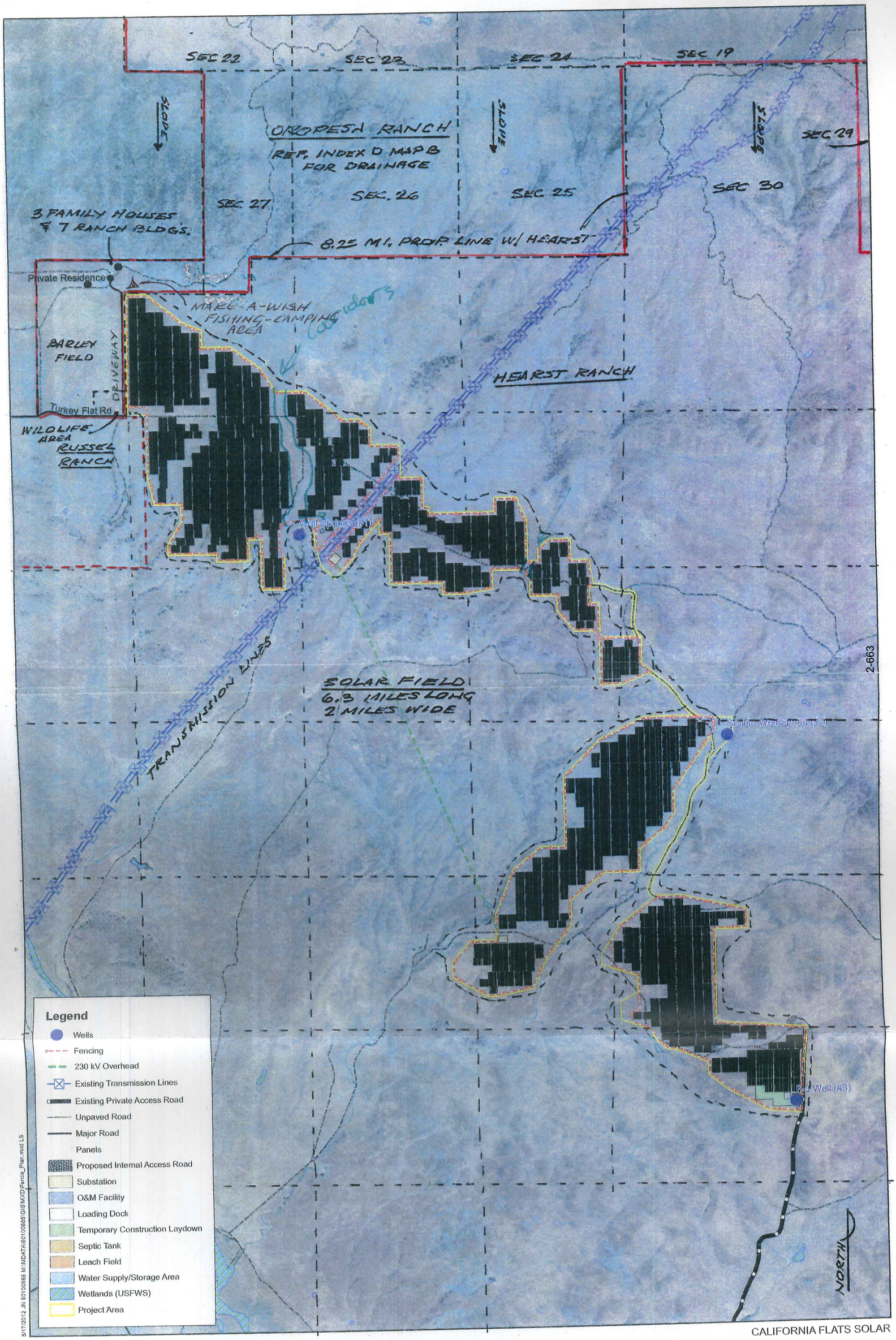
EXHIBIT #2 A Solar Proposal 2012
An economic analysis of the proposal for our section 33 barley field. As you can see the development is completely funded by U.S. taxpayers through subsidies and tax credits. The developers (promoters) are not concerned about the economics of the project because the reimbursements from government (taxpayers) are based on the percentage of costs. The owners, farmers, ranchers or industry look only to the bottom line which, in the case of Exhibit #2 is only .7% (a little over one half of one percent). The unfortunate tax payers, State and Federal, pay for the solar field but never own any part of it. In other words, the owners' neighbors are paying for the implementation of the solar field.

Index A

18.18

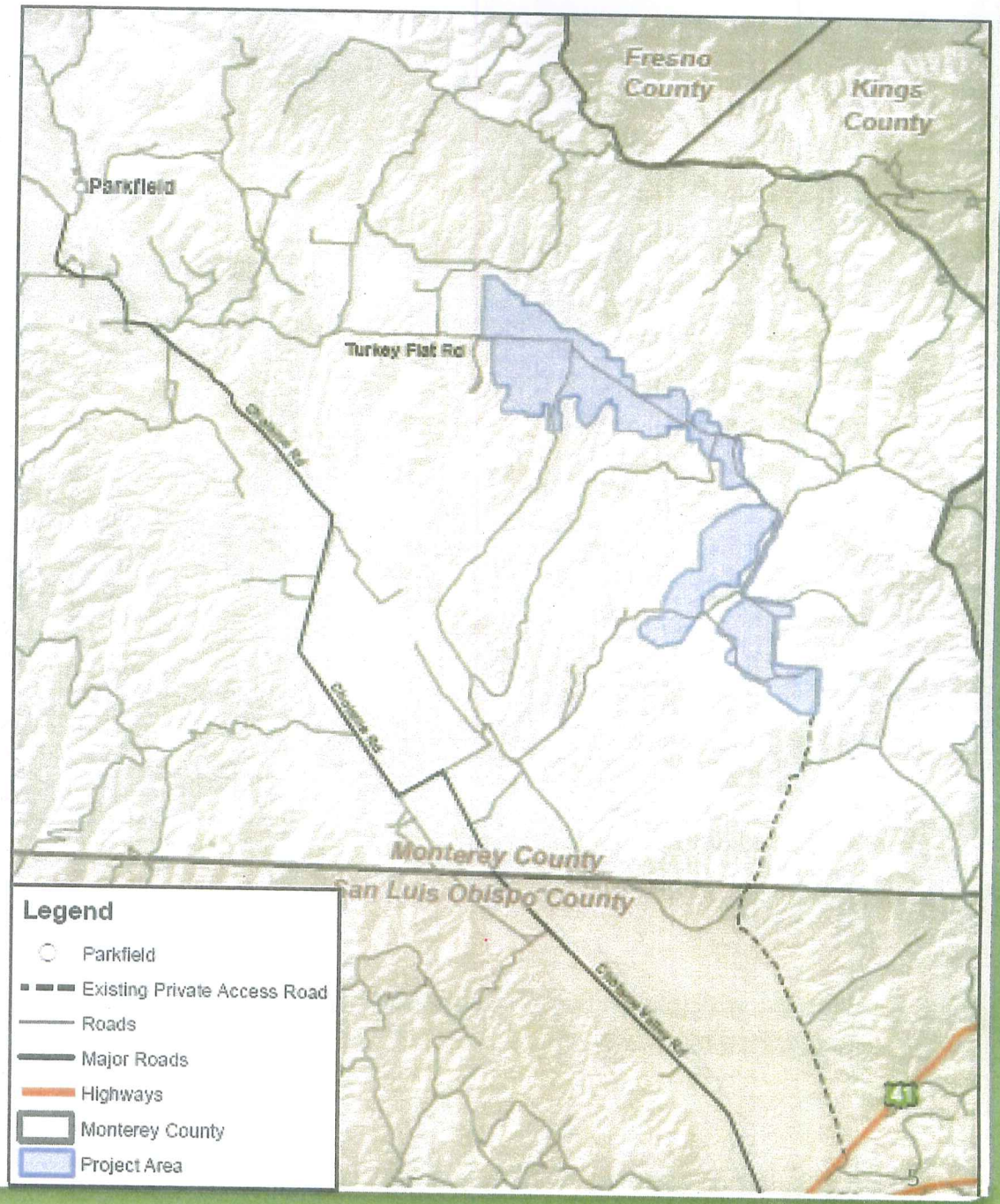
Vicinity Map

Map A
Solar Field Site Map


SEC 22
SEC 23
SEC 24
SEC 19
SEC 29
SEC 30
SEC 27
SEC. 26
SEC 25
SLOPE
SLOPE
SLOPE
OROPESA RANCH
REF. INDEX D MAP B FOR DRAINAGE
3 FAMILY HOUSES & 7 RANCH BLDGS.
8.25 MI. PROP. LINE W/ HEARST
Private Residence
MARC-A-WISH FISHING-CAMPING AREA
BARLEY FIELD
DRIVEWAY
Turkey Flat Rd.
WILDLIFE AREA RUSSEL RANCH
HEARST RANCH
Corridors
Well Spring (#1)
TRANSMISSION LINES
SOLAR FIELD
6.3 MILES LONG
2 MILES WIDE
Scobie Well/Spring (#2)
Well (#3)
NORTH
2-663
Legend
Wells
Fencing
230 kV Overhead
Existing Transmission Lines
Existing Private Access Road
Unpaved Road
Major Road
Panels
Proposed Internal Access Road
Substation
O&M Facility
Loading Dock
Temporary Construction Laydown
Septic Tank
Leach Field
Water Supply/Storage Area
Wetlands (USFWS)
Project Area
5/17/2012 IN 60100865 M:\MDATA\60100865\GIS\MXD\Fence_Plan.mxd LS
CALIFORNIA FLATS SOLAR
0
0.25
0.5
1
Miles
Source: NAIP 2010 (Imagery); Intermap DEM (slope); Esri (Roads)

California Flats Solar Project – Project Location

- 2,675 Acre site
- Southeast corner of Monterey County
- 7 miles southeast of Parkfield
- 25 miles northeast of Paso Robles
- Access from Highway 41 in San Luis Obispo County



VICINITY MAP

Index B

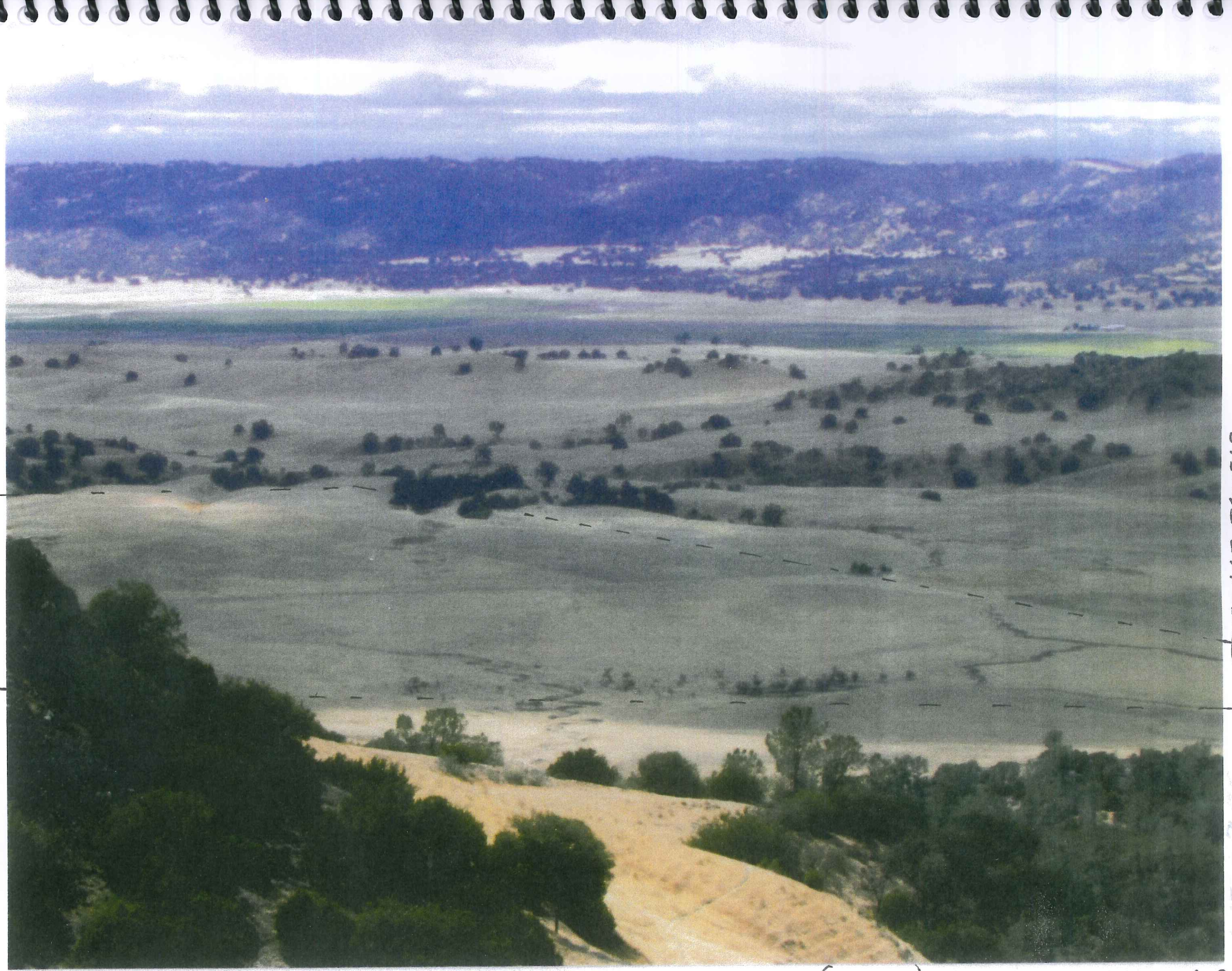
CALIFORNIA FLATS VALLEY CURRENTLY

18.18

Plate A,B,C,D
A combined photo of Plates A, B, C, D

Plates A, B, C, D, E, F
West to East photos of current, existing landscape photos taken from Van Boxtel's residence area

EXHIBIT A -D
West to East photos taken from Van Boxtel entry gate on Turkey Flat Road.



EXISTING VIEW ~~2666~~ SOLAR FIELD (PANELS) FROM VAN BOXTEL RANCH SEC. 34 COMBINES PLATES A-B-C-D

VAN BOXTEL EXISTING VIEW

PHOTO TAKEN FROM HOUSE PATIO SAME VIEW FROM KITCHEN, DINING & LIVING ROOMS

SOLAR FIELD

SOUTH

MAKE-A-WISH FISHING & CAMPING WITH DOCK & CAMP SITES

PLATE A

MATCH PLATE "A"

MATCH PLATE "C"

VAN BOXTEL EXISTING VIEW

PHOTO TAKEN FROM HOUSE PATIO LOOKING SOUTH OVER PROPOSED SOLAR FIELD

PLATE B

SOUTH

VAN BOXTEL, EXISTING VIEW
PHOTO TAKEN FROM HOUSE PATIO
OUTSIDE MASTER BEDROOM.

PLATE C.

SOUTH

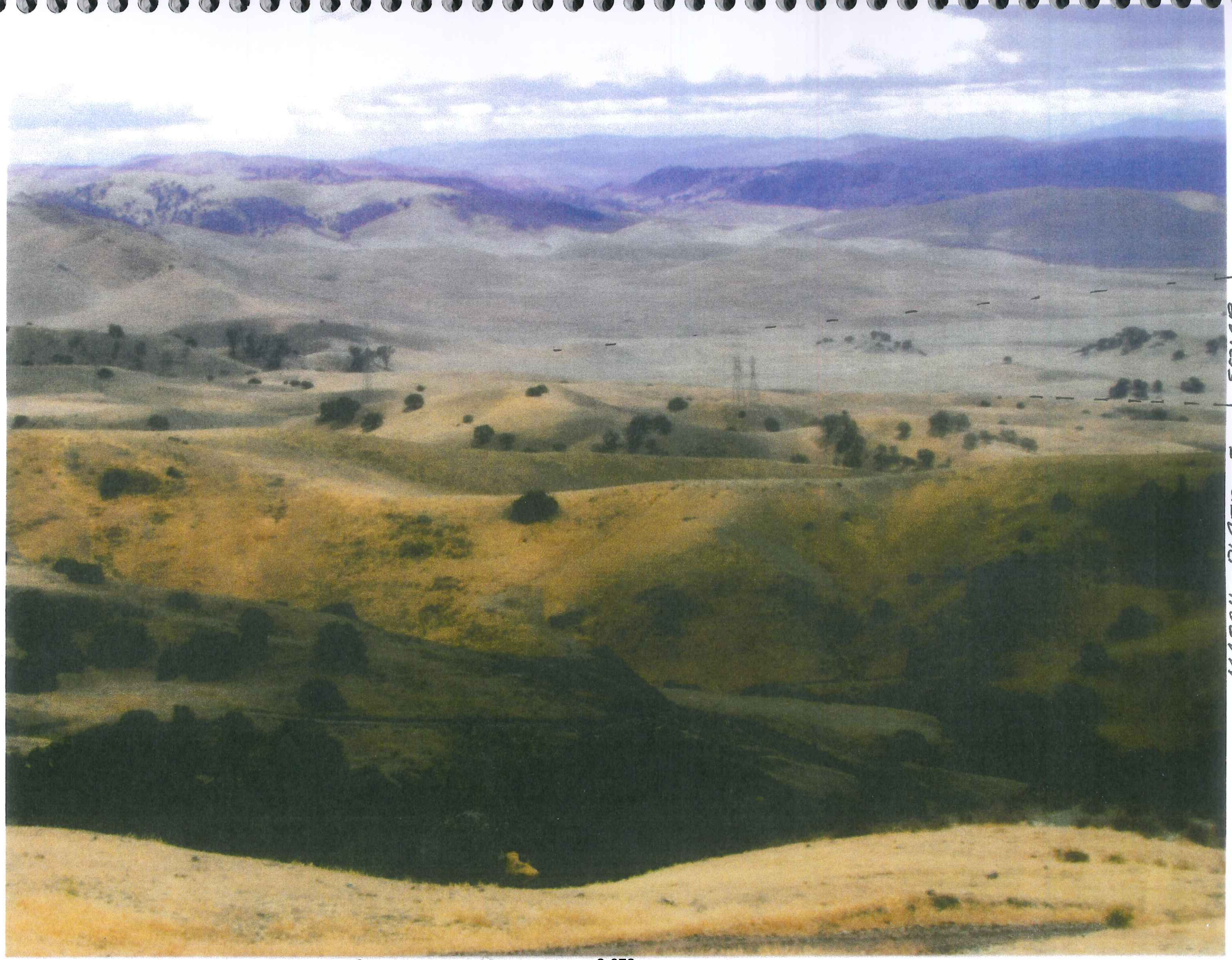
VAN BOXTEL, EXISTING VIEW
PHOTO LOOKING SOUTH YARD OUTSIDE MASTER BEDROOM

2-670

PLATE D

VAN BOXTEL RANCH, OVER PROPOSED SOLAR FIELD
FROM SEC 34 LOOKING SOUTH OVER CHOLAME VALLEY

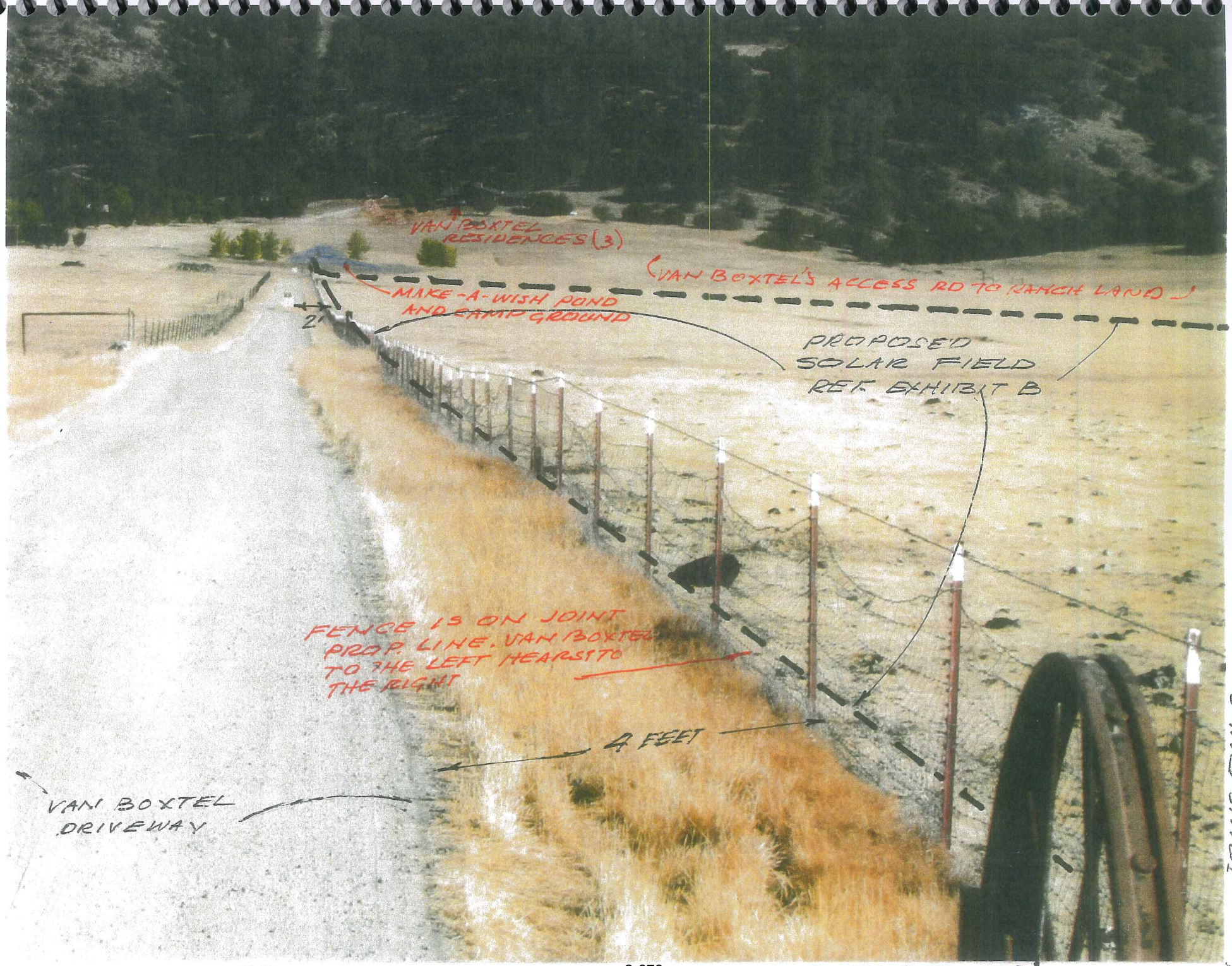
PLATE E



SOUTH

VAN BOXTEL, EXISTING VIEW OVER CHOLAME VALLEY
LOOKING SOUTH FROM SECTION 26

PLATE E

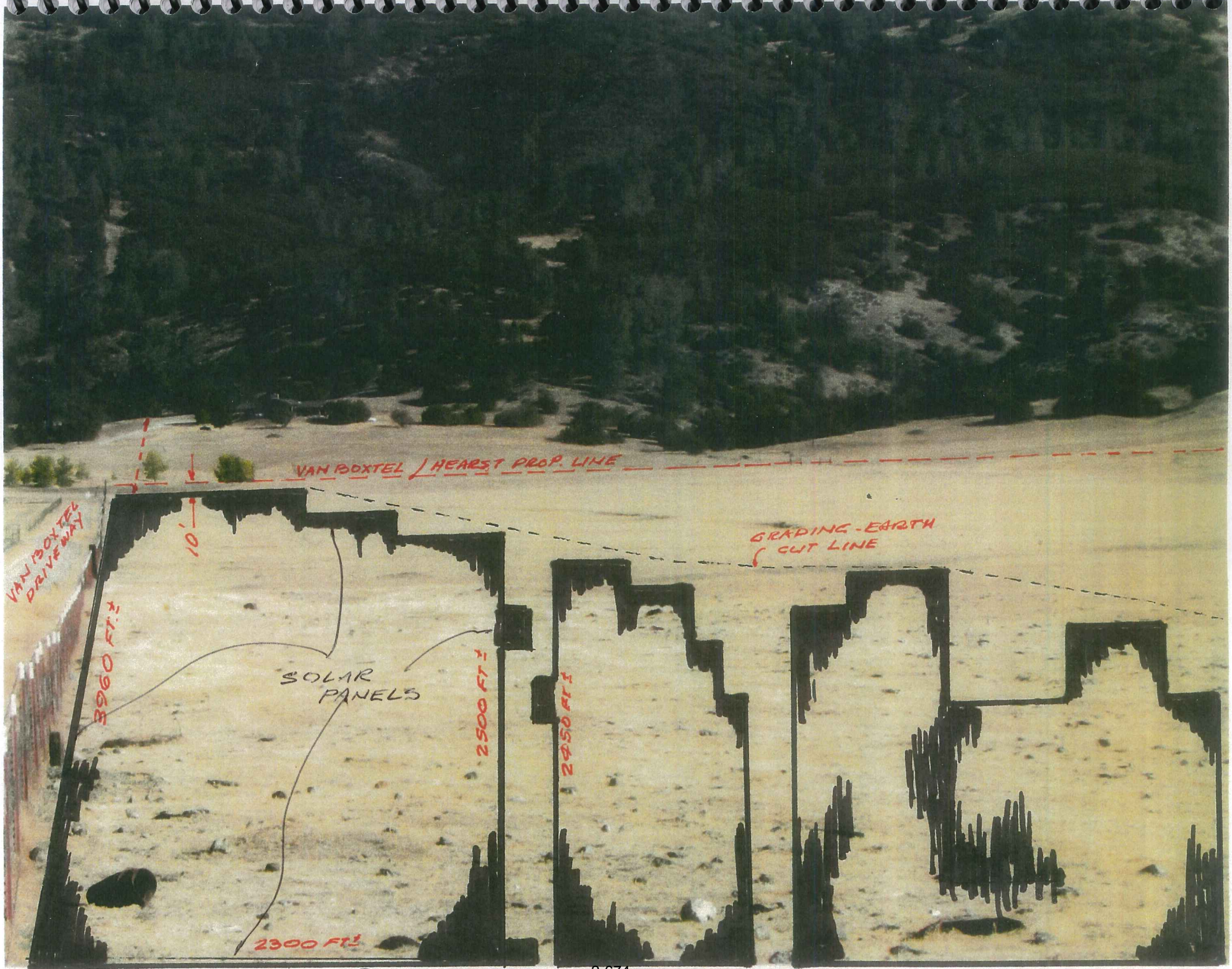


LOOKING NORTH FROM ENTRY GATE

EXISTING VIEW

VAN BOXTEL ENTRY GATE

EXHIBIT A

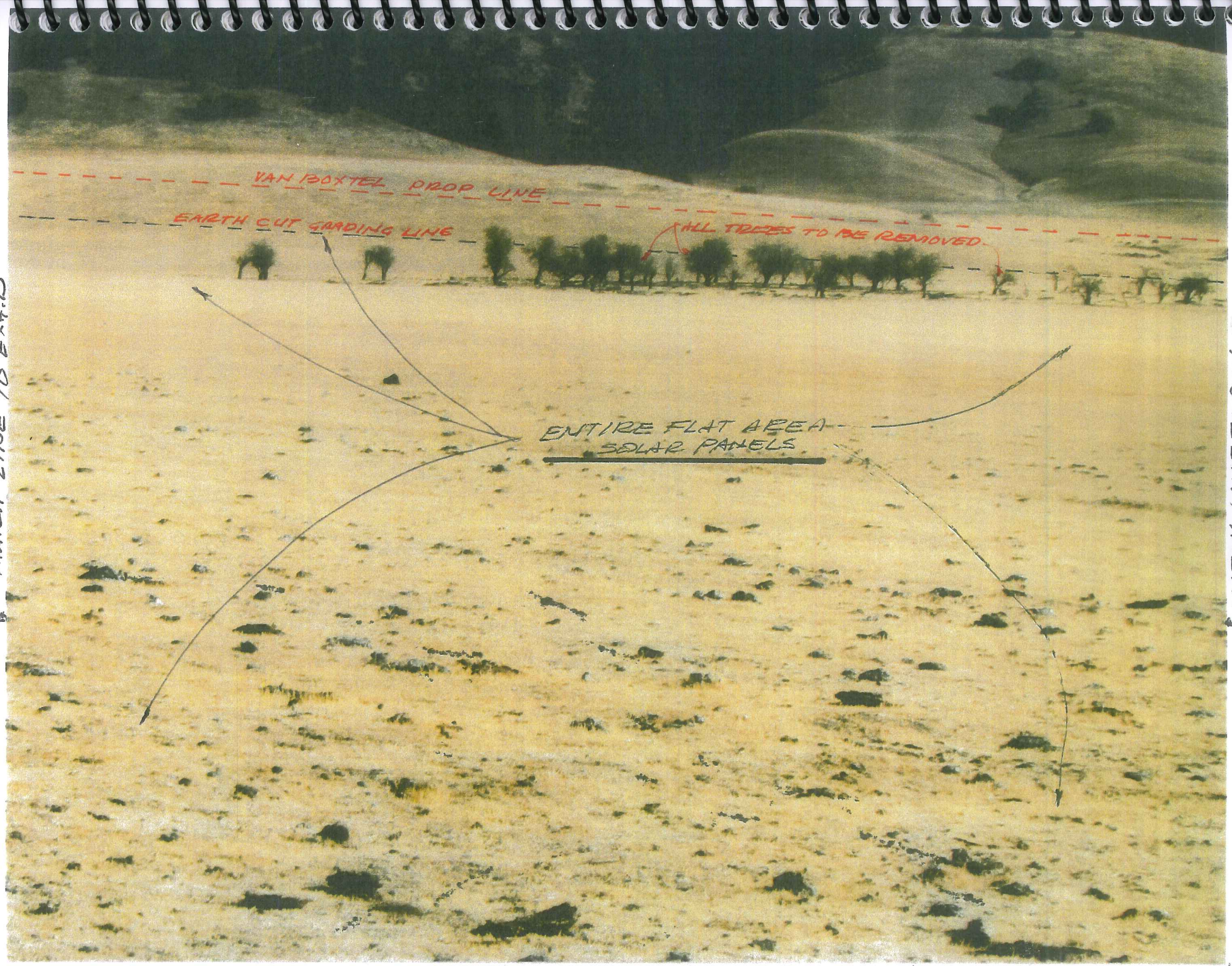


LOOKING NORTH FROM VAN BOXTEL ENTRY GATE

EXHIBIT B

JOINS EXH. A

JOINS EXH. C



LOOKING NORTH TOWARD VAN BOXTEL'S FOOT-HILLS
FROM TURKEY FLAT ROAD.

EXHIBIT C

LOOKING NORTH FROM THREE FLAT RD

EXHIBIT D

Index C

CALIFORNIA VALLEY WITH SIMULATED SOLAR PANELS

18.18

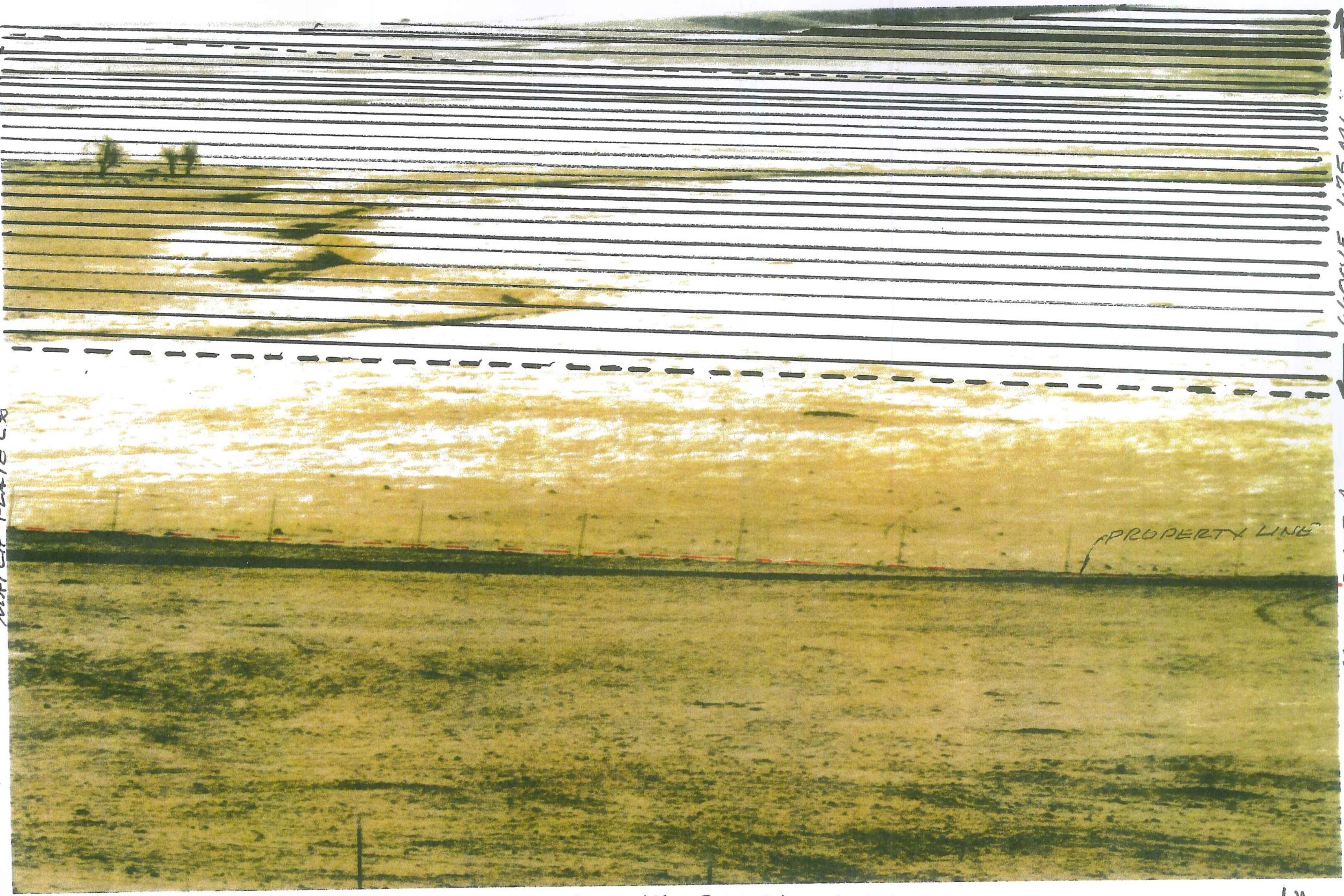
Plates Ax, Bx, Cx and Dx

Simulated solar panel photos taken from Van Boxtel residence area

VIEW FROM VAN BOXTEL RANCH WITH SIMULATED SOLAR PANELS

MAKE-A-WISH FISHING & CAMPING AREA

PLATE A8



VIEW FROM VAN PORTEL RANCH
WITH SIMULATED SOLAR PANELS

PLATE Bx

VIEW FROM VAN BOXTEL RANCH
WITH SIMULATED SOLAR PANELS

PLATE Cx

SOUTH

VIEW FROM VAN BOXTEL RANCH
WITH SIMULATED SOLAR PANELS

PLATE Dx

SOUTH

ARTIST'S DRAWN

Index D

STORM DRAINAGE ASSESSMENT

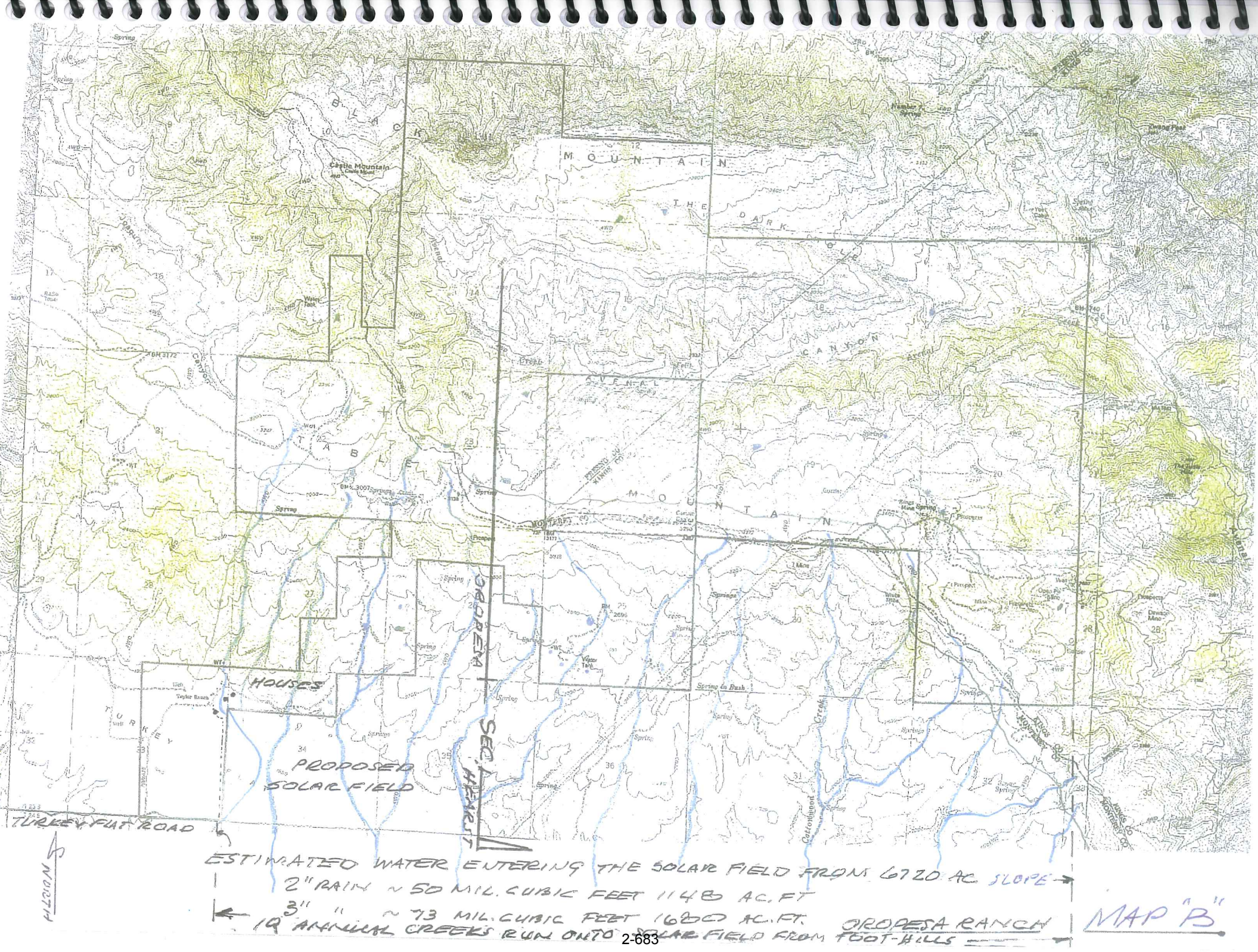
18.18

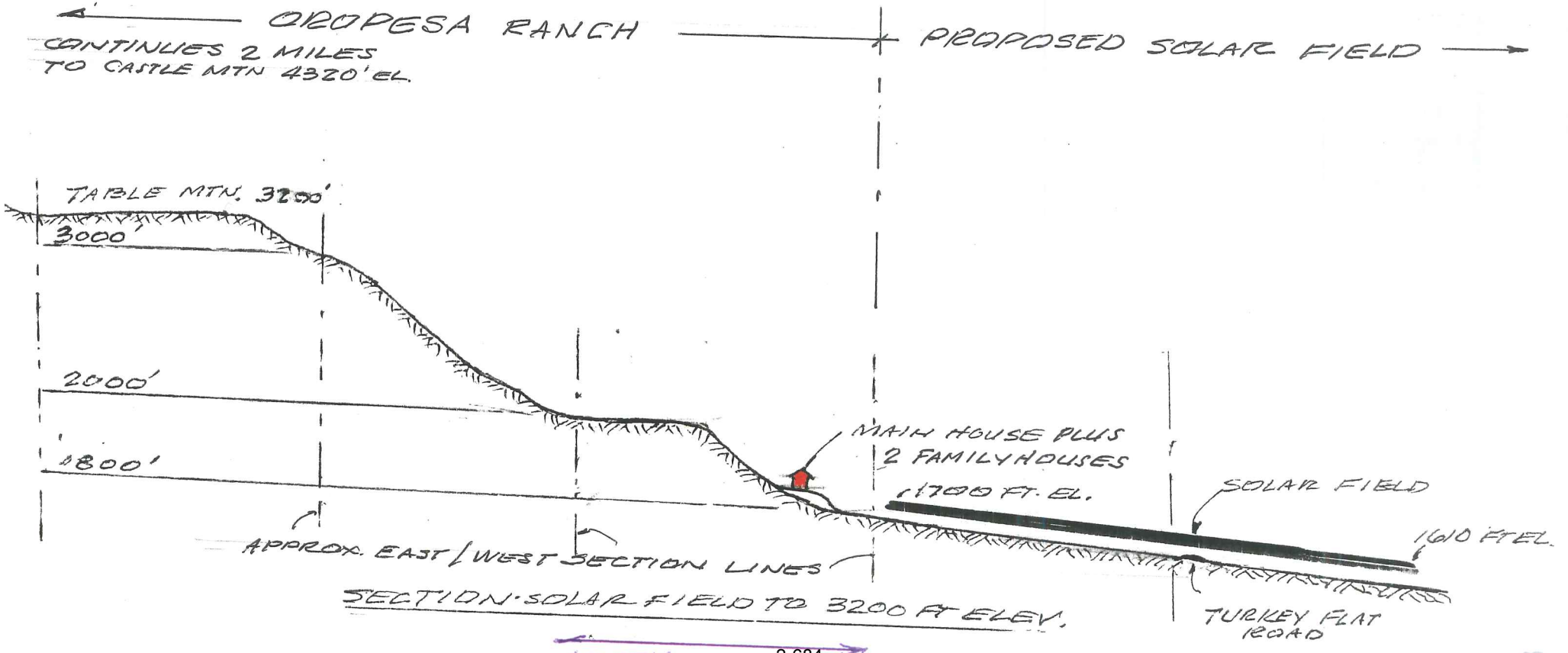
Map B
Drainage from Oropesa onto solar field

SEC #1
Vertical section through Map B

EXHIBIT #1
Photo of flooding course across western section of solar field

Plate H
Creek erosion at north west corner of solar field. Similar in other creeks shown on Map B

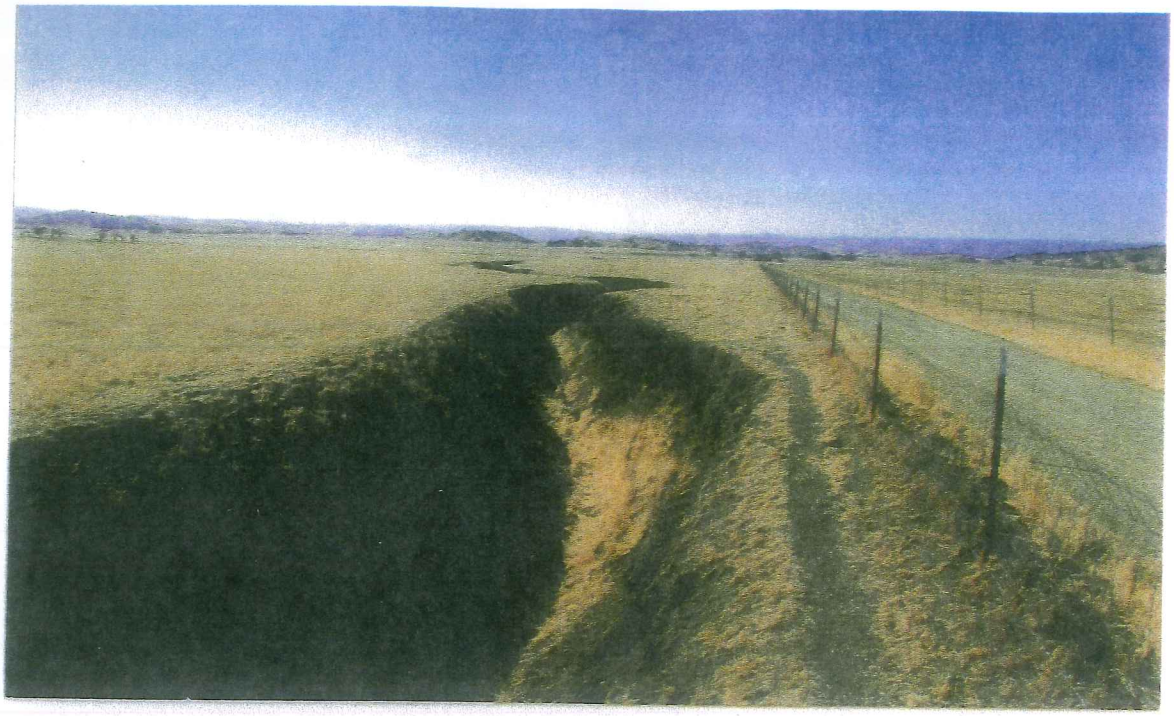

BLACK MOUNTAIN
THE DARK CANYON
MOUNTAIN
TABLE
Castle Mountain
Water Tank
Spring
Creek
Prospect
Mine
Well
Trail
Road
Fresno Ranch
Rings Mine Spring
White Tanks
Dawson Mine
Cattle Guard
Cottonwood
Rings Mountains
HOUSES
Taylor Ranch
TURKEY
PROPOSED SOLAR FIELD
SEC. 1 BOUNDARY
TURKEY FLAT ROAD
NORTH
ESTIMATED WATER ENTERING THE SOLAR FIELD FROM 6720 AC SLOPE
2" RAIN ~ 50 MIL. CUBIC FEET 1148 AC. FT
3" " ~ 73 MIL. CUBIC FEET 1680 AC. FT.
19 ANNUAL CREEKS RUN ONTO SOLAR FIELD FROM FOOT-HILLS
OROPESA RANCH
MAP "B"


OROPESA RANCH
CONTINUES 2 MILES
TO CASTLE MTN 4320' EL.
PROPOSED SOLAR FIELD
TABLE MTN. 3200'
3000'
2000'
1800'
MAIN HOUSE PLUS
2 FAMILY HOUSES
1700 FT. EL.
SOLAR FIELD
1610 FT EL.
APPROX. EAST / WEST SECTION LINES
SECTION · SOLAR FIELD TO 3200 FT ELEV.
TURKEY FLAT
ROAD
NORTH
SOUTH

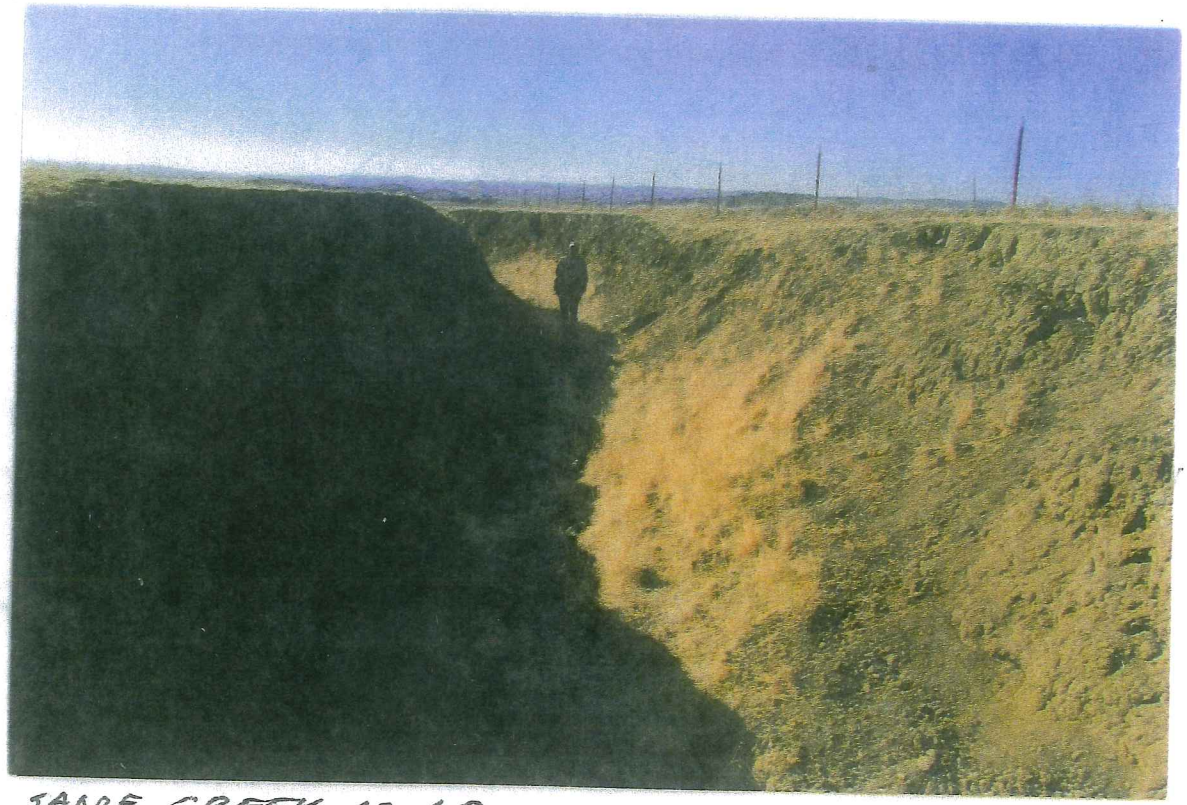
SECTION

LOOKING SOUTH FROM SECT. 26 VAN BOXTEL RANCH
DRAINAGE CONDITION - WEST SOLAR FIELD AREA

EXHIBIT #1



CREEK SHOWN ON PLATE A A MAJOR ANNUAL DRAINAGE OF VAN BOXTEL RANCH. ONE OF 10 SUCH CREEKS ENTERING AND COMPLETELY CROSSING THE PROPOSED SOLAR FIELD AND OVER WHICH ~~WITH~~ THE DEVELOPERS ARE PLANNING TO BRIDGE OVER WITH SUB-STUCTURE AND PANELS



SAME CREEK AS ABOVE ON SOLAR FIELD PROPERTY SHOWING A 6 FOOT 3 INCH PERSON STANDING IN THE CENTER OF THE TRENCH. IT IS APPROXIMATELY 10 FEET DEEP AND 12 TO 15 FEET WIDE AT THE TOP IN THIS AREA

EXAMPLE OF CREEKS CROSSING THE PROPOSED CALIFORNIA FLATS SOLAR FIELD

PLATE H

Index E

ENDANGERED SPECIES

Map C Endangered species map
Confirms species on Oropesa Ranch and West edge of solar field

18.18

MAP C

CASTLE MTN.

100± INDIAN ROCK MORTARS

SPRING

FAIRY SHRIMP POOL

SPRING

AVENAL CREEK

CANYON

SPRING

WILDLIFE WATERER

800 ACRE WILDLIFE AREA

FRESNO COUNTY / KING COUNTY

T A B L E

M O U N T A I N

SPRING

SPRING

PONDS T.YP.

MONTEREY CO.

SPRING

SPRING

SPRING

SPRING

SPRING

WILDLIFE WATERERS

INDIAN CEREMONIAL SITE

MAKE-A-WISH POND?

CAMPING AREA

BURROWING OWLS EVERY SPRING & SUMMER

BURROWING OWLS

5 ACRE WILDLIFE AREA FENCED

PROPOSED SOLAR FIELD

THIS AREA

TURKEY FLAT RD

KIT FOX, RED-LEGGED FROG, CAL. TIGER SALAMANDER BADGER & BURROWING OWL HABITAT

MAP C

TABLE MOUNTAIN CONSERVATION BANK
ONDOPESA RANCH
CRITICAL WILDLIFE HABITAT

- Annual wetlands, ponds and springs
- Native grasses and oaks
- Burrowing owl habitat
- California red-leged frog
- San Joaquin kit fox
- California tiger salamander

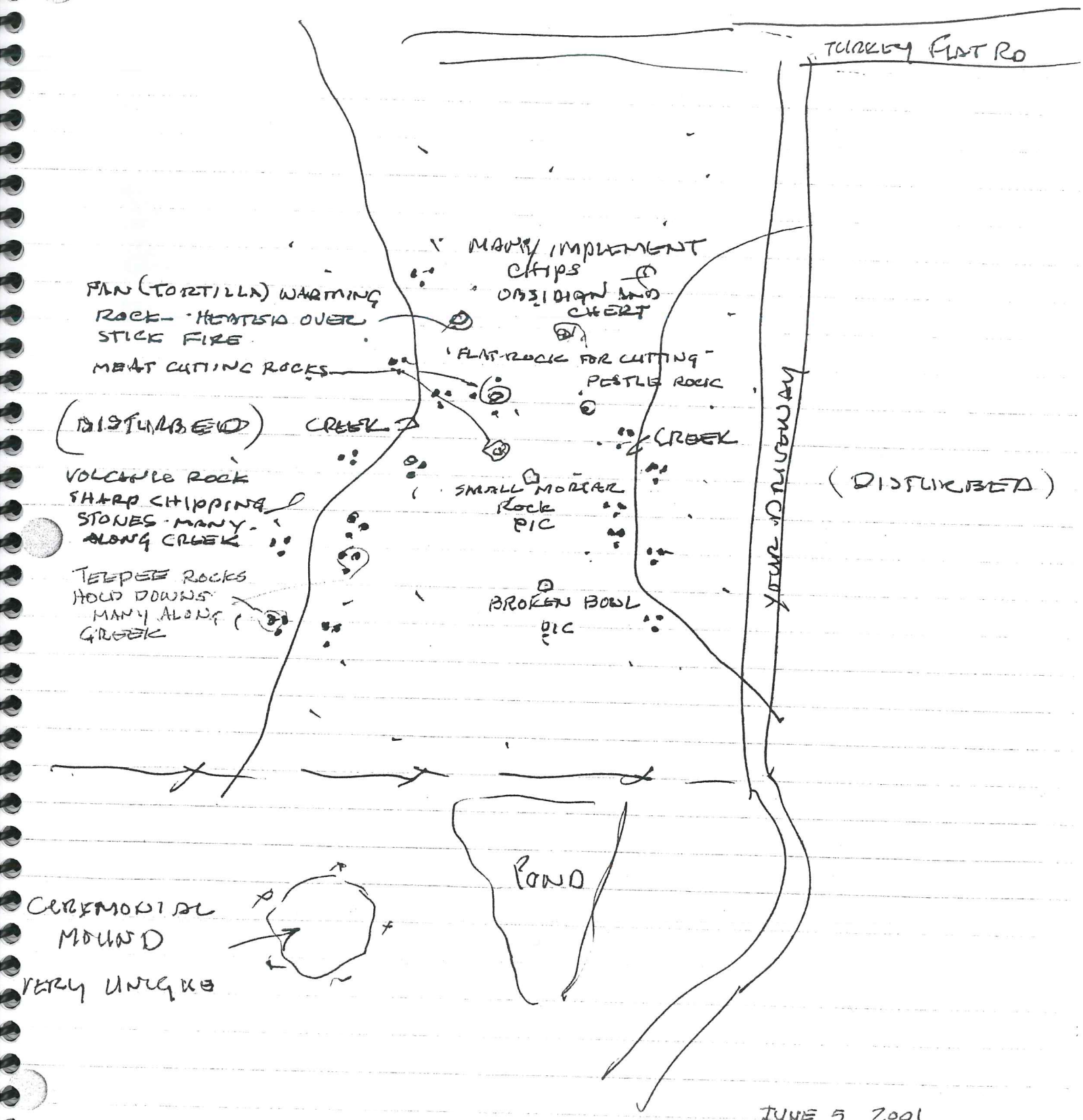
Index F

18.18

INDIAN CULTURE RELIES

Map G Indian Relic map drawn by L. Madina
A Yokut Indian whose ancestors lived on the property until homesteads drove them off. Map is of the western edge of solar site.

Plate G
Photo of Indian relics on proposed solar property.



JUNE 5 2001

L. MADIMA

TABLE MTN RANCH

HOUSE

1 OF 14 PAGES

HEAVILY SCARRED MEAT CUTTING FLAT ROCK AND CUTTING ROCK BLADE FOUND UNDERNEATH.

PORTION OF A BROKEN ROCK BOWL, PERHAPS A SEED GRINDING MATATE

SAMPLE OF REMNANT PHOTOS TAKEN BY L. MADINA, A YOKUT INDIAN AND A WELCOME ANNUAL VISITER TO RANCH AND SURROUNDING ANCESTRAL HABITAT. REFERRENCE L. MADINA MAP G

PLATE G

Index G

SOLAR ELECTRIC ANALYSIS

EXHIBIT #2

Copy of a solar proposal the Van Boxtel's received from a solar marketing group

18.18

Index G

EXHIBIT #2 A Solar Proposal 2012

An economic analysis of the proposal for our section 33 barley field. As you can see the development is completely funded by U.S. taxpayers through subsidies and tax credits. The developers (promoters) are not concerned about the economics of the project because the reimbursements from government (taxpayers) are based on the percentage of costs. The owners, farmers, ranchers or industry look only to the bottom line which, in the case of Exhibit #2 is only .7% (a little over one half of one percent). The unfortunate tax payers, State and Federal, pay for the solar field but never own any part of it. In other words, the owners' neighbors are paying for the implementation of the solar field.

Solar Farm & Ranch Flyer

Irrigating or Drying Crops, Heating/Cooling or Powering Buildings & Processing Facilities, Greenhouses or Irrigation Systems?

Using Clean and Unlimited Power from the Sun can make your Farming/Ranching operations more productive and Cost Effective.

Let us show you how we can help you design, acquire and finance a custom Solar solution for your Farm/Ranch operation.

USDA on Farm Energy Production Survey: "Solar panels have been the most prominent way to produce on-farm renewable energy (2011)"

Solar Energy Systems have low maintenance costs, the fuel is FREE and abundant, and systems are Cost Effective. A substantial portion of system costs are recovered through State and Federal subsidies, grants, utility service provider rebates, accelerated depreciation and Tax Credits.

Solar energy can be harvested forever to meet a large percentage of your electrical power needs. It can also afford you a long term source of income from the sale of excess power while providing potentially significant tax advantages.

System Example completed December 2010

Installed Product:	Photovoltaic Array		
Total Output		418kW-DC	
Install Cost:		$2,500,403	
CSI Rebate: California Solar Initiative Incentive		$<922,370>	30 %
FITC: 30% Federal Incentive Tax Credit		$<700,113>	30. %
5 Year Fed & State Depreciation (MACRS):		$<860,874>	34 %
Net Cost	Less than 1%	$17,046	0,68 %
			100. %

Disclaimer: The above example is for illustration purpose only and shall not be construed in any way or form to indicate other solar voltaic project will achieve the same financial results.

EXHIBIT #2

Letter 18

COMMENTER: W. J. Van Boxtel

DATE: September 18, 2014

Response 18.1

The commenter expresses opposition to the proposed project, citing negative environmental effects as well as emotional, visual, and economic impacts. The commenter additionally notes that Yokut and Salinas Indians resided on the project area. The commenter's opinion of the project is noted. Environmental effects of the project are addressed throughout Section 4.0 of the EIR. Visual and cultural resources are specifically addressed in Sections 4.1, *Aesthetics,* and 4.4, *Cultural and Paleontological Resources,* respectively.

Under CEQA, economic or emotional change cannot be considered a significant effect on the environment, though a social or economic change related to a physical change may be considered in determining whether the physical change is significant. Therefore, socio-economic analysis is not required under CEQA and was not included in the analyses in the DEIR.

Response 18.2

The commenter describes the anticipated visual prominence of the proposed project, noting that neither trees nor fencing would be able to shield view from their residence of the proposed solar panels, which would include over 3,000 feet of solar panels mere feet from their driveway. Visual impacts are addressed in Section 4.1, *Aesthetics,* of the DEIR. As noted on page 4.1-24, views from two private residences (including the commenters' residence) would be substantially degraded. These residences are located approximately 775 feet from the project site boundary, near the eastern public road terminus of Turkey Flat Road (refer Figure 2.4b in Section 2.0, *Project Description,* of the DEIR). These residences are located slightly uphill from the project site, and have sweeping views of the existing project site. These private views would change from a rural ranch landscape to an expanse of solar modules and associated infrastructure.

The project site is not in a County-designated visually sensitive area and is not visible from a scenic roadway. The County of Monterey General Plan does not protect private views, and the scenic resources policies (contained in the Conservation and Open Space Element) do not expressly protect grazing land as a scenic resource. In addition, CEQA does not require a detailed evaluation of individual private views, particularly when only a limited number of private views would be affected by site development activities. Therefore, although some homeowners may experience adverse interference with their private views, the impact is not significant for purposes of the CEQA analysis due to the limited number of affected properties.

Response 18.3

The commenter expresses the opinion that the County of Monterey should exact financial mitigation for the solar field's negative financial and visual impacts. As noted under responses

18.1, economic change cannot be considered a significant effect on the environment, and therefore a socio-economic analysis was not included in the DEIR. Further, as discussed under response 18.2, impacts to private views are not significant for the purposes of CEQA.

Response 18.4

The commenter expresses their appreciation for the beauty of the California Flats Turkey Flat valley and describes the views of the valley from their home. The comment is noted. Visual impacts associated with the proposed project are addressed in Section 4.1, *Aesthetics,* of the DEIR.

Response 18.5

The commenter refers to an attached document entitled "A Contrary Expose in Opposition of the Proposed California Flats Solar Field," which was provided to the Monterey County RMA – Planning Department in early 2013. Refer to response 18.18 for a response to this document.

Response 18.6

The commenter describes the perceived permanence of the proposed project, stating that it may be replaced when the current project is determined to be obsolete. As noted in Section 2.0, *Project Description,* at the end of the project's useful life (anticipated to be 30 to 40 years), it would be decommissioned or, alternatively, repowered. If the project site is repowered, future discretionary review and approval by the County and any necessary associated State or Federal approvals would be required.

The commenter additionally notes the anticipated visual and economic impacts of the project. As noted previously, visual impacts are addressed in Section 4.1, *Aesthetics,* and socio-economic impacts are outside the purview of CEQA.

Response 18.7

The commenter suggests that the California deserts would be a more appropriate location for a solar project, noting the prevalence of high voltage transmission lines, availability of open space with no fog or haze, fewer valley fever spores, and no people to be adversely affected.

Alternatives to the proposed project, including alternative locations, are addressed in Section 7.0, *Alternatives,* of the DEIR. This includes an alternate site within the Jack Ranch (Alternative 2) and Department of Defense brownfield sites (addressed in Section 7.1, *Alternatives Considered but Rejected*).

The proposed project site is located in an area that is optimal for solar energy development, and has been identified as a Competitive Renewable Energy Zone (CREZ) under the State's Renewable Energy Transmission Initiative (RETI). With elevations of around 1,700 feet, the site is situated above the coastal marine layer and, unlike many other inland central California areas, is not subjected to "tule fog" during the winter. The project site therefore experiences substantial year-round sunlight. An existing 230 kilovolt (kV) transmission line with available

transmission capacity, the Morro Bay-Gates line, transects the site. The site is bordered in all directions by mostly undeveloped grazing land, interspersed with sparse residential settlements and small farms south and east of the site. There are two rural residences located in close proximity to the site (775 feet north), both near the eastern public road terminus of Turkey Flat Road.

Valley fever impacts of the proposed project are addressed in Section 4.3, *Air Quality,* of the DEIR.

Response 18.8

The commenter describes the importance of open space, including to the Yokut and Salinas Indians and as evidenced by the Williamson Act and scenic highways. Impacts to Native American resources are described in Section 4.5, *Cultural and Paleontological Resources*; impacts to agriculture, including Williamson Act contracts, are addressed in Section 4.2, *Agricultural Resources;* and impacts to scenic highways are addressed in Section 4.14, *Effects Found not to be Significant.* The remainder of this comment does not pertain to environmental issues or the DEIR analysis. Therefore, no further response is required.

Response 18.9

The comment raises numerous environmental issues, but does not specifically address the analysis contained in the DEIR. Refer to the analysis in Section 4.0, *Environmental Impact Analysis,* of the DEIR. Valley Fever, specifically, is analyzed in Section 4.3, *Air Quality.* Refer to response 16.122 for a discussion of the potential for the project to raise ambient temperatures.

Response 18.10

The commenter raises the issue of water demand and impacts to local aquifers. These impacts are addressed in Impact HYD-3 in Section 4.9, *Hydrology and Water Quality.* As noted therein, construction and operation of the proposed project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. In addition, the proposed project would have sufficient water supplies available from existing resources and no new or expanded entitlements would be needed. Impacts would be Class III, *less than significant*.

Response 18.11

The commenter expresses concern over dust and noise impacts during construction. These impacts are addressed in Sections 4.3, *Air Quality,* and 4.11, *Noise,* respectively. As noted in Section 4.3, *Air Quality,* Mitigation Measure AQ-2(a) (Dust Control Measures) is required to control dust during construction. This measure includes the use of water trucks or sprinkler systems to prevent airborne dust from leaving the site, speed limits, revegetation, and other measures. Additional measures are required by Mitigation Measures AQ-6(a) (Valley Fever Management Plan), AQ-6(b) (Valley Fever Dust Suppression Measures), AQ-6(c) (Monterey County Health Department Notification), AQ-6(d) (Valley Fever Worker Training Program and Safety Measures), and AQ-6(e) (Valley Fever Information Handout) to specifically reduce the

potential for exposure to the Coccidioides fungus that causes Valley Fever, which may be located in dust spores. It should be noted, however, that the project would not expose sensitive receptors to substantial pollutant concentrations associated with construction dust, carbon monoxide hotspots, toxic air contaminants, or naturally-occurring asbestos. Impacts related to localized pollutants would therefore be Class III, *less than significant* (refer to Impact AQ-4).

Construction-related noise effects are discussed under Impact N-1 in Section 4.11, *Noise.* As noted therein, operation of heavy equipment during project construction and decommissioning would result in a temporary noise level increase that could disturb nearby sensitive receptors. However, compliance with County noise protection policies S-7.9 and S-7.10 would ensure that this would be a Class III, *less than significant,* impact.

Response 18.12

The commenter notes that the DEIR addresses impacts to endangered and threatened species, and expresses their concern over the welfare of all wild species. The comment does not raise any issues specific to the DEIR analysis. Therefore, no further response is required.

Response 18.13

The commenter expresses opposition to the proposed project. The comment is noted. Refer also to Section 4.7, *Greenhouse Gas Emissions/Climate Change,* for an explanation of climate change.

Response 18.14

The commenter expresses concern over visual impacts of the proposed project, and references the previously-provided "Contrary Expose" document. Visual impacts are addressed in Section 4.1, *Aesthetics,* of the DEIR. Views from two private residences (including the commenters' residence) would be substantially degraded. These residences are located approximately 775 feet from the project site boundary, near the eastern public road terminus of Turkey Flat Road (refer Figure 2.4b in Section 2.0, *Project Description,* of the DEIR). These residences are located slightly uphill from the project site, and have sweeping views of the existing project site. These private views would change from a rural ranch landscape to an expanse of solar modules and associated infrastructure.

The project site is not in a County-designated visually sensitive area and is not visible from a scenic roadway. The County of Monterey General Plan does not protect private views, and the scenic resources policies (contained in the Conservation and Open Space Element) do not expressly protect grazing land as a scenic resource. In addition, CEQA does not require a detailed evaluation of individual private views, particularly when only a limited number of private views would be affected by site development activities. Therefore, although some homeowners may experience degradation of their private views, the impact is not significant for purposes of the CEQA analysis due to the limited number of affected properties.
Refer also to response 18.18 for a response to the "Contrary Expose" document.

Response 18.15

The commenter describes the economic effects the proposed project is likely to have on their property value, which they anticipate to be devastating given the large scale of the project and the fact that their property looks down on much of the project area. The comment is noted. As stated previously, under CEQA, economic or emotional change cannot be considered a significant effect on the environment, though a social or economic change related to a physical change may be considered in determining whether the physical change is significant. Physical visual effects of the project are described in Section 4.1, *Aesthetics,* of the DEIR. However, the effect of project implementation on an adjacent property value is not considered a physical change. Therefore, analysis of this issue is not required under CEQA and was not included in the analyses in the DEIR.

Response 18.16

The commenter expresses the opinion that visual impacts (their loss of view) and loss of property value are impacts that cannot be mitigated. Refer to responses 18.2 and 18.15. As noted therein, the impacts to private views are not significant for purposes of the CEQA analysis, and economic effects of the project are outside the scope of the analysis.

Response 18.17

The commenter notes that the DEIR includes mitigation for the protection of engendered and threatened species, and offers that they can provide a conservation easement on their property. The comment is noted and will be forwarded to County decision-makers and the project applicant for consideration.

Response 18.18

The commenter provides a document entitled "A Contrary Expose in Opposition of the Proposed California Flats Solar Field," which was provided to the Monterey County RMA – Planning Department in early 2013, prior to completion of the DEIR. The document raises several concerns with the proposed project, including: visual and emotional impacts, financial impacts, impacts to endangered and threatened species habitat, radiated heat from panels, impacts related to stormwater runoff, Native American cultures, construction-related dust impacts, visually offensive illumination, and wildlife habitat. The document additionally contains maps of the project site and photographs containing hand-drawn simulations of the proposed solar panels. Hand drawn maps depicting habitat and cultural resources on the project site are also provided, as is a copy of a solar proposal received by the commenter from a solar marketing group, with an added note pointing out that such a development would be largely funded through federal subsidies and tax credits.

Because this document was prepared prior to completion of the DEIR, it does not specifically address the analysis contained therein. However, all of the environmental issues raised in the document have been addressed in the DEIR. Specifically, visual impacts, including those related to nighttime lighting and daytime glare, are analyzed in Section 4.1, *Aesthetics.* This section also includes professional photographic simulations. Refer also to response 18.2 for a response to the commenter's concerns about visual impacts to their private residence. Impacts to endangered and

threatened species habitat and other wildlife habitat are addressed in Section 4.4, *Biological Resources.* Habitat maps are also provided in this section. Radiant heat is discussed in Section 4.7, *Greenhouse Gas Emissions/Climate Change* (as added in response to comment 16.122; refer to response 16.112). Stormwater runoff is addressed in Section 4.9, *Hydrology and Water Quality.* Impacts to Native American cultures, including on-site artifacts, are addressed in Section 4.5, *Cultural and Paleontological Resources.* Finally, construction-related dust impacts are addressed in Section 4.3, *Air Quality.* Refer also to response 18.11 for a detailed response to the commenter's concerns related to construction-generated dust.

Three issues raised by the commenter in this "Contrary Expose" are not addressed in the DEIR: emotional impacts, financial impacts, and the use of federal funding for solar projects. As noted previously, under CEQA, economic or emotional change cannot be considered a significant effect on the environment, though a social or economic change related to a physical change may be considered in determining whether the physical change is significant. Therefore, socio-economic analysis is not required under CEQA and was not included in the analyses in the DEIR.

Letter 19

Robinson, Delinda x5198

From: Young, Benny x5862
Sent: Friday, September 19, 2014 5:54 PM
To: Novo, Mike x5192; Holm, Carl P. x5103; Ford, John H. x5158; Robinson, Delinda x5198
Subject: Fwd: CEQA comments on Solar Flats Project PLN 120294
Attachments: CEQA comments Solar Flats.pdf; ATT00001.htm

FYI and project files.
Please let me know if a response is necessary at this point,

Benny

Sent from my iPhone

Begin forwarded message:

From: "Jane Wooster" <jane_wooster@yahoo.com>
To: "Young, Benny x5862" <YoungB@co.monterey.ca.us>, "100-District 3 (831) 385-8333" <district3@co.monterey.ca.us>, "Lopez, Christopher M. x5729" <LopezCM@co.monterey.ca.us>
Subject: Fw: CEQA comments on Solar Flats Project PLN 120294

FYI

I am forwarding this to you. The California Solar Flats Project will scar a pristine area of Monterey County. I am afraid this project is going through and it is just a shame because it will have a huge affect on this remote area. Our family owns property adjacent to the development. What is now a nice piece of property with a fresh water spring and a great view will soon be next door to a couple thousand acres of solar panels, continuous low level noise, 24-hour activity, 24-hour lights and reflections off the panels. We are told the General Plan protects the viewshed for the public but not for us. We sit on a county road so I am at a loss why the public is not being considered but I suppose it is because it is remote. 19.1

Actually, while the site is tucked away where most people won't see it, should there be safety issues during construction (they will have 800 people on site) or after, they will find that County services -- sherriff, fire and medical -- are a long way away when they need them. And the county will find those services, which they will expect, will be very expensive to provide. 19.2

Jane Wooster

--- On Fri, 9/19/14, Jane Wooster <jane_wooster@yahoo.com> wrote:

From: Jane Wooster <jane_wooster@yahoo.com>

Subject: CEQA comments on Solar Flats Project PLN 120294

To: CEQAcomments@co.monterey.ca.us

Cc: robinsond@co.monterey.ca.us, fordj@co.monterey.ca.us, "ann myhre" <annmyhre@msn.com>

Date: Friday, September 19, 2014, 4:38 PM
We have attached comments on the
Solar Flats Project EIR PLN 120294. Please let us know
if you have questions and thank you for the opportunity to
comment.

Jane Wooster

Monterey County Resource Management Department
ATTN: John Ford and Delinda Robinson
168 West Alisal Street, 2nd Floor
Salinas, CA 93901

September 19, 2014

RE: California Flats Solar Project proposed by Element Power
County File Number PLN 120294
Comments on Environmental Impact Report

The purpose of this letter is to comment on the Environmental Impact Report (EIR) that has been prepared to evaluate environmental impacts associated with the proposed California Flats Solar Project in the County of Monterey. California Flats Solar, LLC has submitted an application for a Use Permit to the County of Monterey to construct, operate and eventually decommission a 280-megawatt (MW) alternating current photovoltaic solar power facility in unincorporated southeastern Monterey County, approximately seven miles southeast of the community of Parkfield and 25 miles northeast of the City of Paso Robles, near the borders of Monterey, San Luis Obispo, Kings and Fresno counties. Our family owns property adjacent to this proposed project which is actively operated as a cattle ranch and we feel our property and the livestock on the property will be adversely affected by this project if it moves forward as planned without changes. 19.3

As the public agency with the principal responsibility for approving the project, and as the Lead Agency for this project under the California Environmental Quality Act of 1970 (CEQA) as defined in CEQA Guidelines Section 15367 we are asking you to consider our comments as they pertain to the information contained in the EIR prior to taking any action on this project.

The project is of considerable size and would encompass approximately 3,000 acres, and would be comprised of the solar generating facility area, a utility corridor, and improvements to an existing access road. The solar generating facility area would be located on approximately 2,720 acres, and would include an approximately 2,120-acre solar development area (SDA), an approximately 135-acre 230 kV overhead transmission line, an approximately 5-acre high-capacity collection system line corridor, two substations each approximately six acres in size, a switching station owned and operated by Pacific Gas & Electric Company (PG&E) approximately six acres in size, an operations and maintenance (O&M) facility, construction staging areas, and other infrastructure needed to serve the project. We are concerned that we do not believe California Flats Solar, LLC has adequately planned for an emergency secondary access road for this project. The EIR report states in **Table 1-1** that Jane Wooster, the "commenter requests a survey to determine if the secondary (emergency) access road intrudes onto the adjacent property," and it further states that "the comment does not pertain to an environmental impact, therefore no specific to the EIR. No further response is necessary." 19.4

It is our contention that this comment is entirely within the scope of an EIR which according to **Section 1.5 Scope and Content** says that "This EIR addresses the issues determined to be potentially significant during the EIR scoping period.... The issues that have been identified to be addressed in this EIR include: .... Hazards and Hazardous Materials, ...Public Services and Utilities, ...Transportation/Traffic."

The emergency road access involves a hazard if it is not available, it involves determining if public services such as fire protection are readily available, and it involves transportation and traffic as this exit is specifically mentioned in the EIR as an access point for heavy equipment during the construction period. 19.4

We believe that the proposed designated secondary access road includes a portion of Monterey County Assessor's Parcel Number 424-181-011-000 which is owned by our family. We believe it would be appropriate for the County of Monterey to require that California Flats Solar, LLC be required to demonstrate that they have legal access to this secondary access point without crossing our property before approving this project. We do not think that our family should bear the responsibility and the liability of traffic over our private property when we are not responsible for, and do not support, this project. Furthermore, we do not believe that we should bear the expense and the burden of proof that they are encroaching on our ranchland. It is our understanding that California Flats Solar, LLC has represented that they have a right to use this road and that if they do not they will just move it over. It would be appropriate for them to demonstrate that they have the property available to move it over. If that is in fact the case, then we request that as a part of the project they move the fence between our property and theirs so that it is on the property line between our properties so traffic from the development does not travel on our land. A barbed wire, six wire fence with steel pickets and pipe corners and braces, similar to that which is already there, should be sufficient. 19.5

Additionally, we would like to voice our concern about using Turkey Flat Road as an access point for police and fire protection. This is a remote, single-lane road with at least one very bad blind turn that is dangerous even when one knows the road. If it is determined that this road will be used for heavy equipment access during the construction process and for emergency access thereafter, we believe the County should require California Flats Solar, LLC to pay to reconstruct the road in the most dangerous areas where it is impossible to see oncoming traffic and where it is only a one lane road. Private property owners when building a personal residence are required to have a road wide enough for two fire trucks to pass and it seems reasonable that roads serving an industrial operation such as this with the number of people there during construction, and the potential for hazardous situations, would at least need to meet this requirement. 19.6

Additionally, consideration needs to be given to security. It is our understanding that there are only two Monterey County Sheriffs on duty from Soledad south to the San Luis Obispo County line during nighttime hours. This construction will cause additional traffic and some determination should be made as to how the additional traffic and potential crime will be handled. 19.7

We are also concerned about the dust during construction and the resulting exposure to Valley Fever during this construction phase of the project. Impact AQ-2 states that "Construction of the proposed project would result in the temporary generation of air pollutants, which would affect local air quality.... Impacts would be significant and unavoidable." The EIR lists several methods of controlling the dust on the site but it is negligent in addressing how air quality will be controlled on adjacent ground. It has been suggested to us by your office that this should not be a consideration for us as we do not live on our property; the property, however, is used as ranch land, individuals are there to check the cattle and the cattle themselves should also be a consideration. Although health issues are addressed in a different portion of the EIR, we will address them here. We are concerned about human health and cattle health. This project will certainly disturb the surface of the soil releasing Coccidioidomycois spores, which are a soil-dwelling fungus which becomes wind-born and causes lung decease. 19.8

Anthrax is also generally thought to live in the soil of this area of California and it can infect both humans and animals. While there are different ways of contacting the disease, approximately half of humans who contact it through inhalation die. It is projected that this development will immediately abut our property. Given the seriousness of the airborne illnesses cited above, we believe a minimum 300 foot buffer should be provided between our property and any surface area that is disturbed. We also believe that California Flats Solar, LLC should be responsible for restitution for any animal deaths that are shown to be the results of these deceases and that they should be responsible for payment of medical bills for individuals who live nearby the construction area and who contact these deseases. (It should be of interest that my notes for the October 2, 2012 meeting in Parkfield say it was indicated the project would have a 200 feet buffer between our property and any solar panels.) 19.8

We are concerned that the EIR does not specifically state the widths of the specific interior roads nor the location of the waste treatment facility. Since adjacent landowners will already need to adjust to 24-hour activity, a low level of continuous noise, and continuous lighting and reflection of light, I suggest that you require that the waste treatment facility be placed in an area remote from Turkey Flat Road and in a place where the prevailing winds will not subject landowners on this road to drift odors so that they do not also have to become accustomed to the odor of the facility. I also suggest that an attempt be made to keep heavily traveled roads away from the site perimeter near Turkey Flat Road in order to cut down on dust. Additionally, during public meetings we were told that a line of trees would be planted between our private property and the project site but I see no mention of this in the EIR. I suggest that such a line of trees should be planted and maintained by California Flats Solar, LLC. 19.9

The EIR mentions that additional water well will be drilled near our property. We are concerned that this may have a detrimental effect on the spring on our property which is our only source of water and request that the well be moved to a more distant location. We note that the EIR says this well water will be piped for some distance. We would hope that the well could be moved to a source closer to where the water will be used and further from our boundary fence. 19.10

I would also like to bring to your attention that we sent several emails to Taven Kinison Brown that were intended as public comments and that he assured us would be considered public comments and that he said would be addressed before this project moved forward and that many of those comments are not addressed or mentioned in this EIR. There were comments about "prime agricultural ground" or the lack of on the suggested secondary site, a suggestion for an alternate site on the alkali Cholame Flats, questions about whether there were "specs" for the emergency exit, a question about how wide the Turkey Flat County Road easement was, a request for a copy of the actions of the Board of Supervisors when they closed Turkey Flat Road, whether or not having a secondary road access would be seen as a deficiency, whether when Element Power told the public that five acre feet of water per year would be used if the county determined that usage to be accurate, how much heat would be thrown off these solar panels and if there is a possibility that would affect the temperature of the surrounding farmland, and if these solar panels are similar to high tension power lines in that they "bleed" electrical energy and if so can this be dangerous or detrimental to human health. 19.11

Mr. Brown's October 15, 2012 response to these comments included this statement: "Thank you Jane for your concerns and correspondence with the County. While we are processing this application according to our standard practices and pace (not fast tracking) your questions are very real and specific and will be addressed. When the County engages in the evaluation of new development projects, we evaluate primary and secondary access, adjacency to neighbors, potential impacts to environmental resources, road right of ways and safety, water use, and dust and air quality among many other

technical issues. Much of this will be fleshed out in the environmental review process of writing an ...(EIR)...."

19.11

It seems to us that several of these items have not been addressed, either in the EIR or directly by the County.

We appreciate in advance your kind consideration of our comments. We have included a schematic that may help you visualize what we perceive as the road issue.

19.12

You may contact us at 831-385-5316 or 831-385-4177.

Sincerely,

Jane Wooster

Jane Wooster

Ann Myhre

Attachment

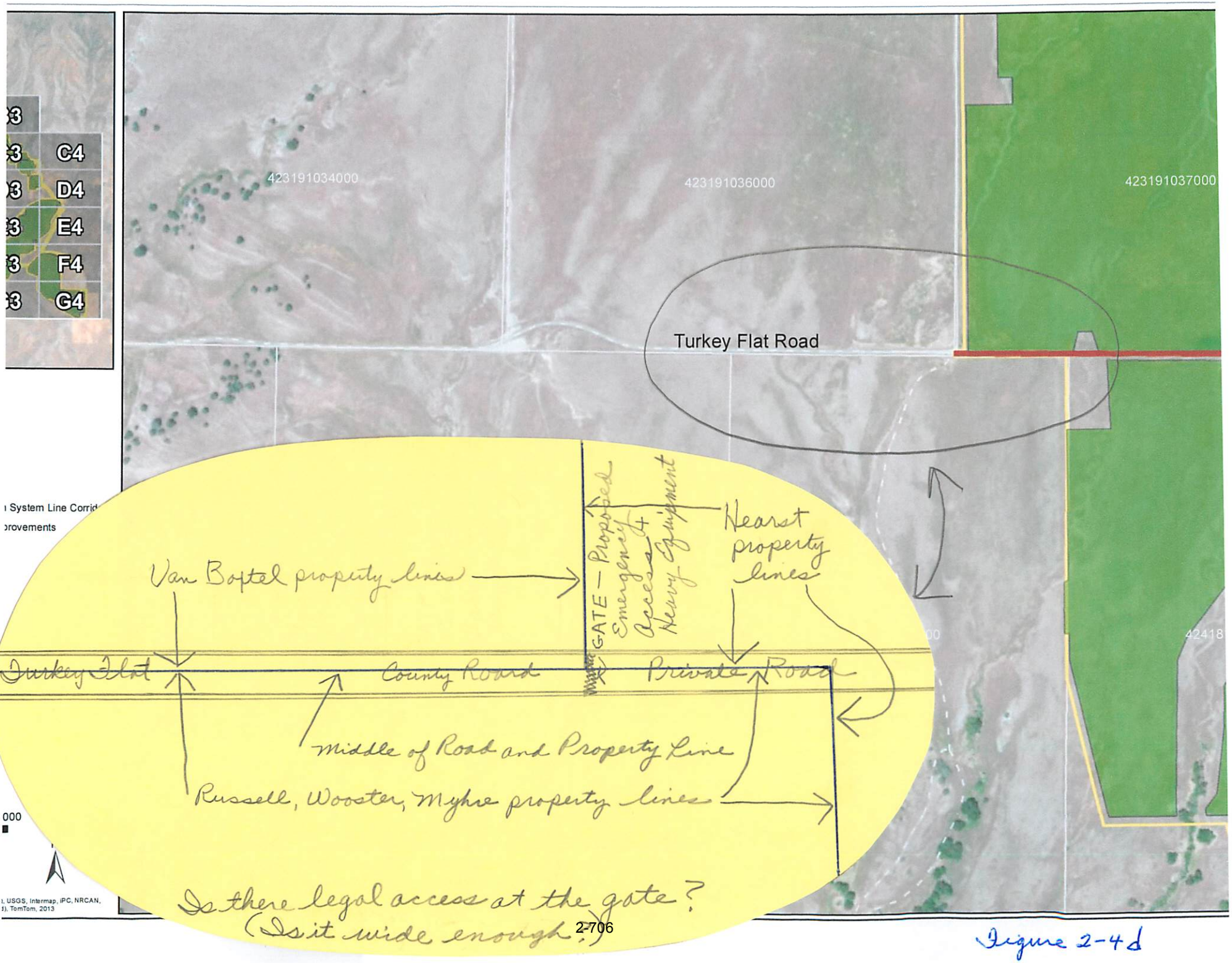

C4
D4
E4
F4
G4
423191034000
423191036000
423191037000
Turkey Flat Road
42418
Van Boptal property lines
GATE – Proposed Emergency Access & Heavy Equipment
Hearst property lines
Turkey Flat
County Road
Private Road
middle of Road and Property Line
Russell, Wooster, Myhre property lines
Is there legal access at the gate?
(Is it wide enough?)

Figure 2-4d

Letter 19

COMMENTER: Jane Wooster and Ann Myhre

DATE: September 19, 2014

Response 19.1

The commenters, whose family owns property adjacent to the proposed project, believe that the project would impair a pristine viewshed in a remote area. The commenters wonder why their views along a County road are not protected. Impact AES-2 in DEIR Section 4.1, *Aesthetics*, contains a discussion of the project's effects on views from private residences in the area. This discussion acknowledges that the proposed solar power facility would substantially degrade views from two private residences located approximately 775 feet from the project site boundary, near the eastern public road terminus of Turkey Flat Road. These residences are located slightly uphill from the project site, and have sweeping views of the existing project site. These private views would change from a rural ranch landscape to an expanse of solar modules and associated infrastructure.

However, the project site is not in a County-designated visually sensitive area and is not visible from a scenic roadway. The County of Monterey General Plan does not protect private views, and the scenic resources policies (contained in the Conservation and Open Space Element) do not expressly protect grazing land as a scenic resource. In addition, CEQA does not require a detailed evaluation of individual private views, particularly when only a limited number of private views would be affected by site development activities. Therefore, although some homeowners may experience adverse interference with their private views, the impact is not significant for purposes of the CEQA analysis due to the limited number of affected properties.

The commenters also express concern that the project would generate continuous low-level noise from solar panels. Please refer to Impact N-3 in DEIR Section 4.11, *Noise*, for a discussion of noise from the operation of PV solar arrays on the project site. As discussed therein, based on acoustic assessments of similar solar power projects, it is estimated that the private residences nearest to the project site (approximately 775 feet away) would be subject to noise levels of 35 dBA Leq or lower from the operation of inverters on the site. (Leq is a measure of noise levels averaged over a period of time, typically for one hour.) Comparing this operational noise level to the ambient noise levels in the project area (29 to 58 dBA Leq daytime), permanent noise levels in the project area would not increase substantially above existing ambient noise levels as a result of the proposed PV solar arrays.

Response 19.2

The commenters are concerned that in the event of safety issues during construction on-site, County sheriff, fire, and medical services would need to respond from far away, and that these services would be very expensive to provide. As discussed in DEIR Section 4.12, *Public Services*, fire protection services to the project site would be adequate during the peak fire season from May to October. Implementation of Mitigation Measure PS-1(a) for a Construction Management Plan would help to reduce demand for fire protection services through on-site fire suppression (including on-site equipment for fire suppression). In addition, Mitigation Measure PS-1(c) would

require the project applicant to enter into an agreement with the fire service provider to receive adequate services throughout construction during the non-peak fire season. These measures would ensure adequate fire protection and emergency medical services to the site during construction. Furthermore, the Monterey County Sheriff's Department would be able to serve the project site within adequate response times, whether arriving by Turkey Flat Road or SR 41. The commenters' concern about the high cost of providing public services to the project site does not pertain to the environmental analysis but will be forwarded to County decision-makers for their consideration.

Response 19.3

The commenters believe that their property, which is located adjacent to the project site and actively operated as a cattle ranch, and their livestock would be adversely affected by the project as proposed. Refer to the analysis contained in Sections 4.1, *Aesthetics,* 4.2, *Agricultural Resources,* 4.3, *Air Quality,* 4.9, *Hydrology,* 4.11, *Noise,* and 4.13, *Transportation,* for an analysis of impacts of the proposed project on adjacent properties.

Response 19.4

Table 1-1 in the DEIR summarizes a comment by Jane Wooster during the EIR's scoping period that a survey should be performed to determine if a proposed emergency access road intrudes onto the adjacent property. The DEIR states that this comment "does not pertain to an environmental impact" and therefore does not merit a further response. The commenters contend that this request is entirely within the scope of an EIR because the emergency road access involves a hazard if it is not available, it involves determining if public services such as fire protection are readily available, and it involves transportation and traffic for heavy equipment during construction. The project applicant is in the process of providing proof of access to the road in question. Proof of access will be required prior to project approval. This comment is noted and will be forwarded to County decision-makers for their consideration.

Response 19.5

The commenter believes that the proposed secondary access road includes a portion of their property on Monterey County Assessor's Parcel Number 424-181-011-000. The commenter asserts that, before approving the proposed project, the County should require the applicant to demonstrate that it has legal access to the secondary access road without crossing their property. The commenters do not think that their family should bear responsibility and liability for traffic over their private property. It is the commenters' understanding that the applicant has claimed to have a right to use the access road and, if not, would move the road over to its property. If the road is moved to the applicant's property, then the commenters request that the existing fence between their property and the applicant's be moved so that it is on the property line. The commenters request a barbed wire, six wire fences with steel pickets, and pipe corners and braces, similar to the existing fence.

The project applicant is in the process of providing proof of access to the road in question. Proof of access will be required prior to project approval.

Response 19.6

The commenters express concern about the proposed use of Turkey Flat Road as an access point for police and fire protection, due to traffic hazards from blind turns on this single-lane road. The commenters request that if the road were used for heavy equipment access during construction and for emergency access thereafter, then the County should require the applicant to pay to reconstruct the road in the most dangerous areas where it consists of one lane and it is impossible to see oncoming traffic. The commenters note that if private property owners are required to have a road wide enough for two fire trucks to pass, when building a personal residence, then roads serving an industrial operation such as the proposed project should at least meet this requirement.

As discussed in DEIR Section 2.0, *Project Description*, the proposed project would not involve use of Turkey Flat Road during construction, except for emergencies and one or two construction trips to deliver large equipment; heavy vehicles would almost exclusively enter the project site from SR 41 during construction. The ability of Turkey Flat Road to accommodate truck traffic and emergency vehicles is discussed on page 30 of Kimley-Horn's Traffic Analysis Report for the project (Appendix M to the DEIR). This report notes that Turkey Flat Road has sufficient width to accommodate truck and fire truck movements. Therefore, reconstruction of the road to serve the project would not be necessary.

Response 19.7

The commenters express concern about additional traffic and potential crime generated by the proposed project. It is the commenters' understanding that only two Monterey County sheriffs are currently on duty from Soledad south to the San Luis Obispo County line during nighttime hours. Please refer to response 19.2 for a discussion of the adequacy of County police service for the proposed project. As discussed therein, the Monterey County Sheriff's Department would be able to serve the project site within adequate response times, whether arriving by Turkey Flat Road or SR 41. A potential increase in crime, in and of itself, does not constitute an environmental impact subject to analysis under CEQA; however, this concern is acknowledged and will be forwarded to County decision-makers for their consideration.

Response 19.8

The commenters are concerned about the generation of dust and resultant exposure to anthrax and the fungus that causes Valley Fever to humans and cattle on nearby properties during construction of the proposed project. The commenters state that soil disturbance would certainly release Coccidioidomycosis spores, which become wind-born and cause lung disease, and may release anthrax as well. Although the EIR includes mitigation to control dust on the site, the commenters believe that it neglects to consider how dust would be controlled on adjacent ground. Given the seriousness of these airborne illnesses, the commenters believe that the applicant should provide a buffer of at least 300 feet between their property and any disturbed surface on the project site. Further, the commenters request that the applicant assume the responsibilities of restitution for any animal deaths that are shown to result from these diseases and of paying medical bills for individuals who live near the construction area.

DEIR Section 4.3, *Air Quality*, acknowledges that the proposed project would result in significant but mitigable impacts from the generation of dust and resultant potential for airborne diseases such as Valley Fever. However, the proposed project would minimize potential hazards from the release of fungal spores by implementing standard construction Best Management Practices (BMPs) to reduce fugitive dust emissions and erosion control measures. In addition, Mitigation Measure AQ-2(a) would minimize the likelihood or extent of fugitive dust, thereby reducing the potential for exposure to construction personnel and off-site receptors. Mitigation Measures AQ-6(a-e) would further reduce health-related impacts from dust exposure to a less than significant level. A buffer between the project site and adjacent private properties would not be necessary to further reduce these impacts.

With regard to the comment about the release of anthrax, please refer to Impact HAZ-6 in DEIR Section 4.8, *Hazards and Hazardous Materials*, for a discussion of potential impacts from anthrax exposure. Though remote, the potential exists for anthrax spores to reside in the soil on or near the project site. Risks to project operations and maintenance personnel would occur if individuals were to come into contact with an expired anthrax-infected animal at the project site. This hazard would be substantially reduced by ensuring that livestock handling is limited to trained personnel, carcass disposal is immediate and follows accepted practices, and personnel are trained to understand the risk of handling animal carcasses. As these activities are considered standard grazing management procedures, impacts related to the potential for anthrax exposure would be less than significant.

The request that the applicant assume financial responsibility for airborne human or animal diseases near the construction area does not pertain to the environmental analysis but will be forwarded to County decision-makers for their consideration.

Response 19.9

The commenters express concern that the EIR does not state the location of the waste treatment facility. They suggest that this facility be placed in an area remote from Turkey Flat Road and where prevailing winds would not subject landowners on this road to drifting odors. The proposed project would not involve construction of a waste treatment facility. A septic system would be located near the operations and maintenance facility, which would not be located near Turkey Flat Road.

The commenters also express concern that the EIR does not state the widths of specific interior roads on the project site. They recommend keeping heavily traveled roads away from the site perimeter near Turkey Flat Road to cut down on dust. Please refer to response 19.8 for a discussion of impacts from dust generated by the proposed project.

During public meetings, the commenters state that they were informed that a line of trees would be planted between their property and the project site; however, the commenters see no mention of this feature in the EIR. They suggest that such a line of trees be planted and maintained by the applicant. It is assumed that this comment pertains to a concern about aesthetics and views from the commenters' private property. As discussed in Impact AES-2 in DEIR Section 4.1, *Aesthetics*, the proposed project would visually transform the existing character of the project site from a rural, ranching landscape, to a renewable energy development with associated infrastructure, and this

visual change would be visible to adjacent private properties. However, the impact is not significant for purposes of the CEQA analysis due to the limited number of affected properties. Nevertheless, this comment will be forwarded to County decision-makers for their consideration.

Response 19.10

The commenters express concern that an additional water well that would be drilled near their property may have a detrimental effect on a spring on their property, which is their only source of water. They request that this new well be drilled closer to where the water would be used and farther from their boundary fence. As discussed in DEIR Section 2.0, *Project Description*, the proposed solar facility could draw water from two existing wells and one potential new on-site well located to the west of the proposed switching station. The potential new well is not confirmed and its ultimate location would depend on final design and operational efficiencies. However, Impact HYD-3 in DEIR Section 4.9, *Hydrology and Water Quality*, finds that the Cholame Valley Groundwater Basin is not in a state of overdraft, and net groundwater recharge in the basin is estimated to be 35,478 acre-feet per year. Estimated water demand from the proposed project represents less than 1% of the net recharge during Year 1 of the project (the year with the greatest demand for water) and an estimated 0.0005% during all years following completion of construction. Therefore, even if the potential new well were built, construction and operation of the proposed project would not substantially deplete groundwater supplies or interfere with groundwater recharge. Relocating the potential new well to protect the spring on the commenters' property would not be necessary.

Response 19.11

The commenters reiterate nine concerns that were included in several emails sent to Monterey County Planner Taven Kinison Brown but are intended as public comments. The commenters express that the DEIR and the County have not addressed several of these items.

First, the commenters express concern about prime agricultural land, or the lack of such land on the suggested secondary site. Please refer to Impact AG-1 in DEIR Section 4.2, *Agricultural Resources*, for a discussion of impacts on important farmland, including prime farmland, and to Section 7.0, *Alternatives*, for an analysis of impacts from alternative sites.

Second, the commenters suggest an alternate site on the alkali Cholame Flats, which is a salt flat located in the Cholame Valley. DEIR Section 7.0, *Alternatives*, analyzes an Alternate Jack Ranch Site located three miles southwest of the project site in the lower, flatter portions of Jack Ranch adjacent to the Cholame Creek channel. However, the DEIR finds that this alternative would create greater environmental impacts than the proposed project. In addition, several other alternative sites were considered but rejected because they were either determined to be infeasible; would fail to meet most of the basic project objectives; or would not avoid, minimize, or reduce any of the potential significant and unavoidable environmental impacts of the proposed project. These alternative sites include two Department of Defense brownfield sites and six smaller brownfield sites in Monterey and San Luis Obispo counties. It should be noted that, in accordance with *CEQA Guidelines* Section 15126.6(a), "an EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation."

Third, the commenters request "specs" for the emergency exit. As discussed in DEIR Section 2.0, *Project Description*, secondary emergency access to the project would be provided from Turkey Flat Road, an existing paved local County road that terminates at the northwestern edge of the project site (refer to Figure 2-4d). Because no improvements are proposed to this access route, design details are not available for the entrance/exit to the project site at Turkey Flat Road.

Fourth, the commenters request information about the width of Turkey Flat Road. As stated in Impact T-6 in DEIR Section 4.13, *Transportation/Traffic*, the travel width of Turkey Flat Road is generally 20 feet on the project site but varies between 11 and 16 feet at creek crossings.

Fifth, the commenters request a copy of actions of the County Board of Supervisors regarding closure of Turkey Flat Road. This comment does not address an environmental issue but will be forwarded to County decision-makers for their consideration.

Sixth, the commenters ask whether or not having a secondary road access would be seen as a deficiency. As discussed in Impact T-6 in DEIR Section 4.13, *Transportation/Traffic*, compliance with existing local requirements would ensure that proposed access and internal site roadway widths would be sufficient to accommodate emergency vehicle access.

Seventh, the commenters question the accuracy of Element Power's statement to the public that 5 acre-feet of water per year would be used. It should be noted that Element Power was acquired, and First Solar is now the applicant for the proposed project. As stated in Impact HYD-3 of DEIR Section 4.9, *Hydrology and Water Resources*, demand for water during operation and maintenance activities is projected to be 5 acre-feet per year (AFY), including 4.1 AFY for module washing, if washing is required, and 0.9 AFY for the operations and maintenance (O&M) facility's potable water supply.

Eighth, the commenters ask about radiant heat from the solar panels and potential effects on the temperature of surrounding farmland. For a discussion of potential impacts from radiant heat on the local climate, please see response 16.112.

Lastly, the commenters express concern about the potential "bleeding" of electrical energy from solar panels, similar to high-tension power lines, and resultant health risks. According to researchers at the National Renewable Energy Laboratory, utility-scale solar PV arrays produce very low levels of electromagnetic fields (EMFs), comparable to low-voltage power lines (Brinkman and Margolis, 2009). PV panels produce weaker electromagnetic fields than household appliances such as televisions and refrigerators. Although inverters and power conditioning units in PV arrays produce substantial EMFs, the strength of these fields declines rapidly with distance. Relatively weak evidence exists linking EMF from high-voltage power lines to adverse health effects. However, the level of EMF produced from such power lines is much stronger than that produced by a solar array. Furthermore, a comprehensive 2013 study found no relationship between the incidence of cancer in adults and proximity to low-frequency magnetic fields from high-voltage overhead power lines, based on four types of cancer recorded in Britain's National Cancer Registry between 1974 and 2008 (Elliot et. al., 2013).

The following two sources have been added to Section 8.0, *References:*

Brinkman, G., and R. Margolis, National Renewable Energy Laboratory, Health Effects of Electromagnetic Fields from Solar Photovoltaic Arrays, August 18, 2009, Available: http://www.oregon.gov/ODOT/HWY/OIPP/docs/solar_usdoememo.pdf

Elliot, P., G. Shaddick, M. Douglass, K. de Hoogh, DJ Briggs, and MB Toledano, Adult Cancers Near High-Voltage Overhead Power Lines, Epidemiology, 24(2): 184-190, March 2013.

Response 19.12

The commenters attached a schematic diagram to visualize the location of their private property with respect to proposed secondary access road. This documentation is noted and will be forwarded to County decision-makers for their consideration. Please refer to response 19.5 for a discussion of property rights concerning the access road.

Letter 20

Gonzales, Eva x5186

From: Ann Gaglioti [agaglioti@grndwork.com]
Sent: Monday, September 22, 2014 4:59 PM
To: Robinson, Delinda x5198; Ford, John H. x5158
Subject: Letter of Support - California Flats Solar Project

Ann Gaglioti
864 Portola Drive
Monterey, CA 93940

September 22, 2014

Delinda Robinson and John Ford
Monterey County Planning Department
168 W. Alisal St. 2nd Floor
Salinas, CA. 93901

VIA e-MAIL:
robinsond@co.monterey.ca.us
fordjh@co.monterey.ca.us

RE: California Flats Solar Project

Dear Ms. Robinson and Mr. Ford,

I am writing to express my strong support for the California Flats Solar Project. I have the unique purview of owning GroundWork Renewables, Inc., a Monterey-based company that specializes in providing meteorological stations to measure irradiance in support of utility-scale solar projects. Our data contributes to gigawatts of solar being built throughout the US. We proudly count First Solar among our clients. 20.1

The Annual Greenhouse Gas Bulletin released on September 9, 2014 by the World Meteorological Organization (WMO) reports a grim outlook for climate change and the United States inability to reduce our rate of emissions. Climate change will surely impact the lives of my two young children if we don't take every action. Of note, it is the first time that the bulletin has published the high rates of ocean acidification due to greenhouse gases. This is especially important to residents of Monterey County that enjoy the beauty and wildlife of Monterey Bay.

The California Flats project will offset 109,000 cubic metric tons of CO2s per year. This project really will move the needle in reducing carbon use. And, projects like the California Flats Solar Project have helped the global PV panel market reach scale so that solar is cheaper for homes and businesses.

It is my sincere hope that the Monterey County Planning Department considers the children of Monterey County and their futures and decides that the California Flats Solar Project is in the very best interests of the County.

Sincerely,

Ann Gaglioti
CEO
GroundWork

w: 831.920.1687
c: 928.607.1501
http://grndwork.com

Letter 20

COMMENTER: Ann Gaglioti, CEO, GroundWork Renewables, Inc.

DATE: September 22, 2014

Response 20.1

The commenter, who owns a Monterey-based company providing support for utility-scale solar projects, expresses support for the proposed project. The commenter states that the project would offset 109,000 cubic metric tons of CO_2 emissions per year, reducing the County's contribution to climate change and associated acidification of the oceans. In addition, the commenter asserts that the project would provide an economic benefit in helping the global PV panel market reach scale so that solar power is cheaper for homes and businesses. This comment is noted and will be forwarded to County decision-makers for their consideration.

Letter 21

Gonzales, Eva x5186

From: hunter12780@gmail.com on behalf of Cameron Hunter [cameronhunter27@gmail.com]
Sent: Monday, September 22, 2014 5:05 PM
To: Robinson, Delinda x5198; Ford, John H. x5158
Subject: Support for California Flats Solar Project

Cameron Hunter

662 Jessie St

Monterey CA 93940

(805) 245-1395

Sept 22, 2014

Delinda Robinson and John Ford

Monterey County Planning Department

168 W. Alisal St. 2nd

Salinas, CA. 93901

Re: California Flats Solar Project

Dear Ms. Robinson and Mr. Ford:

Please accept my comments in this letter as evidence of support from the community of Monterey County. I was excited to learn about the prospect of a utility scale solar development in our county, and I hope that you will consider the proposal favorably, especially as we purport ourselves to be a progressive and environmentally friendly area. The project's environmental and economic benefits are good for all of us in that our county would benefit from sales and use tax income; provide jobs over multiple years of construction; and generate millions in direct and indirect economic benefits over the life of the project 21.1

The idea that this project could provide 100,000 homes with clean renewable power is exciting and important to our community members as we see the risks of other forms of electricity generating energy, such as nuclear

power, as well as the offset of water used by thermal generators during so many years of drought here in California. 21.1

I hope that you consider how much community support there is for this project, and move forward as quickly as possible with its approval.

Sincerely,

Cameron Hunter

Letter 21

COMMENTER: Cameron Hunter

DATE: September 22, 2014

Response 21.1

The commenter expresses support for the proposed project, citing environmental and economic benefits for Monterey County. This comment is noted and will be forwarded to County decision-makers for their consideration.

Letter 22

Gonzales, Eva x5186

From: Holly Temple [holly.mabry@me.com]
Sent: Monday, September 22, 2014 2:03 PM
To: Robinson, Delinda x5198; Ford, John H. x5158
Subject: California Flats

Delinda Robinson and John Ford
Monterey County Planning Department
robinsond@co.monterey.ca.us
fordjh@co.monterey.ca.us

Dear Ms. Robinson and Mr. Ford,

As a mother, it is scary for me to read the papers these days. With the stories of war, suicide bombings, the ebola virus and (especially) climate change, it is hard to have hope for our planet and my children's futures. But then just as I feel like I am about to lose hope, I hear of one individual or one event that could help change the world.

Today, that one thing is the California Flats Solar Project, a project that I see will not only curtail carbon emissions, provide jobs for the people of Monterey, and save water but will also move us all in the right direction. 22.1

"You must be the change you want to see in the world."
Mahatma Gandhi

The change I want to see in the world is more clean, renewable energy in Monterey County. I think it is important to recognize that yesterday, more than 400,000 people marched in New York City to support the environment. I wish I could have joined them, but instead I am thinking globally and acting locally by writing this letter.

Thank you very much for your consideration.

Sincerely,

Holly A. Temple
Carmel-by-the-Sea, CA 93921

Letter 22

COMMENTER: Holly Temple

DATE: September 22, 2014

Response 22.1

The commenter expresses support for the proposed project, stating that it would curtail carbon emissions, provide jobs for the County, and save water. This comment is noted and will be forwarded to County decision-makers for their consideration.

Letter 23

Gonzales, Eva x5186

From: Kdlambeth@aol.com
Sent: Monday, September 22, 2014 6:25 PM
To: ceqacomments
Subject: Comments Re: DEIR For the California Flats Solar Project

To whom it may concern:

I am writing to comment on the above-cited document submitted regarding the California Flats Solar Project.

I have reviewed the DEIR and find it deficient in a number of areas and downright wrong in other areas.

First the analysis regarding aesthetics. The impact on aesthetics described focuses on the impact if the area were open to the public by way of trails, parks and roadways and concludes there are a minimal impacts that can be mitigated. This is patently false. First ,the impact on residents nearby is not addressed and that impact would be severe and could not be mitigated. While the area under consideration for the project is not in a park or on a trail, the residents who live close by as well as nearby residents and travelers driving on Highway 41, Turkey Flat Road and Cholame Road would be able to see the ugly solar panels which would replace a view of grazing lands, creeks,etc. That is a severe impact on the aesthetics of the area that could not be mitigated. In addition, the nearby residents would be subject to extreme glare from the solar panels which would make it impossible to use their outdoor living areas, not to mention the danger to eyesight to which they would be subjected from the extreme glare of the solar panels. This is not addressed in the DEIR. 23.1 23.2

Valley Fever exposure is discussed in an extremely deficient way and, with the exception of one sentence, is focused on the workers who would be constructing the project. Furthermore, there is a statement which minimizes the severity and effects of Valley Fever. Valley Fever can and does kill people and, once a person is infected, is a systemic illness which can flare up at any time with varying degrees of severity. I know someone personally who was infected with Valley Fever three years ago. She almost died and her lung capacity has still not returned to normal levels. She continues under the care of a pulmonary specialist and an infectious disease physician, both of whom have told her she will have Valley Fever for the rest of her life. I know of others who have died from Valley Fever. It is a very serious condition. A number of workers who were involved in the installation of the California Valley Solar Project became infected with Valley Fever. As far as addressing the danger to nearby residents is concerned, the DEIR does not address how they would mitigate that risk at all. Because the spores that cause Valley Fever are airborne and because the area in question is routinely subject to substantial gusty winds (there is even a sign on Hwy. 41 warning drivers of these winds), nearby residents as well as travelers passing by, would be in danger of infection. to say the DEIR is deficient regarding this very serious and real risk is an understatement. 23.3

Regarding dangers to wildlife, again, the DEIR is astoundingly deficient. It does not address the danger to birds and various butterflies, **including the endangered Monarch butterfly**, from the excessive heat generated by the solar panels. It has been widely reported by various newspapers including The Washington Times, the Wall Street Journal, the Huffington Post, among others, that birds have been incinerated by the excessive heat as they fly over the solar panels. These articles point out how this is disturbing the balance of nature and that it occurs on a large scale. Some of the 23.4

many types of birds that have been found to have been incinerated include hummingbirds and other small birds, hawks, and owls, among others. Estimates of the number of birds killed by solar projects range from 1,500 a year to 28,000 a year. The smaller number represents the estimate of solar project operators and the larger number represents the estimate of environmental groups. **I believe the environmentalists' estimate is more accurate as they do not have a monetary stake in the perpetuation of these solar projects.** Observers at the Ivanpah solar project in the Mojave describe seeing "...hundreds and hundreds of butterflies, including Monarchs, killed." None of this is addressed **at all** in the DEIR for the Californmia Flats Solar Project. This danger to birds cannot be mitigated as it is caused by the very functioning of the solar panels which generate temperatures of 800 degrees Farenheit and greater above them. In addition, birds often mistake solar panels for water and are incinerated as they fly overt the panels thinking they are going to a water source. 23.4

Solar projects are heavily subsidized by the Federal Government. As a taxpayer, I object strenuously to these large scale projects because of the harm they do to the environment, the wildlife in the area and the residents and travelers who must look at the ugliness of them instead of a beautiful natural landscape. I urge you to decline to grant a permit to the developers of this very harmful project.

Kathleen D. Lambeth
6465 Via Escondida
San Miguel, CA 93451
Phone: 805-467-2784

Letter 23

COMMENTER: Kathleen Lambeth

DATE: September 22, 2014

Response 23.1

The commenter states that the DEIR does not address a severe and unmitigable aesthetic impact on residents near the project site and motorists on SR 41, Turkey Flat Road, and Cholame Road. As discussed in DEIR Section 4.1, *Aesthetics*, the County of Monterey General Plan does not protect private views, and CEQA does not require a detailed evaluation of individual private views, particularly when only a limited number of private views would be affected by site development activities. Therefore, although some homeowners may experience adverse interference with their private views, the impact is not significant for purposes of the CEQA analysis due to the limited number of affected properties. For drivers traveling along SR 41, construction equipment and staging areas would temporarily be visible; however, the completed roadway improvements would be consistent with the existing roadway infrastructure. In addition, both Turkey Flat Road and Cholame Valley Road generally have very limited views of the project site and lack common public viewing areas of the project site.

Response 23.2

The commenter expresses an opinion that nearby residents would be subject to extreme glare from the proposed solar panels, making it impossible to use their outdoor living areas and endangering their eyesight. Whether the proposed solar panels are installed in a fixed position or use trackers to follow the sun, the off-site residences near the project site would experience minimal glare, based on the direction and tilt of the panels. In addition, photovoltaic modules are designed to absorb light to the highly concentrated photovoltaic material, rather than reflect it outward, resulting in minimal off-site glare. For further discussion of glare, please refer to Impact AES-4 in DEIR Section 4.1, *Aesthetics,* which finds that glint and glare from solar modules would not significantly adversely affect the existing visual receptors in the area.

Response 23.3

The commenter states that the DEIR does not adequately describe the severity of risk from exposure to Valley Fever or address how to mitigate the risk to nearby residents. A number of workers involved in installation of the California Valley Solar Project, the commenter notes, became infected with Valley Fever. The commenter finds that nearby residents and travelers would be in danger because the spores that cause Valley Fever are airborne and because of gusty winds in the area. DEIR Section 4.3, *Air Quality*, notes that a total of 28 cases of Valley Fever occurred in San Luis Obispo County in 2013, including 25 cases from the California Valley Solar Project. However, the proposed project would minimize potential hazards from the release of fungal spores by implementing standard construction Best Management Practices (BMPs) to reduce fugitive dust emissions and erosion control measures. Mitigation Measure AQ-2(a) would minimize the likelihood or extent of fugitive dust, thereby reducing the potential for exposure to construction personnel and off-site receptors. In addition, Mitigation Measure AQ-6(e) requires the

project applicant to develop an educational handout for surrounding residents within three miles of the project site, which would disclose potential sources/ causes, common symptoms, options or remedies available should someone be experiencing these symptoms, and where testing for infection is available. Mitigation Measure AQ-6(e) requires that this handout be mailed to all existing residences within three miles of the project boundaries no less than 30 days prior to any surface disturbance (e.g., grading, filling, trenching) work commencing. Mitigation Measures AQ-6(a) through AQ-6(e) would further reduce impacts to a less than significant level.

Response 23.4

The commenter states that the DEIR does not address the danger to birds and butterflies, including the endangered Monarch butterfly, from excessive heat generated by solar panels. The commenter says that solar projects are estimated to kill between 1,500 and 28,000 birds per year. According to the commenter, observers at Ivanpah solar project in Mojave Desert have described hundreds of deaths of Monarch butterflies. The commenter finds that these impacts are not mitigable. It should be clarified that the Ivanpah solar plant uses mirrors to concentrate and focus solar radiation, which can generate substantial amounts of heat above the facility. The proposed project would not use such technology. In addition, although Monarch butterflies have recently declined in population, they are not currently a protected species under the state or federal Endangered Species Acts. Therefore, potential impacts to this species are not discussed in the EIR.

Please refer to response 16.65 for a discussion of collision mortality from birds mistaking solar panels for open sky or water, and response 16.112 for a discussion of radiant heat from solar panels.

Letter 24

Robinson, Delinda x5198

From: Tristan Mabry [mabryt@mac.com]
Sent: Monday, September 22, 2014 11:00 AM
To: Robinson, Delinda x5198; Ford, John H. x5158
Subject: Public Support for the California Flats Solar Project

Tristan James Mabry, PhD

4SE4 Guadalupe Street

P.O. Box 6265

Carmel-by-the-Sea, CA 93921

September 22, 2014

Delinda Robinson and John Ford

Monterey County Planning Department

168 W. Alisal St. 2nd Floor

Salinas, CA. 93901

VIA e-MAIL:

robinsond@co.monterey.ca.us

fordjh@co.monterey.ca.us

RE: California Flats Solar Project

Dear Ms. Robinson and Mr. Ford,

As I read the news this morning, I see more than 300,000 people marched on the United Nations yesterday demanding urgent environmental policy reform, including but not limited to the use of clean, renewable energy. At this point, my memory was jarred to recall the excellent effort to build a solar energy project right

24.1

here in Monterey County. I am simply writing as a local citizen – a homeowner and (importantly looking forward to coming generations who will bear the brunt of climate change) a father of two young daughters – to express my strong support for the California Flats Solar Project.

Of course, there are many other financial reasons to support this effort – including jobs, economic growth, and expanded tax revenue – but I understand there is (bewildering) opposition from some in the environmental community who reject development of any kind. This is the worst form of not-in-my-backyard thinking. I should think everyone in Monterey County would be proud of such a positive and path-breaking step forward for our environment, noting especially that the Project will also save vast amounts of precious water (as opposed to conventional power generation). 24.1

It is my sincere hope that the Monterey County Planning Department considers the many benefits of the California Flats Solar Project – both environmental and economic – and ultimately decides this remarkable effort is in the very best interests of the County.

Sincerely,

Tristan James Mabry, PhD

Letter 24

COMMENTER: Tristan James Mabry, Ph.D.

DATE: September 22, 2014

Response 24.1

The commenter, a resident of Monterey County, expresses support for the proposed project, for the purposes of addressing climate change and providing jobs, economic growth, and expanded tax revenue. The commenter adds that the project would save vast amounts of water when compared to conventional power generation. This comment is noted and will be forwarded to County decision-makers for their consideration.

3.0 MASTER RESPONSES

This section presents detailed responses to comments that were made by more than one commenter where more than one commenter was making the same general statement of concern. Response to specific comment letters may refer the commenter to one or more of the general responses.

3.1 MASTER RESPONSE 1: ADEQUACY OF BIOLOGICAL SURVEYS

Comment letters submitted by Adams, Broadwell, Joseph and Cardoza (Letter 12), the California Native Plant Society (Letter 13), and Conservation Organizations (a joint comment letter from Audubon California, Center for Biological Diversity, CNPS, Defenders of Wildlife and the Sierra Club; Letter 15) included one or more comments regarding the insufficiency of biological studies, noting that full protocol-level surveys were not completed for a variety of species. Response to comments on the specific details of some surveys have been addressed directly for each comment; however, this general response addresses the adequacy of biological surveys in general, and why protocol-level surveys are not required to evaluate the potential for impacts to special status plant and wildlife species.

The EIR environmental setting is based on expert review of data contained within a number of biological resource databases, available literature on species known to occur in the project vicinity, and a wide variety of surveys designed specifically to meet the site and environmental conditions that included reconnaissance-level surveys, general wildlife surveys, protocol-level surveys, modified protocol surveys, and focal surveys that meet or exceed the level of detail contained in recommended protocol-level surveys. The purpose of the database/literature review and field surveys was to evaluate the project site for the potential to support special status species and assess the potential for impacts to those species that are known to occur or may occur on the project site. A robust and thorough evaluation of biological resources was conducted that involved extensive field surveys between 2011 and 2014, including:

- *Reconnaissance site surveys*
- *Full coverage ground surveys for wildlife and burrows*
- *Mammal habitat assessment*
- *Vegetation community mapping*
- *Protocol-level and focused rare plant surveys*
- *Jurisdictional waters survey and delineation*
- *Vernal pool surveys*
- *Reptile and amphibian reconnaissance surveys*
- *CTS and CRLF aquatic larval surveys*
- *Small mammal trapping surveys*
- *Kangaroo rat genetic analyses*
- *Wet and dry season branchiopod surveys*
- *Spotlight wildlife surveys*
- *Camera station wildlife surveys*
- *CRLF surveys*
- *CTS habitat assessment*

- *Ground-based raptor nest surveys*
- *Helicopter-based raptor nest surveys*
- *Avian activity surveys*
- *Scent-dog kit fox surveys*

These surveys along with available existing information on the occurrence of special status species in the region as discussed in Section 4.4, *Biological Resources,* of the DEIR and referenced in the supporting biological technical reports, and the physical and biological characteristics of the project site identified during field surveys, provide a thorough evaluation of the vegetation communities and wildlife habitats present within and adjacent to the project site. Because of the large size of the study area (roughly 5,000 acres), the site and environmental specific conditions encountered during the period of analysis, the evaluation of biological resources well in advance of construction activity, the adoption of a precautionary approach that does not rely on documenting evidence of absence, and the phased timing of construction activity, protocol surveys were not completed for all potentially occurring species. The biological studies fully evaluated the potential for special status species to occur on the project site and identified suitable habitat for special status species. Based on these evaluations, the DEIR presented a comprehensive and precautionary assessment in favor of resource protection of the potential for special status species to occur on the project site, and evaluated the potential impacts to those species that would or could result from project development. Furthermore, the proposed avoidance and mitigation provides for additional surveys (e.g., focused protocol surveys, pre-construction surveys) to ensure up to date, site-specific information is used when implementing avoidance, minimization, and mitigation strategies, or assumes impacts to special status species where surveys have not or could not be completed prior to preparation of the DEIR, but where available information suggests impacts could occur.

Letters 12 and 15 note that some surveys identified in the Biotic Report (H.T. Harvey [HTH] 2014b; DEIR Appendix E.1) were not completed at the time of DEIR publication, and a comment in Letter 12 states that "the DEIR cannot be considered a robust and comprehensive analysis of biological resources until the surveys have been adequately conducted, documented, and vetted by the public and resource agencies" (comment 12.A.2). Not all surveys or reporting had been completed at the time the DEIR was in preparation, and survey work is ongoing at the project site in conformance with avoidance, minimization, and mitigation measures outlined in the DEIR. However, conducting all possible surveys and conducting full protocol surveys for all potentially occurring species is not required under CEQA. In *Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, the Court specifically addressed whether protocol-level surveys were required to adequately determine the significance of impacts to special status species in an EIR and concluded that they were not required. According to the Court, "CEQA does not require a lead agency to conduct every recommended test and perform all recommended research to evaluate the impacts of a proposed project. The fact that additional studies might be helpful does not mean that they are required." When there is sufficient information regarding the biological resources on-site to determine potential impacts, as is the case here, further studies are not required under CEQA. The DEIR identified the potential for a special status species to occur on the project site, characterized the risks to those species based on the disturbance associated with the proposed project activity, and provided mitigation to address potential impacts. Mitigation may require further protocol surveys or preconstruction surveys (appropriately timed for proposed construction schedules to ensure avoidance of impacts to special status species) and/or

requires avoidance and mitigation for species that are assumed present because suitable habitat is present and protocol surveys were not conducted to document absence.

3.2 MASTER RESPONSE 2: ADEQUACY OF RARE PLANT SURVEYS

Letters 12, 13, and 15 each raised concerns with the timing, extent, and completeness of rare plant surveys. The DEIR presents the results of reconnaissance surveys that identified and mapped vegetation communities and special status species habitats within the project site, as well as rare plant surveys conducted by HTH in 2013. Additional rare plant surveys have been completed by HTH in 2014, and the results are presented in the attached 2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15). Vegetation communities and soils were mapped in advance of the preparation of the DEIR to provide sufficient context to assess the potential for occurrence of, and impacts to special status species from project development. Rare plant surveys over the majority of project impact areas were conducted in advance of DEIR preparation in order to identify any state or federally listed species that may require take authorization, and the remaining impact areas were surveyed to a protocol-level during DEIR preparation as timing required these take place during appropriate blooming periods for the target species. As discussed in General Response 1 above, it is not necessary to conduct all recommended research to evaluate impacts under CEQA; rather, sufficient analysis must be undertaken to identify potential impacts to special status species, and identify suitable avoidance and mitigation measures. Early season 2013 surveys covered the entire project site and identified areas with suitable conditions for later blooming special status plant species. The botanical survey specialists were thus able to identify the few sites that provided potentially suitable habitat for late-blooming target species, and therefore latter surveys (June and July 2013) required a reduced, but focused survey effort. Additionally, nonflowering individuals of target genera (e.g., *Atriplex, Chorizanthe, Eriogonum*) were marked for revisit during the initial transect surveys, allowing surveyors to go back and check individual plants or populations at a later date. In many cases, the later-blooming species prefer hillier habitats, outside of the direct impact areas of the project, or strongly alkaline/saline wetlands, which occur only rarely on the project site.

Reference population checks were performed on 23 days over the course of the 2013 rare plant survey, from March through June (Table 6, HTH 2013 Rare Plant Report, DEIR Appendix E.6). Reference checks were typically completed by a pair of botanists, although sometimes a single botanist visited a population site or a team of three or more botanists was dispatched. The actual hours spent conducting reference population checks are harder to determine than survey person-hours, because travel between sites is typically involved. However, it is estimated that approximately 175 person-hours of effort were expended in conducting reference population checks in 2013. This sum estimates the efforts at actual reference sites, and excludes travel time, general phenology checks prior to flowering, and the survey team visits to known, nearby target species' occurrences, which provided survey search images to all surveyors. Many reference populations were checked multiple times (and for some species, at multiple reference locations) to be effective in timing of surveys and revisits (Table 7, HTH 2013 Rare Plant Report, DEIR Appendix E.6).

Similar levels of effort in monitoring reference populations occurred during the 2014 rare plant surveys as reported in the attached 2014 Special Status Plant Survey Report (HTH 2014h, FEIR Appendix E.15), during which reference populations were monitored on 16 days over spring and early summer. HTH estimates that 125 hours were expended in monitoring reference populations in 2014 (excluding travel time). In 2014, the survey crew benefitted from the prior year's reference population work and surveys. By 2014, many sites close to the project had been identified as supporting target species, and could be visited quickly. Reference site visits provided confirmation that the majority of special status plants with potential to occur in the biological study area (BSA) were readily identifiable during site surveys. Taxonomic expertise and leadership was provided by the same qualified and experienced botanists who had conducted the surveys and reference population monitoring the previous year (resumes for Plant Ecologists Chris Winchell and Colin Wilkinson are provided in Appendix C of the attached 2014 Special Status Plant Survey Report [HTH 2014h, FEIR Appendix E.15]). Known occurrences of many species were visited on multiple dates and at multiple locations in 2014 (Table 6, attached 2014 Special Status Plant Survey Report [HTH 2014h, FEIR Appendix E.15]).

Regional contextual surveys were brief and focused, and, in 2013, were conducted outside the peak bloom period for the target species (those expected to be affected by the project based on preliminary survey results) (HTH 2013 Rare Plant Report, DEIR Appendix E.6). Surveyors' search images for the target species were well developed, and substantial numbers of shining navarretia (*Navarretia nigelliformis* sp. *radians*) and round-leaved filaree (*California macrophylla*) were located during these surveys, which was the basic goal of this survey method (not protocol). Because of the non-protocol nature of these surveys and the desire to cover as much ground as possible during the sampling effort, usually only points were recorded in association with a population estimate, so acreages were not calculated for these 2013 regional contextual surveys.

In 2014, a much expanded level of effort was employed in the regional contextual surveys. This time, a team of six to seven surveyors thoroughly canvassed survey areas (which are not shown in the report out of respect for private landowner privacy concerns). The areas amounted to 8,714 acres of land outside the project's BSA, and were surveyed over 15 days in the target species' peak bloom period, from April through May (Tables 4 and 5, of the attached 2014 Special Status Plant Survey Report, HTH 2014h; FEIR Appendix E.15). An estimated 720 person-hours were expended for the 2014 regional contextual surveys alone (again, excluding travel time). In total, more than 16,000 acres (25 square miles) of land outside and within 10 miles of the BSA were surveyed over the two years to provide a detailed regional context for project impacts.

Despite comparatively low precipitation levels, rare plant surveys conducted in 2013 and 2014 were robust, and in conjunction with vegetation community mapping, soil mapping and site topography, provided a suitable and appropriate evaluation of the potential for state and federally listed species to occur on-site. Despite the low yearly precipitation total, timing of 2014 precipitation was optimal to promote growth of native annual vegetation, and some species not previously confirmed at reference sites were abundant during 2014 site surveys, and other target species were more abundant in 2014 than had been detected in 2013, as discussed in the 2014 Special Status Plant Survey Report (HTH 2014h; FEIR Appendix E.15). Total rainfall does not predict fluctuations in plant population size as well as the temperature following the first major rain event does (Levine et al. 2008), and as such is not necessarily the best indicator of a poor survey season, which instead is provided by the detectability of target species at nearby reference

populations. Regardless, low rainfall totals for years in which plant surveys were conducted were disclosed in the DEIR and noted in evaluation of special status species potential to occur. These surveys, with their extremely high effort in reference population surveys, in conjunction with the regional surveys, also provided a sufficient evaluation of the potential population-level impacts to non-listed species. While the presence or absence of many special status plant species had not yet been determined in the additional impact areas outside the 2013 protocol survey area at the time of DEIR preparation, the potential for occurrence can be, and was, evaluated for the DEIR. Currently, HTH 2014h provides a source of information for species presence and absence for the FEIR that encompasses all impact areas. Impacts have been identified and mitigation measures have been developed based on the potential for special status plant species to occur on the project site. The 2014 rare plant surveys discussed in HTH 2014h satisfy the requirements of Mitigation Measure B-1(c) in Section 4.4, *Biological Resources,* of the DEIR for the additional impact areas for the project. This mitigation measure also requires preconstruction surveys (a standard practice for addressing potential impacts to special status species) for rare plants prior to ground disturbance if more than two years has elapsed since the completion of the 2013 protocol surveys and the initiation of ground disturbance, which would provide further information for avoidance and mitigation of potential impacts to special status plant species.

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4.0 AMENDMENTS TO THE EIR

The following pages provide a summary record of all proposed text amendments to the Draft EIR. Most amendments are the result of comments received during the public review period, and directly respond to those comments. These amendments serve as clarifications and amplifications on the content of the EIR. None of the changes would warrant recirculation of the EIR pursuant to CEQA Guidelines section 15088.5. The amendments serve to clarify and strengthen the content of the EIR, but do not introduce significant new information.

Changes in text are signified by strikeouts (~~strikeouts~~) where text is removed and by underlined font (<u>underline font</u>) where text is added. Other minor clarifications and corrections to typographical errors are also shown as corrected in this format, including corrections not based on responses to comments.

4.1 AMENDMENTS TO THE DRAFT EIR

Executive Summary

Amendments made to Table ES-1 in the *Executive Summary* are shown on the following pages (note only amended mitigation measures are shown).

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
Impact AQ-2 Construction of the proposed project would result in the temporary generation of air pollutants, which would affect local air quality. Short-term emissions of NOX and PM10 during the construction period would exceed MBUAPCD thresholds. Impacts would be Class I, significant and unavoidable. [Threshold 2]	**AQ-2(a) Dust Control Measures**. The project applicant and/or contractor shall be responsible for implementing the following mitigation measures throughout the duration of construction. Prior to the issuance of any grading permit, the project applicant and/or contractor shall submit construction drawings to the Monterey County RMA – Planning Department and RMA – Building Services for review and approval that include the following measures on all plans and specifications: • The grading plan design shall minimize the amount of disturbed area to the extent feasible~~.~~ **;** • Water trucks or sprinkler systems shall be used in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency shall be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible; • In order to avoid long distances and associated travel time between source wells and the work area, the project applicant shall employ the use of on-site temporary pipelines, stand tanks or other measures to reduce water truck travel on unstable, disturbed surfaces ~~to move water to the current work area and thereby reduce fill times for water trucks~~; • To best address fugitive dust proximal to workers, the project applicant shall establish clear boundaries for the assignment of dust control as between the principal EPC contractor and subcontractors. The subcontractors shall be required to maintain dust control in their work area. Maps showing each contractor's area of responsibility for dust control shall be distributed as work areas change. These maps shall be given to each water truck driver in an effort to reduce duplication of efforts while assuring full coverage. Water trucks will be assigned to specific crews or areas. In addition, each water truck driver shall be equipped with a radio to respond to any area that is experiencing dust or equipment operations that require additional dust suppression measures; • The project applicant shall maintain a 15 mph speed limit on roads where water application is the sole form of dust control, and shall post signs to remind workers throughout the work areas. The project applicant shall monitor to ensure compliance with the speed limit. As an additional measure, all of the cart operators shall be required to complete a ~~buggy~~ cart training course prior to operation of ~~any vehicle~~ carts on site; • Water truck operations shall adjust their spraying methods according to the conditions. For example, during windy conditions trucks should point the water spray downward. In silty soils, trucks should use light front spray	Air emissions calculations were performed for both before and after the incorporation of the above-identified mitigation measures. The mitigation measures include those typically required by CARB and the MBUAPCD for NO_X (such as use of off-road equipment with Tier **3** ~~III~~ engines) and PM_{10} (such as watering program for dust control). As shown in Table 4.3-5, despite implementation of mitigation measure AQ-2(a), AQ-2(b), and AQ-2(c), temporary construction emissions would continue to exceed MBUAPCD thresholds for NO_X and PM_{10}. In addition, due to the proximity of the site to other air basins, construction emissions could potentially impact air quality in those air basins. No other feasible measures are available that would further reduce construction emissions. Implementation of Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c) would help maintain compliance with MBUAPCD Rule 402. ~~Therefore~~ However, due to the exceedance of MBUAPCD thresholds for construction activity, impacts would remain significant and unavoidable during construction.

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
	followed by the heavier back spray. In clay soils, a heavy spray is applied well before traffic is expected in the area. This set of techniques shall be conveyed to new water truck operators when they arrive to the work site; • Where access by water trucks is limited by structures or conditions, hand-operated water tanks (i.e. water buffalos) shall be used to provide dust control. Hand-operated water tanks can be used to apply water directly to the work area by crew members; • Heavy construction equipment traveling on unstabilized ~~dirt~~ roads on the project site shall be preceded by a water truck to dampen roadways and reduce dust from transportation along such ~~on-site dirt~~ roads; • All dirt stock pile areas shall be sprayed daily as needed; • Permanent dust control measures identified in the proposed Habitat Restoration and Revegetation Plan [refer to Biology Mitigation Measure B-2(b)] shall be implemented as soon as possible following completion of any soil disturbing activities; • Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established; • All roads shall be stabilized using gravel, non-toxic chemical soil binders (e.g., latex acrylic copolymer), jute netting, or other methods approved in advance by the Monterey County RMA – Planning Department. If necessary, the Monterey County RMA – Planning Department may refer to the list of approved dust control suppressants in the SLOAPCD *CEQA Air Quality Handbook* Technical Appendix 4.3. For all structure pads and other areas to be paved, seeding or soil binders shall be used if construction or paving will not occur within 10 days of grading; • Install track-out control devices where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site; • Sweep paved/unpaved roadways boundaries (e.g. project entrance roadways) at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible; • All of these fugitive dust mitigation measures shall be shown on grading and building plans; and • The contractor or builder shall designate a site dust manager and up to four persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. As necessary, the monitor shall have the authority	

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact

	to require additional dust control measures be implemented. The monitor shall file monthly reports to the Monterey County RMA – Planning Department, including a daily log documenting monitoring activities, exceedances, and measures taken to reduce dust emissions. Their duties shall include weekdays, holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Monterey County RMA – Planning Department and the APCD Compliance Division prior to the start of any grading, earthwork or demolition. In addition, the log of monitoring activities shall be provided to APCD for confirmation that dust control measures are meeting the requirements of Rule 402.
	
	AQ-2(b) Emission-Reduction Measures for Construction Equipment ~~Idling Restrictions~~. The Project Applicant and/or Contractor shall be responsible for implementing the following mitigation measures throughout the duration of construction. Prior to the issuance of any grading permit, the Project Applicant and/or Contractor shall submit construction drawings to the Monterey County RMA – Planning Department and RMA – Building Services for review and approval that include **the following measures on all plans and specifications:**
	• **I~~i~~**dling Restrictions Near Sensitive Receptors for Both On and off-Road Equipment (applicable to northernmost edge of the project site only), including:
	  ○ Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
	  ○ Diesel idling within 1,000 feet of sensitive receptors is not permitted;
	  ○ ~~Use of alternative fueled equipment is recommended whenever possible;~~ and,
	  ○ Signs that specify the no idling requirements must be posted and enforced at the construction site.
	• Operational NO_X and Diesel PM Emissions Reduction Measures for Construction Equipment
	  ○ All construction equipment shall be maintained in proper tune according to manufacturer's specifications;
	  ○ All off-road and portable diesel powered equipment shall be fueled with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);	

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
	○ Use of on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines; ○ On- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5-minute idling limit; ○ Use of electrically-powered equipment when feasible; ○ Gasoline-powered equipment shall be substituted in place of diesel-powered equipment, where feasible; and ○ If available, use of alternatively fueled construction equipment on-site, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel. **AQ-2(c) Tier 3 Construction Equipment**. All off-road construction diesel engines not registered under the California Air Resources Board's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower (hp) or more, shall meet, at a minimum, the Tier 3 California Emissions Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. Construction or trucking companies with fleets that that do not have engines in their fleet that meet the Tier 3 standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance. If a Tier 3 (or equivalent alternative compliance) engine is not available for any off-road engine larger than 50 hp, that engine will have tailpipe retrofit controls that reduce exhaust emissions of NO_X and PM to no more than Tier 2 emission levels. Tier 1 engines will be allowed on a case-by-case basis only when the project applicant has documented that no Tier 2 equipment or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete project construction. This shall be documented with signed written correspondence by the appropriate construction contractor along with documented correspondence with at least two construction equipment rental firms. A list of the construction equipment and the associated EPA Tier shall be submitted to the County of Monterey RMA-Planning Department prior to the issuance of a grading permit to verify implementation of measure.	

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
Impact AQ-4 The project would not expose sensitive receptors to substantial pollutant concentrations associated with construction dust, carbon monoxide hotspots, toxic air contaminants, or naturally-occurring asbestos. Impacts related to localized pollutants would therefore be Class III, less than significant. [Threshold 4]	No mitigation measures are required. Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) would further reduce exposure of sensitive receptors to substantial pollutant concentrations.	Impacts would be less than significant without mitigation.
Impact AQ-6 Construction activities could generate dust and expose sensitive receptors to potential health hazards associated with the Coccidioides fungus (Valley Fever). Impacts related to Valley Fever would be Class II, significant but mitigable. [Threshold 4]	**AQ-6(a) Valley Fever Management Plan**. **AQ-6(a) Valley Fever Management Plan**. The project applicant shall identify and retain a licensed occupational medicine physician (M.D.) specializing in pulmonary epidemiology, subject to approval by the ~~consult with~~ the Monterey County Health Department (Health Officer), ~~the MBUAPCD, and the California Occupational Safety and Health Administration (Cal/OSHA) Compliance Program~~ to assist with the ~~to~~ development and implementation of a Valley Fever Management Plan (VFMP). The VFMP shall ~~that~~ include~~s~~ a job hazard analysis [in compliance with California Occupational Safety and Health Administration (Cal/OSHA) regulations] for any worker that will be exposed to dust. The VFMP shall further include specific measures to reduce the potential for exposure to Valley Fever. The project applicant and the Monterey County Health Department may consult with MBUAPCD and the Cal/OSHA Compliance Program as needed in identifying a specialist M.D. and in developing the VFMP. Prior to issuance of grading permits, the applicant shall submit the ~~Valley Fever Management Plan~~ VFMP to the Monterey County ~~RMA – Planning~~ Health Department for review and approval. The ~~Valley Fever Management Plan~~ VFMP shall ~~include a program to evaluate the potential for exposure to Valley Fever from construction activities and to~~ identify appropriate dust management and safety procedures that shall be implemented, as needed, to minimize ~~personnel~~ worker and public exposure to ~~potential Valley Fever–containing~~ dust potentially containing the *Coccidioides* spore. Measures in the ~~Valley Fever Management Plan~~ VFMP~~, which shall be implemented as applicable~~ may include the following: • Provide HEP-filtered air-conditioned enclosed cabs on heavy equipment. Train workers on proper use of cabs, such as turning on air conditioning	The required mitigation measures, in combination with Mitigation Measure AQ-2(a), would minimize the risk of exposure for construction personnel and off-site receptors to a less than significant level.

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
	prior to using the equipment. • Provide communication methods, such as two-way radios, for use in enclosed cabs. • ~~Provide National Institute for Occupational Safety and Health (NIOSH)-approved respirators for workers.~~ • ~~Conduct a job hazard analysis in compliance with Cal/OSHA regulations for any worker that will be exposed to dust.~~ • Require National Institute for Occupational Safety and Health (NIOSH)-approved-half-face respirators equipped with N-100 or P-100 filters to be used during ~~digging~~ any worker collocation with surface disturbance activities if determined to be ~~warranted after conducting a~~ needed based upon the applicable job hazard analysis. ~~Require employees to wear respirators when working near earth-moving machinery if determined to be warranted after conducting a job hazard analysis.~~ • ~~Cause employees to~~ Workers that are required to use respirators as determined by a job hazard analysis shall be medically evaluated, fit-tested, and properly trained on the use of the respirators, and ~~implement~~ a ~~full~~ respiratory protection program shall be implemented in accordance with the applicable Cal/OSHA Respiratory Protection Standard (8 CCR 5144). • Provide separate, clean eating areas with hand-washing facilities. • Thoroughly clean construction tools, equipment, and vehicles with water before they are moved offsite to other work locations. • ~~Wheel-washing facilities with water-recycling systems shall be provided at all site egress points. Vehicles leaving the site on a daily basis shall utilize wheel-washing facilities in order to reduce dust migration off the project site.~~ Equipment inspection and washing stations shall be established and manned at each construction equipment access/egress point. Spot examination of construction equipment for water washing via portable equipment in accordance with SWPPP BMPs shall be performed in order to prevent track-out of transport of material potentially carrying the *Coccidioides* spore. • Suitable coveralls and change facilities shall be made available to all on-site workers. ~~On-site workers~~ Workers performin work in areas where fresh ground disturbance presents a risk of exposure to the Coccicioides spore shall be required to change clothes after work every day before leaving the work site, to prevent distribution of *Coccidioides* to non-endemic areas, as determined to be needed based upon the applicable job hazard analysis. ~~As an alternative, disposable Tyvek® or equivalent~~	

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
	~~work suits and work boots for use on-site shall be provided for workers.~~ • Establish sub-contract language clearly indicating that all subcontractors are obligated to comply fully with the meaning and intent of Title 8 California Code of Regulations Sections 5141 and 5144, subject to audit and contract enforcement by the applicant. • Establish and execute auditing protocols to ensure subcontractor compliance with all provisions of the VFMP and provide monthly audit summary data, potential deviations noted and corrective actions implemented to the Monterey County Department of Health and County of Monterey RMA-Planning Department. • ~~Work with a medical professional~~ Each primary employer of contracted workers shall be required by the terms and conditions of their contract for services to retain and consult with an Occupational Medicine Professional, licensed by either the Medical Board of California or the Osteopathic Board of California to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever. Reporting of symptoms of Valley Fever and diagnosed cases of Valley Fever must occur consistent with ~~Cal/OSHA~~ County and State requirements. **AQ-6(b) Additional Valley Fever Dust Suppression Measures.** If peak daily wind speeds exceed 15 mph or peak daily temperatures exceed 95 degrees Fahrenheit for three consecutive days, additional dust suppression measures (such as additional water or the application of additional soil stabilizer) shall be implemented prior to and immediately following ground disturbing activities. The additional dust suppression shall continue until winds are 10 mph or lower and outdoor air temperatures are below a peak daily temperature of 90 degrees for at least two consecutive days. The additional dust suppression measures shall be incorporated into the Final Construction Management Plan. The Final Construction Management Plan shall be submitted to the County of Monterey RMA-Planning Department for review and approval prior to ~~the issuance of any grading permit~~ commencing ground disturbing activities (e.g., grading, filling, trenching). **AQ-6(d) Valley Fever Worker Training Program and Safety Measures**. Prior to any project grading activity, the primary project construction contractor shall prepare and implement a worker training program that describes potential health hazards associated with Valley Fever, common symptoms, proper safety procedures to minimize health hazards, and notification procedures if suspected work-related symptoms are identified	

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
	during construction, including the fact that certain ethnic groups and immune-compromised persons are at greater risk of becoming ill with Valley Fever. The objective of the training shall be to ensure the workers are aware of the danger associated with Valley Fever. The worker training program shall be included in the standard in-person training for project workers, and shall identify safety measures to be implemented by construction contractors during construction, including all safety measures included in the Valley Fever Management Plan prepared pursuant to Mitigation Measure AQ-6(a). Prior to initiating any grading, the project applicant shall provide the Monterey County RMA – Planning Department and the ~~County of~~ Monterey ~~Environmental~~ County Health ~~Bureau~~ Department with copies of all educational training material for review and approval. No later than 30 days after any new employee or employees begin work, the project applicant shall submit evidence to the Monterey County RMA – Planning Department that each employee has acknowledged receipt of the training (e.g., sign-in sheets with a statement verifying receipt and understanding of the training). **AQ-6(e) Valley Fever Information Handout.** The applicant shall work with a medical professional, in consultation with the Monterey County Health Department, to develop an educational handout for on-site workers and surrounding residents within three miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for ~~exposure~~ infection is available. Prior to construction permit issuance, this handout shall have been created by the applicant and reviewed by the County. No less than 30 days prior to any surface disturbance (e.g., grading, filling, trenching) work commencing, this handout shall be mailed to all existing residences within three miles of the project boundaries.	

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
Impact AQ-7 The proposed project would result in temporary air quality impacts as a result of project decommissioning. The extent of these effects would depend on future conditions in effect at that time, although project decommissioning is anticipated to result in air quality impacts comparable to project construction. Impacts related to decommissioning would be Class I, significant and unavoidable. [Thresholds 2, 3]	Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) would reduce fugitive dust and exhaust emissions associated with project decommissioning. These mitigation measures, or equivalent measures based on available technology at the time of project decommissioning, would be required during project decommissioning, if proposed.	As described in Impact AQ-2, Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) would reduce project construction emissions, but emissions would remain significant and unavoidable. Therefore, emissions from decommissioning remain significant and unavoidable.

Impact AQ-9 Construction of the proposed project would result in the temporary generation of air pollutants, which would affect local air quality. Short-term emissions of ozone precursors and PM_{10} during the construction period would exceed SLOAPCD thresholds. Impacts would be Class I, significant and unavoidable. [Threshold 2]	Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) are required for the proposed project, and are based on SLOAPCD recommendations for mitigating construction emission thresholds of significance. These measures are consistent with standard MBUAPCD and SLOAPCD recommended measures, and would ensure that construction-phase mitigation is uniformly applied across the project. ~~Thus, separate additional mitigation is not required for the portion of the project within SLOAPCD.~~ In addition, SLOAPCD CEQA Air Quality Handbook (April 2012) requires projects that cannot mitigated their construction emissions below the SLOAPCD thresholds of significance with on-site mitigation to develop a Construction Activity Management Plan that includes off-site mitigation to reduce emissions below the applicable threshold. Preparation of a Final Construction Management Plan (CMP) is required by APM-2, described in Section 2.0, *Project Description*. Therefore, the following mitigation measure is required to minimize construction emissions within the SCCAB:
	
	AQ-9 Construction Management Plan Requirements. The Final Construction Management Plan (CMP) proposed as Applicant Proposed Measure 2 (APM-2) shall include the following construction emissions reduction measures, recommended by SLOAPCD:
	• Best Available Control Technology for Construction equipment (BACT) measures to reduce construction emissions, which can include:
	  ○ Repowering equipment with the cleanest engines available;
	  ○ Installing California Verified Diesel Emission Control Strategies. These strategies are listed at:
		~~Even w~~ With implementation of ~~these m~~ Mitigation ~~m~~ Measures AQ-2(a), AQ-2(b), AQ-2(c), and AQ-9, temporary emissions within the SCCAB during construction would be reduced to the maximum extent feasible, but would continue to exceed ambient air quality standards within the SCCAB. Therefore, the impact would be significant and unavoidable.

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
	http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm • Schedule activities to minimize the amount of large construction equipment operating simultaneously during any given time period; and • Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions; The CMP shall be submitted to the County of Monterey RMA-Planning Department for review and approval.	
Impact CR-1 Construction and decommissioning of the proposed project would involve surface excavation, which has the potential to unearth or adversely impact identified NRHP/CRHR-eligible prehistoric or historic archaeological resources. Impacts would be Class II, *significant but mitigable.* [Threshold 1]	**CR-1(a) Archaeological Site Avoidance.** Wherever feasible, direct impacts on NRHP/CRHR-eligible archaeological sites shall be avoided. Avoidance shall be accomplished by preventing any direct ground disturbance of the resource. If impacts to all or any of these resources cannot be avoided, as determined by the applicant with concurrence from RMA – Planning, the boundaries of the NRHP/CRHR-eligible sites shall be marked in the field by a Registered Professional Archaeologist prior to ground disturbance with exclusionary fencing, lath, flagging tape, or some other combination of material that is highly visible, durable, and which construction and management personnel can recognize as marking an exclusion zone where no earth disturbance or other activity shall occur. ~~If avoidance of any direct disturbance is deemed feasible by RMA – Planning based on the sensitivity of the resource relative to the severity of impact, the boundaries of the NRHP/CRHR-eligible sites shall be marked in the field by a Registered Professional Archaeologist prior to ground disturbance with exclusionary fencing, lath, flagging tape, or some other combination of material that is highly visible, durable, and which construction and management personnel can recognize as marking an exclusion zone where no earth disturbance or other activity shall occur.~~ Exclusion zones shall be inspected weekly by an archaeological monitor or other environmental inspector to ensure that they are being honored, remain effective, and in place. If complete avoidance is not feasible, mitigation measures CR-1(b) and CR-1(c) shall apply.	Implementation of mitigation measures CR-1(a) through CR-1(f) would reduce impacts to historic and archaeological cultural resources to a less than significant level.
Impact GEO-2 The solar ~~development~~ generating facility area is relatively flat and is subject to low levels of landslide potential. However, the utility corridor contains steeper slopes that may be subject to moderate landslide potential. In addition, the project site contains several deeply incised channels that	**GEO-2 Landslide Avoidance and Hazard Minimization.**	Impacts would be less than significant after mitigation.

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
are subject to moderate landslide potential. Landsliding has the potential to damage and destroy roadways, structures and other improvements as well as alter or block drainage channels, causing further damage and erosion. This is a Class II, *significant but mitigable,* impact. [Threshold 1]		
Impact GEO-3 Project construction, operation, and decommissioning could result in soil erosion or loss of topsoil. However, compliance with the NPDES construction stormwater program and implementation of measures promoting infiltration, as identified in a final, design-level drainage analysis, would minimize erosion. Impacts would be Class III, *less than significant*. [Threshold 2]	Compliance with Monterey County requirements for erosion control and grading would partially reduce impacts. In addition, compliance with recommendations in a required final, design-level drainage analysis, and compliance with the project's construction SWPPP, as described in Section 4.9, *Hydrology and Water Quality,* as well as proposed project design features (i.e., APMs), would reduce erosion impacts to a less than significant level. No mitigation is required.	Impacts would be less than significant without mitigation.
Impact HAZ-5 Repowering or decommissioning of the proposed project could result in the improper disposal of hazardous waste, including used PV solar modules. Impacts related to the disposal of decommissioned PV solar modules would be Class II, *significant but mitigable.* [Thresholds 1, 2]	**HAZ-5 Disposal of PV Modules and Support Structures.** The applicant shall submit a recycling or disposal plan for PV modules ~~and support structures~~ for County review and approval, in order that project structures not pose a risk to human health or the environment after project repowering and/or decommissioning. The plan shall specify how these project components shall be recycled or disposed of in a manner that will not pose a risk to human health or the environment, and the costs of such recycling or disposal. Prior to ~~grading or building permit issuance~~ operation, the applicant shall post a long-term decommissioning bond to the County of Monterey, or other mutually acceptable financial obligation, in an amount consistent with these costs (plus County administrative costs) consistent with the requirements of the Development Agreement (if approved)~~, and which may also include any other project decommissioning obligations~~.	Implementation of the above mitigation measure would reduce impacts related to disposal of PV modules and support structures during decommissioning and/or repowering to a less than significant level.
Impact HYD-2 Construction or operation of the project could potentially result in the accidental release of hazardous materials that could degrade water quality. Impacts would be Class II, *significant but mitigable*. [Thresholds 1, 6]	**HYD-2(a) Accidental Spill Control and Environmental Training.** Prior to the issuance of any grading and/or building permit, the project proponent shall submit a Spill Response Plan and Spill Prevention, Control and Countermeasure Plan to the County of Monterey for review and approval.,.. The Spill Response Plan (SRP) in combination with the Spill Prevention, Control and Countermeasure (SPCC) Plan to be prepared for the proposed project shall include procedures for quick and safe clean-up of accidental spills.	With implementation of the identified mitigation measures, impacts would be reduced to a less than significant level.

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
	The SRP and/or SPCC shall prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe clean-up of accidental spills. Additionally, an environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention and response measures to all field personnel. A monitoring program shall be implemented to ensure that the plans are followed during all construction, operations, and maintenance activities. The Hazardous Materials Response Plan (HMRP) proposed as part of the project [applicant proposed measure (APM) 6] shall incorporate all of the elements of this mitigation measure. The County of Monterey shall be responsible for reviewing the applicant's proposed HMRP to confirm that it incorporates the requirements of this mitigation measure.	
Impact HYD-4 The proposed project could alter the existing drainage pattern of the project area, and would introduce impervious surfaces into an area that is currently undeveloped. The project may therefore increase runoff, potentially resulting in flooding or increased erosion downstream. Impacts would be Class III, *less than significant*. [Thresholds 3, 4, 5]	~~The final design of the project would be required to be developed in accordance with a final, design-level, drainage analysis which would include a detailed evaluation of the potential drainage impacts associated with the project, including identification of measures to reduce runoff by promoting infiltration. As noted in the *Preliminary Drainage Report* (RBF, 2013), measures to reduce runoff by promoting infiltration would be selected and configured as part of this final design considering local impacts from proposed improvements, detailed grading plans and maintenance requirements. In addition, the proposed project would be required to comply with the NPDES program, including through preparation of a SWPPP and implementation of associated BMPs, as outlined in Impact HYD-1. Compliance with recommendations in the design-level drainage analysis and existing regulations would reduce impacts related to increased erosion downstream to a less than significant level.~~ No mitigation ~~would be~~ is required.	Impacts would be less than significant.
Impact HYD-5 The project site contains numerous drainage channels, some of which contain flow depths and velocities that could expose proposed structures to potential flooding hazards. Impacts would be Class III, *less than significant*. [Threshold 9]	~~The applicant would be required to prepare a design-level drainage analysis that would ensure both that proposed facilities avoid higher flow rates, and that any improvements within 50 feet from the top of bank of on-site drainages would comply with the requirements of Chapter 16.16 of the Monterey County Code. Compliance with the recommendations contained in the design-level analysis would ensure that impacts are less than significant.~~ No mitigation is required.	Impacts would be less than significant.

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
Impact PS-1 The proposed project would substantially increase activity temporarily during construction and incrementally increase demand during operation at a site located in a relatively undeveloped area of the County. Emergency access for fire or emergency medical services may be insufficient and estimated response times would exceed acceptable limits included in the General Plan Public Services Element. Impacts would be Class II, *significant but mitigable*. [Threshold 1(i)]	**PS-1(a) Construction Management Plan.** The applicant shall include measures that reduce the demand for fire protection services during project construction in the final Construction Management Plan subject to the review and approval of ~~Cal Fire~~CAL FIRE or the Fire Protection District as applicable. Applicable measures shall include but not be limited to on-site fire suppression, including on-site fire suppression equipment and fire suppression training for on-site personnel. The construction contractor shall be responsible for implementing the final Construction Management Plan, including applicable fire safety measures, for the duration of construction. Prior to the issuance of a construction permit, the applicant shall provide the County with a copy of the final Construction Management Plan approved by ~~Cal Fire~~CAL FIRE that includes measures that adequately reduce the demand for fire protection services. **PS-1(b) Emergency Response Training.** During project construction and operation, on-site staff shall receive emergency response training and shall be informed of all emergency response procedures on a minimum annual basis. Prior to operation of the project, the applicant shall consult with South Monterey County FPD/CAL FIRE staff to educate them in emergency response procedures for solar power facilities. In addition, on-site fire suppression equipment (e.g. fire extinguishers) shall be maintained on-site for the duration of project operation. **PS-1(c) Fire Protection during Construction.** Prior to the issuance of a construction permit, the applicant shall enter into an agreement with ~~Cal Fire~~CAL FIRE to provide sufficient fire protection services during the non-peak fire season for the duration of project construction via provision of sufficient funding and other measures necessary to keep the ~~Cal Fire~~CAL FIRE Parkfield substation operational during the non-peak fire season. The measures to assure sufficient fire protection services in accordance with existing standards shall be subject to the review and approval of ~~Cal Fire~~CAL FIRE and may include but not be limited to the following: funding for provision for fire personnel, ~~increasing engine availability in the area~~ purchase of on additional patrol/rescue vehicle, and/or provision of a helicopter landing space in consultation with ~~Cal Fire~~CAL FIRE, the use of which will be restricted to emergency use only. A copy of the final, executed agreement shall be submitted to the County prior to the issuance of a construction permit.	Compliance with existing County ordinances and implementation of mitigation measures PS-1(a) through PS-1(c) would reduce potential impacts relating to emergency access and provision of emergency services. As noted above, year round staffing at the local Cal Fire station during the construction phase would address response times to the site. Impacts would therefore be less than significant.

Table ES-1
Summary of Significant Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure	Residual Impact
Impact T-7 An employee shuttle service would provide transport to and from the site during the construction phase. The exact location, ~~and~~ size, and design of the proposed park and ride facilities are not known at this time; therefore, there is the potential for secondary impacts to the environment to occur. Impacts would be Class II, *significant but mitigable.* [Threshold: multiple]	**T-7 Park and Ride Facility Siting.**	With implementation of the above mitigation measure, impacts would be less than significant.

Section 2.0 Project Description

Figures 2-2a (formerly Figure 2-2) and 2-2b (new figure); revisions shown on following pages.

Second paragraph under Section 2.4 (Project Location):

> …In addition, implementation of the proposed solar project would require construction and operation of an approximately 155-acre utility corridor and improvements to an existing private access road within an approximately 60-acre area. The various project boundaries are shown in Figure 2-2b, and t~~T~~hese proposed project features are described in more detail under Section 2.5, Project Characteristics.

Third paragraph of the *Solar Modules, Collection Systems, and Inverters* discussion in Section 2.5.1 (Energy-Related Infrastructure):

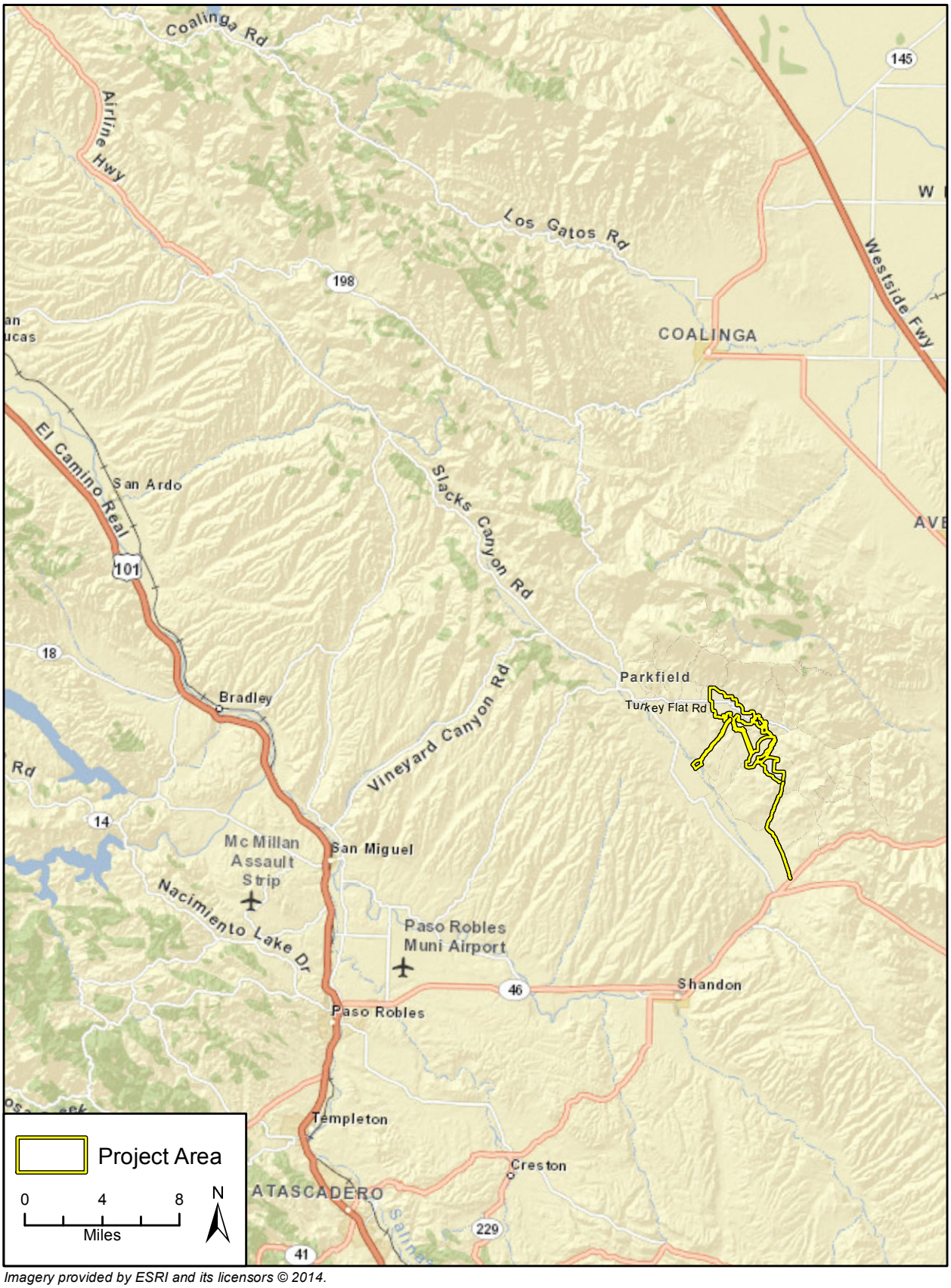
> …With a fixed-tilt system, the modules would be fixed at an angle between 20 to 25 degrees to the south and would not move. Fixed-tilt modules would be up to ~~ten~~ 13 feet off the ground surface at the highest point of the array depending on the terrain…

Seventh paragraph of the *Solar Modules, Collection Systems, and Inverters* discussion in Section 2.5.1 (Energy-Related Infrastructure):

> A high-capacity 34.5 Kv collection system line would collect power in the northern and southern areas of the project site…The southern portions of the project site would also be linked by a high-capacity 34.5 Kv collection system line corridor…

Second paragraph of the *On-Site Substations* discussion in Section 2.5.1 (Energy-Related Infrastructure)*:*

> The substations areas would be improved with compacted materials and concrete pads to support electrical equipment and supporting infrastructure. The substations structures would range in height from approximately 20 to ~~90~~ 130 feet, as shown in Figure 2-7~~a~~b…



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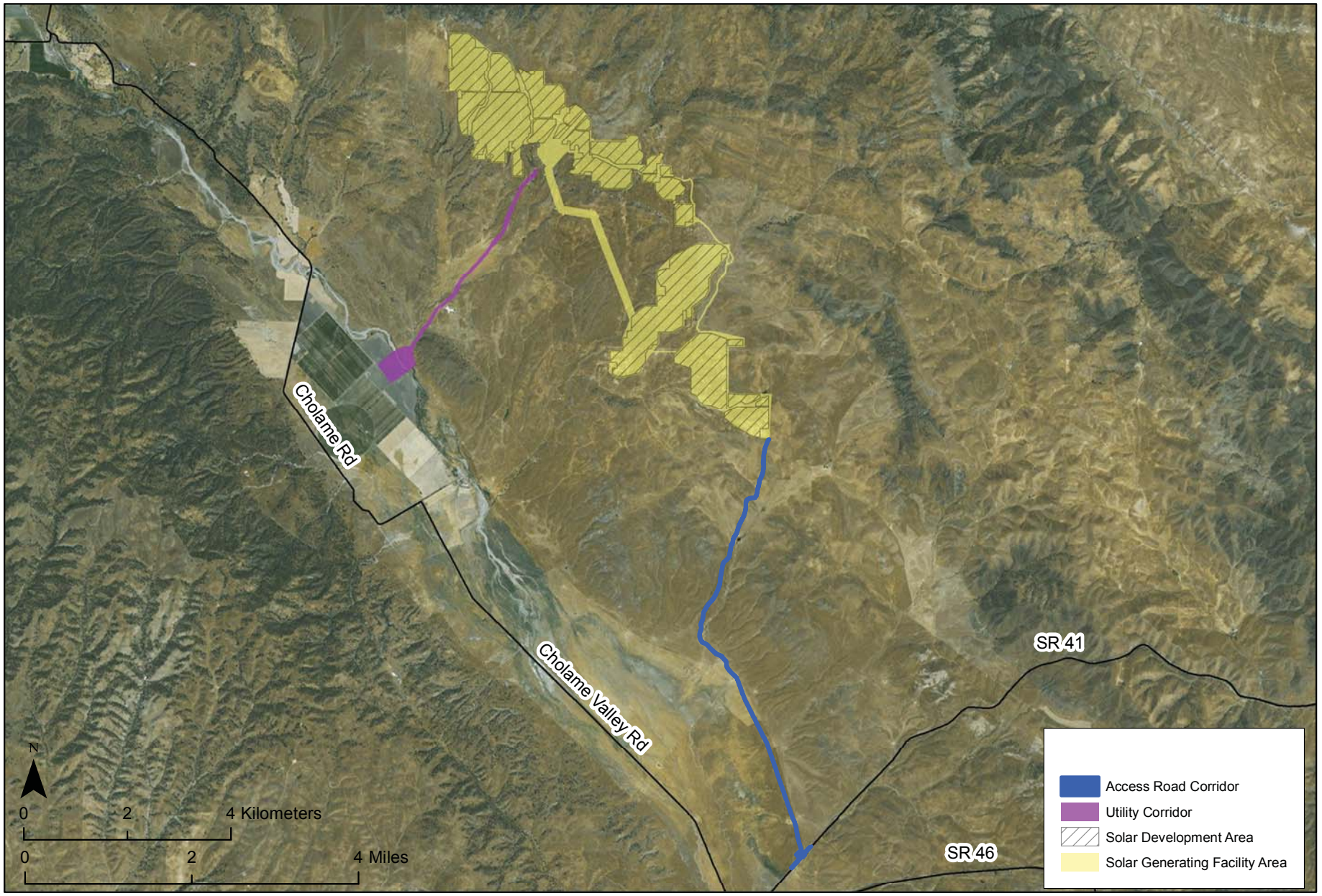
Vicinity Map

Figure 2-2a



Project Boundaries

Figure 2-2b

Source: Denise Duffy and Associates, 2014.

Second paragraph of the *On-Site Substations* discussion in Section 2.5.1:

> The substations areas would be improved with compacted materials and concrete pads to support electrical equipment and supporting infrastructure. The substations structures would range in height from approximately 20 to ~~90~~ 130 feet, as shown in Figure 2-7~~a~~b. Security fencing consisting of six to eight foot chain link fencing with barbwire would be installed around the perimeter of the new substations. Approximately ~~three to~~ five to seven steel monopole structures or lattice structures would be constructed between the northern substation and the PG&E Switching Station (described below) to tie the project into the PG&E system. These poles would be approximately ~~130~~ 140 to 150 feet in height.

PG&E Switching Station discussion in Section 2.5.1:

> PG&E Switching Station. Near the location of the proposed northern substation, the project proponent would also construct a new 230kV interconnection switching station that would provide an interconnection to the existing Morro Bay-Gates 230kV transmission line and would be owned and operated by PG&E. The PG&E-owned switching station would include an approximately ~~six to~~ eight foot chain link fence with barbwire for security, electrical equipment and control building, and ~~two to four~~ five to seven transmission structures approximately ~~130~~ 140 to 150 feet in height to reroute the existing 230 kV transmission line into the new switching station. The disturbance area of the switching station would be approximately 6 acres. The switching station area would be improved with compacted materials and concrete pads to support electrical equipment and supporting infrastructure. The approximately ~~Three to~~ five to seven steel monopole structures or lattice structures that would be constructed between the northern substation and the switching station would be approximately ~~130~~ 140 to 150 feet in height~~, as shown in Figure 2-7b~~. PG&E would be responsible for inspecting and maintaining the switching station.
>
> The PG&E switching station would include separate communication facilities to connect the switching station to PG&E's Gates substation located in Fresno County, approximately 23 miles from the switching station. Two different types of communication (microwave and fiber) are preferred for redundancy. A microwave site approximately 125 feet by 125 feet would be constructed within the switching station footprint which would include a communications building and microwave tower approximately 75 - 130 feet high. A relay station would be constructed within an existing disturbed area to provide microwave relay to the Gates substation. In addition, the project applicant would construct two trenched fiber line conduits ~~approximately 200 feet of underground fiber would be constructed~~ from the switching station to a Morro Bay-Gates 230kV transmission line tower to connect to the optical ground wire on that transmission line tower to provide a communication path to the Gates substation. PG&E would construct a switching station fiber tap and a fiber tap located on the Morro Bay-Gates 230 kV line. When reconfiguring the PG&E Morro Bay-Gates 230 kV line, PG&E also would need to install a temporary shoo-fly line to support the Templeton Gates 230 kV circuit. This shoo-fly would require approximately ten wood poles, which would be

removed upon securing the interconnection to the switching station (typically 3-6 months).

Access Road Improvements discussion in Section 2.5.2 (Other Structures and Improvements) in Section 2.0, *Project Description*:

> …These improvements would include: widening the access road from 15 to up to 30 feet, resurfacing with aggregate material…

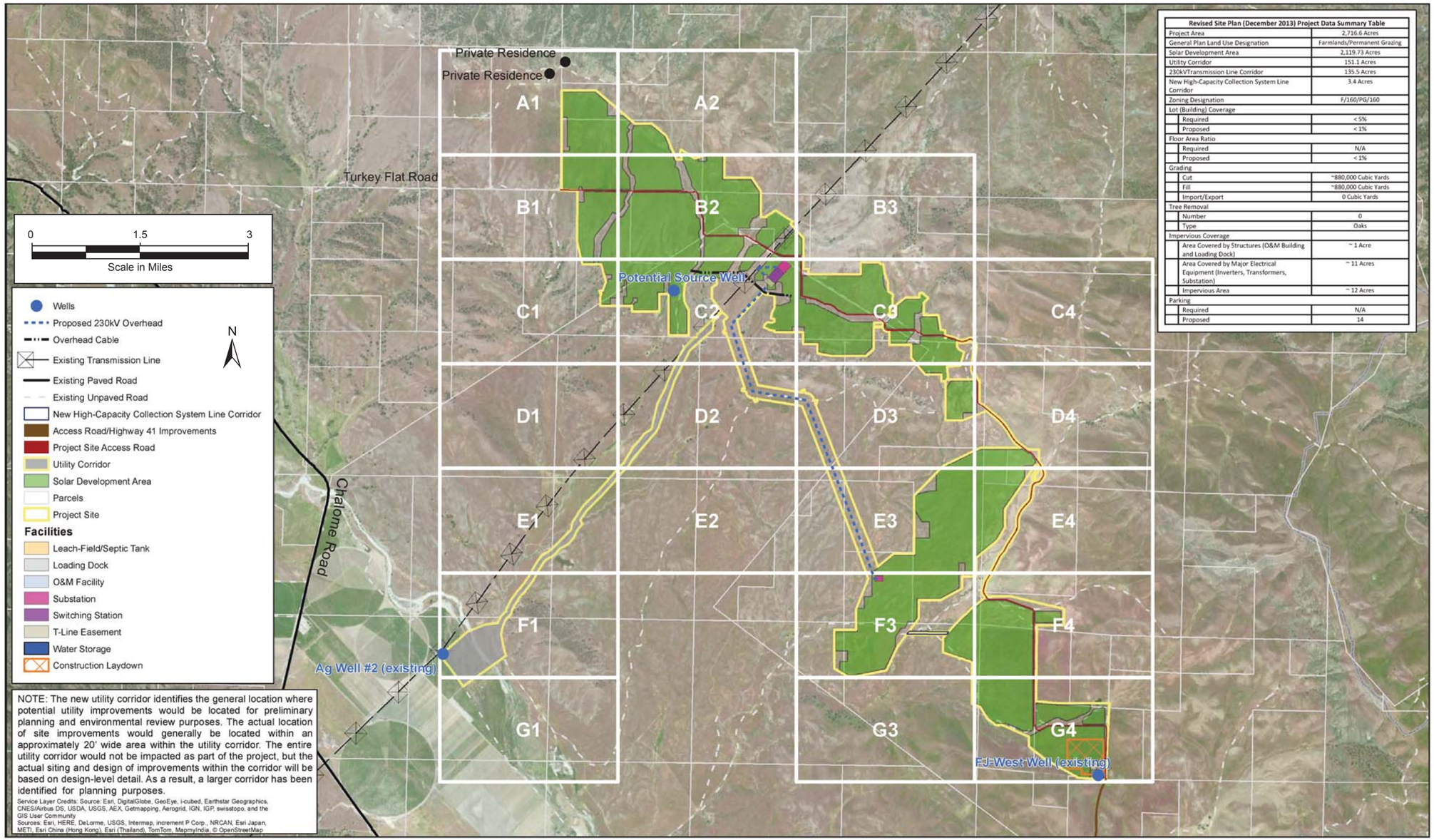
Figure 2-4a, Figure 2-4e, and Figure 2-4h; revisions shown on the following pages.

Last paragraph of the *Internal Roadways* discussion in Section 2.5.2 (Other Structures and Improvements):

> Best Management Practices (BMPs) for construction and maintenance of roads would be implemented, as ~~well as the Applicant Proposed Measures (APMs)~~ described in Section 2.6.5, as well as the Applicant Proposed Measures (APMs) described in Section 2.9.

Second paragraph of Section 2.6.2 (Access and Traffic):

> The applicant has proposed a number of construction traffic minimization measures, including the use of a shuttle service to and from the site (see Section 2.10 for more information regarding applicable APMs). This shuttle service would transport approximately 95% of the anticipated construction work force (not including visitors, management, monitors/inspectors, etc.) on a daily basis from designated employee shuttle park-and-ride locations. Use of the shuttle program would be mandated as a condition of employment. Shuttle park-and-ride lots ~~would~~ are anticipated to be located west of the site on SR 46 in Paso Robles~~,~~ (Cuesta College North County Campus), northwest of the site on Highway 101 in King City (Wild Horse Café), and southeast of the project site near the intersection of SR 46 and SR 33 (Blackwell's Corner). The ultimate locations of the proposed park-n-ride facilities would be determined based on their proximity to SR 46 and SR 41, their ability to achieve the goal of 95% ridership, and their prior use for parking, including prior use for construction staging for other solar developments located in San Luis Obispo County. In addition, the locations of park-and-ride facilities would consist of previously disturbed and/or developed areas (paved or unpaved) that have historically been used for parking purposes. No new or expanded parking facilities would be constructed for the proposed project, although ~~These sites may require~~ temporary fencing and minor surface improvements may be constructed. Each shuttle bus would have a capacity of approximately 46 passengers.

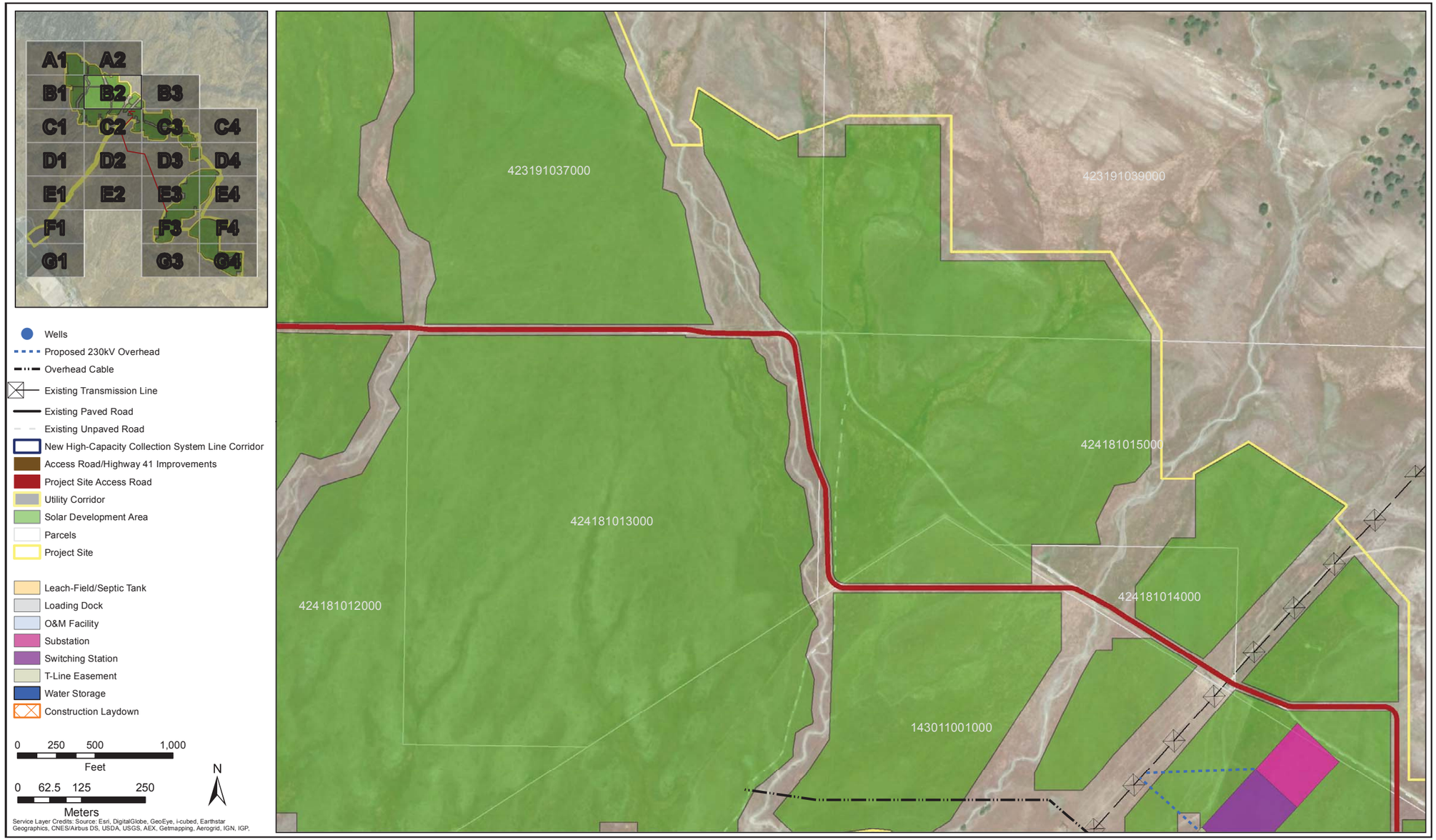


Revised Site Plan (December 2013) Project Data Summary Table	
Project Area	2,716.6 Acres
General Plan Land Use Designation	Farmlands/Permanent Grazing
Solar Development Area	2,119.73 Acres
Utility Corridor	151.1 Acres
230kVTransmission Line Corridor	135.5 Acres
New High-Capacity Collection System Line Corridor	3.4 Acres
Zoning Designation	F/160/PG/160
Lot (Building) Coverage	
Required	< 5%
Proposed	< 1%
Floor Area Ratio	
Required	N/A
Proposed	< 1%
Grading	
Cut	~880,000 Cubic Yards
Fill	~880,000 Cubic Yards
Import/Export	0 Cubic Yards
Tree Removal	
Number	0
Type	Oaks
Impervious Coverage	
Area Covered by Structures (O&M Building and Loading Dock)	~ 1 Acre
Area Covered by Major Electrical Equipment (Inverters, Transformers, Substation)	~ 11 Acres
Impervious Area	~ 12 Acres
Parking	
Required	N/A
Proposed	14

Site Plan: Index

Figure 2-4a

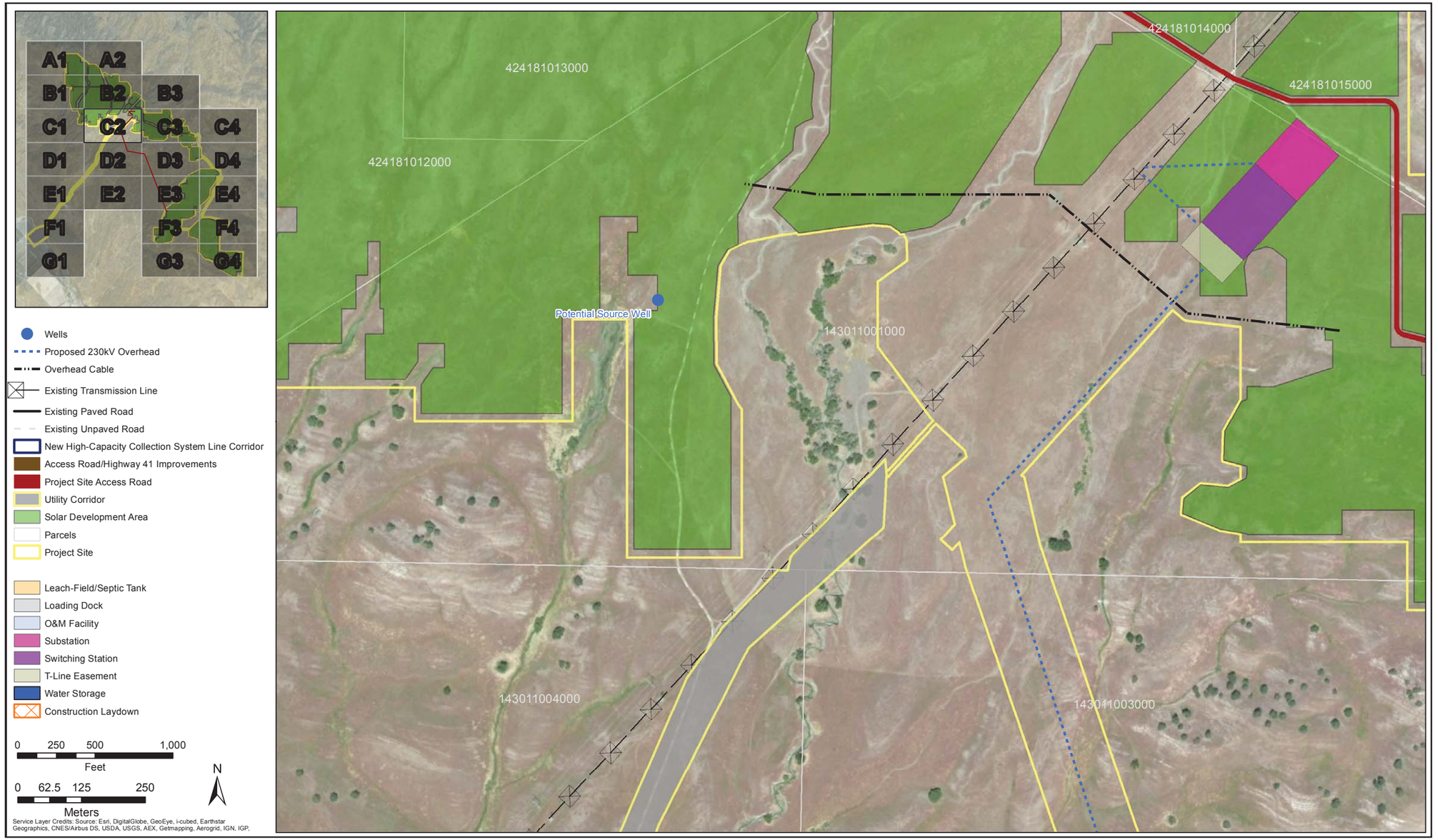
Base map source: Denise Duffy and Associates, Inc., 2013.



Site Plan: Sheet B2

Figure 2-4e

Base map source: Denise Duffy and Associates, Inc., 2014.



Site Plan: Sheet C2

Figure 2-4h

Base map source: Denise Duffy and Associates, Inc., 2014.

Sixth paragraph of Section 2.8 (Decommissioning and Site Restoration/Revegetation):

> …Overhead electrical collection lines, poles and associated components would be disassembled and removed, and reprocessed, sold, salvaged or otherwise disposed of in an appropriate manner. PG&E facilities constructed in association with the proposed project would not be decommissioned, but rather would remain associated with the Morro Bay-Gates 230 kV line.

Table 2-4:

Table 2-4
Applicant Proposed Measures

APM Number	Proposed Measure
APM-10	The project proponent will prepare a Bird and Bat Conservation Strategy (BBCS) to identify conservation measures to minimize avian impacts, describe the avian use of the site, and describe a post-construction avian mortality monitoring program. This Avian Mortality Monitoring Program (AMMP) will monitor operational effects of the project on avian species. The AMMP will include the following elements: • Surveys of the solar arrays for bird mortality during the initial operations and maintenance phase; • Protocols for data collection, documentation, and reporting to the County; • Protocols to assess searcher efficiency and carcass removal; and • Minimum credentials of monitoring personnel and/or appropriate training.
APM-11	The applicant shall prepare a design level drainage analysis that will ensure that project facilities are not placed in areas where they would be subject to significant flood or erosion hazards or affect the existing capacity of affected watercourses. The design level drainage study will incorporate the following flood-risk and erosion avoidance measures contained in the *Preliminary Drainage Report* (RBF 2013) and in the *Preliminary Drainage Analysis Addendum* (Wallace Group 2014): • No modules shall be placed in areas where the product of the flow depth and flow velocity is greater than 9 square feet per second (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24-hour storm event; • No transformers, substations, or inverters shall be placed in areas where the flow depth exceeds 2 feet (corresponding to a hazard level 3, as defined in the Preliminary Drainage Report) during a 100-year, 24-hour storm event; • Transformers, substations, or inverters constructed in areas where any inundation is expected to occur should be placed a minimum of 1 foot above the 100- year water surface elevation; • Solar modules constructed in areas where any inundation is expected to occur should be placed a minimum of 6-inches above the 100- year water surface elevation; and • Tracker actuator motors constructed in areas where any inundation is expected to occur should be placed a minimum of 6-inches above the 100- year water surface elevation. In addition, the design level drainage analysis shall contain measures to ensure that any project-related improvements within 50 feet from the top of bank of on-site drainages will not result in significant erosion related hazards and that these improvements will not affect the existing capacity of the affected watercourse, as required by Chapter 16.16 of the Monterey County Code. Prior to the issuance of grading permits, the applicant shall submit the design-level drainage analysis to the Monterey County Water Resources Agency for review and approval.

Section 4.1 Aesthetics

First paragraph of Section 4.1.2(c) (Proposed Project Viewshed):

> …The proposed project site is not visible from any roadways, with the exception of one location on Turkey Flat Road where the public road terminates into the project site. The proposed utility corridor area is also within the viewshed of ~~and~~ Cholame Valley Road~~, which, due to the surrounding topography, generally have very limited views of the site, despite its size~~; however, due to the distance of the utility corridor from this roadway and intervening topography, it is unlikely that this project component would be visible from this roadway.

Fifth paragraph of Section 4.1.3(a) (Methodology and Significance Thresholds):

> As stated in Section 2.0, *Project Description*, project decommissioning, which would occur in 30 years or more, could potentially result in other environmental effects, depending on site-specific environmental conditions and the specific actions that would occur as part of decommissioning. The County may conduct additional CEQA review to ensure compliance with future aesthetic requirements during decommissioning. As described in Section 2.0, *Project Description*, the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

First paragraph under Impact AES-1:

> As noted in Section 4.1.2(c) (Proposed Project Viewshed), the project site is visible from Turkey Flat Road~~, Cholame Valley Road,~~ and SR 41. The proposed utility corridor area is also within the viewshed of Cholame Valley Road; however, due to the distance of the utility corridor from this roadway and intervening topography, it is unlikely that this project component would be visible from this roadway.

Third paragraph of Impact AES-2:

> …Visible improvements would include: widening the access road up to 30 feet in all locations, resurfacing with aggregate material, widening the existing culverts to accommodate the 30-foot width of the access road, and creating turnouts to accommodate emergency vehicle access…

Fourth paragraph of the *KOP Analysis* discussion in Impact AES-2:

> KOP 4 represents a location from which the proposed utility corridor infrastructure could be ~~somewhat~~ visible from a public viewing location, although given the distance between the viewing location and proposed improvements it is unlikely that infrastructure improvements would be visible from this location. Figure 4.1-5 depicts pre- and post-project conditions as viewed from KOP 4. The proposed three-mile utility corridor is not included in the post-project visual simulation. The proposed utility

corridor would generally be located to the southeast of the existing 230 kV Morro Bay Gates overhead transmission line. Because of the current visibility of the transmission line, this area is not a pristine view. The proposed overhead utilities in this corridor would be located along a similar path as the existing Morro Bay Gates infrastructure. Therefore, the proposed utility corridor would not substantially degrade this viewshed and would be generally consistent with the existing visual character of the area. Accordingly, ~~and~~ the visual impacts related to the proposed utility corridor are less than significant.

Second paragraph under Impact AES-3:

Temporary construction lighting would be limited to the 38-acre construction laydown area, an approximately 4 acre- temporary construction and material staging area northwest of SR 41, a 0.5-acre temporary construction staging area south of SR 41, and the project entrance. Additional temporary nighttime lighting may be needed, on an as-needed basis, elsewhere on the site depending on the nature of construction-related activities. This lighting would be used on an as needed basis to accommodate nighttime deliveries and/or for security purposes.

Section 4.2 Agricultural Resources

Page 4.2-5:

Monterey County Zoning Ordinance – Title 21. According to Title 21 of the Monterey County Code, the project site, including the utility corridor and the northern half of the existing private access road, are zoned Permanent Grazing/160 (PG/160 and Farmland/160 (F/160). The southern half of the access road, within San Luis Obispo County, is designated Agriculture. Chapter 21.34 (Regulations for Permanent Grazing Zoning Districts or "PG" Districts) of the Monterey County Code is intended to preserve, protect, and enhance those productive exclusive grazing lands in the County of Monterey. Projects considered "public and quasi-public uses, including public utilities," may be developed with a use permit under the site's existing zoning [Monterey County Zoning Ordinance §21.30.050(b) and §21.34.050(d)].

Section 4.2.3(a) (Methodology and Significance Thresholds):

…this EIR evaluates decommissioning based on current standard decommissioning practices, which include dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements, and site restoration. As described in Section 2.0, *Project Description*, the project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time. The County may conduct additional CEQA review to ensure adequate protection of agricultural resources during decommissioning.

Second paragraph of Impact AG-1:

> Development activities associated with the proposed project that could affect "Prime Farmland" or "Unique Farmland" would be limited to the installation of temporary water infrastructure (including pumping facilities and ~~an above-ground~~ water pipeline, portions of which would be above and below ground) associated with transporting water from existing Ag Well #2 (as shown in Figure 2-4s in Section 2.0, *Project Description*) to the project site.

Last paragraph of Impact AG-3:

> The proposed project contains design features (i.e., applicant proposed measures or APMs) intended to minimize the potential temporary impacts associated with project construction and thereby limit potential secondary effects to adjacent agricultural uses. Applicable measures include the implementation of Best Management Practices (BMPs) during project construction, including providing ongoing coordination with the adjacent property owners concerning construction activities (APM-2), installing mud shakers and/or rumble strips to limit the transport of invasive species (APM-3), implementing applicable SWPPP and erosion control measures (APM-7), implementing a dust control plan to minimize fugitive dust emissions (APM-4), developing a hazardous materials response plan (APM-6), and implementing a post-construction restoration and revegetation plan (APM-5). These measures would minimize the extent of potential indirect impacts to adjacent agricultural uses.

Mitigation measures discussion under Impact AG-3:

> Mitigation Measures. No mitigation measures are required. Although the impact would be less than significant without mitigation, the implementation of proposed APMs, as well as measures AQ-2a (Dust Control measures), BIO-2(b) and BIO-2(c), and HYD-2a through HYD-2c would further minimize impacts related to fugitive dust, invasive weeds, and accidental releases of contaminants that could degrade water quality.

Section 4.3 Air Quality

Table 4.3-1:

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
Impact AQ-2 Construction of the proposed project would result in the temporary generation of air pollutants, which would affect local air quality. Short-term emissions of NOX and PM10 during the construction period would exceed MBUAPCD	**AQ-2(a) Dust Control Measures**. The project applicant and/or contractor shall be responsible for implementing the following mitigation measures throughout the duration of construction. Prior to the issuance of any grading permit, the project applicant and/or contractor shall submit construction drawings to the Monterey County RMA – Planning Department and RMA – Building Services for review and approval that include the	Air emissions calculations were performed for both before and after the incorporation of the above-identified mitigation measures. The mitigation measures include those typically required by CARB and the MBUAPCD

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
thresholds. Impacts would be Class I, significant and unavoidable. [Threshold 2]	following measures on all plans and specifications: • The grading plan design shall minimize the amount of disturbed area to the extent feasible~~.~~ **;** • Water trucks or sprinkler systems shall be used in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency shall be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible; • In order to avoid long distances and associated travel time between source wells and the work area, the project applicant shall employ the use of on-site temporary pipelines, stand tanks or other measures to reduce water truck travel on unstable, disturbed surfaces ~~to move water to the current work area and thereby reduce fill times for water trucks~~; • To best address fugitive dust proximal to workers, the project applicant shall establish clear boundaries for the assignment of dust control as between the principal EPC contractor and subcontractors. The subcontractors shall be required to maintain dust control in their work area. Maps showing each contractor's area of responsibility for dust control shall be distributed as work areas change. These maps shall be given to each water truck driver in an effort to reduce duplication of efforts while assuring full coverage. Water trucks will be assigned to specific crews or areas. In addition, each water truck driver shall be equipped with a radio to respond to any area that is experiencing dust or equipment operations that require additional dust suppression measures; • The project applicant shall maintain a 15 mph speed limit on roads where water application is the sole form of dust control, and shall post signs to remind workers throughout the work areas. The project applicant shall monitor to ensure compliance with the speed limit. As an additional measure, all of the cart operators shall be required to complete a ~~buggy~~ cart training course prior to operation of ~~any vehicle~~ carts on site; • Water truck operations shall adjust their spraying methods according to the conditions. For example, during windy conditions trucks should point the water spray downward. In silty soils, trucks should use light front spray followed by the heavier back spray. In clay soils, a heavy spray is applied well before traffic is expected in the area. This set of techniques shall be conveyed to new water truck operators when they arrive to the work site;	for NO_X (such as use of off-road equipment with Tier **3** ~~II~~ engines) and PM_{10} (such as watering program for dust control). As shown in Table 4.3-5, despite implementation of mitigation measure AQ-2(a), AQ-2(b), and AQ-2(c), temporary construction emissions would continue to exceed MBUAPCD thresholds for NO_X and PM_{10}. In addition, due to the proximity of the site to other air basins, construction emissions could potentially impact air quality in those air basins. No other feasible measures are available that would further reduce construction emissions. Implementation of Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c) would help maintain compliance with MBUAPCD Rule 402. ~~Therefore~~ However, due to the exceedance of MBUAPCD thresholds for construction activity, impacts would remain significant and unavoidable during construction.

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
	• Where access by water trucks is limited by structures or conditions, hand-operated water tanks (i.e. water buffalos) shall be used to provide dust control. Hand-operated water tanks can be used to apply water directly to the work area by crew members; • Heavy construction equipment traveling on unstabilized ~~dirt~~ roads on the project site shall be preceded by a water truck to dampen roadways and reduce dust from transportation along such ~~on-site dirt~~ roads; • All dirt stock pile areas shall be sprayed daily as needed; • Permanent dust control measures identified in the proposed Habitat Restoration and Revegetation Plan [refer to Biology Mitigation Measure B-2(b)] shall be implemented as soon as possible following completion of any soil disturbing activities; • Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established; • All roads shall be stabilized using gravel, non-toxic chemical soil binders (e.g., latex acrylic copolymer), jute netting, or other methods approved in advance by the Monterey County RMA – Planning Department. If necessary, the Monterey County RMA – Planning Department may refer to the list of approved dust control suppressants in the SLOAPCD *CEQA Air Quality Handbook* Technical Appendix 4.3. For all structure pads and other areas to be paved, seeding or soil binders shall be used if construction or paving will not occur within 10 days of grading; • Install track-out control devices where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site; • Sweep paved/unpaved roadways boundaries (e.g. project entrance roadways) at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible; • All of these fugitive dust mitigation measures shall be shown on grading and building plans; and • The contractor or builder shall designate a site dust manager and up to four persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. As necessary, the monitor shall have the authority to require additional dust control measures be	

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact

	implemented. The monitor shall file monthly reports to the Monterey County RMA – Planning Department, including a daily log documenting monitoring activities, exceedances, and measures taken to reduce dust emissions. Their duties shall include weekdays, holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Monterey County RMA – Planning Department and the APCD Compliance Division prior to the start of any grading, earthwork or demolition. In addition, the log of monitoring activities shall be provided to APCD for confirmation that dust control measures are meeting the requirements of Rule 402.
	
	AQ-2(b) Emission-Reduction Measures for Construction Equipment ~~Idling Restrictions~~. The Project Applicant and/or Contractor shall be responsible for implementing the following mitigation measures throughout the duration of construction. Prior to the issuance of any grading permit, the Project Applicant and/or Contractor shall submit construction drawings to the Monterey County RMA – Planning Department and RMA – Building Services for review and approval that include the following measures on all plans and specifications:
	• ~~I~~idling Restrictions Near Sensitive Receptors for Both On and off-Road Equipment (applicable to northernmost edge of the project site only), including:
	  ○ Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
	  ○ Diesel idling within 1,000 feet of sensitive receptors is not permitted;
	  ○ ~~Use of alternative fueled equipment is recommended whenever possible;~~ and,
	  ○ Signs that specify the no idling requirements must be posted and enforced at the construction site.
	• Operational NO_X and Diesel PM Emissions Reduction Measures for Construction Equipment
	  ○ All construction equipment shall be maintained in proper tune according to manufacturer's specifications;
	  ○ All off-road and portable diesel powered equipment shall be fueled with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);
	  ○ Use of on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines;	

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
	○ On- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5-minute idling limit; ○ Use of electrically-powered equipment when feasible; ○ Gasoline-powered equipment shall be substituted in place of diesel-powered equipment, where feasible; and ○ If available, use of alternatively fueled construction equipment on-site, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel. **AQ-2(c) Tier 3 Construction Equipment**. All off-road construction diesel engines not registered under the California Air Resources Board's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower (hp) or more, shall meet, at a minimum, the Tier 3 California Emissions Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. Construction or trucking companies with fleets that that do not have engines in their fleet that meet the Tier 3 standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance. If a Tier 3 (or equivalent alternative compliance) engine is not available for any off-road engine larger than 50 hp, that engine will have tailpipe retrofit controls that reduce exhaust emissions of NO_X and PM to no more than Tier 2 emission levels. Tier 1 engines will be allowed on a case-by-case basis only when the project applicant has documented that no Tier 2 equipment or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete project construction. This shall be documented with signed written correspondence by the appropriate construction contractor along with documented correspondence with at least two construction equipment rental firms. A list of the construction equipment used on-site and the associated EPA Tier shall be submitted to the County of Monterey RMA-Planning Department quarterly to verify implementation of measure.	

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
Impact AQ-4 The project would not expose sensitive receptors to substantial pollutant concentrations associated with construction dust, carbon monoxide hotspots, toxic air contaminants, or naturally-occurring asbestos. Impacts related to localized pollutants would therefore be Class III, less than significant. [Threshold 4]	No mitigation measures are required. Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) would further reduce exposure of sensitive receptors to substantial pollutant concentrations.	Impacts would be less than significant without mitigation.
Impact AQ-6 Construction activities could generate dust and expose sensitive receptors to potential health hazards associated with the Coccidioides fungus (Valley Fever). Impacts related to Valley Fever would be Class II, significant but mitigable. [Threshold 4]	**AQ-6(a) Valley Fever Management Plan**. The project applicant shall identify and retain a licensed occupational medicine physician (M.D.) specializing in pulmonary epidemiology, subject to approval by the ~~consult with~~ the Monterey County Health Department (Health Officer), ~~the MBUAPCD, and the California Occupational Safety and Health Administration (Cal/OSHA) Compliance Program~~ to assist with the ~~to~~ development and implementation of a Valley Fever Management Plan (VFMP). The VFMP shall ~~that~~ include~~s~~ a job hazard analysis [in compliance with California Occupational Safety and Health Administration (Cal/OSHA) regulations] for any worker that will be exposed to dust. The VFMP shall further include specific measures to reduce the potential for exposure to Valley Fever. The project applicant and the Monterey County Health Department may consult with MBUAPCD and the Cal/OSHA Compliance Program as needed in identifying a specialist M.D. and in developing the VFMP. Prior to issuance of grading permits, the applicant shall submit the ~~Valley Fever Management Plan~~ VFMP to the Monterey County ~~RMA – Planning~~ Health Department for review and approval. The ~~Valley Fever Management Plan~~ VFMP shall ~~include a program to evaluate the potential for exposure to Valley Fever from construction activities and to~~ identify appropriate dust management and safety procedures that shall be implemented, as needed, to minimize ~~personnel~~ worker and public exposure to ~~potential Valley Fever–containing~~ dust potentially containing the *Coccidioides* spore. Measures in the ~~Valley Fever Management Plan~~ VFMP~~, which shall be implemented as applicable~~ may include the following: • Provide HEP-filtered air-conditioned enclosed cabs on heavy equipment. Train workers on proper use of cabs, such as turning on air conditioning prior to using the equipment. • Provide communication methods, such as two-way radios, for use in enclosed cabs. • ~~Provide National Institute for Occupational~~	The required mitigation measures, in combination with Mitigation Measure AQ-2(a), would minimize the risk of exposure for construction personnel and off-site receptors to a less than significant level.

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
	~~Safety and Health (NIOSH)-approved respirators for workers.~~ • ~~Conduct a job hazard analysis in compliance with Cal/OSHA regulations for any worker that will be exposed to dust.~~ • Require National Institute for Occupational Safety and Health (NIOSH)-approved half-face respirators equipped with N-100 or P-100 filters to be used during ~~digging~~ any worker collocation with surface disturbance activities if determined to be ~~warranted after conducting a~~ needed based upon the applicable job hazard analysis. ~~Require employees to wear respirators when working near earth-moving machinery if determined to be warranted after conducting a job hazard analysis.~~ • ~~Cause employees to~~ Workers that are required to use respirators as determined by a job hazard analysis shall be medically evaluated, fit-tested, and properly trained on the use of the respirators, and ~~implement~~ a ~~full~~ respiratory protection program shall be implemented in accordance with the applicable Cal/OSHA Respiratory Protection Standard (8 CCR 5144). • Provide separate, clean eating areas with hand-washing facilities. • Thoroughly clean construction tools, equipment, and vehicles with water before they are moved offsite to other work locations. • ~~Wheel-washing facilities with water-recycling systems shall be provided at all site egress points. Vehicles leaving the site on a daily basis shall utilize wheel-washing facilities in order to reduce dust migration off the project site.~~ Equipment inspection and washing stations shall be established and manned at each construction equipment access/egress point. Spot examination of construction equipment for water washing via portable equipment in accordance with SWPPP BMPs shall be performed in order to prevent track-out of transport of material potentially carrying the *Coccidioides* spore. • Suitable coveralls and change facilities shall be made available to all on-site workers. ~~On-site workers~~ Workers performin work in areas where fresh ground disturbance presents a risk of exposure to the Coccicioides spore shall be required to change clothes after work every day before leaving the work site, to prevent distribution of *Coccidioides* to non-endemic areas, as determined to be needed based upon the applicable job hazard analysis. ~~As an alternative, disposable Tyvek® or equivalent work suits and work boots for use on-site shall be provided for workers.~~ • Establish sub-contract language clearly	

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
	indicating that all subcontractors are obligated to comply fully with the meaning and intent of Title 8 California Code of Regulations Sections 5141 and 5144, subject to audit and contract enforcement by the applicant. • Establish and execute auditing protocols to ensure subcontractor compliance with all provisions of the VFMP and provide monthly audit summary data, potential deviations noted and corrective actions implemented to the Monterey County Department of Health and County of Monterey RMA-Planning Department. • ~~Work with a medical professional~~ Each primary employer of contracted workers shall be required by the terms and conditions of their contract for services to retain and consult with an Occupational Medicine Professional, licensed by either the Medical Board of California or the Osteopathic Board of California to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever. Reporting of symptoms of Valley Fever and diagnosed cases of Valley Fever must occur consistent with ~~Cal/OSHA~~ County and State requirements. **AQ-6(b) Additional Valley Fever Dust Suppression Measures.** If peak daily wind speeds exceed 15 mph or peak daily temperatures exceed 95 degrees Fahrenheit for three consecutive days, additional dust suppression measures (such as additional water or the application of additional soil stabilizer) shall be implemented prior to and immediately following ground disturbing activities. The additional dust suppression shall continue until winds are 10 mph or lower and outdoor air temperatures are below a peak daily temperature of 90 degrees for at least two consecutive days. The additional dust suppression measures shall be incorporated into the Final Construction Management Plan. The Final Construction Management Plan shall be submitted to the County of Monterey RMA-Planning Department for review and approval prior to ~~the issuance of any grading permit~~ commencing ground disturbing activities (e.g., grading, filling, trenching). **AQ-6(d) Valley Fever Worker Training Program and Safety Measures**. Prior to any project grading activity, the primary project construction contractor shall prepare and implement a worker training program that describes potential health hazards associated with Valley Fever, common symptoms, proper safety procedures to minimize health hazards, and notification procedures if suspected work-related symptoms are identified during	

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
	construction, including the fact that certain ethnic groups and immune-compromised persons are at greater risk of becoming ill with Valley Fever. The objective of the training shall be to ensure the workers are aware of the danger associated with Valley Fever. The worker training program shall be included in the standard in-person training for project workers, and shall identify safety measures to be implemented by construction contractors during construction, including all safety measures included in the Valley Fever Management Plan prepared pursuant to Mitigation Measure AQ-6(a). Prior to initiating any grading, the project applicant shall provide the Monterey County RMA – Planning Department and the ~~County of~~ Monterey ~~Environmental~~ County Health ~~Bureau~~ Department with copies of all educational training material for review and approval. No later than 30 days after any new employee or employees begin work, the project applicant shall submit evidence to the Monterey County RMA – Planning Department that each employee has acknowledged receipt of the training (e.g., sign-in sheets with a statement verifying receipt and understanding of the training). **AQ-6(e) Valley Fever Information Handout.** The applicant shall work with a medical professional, in consultation with the Monterey County Health Department, to develop an educational handout for on-site workers and surrounding residents within three miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for ~~exposure~~ infection is available. Prior to construction permit issuance, this handout shall have been created by the applicant and reviewed by the County. No less than 30 days prior to any surface disturbance (e.g., grading, filling, trenching) work commencing, this handout shall be mailed to all existing residences within three miles of the project boundaries.	

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
Impact AQ-7 The proposed project would result in temporary air quality impacts as a result of project decommissioning. The extent of these effects would depend on future conditions in effect at that time, although project decommissioning is anticipated to result in air quality impacts comparable to project construction. Impacts related to decommissioning would be Class I, significant and unavoidable. [Thresholds 2, 3]	Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) would reduce fugitive dust and exhaust emissions associated with project decommissioning. These mitigation measures, or equivalent measures based on available technology at the time of project decommissioning, would be required during project decommissioning, if proposed.	As described in Impact AQ-2, Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) would reduce project construction emissions, but emissions would remain significant and unavoidable. Therefore, emissions from decommissioning remain significant and unavoidable.
Impact AQ-9 Construction of the proposed project would result in the temporary generation of air pollutants, which would affect local air quality. Short-term emissions of ozone precursors and PM_{10} during the construction period would exceed SLOAPCD thresholds. Impacts would be Class I, significant and unavoidable. [Threshold 2]	Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) are required for the proposed project, and are based on SLOAPCD recommendations for mitigating construction emission thresholds of significance. These measures are consistent with standard MBUAPCD and SLOAPCD recommended measures, and would ensure that construction-phase mitigation is uniformly applied across the project. ~~Thus, separate additional mitigation is not required for the portion of the project within SLOAPCD.~~ In addition, SLOAPCD CEQA Air Quality Handbook (April 2012) requires projects that cannot mitigated their construction emissions below the SLOAPCD thresholds of significance with on-site mitigation to develop a Construction Activity Management Plan that includes off-site mitigation to reduce emissions below the applicable threshold. Preparation of a Final Construction Management Plan (CMP) is required by APM-2, described in Section 2.0, *Project Description*. Therefore, the following mitigation measure is required to minimize construction emissions within the SCCAB: **AQ-9 Construction Management Plan Requirements**. The Final Construction Management Plan (CMP) proposed as Applicant Proposed Measure 2 (APM-2) shall include the following construction emissions reduction measures, recommended by SLOAPCD: • Best Available Control Technology for Construction equipment (BACT) measures to reduce construction emissions, which can include: ○ Repowering equipment with the cleanest engines available; ○ Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: http://www.arb.ca.gov/diesel/verdev/vt/cvc.htm	~~Even w~~ With implementation of ~~these m~~ Mitigation ~~m~~ Measures AQ-2(a), AQ-2(b), AQ-2(c), and AQ-9, temporary emissions within the SCCAB during construction would be reduced to the maximum extent feasible, but would continue to exceed ambient air quality standards within the SCCAB. Therefore, the impact would be significant and unavoidable.

Table 4.3-1
Impact and Mitigation Summary: Air Quality

Impact	Mitigation Measures	Residual Impact
	• Schedule activities to minimize the amount of large construction equipment operating simultaneously during any given time period; and • Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions; The CMP shall be submitted to the County of Monterey RMA-Planning Department for review and approval.	

Total Short-Term Construction Emissions discussion under Impact AQ-2:

Total Short-Term Construction Emissions. As described above and shown in Table 4.3-5, temporary emissions during construction would exceed MBUAPCD thresholds for PM_{10} and NO_X. As described in Section 2.0, *Project Description*, the project includes APM-2 through APM-5, which would reduce temporary emissions associated with construction of the proposed project. Project construction activity would be required to comply with MBUAPCD Rule 402, which states that:

> *No person shall discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health, or safety of any such persons or the public; or which cause, or have a natural tendency to cause, injury or damage to business or property. {CAL. HSC Section 41700}*

~~Therefore~~ However, short-term air quality emissions during project construction would be remain potentially significant.

Mitigation measures and *Significance After Mitigation* discussion for Impact AQ-2:

AQ-2(a) **Dust Control Measures**. The project applicant and/or contractor shall be responsible for implementing the following mitigation measures throughout the duration of construction. Prior to the issuance of any grading permit, the project applicant and/or contractor shall submit construction drawings to the Monterey County RMA – Planning Department and RMA – Building Services for review and approval that include the following measures on all plans and specifications:

- The grading plan design shall minimize the amount of disturbed area to the extent feasible~~.~~ ;
- Water trucks or sprinkler systems shall be used in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency shall be required whenever wind speeds exceed 15 mph.

Reclaimed (non-potable) water shall be used whenever possible;

- In order to avoid long distances and associated travel time between source wells and the work area, the project applicant shall employ the use of on-site temporary pipelines, stand tanks or other measures to reduce water truck travel on unstable, disturbed surfaces ~~to move water to the current work area and thereby reduce fill times for water trucks~~;
- To best address fugitive dust proximal to workers, the project applicant shall establish clear boundaries for the assignment of dust control as between the principal EPC contractor and subcontractors. The subcontractors shall be required to maintain dust control in their work area. Maps showing each contractor's area of responsibility for dust control shall be distributed as work areas change. These maps shall be given to each water truck driver in an effort to reduce duplication of efforts while assuring full coverage. Water trucks shall be assigned to specific crews or areas. In addition, each water truck driver shall be equipped with a radio to respond to any area that is experiencing dust or equipment operations that require additional dust suppression measures;
- The project applicant shall maintain a 15 mph speed limit on roads where water application is the sole form of dust control, and shall post signs to remind workers throughout the work areas. The project applicant shall monitor to ensure compliance with the speed limit. As an additional measure, all of the cart operators shall be required to complete a ~~buggy~~ cart training course prior to operation of ~~any vehicle~~ carts on site;
- Water truck operations shall adjust their spraying methods according to the conditions. For example, during windy conditions trucks should point the water spray downward. In silty soils, trucks should use light front spray followed by the heavier back spray. In clay soils, a heavy spray is applied well before traffic is expected in the area. This set of techniques shall be conveyed to new water truck operators when they arrive to the work site;
- Where access by water trucks is limited by structures or conditions, hand-operated water tanks (i.e. water buffalos) shall be used to provide dust control. Hand-operated water tanks can be used to apply water directly to the work area by crew members;

- Heavy construction equipment traveling on unstabilized ~~dirt~~ roads on the project site shall be preceded by a water truck to dampen roadways and reduce dust from transportation along such ~~on-site dirt~~ roads;
- All dirt stock pile areas shall be sprayed daily as needed;
- Permanent dust control measures identified in the proposed Habitat Restoration and Revegetation Plan [refer to Biology Mitigation Measure B-2(b)] shall be implemented as soon as possible following completion of any soil disturbing activities;
- Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established;
- All roads shall be stabilized using gravel, non-toxic chemical soil binders (e.g., latex acrylic copolymer), jute netting, or other methods approved in advance by the Monterey County RMA – Planning Department. If necessary, the Monterey County RMA – Planning Department may refer to the list of approved dust control suppressants in the SLOAPCD *CEQA Air Quality Handbook* Technical Appendix 4.3. For all structure pads and other areas to be paved, seeding or soil binders shall be used if construction or paving will not occur within 10 days of grading;
- Install track-out control devices where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site;
- Sweep paved/unpaved roadways boundaries (e.g. project entrance roadways) at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible;
- All of these fugitive dust mitigation measures shall be shown on grading and building plans; and
- The contractor or builder shall designate a site dust manager and up to four persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. As necessary, the monitor shall have the authority to require additional dust control measures be implemented. The monitor shall file monthly reports to the Monterey County RMA – Planning Department, including a daily log

documenting monitoring activities, exceedances, and measures taken to reduce dust emissions. Their duties shall include weekdays, holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to RMA-Planning and the APCD Compliance Division prior to the start of any grading, earthwork or demolition. In addition, the log of monitoring activities shall be provided to APCD for confirmation that dust control measures are meeting the requirements of Rule 402.

AQ-2(b) **Emission-Reduction Measures for Construction Equipment ~~Idling Restrictions~~.** The Project Applicant and/or Contractor shall be responsible for implementing the following mitigation measures throughout the duration of construction. Prior to the issuance of any grading permit, the Project Applicant and/or Contractor shall submit construction drawings to RMA-Planning and RMA – Building Services for review and approval that include the following measures on all plans and specifications:

- Idling Restrictions Near Sensitive Receptors for Both On and Off-Road Equipment (applicable to northernmost edge of the project site only), including:
    - Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
    - Diesel idling within 1,000 feet of sensitive receptors is not permitted;
    - ~~Use of alternative fueled equipment is recommended whenever possible;~~ and,
    - Signs that specify the no idling requirements must be posted and enforced at the construction site.
- Operational NO_X and Diesel PM Emissions Reduction Measures for Construction Equipment
    - All construction equipment shall be maintained in proper tune according to manufacturer's specifications;
    - All off-road and portable diesel powered equipment shall be fueled with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);
    - Use of on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines;
    - On- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or

job sites to remind drivers and operators of the 5-minute idling limit;
- Use of electrically-powered equipment when feasible;
- Gasoline-powered equipment shall be substituted in place of diesel-powered equipment, where feasible; and
- If available, use of alternatively fueled construction equipment on-site, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

AQ-2(c) **Tier 3 Construction Equipment**. All off-road construction diesel engines not registered under the California Air Resources Board's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower (hp) or more, shall meet, at a minimum, the Tier 3 California Emissions Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment.

Construction or trucking companies with fleets that that do not have engines in their fleet that meet the Tier 3 standards identified in the above two measures (e.g. captive or NO_X exempt area fleets) may be eligible by proving alternative compliance. If a Tier 3 (or equivalent alternative compliance) engine is not available for any off-road engine larger than 50 hp, that engine will have tailpipe retrofit controls that reduce exhaust emissions of NO_X and PM to no more than Tier 2 emission levels. Tier 1 engines will be allowed on a case-by-case basis only when the project applicant has documented that no Tier 2 equipment or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete project construction. This shall be documented with signed written correspondence by the appropriate construction contractor along with documented correspondence with at least two construction equipment rental firms. A list of the construction equipment and the associated EPA Tier shall be submitted to the County of Monterey RMA-Planning Department prior to the issuance of a grading permit to verify implementation of measure.

Significance After Mitigation. Air emissions calculations were performed for both before and after the incorporation of the above-identified mitigation measures. The mitigation measures include those typically required by CARB and the MBUAPCD for NO_X (such as use of off-road equipment with Tier **3** ~~III~~ engines) and PM_{10} (such as watering program for dust control). As shown in Table 4.3-5, despite implementation of Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c), temporary construction emissions would continue to exceed MBUAPCD thresholds for NO_X and PM_{10}. In addition, due to the proximity of the site to other air basins, construction emissions could potentially impact air quality in those air basins. No other feasible measures are available that would further reduce construction emissions. Implementation of Mitigation Measures AQ-2(a), AQ-2(b), and AQ-2(c) would help maintain compliance with MBUAPCD Rule 402. ~~Therefore~~ However, due to the exceedance of MBUAPCD thresholds for construction activity, impacts would remain significant and unavoidable during construction.

Fifth paragraph under Impact AQ-3:

…Overall, the project would have a net regional benefit in term of long-term emissions of operational criteria pollutants and thus, the operational impacts on regional air quality would be beneficial.

First paragraph of Impact AQ-4:

Construction Dust. As described under Impact AQ-2, project construction emissions would exceed MBUAPCD daily thresholds and would result in a significant and unavoidable impact even with the implementation of Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c). However, as described under Impact AQ-3, the project would have a beneficial impact on long-term air quality during operation. There are two sensitive receptors (single family residences) located approximately 775 feet and 1,000 feet north of the site boundary, and due to the proximity of these receptors to construction-related activities and overall size of the project site, these residences would only be exposed to construction activity for a relatively short portion of the total construction schedule…

Mitigation Measures discussion under Impact AQ-4:

Mitigation Measures. No mitigation measures are required. Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) would further reduce exposure of sensitive receptors to substantial pollutant concentrations.

Third paragraph under Impact AQ-5*:*

Construction-related odors would be short-term, and would cease upon completion. There are two residences located within 1,000 feet of the project site, and due to the proximity of these receptors to construction-related activities and overall size of the project site, these residences would only be exposed to construction activity for a relatively short portion of the total construction schedule…

Last paragraph of Impact AQ-6*:*

> The project applicant and all construction contractors operating on the site would be required implement all of California Title 8 safety and health regulations necessary to protect employees. As described in Section 2.0, *Project Description*, the project includes APM-3 through APM-5, which would reduce fugitive dust emissions associated with construction of the proposed project. Standard construction Best Management Practices (BMPs) to minimize fugitive dust emissions, as well as standard erosion control measures, would minimize potential hazards associated with the release of fungal spores and are consistent with the recommendations of the California Department of Public Health…

Mitigation Measure AQ-6(a)*:*

> **AQ-6(a)** **Valley Fever Management Plan**. The project applicant shall identify and retain a licensed occupational medicine physician (M.D.) specializing in pulmonary epidemiology, subject to approval by the ~~consult with~~ the Monterey County Health Department (Health Officer), ~~the MBUAPCD, and the California Occupational Safety and Health Administration (Cal/OSHA) Compliance Program~~ to assist with the ~~to~~ development and implementation of a Valley Fever Management Plan (VFMP). The VFMP shall ~~that~~ includes ~~a~~ a job hazard analysis [in compliance with California Occupational Safety and Health Administration (Cal/OSHA) regulations] for any worker that will be exposed to dust. The VFMP shall further include specific measures to reduce the potential for exposure to Valley Fever. The project applicant and the Monterey County Health Department may consult with MBUAPCD and the Cal/OSHA Compliance Program as needed in identifying a specialist M.D. and in developing the VFMP.
>
> Prior to issuance of grading permits, the applicant shall submit the ~~Valley Fever Management Plan~~ VFMP to the Monterey County ~~RMA – Planning~~ Health Department for review and approval. The ~~Valley Fever Management Plan~~ VFMP shall ~~include a program to evaluate the potential for exposure to Valley Fever from construction activities and to~~ identify appropriate dust management and safety procedures that shall be implemented, as needed, to minimize ~~personnel~~ worker and public exposure to ~~potential Valley Fever-containing~~ dust potentially containing the *Coccidioides* spore. Measures in the ~~Valley Fever Management Plan~~ VFMP~~, which shall be implemented as applicable~~ may include the following:
>
> - Provide HEP-filtered air-conditioned enclosed cabs on heavy equipment. Train workers on proper use of cabs,

such as turning on air conditioning prior to using the equipment.

- Provide communication methods, such as two-way radios, for use in enclosed cabs.
- ~~Provide National Institute for Occupational Safety and Health (NIOSH)-approved respirators for workers.~~
- ~~Conduct a job hazard analysis in compliance with Cal/OSHA regulations for any worker that will be exposed to dust.~~
- Require National Institute for Occupational Safety and Health (NIOSH)-approved-half-face respirators equipped with N-100 or P-100 filters to be used during ~~digging~~ any worker collocation with surface disturbance activities if determined to be ~~warranted after conducting a~~ needed based upon the applicable job hazard analysis. ~~Require employees to wear respirators when working near earth-moving machinery if determined to be warranted after conducting a job hazard analysis.~~
- ~~Cause employees to~~ Workers that are required to use respirators as determined by a job hazard analysis shall be medically evaluated, fit-tested, and properly trained on the use of the respirators, and ~~implement~~ a ~~full~~ respiratory protection program shall be implemented in accordance with the applicable Cal/OSHA Respiratory Protection Standard (8 CCR 5144).
- Provide separate, clean eating areas with hand-washing facilities.
- Thoroughly clean construction tools, equipment, and vehicles with water before they are moved offsite to other work locations.
- ~~Wheel-washing facilities with water-recycling systems shall be provided at all site egress points. Vehicles leaving the site on a daily basis shall utilize wheel-washing facilities in order to reduce dust migration off the project site.~~ Equipment inspection and washing stations shall be established and manned at each construction equipment access/egress point. Spot examination of construction equipment for water washing via portable equipment in accordance with SWPPP BMPs shall be performed in order to prevent track-out of transport of material potentially carrying the *Coccidioides* spore.
- Suitable coveralls and change facilities shall be made available to all on-site workers. ~~On-site workers~~ Workers performing work in areas where fresh ground disturbance presents a risk of exposure to the

Coccicioides spore shall be required to change clothes after work every day before leaving the work site, to prevent distribution of *Coccidioides* to non-endemic areas, as determined to be needed based upon the applicable job hazard analysis. ~~As an alternative, disposable Tyvek® or equivalent work suits and work boots for use on-site shall be provided for workers.~~

- Establish sub-contract language clearly indicating that all subcontractors are obligated to comply fully with the meaning and intent of Title 8 California Code of Regulations Sections 5141 and 5144, subject to audit and contract enforcement by the applicant.
- Establish and execute auditing protocols to ensure subcontractor compliance with all provisions of the VFMP and provide monthly audit summary data, potential deviations noted and corrective actions implemented to the Monterey County Department of Health and County of Monterey RMA-Planning Department.
- ~~Work with a medical professional~~ Each primary employer of contracted workers shall be required by the terms and conditions of their contract for services to retain and consult with an Occupational Medicine Professional, licensed by either the Medical Board of California or the Osteopathic Board of California to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever. Reporting of symptoms of Valley Fever and diagnosed cases of Valley Fever must occur consistent with ~~Cal/OSHA~~ County and State requirements.

Mitigation Measure AQ-6(b)*:*

AQ-6(b) **Additional Valley Fever Dust Suppression Measures**. If peak daily wind speeds exceed 15 mph or peak daily temperatures exceed 95 degrees Fahrenheit for three consecutive days, additional dust suppression measures (such as additional water or the application of additional soil stabilizer) shall be implemented prior to and immediately following ground disturbing activities. The additional dust suppression shall continue until winds are 10 mph or lower and outdoor air temperatures are below a peak daily temperature of 90 degrees for at least two consecutive days. The additional dust suppression measures shall be incorporated into the Final Construction Management Plan. The Final Construction Management Plan shall be submitted to the County of Monterey RMA-Planning Department for review and

approval prior to ~~the issuance of any grading permit~~ commencing ground disturbing activities (e.g., grading, filling, trenching).

Mitigation Measure AQ-6(d)*:*

AQ-6(d) **Valley Fever Worker Training Program and Safety Measures**. Prior to any project grading activity, the primary project construction contractor shall prepare and implement a worker training program that describes potential health hazards associated with Valley Fever, common symptoms, proper safety procedures to minimize health hazards, and notification procedures if suspected work-related symptoms are identified during construction, including the fact that certain ethnic groups and immune-compromised persons are at greater risk of becoming ill with Valley Fever. The objective of the training shall be to ensure the workers are aware of the danger associated with Valley Fever. The worker training program shall be included in the standard in-person training for project workers, and shall identify safety measures to be implemented by construction contractors during construction, including all safety measures included in the Valley Fever Management Plan prepared pursuant to Mitigation Measure AQ-6(a). Prior to initiating any grading, the project applicant shall provide the Monterey County RMA – Planning Department and the ~~County of~~ Monterey ~~Environmental~~ County Health ~~Bureau~~ Department with copies of all educational training material for review and approval. No later than 30 days after any new employee or employees begin work, the project applicant shall submit evidence to the Monterey County RMA – Planning Department that each employee has acknowledged receipt of the training (e.g., sign-in sheets with a statement verifying receipt and understanding of the training).

Mitigation Measure AQ-6(e) in Section 4.3, *Air Quality:*

AQ-6(e) **Valley Fever Information Handout**. The applicant shall work with a medical professional, in consultation with the Monterey County Health Department, to develop an educational handout for on-site workers and surrounding residents within three miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for ~~exposure~~ infection is available. Prior to construction permit issuance, this handout

shall have been created by the applicant and reviewed by the County. No less than 30 days prior to any surface disturbance (e.g., grading, filling, trenching) work commencing, this handout shall be mailed to all existing residences within three miles of the project boundaries.

The second paragraph under Impact AQ-7:

Before the proposed project site is decommissioned, pursuant to APM-1, the project proponent would prepare a decommissioning plan that identifies the specific plan and process that would be implemented during decommissioning, as well as the site-specific environmental, regulatory, and technological conditions at the time of decommissioning (See APM-1 in Table 2-4). As stated in Section 2, *Project Description*,~~,~~ at least 90 days prior to initiating any decommissioning activities, the project proponent shall submit design-level information (e.g., grading plans, demolition plans, etc.) to the County of Monterey for review. All design-level information shall be consistent with then-current County of Monterey planning and building requirements that may be necessary for the issuance of any grading, demolition, use or other necessary permit from the County of Monterey. The County may conduct additional CEQA review to ensure adequate prevention and/or mitigation of air quality impacts during decommissioning. However, due the potential for decommissioning-related impacts to regional air quality, including temporary air pollutant emissions (as discussed in Impact AQ-2)~~, exposure of sensitive receptors to substantial pollutant concentrations (as discussed in Impact AQ-4), odors (as discussed in Impact AQ-5),~~ and unmitigated exposure of sensitive receptors to potential health hazards associated with the Coccidioides fungus (as discussed in Impact AQ-6), this impact would be potentially significant

Mitigation Measure discussion under Impact AQ-9*:*

Mitigation Measures. Mitigation Measures AQ-2(a), ~~and~~ AQ-2(b), and AQ-2(c) are required for the proposed project, and are based on SLOAPCD recommendations for mitigating construction emission thresholds of significance. These measures are consistent with standard MBUAPCD and SLOAPCD recommended measures, and would ensure that construction-phase mitigation is uniformly applied across the project. ~~Thus, separate additional mitigation is not required for the portion of the project within SLOAPCD.~~ In addition, SLOAPCD *CEQA Air Quality Handbook* (April 2012) requires projects that cannot mitigate their construction emissions below the SLOAPCD thresholds of significance with on-site mitigation to develop a Construction Activity Management Plan that includes off-site mitigation to reduce emissions below the applicable threshold. Preparation of a Final Construction Management Plan (CMP) is required by APM-2, described in Section 2.0, *Project Description*. Therefore, the following mitigation measure is required to minimize construction emissions within the SCCAB:

AQ-9 **Construction Management Plan Requirements**. The Final Construction Management Plan (CMP) proposed as Applicant Proposed Measure 2 (APM-2) shall include, but not be limited

to, the following construction emissions reduction measures, recommended by SLOAPCD:

- Best Available Control Technology for Construction equipment (BACT) measures to reduce construction emissions, which can include:
    - Expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines;
    - Repowering equipment with the cleanest engines available;
    - Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm
- Schedule construction activities to minimize the amount of large construction equipment operating simultaneously during any given time period; and
- Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions.

The CMP shall be submitted to the County of Monterey RMA-Planning Department for review and approval.

Significance After Mitigation. ~~Even w~~ With implementation of ~~these m~~ Mitigation ~~m~~ Measures AQ-2(a), AQ-2(b), AQ-2(c), and AQ-9, temporary emissions within the SCCAB during construction would be reduced to the maximum extent feasible, but would continue to exceed ambient air quality standards within the SCCAB. Therefore, the impact would be significant and unavoidable.

Section 4.4 Biological Resources

First paragraph of Section 4.4.2 (Setting):

…The BSA is an area of approximately 5,033 acres consisting of an approximately 4,184-acre study area around the Solar Generating Facility Area, an approximately 698-acre study area around the Access Road and an approximately 155-acre study area around the Utility Corridor (of which four acres overlap with the SGFASA). The various biological technical reports listed above refer to both the study areas and project impact areas (see below for a discussion of the project impact areas)…

Figure 4.4-1; revision shown on the following page.

Table 4.4-2:

Table 4.4-2
Habitats Within the California Flats Solar Project Site Impact Areas*

Habitat	Solar Generating Facility Area	Access Road	Utility Corridor
Tree Dominated Habitats			
Willow-Cottonwood Riparian Woodland	~~2.53~~1.72	--	--
Cottonwood Alluvial Riparian Woodland	--	--	--

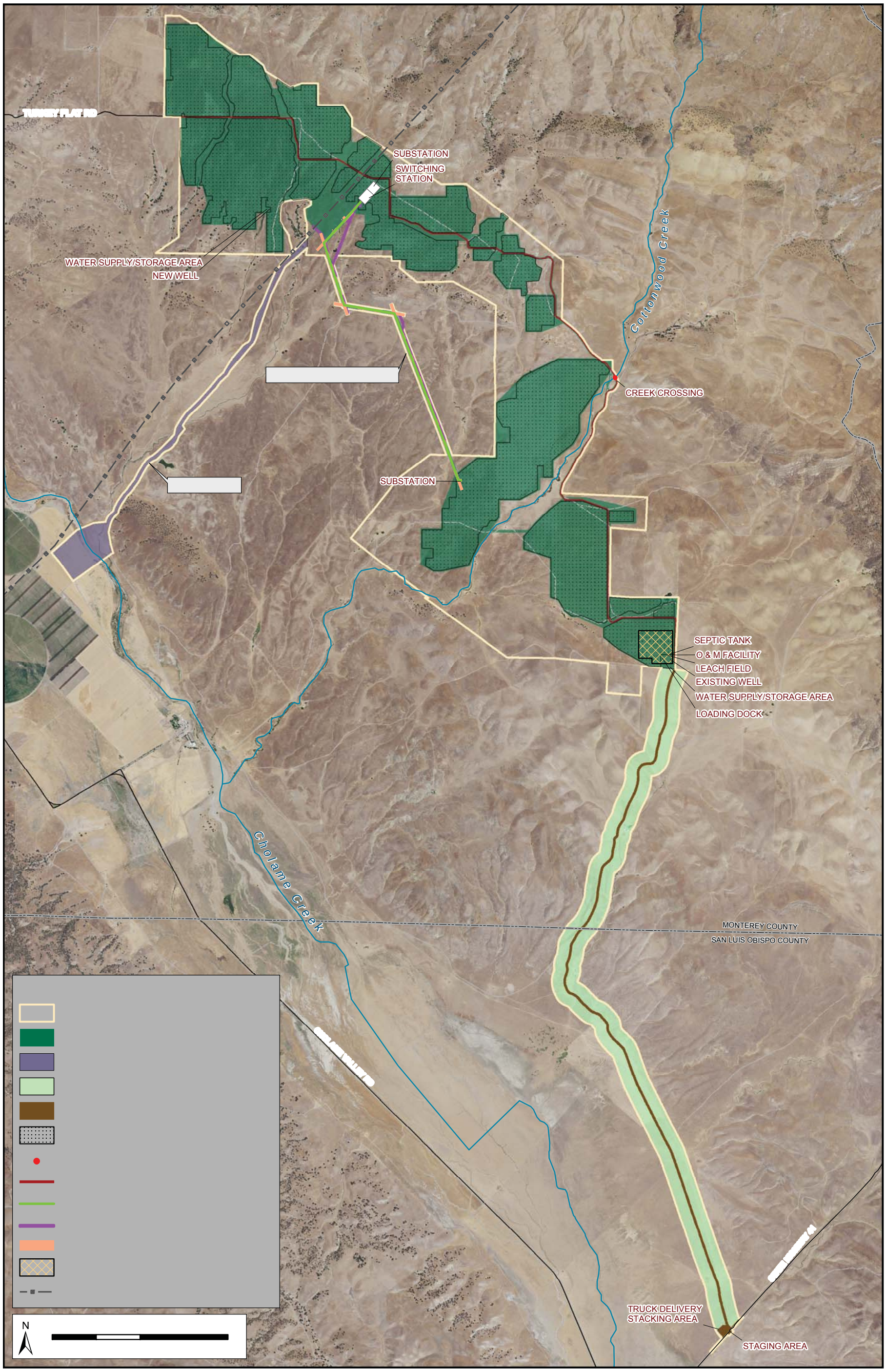
Figure 4.4-2a through 4.4-2f; revisions shown on the following pages.

Third paragraph of the *Seasonal Wetland* discussion in Section 4.4.2(b) (Habitats):

> The alkali wetlands on the BSA are concentrated in the northeastern corner where alkaline minerals have accumulated in the foothills and valley floor, forming a wetland complex where surface and subsurface water drains into the BSA from watersheds to the northeast (Figure ~~3a~~4.4-2a).

Sensitive Plant Communities and Critical Habitat discussion in Section 4.4.2(f) (Special Status Resources):

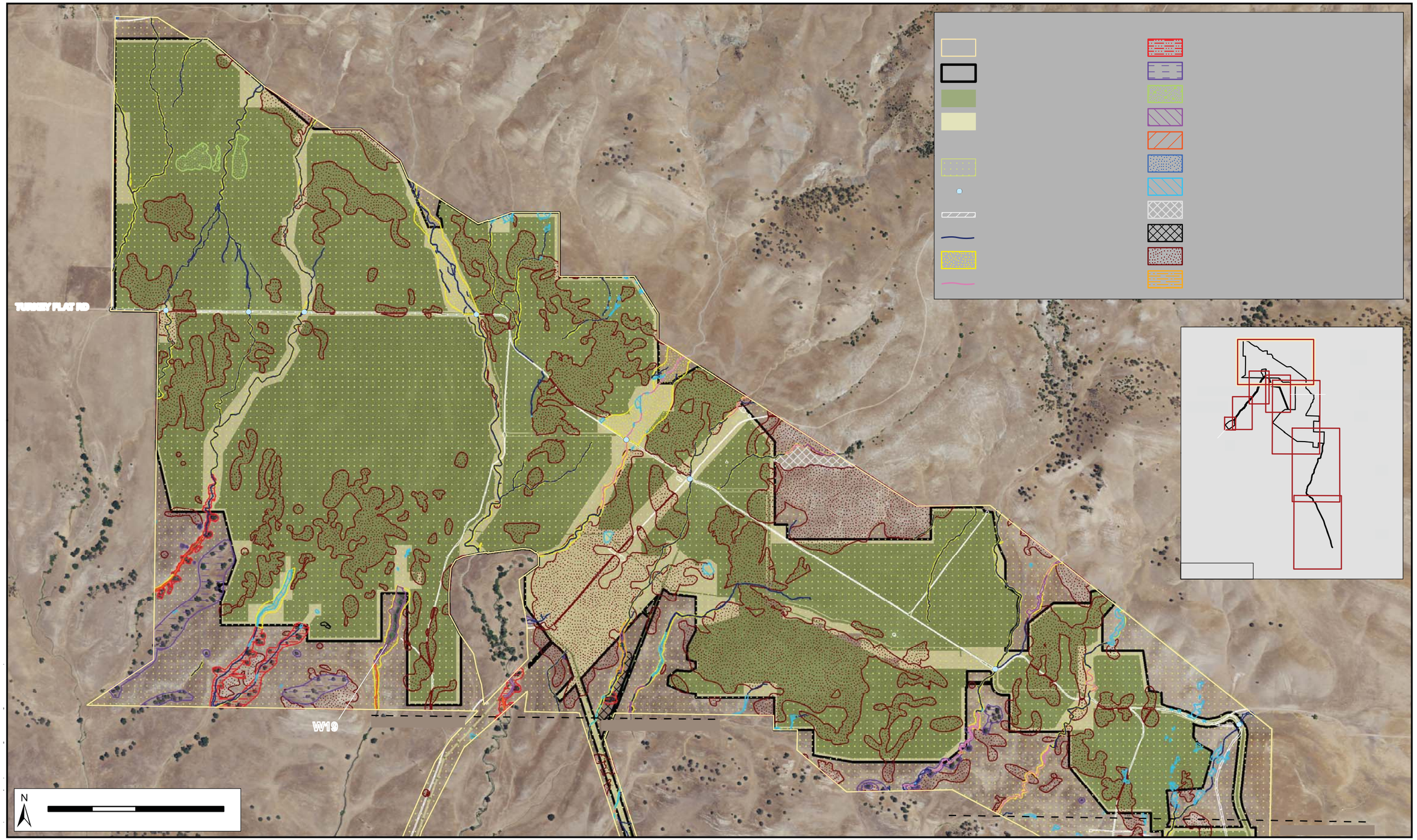
> Sensitive Plant Communities and Critical Habitat. Three sensitive plant communities are known to occur within the vicinity of the BSA: Wildflower Fields, Great Valley Mesquite Scrub and Valley Sink Scrub. Neither Great Valley Mesquite Scrub nor Valley Sink Scrub plant communities were documented within the BSA; however, Wildflower Fields are present on ~~540.58~~551.87 acres within the Solar Generating Facility Area ~~project site~~, and 0.27~~1~~ acres in the Access Road, and 0.13 acres within the Utility Corridor. This community was not detected within the Utility Corridor. Wildflower field is considered to be a sensitive plant community by the CDFW. In addition, federally designated critical habitat for California red-legged frog (CRLF; *Rana draytonii*) and California tiger salamander (CTS: *Ambystoma californiense*) are mapped within five miles of the BSA…



Biological Study Area

Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014

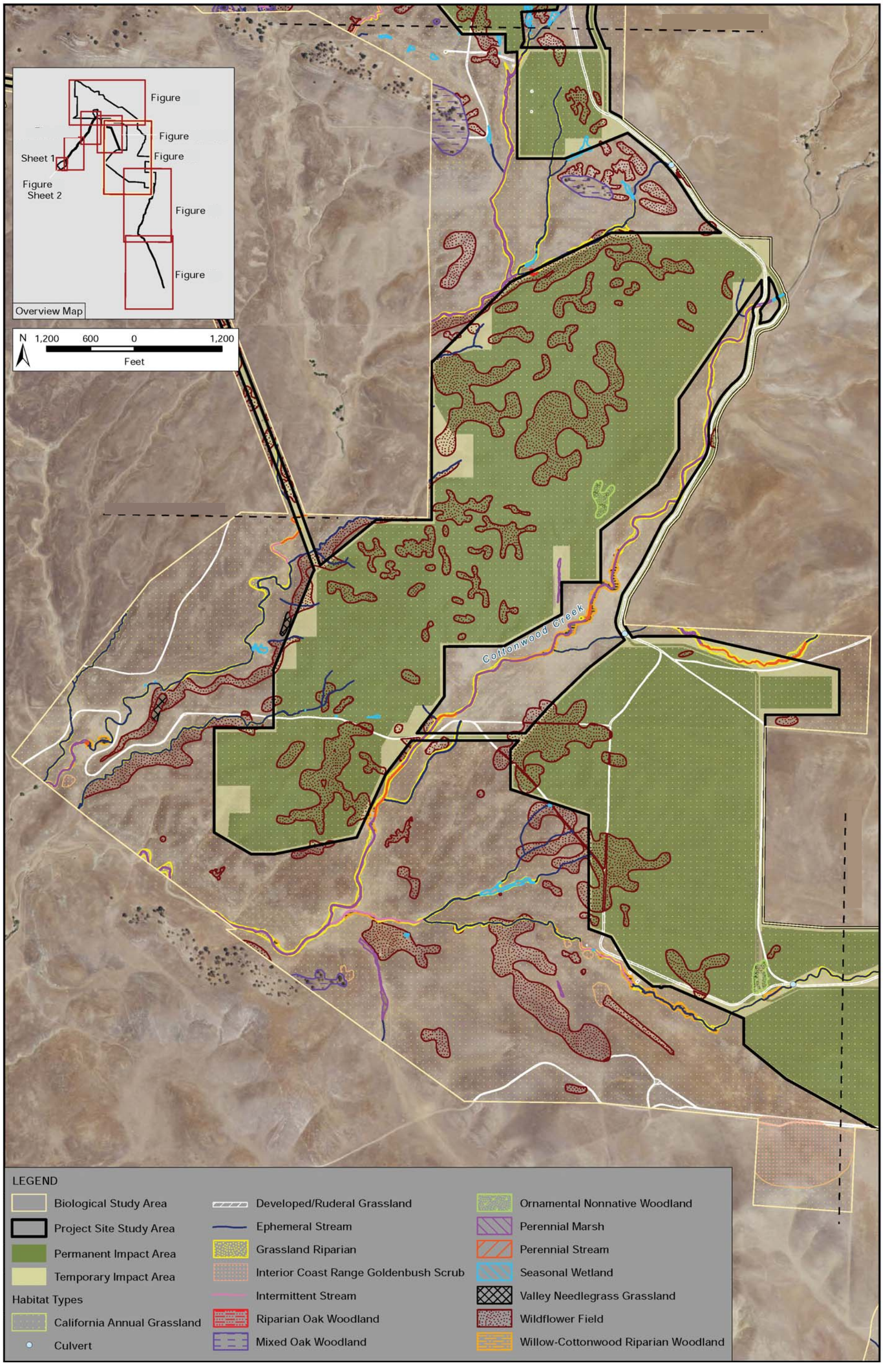
Figure 4.4-1



Habitat Map

Figure 4.4-2a

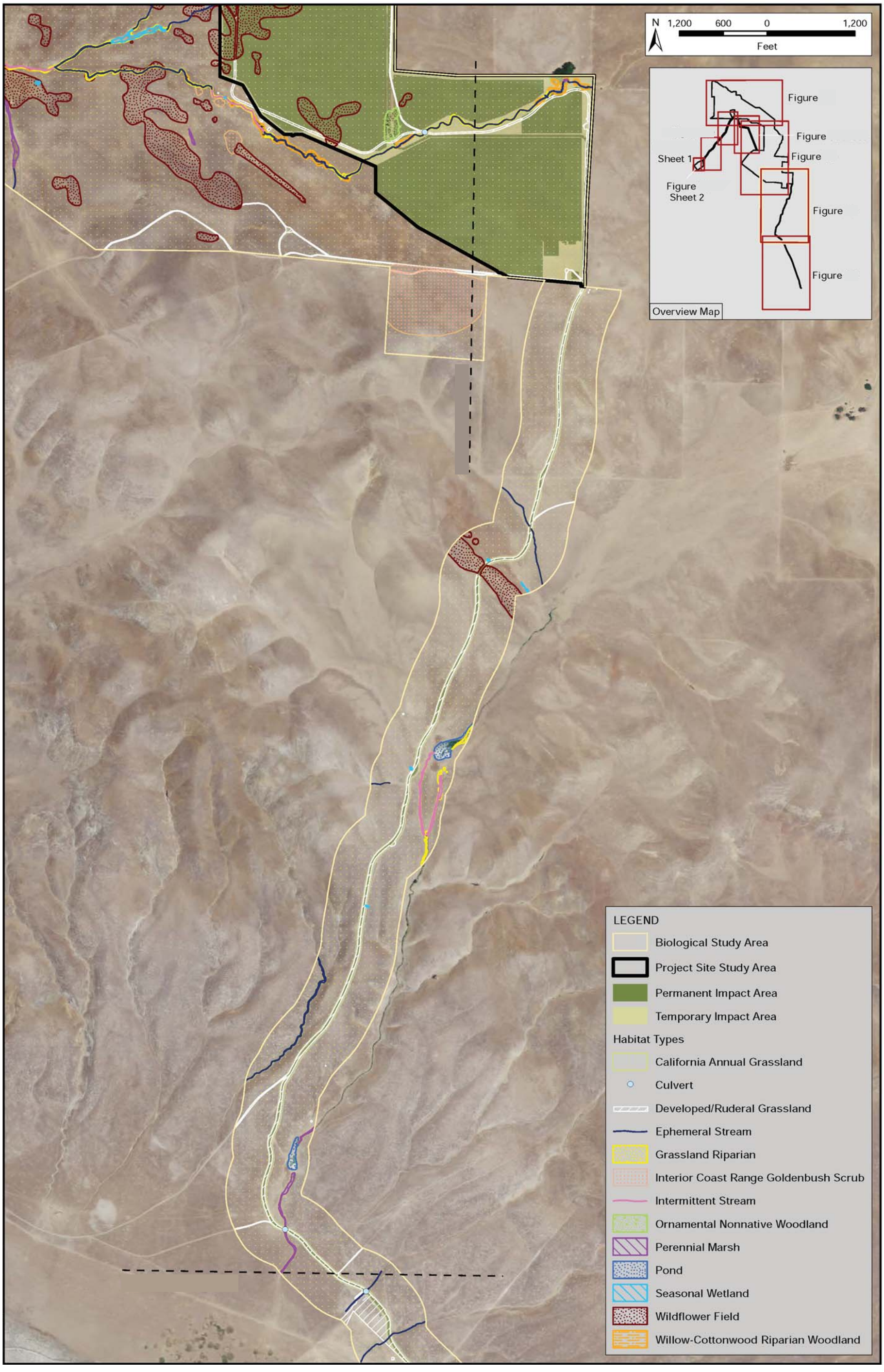
Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014



Habitat Map

Figure 4.4-2b

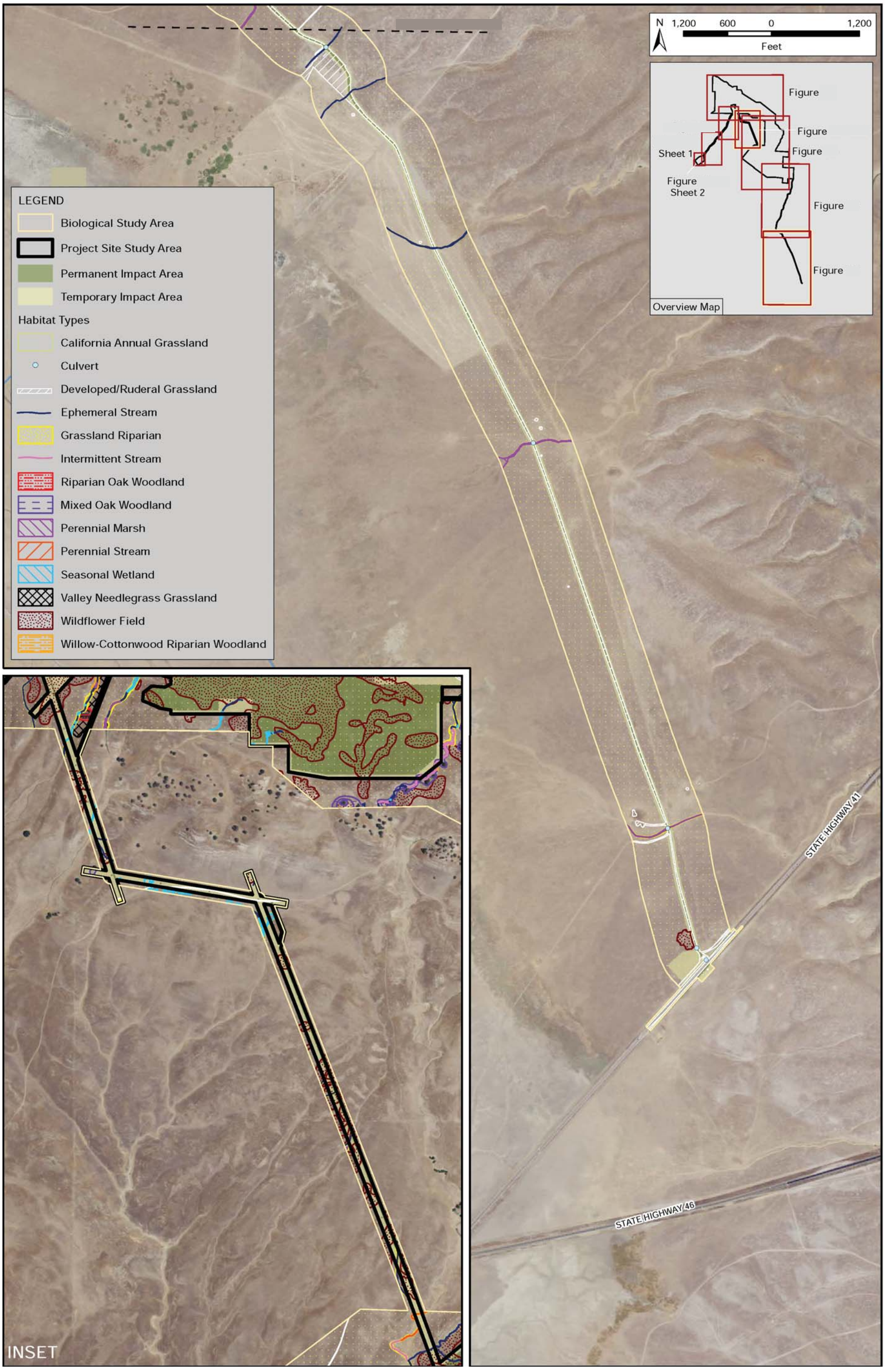
Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014



Habitat Map

Figure 4.4-2c

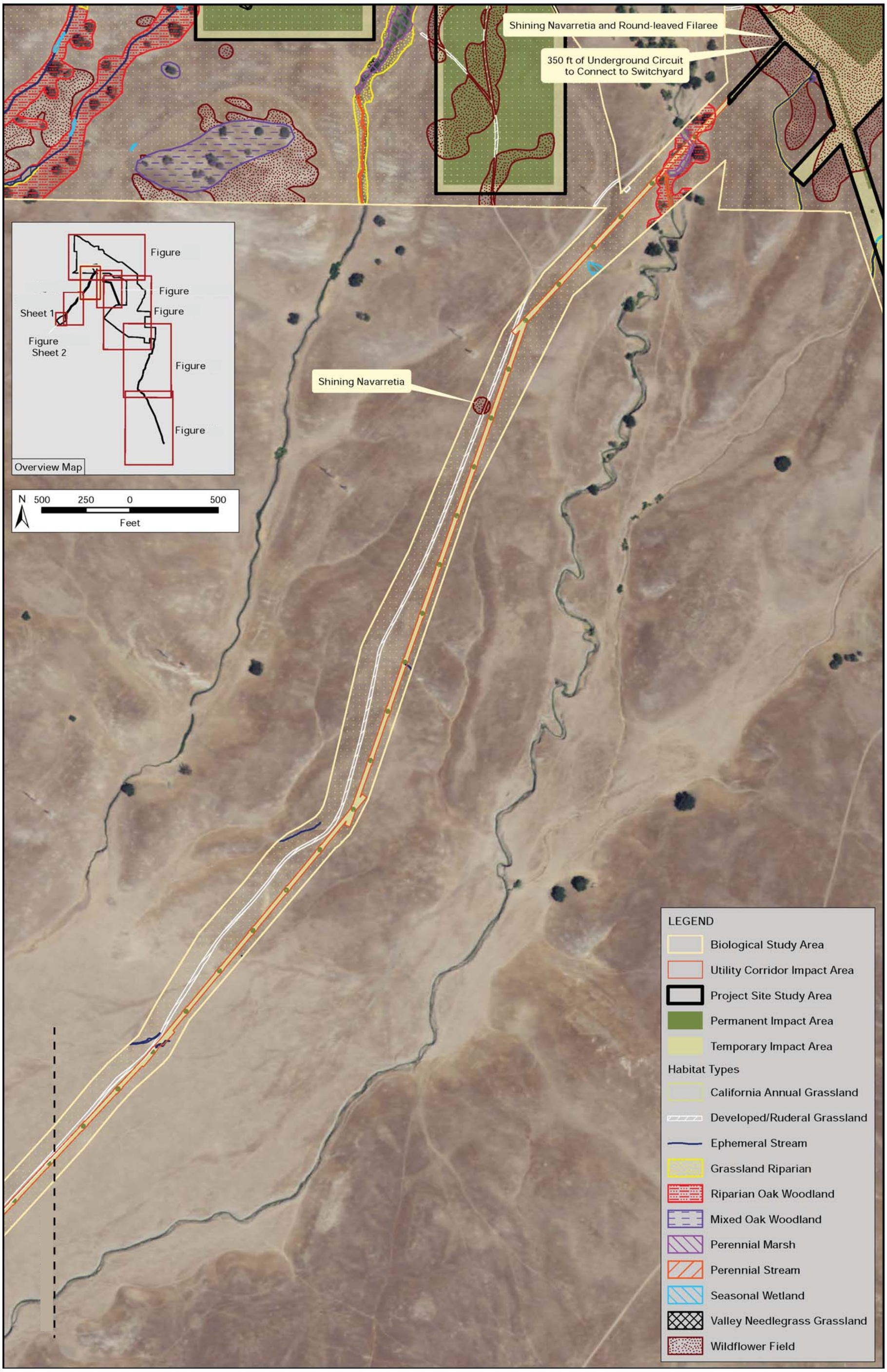
Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014



Habitat Map

Figure 4.4-2d

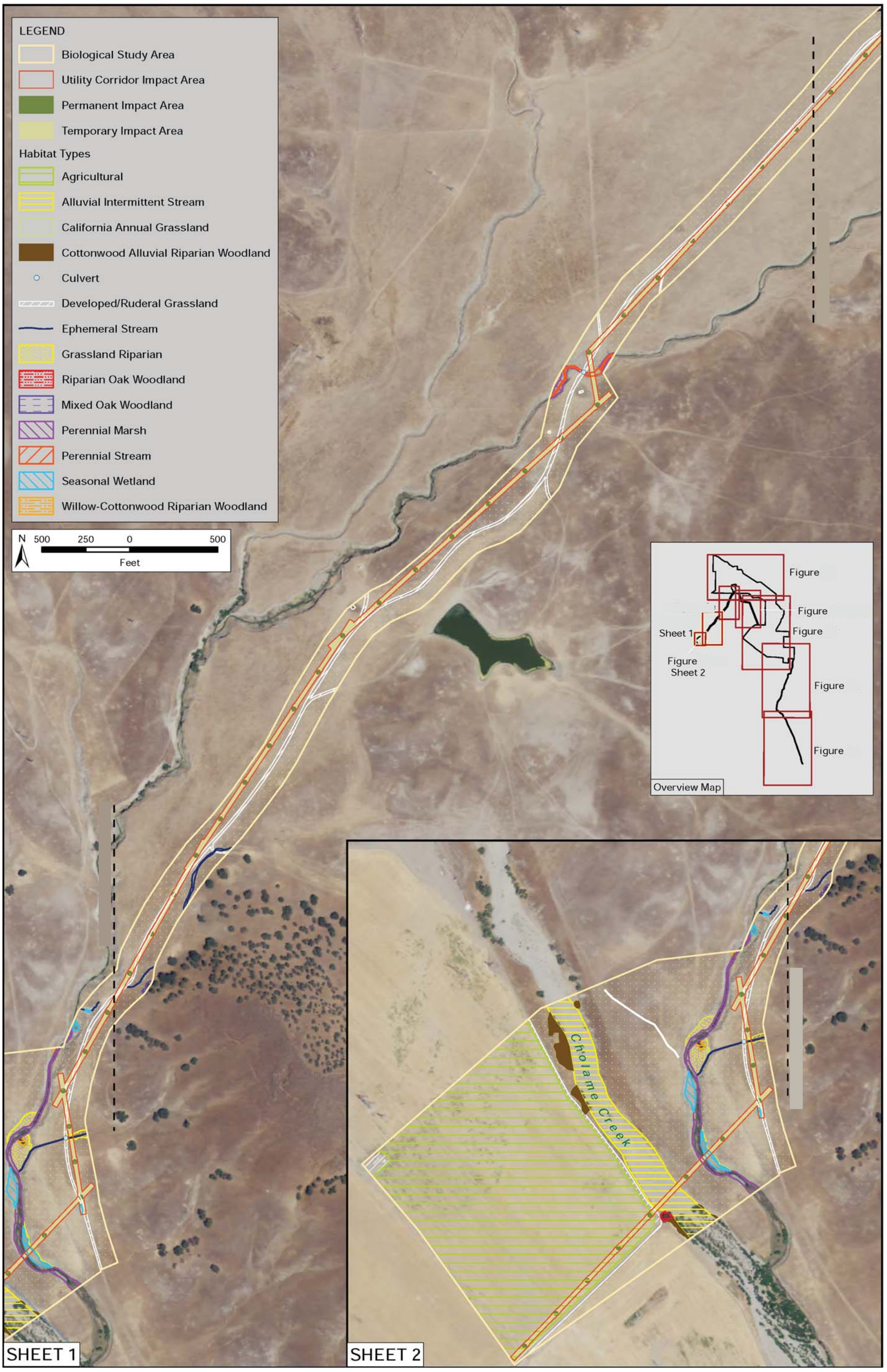
Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014



Habitat Map

Figure 4.4-2e

Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014



Habitat Map

Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014

Figure 4.4-2f

Section 4.4.2(f) (Special Status Resources):

> Special Status Plants and Animals. Special status plants and animals, their listing status, habitats, and potential to occur within the BSA are presented in Table 4.4-4. Figures 4.4-4 -4.4-6 depict the distribution of CNDDB (2013) records of special status plant, reptiles and amphibians, and other wildlife species and critical habitat (respectively) in the vicinity of the BSA. Most of the 53 special status plants and 32 special status animal species known from the region and listed in Table 4.4-4 have at least some potential to occur within the BSA except for the yellow warbler (*Dendroica petechia*), Indian valley spineflower (*Aristocapsa insignis*), Hardham's suncup (*Camissonia hardhamiae*), ~~Hoover's eriastrum (*Eriastrum hooveri*),~~ delicate blue cup (*Githopsis tenella*), and San Antonio hill monardella (*Monardella antonina* ssp. *antonina*)~~, and Mason's neststraw (*Stylocline masonii*)~~.
>
> *Special Status Plants.* Special status plant surveys were conducted from March through July 2013 across the BSA, except in the Utility Corridor area which was not part of the project at the time of these botanical surveys, in accordance with protocols established by the U.S. Fish and Wildlife Service (USFWS), CDFW, and CNPS. A variety of surveys were conducted including surveys focused on the direct impact areas for the project plus a 100-foot buffer, except in the Utility Corridor area as noted above; intuitively controlled surveys focused on approximately 1,449 acres of additional land within the BSA; and, regional contextual surveys of the project vicinity that covered approximately 10,000 acres spread out within a 5-mile radius of the BSA…

Figure 4.4-3; revisions shown on the following page.

Table 4.4-4; revisions shown on the following pages.

Last paragraph before *Special Status Birds* discussion in Section 4.4.2(f) (Special Status Resources):

> Note that the Utility Corridor was added to the project description after protocol rare plant surveys were completed. The presence or absence of many special status plant species has not yet been determined through protocol botanical surveys during preparation of the DEIR; however, the potential for occurrence ~~can~~could be evaluated, and Table 4.4-4 identifies those special status plant species with potential to occur in the Utility Corridor.

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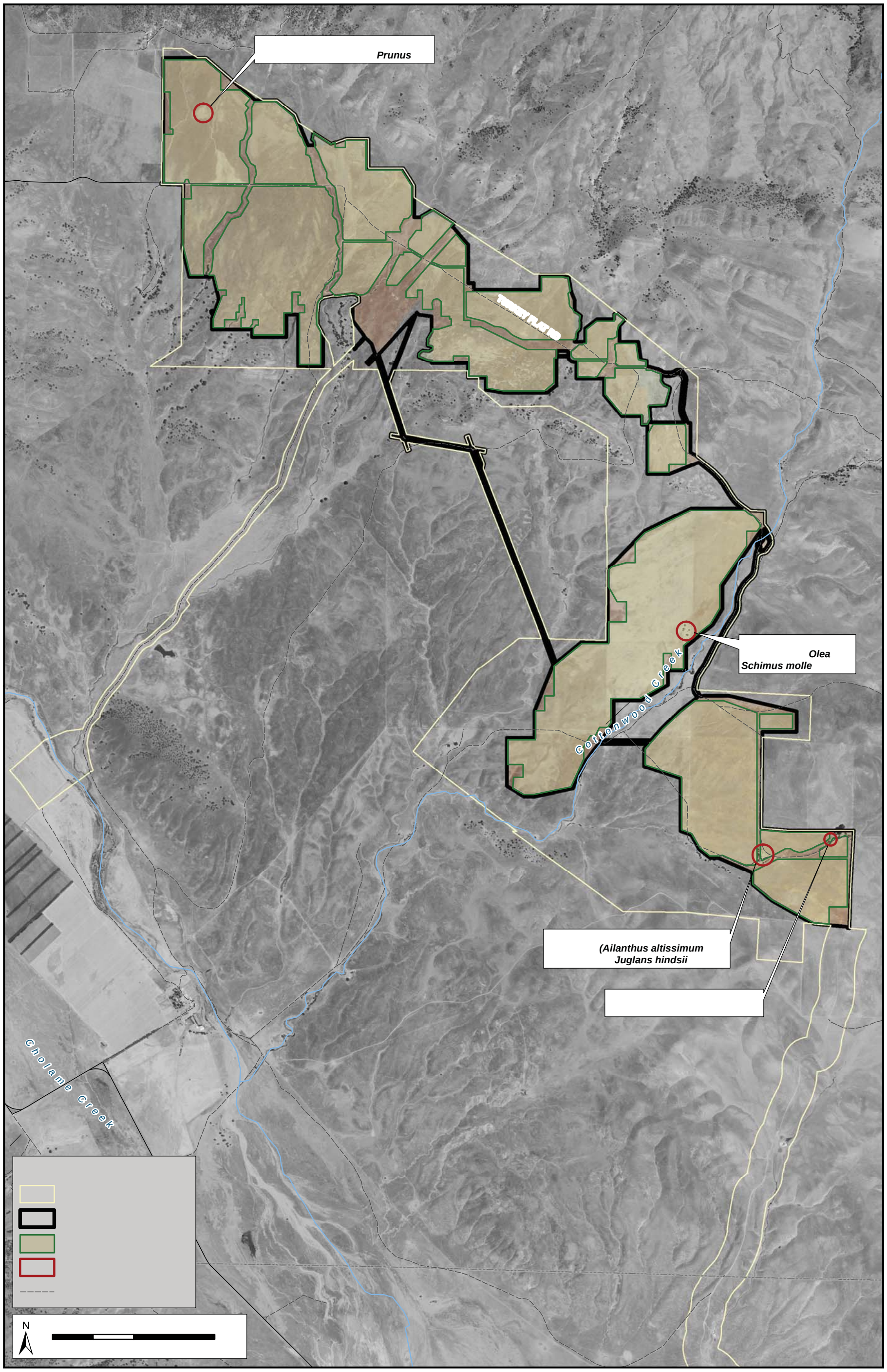


General Location of Trees
within the Project Site

Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014

Figure 4.4-3

Table 4.4-4
Special Status Species Known or with Potential to Occur Within the Solar Generating Facility Area, Access Road, and Utility Corridor

Scientific Name Common Name	Status[a] Fed/State/ CRPR	Habitat Requirements	Potential for Occurrence within the Solar Generating Facility Area	Potential for Occurrence within the Access Road	Potential for Occurrence within the Utility Corridor
Calochortus simulans La Panza mariposa lily	--/--/1B.3	Sandy, often decomposed granite, sometimes serpentinite, substrates in chaparrals, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland.	~~**Absent**~~ **Unlikely.** Marginally suitable habitat present, but not observed during protocol rare plant surveys in 2013.	~~**Absent**~~ **Unlikely.** Marginally suitable habitat present, but not observed during protocol rare plant surveys in 2013.	**Unlikely.** Marginally suitable soils present.
Convolvulus simulans small-flowered morning glory	--/--/4.2	Clay soils and serpentinite seeps in valley and foothill grassland, coastal scrub, and openings in chaparral.	**Present.** Detected on the project site in 2013 during protocol rare plant surveys.	~~**Absent.** Not observed in Access Road corridor during 2013 protocol rare plant surveys.~~ **Present.** Detected in the Access Road corridor during surveys in 2014.	**Possible.** Suitable habitat present.
Cryptantha rattanii Rattan's cryptantha	--/--/4.3	Cismontane woodland, riparian woodland, and valley and foothill grassland habitats.	~~**Absent**~~ **Possible.** Suitable habitat present, but not observed during protocol rare plant surveys in 2013. No Reference populations to establish blooming.	~~**Absent**~~ **Possible.** Suitable habitat present, but not observed during protocol rare plant surveys in 2013. No Reference populations to establish blooming.	**Possible.** Suitable habitat present.
Eschscholzia rhombipetala diamond-petaled California poppy	--/--/1B.1	Alkaline clay substrate in valley and foothill grassland.	~~**Absent**~~ **Possible.** Suitable habitat present, but not observed during protocol rare plant surveys in 2013. Not observed blooming at reference populations	~~**Absent**~~ **Possible.** Suitable habitat present, but not observed during protocol rare plant surveys in 2013. Not observed blooming at reference populations.	**Possible.** Suitable habitat is present.
Gilia tenuiflora ssp. *amplifaucalus* trumpet-throated gilia	--/--/4.3	Sandy substrate in cismontane woodland and valley and foothill grassland.	~~**Absent**~~ **Possible.** Marginally suitable habitat present, but not observed during protocol rare plant surveys in 2013. Not observed blooming at reference populations	~~**Absent**~~ **Possible.** Marginally suitable habitat present, but not observed during protocol rare plant surveys in 2013. Not observed blooming at reference populations	**Unlikely.** Marginally suitable habitat is present.

Table 4.4-4
Special Status Species Known or with Potential to Occur Within the Solar Generating Facility Area, Access Road, and Utility Corridor

Scientific Name Common Name	Status[a] Fed/State/ CRPR	Habitat Requirements	Potential for Occurrence within the Solar Generating Facility Area	Potential for Occurrence within the Access Road	Potential for Occurrence within the Utility Corridor
Lagophylla diaboloensis[1] *[Formerly included in L. dichotoma, s.l.]* ~~forked~~ Diablo Range hare-leaf	--/--/1B.2~~1~~	Known only from the Diablo Range. Sometimes clay substrate in cismontane woodland and valley and foothill grassland.	**Absent.** Suitable habitat present, but not observed during protocol rare plant surveys in 2013. Flowering/fruiting confirmed at reference population.	**Absent.** Suitable habitat present, but not observed during protocol rare plant surveys in 2013. Flowering/fruiting confirmed at reference population.	**Possible.** Suitable habitat present.
Lepidium jaredii ssp. *album* Panoche pepper-grass	--/--/1B.2	White or grey clay lenses on steep slopes, clay and gypsum rich soils, in valley and foothill grassland.	~~**Absent**~~ **Possible.** Limited suitable soil conditions present, but not observed during protocol rare plant surveys in 2013. Not observed blooming at reference populations	~~**Absent**~~ **Possible.** Limited suitable soil conditions present, but not observed during protocol rare plant surveys in 2013. Not observed blooming at reference populations	**Unlikely.** Limited suitable soil conditions.
Phrynosoma blainvillii coast horned lizard	--/SSC/--	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial and abundant supply of ants and other insects.	**Possible.** Moderately suitable habitat present~~ on the project site~~. There is a record for the species within 3 miles south of the project site.	**Possible.** Moderately suitable habitat present. There is a record for the species within 2 miles west of the Access Road.	**Possible.** Moderately suitable habitat~~ present on the project site~~. There is a record for the species within 3 miles to the south.

[1] In 2013, taxonomy of the genus *Lagophylla* was revised. *Lagophylla dichotoma* (sensu lato) was divided into two species. The newly narrow description of *L. dichotoma* (sensu stricto) applies to plants of the Sierra Nevada foothills and eastern Great Central Valley, and does not occur in Monterey County, while occurrences of the newly described *L. diabolensis* occur in the Diablo Range, in portions of Monterey, Fresno, and San Benito Counties (Baldwin 2013).

Special Status Birds discussion in Section 4.4.2(f) (Special Status Resources):

> *Special Status Birds.* Six special status bird species were detected within the BSA: tricolored blackbird (*Agelaius tricolor*), golden eagle (*Aquila chrysaetos*), short-eared owl (*Asio flammeus*), burrowing owl (*Athene cunicularia*), bald eagle (*Haliaeetus leucocephalus*), and loggerhead shrike (*Lanius ludovicianus*). Another six special status bird species have the potential to occur on-site: grasshopper sparrow (*Ammodramus savannarum*), long-eared owl (*Asio otus*), mountain plover (*Charadrius montanus*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and Oregon vesper sparrow (*Pooecetes gramineus affinis*). The Utility Corridor was added to the project description after the majority of avian surveys were completed. However, the potential for occurrence can be evaluated, and Table 4.4-4 identifies those special status avian species with potential to occur in the Utility Corridor.

Mountain Plover discussion in Section 4.4.2(f) (Special Status Resources):

> *Mountain Plover*. Mountain plover do not breed in California; rather they migrate to the Central and Imperial valleys during the winter. There ~~are no~~ is one CNDDB record for mountain plover, an approximate location recorded centered within ~~20~~ five miles of the BSA, ~~but~~ and small flocks have been reported in the Cholame Valley as close as four miles south of the project site (NAS and CLO, 2012). Most observations have been in agricultural lands 10 to 15 miles east of the BSA. No mountain plovers have been observed within the BSA, but suitable foraging habitat is present.

Oregon Vesper Sparrow discussion in Section 4.4.2(f) (Special Status Resources):

> …While this subspecies has not been observed on-site, suitable wintering habitat is present within the Solar Generating Facility Area, ~~project site and the~~ Access Road, and Utility Corridor.

Special Status Mammals discussion in Section 4.4.2(f) (Special Status Resources):

> *Special Status Mammals.* Two special status mammal species were detected on-site: San Joaquin kit fox (*Vulpes macrotis mutica*) and American badger (*Taxidea taxus*). Another three special status mammals have the potential to occur on-site: Pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), and San Joaquin pocket mouse (*Perognathus inornatus inornatus*). The Utility Corridor was added to the project description after the majority of mammal surveys were completed. However, the potential for occurrence can be evaluated, and Table 4.4-4 identifies those special status mammal species with potential to occur in the Utility Corridor.

San Joaquin Pocket Mouse discussion in Section 4.4.2(f) (Special Status Resources):

> *San Joaquin Pocket Mouse*. The nearest CNDDB record for San Joaquin pocket mouse is approximately 14 miles east of the BSA. Though none were detected within the Solar Generating Facility Area, ~~the project site or~~ Access Road, or Utility Corridor, San Joaquin pocket mice could occur where suitable friable soils are present in grasslands and blue oak woodlands.

Special Status Invertebrates discussion in Section 4.4.2(f) (Special Status Resources):

> *Special Status Invertebrates.* Critical habitat for vernal pool fairy shrimp (*Branchinecta lynchi*) is located approximately 10 miles to the west of the BSA. Protocol vernal pool branchiopod surveys were conducted within the BSA, except in the Utility Corridor area which was not part of the project at the time of these surveys, to determine the presence or absence of listed vernal pool branchiopod species…
>
> Wet-season protocol surveys were conducted within the BSA, except in the Utility Corridor area as noted above, during the 2012/2013 winter rainy season. Nine seasonal wetlands were sampled and no listed branchiopods were detected; however, the area received approximately 50% of the average precipitation recorded for the region containing the BSA. Please refer to the Wet-Season Branchiopod report in Appendix E.9 for more details.
>
> Note that the Utility Corridor study area was added to the project after dry-season and wet-season sampling was completed; and, therefore, was not subject to vernal pool branchiopod surveys. However, the potential for occurrence can be evaluated, and Table 4.4-4 identifies those special status branchiopod species with potential to occur in the Utility Corridor.

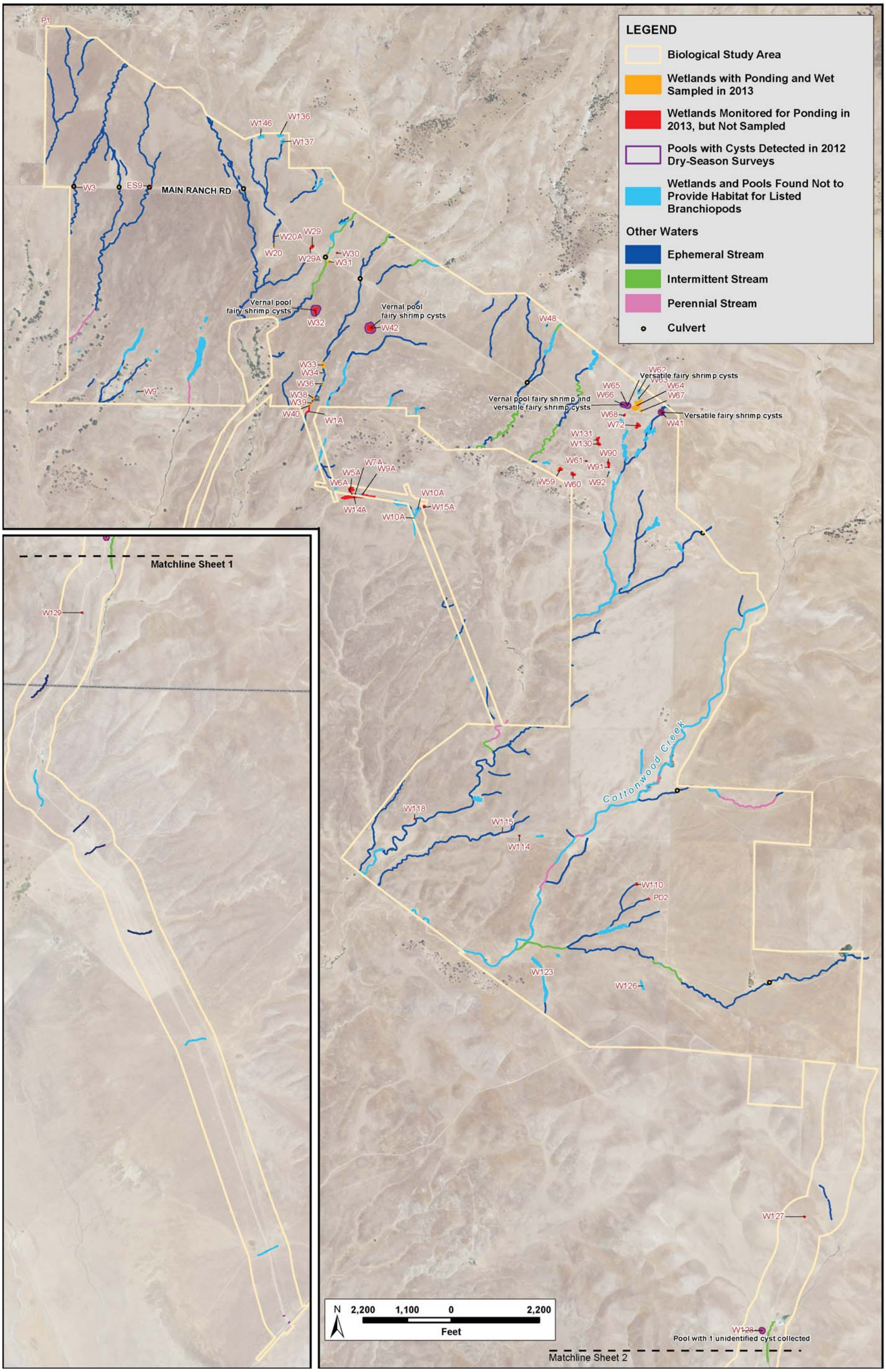
Pronghorn Antelope discussion in Section 4.4.2(f) (Special Status Resources):

> *Pronghorn Antelope.* No pronghorn or their sign were detected within the ~~project site~~SGFA during biological surveys conducted for the project, but they have been observed foraging within the Access Road (Biotic Report, HTH 2014b; DEIR Appendix E.1). Pronghorn have also been documented in the Cholame Valley on both sides of the Access Road and within the southern portion of the project site in previous reports (Penrod et al., 2010). A herd of approximately 40 to 50 pronghorn have been tracked by the CDFW within the Cholame Valley.

Figure 4.4-7; revisions shown on following page.

Fourth paragraph of Wildlife Movement Corridors discussion:

> …The results of the full coverage den surveys, camera stations, and spotlight surveys collectively indicate that the relatively small, moderately suitable grassland habitat patches comprising the project site are rarely used by San Joaquin kit fox, and pronghorn and Tule elk have not been observed with the project site. Pronghorn have been observed in the access road area, and were previously reported from other sources as occurring in the southern portion of the project site. Given the remote location of the project site, the low level of development in the vicinity…



Vernal Pool Branchiopod
Survey Coverage and Occupied Habitat

Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014

Figure 4.4-7

Table 4.4-5:

Table 4.4-5
Special Status Plant Species Identified Within the BSA During 2013 Protocol Surveys.

Scientific Name Common Name	Status Fed/State/CRPR	Approximate Number of Individuals	
		~~p~~Project ~~s~~Site	BSA (Outside of ~~p~~Project ~~s~~Site

Special Status Plants subsection of Impact B-1:

Thresholds

CDFW standards state that species ranked 1A, 1B, 2A, and 2B may meet definitions of rare or endangered under CEQA Sections 15380 (b) and (d); (CDFW 2014). By CNPS standards, the plants of CRPR Ranks 1A, 1B, 2A and 2B meet the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code, and are eligible for state listing (CNPS 2014).

According to CDFW,

> "In general, CNPS List 3 plants (plants about which more information is needed) and List 4 plants (plants of limited distribution) may not warrant consideration under CEQA §15380. These plants may be included on special status plant lists such as those developed by counties where they would be addressed under CEQA §15380... Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a List 4 plant are significant even if individual project impacts are not."

CRPR 1B plant species meet CEQA Section 15380 criteria as rare, and impacts would be significant without compensatory mitigation. Mitigation is required for all impacts over 10 percent of the population within the BSA to avoid impacts that could cause the regional population of any of these species to drop below self-sustaining levels, threaten to eliminate any plant community of which the species was a key part; or substantially reduce the number of occurrences or individuals or restrict the range of that species.

Due to the unusual large number of individuals and extent of CRPR 4 plant species in the vicinity compared with other records for these species, these populations are considered unique, with implications for the status of this species throughout its range; these populations would thus meet criteria for analysis as rare under CEQA Section 15380. Due to the regional significance of these populations of CRPR 4 plant species, ~~I~~impacts to CRPR ~~List~~ 4 plant species would be considered significant and require compensatory mitigation if more than 30% of the population occurring within the BSA ~~and/or known populations of the species within a 5-mile radius of the BSA (where such populations are known)~~, would be affected. In addition, the impact ~~may~~ would be considered significant if less than 30% of the population ~~or~~ within the BSA would be affected ~~but~~where the population exhibits unusual morphology, occurs on unusual substrates for that species, or if loss related to the project could reduce the species' range, as determined by a qualified botanist familiar with the population present in the impact area and the rare flora of the Central Coast Ranges.

Indirect Impacts to California Condors discussion under Impact B-1:

> *Indirect Impacts to California Condor*. Indirect impacts could include the long-term decline in population viability for California condors~~. Since~~however, no roosting or nesting habitat will be affected, and since the project site comprises only a very small area of foraging habitat relative to what is available in the region, no indirect impacts to California condors are expected.

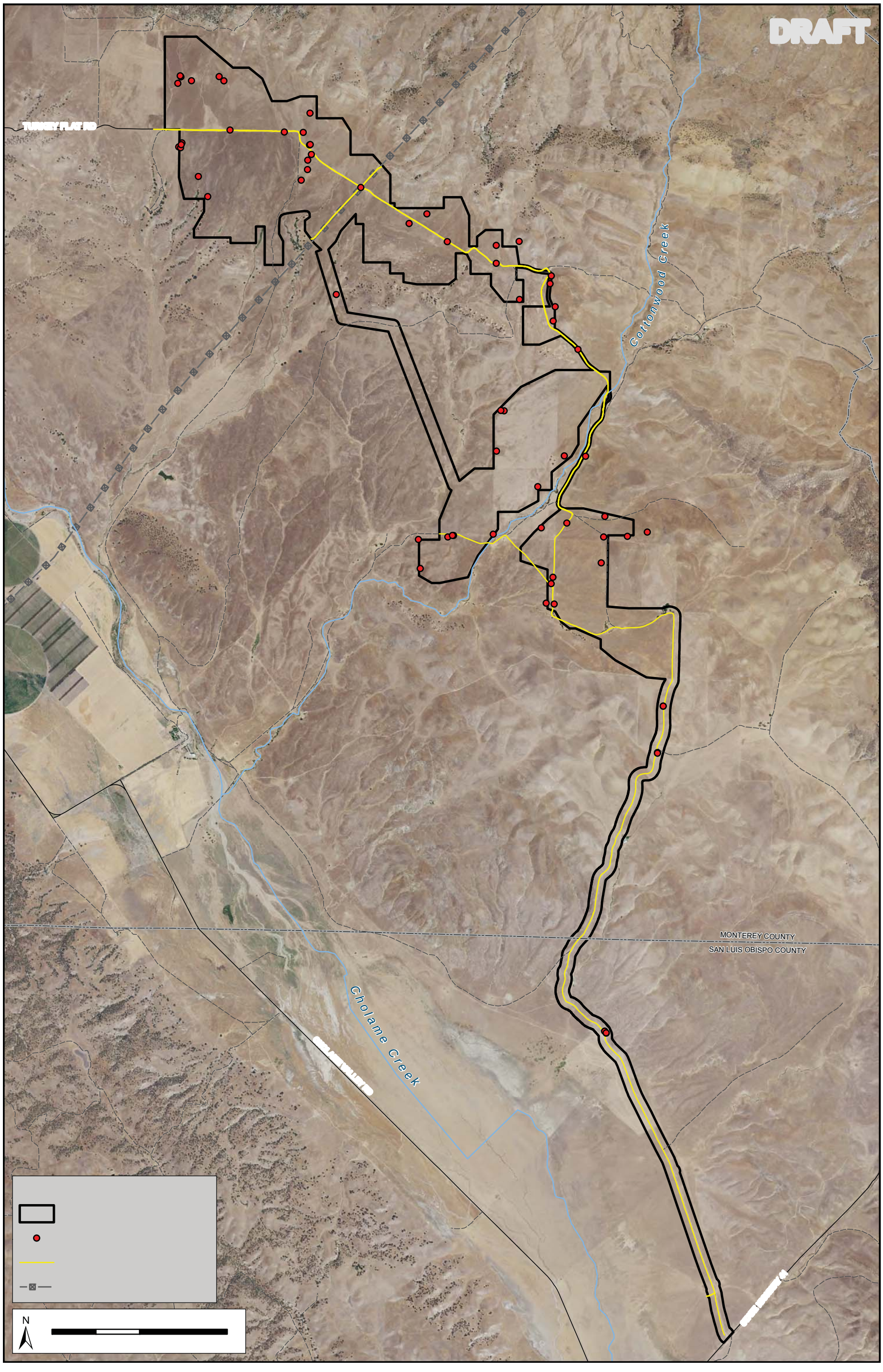
Direct Impacts to Golden Eagles discussion under Impact B-1:

> *Direct Impacts to Golden Eagle.* Direct impacts to golden eagles could include mortality or injury of individuals, as well as disruption of foraging and nesting behaviors and loss of foraging ~~and nesting~~ habitat, leading to reduced productivity and nestling survival…

Figure 4.4-8; revisions shown on the following page.

Raptors and Other Special Status Birds discussion under Impact B-1*:*

> Raptors and Other Special Status Birds. The open grassland and riparian areas of the BSA and Utility Corridor study area provide suitable breeding and foraging habitat for a variety of native birds, including golden eagles, bald eagles, California condors, and burrowing owls, which are discussed above. The site also provides suitable foraging and/or breeding habitat for other special-status raptors and bird species, including Swainson's hawks, white-tailed kites, and northern harriers, short-eared owl, long-eared owl, loggerhead shrike, tricolored blackbird, mountain plover, Oregon vesper sparrow (wintering only), and grasshopper sparrow, as well as several CDFW Watch List species including Cooper's hawk, ferruginous hawk, horned lark, prairie falcon, Lewis's woodpecker, yellow-billed magpie, and Lawrence's goldfinch. Many other native bird species that are protected under state and federal law during nesting could occur and nest on-site. Based on the condition of the site and observations of avian activity in 2012 and 2013, there is a high likelihood of birds nesting within the project site.



Burrowing Owl Survey Data

Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014

Figure 4.4-8

County of Monterey

Last paragraph of the *Raptors and Other Special Status Birds* discussion under Impact B-1:

> Solar facilities also present risk for bird collisions with solar panels. Birds migrating at night or moving between the perennial and ephemeral streams on the project site or the adjacent stock ponds would also be at an increased risk of collision with the solar panels as the panels might be mistaken for open sky or water. Based on the known distribution of the species in the project area, observations made during surveys, and fatality results emerging from other solar sites in California (Western EcoSystems Technology, Inc. 2014), some collision mortality is anticipated to occur. Applicant Proposed Measure (APM) 10 is proposed to monitor avian use of the site, conduct post-construction avian mortality monitoring, and identify conservation measures to minimize impacts. These efforts would be memorialized in a Bird and Bat Conservation Strategy (BBCS) prepared in collaboration with USFWS and would include an Avian Mortality Monitoring Program (AMMP) to monitor operational effects of the project on avian species. The development of a BBCS would further reduce potential operational impacts to avian species by providing additional data and additional conservation measures in response to that data.

Table 4.4-7:

Table 4.4-7
Impact Acreages for Upland Habitat within Four Distance Intervals from Potential California Tiger Salamander Breeding Ponds*

Distance from Breeding Pond	Solar Generating Facility Area			Access Road			Utility Corridor		
	Temp	Perm	Total	Temp	Perm	Total	Temp	Perm	Total
0 – 1,844 feet	24.34	61.54	88~~5~~.88	14.14	8.5	22.64	2.4	0.2	2.6
1,844 – 4,925 feet	83.25	659.32	742.57	21.72	12.11	33.83	3.5	0.3	3.8
4,925 – 6,125 feet	72.07	314.77	386.84	1.39	0.83	2.22	0.8	0.1	0.9

Fourth paragraph under *California Red-legged Frog* in Impact B-1:

> …Any permanent or temporary areas of impact within these polygons were identified, and acreages were calculated as impacts to California red-legged frog upland dispersal habitat. ~~However, those areas of the SDAs not permanently impacted (e.g., grassland habitat beneath the solar arrays) will be available for CRLF use after construction.~~ Although considered permanently impacted for the purposes of analysis mitigation, grassland habitat beneath the solar arrays is expected to be available for CRLF use after construction.

Figures 4.4-9 through 4.4-11; revisions shown on the following pages.

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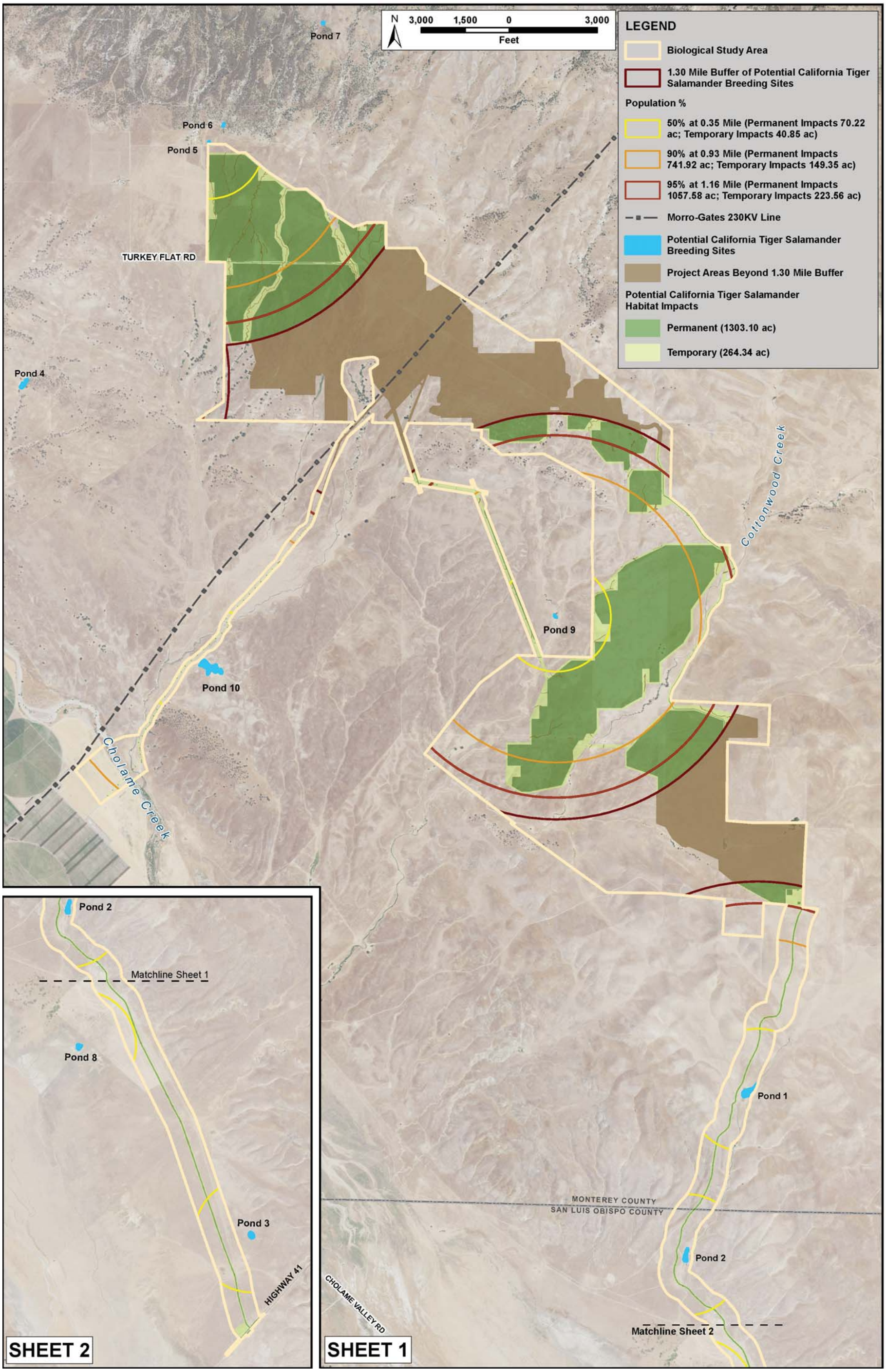
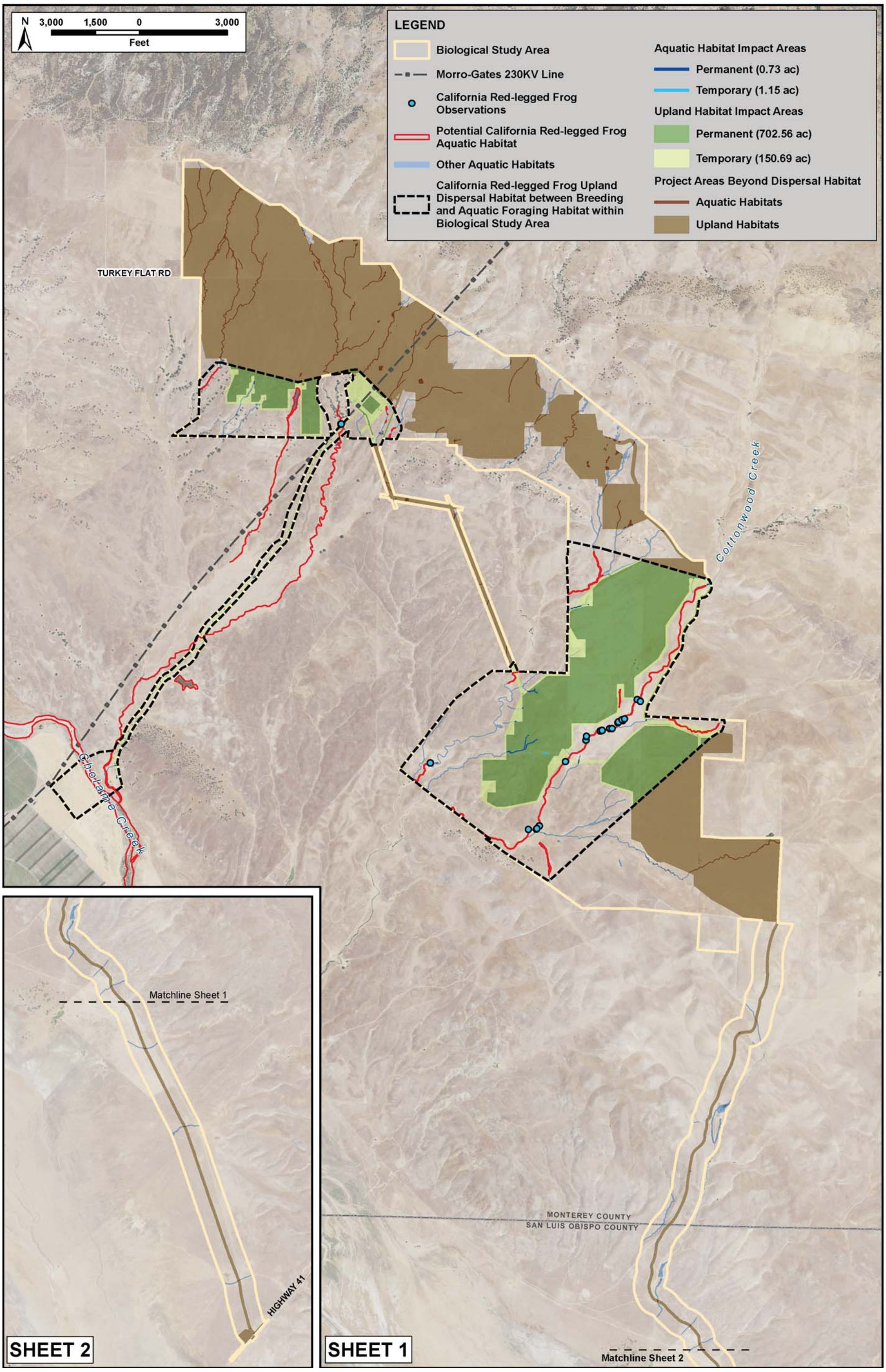


Potential California Tiger Salamander Habitat Impacts

Figure 4.4-9

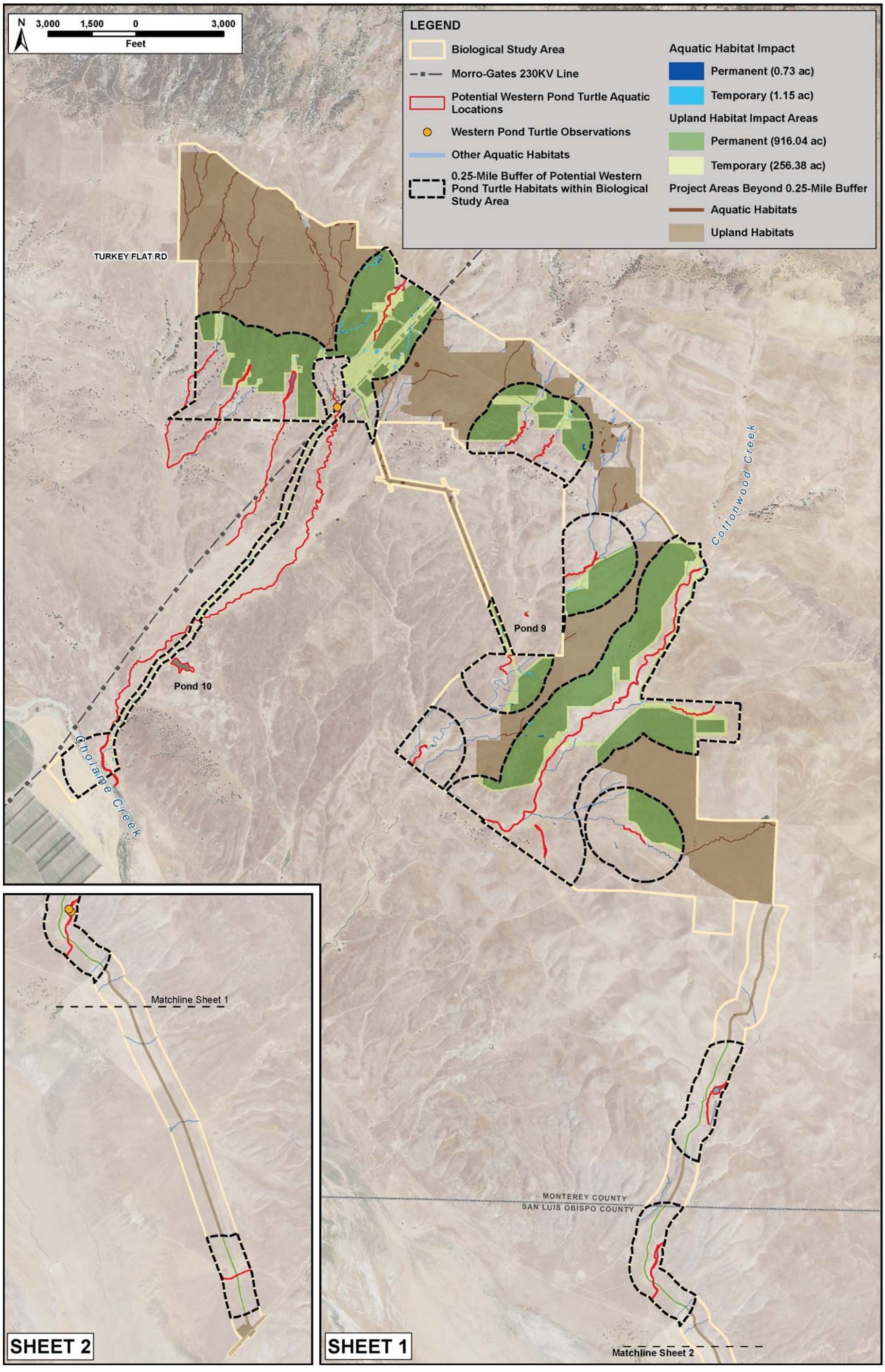
Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014



Potential California Red-legged Frog Habitat Impacts

Figure 4.4-10

Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014



Western Pond Turtle Habitat and Impacts

Figure 4.4-11

Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014

Indirect Impacts to California Red-legged Frog discussion under Impact B-1:

> *Indirect Impacts to California Red-Legged Frog.* Indirect impacts to CRLF could occur due to sedimentation of aquatic habitats or changes in water quality. Other indirect impacts may include changes to predation pressure or prey populations in upland dispersal habitat due to facility maintenance and management which may result in a potential for ~~include the~~ long-term decline in population viability within the project site over the life of the project.

Impact Significant for California Red-Legged Frog discussion under Impact B-1:

> *Impact Significant for California Red-Legged Frog*. Because of the regional rarity of this species, potential increased mortality of CRLF and degradation and loss of their ~~breeding and~~ non-breeding aquatic habitats and upland dispersal habitats would be considered *Class II, significant but mitigable*.

Indirect Impacts to Western Pond Turtle discussion under Impact B-1:

> *Indirect Impacts to Western Pond Turtle.* Indirect Impacts to western pond turtles could occur due to sedimentation of aquatic habitats or changes in water quality. Other indirect impacts may include changes to predation pressure or prey populations in upland dispersal habitat due to facility maintenance and management which may result in a potential for ~~include~~ long-term decline in population viability within the project site over the life of the project.

Western Spadefoot, San Joaquin Coachwhip, and Coast Horned Lizard discussion under Impact B-1:

> Western Spadefoot, San Joaquin Coachwhip, and Coast Horned Lizard. San Joaquin coachwhip has been observed in the project impact area, and western spadefoot and coast horned lizard have the potential to occur within the Solar Generating Facility Area, ~~and~~ along the Access Road and within the utility corridor. Up to 2,089 acres of upland habitat could be permanently affected, although this includes grassland habitat under the solar arrays that could be used by these species during the operational phase of the project;…

Indirect Impacts to Western Spadefoot, San Joaquin Coachwhip, and Coast horned lizard discussion in Impact B-1:

> *Indirect Impacts to Western Spadefoot, San Joaquin Coachwhip, and Coast horned lizard.* Indirect impacts to western spadefoot, San Joaquin coachwhip and coast horned lizard could potentially occur due to increased predation pressure, facilitated by the installation of structures that can be used as raptor perches and lighting that illuminates nocturnal species. Human activities could result in the introduction of non-native ant species that displace native ant species, which are the primary prey of coast horned lizards. Indirect impacts on western spadefoot could occur if surface flows are disrupted such that they affect wetland hydrology or ponding. Erosion and sedimentation from construction could affect the water quality of western spadefoot breeding pools. As a

result there may be ~~include~~ a potential long-term decline in population viability of these species within the project site over the life of the project. ~~Increased predatory pressure due to the availability of addition raptor perches would also be an indirect impact to these species.~~

Mitigation Measure B-1(a):

B-1(a) **Nested Compensatory Mitigation.** The applicant shall provide conservation easements or funds for acquisition of conservation easements as compensatory mitigation to offset impacts to vegetative communities and listed or special status plants and wildlife. The compensatory mitigation shall incorporate the conditions specified in incidental take permits that could be issued by CDFW and USFWS for this project, but shall meet the minimum standards specified in this measure. Compensatory mitigation shall be provided at a ratio of not less than those specified in mitigation measures B-1(e), B-1(j), B-1(n), B-1(v), B-1(z), and B-1(cc). Compensatory mitigation for multiple species may be combined to mitigate for impacts to multiple species simultaneously (i.e. nested compensatory mitigation). Areas proposed for preservation and serving as compensatory mitigation for special status <u>plant</u> species impacts must contain verified extant populations of the special status <u>plant</u> species that would be impacted by the project. <u>Areas proposed for preservation and serving as compensatory mitigation for special status wildlife species impacts must contain habitat value and function consistent with the conditions necessary to support viable populations of the special status species for which impacts are being mitigated (i.e. suitable vegetation communities, suitable breeding and nesting habitat and microhabitat conditions, including appropriate aquatic habitat for impacts to aquatic species or disturbances to aquatic habitat). Preservation lands must also be within known species ranges and known occurrences of local populations of the species for which impacts are being mitigated</u>. Compensatory mitigation areas shall have a restrictive covenant prohibiting future development/disturbance and shall be managed in perpetuity to encourage persistence and enhancement of the preserved target species. Compensatory mitigation lands cannot be located on land that is currently held publicly for resource protection. The compensatory mitigation areas shall be managed by a conservation lands management entity or other qualified easement holder…

Mitigation Timing discussion of Mitigation Measure B-1(a):

> **Mitigation Timing**: The applicant shall calculate the total acreages required to meet all compensatory mitigation obligations and submit these totals to the County prior to the issuance of grading permits. The applicant shall then obtain County approval of the location of mitigation lands, the holder of conservation easements, and the restrictions contained in the easement(s) created for the permanent protection of these lands. Documentation of recorded easement(s) shall be submitted to and approved by the County prior to the first of the project's final inspections, or within ~~12~~ 18 months after issuance of grading permits, whichever comes first. Verification of having met habitat mitigation requirements shall be reviewed and approved prior to final inspection.

Items 8 and 9 in Mitigation Measure B-1(b):

> 8. a contingency plan for mitigation elements that do not meet performance or final success criteria within described periods; the plan shall include specific triggers for remediation if performance criteria are not met and a description of the process by which remediation of problems with the mitigation site (e.g., presence of noxious weeds) shall occur; this contingency plan shall identify associated follow-up monitoring needs beyond the initial three years post-construction if remedial actions are required;
> 9. a requirement that the applicant shall be responsible for monitoring, as specified in the HMMP, for at least three years post-construction or until success of the compensatory lands (especially enhanced habitats) as described in the HMMP can be shown; during this period, regular reporting shall be provided to the County;

Mitigation Measure B-1(d):

> **B-1(d)** **Special Status Plant Species Avoidance and Minimization.** Federally- and state-listed plant species were not identified during 2013 protocol survey; however, if they are identified during future survey efforts within the project site, as conducted under B-1(a), complete avoidance shall be required. The project Proponent shall, in consultation with a qualified plant ecologist, design, construct, and operate the project to completely avoid

impacts to all populations of California jewelflower and San Joaquin woollythreads within the project impact area or within 50 feet of the project impact area. Impacts to all other (CRPR 1B and 4) special status plant species shall be avoided or minimized to the greatest extent feasible.

All known special status plant populations present within the limits of disturbance, or within 100 feet of the limits of disturbance shall be clearly depicted on Project plan sets. Prior to ground disturbance or vegetation removal in areas where special-status plant populations are to be avoided, the limits of work shall be visibly delineated with highly visible orange construction fencing or flagging. Visible delineation markers shall be required where special status plants to be avoided occur within 50 feet of general Project construction access areas and array installation, or within 100 feet of grading. The avoidance buffers shall be designated Environmentally Sensitive Areas (ESAs) and shall also be shown on Project plan sets. No equipment, vehicles, or personnel are permitted within ESAs without clear permission from a qualified biologist. All ESA fencing shall be maintained intact and in good condition throughout the duration of construction.

Mitigation Measure B B-1(e):

B-1(e) **Compensatory Mitigation for Special Status Plant Species.** Where direct impacts to special status plants cannot be avoided through redesign of project elements, ~~T~~to compensate for significant impacts on special status plant species, offsite habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acres preserved for each occupied acres affected) up to the significance threshold, that is more than 10% of the BSA population for CRPR 1B species, or more than 30% of the BSA population for CRPR 4 species. ~~(e.g.,~~ For example, for a CRP-ranked 1B species where 15% of the known BSA population ~~within 5 miles of the project impact area~~ is impacted, mitigation must be provided at 1:1 equivalent of 5% of that ~~regional~~ BSA population; for CRPR 4 species, all impacts beyond 30 percent of the known BSA population must be mitigated at a 1:1 ratio). Areas proposed for preservation and serving as compensatory mitigation for special status plant impacts must contain verified extant populations of the special status plant species, of similar

size and quality, and equal or greater density to the populations that would be impacted by the project, and should be consistent with the USFWS Recovery Plan for Upland Species of the San Joaquin Valley (USFWS 1998) if possible.

Preservation of offsite local populations within 5 miles of the project site would ensure that although the project could impact many individuals of CRPR 1B and 4 species, the project would not result in extirpation of these species from the region, and conserved populations would benefit long-term survival of these species statewide.

Locations of suitable mitigation sites must be identified within 5 miles of the BSA, and a technical report must be submitted demonstrating that the same species, approximate number of individuals, and same acreage of suitable habitat as would be impacted would be preserved. Suitable sites must have similar associate species, soils, and lack extensive populations of noxious weeds. Because populations of annual plants can fluctuate from year to year and are difficult to census over large areas, estimated population of the target species at mitigation sites may vary by up to 10 percent from impacted population estimates, provided calculations are based on population estimates conducted following 2009 CDFW-approved botanical survey protocol. The technical report must identify a species-by-species accounting of individuals and acreage impacted; locations, acreages, and individuals at each proposed mitigation site; botanical survey dates, personnel, mapping and population estimation techniques used to demonstrate site suitability as mitigation for special status plant impacts.

If possible, compensatory mitigation areas shall be located as close to the project site as feasible, but must also be protected from Project-related ground disturbance by a species- and impact-specific buffer developed by a qualified plant ecologist familiar with the project actions and with the habitats and plant species present on the project site. This buffer must take into account the following potential indirect impacts that could occur to the preserved populations:

1. potential shading, or alteration of existing light regimes, by nearby infrastructure;

2. potential for alteration of drainage patterns that could affect the hydrology of habitat occupied by the preserved population;
3. potential for overspray of herbicides used during site vegetation management; *and*,
4. potential for ongoing dust deposition on the preserved population, sufficient to coat foliage or reproductive structures and substantially interfere with photosynthesis or pollination.

Compensatory mitigation areas for special status plants can be combined with mitigation for multiple species as outlined in measure B-1(a) for nesting mitigation. Compensatory mitigation for special status plants shall be consistent with the conditions outlined in the above measure B-1(a), and be managed and monitored under the HMMP as outlined in the above measure B-1(b).

If sufficient acreage of suitable quality as previously discussed cannot be protected to conserve CRPR 1B species at a minimum one to one ratio for individuals and acreage impacted, and to conserve CRPR 4 species impacted beyond the 30% threshold, the deficit between available suitable mitigation sites and required mitigation numbers and acreage shall be made up through active restoration. A special status plant mitigation restoration plan will be prepared, if needed, to identify suitable locations, methods, and success criteria for special status plant mitigation through direct seeding and restoration of suitable unoccupied habitat. The plan must at a minimum require replacement through collection of seed and topsoil from impact sites, a monitoring and management component that outlines weed management and monitoring techniques, and success criteria that require successful establishment of the target species over the acreage and numbers impacted plants within five years.

If compensatory mitigation for special status plants will involve restoration, then the applicant shall scrape and collect topsoil and/or duff from impact areas that support rare plants, to be used in compensatory mitigation site restoration. Seed may also be collected from impact areas. Before project-related activities commence and once on-site special-status plants go to seed, areas of proposed site grading where special status plants have been recorded shall be scraped to collect the seeds and topsoil/duff for redistribution on compensatory lands. A qualified botanist

shall determine the most suitable locations for the topsoil/duff to be distributed on the compensatory lands, which may include but not be limited to creation of "wetland" depressions for those plants associated with wetlands, seeps, vernal pools or other mesic sites with clay soils, and determining correct soil types or topographic aspect to support each plant species. Scraping will not be conducted for soils in vernal pools that could contain federally listed invertebrates unless permitted to do so by the United States Fish and Wildlife Service (USFWS).

Sites used for restoration can be located on suitable habitat as outlined in measure B-1(a) for nested mitigation. Compensatory mitigation for special status plants shall be consistent with the conditions outlined in the above measure B-1(a), and be managed and monitored under the HMMP as outlined in the above measure B-1(b).

Mitigation Timing: A technical report as described above that identifies ~~Identification of~~ the total number of plants and acreage impacted and required for mitigation, sites identified for mitigation through conservation, and the special status plant restoration plan, if applicable, must be submitted to the ~~c~~County prior to the issuance of grading permits or prior to the issuance of the grading permit for each phase of the project, should the project be phased. The applicant shall then obtain County approval of the restoration plan, if applicable, and the location of mitigation lands, the holder of conservation easements, and the restrictions contained in the easement(s) created for the permanent protection of these lands. All other timing shall be consistent with measure B-1(a).

Fourth paragraph of Mitigation Measure B-1(g):

If a potential den is located outside of the disturbance footprint but within 500 feet of ground disturbing activities (including staging areas), the dens shall be avoided by installation of highly visible orange construction fencing a minimum of 100 feet around the den, designating the area an ESA. If the den is to be completely enclosed by fencing, the fencing must be installed in a manner that allows badger to move through the fencing at will, as determined by a qualified biologist.

Second paragraph of Mitigation Measure B-1(i):

> Dens with proper dimensions but no obvious sign will require further investigation. A remote motion-sensing camera will be deployed for at least ~~3~~five (5) days to document whether the hole is being used by kit fox. If, after ~~3~~five days, no kit foxes are detected and the hole has remained unchanged (no new tracks or excavations are observed), the den will be deemed unoccupied. The den will be considered occupied if a kit fox is photographed using the den frequently or if recent sign is found.

Item 7 in Mitigation Measure B-1(i):

> 7. All reductions to established restrictive buffer areas (i.e. changes in total area by reducing the radii of the buffer or modifying the circular shape of the buffer) or allowance of additional activities within the restrictive buffers based on specific circumstances (i.e. vegetation, topography, acclimation to existing conditions, or frequency, intensity, or duration of anthropogenic activities) must be authorized by an agency-approved kit fox biologist. Agency approval of the kit biologist must be provided in writing by the agencies after review of the biologist's resume. All authorized reductions to restrictive buffer areas must be reported in writing to the USFWS and CDFW per the requirements of the federal and/or state take authorizations if specified, or within 24 hours of implementing the change if not specified in the take authorization(s).

Mitigation Timing discussion of Mitigation Measure B-1(i):

> **Mitigation Timing**: The applicant shall submit documentation to the County that either no occupied SJKF dens were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of occupied or active breeding dens prior to ~~issuance of grading permits~~ the start of active construction. If occupied dens cannot be avoided the applicant will provide documentation that an Incidental Take Permit has been issued by CDFW (CESA/CFGC Sections 2081(b) and 2081(c)) and a Biological Opinion has been issued by the USFWS (FESA Section 7)

Mitigation Timing discussion of Mitigation Measure B-1(j):

> **Mitigation Timing**: Identification of the total acreage for mitigation of San Joaquin kit fox must be submitted to the county prior to the issuance of grading permits or prior to the issuance of the grading permit for each phase of the project, should the project be phased. All other timing shall be consistent with measure B-1(a).

Last sentence of Mitigation Measure B-1(k):

> The removal and disposal shall be conducted by an individual in possession of appropriate federal and state permits, if any are required, including but not necessarily limited to a state scientific collection permit pursuant to Fish and Game Code Section 2081.

Mitigation Timing and *Monitoring* discussions of Mitigation Measure B-1(l):

> **Mitigation Timing**: The applicant will contract for preconstruction burrowing owl surveys to be conducted prior to construction of the project and shall submit documentation to the County that surveys have been completed prior to the start of initial ground-disturbing activities. **Monitoring**: The County shall ensure that applicant is in compliance with all burrowing owl impact avoidance and minimization measures ~~the surveys are completed prior to issuing grading permits~~.

Mitigation Measure B-1(m):

> **B-1(m)** **Burrowing Owl Avoidance and Minimization Measures.** If suitable burrows for burrowing owls are found during preconstruction surveys on the project site; burrowing owl occupancy shall be determined through up to three additional focused surveys on potential burrows during the morning and/or evening survey windows as defined in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012; Appendix B). If the burrows are determined to be unoccupied, they shall be hand excavated by a qualified biologist in the same manner as described under B-1(g).
>
> If the presence of burrowing owls is confirmed, the following avoidance measures shall be implemented.
> 1. Occupied burrows shall not be disturbed during the nesting season (1 February through 31 August) unless

a qualified biologist verifies, through noninvasive methods, that either (1) the ~~birds have not begun egg-laying and incubation~~ burrow is not being used for breeding, (2) a previously active nest has failed and the burrow is no longer active ~~re-nesting is highly unlikely~~, or (3) all juveniles from the occupied burrow are foraging independently and capable of independent survival and the burrow is no longer an active nest burrow. Owls present after 1 February shall be assumed to be nesting unless evidence indicates otherwise. Nest-protection buffers described below shall remain in effect until 31 August or, based upon monitoring evidence, until the nest has failed or all juvenile owls are foraging independently as determined by a qualified biologist.

2. Site-specific, no-disturbance buffer zones shall be established and maintained between Project activities and occupied burrows, using the distances recommended in the CDFW guidelines (CDFG 2012; Appendix B):

Time of Year	Level of Disturbance		
	Low	Med	High
April 1 – Aug 15	200 meters	500 meters	500 meters
Aug 16 – Oct 15	200 meters	200 meters	500 meters
Oct 16 – Mar 31	50 meters	100 meters	500 meters

The appropriateness of using reduced buffer distances or burrow-specific buffer distances shall be established on a case-by-case basis by a qualified ornithologist ~~who may consult~~in consultation with CDFW, and shall depend on existing conditions (e.g., vegetation/topographic screening and current disturbance regimes). If necessary, buffer distances shall be carefully reassessed and relaxed or modified, based on future development plans (e.g., increased or intensified construction activities), by a qualified biologist who may consult with CDFW. The buffer zones shall be clearly delineated by highly visible orange construction fencing, which shall be maintained in good condition through construction of project or until construction activities are no longer occurring in the vicinity of the burrow.

3. During the nonbreeding season (generally 1 September–31 January), a qualified biologist may passively relocate burrowing owls found within

construction areas. Prior to passively relocating burrowing owls, a Burrowing Owl Exclusion Plan shall be prepared by a qualified biologist in accordance with Appendix E of the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012). The Burrowing Owl Exclusion Plan shall be submitted for review and approval to the CDFW and County ~~for review and approved by the County~~ prior to implementation.

The biologist shall accomplish such relocations using one-way burrow doors installed and left in place for at least two nights; owls exiting their burrows will not be able to re-enter. Then, immediately before the start of construction activities, the biologists shall remove all doors and excavate the burrows to ensure that no animals are present the burrow. The excavated burrows shall then be backfilled. To prevent evicted owls from occupying other burrows in the impact area, the biologist shall, before eviction occurs, (1) install one-way doors and backfill all potentially suitable burrows within the impact area, and (2) install one-way doors in all suitable burrows located within approximately 50 feet of the active burrow, then remove them once the displaced owls have settled elsewhere. When temporary or permanent burrow-exclusion methods are implemented, the following steps shall be taken:

a) Prior to excavation, a qualified biologist shall verify that evicted owls have access to multiple, unoccupied, alternative burrows, located nearby (within 250 feet) and outside of the projected disturbance zone. If no suitable alternative natural burrows are available for the owls, then, for each owl that is evicted, at least two artificial burrows shall be installed in suitable nearby habitat areas. Installation of any required artificial burrows preferably shall occur at least two to three weeks before the relevant evictions occur, to give the owls time to become familiar with the new burrow locations before being evicted. The artificial burrow design and installation shall be as described in the Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans per Appendix E of the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012).
b) Passive relocation of burrowing owls shall be limited in areas adjacent to Project activities that

have a sustained or low-level disturbance regime; this approach shall allow burrowing owls that are tolerant of Project activities to occupy quality, suitable nesting and refuge burrows. The use of passive relocation techniques in a given area shall be determined by a qualified biologist who may consult with CDFW, and shall depend on existing and future conditions (e.g., time of year, vegetation/topographic screening, and disturbance regimes).

Mitigation Measure B-1(p):

B-1(p) **Wildlife-Friendly Fence Design**. The fencing around the perimeter of the project site and SDAs shall be designed to allow passage by SJKF, American badger, and their prey species, by incorporating either standard deer fencing installed so that the larger openings occur at the bottom or chain link fencing with the bottom edge raised 5 to 7 inches above the ground for the entire length, to allow for unimpeded movement of SJKF and American badger through the site ~~openings in the perimeter fence that are a minimum of 4- inch by 4-inch for SJKF, with additional 6-inch by 7-inch openings to allow permeability by American badgers. The opening should be located at least every 500 feet along the perimeter fence.~~ Interior fencing may be designed such that it is installed four to five inches above ground.

Mitigation Timing: The Wildlife-friendly fence design plans shall be submitted by the applicant to the County, CDFW, and USFWS for review and approval~~ed~~ by the County prior to issuance of grading permits.

Second paragraph of Mitigation Measure B-1(q):

If active maternity roosts or hibernacula are found, the structure or tree occupied by the roost shall be fully avoided and not removed or otherwise impacted by Project activities during the maternity season. A minimum 100-foot ESA avoidance buffer shall be demarcated by highly visible orange construction fencing around active maternity roosts. No construction equipment, vehicles, or personnel shall enter the ESA without clear permission from the qualified biologist. Reduced avoidance buffers can be established through consultation with CDFW. ESA fencing shall be maintained in good condition for the

duration of the maternity season. The roost shall be removed only after the maternity season has ended, and shall be removed under the direction of a qualified biologist.

Mitigation Timing discussion of Mitigation Measure B-1(q):

Mitigation Timing: The applicant shall submit documentation to the County that either no special status bats were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of impacts to special status bats prior to ~~issuance of grading permits~~ the start of construction activity.

Mitigation Measure B-1(r):

B-1(r) **Preconstruction Surveys for Raptors and Other Special Status Bird Species.** Not ~~less~~ more than 30 days prior to initiation of construction activities (incl. mobilization, staging and ESA fence installation) during the breeding season (1 February to 15 September), a qualified biologist shall conduct preconstruction surveys for nesting raptors. ~~and~~ Not more than 14 days prior to initiation of construction activities (incl. mobilization, staging and ESA fence installation) during the breeding season (1 February to 15 September), a qualified biologist shall conduct preconstruction surveys for nesting MBTA/state regulated birds. The survey for the presence of nesting raptors, including golden eagles, shall cover all areas within of the disturbance footprint plus a 1-mile buffer where access can be secured. The survey area for all other nesting bird species shall include the disturbance footprint plus a 300-foot buffer. The surveys shall be repeated during the breeding season for each subsequent year of construction to ensure that ongoing construction activities avoid impacts to nesting birds.

If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer ranging from 50 to 300 feet based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest, and 0.5 mile for fully protected and state-listed raptors (such as white-tailed kite, bald eagle and Swainson's hawk). The objective of the buffer shall be to reduce disturbance of nesting birds. All buffers shall be marked using high-visibility flagging or fencing, and, unless approved by the qualified biologist,

no construction activities shall be allowed within the buffers until the young have fledged from the nest or the nest fails.

For golden eagle nests identified during the preconstruction surveys, an avoidance buffer of up to one mile shall be established on a case-by-case basis in consultation with the USFWS, and shall depend on the existing conditions and disturbance regime, relevant landscape characteristics, and the nature, timing, and duration of the expected development disturbance. The buffer shall be established between 1 February and 31 August; however, buffers may be relaxed earlier than 31 August if a qualified ornithologist determines that a given nest has failed or that all surviving chicks have fledged.

Mitigation Timing: The applicant shall submit documentation to the County that either no raptors or other special status birds were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of impacts to raptors and other special status birds prior to ~~issuance of grading permits~~ the start of construction activity. If results of the preconstruction surveys for raptors or other special status birds identify any state listed or state fully protected species, a preconstruction survey report will also be provided to CDFW prior to the start of construction. **Monitoring**: The County shall ensure that the applicant is in compliance with raptor and special status bird impacts avoidance and minimization measures.

Mitigation Timing discussion of Mitigation Measure B-1(s):

Mitigation Timing: The applicant shall submitted documentation to the County, that avian impact avoidance and minimization features have been incorporated into the project design prior to issuance of ~~grading~~ construction or electrical permits that incorporate the guidelines permits. Biological monitoring reports (see B-1[ee]) will include discussions of monitoring of vertical pipes and pilings and that these features were capped to ensure avoidance of impacts to avian species during construction. **Monitoring**: The County shall ensure that all avian impact avoidance and minimization design features have been included in project design by the applicant.

Mitigation Timing discussion of Mitigation Measure B-1(t):

> **Mitigation Timing**: The applicant shall submit documentation to the County that no aquatic special status species were recorded on the project site, or that appropriate impact avoidance measures have been implemented to ensure avoidance of aquatic special status species prior to ~~issuance of grading permits~~ the start of construction activity.

Mitigation Timing discussion of Mitigation Measure B-1(u):

> **Mitigation Timing**: The applicant shall submit preconstruction survey documentation to the County that no western spadefoot were recorded on the project site, or that appropriate avoidance measures have been implemented to ensure avoidance of impacts to western spadefoot prior to ~~issuance of grading permits~~ the start of construction activity. **Monitoring**: The County shall ensure that the applicant is in compliance with western spadefoot impact avoidance and minimization measures.

Mitigation Measure B-1(w):

> **B-1(w)** **California Tiger Salamander and California Red-Legged Frog Relocation Sites.** Prior to the initiation of any other protective measures, a qualified biologist (i.e., biologist approved by USFWS and/or CDFW to translocate CTS and CRLF) shall, in consultation with USFWS and/or CDFW as applicable, identify appropriate relocation sites for any adult, juvenile, and larval CTS and CRLF that may be observed during the pre-construction survey or monitoring activities described below and need to be moved from within the limits of direct impact disturbance. Relocation or other take (e.g. entrapment) of CTS and CRLF can only be conducted by an authorized biologist and the project must have been issued the requisite take authorizations from CDFW and/or USFWS as applicable before any relocation activity can commence.
>
> **Mitigation Timing**: The applicant shall submit to the County documentation that CDFW and/or USFWS approved relocation sites for CTS and CRLF have been identified prior to issuance of grading permits. **Monitoring**: The County shall ensure that CDFW- and USFWS-approved relocation sites have been identified by the applicant.

Second paragraph of Mitigation Measure B-1(y):

> Preconstruction surveys shall be conducted for CRLF prior to initiation of construction activities, including mobilization and staging. All suitable aquatic habitat within the disturbance footprint plus 200 feet of adjacent upland habitat shall be surveyed. CRLF surveys shall consist of one nighttime survey and one daytime survey conducted by a qualified biologist within a 48-hour period before the onset of construction activities. If CRLF of any life stage are found, they shall be moved to the designated relocation sites identified under B-1(~~p~~w).

Mitigation Timing discussion of Mitigation Measure B-1(y):

> **Mitigation Timing**: The applicant shall submit documentation to the County that no aquatic special status species were recorded on the project site, or that appropriate impact avoidance measures have been implemented to ensure avoidance of aquatic special status species prior to ~~issuance of grading permits~~ the start of construction activity.

Mitigation Timing discussion of Mitigation Measure B-1(z):

> **Mitigation Timing**: Identification of the total acreage for mitigation for California red-legged frog must be submitted to the county prior to the issuance of grading permits, or prior to the issuance of the grading permit for each phase of the project, should the project be phased. All other timing shall be consistent with measure B-1(a).

Second paragraph of Mitigation Measure B-1(aa):

> Within 0.35 mile of the identified suitable breeding habitat of the project site, where installation of a silt fence is not feasible, ground-disturbing construction activities shall be limited to the non-breeding season to the extent practicable, and nighttime construction activities shall be minimized during the breeding season. In particular, to minimize impacts to California tiger salamanders that are dispersing to and from breeding sites during the breeding season (October through March), ground-disturbing construction activities along the access road, utility corridor, and transmission line shall be limited to the non-breeding season, to the extent practicable…

Mitigation Timing discussion of Mitigation Measure B-1(bb):

> **Mitigation Timing**: The applicant shall include details on special status animal species general avoidance measures and construction BMPs in biological monitoring status reports that are to be submitted to the County as outlined in B-1(~~u~~ee).

Mitigation Timing discussion of Mitigation Measure B-1(cc):

> **Mitigation Timing**: Identification of the total acreage for mitigation for California tiger salamander must be submitted to the county prior to the issuance of grading permits or prior to the issuance of the grading permit for each phase of the project, should the project be phased. All other timing shall be consistent with measure B-1(a).

Mitigation Timing discussion of Mitigation Measure B-1(ee):

> **Mitigation Timing**: The applicant shall submit documentation to the County demonstrating that the applicant has contracted qualified biologists to conduct biological monitoring and that these biologists have been approved by CDFW and USFWS (as required) prior to issuance of a grading permit. The applicant shall also report results of daily biological monitoring activity to the County (through the Environmental Compliance Manager) on a monthly and annual basis through the preparation and submission of ~~and prepare and submit~~ monthly summary monitoring reports, and annual monitoring reports ~~to the County~~. During construction, the annual written report shall describe the status of project construction, as well as the compliance and current implementation status of construction-related biological mitigation measures and general biological measures. The report shall be submitted to the County no later than 15 February of the following year.

Item 7 in Mitigation Measure B-1(ff):

> 7. To prevent entrapment of special-status wildlife, all excavations (e.g., steep-walled holes, or trenches) more than six inches deep shall be covered with plywood or similar materials when not in use or fitted with at least one escape ramp constructed of earth dirt fill, wooden planks, or another material that wildlife could ascend. During the month of May excavations and trenches two-feet deep or greater shall be covered with plywood or

> similar materials when not in use, and any excavations or trenches that cannot be covered when not in use shall be monitored daily to prevent entrapment of pronghorn calves. All excavations more than six inches deep shall be inspected daily for entrapped wildlife before construction activities begin and once immediately before being covered with plywood. Before excavations are filled, they shall be thoroughly inspected for entrapped wildlife. Any wildlife discovered shall be allowed to escape unimpeded before field activities resume or shall be removed from excavated areas by a qualified biologist and released at a safe nearby location.

Item 19 of Mitigation Measure B-1(ff):

> ~~19. During construction, an annual written report shall be prepared describing the status of Project construction, as well as the compliance and current implementation status of construction-related biological mitigation measures and general biological measures. The report shall be submitted to the County no later than 15 February the following year.~~

Mitigation Timing discussion of Mitigation Measure B-1(ff):

> **Mitigation Timing**: The applicant shall include details on special status animal species general avoidance measures and construction BMPs in biological monitoring status reports that are to be submitted to the County as outlined in B-1(~~u~~ee).

Mixed Oak Woodland: Permanent Impacts discussion in Impact B-2:

> …project activity could result in permanent impacts to up to 0.~~0~~1 acres of oak woodland from potential linear.

Table 4.4-8; revisions shown on the following page.

Last paragraph of the *Riparian Habitat and Streams: Temporary Impacts* discussion in Impact B-2:

> Temporary impacts may also be caused by frac-out events that could occur during directional drilling activity under stream and wetland features. If directional drilling work resulted in a frac-out, in which fracturing of the ground result in drilling fluid escaping to the surface, or water draining out of the wetland feature, this would result in direct, but temporary impacts to wetland features. If directional drilling is included in project construction activity, the applicant would be required to acquire a CDFW Streambed Alteration Agreement (SAA) for potential impacts to jurisdictional features in the event of a frac-out, and conditions of the SAA would be designed to address those potential impacts.

Table 4.4-8
Summary of Impacts on Natural Communities in the project Impact Area[1]

	Impacts (Acres)							
	Total Project Impact Area		Access Road		project site		Utility Corridor	
Habitat Types	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Agricultural	**0.06**	**0.63**	0	0	0	0	0.06	0.63
Alluvial Intermittent Stream	**0**	**0.1**	0	0	0	0.0	0	0.1
Cottonwood Alluvial Riparian Woodland	**0**	**0**	0	0	0	0	0	0

Perennial Stream Impacts discussion under Impact B-2:

Perennial Stream Impacts. A new ~~double box culvert~~ clear-span bridge is proposed for a crossing of Cottonwood Creek (a perennial stream that supports perennial marsh wetland vegetation [Figure 4.4-2b]) within the project site. Construction of this ~~culvert~~ bridge, which would require rock slope protection on streambanks associated with bridge abutments, would constitute a permanent impact to the stream in this location. However, due to the clear-span design, the stream channel bottom would remain a native mud-bottomed habitat. Temporary impacts would be caused by the access and activities, including localized dewatering, required to construct this crossing. The project would avoid the remainder of Cottonwood Creek. Elsewhere, perennial streams would be impacted by improvements to and widening of the existing access road and main ranch road. In these areas, pipe culverts large enough to handle storm flows to at least existing channel capacity and avoid scour~~,~~ or channel downcutting, would be installed, along with associated erosion control measures, such as rock weirs and cross vanes, where necessary. Permanent impacts related to these improvements would be confined to the area affected by the wider road and culvert, as well as any erosion control improvements such as weirs. Temporary impacts would be restricted to the areas where construction access is needed to install the improvements.

Mitigation Measure B-2(a):

B-2(a) **Valley Needlegrass Grassland and Wildflower Field Habitat Mitigation.** The applicant shall mitigate permanent impacts to these habitats caused by grading, construction of new road surface, array construction, and structure and building placement by preserving and managing valley needlegrass grassland at a 2:1 mitigation ratio and wildflower field at a 1:1 mitigation ratio (mitigation area: impact area) for total acreages of these habitats as presented in Table 4.4-8.

This compensatory mitigation may be fulfilled in conjunction with other mitigation requirements, such as those for special status plant or animal species affected by the project and should be consistent with the conditions outlined in measure B-1(a), and shall be managed in accordance with the HMMP described in mitigation measure B-1(b).

Areas proposed for preservation and serving as compensatory mitigation for sensitive vegetation types must contain verified extant populations of the vegetation that would be impacted by the project. If existing floristic data has sufficient detail to classify and quantify wildflower fields to alliance level using currently accepted vegetation classification protocols outline in the Manual of California

Vegetation, 2nd Edition (Sawyer et al. 2009) and the CDFW VegCAMP program, this data may be used to determine alliances and acreages required for compensatory mitigation. To demonstrate consistent quality and composition between mitigation sites and impacted sites, baseline plot data must be collected. Data collection must follow an accepted vegetation sampling methodology for cover, species composition, and species richness, and plot size must be appropriate for the community sampled. Guidance on minimum plot size is provided in the CDFW/CNPS Vegetation Rapid Assessment Method. Compensatory mitigation sites for sensitive vegetation must have similar or better native species cover, comparable species richness and composition, and meet alliance classification membership rules of the alliance, if any, for which mitigation is intended. The total number of baseline and mitigation site plots required to demonstrate consistency shall be determined by a qualified ecologist skilled in design of vegetation field sampling studies.

Fourth paragraph of Mitigation Measure B-2(c):

The PVIMP shall be submitted to the County, CDFW, and USFWS prior to the notice to proceed, and shall address the entire project site. This submittal shall further describe the process by which the PVIMP shall be implemented (e.g., the entity responsible for implementing it, funding mechanisms, and reporting procedures). The PVIMP shall include, but is not limited to, the following…

Mitigation Measure B-2(f):

B-2(f) **Stream Channel Avoidance and Minimization.** To prevent high-velocity water flow from causing bank downcutting at downstream locations, any improvements related to road realignment, widening, or the ability of the road to convey heavy equipment for construction shall be designed to ~~handle heavy storm flows (up to the 25-year flood event or more), such that undesirable velocities and channel destabilization downstream of the crossing shall be avoided~~ minimize alterations to natural flow patterns and capacity, consistent with the design-level drainage analysis.

…A single ~~crossing, including a~~ new ~~double box culvert or free~~clear-span bridge~~,~~ shall be installed ~~in~~over Cottonwood Creek…

Mitigation Timing section of Mitigation Measure B-2(g):

Mitigation Timing. The Frac-out Plan shall be submitted by the applicant to the County~~, CDFW, and USACE and approved by the County~~ for approval prior to issuance of grading permits.

Mitigation Measures B-3(b):

B-3(b) **Well Placement Hydrology Study.** To mitigate for potential impacts from groundwater pumping that may affect the active hydrology at New Well 1, the applicant shall contract a qualified hydrologist to perform a detailed, area-specific study for all newly proposed wells, prior to well construction. The Well Placement Hydrology Study (WPHS) shall determine the potential vulnerability and the expected effects of any new well (including calculated acreages of impacts), as well as the anticipated construction water demands on nearby wetlands and the downstream waters fed by such wetlands. To the extent feasible, all new wells shall be sited with sufficient setback from groundwater-fed wetlands such that temporary impacts to W19 and other wetlands shall be avoided or minimized. If a new well must be sited in an area where impacts to W19 or other wetlands cannot be ruled out (or limited to no more than one rainy season) by the hydrologic study, mitigation measure B-3(c) shall apply, and the applicant shall consult with CDFW, USACE and RWQCB, as applicable, to determine if permitting is required.

Mitigation Timing section of Mitigation Measures B-3(d):

Mitigation Timing: The applicant shall obtain County approval of the location of mitigation lands, the holder of conservation easements, and the restrictions contained in the easement(s) created for the permanent protection of these lands. Documentation of recorded easement(s) shall be submitted to and approved by the County consistent with the timing outlined in mitigation measureB-1(a). The applicant shall consult with CDFW on the requirement for a Lake and Streambed Alteration Agreement (LSAA; Fish and Game Code 1600) for waters subject to CDFW jurisdiction.

First paragraph under Impact B-4:

> Penrod et al.'s (2010) regional corridor analysis identified three "target areas," or core areas identified as endpoints that connect core populations. In this instance, the endpoints identified are the Carrizo Plain (at the south end of the species' range) and three locations to the north. The three northern locations, which support stable populations of kit fox, are the Salinas River Watershed, the Palo Prieto/Cholame Valley, and Western Kern County (Antelope Valley) (see Figures ~~9 and 10~~ 12 and 13 in Appendix E.1). The project is located within the Palo Prieto/Cholame Valley target area.

Pronghorn Antelope Movement and Calving Grounds discussion under Impact B-4:

> …Because construction is anticipated to occur for up to 24 ~~18~~ months, there is a high likelihood that pronghorn use along the Access Road and adjacent areas would be adversely affected…

Figure 4.4-12; revisions shown on following page.

Mitigation Timing section of Mitigation Measure B-4(b):

> **Mitigation Timing:** The applicant shall submit documentation that to the County and CDFW that pronghorn-friendly fence design has been incorporated into the HMMP ~~prior to issuance of a grading permit~~ concurrently with submittal of the HMMP as noted in Measure B-1(b) (prior to the first of the project's final inspections, or within 12 months after issuance of grading permits, whichever comes first).

Section paragraph of Section 4.4.3(c) (Cumulative Impacts):

> Geographic Extent. The geographic scope of this cumulative impact analysis includes the interior coats range within Monterey and San Luis Obispo Counties, including the Cholame Valley, Cholame Hills, Temblor Hills, Carrizzo Plain, and portions of the Diablo Range, which encompasses roughly 10,000 square miles…

Fourth paragraph of Section 4.4.3(c) (Cumulative Impacts):

> Proposed solar development within the Carizzo Plain area combined with other solar development in the region (including the proposed project) does have the potential to result in cumulative impacts to sensitive species, especially high risk species such as the San Joaquin kit fox ~~and blunt-nosed leopard lizard~~, particularly if suitable mitigation were not employed to offset and mitigate potential impacts…

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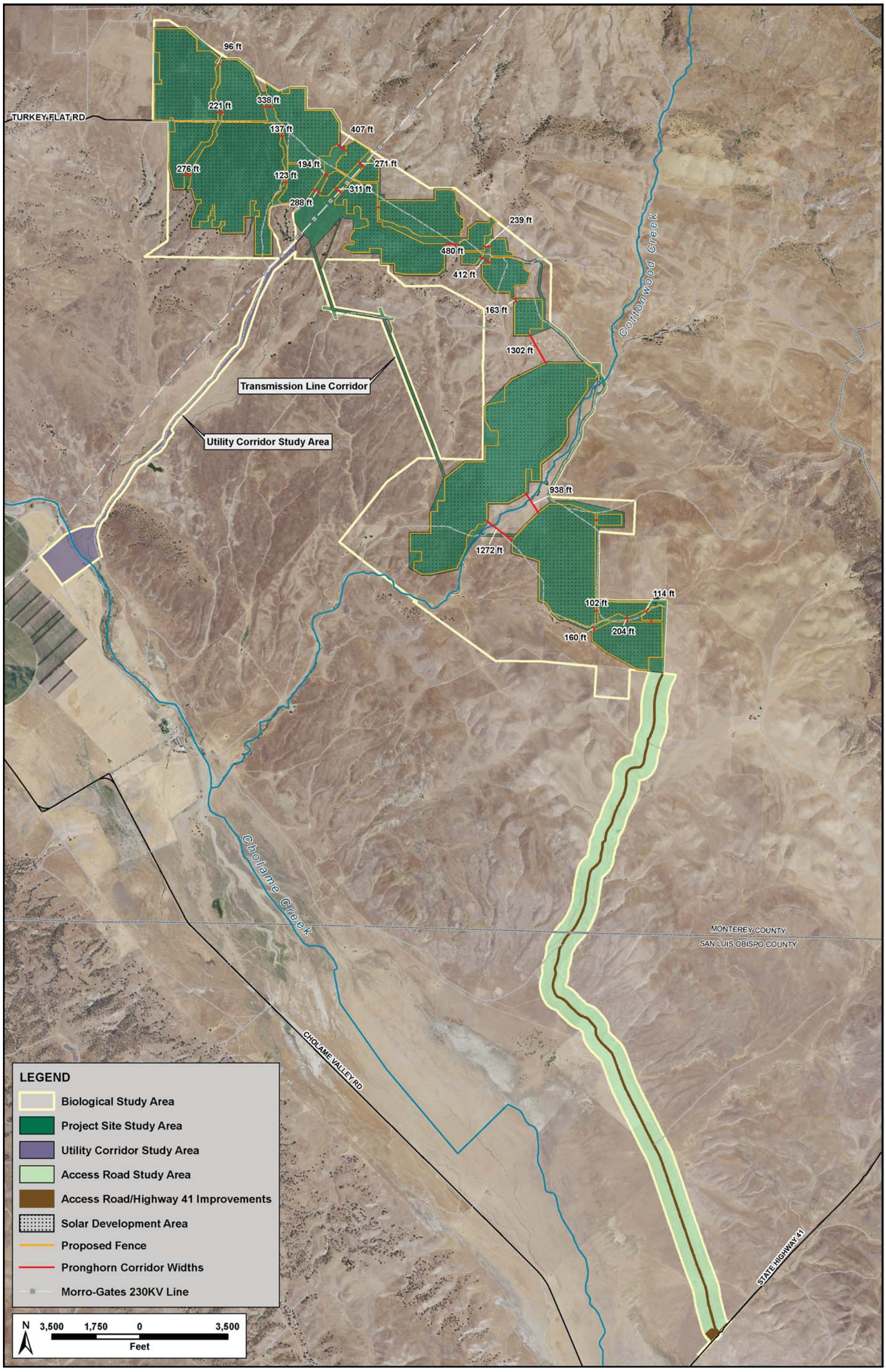

Pronghom Corridor Widths

Source: Amy Sparks (H.T. Harvey & Associates) and First Solar, 2014

Figure 4.4-12

Section 4.5 Cultural and Paleontological Resources

Table 4.5-1:

Table 4.5-1
Impact and Mitigation Summary: Cultural and Paleontological Resources

Impact	Mitigation Measures	Residual Impact
Impact CR-1 Construction and decommissioning of the proposed project would involve surface excavation, which has the potential to unearth or adversely impact identified NRHP/CRHR-eligible prehistoric or historic archaeological resources. Impacts would be Class II, significant but mitigable. [Threshold 1]	**CR-1(a) Archaeological Site Avoidance.** Wherever feasible, direct impacts on NRHP/CRHR-eligible archaeological sites shall be avoided. Avoidance shall be accomplished by preventing any direct ground disturbance of the resource. If impacts to all or any of these resources cannot be avoided, as determined by the applicant with concurrence from RMA – Planning, the boundaries of the NRHP/CRHR-eligible sites shall be marked in the field by a Registered Professional Archaeologist prior to ground disturbance with exclusionary fencing, lath, flagging tape, or some other combination of material that is highly visible, durable, and which construction and management personnel can recognize as marking an exclusion zone where no earth disturbance or other activity shall occur. ~~If avoidance of any direct disturbance is deemed feasible by RMA – Planning based on the sensitivity of the resource relative to the severity of impact, the boundaries of the NRHP/CRHR eligible sites shall be marked in the field by a Registered Professional Archaeologist prior to ground disturbance with exclusionary fencing, lath, flagging tape, or some other combination of material that is highly visible, durable, and which construction and management personnel can recognize as marking an exclusion zone where no earth disturbance or other activity shall occur.~~ Exclusion zones shall be inspected weekly by an archaeological monitor or other environmental inspector to ensure that they are being honored, remain effective, and in place. If complete avoidance is not feasible, mitigation measures CR-1(b) and CR-1(c) shall apply.	Implementation of Mitigation Measures CR-1(a) through CR-1(f) would reduce impacts to historic and archaeological cultural resources to a less than significant level.

Mitigation Measure CR-1(a):

> **CR-1(a)** **Archaeological Site Avoidance**. Wherever feasible, direct impacts on NRHP/CRHR-eligible archaeological sites shall be avoided. Avoidance shall be accomplished by preventing any

direct ground disturbance of the resource. If impacts to all or any of these resources cannot be avoided, as determined by the applicant with concurrence from RMA – Planning Department, the boundaries of the NRHP/CRHR-eligible sites shall be marked in the field by a Registered Professional Archaeologist prior to ground disturbance with exclusionary fencing, lath, flagging tape, or some other combination of material that is highly visible, durable, and which construction and management personnel can recognize as marking an exclusion zone where no earth disturbance or other activity shall occur. ~~If avoidance of any direct disturbance is determined feasible by RMA – Planning based on the sensitivity of the resource relative to the severity of impact, the boundaries of the NRHP/CRHR-eligible sites shall be marked in the field by a Registered Professional Archaeologist prior to ground disturbance with exclusionary fencing, lath, flagging tape, or some other combination of material that is highly visible, durable, and which construction and management personnel can recognize as marking an exclusion zone where no earth disturbance or other activity shall occur.~~ Exclusion zones shall be inspected weekly by an archaeological monitor or other environmental inspector to ensure that they are being honored, remain effective, and in place. If complete avoidance is not feasible, Mitigation Measures CR-1(b) or CR-1(c) shall apply.

Section 4.6 Geology/Soils

Table 4.6-1 (note mitigation measure not shown in its entirety, as this text has not been revised):

Table 4.6-1
Impact and Mitigation Summary: Geology/Soils

Impact	Mitigation Measures	Significance After Mitigation
Impact GEO-2 The solar ~~development~~ generating facility area is relatively flat and is subject to low levels of landslide potential. However, the utility corridor contains steeper slopes that may be subject to moderate landslide potential. In addition, the project site contains several deeply incised channels that are subject to moderate landslide potential. Landsliding has the potential to damage and destroy roadways, structures and other improvements as well as alter or block drainage channels, causing further damage and erosion. This is a Class II, significant but mitigable, impact. [Threshold 1]	**GEO-2 Landslide Avoidance and Hazard Minimization.**	Impacts would be less than significant after mitigation.

Table 4.6-1
Impact and Mitigation Summary: Geology/Soils

Impact	Mitigation Measures	Significance After Mitigation
Impact GEO-3 Project construction, operation, and decommissioning could result in soil erosion or loss of topsoil. However, compliance with the NPDES construction stormwater program and implementation of measures promoting infiltration, as identified in a final, design-level drainage analysis, would minimize erosion. Impacts would be Class III, less than significant. [Threshold 2]	Compliance with Monterey County requirements for erosion control and grading would partially reduce impacts. In addition, compliance with recommendations in a required final, design-level drainage analysis, and compliance with the project's construction SWPPP, as described in Section 4.9, *Hydrology and Water Quality,* as well as proposed project design features (i.e., APMs), would reduce erosion impacts to a less than significant level. No mitigation is required.	Impacts would be less than significant without mitigation.

Last paragraph on page 4.6-3:

> The ~~solar development area~~ project site is located within the U.S. Geological Survey (USGS) Cholame Valley and Dark Hole quadrangles.

San Andreas Fault discussion in Section 4.6.2(b) (Geologic Hazards):

> The proposed approximately 155-acre utility corridor would cross the San Andreas Fault, while the proposed solar ~~development~~ generating facility area would be located approximately two miles northeast of the fault trace.

Gold Hill Thrust Fault discussion in Section 4.6.2(b) (Geologic Hazards):

> This fault is located approximately 0.25 miles southwest of the solar ~~development~~ generating facility area and would cross the proposed utility corridor.

Jack Ranch Fault discussion in Section 4.6.2(b) (Geologic Hazards):

> This fault is located approximately 1.0 mile southwest of the solar ~~development~~ generating facility area and would cross the proposed utility corridor.

State discussion in Section 4.6.2(c) (Regulatory Setting):

> The solar ~~development~~ generating facility area is located in a "low" liquefaction area, while portions of the proposed utility corridor and access road are located in a "moderate" liquefaction area [refer to Section 4.6(b) (*Land Subsidence and Liquefaction*)]. However, the entire project area is located in a "low" landslide hazard area according to Monterey County resource maps [refer to Section 4.6(b) (*Landslides*)].

First paragraph under Impact GEO-1:

> The solar ~~development~~ generating facility area is located in a seismically active region and could be subject to fault rupture and strong seismic groundshaking during the project's design lifetime (anticipated to be 30 to 40 years).As shown in Figure 4.6-1, the proposed utility corridor would cross three fault lines, including the active San Andreas Fault and two inactive faults. It is thought that this particular section of the San Andreas Fault is likely to have a major earthquake in the next 30 years (2007 Working Group on California Earthquake Probabilities, 2008). ~~As such~~The proposed project, due to its proximity to existing faults, ~~the site~~ is likely to experience significant surface rupture and groundshaking activity as a result of seismic activity along the San Andreas Fault during the life of the project. The proposed project would include the construction of PV modules, electrical transformers and other equipment, a transmission line, two substations, a switching station, security fencing, internal access roads, and an operations and maintenance (O&M) building, in addition to the utility corridor (which crosses a portion of ~~that would cross~~ the San Andreas Fault trace).

Second paragraph under Impact GEO-1:

> Furthermore, the solar ~~development~~ generating facility area is located in an area mapped as having a low liquefaction potential, according to Exhibit 4.4.3 in the *Monterey County General Plan*.

Impact statement GEO-2:

> **Impact GEO-2 The solar ~~development~~ generating facility area is relatively flat and is subject to low levels of landslide potential…**

Impact statement GEO-3:

> **Impact GEO-3 Project construction, operation, and decommissioning could result in soil erosion or loss of topsoil. However, compliance with the NPDES construction stormwater program and implementation of measures promoting infiltration, as identified in a final, design-level drainage analysis, would minimize erosion. Impacts would be Class III, *less than significant*. [Threshold 2]**

Second paragraph under Impact GEO-3:

> The operation of the project could also result in localized increases in erosion due to the introduction of new physical elements and impervious surfaces on the solar ~~development~~ generating facility area.

Fourth paragraph under Impact GEO-3:

> Implementation of a NPDES-compliant construction Stormwater Pollution Prevention Plan (SWPPP), as required by the Clean Water Act…

Fifth paragraph under Impact GEO-3:

> ~~However, mitigation is required to reduce erosion impacts to a less than significant level.~~ As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

Mitigation Measure discussion under Impact GEO-3:

> Mitigation Measures. Compliance with Monterey County requirements for erosion control and grading would partially reduce impacts. In addition, compliance with recommendations in a required final, design-level drainage analysis, and compliance with the project's construction SWPPP, as described in Section 4.9, *Hydrology and Water Quality,* as well as proposed project design features (i.e., APMs), would reduce erosion impacts to a less than significant level. No mitigation is required.

Section 4.7 Greenhouse Gas Emissions/Climate Change

Section 4.7.2(d) (Local Effects of Climate Change):

> **d. Local Effects of Climate Change.** While the above discussion identifies the possible effects of climate change at a global and potentially statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. In general, regional and local predictions are made based on downscaling statewide models (CalEPA, April 2010). The project site is located in an inland area, so while some of the above effects of climate change may apply to the proposed project, potential sea level rise would not affect the project site.
>
> Property owners adjacent to the project site also have raised concerns about the potential of PV panels to cause local climate change by emitting radiant heat and raising the ambient temperature of surrounding areas. It should be noted that PV arrays are designed to maximize the absorption of solar radiation and its conversion to electricity and to minimize the loss of solar energy as heat to the atmosphere (Massachusetts Department of Energy Resources, et al., 2012). Furthermore, because solar panels are thin and light, they do not store a large amount of heat.
>
> Although scientific research on this topic is limited, researchers at Columbia University and the Brookhaven National Laboratory have conducted detailed three-dimensional simulations of the effects of a large-scale solar power plant on the local microclimate (Fthenakis and Yu, n.d.). Using weather data provided by

> First Solar from the 80 MW Sarnia Solar Power Plant in Ontario, Canada, the simulations showed that mean annual air temperatures in the center of a PV array, at a height of 2.5 meters, can reach up to 1.9 degrees Celsius above the ambient temperature; however, this thermal energy was found to completely dissipate at heights of 5 to 18 meters. Heat produced by the solar array also was found to dissipate with distance from the solar plant, with air temperatures within 0.3 degrees Celsius of the ambient temperature approximately 300 meters away from the facility's perimeter. Moreover, an analysis of 18 months of data showed that an increase in ambient temperature of surrounding areas was unlikely due to cooling of the solar array at night.

Fifth paragraph of Section 4.7.3(a) (Methodology and Significance Thresholds)*:*

> The MBUAPCD does not have a formal policy recommending any specific threshold for GHG emissions. The SLOAPCD has ~~recommends using the~~ adopted a ~~SLOAPCD~~ quantitative emissions threshold of 1,150 metric tons of carbon dioxide equivalent (MT CO_2E) per year for most land use projects. Therefore, the project's contribution to cumulative impacts related to GHG emissions and climate change would be cumulatively considerable if the project would produce more than 1,150 metric tons of CO_2E per year. In addition, a project that contributes to a net decrease in GHG emissions and is consistent with the reduction goals of AB 32 is presumed to have a less than significant GHG impact.

Operational GHG Analysis discussion in Impact GHG-1*:*

> *Operational GHG Analysis*. The project would require a negligible amount of energy for security and monitoring systems during non-daylight hours. The project would not result in a substantial amount of mobile source GHG emissions, as the project would require a minimal amount of employees traveling to and from the site. In addition to these new sources of emissions, the project would introduce a non-fossil fuel-based energy source, which would have the indirect effect of displacing emissions otherwise occurring at natural gas and coal-fired power plants.[2] Based on the CCAR emissions factors (630 pounds of CO_2 per MWh minus ~~42~~ 36 pounds of CO_2 per MWh to account for the life cycle CO_2 emissions for cadmium telluride [CdTe]) from fossil-fuel based power plants, the project would offset approximately 202,513 MT CO_2E emissions annually.

Last paragraph under Impact GHG-1*:*

> However, based on current decommissioning practices, as a reasonable-worst case, GHG emissions generated during future decommissioning would be similar to GHG emissions generated during the construction phase of the proposed project. Therefore, the potential to add approximately 229 MT CO_2E per year during decommissioning would result in a slight decrease to the overall GHG emissions reduction benefit

[2] MBUAPCD staff stated that they did not believe that the project would directly offset emissions in the North Central Coast Air Basin (NCCAB), but that it could potentially offset emissions on a statewide level as older fossil fuel energy facilities are taken offline, including the Morro Bay facility, and that the project would provide a renewable source of energy production that would otherwise be provided by new fossil fuel-fired facilities (California Flats Solar Project Air Quality and Greenhouse Gas Assessment, August 2013).

attributable to the proposed project. It should also be noted that, as described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that potential future environmental effects associated with project decommissioning – including GHG emissions – would be addressed at the time decommissioning is proposed consistent with regulations in effect at the time. Because the solar energy produced by the proposed project would off-set the GHG emissions generated by the facility, the project would result in a beneficial impact on GHG emissions and climate change.

Section 4.8 Hazards and Hazardous Materials

Table 4.8-1:

Table 4.8-1
Impact and Mitigation Summary: Hazards and Hazardous Materials

Impact	Mitigation Measures	Residual Impact
Impact HAZ-5 Repowering or decommissioning of the proposed project could result in the improper disposal of hazardous waste, including used PV solar modules. Impacts related to the disposal of decommissioned PV solar modules would be Class II, significant but mitigable. [Thresholds 1, 2]	**HAZ-5 Disposal of PV Modules and Support Structures.** The applicant shall submit a recycling or disposal plan for PV modules ~~and support structures~~ for County review and approval, in order that project structures not pose a risk to human health or the environment after project repowering and/or decommissioning. The plan shall specify how these project components shall be recycled or disposed of in a manner that will not pose a risk to human health or the environment, and the costs of such recycling or disposal. Prior to ~~grading or building permit issuance~~ operation, the applicant shall post a long-term decommissioning bond to the County of Monterey, or other mutually acceptable financial obligation, in an amount consistent with these costs (plus County administrative costs) consistent with the requirements of the Development Agreement (if approved)~~, and which may also include any other project decommissioning obligations~~.	Implementation of the above mitigation measure would reduce impacts related to disposal of PV modules and support structures during decommissioning and/or repowering to a less than significant level.

Third to last paragraph under Impact HAZ-2:

…A developmental toxicology investigation specific to tellurium metal found no indications of unique developmental effects upon exposure of pregnant rats or rabbits to tellurium (Johnson et al., 1998; Putnam, 1996). CdTe appears to be less toxic than elemental cadmium in terms of acute exposure (Zayed and Philippe, 2009; Kaczmar, 2011), but the highly reactive oxidizing surface of CdTe can damage cell membranes, mitochondria, and cell nuclei ~~depending on the technology used~~ in quantum dot technology applications (Lovric et al., 2005), which is unrelated to the CdTe PV technology that may be used for the project.

Second paragraph under Impact HAZ-5*:*

> As discussed in Section 2.0, *Project Description*, the proposed project includes APM-1 to ensure that all potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time. In addition, the project includes a conceptual decommissioning plan that describes the general types of measures that may be implemented at the time of decommissioning…

Mitigation Measure HAZ-5*:*

> **HAZ-5** **Disposal of PV Modules and Support Structures.** Prior to ~~construction permit issuance~~ operation, the applicant shall submit a recycling or disposal plan for PV modules ~~and support structures~~ for County review and approval, in order that project structures not pose a risk to human health or the environment after project repowering and/or decommissioning. The plan shall specify how these project components shall be recycled or disposed of in a manner that will not pose a risk to human health or the environment, and the costs of such recycling or disposal. Prior to ~~grading or building permit issuance~~ operation, the applicant shall post a long-term decommissioning bond to the County of Monterey, or other mutually acceptable financial obligation, in an amount consistent with these costs (plus County administrative costs) consistent with the requirements of the Development Agreement (if approved)~~, and which may also include any other project decommissioning obligations~~.

Third to last paragraph of Impact HAZ-2*:*

> CdTe appears to be less toxic than elemental cadmium in terms of acute exposure (Zayed and Philippe, 2009; Kaczmar, 2011), but the highly reactive oxidizing surface of CdTe can damage cell membranes, mitochondria, and cell nuclei ~~depending on the technology used~~ in quantum dot technology applications (Lovric et al., 2005), which is unrelated to the CdTe PV technology that may be used for the project.

Section 4.9 Hydrology and Water Quality

Table 4.9-1:

Table 4.9-1
Impact and Mitigation Summary: Hydrology and Water Quality

Impact	Mitigation Measures	Residual Impact
Impact HYD-2 Construction or operation of the project could potentially result in the accidental release of hazardous materials that could degrade water quality. Impacts would be Class II, significant but mitigable. [Thresholds 1, 6]	**HYD-2(a) Accidental Spill Control and Environmental Training.** Prior to the issuance of any grading and/or building permit, the project proponent shall submit a Spill Response Plan and Spill Prevention, Control and Countermeasure Plan to the County	With implementation of the identified mitigation measures, impacts would be reduced to a less than significant level.

Table 4.9-1
Impact and Mitigation Summary: Hydrology and Water Quality

Impact	Mitigation Measures	Residual Impact
	of Monterey for review and approval. The Spill Response Plan (SRP) in combination with the Spill Prevention, Control and Countermeasure (SPCC) Plan to be prepared for the proposed project shall include procedures for quick and safe clean-up of accidental spills. The SRP and/or SPCC shall prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe clean-up of accidental spills. Additionally, an environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention and response measures to all field personnel. A monitoring program shall be implemented to ensure that the plans are followed during all construction, operations, and maintenance activities. <u>The Hazardous Materials Response Plan (HMRP) proposed as part of the project [applicant proposed measure (APM) 6] shall incorporate all of the elements of this mitigation measure. The County of Monterey shall be responsible for reviewing the applicant's proposed HMRP to confirm that it incorporates the requirements of this mitigation measure.</u> **HYD-2(b) Maintain Vehicles and Equipment.** All vehicles and equipment, including all hydraulic hoses, shall be maintained in good working order to minimize leaks that could escape the vehicle or contact the ground. A vehicle and equipment maintenance log shall be updated and provided by the applicant to the County of Monterey RMA – Planning Department on a monthly basis for the duration of project construction.	
Impact HYD-4 The proposed project could alter the existing drainage pattern of the project area, and would introduce impervious surfaces into an area that is currently undeveloped. The project may therefore increase runoff, potentially resulting in flooding or increased	~~The final design of the project would be required to be developed in accordance with a final, design level, drainage analysis which would include a detailed evaluation of the potential drainage impacts associated with the project, including identification of measures to reduce~~	Impacts would be less than significant.

Table 4.9-1
Impact and Mitigation Summary: Hydrology and Water Quality

Impact	Mitigation Measures	Residual Impact
erosion downstream. Impacts would be Class III, less than significant. [Thresholds 3, 4, 5]	~~runoff by promoting infiltration. As noted in the *Preliminary Drainage Report* (RBF, 2013), measures to reduce runoff by promoting infiltration would be selected and configured as part of this final design considering local impacts from proposed improvements, detailed grading plans and maintenance requirements. In addition, the proposed project would be required to comply with the NPDES program, including through preparation of a SWPPP and implementation of associated BMPs, as outlined in Impact HYD-1. Compliance with recommendations in the design-level drainage analysis and existing regulations would reduce impacts related to increased erosion downstream to a less than significant level.~~ No mitigation ~~would be~~ is required.	
Impact HYD-5 The project site contains numerous drainage channels, some of which contain flow depths and velocities that could expose proposed structures to potential flooding hazards. Impacts would be Class III, less than significant. [Threshold 9]	~~The applicant would be required to prepare a design-level drainage analysis that would ensure both that proposed facilities avoid higher flow rates, and that any improvements within 50 feet from the top of bank of on-site drainages would comply with the requirements of Chapter 16.16 of the Monterey County Code. Compliance with the recommendations contained in the design-level analysis would ensure that impacts are less than significant.~~ No mitigation is required.	Impacts would be less than significant.

Watersheds discussion in Section 4.9.2(a) (Regional Hydrology):

> The waterbodies in the Cholame Creek Watershed are impaired ~~due to exceedance of~~with high levels of boron, chloride, fecal coliform, sodium, and ~~water quality objectives and United States Environmental Protection Agency (USEPA) recommended criteria for~~ *E. Coli*, low levels of dissolved oxygen, and electrical conductivity outside of levels supporting healthy fisheries (Hamilton, Personal Communication, October 28, 2014). Fecal coliform are shed by all warm-blooded animals including humans, pets, livestock, birds, and other wildlife…

Federal Clean Water Act discussion in Section 4.9.2(d) (Regulatory Setting):

The Central Coast RWQCB has established and certified ~~a~~ TMDLs for boron in streams of the Estrella River Basin~~, which was approved by the Board~~ in December 2013 and for fecal indicator bacteria in the Cholame Creek Watershed in May 2011 (CCRWQCB, 2014).

Second to last paragraph under Impact HYD-1:

Decommissioning would be required to comply with the standards in place at the time of decommissioning, which are anticipated to be similar or more stringent than the requirements currently placed on construction activities. In addition, as described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

Mitigation Measure HYD-2(a):

HYD-2(a) **Accidental Spill Control and Environmental Training.** Prior to the issuance of any grading and/or building permit, the project proponent shall submit a Spill Response Plan and Spill Prevention, Control and Countermeasure Plan to the County of Monterey for review and approval. The Spill Response Plan (SRP) in combination with the Spill Prevention, Control and Countermeasure (SPCC) Plan to be prepared for the proposed project shall include procedures for quick and safe clean-up of accidental spills. The SRP and/or SPCC shall prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe clean-up of accidental spills. Additionally, an environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention and response measures to all field personnel. A monitoring program shall be implemented to ensure that the plans are followed during all construction, operations, and maintenance activities. The Hazardous Materials Response Plan (HMRP) proposed as part of the project [applicant proposed measure (APM) 6] shall incorporate all of the elements of this mitigation measure. The County of Monterey shall be responsible for reviewing the applicant's proposed HMRP to confirm that it incorporates the requirements of this mitigation measure.

Mitigation Measure discussion under Impact HYD-4:

~~Mitigation Measures.~~ The final design of the project would be required to be developed in accordance with APM-11, in which the applicant shall prepare a final, design-level, drainage analysis which would include a detailed evaluation of the potential drainage impacts associated with the project, including identification of measures to reduce

runoff by promoting infiltration. As noted in the *Preliminary Drainage Report* (RBF, 2013) and in the *Preliminary Drainage Analysis Addendum* (Wallace Group, 2014), measures to reduce runoff by promoting infiltration would be selected and configured as part of this final design considering local impacts from proposed improvements, detailed grading plans and maintenance requirements. The design level drainage analysis would ensure that increases in peak runoff flow rates and volumes due to the addition of impervious surfaces such as isolated buildings are mitigated so that the post-project flow rates and volumes are no greater than pre-project flow rates and volumes for the 85th percentile storm event (NOAA Atlas 14) or a method acceptable by Monterey County and Regional Water Quality Control Board. In addition, the proposed project would be required to comply with the NPDES program, including through preparation of a SWPPP and implementation of associated BMPs, as outlined in Impact HYD-1. Compliance with recommendations in the design-level drainage analysis and existing regulations would ~~reduce~~ result in impacts related to increased erosion downstream that are ~~to a~~ less than significant ~~level~~. ~~No mitigation would be required.~~

Mitigation Measures. No mitigation is required.

First paragraph under Impact HYD-5:

The *California Flats Solar Project Preliminary Drainage Report* (RBF, 2013) included a preliminary hydraulic analysis to determine potential flood hazards relating to flow depths and velocities throughout the project site. The *Preliminary Drainage Analysis Addendum* (Wallace Group, 2014) provided additional review and recommendations regarding flood hazards, and included the private access road in the review…

Fourth paragraph under Impact HYD-5:

The proposed project would ~~be required to~~ implement APM-11, which requires the preparation of a design level drainage study that contains measures that ensure that project facilities are not placed in areas where they would be subject to significant flood or erosion hazards. Flood-risk and erosion avoidance measures outlined in APM-11 are generally consistent with the *Preliminary Drainage Report* (RBF 2013) and *Preliminary Drainage Analysis Addendum* (Wallace Group 2014), ~~comply with the recommendations in the *Preliminary Drainage Report* (RBF, 2013), and the final design of the project would be required to be developed in accordance with a final, design-level, drainage analysis. As outlined in the *Preliminary Drainage Report*, the final design-level drainage analysis~~ and would include the following requirements:

- No modules shall be placed in areas where the product of the flow depth and flow velocity is greater than 9 feet per second (corresponding to a hazard level 3, as defined in the *Preliminary Drainage Report*) during a 100-year, 24-hour storm event, based on the results of a design-level drainage analysis~~;~~
- No transformers, substations, or inverters shall be placed in areas where the flow depth exceeds 2 feet (corresponding to a hazard level

3, as defined in the *Preliminary Drainage Report*) during a 100-year, 24-hour storm event~~; and~~

In addition, in accordance with the *Preliminary Drainage Report* (RBF 2013) and *Preliminary Drainage Analysis Addendum* (Wallace Group 2014), the final design level drainage analysis would include the following additional requirement:

- Solar modules, transformers, substations, or inverters constructed in areas where any inundation is expected to occur should be placed a minimum of 1 foot above the 100- year water surface elevation.

The Monterey County Water Resources Agency would review and approve the design-level drainage analysis. Implementation of the recommendations contained therein~~, including the flood risk avoidance measures listed above,~~ would ensure that proposed facilities avoid significant flood or erosion hazards ~~higher flow rates~~.

… To ensure the improvements are consistent with the requirements of Chapter 16.16 of the Monterey County Code, the design-level drainage analysis prepared by the applicant in accordance with APM-11 and consistent with the requirements outlined in the *Preliminary Drainage Report* (RBF 2013) and *Preliminary Drainage Analysis Addendum* (Wallace Group 2014) ~~described above)~~ would be required to ~~address any development proposed within 50 feet from the top of the bank of on-site drainages and~~ prove, to the satisfaction of the Monterey County Water Resources Agency, that any improvements within 50 feet from the top of bank of on-site drainages would not result in significant flood- or erosion-related hazards, and that these improvements would not affect the existing capacity of the affected watercourse, as required by Chapter 16.16 of the Monterey County Code. Implementation of the recommendations contained in the design-level drainage analysis would ensure that impacts are less than significant. ~~the proposed development would be safe from flow-related hazards and would not significantly reduce the capacity of the existing watercourses. Upon compliance with the requirement so Chapter 16.16, impacts would be less than significant.~~

Mitigation Measures. ~~As noted above, the applicant would be required to prepare a design-level drainage analysis that would ensure both that proposed facilities avoid higher flow rates, and that any improvements within 50 feet from the top of bank of on-site drainages would comply with the requirements of Chapter 16.16 of the Monterey County Code. Compliance with the recommendations contained in the design-level analysis would ensure that impacts are less than significant.~~ No mitigation is required.

First paragraph of the *Cumulative Impact Analysis*:

The proposed project would require up to ~~345 AFY~~ 494 acre-feet during construction and up to 5 AFY during operation.

Section 4.10 Land Use and Planning

First bullet in Section 4.10.2(b) (Project Site Setting) in Section 4.10, *Land Use and Planning*:

- *Farmlands (F)* designated zones are typically 40 acre minimum parcels and allow a range of uses to conserve and enhance the use of the important farmlands in the County while also providing opportunity to establish necessary support and ancillary facilities for those agricultural uses. The extent of use of land for this designation is limited to building coverage of 5% of the subject property, except for commercial greenhouse operations, which are permitted coverage of 50%. The County of Monterey has, however, determined that solar components (e.g., PV modules, inverters, and other related infrastructure) of ground-mounted facilities will not be counted as building site coverage. (Monterey County Director Interpretation, August 2012).

Second paragraph of the discussion for Policy LU-1.11 in Table 4.10-2:

> …The County of Monterey previously determined that the solar components of ground-mounted facilities ~~photovoltaic (PV) modules~~ do not constitute buildings as defined in Title 21 and therefore are not subject to the building coverage requirements (Monterey County, August 2012)…

Discussion for Policy OS-5.3 in Table 4.10-2:

> **Potentially Consistent.** As described in Section 4.4, *Biological Resources*, no critical habitat ~~could~~would be impacted by the proposed project. In addition, Mitigation Measures outlined in Section 4.4, *Biological Resources*, would ~~be required to ensure conservation and maintenance of such areas, as well as to reduce potential impacts to protected wetlands. These measures would~~ reduce any potential impacts to biological resources to less than significant levels and ensure consistency with this policy.

Discussion for Policy S-3.1 in Table 4.10-2:

> …In addition, the proposed project would be required to comply with the construction stormwater NPDES program, including through preparation of a SWPPP and implementation of associated BMPs.Compliance with recommendations in the design-level drainage analysis and existing regulations would ensure consistency with this policy.

Section 4.11 Noise

First paragraph below Table 4.11-6:

> …Due to hot weather, between June 1 and September 30, construction activities may begin as early as 5:00 AM and continue to 9:00 PM, Monday through Friday. A limited amount of construction work on the weekends may be required, depending on project scheduling, equipment and material delivery schedules, and other logistical considerations. In addition, ~~S~~some nighttime construction may be required to finish construction activities that cannot be readily stopped at the end of the regular construction day or to maintain the construction schedule…

Last paragraph under Impact N-1:

> Similar to the noise generated during construction of the proposed project, decommissioning activities would be conducted in accordance with all applicable

requirements in effect at the time of project termination. As described in Section 2.0, *Project Description*, the project includes APM-1 to ensure that potential future environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time. A final decommissioning plan, based on then-current technology, site conditions, and regulations, would be prepared prior to actual decommissioning. Therefore, decommissioning of the project would result in less than significant noise impacts.

First paragraph under Impact N-2*:*

Construction activity at these sites may result in noise associated with equipment loading and off-loading and vehicle trips; however, no sensitive noise receptors are located within one mile of these locations. The proposed 38-acre laydown area is located approximately five miles southeast of the nearest sensitive receptors, and no sensitive receptors are located in close proximity to the proposed staging areas located at the project entrance. Therefore construction activity associated with the proposed laydown areas would not result in a significant noise impact.

Last paragraph under Impact N-2 in Section 4.11, *Noise*:

In addition, as described in Impact N-1, project decommissioning activities would be generally similar to project construction and be completed in 12 to 24 months. Assuming that the facility would be torn down and the materials present recycled or disposed, temporary traffic noise associated with such actions are assumed to be generally similar to the noise levels that would occur during project construction. In addition, as described in Section 2.0, *Project Description*, the project includes APM-1 to ensure that potential environmental effects associated with project decommissioning would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.~~;~~ ~~t~~Therefore, decommissioning of the project would result in less than significant transportation noise impacts.

Section 4.12 Public Services

All references to "Cal Fire" and "Cal-Fire" are changed to "CAL FIRE."

Table 4.12-1:

Table 4.12-1
Impact and Mitigation Summary: Public Services

Impact	Mitigation Measures	Residual Impact
Impact PS-1 The proposed project would substantially increase activity temporarily during construction and incrementally increase demand during operation at a site located in a relatively undeveloped area of the County. Emergency access for fire or emergency medical services may be insufficient and estimated response	**PS-1(a) Construction Management Plan.** The applicant shall include measures that reduce the demand for fire protection services during project construction in the final Construction Management Plan subject to the review and approval of ~~Cal Fire~~CAL FIRE or the Fire Protection District as applicable.	Compliance with existing County ordinances and implementation of Mitigation Measures PS-1(a) through PS-1(c) would reduce potential impacts relating to emergency access and provision of emergency services. As noted above, year round staffing at the local ~~Cal Fire~~CAL FIRE station during the construction

Table 4.12-1
Impact and Mitigation Summary: Public Services

Impact	Mitigation Measures	Residual Impact
times would exceed acceptable limits included in the General Plan Public Services Element. Impacts would be Class II, significant but mitigable. [Threshold 1(i)]	Applicable measures shall include but not be limited to on-site fire suppression, including on-site fire suppression equipment and fire suppression training for on-site personnel. The construction contractor shall be responsible for implementing the final Construction Management Plan, including applicable fire safety measures, for the duration of construction. Prior to the issuance of a construction permit, the applicant shall provide the County with a copy of the final Construction Management Plan approved by ~~Cal Fire~~CAL FIRE that includes measures that adequately reduce the demand for fire protection services. **PS-1(b) Emergency Response Training.** During project construction and operation, on-site staff shall receive emergency response training and shall be informed of all emergency response procedures on a minimum annual basis. Prior to operation of the project, the applicant shall consult with South Monterey County FPD/CAL FIRE staff to educate them in emergency response procedures for solar power facilities. In addition, on-site fire suppression equipment (e.g. fire extinguishers) shall be maintained on-site for the duration of project operation. **PS-1(c) Fire Protection during Construction.** Prior to the issuance of a construction permit, the applicant shall enter into an agreement with ~~Cal Fire~~CAL FIRE to provide sufficient fire protection services during the non-peak fire season for the duration of project construction via provision of sufficient funding and other measures necessary to keep the ~~Cal Fire~~CAL FIRE Parkfield substation operational during the non-peak fire season. The measures to assure sufficient fire protection services in accordance with existing standards shall be subject to the review and approval of ~~Cal Fire~~CAL FIRE and may include but not be limited to the following: funding for provision for	phase would address response times to the site. Impacts would therefore be less than significant.

Table 4.12-1
Impact and Mitigation Summary: Public Services

Impact	Mitigation Measures	Residual Impact
	fire personnel, ~~increasing engine availability in the area~~ purchase of on additional patrol/rescue vehicle, and/or provision of a helicopter landing space in consultation with ~~Cal Fire~~CAL FIRE, the use of which will be restricted to emergency use only. A copy of the final, executed agreement shall be submitted to the County prior to the issuance of a construction permit.	

Section 4.12.2(b) (Fire Protection Services)*:*

> **b. Fire Protection Services**. The project site is located in a State Responsibility Area (SRA).[3] Currently, this SRA lies outside of a legally formed fire protection district, so there is no Fire Authority Having Jurisdiction (FAHJ) on the project site (Browder, Personal Communication, September 22, 2014). As such, although the California Department of Forestry and Fire Protection ~~Services (~~Cal Fire~~CAL FIRE) is responsible for providing wildland fire suppression to the site and surrounding area, it is not responsible ~~and~~ for general fire protection services to the site and surrounding area~~, and would provide fire protection services for the proposed project~~. However, the project site is part of an existing annexation process into the South Monterey County Fire Protection District (FPD)/CAL FIRE, which would then have responsibility for general fire protection services (i.e., fire and rescue services) for the proposed project upon LAFCO approval of annexation.
>
> The nearest ~~Cal Fire~~CAL FIRE Forest Fire Station (FFS) ~~substation~~ to the project site is located in Parkfield, which is approximately seven miles northwest of the project site, and would be the primary station responsible for responding to an emergency at or near the site during peak fire season. ~~Cal Fire~~CAL FIRE typically responds with a minimum of three personnel. The ~~Cal Fire~~CAL FIRE Parkfield FFS~~substation~~ has a captain and usually three to four firefighters~~one deputy~~ assigned to the area (depending on staffing, funding, and availability) and is staffed for five months out of the year, within the period between May and October (Browder, Personal Communication, September 22, 2014; John Owens, Assistant Chief ~~Cal Fire~~CAL FIRE, San Benito/Monterey Unit, Personal Communication, July 31, 2013).

The *Emergency Access* discussion under Impact PS-1:

> *Emergency Access.* Emergency access would be provided from two locations depending on the location of the emergency incident: 1) service providers would access the project site via an existing 5.6-mile private access road from SR 41, or 2) emergency access would occur from Turkey Flat Road. ~~Cal Fire~~CAL FIRE has identified that

[3] *The State Responsibility Area (SRA) is the area of the state where the State of California is financially responsible for the prevention and suppression of wildfires.*

primary emergency access would occur from Turkey Flat Road given the proximity of the site in relationship to the existing fire station.

As part of this analysis, the appropriate fire service provider~~s~~ was~~ere~~ contacted to ascertain whether the agency anticipates accessibility issues to the project site within its jurisdiction. As discussed in Section 4.12.2, *Setting*, the project site is currently in the process of annexation to the South Monterey County FPD/CAL FIRE, and it is assumed that this district would provide fire service to the site. Assistant Chief John Owens of ~~Cal Fire~~CAL FIRE /San Benito Monterey Unit identified several potential accessibility issues. First, ~~Cal Fire~~CAL FIRE would use air ambulance services in the area due to its remote location. Air ambulance services would be dispatched depending on severity of emergencies, weather conditions, and availability of medical helicopters in the area. A cleared area free of overhead obstructions suitable for use as a landing site has not been identified on project site plans. Additionally, adequate access would depend on road type and conditions, locked gates, weather, and the exact location of the emergency. Improved internal roads and improved access road would be required to meet General Plan requirements and Monterey County Fire Code requirements with respect to width and road conditions. The proposed project would be required to comply with access provisions of the Fire Code (Chapter 18.09) and the Wildfire Protection Standards in State Responsibility Areas (Chapter 18.56) relating to site access, including providing ~~Cal Fire~~CAL FIRE with access to any and all locked gates and maintaining existing roads. Section 18.56.060.13.d of the County Code allows the reviewing authority having jurisdiction (~~Cal Fire~~CAL FIRE) to require a key box or other acceptable means of immediate access for emergency equipment, and ~~Cal Fire~~CAL FIRE would require that such access is indicated on construction plans.

The *Fire Services* discussion under Impact PS-1:

Fire Services. As noted previously, the nearest ~~Cal Fire~~CAL FIRE station is located approximately seven miles from the site in Parkfield, and is staffed only during peak fire season (generally May through October). In order to meet the needs of the proposed project and the surrounding community during construction, ~~Cal Fire~~CAL FIRE would require year round staffing during both non-peak and peak fire season (Owens, Personal Communication, July 31, 2013). This could include the increase of staffing by five fire personnel: two Fire Captains and three Fire Apparatus Engineers -Paramedics or three Firefighter II Paramedics. Due to the nature of soils and precipitation patterns in the area, road conditions may become unsuitable for emergency access during and following peak storm events, which ~~An increase in engine availability would be necessary in the area and w~~could require the purchase of one additional patrol/rescue vehicle~~new engine~~ to serve the proposed project (Browder, Personal Communication, September 22, 2014~~Owens, Personal Communication, July 31, 2013~~).

Sources and Notes section of Table 4.12-3*:*

Sources: John Owens, Assistant Chief, ~~Cal Fire~~CAL FIRE San Benito – Monterey South Division. Christopher Browder, Personal Communications, September 22, 2014.
Notes:
1. The existing average response times for CAL FIRE stations in Bradley, Lockwood, and King City only apply to the portion of the year when these stations are staffed (peak fire season).
n/a - ~~Cal Fire~~CAL FIRE does not have a set response time goal for State Response Areas. Response times are variable based on availability of engines and time of year (depending on preparedness levels).

Mitigation measures and *Significance After Mitigation* discussion for Impact PS-1:

PS-1(a) **Construction Management Plan.** The applicant shall include measures that reduce the demand for fire protection services during project construction in the final Construction Management Plan subject to the review and approval of ~~Cal Fire~~ CAL FIRE or the Monterey County FPD ~~Fire Protection District~~ as applicable. Applicable measures shall include but not be limited to on-site fire suppression, including on-site fire suppression equipment and fire suppression training for on-site personnel. The construction contractor shall be responsible for implementing the final Construction Management Plan, including applicable fire safety measures, for the duration of construction. Prior to the issuance of a construction permit, the applicant shall provide the County with a copy of the final Construction Management Plan approved by ~~Cal Fire~~ South Monterey County FPD/CAL FIRE that includes measures that adequately reduce the demand for fire protection services.

PS-1(b) **Emergency Response Training.** During project construction and operation, on-site staff shall receive emergency response training and shall be informed of all emergency response procedures on a minimum annual basis. Prior to operation of the project, the applicant shall consult with South Monterey County FPD/CAL FIRE staff to educate them in emergency response procedures for solar power facilities. In addition, on-site fire suppression equipment (e.g. fire extinguishers) shall be maintained on-site for the duration of project operation.

PS-1(c) **Fire Protection during Construction.** Prior to the issuance of a construction permit, the applicant shall enter into an agreement with ~~Cal Fire~~ South Monterey County FPD/CAL FIRE to provide sufficient fire protection services during the non-peak fire season for the duration of project construction via provision of sufficient funding (supplied by the applicant) and other measures necessary to keep the ~~Cal Fire~~ South Monterey County FPD/CAL FIRE Parkfield substation operational during the non-peak fire season. The measures to assure sufficient fire protection services in accordance with existing standards shall be subject to the review and approval of ~~Cal Fire~~ South Monterey County FPD/CAL FIRE and may include but not be limited to the following: funding (by the applicant) for provision for fire personnel, ~~increasing engine availability in the area~~ purchase of one additional patrol/rescue vehicle or equivalent vehicle capacity, and/or provision of a helicopter landing space in consultation with ~~Cal Fire~~ South Monterey County FPD/CAL FIRE, the use of

which will be restricted to emergency use only. A copy of the final, executed agreement shall be submitted to the County prior to the issuance of a construction permit.

Significance After Mitigation. Compliance with existing County ordinances and implementation of Mitigation Measures PS-1(a) through PS-1(c) would reduce potential impacts relating to emergency access and provision of emergency services. As noted above, year round staffing at the local ~~Cal Fire~~ South Monterey County FPD/CAL FIRE station during the construction phase [as required by Mitigation Measure PS-1(c)] would address response times to the site. Impacts would therefore be less than significant.

Second to last paragraph of Impact PS-3:

…Waste disposed to landfill during project decommissioning would be distributed to landfills in existence at the time. Similar to the construction phase, a demolition waste diversion program would be required by the SVSWA and San Luis Obispo County IWMA. In addition, as described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that potential future environmental effects associated with project decommissioning – including those related to solid waste – would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

Section 4.13 Transportation/Traffic

Table 4.13-1 (note mitigation measure not shown in its entirety, as this text has not been revised):

Table 4.13-1
Impact and Mitigation Summary: Traffic/Transportation

Impact	Mitigation Measures	Residual Impact
Impact T-7 An employee shuttle service would provide transport to and from the site during the construction phase. The exact location, ~~and~~ size, and design of the proposed park and ride facilities are not known at this time; therefore, there is the potential for secondary impacts to the environment to occur. Impacts would be Class II, significant but mitigable. [Threshold: multiple]	**T-7 Park and Ride Facility Siting.**	With implementation of the above mitigation measure, impacts would be reduced to a less than significant level.

Fourth full paragraph under Impact T-1*:*

… decommissioning would likely involve construction truck trips and construction vehicle trips to transport employees to the site to dismantle the facility. Truck trips may also be required to transport the dismantled facility to a waste processing facility or recycling facility. The number of construction truck trips, construction vehicles, and travel routes are unknown at this time. As described in Section 2.0, *Project Description,* the project includes APM-1 to ensure that potential environmental effects associated

with project decommissioning – including those related to traffic and circulation – would be addressed at the time decommissioning is proposed consistent with regulations in effect at that time.

Mitigation Measure T-2:

T-2 **Friday Peak Hour Control Measures – Construction Phase.** All project generated traffic bound for SR 46 eastbound that would make the southbound left turn movement at the intersection of SR 41/SR 46 shall be removed by implementing traffic control measures at the project access road exit during the Friday PM peak hour between 4:35 PM and 5:35 PM. Truck delivery and construction workers bound for eastbound SR 46 shall be prohibited from making right turns from the project access road onto SR 41 by a flagman located at the project access road during the Friday PM peak hour. Vehicle destinations shall be identified by vehicle badges. The flagman shall identify these vehicles and direct them to make an eastbound left out movement from the project access road onto SR 41 east. An acceleration/receiving lane shall be constructed to accommodate this movement, in accordance with Caltrans requirements.

Significance After Mitigation. The removal of project generated trips destined for SR 46 east would divert all project trips from the southbound right turn movement and ultimately from the eastbound SR 46 during the Friday PM Peak Hour. The construction of an acceleration/receiving lane to accommodate left out movement from the project access road onto SR 41 east would occur entirely within the existing Caltrans right-of-way, and would be subject to a Caltrans encroachment permit. Impacts would be reduced to a less than significant level.

Impact T-7*:*

Impact T-7 **An employee shuttle service would provide transport to and from the site during the construction phase. The exact location, ~~and~~ size, and design of the proposed park and ride facilities are not known at this time; therefore, there is the potential for secondary impacts to the environment to occur. Impacts would be Class II, *significant but mitigable*. [Threshold: multiple]**

As described previously, trip generation for the construction phase assumes that an employee shuttle service would transport 95% of the total construction workforce to and from the project site. Designated employee shuttle park and ride locations would provide parking for the construction workforce. As noted in Section 2.0, *Project Description,* shuttle park-and-ride lots would likely be located west of the site on SR 46 in Paso Robles (Cuesta College North County Campus), northwest of the site on Highway

101 in King City (Wild Horse Café), and southeast of the project site near the intersection of SR 46 and SR 33 (Blackwell's Corner). These sites may require temporary fencing and minor surface improvements. The ultimate locations of the proposed park-n-ride facilities would be determined based on their proximity to SR 46 and SR 41, their ability to achieve the goal of 95% ridership, and their prior use for parking, including prior use for construction staging for other solar developments located in San Luis Obispo County. However, further details regarding the park-and-ride facilities are not available at this time. ~~While the exact locations of the park and ride facilities have not been identified, one shuttle park and ride lot would be generally located west of the site on SR 46 in Paso Robles, the other park and ride lot will be located northeast of the project site approximately at the intersection of SR 41 and SR 33.~~ Given that the size, design, and exact location of the parking facilities is not known at this time, there is the potential for adverse impacts to occur in several issue areas including but not limited to aesthetics, biological resources, water quality and hydrology, noise and transportation and traffic. Impacts would therefore be potentially significant.

Section 4.14 Effects Found Not to be Significant

Section 4.14.7 (Greenhouse Gas Emissions/Climate Change):

a. Thresholds of Significance. Pursuant to the *State CEQA Guidelines*, Appendix G checklist, potentially significant impacts would occur if the proposed project would result in any of the following:

1) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment and/or*
2) *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

Both of the above thresholds are analyzed in Section 4.7, *Greenhouse Gas Emissions/Climate Change*. Thus, there will be no further discussion herein.

In addition, the proposed project would have a less than significant impact on the local climate. Based on the available research discussed in Section 4.7, *Greenhouse Gas Emission/Climate Change*, utility-scale PV arrays do not substantially increase ambient temperatures on adjacent sites. Thus, there will be no further discussion herein of the radiant heat effect of solar facilities.

Section 6.0 Long-Term Impacts

Third paragraph of the *Construction Workforce* discussion in Section 6.1.1 (Economic and Population Growth):

As a condition of employment, 95% of construction personnel would be required to commute to the project site via the proposed employee shuttle that would depart from specified park-and-ride lots. Only 5% of employees would be given permits to drive personal vehicles to the site. While ~~some~~ the majority of the labor force would likely commute to the project park-and-ride lots from existing residences, some may elect to

temporarily relocate near the project site. Given the remote nature of the project site and the relatively limited availability of lodging in nearby rural communities (including Parkfield, Cholame, and Shandon), it is assumed that the majority of workers would find accommodation in the City of Paso Robles and/or the City of Avenal.

Section 7.0 Alternatives

Second paragraph of the *Hydrology and Water Quality* discussion for Alternative 2 (Alternate Jack Ranch Site)*:*

Similar to the proposed project, this alternative would require water for dust suppression purposes during construction, as well as water to ~~potable water would be needed to~~ wash the modules and support overall operations at the site…

Transportation/Traffic discussion for Alternative 2 (Alternate Jack Ranch Site):

Transportation/Traffic. Like the proposed project, this alternative is expected to result in significant and unavoidable impacts to traffic and transportation during both construction and operation. The site would be accessed via Cholame Road and the SR 46 intersection. Project generated traffic during the construction phase would likely result in the segment of SR 46 between SR 41 and Branch Road operating at an unacceptable LOS E. Mitigation Measure T-1 referenced in Section 4.13, *Transportation/Traffic*, would alleviate potential impacts but they would remain Class I, *significant and unavoidable*.

~~As with the proposed project, construction of this alternative would add trips to the intersection of SR 41/SR 46, which currently operates at LOS F during the Friday PM Peak Hour. This impact would be Class II, *significant but mitigable*, with implementation of Mitigation Measure T-2, similar to the proposed project.~~ This alternative would avoid potential impacts associated with the proposed project's addition of trips to the intersection of SR41/SR 46. The southbound left turn movement from SR 41 to SR 46 currently operates at an LOS F. This alternative would not add any trips traveling on SR 41 making a left onto eastbound SR 46. As a result, no mitigation would be warranted.

…Project generated traffic during the operation phase would add trips to the intersection of SR 41/ SR 46~~, similar to the proposed project~~. As discussed, ~~this~~ the southbound left at this intersection currently operates at LOS F during the Friday PM Peak Hour. This alternative would not contribute any traffic trips making a southbound left from SR 41 onto eastbound SR 46. As a result, this alternative would avoid the significant impacts associated with the proposed project (Impacts T-2 and T-4). ~~Alternative-related traffic would cause a Class II, *significant but mitigable* impact with implementation of Mitigation Measure T-4. As described for the proposed project, accident rates at the intersection of SR 41 / SR 46 are more than two times the statewide average. Addition of traffic to this intersection during construction and operation of the proposed project could exacerbate existing hazards. Implementation of Mitigation Measures T-2 and T-4 would reduce the impact but it would remain Class I, *significant and unavoidable*.~~

…Given that this alternative would construct a 280 MW solar generating facility over 12 to 24 months, similar to the proposed project, it is assumed that ~~the alternative site location, it is unknown whether~~ an employee shuttle service would be needed to provide transport to and from the site during construction. ~~It may be possible to phase construction to accommodate construction worker vehicles which would avoid the need for an off-site park-and-ride lot and related environmental impacts. If so, impacts associated with the proposed project would be avoided. If not,~~ As a result, impacts related to the secondary effects of park and ride lots would ~~likely~~ be similar to those described for the proposed project and Class II, *significant but mitigable* through implementation of Mitigation Measure T-7…

Second paragraph of the *Hydrology and Water Quality* discussion for Alternative 3 (Reduced Project)*:*

Similar to the proposed project, ~~potable water would be needed to~~ this alternative would require water for dust suppression purposes during construction, as well as water to wash the PV modules and support overall operations at the site.

Table 7-1:

Table 7-1
Impact Comparison Summary

Issue	Proposed Project	No Project (Alternative 1)	Alternate Jack Ranch Site (Alternative 2)	Reduced Project (Alternative 3)
Transportation/Traffic	=	-	+/=	-

\+ Greater impact than the proposed project
\- Less impact than the proposed project
= No better or worse than the proposed project

Section 8.0 References

The following references have been added or modified in Section 8.1.1 (Bibliography):

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Appendix E

Biological Resources Reports

Appendix E.15

2014 Special Status Plant Survey Report

H.T. HARVEY & ASSOCIATES
Ecological Consultants

2014 Special-status Plant Survey Report for the California Flats Solar Project Monterey County, California

Project # 3544-02

Prepared for:

California Flats Solar, LLC
135 Main Street, 6th Floor
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Prepared by:

H. T. Harvey & Associates

September 2014

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Executive Summary

Survey Overview

Protocol-level special-status plant surveys were conducted during spring and summer 2014 on the 2707-acre California Flats Solar Project (Project) site in southeastern Monterey and northeastern San Luis Obispo counties, California. The majority of the Project site was previously surveyed at a protocol level in 2013; however, additional surveys were necessary due to subsequent Project redesign. The 2014 protocol-level surveys covered all newly added direct impact areas and a 100-foot buffer around these locations. The 2014 protocol-level survey areas comprised (1) the utility corridor; (2) expansions to the original impact area along the transmission line corridor; (3) locations adjacent to Highway 41, including a construction laydown area, the location of a future turn lane, and a truck receiving area off the access road; (4) a road crossing over Cottonwood Creek that was shifted slightly to the east compared to the prior design; and (5) longer reaches of streams crossing the access road, to accommodate a more in-depth Project design. In total, the 2014 protocol-level surveys covered approximately 457 acres.

Focused surveys for special-status plant species, which represent a high level of effort but do not employ preset transects, were also conducted on approximately 2326 acres outside the Project site, but within the Project's Biological Study Area (BSA). In addition, focused surveys for two federally listed species, California jewelflower (*Caulanthus californicus*) and San Joaquin woollythreads (*Monolopia congdonii*), were conducted in areas with at least marginally suitable habitat within the Project site (the majority of which had been previously surveyed during 2013). Also, focused surveys in suitable habitat were conducted on the portion of the Project site previously surveyed in 2013 for two CNPS-listed species, small-flowered morning glory (*Convolvulus simulans*) and Lemmon's jewelflower (*Caulanthus lemmonii*). The Project site was resurveyed for small-flowered morning glory in 2014 because many more individuals of the species were encountered in 2014, and the survey team took advantage of an early survey period to locate all individuals of this cryptic species when it was extremely visible because of its lime-green cotyledons. The Project site was resurveyed for Lemmon's jewelflower because this species was not detected in 2013, but did germinate and flower near the Project BSA in 2014. Finally, regional contextual surveys were conducted in 2014 on approximately 8714 acres of additional lands within a 10-mile radius of the BSA (Project Vicinity). Surveyors made use of aerial photography, soil maps, and other resources to identify highly suitable habitats for target special-status plant species, and concentrated their efforts in these areas to assess the regional population sizes of target species and to provide context for the Project site surveys.

Survey Timing

Protocol-level surveys took place in early and mid-spring, late spring, and summer 2014 (i.e., March, April, May, and June). Populations of larkspur (*Delphinium* spp.), spineflower (*Chorizanthe* spp.) buckwheat (*Eriogonum* spp.), milkvetch (*Astragalus* spp.), and other late spring–blooming species were initially identified to

genus level during surveys in March and April, and were revisited in late April and May. Summer-blooming species such as saltscales (*Atriplex* spp.) were revisited in June. Focused surveys and regional contextual surveys followed a similar timeline; however, because the 2014 regional contextual surveys were focused on spring-blooming species impacted by the Project, these did not include summer revisits.

Methodology

All surveys were conducted by experienced plant ecologists familiar with the target species. Protocol-level surveys employed preset transects spaced at 50-foot intervals to ensure complete coverage. Protocol-level surveys were floristic in nature, seeking to identify every plant species encountered on the site. Focused surveys were also floristic in nature, but did not employ preset transects. Regional contextual surveys were focused on only targeted special-status plants, with a concentrated effort spent in areas that were identified to be highly suitable based on habitat and soil characteristics.

For all surveys, data were recorded using the GISKit Pro (Garafa, LLC) application on Apple® iPad 4 and iPad Air tablets. Wherever possible, discrete populations of special-status plants were mapped in the field using a Global Positioning System (GPS), and the number of individuals in each population was estimated. However, some special-status plants were small or cryptic and occurred in widely scattered populations, making it difficult to delineate the boundaries of discrete populations in the field. In these cases, ecologists recorded GPS points at regular intervals (approximately every 50 feet) along transects (preset or intuitive) until special-status plants could no longer be detected. Along with each GPS point, an estimate of the number of special-status plant individuals occurring in that interval was recorded. These data resulted in thousands of individual data points that were later aggregated into discrete polygons using ArcGIS. The abundance estimates associated with each point within the resulting polygons were summed, and a total was assigned to each polygon to indicate population size in numbers of individuals.

Results

A total of 14 special-status plant species were identified on the Project site and/or in the BSA during the 2013 and 2014 surveys (see table below). Of these 14 species, 10 occur on the Project site and would be impacted by the proposed Project; two of these 10 species, round-leaved filaree (*California macrophylla*) and shining navarretia (*Navarretia nigelliformis* ssp. *radians*), are locally abundant and widely distributed across the Project site. Other special-status species identified during the surveys occurred in much smaller numbers and in more localized populations. The numbers reported below indicate the combined results for 2013 and 2014, where the largest population estimate from the two surveys is shown for a species if it was encountered in the same area in both years.

Special-status Plants Detected during the 2013 and 2014 Surveys

Species	CRPR[1]	Approximate Number of Individuals		
		Project Site	BSA (outside Project Site)	Project Vicinity (outside BSA)
Douglas' fiddleneck *(Amsinckia douglasiana)*	4.2	0	500	135,000
California androsace *(Androsace elongata* ssp. *acuta)*	4.2	56	50	2285
Crownscale *(Atriplex coronata* var. *coronata)*	4.2	27	1734	10,880
Round-leaved filaree *(California macrophylla)*	1B.1	258,230	100,890	162,819
South Coast Range morning glory *(Calystegia collina* ssp. *venusta)*	4.3	19,588	5636	43,919
Potbellied spineflower *(Chorizanthe ventricosa)*	4.3	0	845	2855
Small-flowered morning glory *(Convolvulus simulans)*	4.2	25,175	24,753	47,212
Hall's tarplant *(Deinandra halliana)*	1B.1	1	0	1500
Elegant wild buckwheat *(Eriogonum elegans)*	4.3	25	361	0
Protruding buckwheat *(Eriogonum nudum* var. *indictum)*	4.2	10	473	46,383
Temblor buckwheat *(Eriogonum temblorense)*	1B.2	0	5700	0
Hogwallow starfish *(Hesperevax caulescens)*	4.2	27,642	840	20,114
Showy golden madia *(Madia radiata)*	1B.1	0	200	11,900
Shining navarretia *(Navarretia nigelliformis* ssp. *radians)*	1B.2	850,111	290,079	547,825

Notes:

[1] California Rare Plant Rank (CRPR) Definitions

1A = Plants presumed extinct in California and elsewhere.
1B = Plants that are rare, threatened, or endangered in California and elsewhere.
2A = Plants presumed extinct in California, but more common elsewhere.
2B = Plants rare, threatened, or endangered in California, but more common elsewhere.
3 = Plants about which more information is needed—a review list.
4 = A watch list of plants of limited distribution.

California Native Plant Society Threat Code Extensions

0.1: Seriously endangered in California.
0.2: Fairly endangered in California.
0.3: Not very endangered in California.

Table of Contents

Figures

Graphs

Tables

Appendices

Section 1.0 Introduction

During spring and summer 2014, protocol-level special-status plant surveys were conducted on the 2707-acre California Flats Solar Project (Project) site in southeastern Monterey and northeastern San Luis Obispo counties, California. Although most of the Project site was surveyed for special-status plants at a protocol level in 2013, additional surveys were necessary due to subsequent Project redesign. This report summarizes the Project improvements that necessitated additional surveys, describes the types and methods of surveys conducted in 2014, and presents the results of the survey efforts.

1.1 Project Description

California Flats Solar, LLC (the Project applicant), proposes to construct and operate a 280-megawatt, alternating current, photovoltaic solar energy project on an approximately 2707-acre site in southeastern Monterey County, California, near the borders of Monterey, San Luis Obispo, Kings, and Fresno counties. The proposed Project includes solar arrays and related structures, electrical equipment and infrastructure improvements, and an operations and maintenance facility. A complete description of the proposed Project is provided in the *California Flats Solar Project, Project Description*, prepared by Denise Duffy & Associates, Inc. (2012). Additional direct impact areas that were added in 2014 are briefly described below.

1.1.1 Utility Corridor

The utility corridor will extend from the Project site southwest to the Cholame Valley, following an existing ranch road, and will be used to site an aboveground temporary water pipeline, temporary pumping facilities, a 12.47-kilovolt electrical distribution line, and a communication line. The temporary water pipeline will carry water to the site (for construction uses only) from an existing well on the south side of Cholame Creek, and may be trenched under Cholame Creek.

1.1.2 Transmission Line Corridor

As part of the Project, an approximately 12,268-foot-long transmission line will be constructed along the central axis of the transmission line corridor. Multiple towers will be placed along the central spine of the transmission line corridor, and the remainder of the corridor will be used to provide the access, staging, and line-pulling sites needed for construction of the line. Although most of the alignment was surveyed in 2013, staging and line-pulling areas were subsequently added to the corridor, and the access road was realigned in one location.

1.1.3 Highway 41 Construction Laydown Area

Temporary staging areas may be established within San Luis Obispo County and California Department of Transportation (Caltrans) rights-of-way, for the purposes of constructing the proposed Highway 41 (Hwy 41) improvements at the existing access road, and for providing an entrance area for materials laydown. These

staging areas would be located on the northwest and southeast shoulders of Hwy 41. Hwy 41 would also be widened to accommodate a new turn lane for the Project. Additionally, a truck receiving and security area was added along the eastern shoulder of the private access road. This receiving area would be used throughout construction to allow vehicle queuing and to vet deliveries. The staging area on the south side of Hwy 41 would only be used during construction of Hwy 41 improvements.

1.1.4 Cottonwood Creek Crossing

The Project's road crossing over Cottonwood Creek was relocated approximately 100 feet northeast of the existing crossing. The newly proposed crossing site is better located for aligning the road and minimizing impacts on bank topography.

1.1.5 Longer Reaches of Stream Crossings

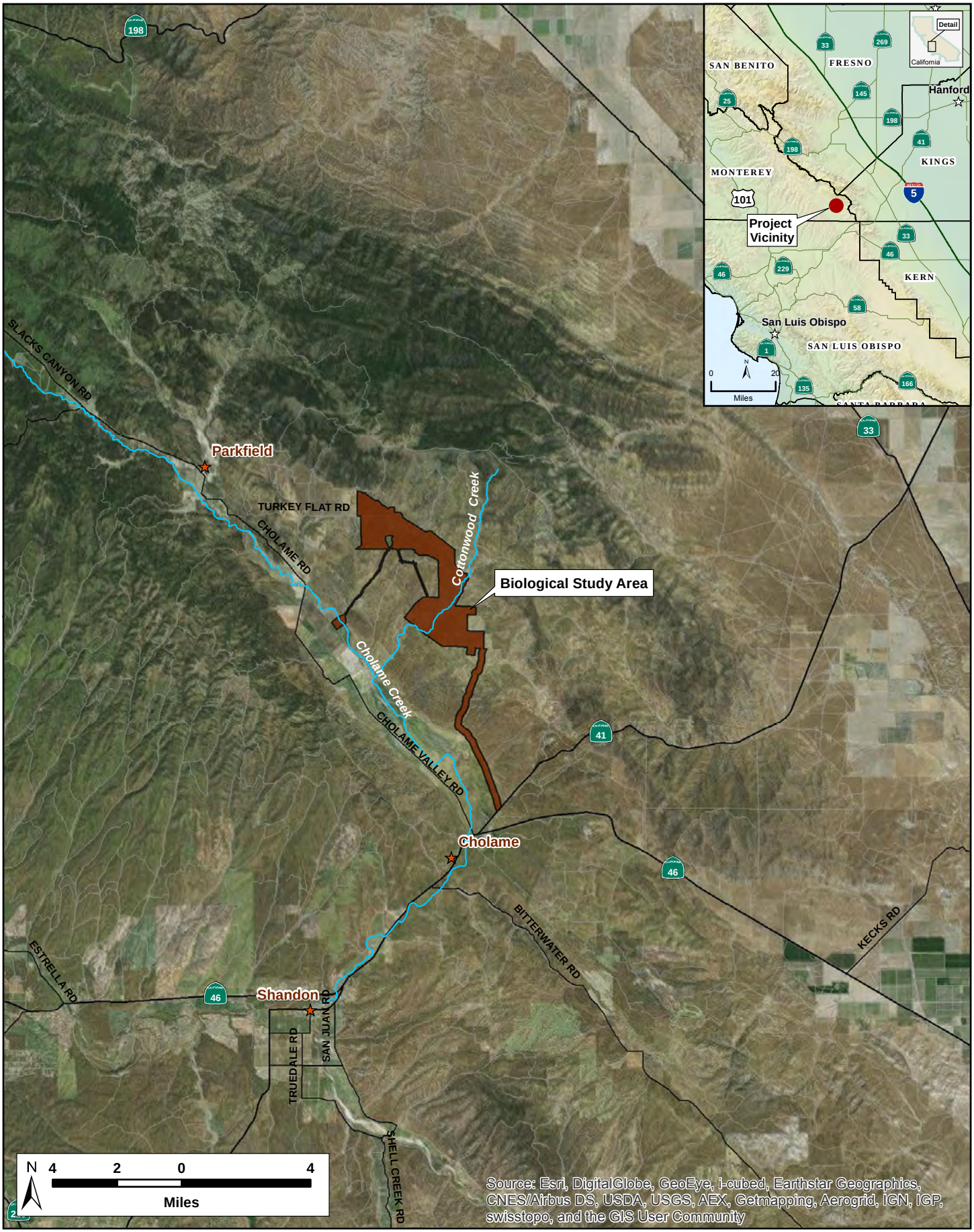
Six proposed stream crossings along the access road have now been designed with enough specificity to confirm that impacts on waters of the United States would extend outside the previously delineated corridor. These additional access areas were included in the Project site footprint to be studied in 2014, and the survey corridor for the entire access road was also widened to accommodate all road grading impacts.

1.2 Project Site Description

The Biological Study Area (BSA) for the Project was intentionally delineated to be larger than the area of the Project site, in order to frame the context of biological assessments, but is limited by private property interests. In total, the BSA comprises approximately 5033 acres in an unincorporated area of southeastern Monterey County. The Project site consists of an approximately 2707-acre area within the BSA. The proposed access road improvements between the Project site and Hwy 41 extend the southern portion of the BSA into northeastern San Luis Obispo County, California, near the Kings County and Fresno County borders (Figure 1).

The BSA is located along the eastern rim of the Cholame Valley. The San Andreas Rift Zone trends northwest-southeast south of the BSA. The BSA is bounded by mostly undeveloped private land in all directions. Sparse residential settlements and small farms are located west of the BSA. The BSA itself is undeveloped and is currently used as a working cattle ranch. Most level areas of the BSA (i.e., the area north of the access road spur to Hwy 41) were historically disked and dryland-farmed for hay and grain production.

The BSA occurs on three U.S. Geological Survey (USGS) 7.5-minute quadrangle maps: The Dark Hole, Cholame Valley, and Cholame (Figure 2). Elevations in the area range from 1180 feet National Geodetic Vertical Datum (NGVD) at the intersection of the access road with Hwy 41 to approximately 1860 feet NGVD along the northwest edge of the BSA. Topography in the BSA consists of steeply rolling hills along the BSA's northern, eastern, and southern boundaries and within a corridor for the proposed transmission line. Extensive alluvial terraces form wide, level plains in most of the central portion of the BSA (Figure 2).



J:\Reports\Botany Reports\Special Status Plants 2014 Report\August 2014\Fig 1 Vicinity Map1.mxd

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First Solar

Figure 1: Vicinity Map of BSA and Project Site
California Flats Solar Project:
2014 Special-status Plant Survey Report (3544-02)
September 2014

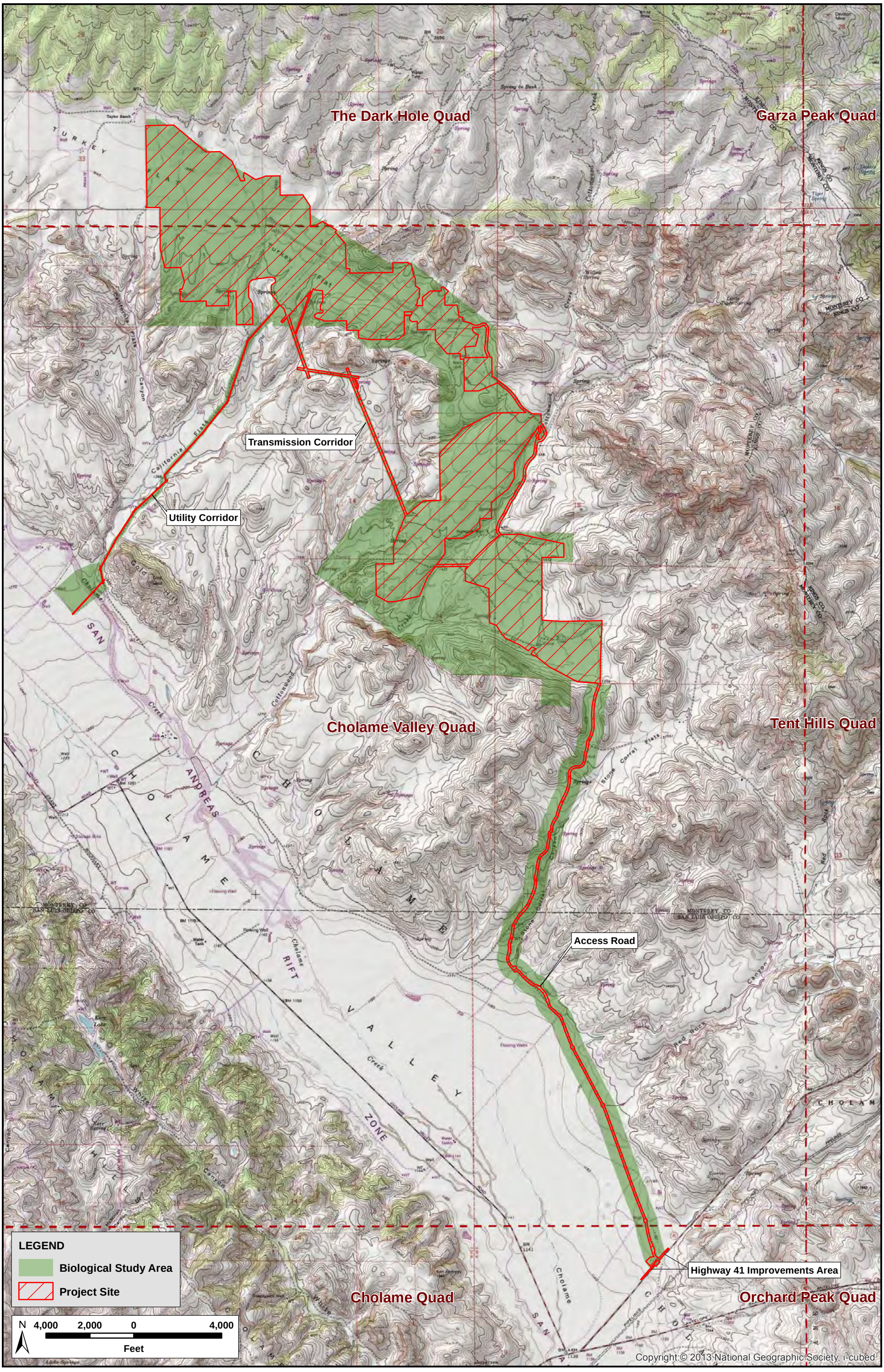

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Figure 2: USGS Map of BSA and Project Site

California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)

September 2014

The plains and hills are bisected by several drainages that mostly flow from north to south, eventually draining to the Cholame Valley. The largest perennial stream in the BSA is Cottonwood Creek, which is mostly excluded from the Project site itself with the exception of a road crossing (Figure 2). Climatic conditions range from cooler and wetter in the higher-elevation northwest corner of the BSA to warmer and drier in the lower-elevation southeast corner of the BSA. Average annual precipitation ranges from 13.6 to 17.9 inches across the site and average annual temperatures range from 59 to 61°F across the site with lower average rainfall and higher temeratures in the southern portion of the BSA (PRISM Climate Group 2014).

A total of 36 different soil types and complexes underlie the BSA (Figure 3). Table 1 lists the names of each soil type, along with its texture class, drainage classification, and hydric soil status, as determined by the National Resources Conservation Service (NRCS) (2012). Five of these soil series or complexes (Capay silty clay; Fluvents; stony Salinas clay loam, 0 to 2% slopes; Pico fine sandy loam; and Psamments and Fluvents, frequently flooded) are considered hydric. However, inclusions within soil series or complexes associated with certain landforms, such as basins and drainages, may also be hydric (NRCS 2012). The BSA extends into both the soil survey areas for Monterey County (Soil Conservation Service [SCS] 1978; soil symbols lettered) and San Luis Obispo County (SCS 1983; soil symbols numbered) (Table 1, following Figure 3).

Soils in the BSA are dominated by well-drained clay loams interspersed frequently with clays. Some of the heavier clays are considered to be hydric by NRCS (Table 1). Even in most clay soils in the BSA, a restrictive layer is lacking, and the soils drain freely. In many areas, frequent large cobbles occur in the soil profile, accelerating drainage. Some soils in the steeper portions of the BSA, including soils from the Climara and Montara series, are serpentine.

114 - BALCOM-NACIMIENTO ASSOCIATION, MODERATELY STEEP
122 - CAPAY SILTY CLAY
173 - MOCHO CLAY LOAM, 0 TO 2 PERCENT SLOPES
174 - MOCHO CLAY LOAM, 2 TO 9 PERCENT SLOPES
189 - RINCON CLAY LOAM, 9 TO 15 PERCENT SLOPES
195 - SAN EMIGDIO FINE SANDY LOAM, 2 TO 9 PERCENT SLOPES
AaC - ALO SILTY CLAY, 2 TO 9 PERCENT SLOPES
AaD - ALO SILTY CLAY, 9 TO 15 PERCENT SLOPES
AaE - ALO SILTY CLAY, 15 TO 30 PERCENT SLOPES
AaF - ALO SILTY CLAY, 30 TO 50 PERCENT SLOPES
Ab - ALO-MILLSHOLM COMPLEX
AyD - AYAR SILTY CLAY, 5 TO 15 PERCENT SLOPES
AyE - AYAR SILTY CLAY, 15 TO 30 PERCENT SLOPES
AyF - AYAR SILTY CLAY, 30 TO 50 PERCENT SLOPES
Ck - CLIMARA-MONTARA COMPLEX
CnC - CROPLEY SILTY CLAY, 2 TO 9 PERCENT SLOPES
DdB - DIBBLE SILT LOAM, 9 TO 15 PERCENT SLOPES
DdE - DIBBLE SILT LOAM, 15 TO 30 PERCENT SLOPES
Fa - FLUVENTS, STONY
GdF - GAVIOTA SANDY LOAM, 30 TO 75 PERCENT SLOPES
LhE - LOPEZ SHALY LOAM, 15 TO 30 PERCENT SLOPES
MbG - MCCOY-GILROY COMPLEX, 30 TO 75 PERCENT SLOPES
MhG - MILLSHOLM LOAM, 30 TO 75 PERCENT SLOPES
MoA - MOCHO SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES
MoC - MOCHO SILTY CLAY LOAM, 2 TO 9 PERCENT SLOPES
Mp - MONTARA-ROCK OUTCROP COMPLEX
NaD - NACIMIENTO SILTY CLAY LOAM, 9 TO 15 PERCENT SLOPES
NaE - NACIMIENTO SILTY CLAY LOAM, 15 TO 30 PERCENT SLOPES
NaF - NACIMIENTO SILTY CLAY LOAM, 30 TO 50 PERCENT SLOPES
PcC - PARKFIELD CLAY, 2 TO 9 PERCENT SLOPES
Pf - PICO FINE SANDY LOAM
Ps - PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED
RaC - RINCON CLAY LOAM, 2 TO 9 PERCENT SLOPES
RaD - RINCON CLAY LOAM, 9 TO 15 PERCENT SLOPES
SbA - SALINAS CLAY LOAM, 0 TO 2 PERCENT SLOPES
Xc - XERORTHENTS, LOAMY

TURKEY FLAT RD
Cottonwood Creek
Cholame Creek
CHOLAME VALLEY RD
STATE HIGHWAY 41
STATE HIGHWAY 46
KINGS COUNTY
MONTEREY COUNTY
MONTEREY COUNTY
SAN LUIS OBISPO COUNTY

LEGEND
Biological Study Area
Soil Series Boundary

N 4,000 2,000 0 4,000
Feet

J:\Reports\Botany Reports\Special Status Plants 2014 Report\August 2014\Fig 3 Soils Map.mxd

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Figure 3: Soils Map of BSA and Project Site
California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)
September 2014

Table 1. Soil Type, Texture, Drainage Classification, Hydric Soil Status, and Acreage for 36 Different Soil Types Occurring in the BSA

Soil Symbol	Soil Name	Soil Texture	Drainage Classification	Hydric	Acreage in BSA
AaC	Alo silty clay, 2 to 9% slopes	Silty clay	Well drained	No	8.26
AaD	Alo silty clay, 9 to 15% slopes	Silty clay	Well drained	No	4.83
AaE	Alo, silty clay, 15 to 30% slopes	Silty clay	Well drained	No	4.45
AaF	Alo silty clay, 30 to 50% slopes	Silty clay	Well drained	No	1.70
Ab	Alo-Millsholm complex	Silty clay/ loam	Well drained	No	40.28
AyD	Ayar silty clay, 5 to 15% slopes	Silty clay	Well drained	No	676.02
AyE	Ayar silty clay, 15 to 30% slopes	Silty clay	Well drained	No	127.84
AyF	Ayar silty clay, 30 to 50% slopes	Silty clay	Well drained	No	44.03
Ck	Climara-Montara complex	Clay/clay loam	Well drained	No	50.27
CnC	Cropley silty clay, 2 to 9% slopes	Silty clay	Well drained	No	232.30
DdB	Dibble silt loam, 9 to 15% slopes	Silt loam	Well drained	No	11.59
DdE	Dibble silt loam, 15 to 30%slopes	Silt loam	Well drained	No	28.69
Fa	Fluvents, stony	Sandy loam/ sand/cobbles	Excessively drained	Yes	50.83
GdF	Gaviota sandy loam, 30 to 75% slopes	Sandy loam	Excessively drained	No	81.73
LhE	Lopez shaly loam, 15 to 30% slopes	Shaly loam	Excessively drained	No	16.28
MbG	McCoy-Gilroy complex, 30 to 75% slopes	Clay loam/ gravely loam	Well drained	No	0.11
MhG	Millsholm loam, 30 to 75% slopes	Loam	Well drained	No	23.29
MoA	Mocho silty clay loam, 0 to 2% slopes	Silty clay loam	Well drained	No	281.00
MoC	Mocho silty clay loam, 2 to 9% slopes	Silty clay loam	Well drained	No	398.01
Mp	Montara-Rock outcrop complex	Clay loam/ rock	Well drained	No	52.99
NaD	Nacimiento silty clay loam, 9 to 15% slopes	Silty clay loam	Well drained	No	175.69
NaE	Nacimiento silty clay loam, 15 to 30% slopes	Silty clay loam	Well drained	No	138.43
NaF	Nacimiento silty clay loam, 30 to 50% slopes	Silty clay loam	Well drained	No	226.23
PcC	Parkfield clay, 2 to 9% slopes	Clay	Well drained	No	1684.18
Pf	Pico fine sandy loam	Sandy loam	Well drained	Yes	14.64

Soil Symbol	Soil Name	Soil Texture	Drainage Classification	Hydric	Acreage in BSA
Ps	Psamments and Fluvents, frequently flooded	Sandy loam/ sand/cobbles	Well drained	Yes	10.43
RaC	Rincon clay loam, 2 to 9% slopes	Clay loam	Well drained	No	15.64
RaD	Rincon clay loam, 9 to 15 percent slopes	Clay loam	Well drained	No	11.20
SbA	Salinas clay loam, 0 to 2% slopes	Clay loam	Well drained	Yes	43.99
Xc	Xerorthents, loamy	Loam	Well drained	No	150.38
114	Balcom-Nacimiento association, moderately steep	Fine loam	Well drained	No	83.06
122	Capay silty clay	Clay	Moderately well drained	Yes	26.29
173	Mocho clay loam, 0 to 2% slopes	Clay loam	Well drained	No	48.78
174	Mocho clay loam, 2 to 9% slopes	Clay loam	Well drained	No	151.92
189	Rincon clay loam, 9 to 15% slopes	Clay loam	Well drained	No	2.94
195	San Emigdio fine sandy loam, 2 to 9% slopes	Sandy loam	Well drained	No	114.92
	Total to Nearest Tenth of an Acre				**5033.2**

Notes: BSA = Biological Study Area.

Source: Natural Resources Conservation Service 2012.

All values approximate due to rounding.

1.3 Biotic Habitats

Five biotic community types occur on the Project site, and six community types occur within the larger BSA (Table 2). The five communities on the Project site are grasslands, woodlands (including oak woodlands), aquatic communities, wetlands, and developed/ruderal grassland. The larger BSA contains shrublands in addition to the five communities within the Project site(Table 2). The habitat characterizations were developed in reference to the habitats and vegetation alliances described by Holland (1986) and Sawyer et al. (2009).

Table 2. Biotic Community and Habitat Acreages in the BSA and on the Project Site

Biotic Community/Habitat	Total Acres in BSA	Total Acres on the Project Site
Grasslands	**4780.17**	**2632.31**
California annual grassland	3875.02	2036.31
Wildflower field	820.80	558.01
Serpentine bunchgrass grassland	4.61	0.01
Valley needlegrass grassland	3.90	0.58
Grassland riparian	75.84	37.40
Shrublands	**27.44**	**0.00**
Interior Coast Range goldenbush scrub	27.44	0.00
Woodlands	**71.39**	**12.41**
Willow–cottonwood riparian woodland	9.54	1.72
Ornamental non-native woodland	9.08	9.08
Mixed oak woodland	38.60	0.42
Riparian oak woodland	14.17	1.19
Aquatic Communities	**21.58**	**5.64**
Culvert	0.02	0.02
Ephemeral stream	10.27	4.91
Alluvial intermittent stream	5.51	0.10
Intermittent stream	2.27	0.37
Perennial stream	1.12	0.24
Pond	2.39	0.00
Wetlands	**24.01**	**5.32**
Perennial marsh	13.72	0.90
Seasonal wetland	10.29	4.42
Developed/Disturbed	**107.95**	**51.64**
Agricultural	36.64	0.69
Developed/ruderal grasslands	71.31	50.95
Total (All Acreages Are Approximate)	**5033.23**	**2707.32**

Notes: BSA = Biological Study Area.

Section 2.0 Survey Methods

2.1 Overview of 2014 Special-status Plant Surveys

Most of the Project site was surveyed at a protocol level in 2013; however, additional plant surveys were needed in 2014 because of subsequent Project redesign. Rare plant surveys in 2013 were conducted on all direct impact areas known at that time, including in all potential solar array and Project infrastructure locations, and in a 100-foot buffer around these areas. In total, these 2013 surveys covered approximately 2912 acres.

Between March and June 2014, H. T. Harvey & Associates ecologists conducted protocol-level, floristic special-status plant surveys across 457 acres. The survey area consisted of all new direct impact areas, including the entire 155-acre utility corridor study area, and a 100-foot buffer around these locations (Figure 4; Table 3). The 2014 protocol-level survey area was divided into 23 survey blocks, based on features such as fences, creeks, and roads. As in 2013, these protocol-level surveys were conducted along preset 50-foot transects to ensure complete coverage, and were floristic in nature, seeking to identify every plant species encountered on the site. The surveys were conducted in accordance with the most current guidelines from the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and California Native Plant Society (CNPS) (USFWS 2002; California Department of Fish and Game [CDFG] 2000, 2009; CNPS 2001), by trained plant ecologists familiar with the special-status plant species that occur in Monterey and San Luis Obispo counties. As per the guidelines, the surveys were conducted during the seasons appropriate for identifying all potentially occurring target species, and relied on reference population information to schedule survey coverage for the various target species. As such, the surveys also included extensive visits to reference sites to observe known populations of target species (see Section 2.2.3, "Reference Site Visits," for more details).

In addition to the protocol-level surveys, focused surveys for special-status plant species, which represented a high level of floristic survey effort but did not employ preset transects, were conducted on approximately 2326 acres in the remainder of the BSA in 2014 (Figure 4; Table 3).

Also, regional contextual surveys of the Project vicinity were conducted on approximately 8714 additional acres scattered outside, but within a 5-mile radius, of the BSA (Project Vicinity) (Table 3). These surveys were not floristic; instead, they aimed to provide contextual information on regional population sizes for the target species found on the Project site. For the regional contextual surveys, ecologists employed aerial photographs, soil maps, and other resources to identify highly suitable habitats for target special-status plant species, then concentrated effort in these areas. The purpose of these contextual surveys was to better characterize the botanical resources of the region, and more specifically, to place into local context the abundance of some of the rare plant species found on the Project site. Regional contextual surveys had been conducted in 2013 on approximately 12,205 acres of additional lands within a 5-mile radius of the BSA. Over

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LEGEND
2013 Protocol Survey Areas
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Figure 4: BSA and Project Site Survey Blocks

California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)
September 2014

the two consecutive years of rare plant surveys, regional contextual surveys were conducted across a total of approximately 16,839 acres in the Project Vicinity; some of these areas were surveyed during both 2013 and 2014, whereas others were surveyed in only one of the two survey years.

Table 3. Description of the Special-status Plant Surveys Conducted in 2014 for the California Flats Solar Project

Survey Area	Description	Size (acres)	Survey Methods
2014 protocol-level survey area	Newly added direct impact areas plus 100-foot buffer	457	Full protocol-level; 50-foot transects for first sweep, followed by targeted revisits; floristic
2014 focused survey area	BSA (outside the Project site)	2326	Floristic surveys by foot (without preset transects)
Regional contextual survey	Various lands within a 5-mile radius of the BSA	8714	Focused surveys by foot and UTV; not floristic

Notes: BSA = Biological Survey Area; UTV = utility task vehicle.

In addition, focused surveys for two federally listed species, California jewelflower (*Caulanthus californicus*) and San Joaquin woollythreads (*Monolopia congdonii*), were conducted in areas with suitable habitat across the entire Project site, some of which had been surveyed in 2013. These additional surveys were conducted to account for potential interannual variation in the abundance of these plant species, and to provide additional confirmation of the absence of these federally listed species from Project impact areas. Focused surveys in suitable habitat were also conducted on the portion of the Project site previously surveyed in 2013 for two CNPS-listed species, small-flowered morning glory (*Convolvulus simulans*) and Lemmon's jewel-flower (*Caulanthus lemmonii*). The Project site was resurveyed for small-flowered morning glory in 2014 because many more individuals of this species were encountered in 2014 than had been detected in 2013, and the team took advantage of an early survey period to locate all individuals of this cryptic species when its bright, lime-green cotyledons made it easily visible. The Project site was resurveyed for Lemmon's jewel-flower because this species was never detected in any reference population in 2013, but did germinate and flower near the BSA in 2014.

A comprehensive list of all plant species identified on the Project site, BSA, and in the Project vicinity is provided as Appendix A. Survey photos are provided in Appendix B.

2.1.1 Target Species Selection

Before conducting the 2014 surveys, H. T. Harvey & Associates plant ecologists consulted the most recent available records in the California Natural Diversity Database (CNDDB) (2014) (Figure 5), records for plant species with California Rare Plant Rank (CRPR) 1 through 4 (CNPS 2014a), and herbarium specimen and record information available through Calflora (2014) and the Consortium of California Herbaria (CCH) (2014). An initial list of species based on all CRPR plants known to occur in San Luis Obispo and Monterey

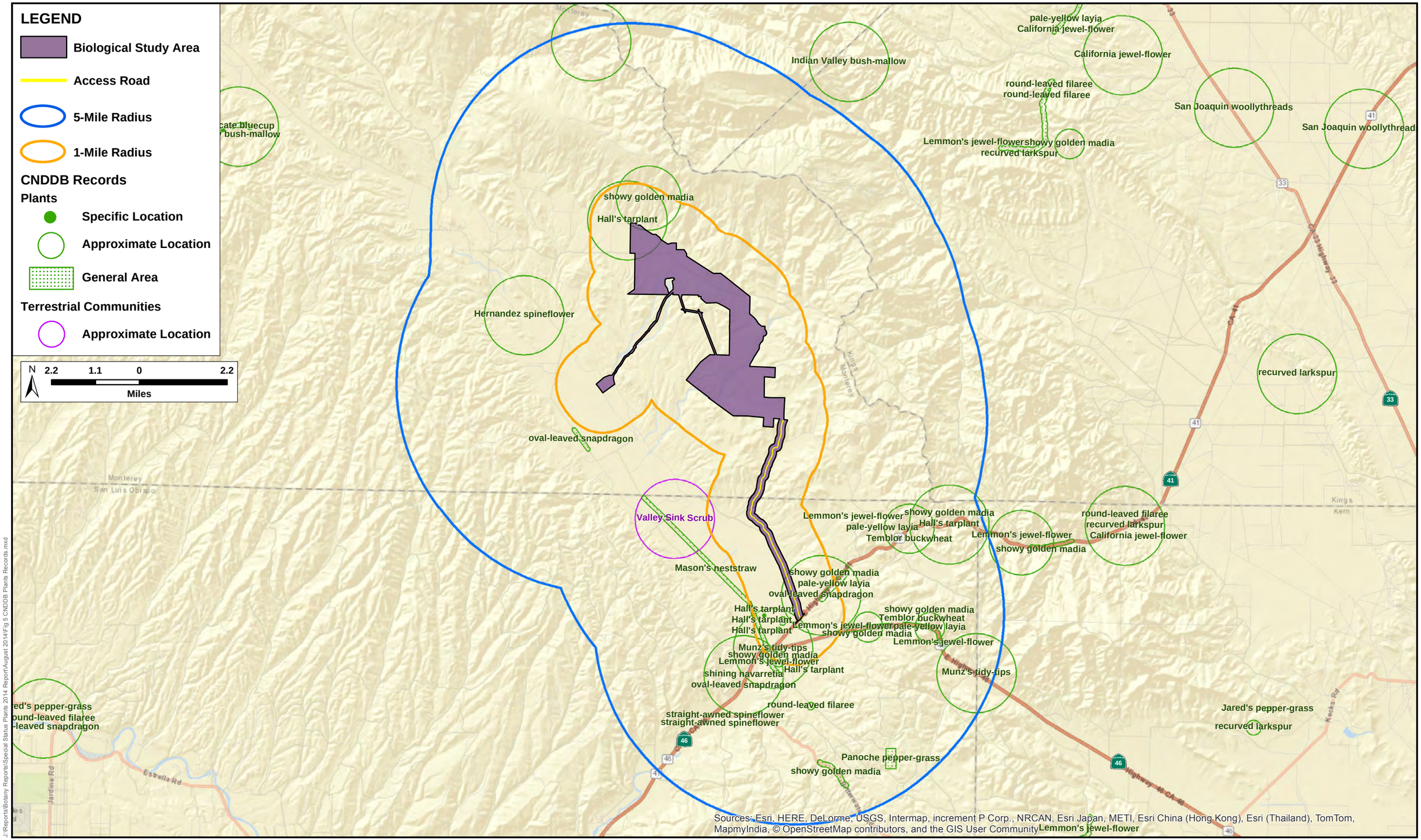

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Figure 5: CNDDB Plant Records

California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)

September 2014

counties was narrowed (based on habitat, microhabitat, edaphic, elevation, and occurrence information) to a list of 50 target species for the 2014 special-status plant survey effort (Table 4). However, although a target species list was used to focus the surveyors' efforts, the protocol-level and focused surveys were floristic in nature, and aimed to identify every plant found to the level necessary to determine its exact identity and status (typically the species, variety, or subspecies level).

Table 4. Target Special-status Plant List for the 2013 and 2014 Surveys

Scientific Name	Common Name	CRPR, State and Federal Status[1]	Blooming Period
Acanthomintha lanceolata	Santa Clara thorn mint	4.2	March–June
Acanthomintha obovata ssp. *obovata*	San Benito thorn mint	4.2	April–July
Amsinckia douglasiana	Douglas' fiddleneck	4.2	March–May
Amsinckia furcata	Forked fiddleneck	4.2	February–May
Androsace elongata ssp. *acuta*	California androsace	4.2	March–June
Antirrhinum ovatum	Oval-leaved snapdragon	4.2	May–November
Aristocapsa insignis	Indian Valley spineflower	1B.2	May–September
Astragalus macrodon	Salinas milk-vetch	4.3	April–July
Atriplex coronata var. *coronata*	Crownscale	4.2	March–October (identifiable in summer and fall)
Atriplex vallicola	Lost Hills crownscale	1B.2	April–August
Benitoa occidentalis	Western lessingia	4.3	May–November
California macrophylla	Round-leaved filaree	1B.1	March–May
Calochortus simulans	La Panza mariposa lily	1B.3	April–June
Calystegia collina ssp. *venusta*	South Coast Range morning glory	4.3	April–June
Caulanthus californicus	California jewelflower	1B.1, SE and FE	February–May
Caulanthus lemmonii	Lemmon's jewelflower	1B.2	March–May
Chorizanthe biloba var. *immemora*	Hernandez spineflower	1B.2	May–September
Chorizanthe rectispina	Straight-awned spineflower	1B.3	April–July
Chorizanthe ventricosa	Potbellied spineflower	4.3	May–September
Convolvulus simulans	Small-flowered morning glory	4.2	March–July
Cryptantha rattanii	Rattan's cryptantha	4.3	April–July
Deinandra halliana	Hall's tarplant	1B.1	April–May
Delphinium recurvatum	Recurved larkspur	1B.2	March–June
Eriastrum hooveri	Hoover's eriastrum	4.2	March–July
Eriogonum eastwoodianum	Eastwood's buckwheat	4.2	May–September
Eriogonum elegans	Elegant wild buckwheat	4.3	May–November
Eriogonum gossypinum	Cottony buckwheat	4.2	March–September

Scientific Name	Common Name	CRPR, State and Federal Status[1]	Blooming Period
Eriogonum nudum var. *indictum*	Protruding buckwheat	4.2	May–December
Eriogonum temblorense	Temblor buckwheat	1B.2	April–September
Eschscholzia hypecoides	San Benito poppy	4.3	March–June
Eschscholzia rhombipetala	Diamond-petaled California poppy	1B.1	March–April
Fritillaria agrestis	Stinkbells	4.3	March–June
Gilia tenuiflora ssp. *amplifaucalis*	Trumpet-throated gilia	4.3	March–April
Hesperevax caulescens	Hogwallow starfish	4.2	March–June
Lagophylla diabloensis	Forked hare-leaf	1B.1	April–September
Lasthenia ferrisiae	Ferris' goldfields	4.2	February–May
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	1B.1	February–June
Layia heterotricha	Pale-yellow layia	1B.1	March–June
Layia munzii	Munz's tidy-tips	1B.2	March–April
Lepidium jaredii ssp. *album*	Panoche pepper-grass	1B.2	February–June
Lepidium jaredii ssp. *jaredii*	Jared's peppergrass	1B.2	March–May
Lessingia tenuis	Spring lessingia	4.3	May–July
Madia radiata	Showy golden madia	1B.1	March–May
Microseris sylvatica	Sylvan microseris	4.2	March–June
Monolopia congdonii	San Joaquin woollythreads	1B.2, FE	February–May
Navarretia nigelliformis ssp. *nigelliformis*	Adobe navarretia	4.2	April–June
Navarretia nigelliformis ssp. *radians*	Shining navarretia	1B.2	April–July
Nemacladus secundiflorus var. *secundiflorus*	Large-flowered nemacladus	4.3	April–June
Senecio aphanactis	Chaparral ragwort	2B.2	January–April
Stylocline masonii[2]	Mason's neststraw	1B.1	March–May

Notes:

[1] State and Federal Status
SE = State-listed as endangered.
FE = Federally listed as endangered.

California Rare Plant Rank (CRPR) Definitions
1A = Plants presumed extinct in California and elsewhere.
1B = Plants that are rare, threatened, or endangered in California and elsewhere.
2A = Plants presumed extinct in California, but more common elsewhere.
2B = Plants rare, threatened, or endangered in California, but more common elsewhere.
3 = Plants about which more information is needed—a review list.
4 = A watch list of plants of limited distribution.

California Native Plant Society Threat Code Extensions
0.1: Seriously endangered in California.
0.2: Fairly endangered in California.
0.3: Not very endangered in California.

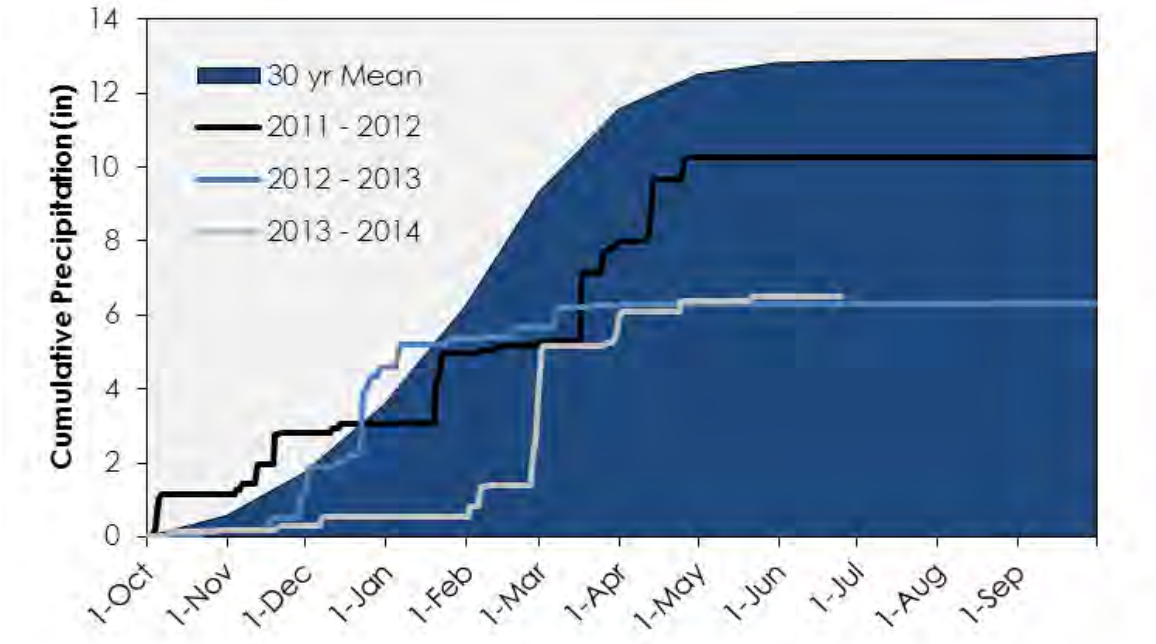
[2] *Stylocline masonii* (Mason's neststraw) was not included in the target species list for the 2013 survey effort. This species was added at a later date because suitable habitat was identified in the new area of Project improvements. This species is reported to colonize alluvial intermittent stream habitat (with a sandy or gravelly substrate) in the Cholame Creek channel at the southernmost end of the utility corridor.

2.1.2 Survey Timing and Precipitation

Onsite plant phenology (i.e., periodic life cycle events, such as flowering) and known reference populations in the vicinity were monitored throughout March 2014 to determine the best start date for the initial spring survey. Additionally, weather was monitored carefully throughout the growing season to track precipitation events and average temperatures. The public weather station nearest to the Project site is located approximately 5 miles northwest of the BSA, at an elevation of 1525 feet, in the town of Parkfield (MesoWest 2014). Although detailed climate data for the BSA itself are not available, analysis of data from the Parkfield weather station provides a useful and pertinent representation of hydrologic conditions in the Project Vicinity.

The 30-year climate normals for the Parkfield area indicate that approximately 13.1 inches of precipitation fall annually (Graph 1). During the 2013–2014 growing season (from October 2013 through June 2014), 6.5 inches of rain were recorded in Parkfield, which is approximately 50% below normal. Just prior to the start of the 2014 survey effort, a large rain event occurred, with approximately 3.8 inches falling during a 5-day period from 26 February to 2 March, accounting for approximately 71% of the normal rainfall for the months of February and March combined (5.33 inches) (PRISM Climate Group 2014). Before this event, Parkfield had received only 1.4 inches of precipitation during the nearly 5-month period from 1 October to 25 February.

In the 2012–2013 growing season (October 2012 through June 2013), 6.3 inches of rainfall were recorded in Parkfield, approximately 49% of normal in Parkfield. In contrast to the most recent growing season, the majority of rain fell during several big storms from late November to January. After 1 January, Parkfield received only 1.7 inches of rain during what is typically the wettest time of the year (January–March).



Graph 1. Comparison of Precipitation over the Last Three Years in Parkfield, California, with 30-year Climate Normals (1980–2010)

2.1.3 Survey Personnel and Preparation

A team of qualified plant ecologists experienced with the flora of the Central Coast Ranges and Carrizo Plain was employed to conduct the 2014 surveys (individual resumes are provided as Appendix C). The team consisted of Colin Wilkinson, B.S.; Chris Winchell; Élan Alford, Ph.D.; Ethan Barnes, M.S.; Brian Cleary, M.S.; Maya Goklany, M.S.; and Chris Gurney, M.S. All members of the survey crew had also participated in the 2013 special-status plant surveys and attended a survey orientation in March 2013. The 2013 orientation included an overview of all target species and survey methods.

2.1.4 Survey Dates and Effort

As stated, the 2014 protocol-level surveys adhered to CNPS (2001) and CDFW (CDFG 2009) guidelines and were floristic in nature. The surveys occurred during the seasons appropriate for detecting and accurately identifying all potentially occurring target species (Table 4), as well as all common species in the survey areas. Plant and community phenology (seasonal development and life cycle timing) were monitored beginning in early March 2014 to schedule the start date for the initial spring surveys. Because most of the target species are annuals with documented blooming periods between March and May (Table 4), comprehensive, transect-based spring surveys were conducted during late March and early April (31 March–11 April). Revisits were conducted in late April and early May (30 April to 2 May). Summer surveys were conducted on 10–11 June, when phenology progressed enough to adequately to detect the fruits of annual saltscale (*Atriplex* spp.) and buckwheat (*Eriogonum* spp.) species, as is necessary for identification to the species and variety taxonomic levels. Focused surveys and regional contextual surveys followed a similar timeline; however, regional

contextual surveys did not include summer revisits. In total, approximately 800 person-hours were spent on the protocol-level, focused, and regional contextual surveys combined. This estimate does not include time spent on phenology visits, orientation and training, travel, reference site visits, or specimen identification. A summary of 2014 survey dates and personnel is provided in Table 5..

Table 5. Timeline for 2014 Special-status Plant Surveys

Dates (2014)	Location	Tasks	Plant Ecologists
4–7, 14, 19 March	Known reference populations in vicinity (CNDDB and CCH records; see Table 6)	Check phenology and monitor reference populations	Colin Wilkinson Chris Winchell
24–27 March	BSA and known reference populations in vicinity (CNDDB and CCH records; see Table 6)	Check phenology and monitor reference populations	Ethan Barnes Colin Wilkinson Chris Winchell
31 March to 1 April, 3–4 April	2014 protocol-level survey area and known reference populations in vicinity (CNDDB and CCH records; see Table 6)	Conduct initial spring surveys; monitor reference populations	Élan Alford Ethan Barnes Brian Cleary Maya Goklany Chris Gurney Colin Wilkinson Chris Winchell
9–11 April	2014 protocol-level survey area	Finish initial spring surveys	Ethan Barnes Colin Wilkinson
14–25 April	Project Vicinity	Conduct regional contextual surveys	Élan Alford Ethan Barnes Brian Cleary Maya Goklany Chris Gurney Colin Wilkinson Chris Winchell
19, 22, 24 April	Known reference populations in vicinity (CNDDB and CCH records; see Table 6)	Check phenology and monitor reference populations	Colin Wilkinson Chris Winchell
30 April to 2 May	2014 protocol-level survey area	Conduct late spring revisits to confirm species identifications	Ethan Barnes Colin Wilkinson Chris Winchell
2 May	Project site (including the 2013 survey area)	Focused survey for California jewelflower and San Joaquin woollythreads	Ethan Barnes Colin Wilkinson Chris Winchell
5 May	Known reference populations in vicinity (CNDDB and CCH records; see Table 6)	Check phenology and monitor reference populations	Chris Winchell
19–20 May	Project Vicinity	Conduct regional contextual surveys	Ethan Barnes Brian Cleary Colin Wilkinson Chris Winchell

Dates (2014)	Location	Tasks	Plant Ecologists
8–9 June	Known reference populations in vicinity (CNDDB and CCH records; see Table 6)	Check phenology and monitor reference populations	Chris Winchell
10–11 June	2014 protocol-level survey area	Conduct summer revisits to confirm *Eriogonum*, *Atriplex*, and *Astragalus* species	Ethan Barnes Chris Winchell

2.1.5 Taxonomy and Identification

Plants were identified using primarily *The Jepson Manual, 2nd Edition* (Baldwin et al. 2012), supplemented by *A California Flora and Supplement* (Munz and Keck 1968) and *The Jepson Manual* (Hickman 1993). For the purpose of this report, the naming conventions of *The Jepson Manual, 2nd Edition* were employed (Baldwin et al. 2012). Supplemental information, taxonomic crosswalks between keys, and visual comparisons were provided by *An Illustrated Field Key to the Flowering Plants of Monterey County* (Matthews 1997) and Calflora (2014). Voucher specimens of all special-status species were collected and preserved using standard herbarium methods. All special-status species occurrences in the BSA are in the process of being submitted to the CNDDB to satisfy the protocol for rare plant surveys.

2.1.6 Occurrence Counts and GPS/GIS Data

All data were recorded using the GISKit Pro (Garafa, LLC) application on Apple® iPad 4 and iPad Air tablets. The iPads are capable of identifying location to within about 16.4 feet (5 meters). Wherever possible, discrete populations of special-status plants were mapped in the field using the Global Positioning System (GPS), and the number of individuals in each population was estimated. However, some special-status plants were small or cryptic and occurred in widely scattered populations, making it difficult to delineate the boundaries of discrete populations in the field. In these cases, surveyors recorded GPS points at regular intervals (approximately every 50 feet) along transects (preset or intuitive) until special-status plants could no longer be detected. Along with each GPS point, an estimate of the number of special-status plant individuals occurring in that interval was recorded. These data resulted in thousands of individual data points that were later aggregated into discrete polygons using ArcGIS. The abundance estimates associated with each point within the resulting polygons were summed, and a total was assigned to each polygon to indicate population size in numbers of individuals.

The total acreage of occupied habitat for each species was estimated from polygon data in ArcGIS. Our estimates of occupied habitat are conservative, to compensate for the dry condition. Additionally, most polygons represent a mosaic of occupied and unoccupied habitats; practical constraints made it impossible to delineate every small patch of occupied/unoccupied habitat within very large, scattered populations. Thus, our mapped polygons accurately represent the distribution and abundance of special-status plant species at a coarse scale, but are not intended to be used at a very fine scale.

2.1.7 Reference Site Visits

Protocol-level surveys include visits to target species populations at nearby known reference sites. For the purpose of the 2014 surveys, these sites included those open to the public and legally accessible, and locations within the Project site and BSA areas where populations were observed in 2013. The purpose of these visits is to train surveyors to recognize suitable habitat for target species, determine whether and when annual species are blooming and perennial species are detectable, and determine the appropriate timing of the survey effort for that year. For the 2014 protocol-level surveys, reference populations selected for visits were based upon prior surveys conducted by H. T. Harvey & Associates ecologists or located using the CNDDB (2014), Calflora (2014), and CCH (2014). Reference site visits took place across 20 days from 4 March to 9 June 2014.

The results of reference site visits are summarized in Table 6 below. Of the 50 target species, 38 species were observed at some point during the 2014 surveys. Of the remaining 12 species, sufficient location information to locate reference populations was lacking for 3 species: Rattan's cryptantha (*Cryptantha rattanii*), Hall's tarplant (*Deinandra halliana*), and adobe navarretia (*Navarretia nigelliformis* ssp. *nigelliformis*). Nine species were not observed even though detailed location information was available; these may not have germinated in 2014 because of the precipitation patterns previously discussed: La Panza mariposa lily (*Calochortus simulans*), Hoover's eriastrum (*Eriastrum hooveri*), cottony buckwheat (*Eriogonum gossypinum*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), trumpet-throated gilia (*Gilia tenuiflora* ssp. *amplifaucalis*), Coulter's goldfield (*Lasthenia glabrata* ssp. *coulteri*), Panoche peppergrass (*Lepidium jaredii* ssp. *album*), Jared's peppergrass (*Lepidium jaredii* ssp. *jaredii*), and Mason's neststraw (*Stylocline masonii*).

Table 6. Summary of Reference Site Visits to Recorded Locations of Target Special-status Species Occurrences

Common and Scientific Name	CRPR, State and Federal Status[1]	Reference Population ID	Dates Visited (2014)	Observed? (Y/N)	Comments
Santa Clara thorn mint *(Acanthomintha lanceolata)*	4.2	Parkfield Grade, near or at CCH: PGM2137	3/7, 3/25, 6/9	Y	None observed on 3/7 or 3/25. Approximately 75 flowering plants observed on 6/9.
San Benito thorn mint (*Acanthomintha obovata* ssp. *obovata*)	4.2	Known occurrence off Coalinga Road near Hernandez Reservoir	6/9	Y	Hundreds of plants observed, many in bud or early flower.
Douglas' fiddleneck (*Amsinckia douglasiana*)	4.2	Known 2013 occurrence in 2013 BSA survey area	3/19, 3/24, 3/31, 4/14	Y	Plants vegetative on 3/19 and 3/24; budding on 3/31; in flower on 4/14.
Forked fiddleneck (*Amsinckia furcata*)	4.2	CCH: JEPS100514	3/7, 3/27	Y	None observed on 3/7; 150+ plants in bloom on 3/27.
		Known location near Tumey Hills entrance	3/7, 3/27	Y	Twenty plants observed in flower and 100+ in bud on 3/7; 100+ plants flowering and fruiting on 3/27.
California androsace (*Androsace elongata* ssp. *acuta*)	4.2	Known 2012 occurrence in 2013 BSA survey area	3/6, 3/25	Y	None observed on 3/6; five plants in bud observed on 3/25.
		Known 2013 location on Stylocline Ridge, north edge of Panoche Valley	3/7, 3/27	Y	Approximately 40 basal rosettes observed on 3/7; plants generally in bud on 3/27.
Oval-leaved snapdragon (*Antirrhinum ovatum*)	4.2	Known 2013 location off Coaling Road near Hernandez Reservoir	6/9	Y	Two plants observed in flower.
Indian Valley spineflower *(Aristocapsa insignis*)	1B.2	CNDDB Occ. #1	6/9	Y	Fewer than 10 flowering individuals observed.
Salinas milk-vetch *(Astragalus macrodon)*	4.3	Known location near Simmler on Hwy 58	N/A	N	Insufficient location information available for reference site visit—nearby recorded occurrences located on private property and no access was possible.

Common and Scientific Name	CRPR, State and Federal Status[1]	Reference Population ID	Dates Visited (2014)	Observed? (Y/N)	Comments
Crownscale (*Atriplex coronata* var. *coronata*)	4.2	Known 2013 occurrence in 2013 Project site survey area	3/6, 3/19, 5/1, 6/10	Y	Dozens of young, vegetative plants observed on 3/6 and 3/19; plants with immature fruit bracts present on 5/1; plants with mature fruit bracts observed on 6/10.
Lost Hills crownscale (*Atriplex vallicola*)	1B.2	Known occurrence on Carrizo Plain (Tab property)	3/5, 3/26, 6/9	Y	Hundreds of young, vegetative plants observed on 3/5 and 3/26; plants with mature fruiting bracts found on 6/9.
Western lessingia (*Benitoa occidentalis*)	4.3	CCH: CHSC43092	3/6, 3/25, 6/9	Y	Potential basal leaves observed 3/6 and 3/25; approximately 100 plants observed in bud on 6/9.
Round-leaved filaree (*California macrophylla*)	1B.1	Known 2012 occurrence in 2013 Project site survey area	3/6, 3/25	Y	Vegetative plants observed on 3/6; some flowers observed on 3/25. Plants generally occurred at lower densities in 2014 compared to 2013.
La Panza mariposa lily (*Calochortus simulans*)	1B.3	CNDDB Occ. #14	6/9	N	None observed.
		Known occurrence along Hwy 58	3/26, 6/9	N	None observed.
South Coast Range morning glory (*Calystegia collina* ssp. *venusta*)	4.3	Observed on Project site	3/6, 3/25	Y	Fewer than 100 vegetative plants observed on 3/6; several budding plants observed on 3/25.
California jewelflower (*Caulanthus californicus*)	1B.1, SE and FE	CNDDB Occ. #44	3/5, 3/26	N	None observed.
		CNDDB Occ. #56	3/4, 5/5	Y	No plants observed on 3/4; approximately 110 plants observed on 5/5.
Lemmon's jewelflower (*Caulanthus lemmonii*)	1B.2	CNDDB Occ. #15	3/5, 3/25	N	None observed.
		CNDDB Occ. #19	3/5, 3/14, 4/19	Y	None observed on 3/5; possible basal leaves observed on 3/14; thousands of plants in flower observed on 4/19.

Common and Scientific Name	CRPR, State and Federal Status[1]	Reference Population ID	Dates Visited (2014)	Observed? (Y/N)	Comments
Hernandez spineflower (*Chorizanthe biloba* var. *immemora*)	1B.2	CNDDB Occ. #2	6/8	Y	Approximately 25 plants in early flower observed.
Straight-awned spineflower (*Chorizanthe rectispina*)	1B.3	CNDDB Occ. #5	3/26, 6/9	Y	Approximately 20 vegetative plants observed on 3/26; plants in full flower on 6/9.
Potbellied spineflower (*Chorizanthe ventricosa*)	4.3	Project site; discovered during 2013 surveys	3/5, 3/26, 4/22	Y	Plants vegetative on 3/5 and 3/26; plants in early flower on 4/22.
Small-flowered morning glory (*Convolvulus simulans*)	4.2	Known 2013 occurrence in the 2013 Project site survey area	3/5, 3/14, 3/25	Y	Cotyledons present on 3/5; first sets of basal leaves present on 3/14; first flowers observed on 3/25. Plants occurred in much greater densities and larger populations were observed in 2014 compared to 2013.
Rattan's cryptantha (*Cryptantha rattanii*)	4.3	n/a	n/a	n/a	Insufficient location information available for reference site visit—nearby recorded occurrences are located on private property.
Hall's tarplant (*Deinandra halliana*)	1B.1	n/a	n/a	n/a	Insufficient location information available for reference site visit—nearby recorded occurrences are located on private property. Individual detected on-site in 2013 not found in 2014.
Recurved larkspur *(Delphinium recurvatum)*	1B.2	CNDDB Occ. #26	3/5, 3/26	Y	Approximately 10 vegetative plants observed on 3/5; plants remained vegetative and were drying on 3/26.
Hoover's eriastrum (*Eriastrum hooveri*)	4.2	CNDDB Occ. #17	3/5, 3/27	N	Suitable habitat present; however, plants not observed. Site conditions dry.
		Known occurrence near McKittrick	3/5, 3/27	N	Suitable habitat present; however, plants not observed. Site conditions dry.
		Known occurrences near Buttonwillow	3/5, 3/27	N	Suitable habitat present; however, plants not observed. Site conditions dry.
Eastwood's buckwheat (*Eriogonum eastwoodianum*)	1B.3	CNDDB Occ. #1	3/6, 3/25, 6/9	Y	Not observed on 3/6; basal rosettes observed on 3/25; plants in early flower on 6/9.

Common and Scientific Name	CRPR, State and Federal Status[1]	Reference Population ID	Dates Visited (2014)	Observed? (Y/N)	Comments
Elegant wild buckwheat (*Eriogonum elegans*)	4.3	CCH: CHSC55235	3/26, 6/9	Y	Approximately 100 basal rosettes observed on 3/26; plants in early flower on 6/9.
		Known occurrence along Vineyard Canyon Road	6/9	Y	Thousands of plants in early flower observed.
Cottony buckwheat (*Eriogonum gossypinum*)	4.2	Known occurrence in Carrizo Plain	3/5, 3/25, 6/9	N	None observed. Site conditions dry.
Protruding buckwheat (*Eriogonum nudum* var. *indictum*)	4.2	Known occurrence along Parkfield Grade	3/25, 6/9	Y	Plants vegetative on 3/25; some plants in early flower on 6/9.
Temblor buckwheat (*Eriogonum temblorense*)	1B.2	Known 2013 occurrence on the 2013 Project site survey area	3/25, 6/9	Y	Plants vegetative on 3/25; flowering plants observed on 6/9.
San Benito poppy (*Eschscholzia hypecoides*)	4.3	Multiple occurrences along Parkfield Grade	3/6, 3/25	Y	No plants observed on 3/6; approximately 10 young and vegetative plants observed on 3/25.
		Known occurrence near known *Amsinckia furcata* record (CCH: UC1097048)	3/7, 6/8	Y	Not observed on 3/7; withered and fruiting plants observed on 6/8.
Diamond-petaled California poppy (*Eschscholzia rhombipetala*)	1B.1	CNDDB Occ. #8	3/5, 3/25	N	Suitable habitat present; however, plants not observed. Site conditions dry.
Stinkbells (*Fritillaria agrestis*)	4.3	CNDDB Occ. #32	3/5	N	None observed.
		CCH: SDSU19714	3/5, 3/26	Y	None observed on 3/5; approximately 15 vegetative plants and two budding plants observed on 3/26.
		Known occurrence along Parkfield Grade	3/5, 3/25	Y	No plants observed.
Trumpet-throated gilia (*Gilia tenuiflora* ssp. *amplifaucalis*)	4.3	CCH: CAS526015	3/6, 3/19	N	None observed.

Common and Scientific Name	CRPR, State and Federal Status[1]	Reference Population ID	Dates Visited (2014)	Observed? (Y/N)	Comments
Hogwallow starfish (*Hesperevax caulescens*)	4.2	Known 2012 occurrence in 2013 Project site survey area	3/5, 3/14, 3/25	Y	Plants vegetative on 3/5 and 3/14; plants with flowers first detected on 3/25.
Forked hare-leaf (*Lagophylla diabolensis*)	1B.2	Known occurrence along Coalinga Road	6/8	Y	Plants in full flower.
Ferris' goldfields (*Lasthenia ferrisiae*)	4.2	Known occurrence on Carrizo Plain, Tab property	3/5, 3/25	Y	Possible vegetative plants observed on 3/5.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	1B.1	CNDDB Occ. #89	3/5, 3/25	N	None observed.
Pale-yellow layia (*Layia heterotricha*)	CRPR 1B.1	Known occurrence on southern Carrizo Plain; southeast of Majellesi parcel	3/5, 3/25	N	None observed.
		CNDDB Occ. #14	4/4	Y	Hundreds of plants observed in full flower.
Munz's tidy-tips (*Layia munzii*)	CRPR 1B.2	Known occurrence along Clarksburg, north of Belmont	3/5, 3/25	Y	Possible plants observed on 3/5; small numbers of plants in bud observed on 3/25.
		CNDDB Occ. #11 along road east of Tab property	3/25	Y	A few depauperate individuals observed in bud.
Panoche pepper-grass (*Lepidium jaredii* ssp. *album*)	CRPR 1B.2	CNDDB Occ. #11	3/5	N	None observed. Site conditions dry.
		CNDDB Occ. #19	3/15	N	None observed. Site conditions dry.
Jared's peppergrass (*Lepidium jaredii* ssp. *jaredii*)	CRPR 1B.2	CNDDB Occ. #5	3/5, 3/25	N	None observed. Site conditions dry.
		Known occurrence on Carrizo Plain (Tab property)	3/5, 3/25	N	None observed. Site conditions dry.
Spring lessingia (*Lessingia tenuis*)	CRPR 4.3	CCH: OBI15781	3/6, 3/26	Y	Dozens of vegetative plants found.
		Known occurrence on Vineyard Canyon Road	6/9	Y	Approximately 500 plants observed in flower.

Common and Scientific Name	CRPR, State and Federal Status[1]	Reference Population ID	Dates Visited (2014)	Observed? (Y/N)	Comments
Showy golden madia (*Madia radiata*)	CRPR 1B.1	Known occurrence near the Parkfield Grade summit	3/25, 4/4	Y	Approximately 20 possible vegetative individuals observed, buds visible on 4/4.
Sylvan microseris (*Microseris sylvatica*)	CRPR 4.2	Known location on Tejon Ranch east of Bakersfield; south side of Bena Road, off Hwy 58	3/4, 4/1	Y	Approximately 25 basal rosettes observed on 3/4; plants observed on 4/1 were withering and did not appear to have flowered.
San Joaquin woollythreads (*Monolopia congdonii*)	CRPR 1B.2, FE	CNDDB Occ. #39	3/5, 3/25	N	No plants observed. Site conditions dry.
		CNDDB Occ. #31	3/5, 3/25	N	No plants observed. Site conditions dry.
		CNDDB Occ. #44	3/5, 3/25	N	No plants observed. Site conditions dry.
		CNDDB Occ. #8	5/5	Y	Thousands of dead and senesced plants observed.
Adobe navarretia (*Navarretia nigelliformis* ssp. *nigelliformis*)	CRPR 4.2	n/a	n/a	n/a	Insufficient location information available for reference site visit—nearby occurrences were vaguely described, located on private property, or potentially misidentified.
Shinning navarretia (*Navarretia nigelliformis* ssp. *radians*)	CRPR 1B.2	Known 2012 occurrence on Project site.	3/5, 3/14, 3/25	Y	Hundreds of plants observed, vegetative and in bud, on all dates. First flowers observed in early April in protocol survey areas.
Large-flowered nemacladus (*Nemacladus secundiflorus* var. secundiflorus)	CRPR 4.3	CCH: OBI57348 (35.46037/-120.34384)	3/5, 3/25, 4/24	Y	No plants observed on 3/5; approximately 10 plants in bud observed on 3/25; flowering on 4/24.

Common and Scientific Name	CRPR, State and Federal Status[1]	Reference Population ID	Dates Visited (2014)	Observed? (Y/N)	Comments
Chaparral ragwort (*Senecio aphanactis*)	CRPR 2B.2	CNDDB Occ. #46	3/7	Y	Approximately 100 plants observed in early flower.
Mason's neststraw (*Stylocline masonii*)	CRPR 1B.1	Several possible locations in the Cholame and Cholame Valley 7.5-minute quadrangles (CNPS 2014b).	3/3, 4/1 4/3, 4/4	N	This species has been collected once (in 1991) over the past 43 years, and is known from seven total occurrences throughout the state (CNPS 2014b). Likely extirpated from Project Vicinity.

Notes: BSA = Biological Study Area; CCH = Consortium of California Herbaria; CNDDB = California Natural Diversity Database; Occ = Occurrence.

n/a = Insufficient location information available for reference site visit.

[1] State and Federal Status
SE = State-listed as endangered.
FE = Federally listed as endangered.

California Rare Plant Rank (CRPR) Definitions
1A = Plants presumed extinct in California and elsewhere.
1B = Plants that are rare, threatened, or endangered in California and elsewhere.
2A = Plants presumed extinct in California, but more common elsewhere.
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3 = Plants about which more information is needed—a review list.
4 = A watch list of plants of limited distribution.

California Native Plant Society Threat Code Extensions
0.1: Seriously endangered in California.
0.2: Fairly endangered in California.
0.3: Not very endangered in California.

2.2 Protocol-level Survey Details

2.2.1 Initial Spring Survey

Initial field surveys of the Project site were accomplished by teams of two to seven plant ecologists. The teams included E. Alford, E. Barnes, B. Cleary, M. Goklany, C. Gurney, C. Wilkinson, and C. Winchell (Table 5). On each survey day, the survey crew was divided into teams, and each team leader filled out a Team Leader Summary Sheet that, at minimum, documented who was on the team for that day and where the surveys were located. Additional information was recorded on these forms when appropriate, such as whether any target species were located, the areas needing revisits because early phenology was indicated, and weed abundance data.

The approximately 457-acre protocol-level survey area was walked on foot by the survey team, using transects spaced at 50-foot intervals and arranged in survey blocks. All survey blocks and transects were preloaded onto Apple® iPad 4 and iPad Air tablets using the GISKit Pro application. When special-status plants were found, data forms were completed in GISKit Pro that, at minimum, included the following information: GPS coordinates, date, time, surveyor, species, and number of individual plants. Comprehensive, floristic plant lists were maintained for each survey. The plant ecologists noted where revisits were needed, and where rare plants had been found each day.

2.2.2 Mid-spring Revisits

Potential rare plants that could not be identified with confidence during the initial spring survey were marked for revisit by recording GPS coordinates in the GISKit Pro data forms. Plant populations that required late spring revisits to confirm their identification to the species, subspecies, and variety taxonomical levels were morning glory (*Calystegia* sp.), spineflower, larkspur, buckwheat, and navarretia. From 9 to 11 April and from 30 April to 2 May, these populations were revisited by a team of up to three plant ecologists: E. Barnes, C. Wilkinson, and C. Winchell. Considerable attention was focused on verifying the identification of navarretia species, because many of these plants did not have mature flowers during the initial spring surveys, and the Project site supports two species that co-occur. However, in most cases, shining navarretia (*Navarretia nigelliformis* ssp. *radians*) can be distinguished vegetatively from the other common species in the BSA (Paso Robles navarretia [*N. mitracarpa*]), based on several features, including smaller, more densely clustered bracts (Appendix B, Photo 1). Thus, the revisits mostly confirmed that the initial shining navarretia identifications were correct.

2.2.3 Summer Revisits

Summer floristic surveys to confirm the identification of saltscale species to the lowest taxonomical level possible were conducted on 10 and 11 June by plant ecologists E. Barnes and C. Winchell. As with the previous surveys, when a population of any target species was encountered, the extent of the discrete population or area of concentrated individuals was mapped using a GPS unit, and the number of individual target plants in the area was visually estimated.

Section 3.0 Survey Results

3.1 Summary of 2013 and 2014 Survey Results

Of the 50 target special-status plant species, 14 species were found on the Project site, in the BSA, or in the Project Vicinity during the 2013 and 2014 surveys (Table 7; Figures 6–9). Of these 14 species, 10 occur both on the Project site and in the BSA and would be affected by the proposed Project. These species are California androsace (*Androsace elongata* ssp. *acuta*), crownscale (*Atriplex coronata* var. *coronata*), round-leaved filaree (*California macrophylla*) (Appendix B, Photo 2), South Coast Range morning glory (*Calystegia collina* ssp. *venusta*) (Appendix B, Photo 3), small-flowered morning glory (Appendix B, Photos 4-5), Hall's tarplant, elegant wild buckwheat (*Eriogonum elegans*), protruding buckwheat (*Eriogonum nudum* var. *indictum*), hogwallow starfish (*Hesperevax caulescens*) (Appendix B, Photo 6), and shining navarretia (Appendix B, Photos 1, 7, and 8). Two of these 10 species, round-leaved filaree and shining navarretia, are locally abundant and widely distributed across the Project site. Other special-status species identified during the surveys occurred in much smaller numbers and in more localized populations. In addition to these 10 species, Douglas' fiddleneck (*Amsinckia douglasiana*), potbellied spineflower (*Chorizanthe ventricosa*), temblor buckwheat (*Eriogonum temblorense*), and showy golden madia (*Madia radiata*) were detected in the BSA, but not on the Project site. Moreover, all special-status plant species detected on the Project site, with the exception of elegant wild buckwheat, were also identified in the Project Vicinity during the regional contextual surveys. Three special-status plant species were detected on the Project site or in the BSA during the 2014 surveys that had not been detected previously in these areas: Douglas' fiddleneck, elegant wild buckwheat, and showy golden madia (Photo 9). However, the two federally listed target species, California jewelflower and San Joaquin woollythreads, were not present on the Project site or in the BSA in either 2013 or 2014, even though reference populations of these species were located in both years (Table 6).

Table 7 lists the approximate numbers of individuals of special-status plants, along with the combined acreage of populations of each species, recorded in all three of the survey areas (the Project site, the BSA, and the Project Vicinity) during the entire 2013–2014 survey effort. If populations were observed in both 2013 and 2014, the table reports the largest number of individuals or largest acreage for the population (e.g., a population detected in 2013 that contained 300 individuals over 0.1 acre, which was found to contain 2000 individuals over 0.2 acre when resurveyed in 2014, is reported as 2000 individuals over 0.2 acre). Table 8 lists the newly discovered special-status plants and associated acreages that were detected during the 2014 surveys in the Project impact areas and in the regional contextual survey areas that were visited during this effort. It does not list Project vicinity acreage as the surveyors resurveyed some areas within the Project vicinity in both years, and in these cases worked off of original polygons recorded in 2013, enlarging the polygons if necessary based on observations from the 2014 surveys.

Table 7. Combined Results: Rare Plants Identified during the 2013 and 2014 Special-status Plant Surveys

Species	CRPR[1]	Approximate Number of Individuals			Approximate Acreage of Occupied Habitat (acres)		
		Project Site	BSA (outside Project Site)	Project Vicinity (outside BSA)	Project Site	BSA (outside Project Site)	Project Vicinity (outside BSA)
Douglas' fiddleneck *(Amsinckia douglasiana)*	4.2	0	500	135,000	0.00	0.13	6.67
California androsace *(Androsace elongata ssp. acuta)*	4.2	56	50	2285	0.01	<0.01	1.02
Crownscale *(Atriplex coronata var. coronata)*	4.2	27	1734	10,880	0.01	0.13	121.79
Round-leaved filaree *(California macrophylla)*	1B.1	258,230	100,890	162,819	292.53	80.45	150.60
South Coast Range morning glory *(Calystegia collina ssp. venusta)*	4.3	19,588	5636	43,919	6.60	1.30	23.45
Potbellied spineflower *(Chorizanthe ventricosa)*	4.3	0	845	2855	0.00	0.02	0.78
Small-flowered morning glory *(Convolvulus simulans)*	4.2	25,175	24,753	47,212	2.22	15.13	21.06
Hall's tarplant *(Deinandra halliana)*	1B.1	1	0	1500	<0.01	0.00	0.44
Elegant wild buckwheat *(Eriogonum elegans)*	4.3	25	361	0	0.05	0.86	0.00
Protruding buckwheat *(Eriogonum nudum var. indictum)*	4.2	10	473	46,383	<0.01	0.42	17.98
Temblor buckwheat *(Eriogonum temblorense)*	1B.2	0	5700	0	0.00	0.06	0.09

Species	CRPR[1]	Approximate Number of Individuals			Approximate Acreage of Occupied Habitat (acres)		
		Project Site	BSA (outside Project Site)	Project Vicinity (outside BSA)	Project Site	BSA (outside Project Site)	Project Vicinity (outside BSA)
Hogwallow starfish *(Hesperevax caulescens)*	4.2	27,642	840	20,114	5.05	0.31	5.50
Showy golden madia *(Madia radiata)*	1B.1	0	200	11,900	0.01	0.01	2.59
Shining navarretia *(Navarretia nigelliformis ssp. radians)*	1B.2	850,111	290,079	547,825	297.83	67.78	104.91

Notes:

[1] California Rare Plant Rank (CRPR) Definitions
1A = Plants presumed extinct in California and elsewhere.
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2A = Plants presumed extinct in California, but more common elsewhere.
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Table 8. Rare Plants Identified during the 2014 Special-status Plant Surveys (Uncombined Data)

		Approximate Number of Individuals			Approximate Acreage of Occupied Habitat (acres)	
Species	**CRPR[1]**	**Project Site**	**BSA (outside Project Site)**	**Project Vicinity (outside BSA)**	**Project Site**	**BSA (outside Project Site)**
Douglas' fiddleneck *(Amsinckia douglasiana)*	4.2	0	500	135,000	0.00	0.13
California androsace *(Androsace elongata ssp. acuta)*	4.2	0	0	0	0	0
Crownscale *(Atriplex coronata var. coronata)*	4.2	12	1499	0	<0.01	0.12
Round-leaved filaree *(California macrophylla)*	1B.1	12,810	18,534	103,478	5.89	28.27
South Coast Range morning glory *(Calystegia collina ssp. venusta)*	4.3	40	3,266	43,919	0.01	1.06
Potbellied spineflower *(Chorizanthe ventricosa)*	4.3	0	0	2105	0.00	0.00
Small-flowered morning glory *(Convolvulus simulans)*	4.2	24,925	24,741	47,212	2.21	15.13
Hall's tarplant *(Deinandra halliana)*	1B.1	0	0	0	0	0.00
Elegant wild buckwheat *(Eriogonum elegans)*	4.3	25	361	0	0.05	0.86

Species	CRPR[1]	Approximate Number of Individuals			Approximate Acreage of Occupied Habitat (acres)	
		Project Site	BSA (outside Project Site)	Project Vicinity (outside BSA)	Project Site	BSA (outside Project Site)
Protruding buckwheat *(Eriogonum nudum var. indictum)*	4.2	0	246	43,348	0	0.01
Temblor buckwheat *(Eriogonum temblorense)*	1B.2	0	0	0	0.00	0.00
Hogwallow starfish *(Hesperevax caulescens)*	4.2	310	640	18,754	0.01	0.10
Showy golden madia *(Madia radiata)*	1B.1	0	200	11,900	0.01	0.01
Shining navarretia *(Navarretia nigelliformis ssp. radians)*	1B.2	43,743	70,819	449,308	9.37	19.14

Notes:

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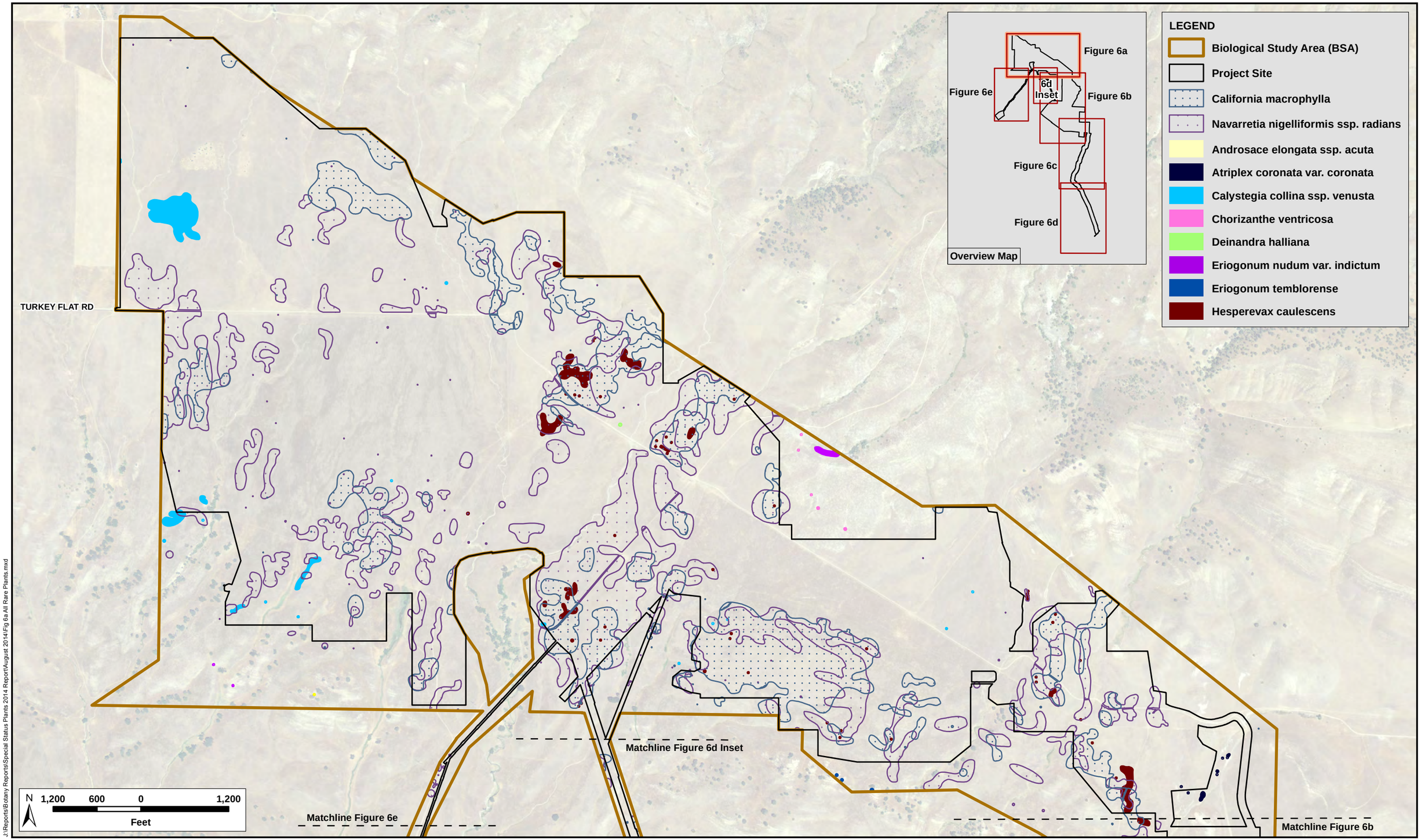

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First Solar

Figure 6a: Survey Results - All Species Combined

California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)

September 2014

Figure 6a
Figure 6e
6d Inset
Figure 6b
Figure 6c
Figure 6d
Overview Map

N 1,200 600 0 1,200
Feet

Matchline Figure 6a

Matchline Figure 6d Inset

Cottonwood Creek

Matchline Figure 6c

LEGEND
- Biological Study Area (BSA)
- Project Site
- California macrophylla
- Navarretia nigelliformis ssp. radians
- Amsinckia douglasiana
- Androsace elongata ssp. acuta
- Atriplex coronata var. coronata
- Calystegia collina ssp. venusta
- Convolvulus simulans
- Eriogonum nudum var. indictum
- Eriogonum temblorense
- Hesperevax caulescens
- Madia radiata

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Figure 6b: Survey Results - All Species Combined
California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)
September 2014

N

1,200 600 0 1,200

Feet

Matchline Figure 6b

Figure 6a

Figure 6e

6d Inset

Figure 6b

Figure 6c

Figure 6d

Overview Map

Matchline Figure 6d

LEGEND

- Project Site
- Biological Study Area (BSA)
- California macrophylla
- Navarretia nigelliformis ssp. radians
- Convolvulus simulans
- Madia radiata

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Figure 6c: Survey Results - All Species Combined

California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)

September 2014

Matchline Figure 6c

N 1,200 600 0 1,200
Feet

Figure 6a
Figure 6e
6d Inset
Figure 6b
Figure 6c
Figure 6d
Overview Map

LEGEND
- Biological Study Area (BSA)
- Project Site
- California macrophylla
- Navarretia nigelliformis ssp. radians
- Atriplex coronata var. coronata
- Calystegia collina ssp. venusta
- Eriogonum nudum var. indictum
- Eriogonum temblorense
- Hesperevax caulescens

Matchline Figure 6a

STATE HIGHWAY 41

STATE HIGHWAY 46

Matchline Figure 6b

INSET

J:\Reports\Botany Reports\Special Status Plants 2014 Report\August 2014\Fig 6d All Rare Plants.mxd

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First Solar

Figure 6d: Survey Results - All Species Combined

California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)

September 2014

LEGEND

- Biological Study Area (BSA)
- Project Site
- California macrophylla
- Navarretia nigelliformis ssp. radians
- Androsace elongata ssp. acuta
- Eriogonum elegans
- Eriogonum nudum var. indictum

N 900 450 0 900

Feet

Figure 6a
Figure 6e
6d Inset
Figure 6b
Figure 6c
Figure 6d

Overview Map

Matchline Figure 6a Inset

J:\Reports\Botany Reports\Special Status Plants 2014 Report\August 2014\Fig 6e All Rare Plants.mxd

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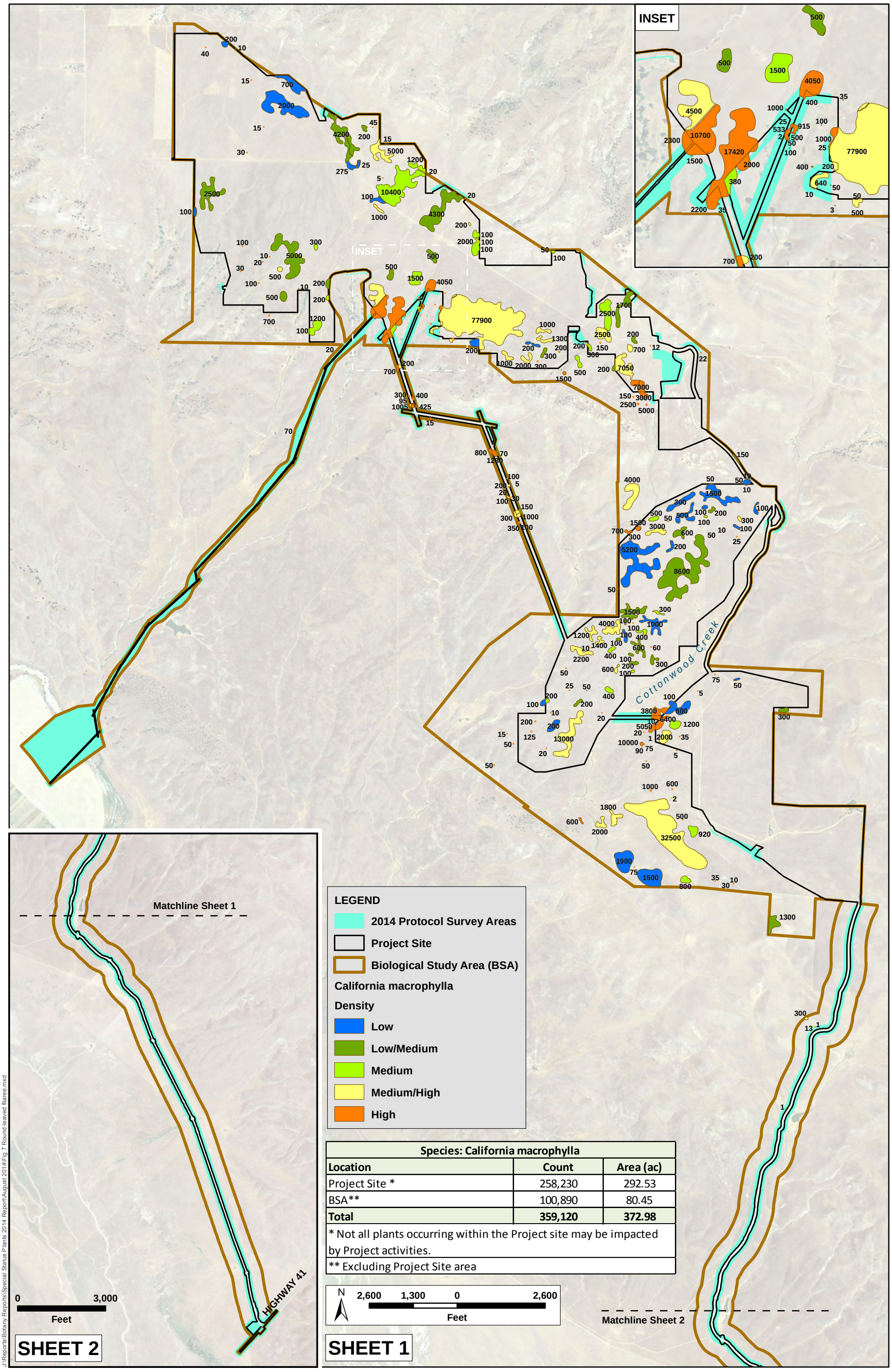
Ecological Consultants

First Solar

Figure 6e: Survey Results - All Species Combined

California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)

September 2014



Species: California macrophylla		
Location	**Count**	**Area (ac)**
Project Site *	258,230	292.53
BSA**	100,890	80.45
Total	**359,120**	**372.98**
* Not all plants occurring within the Project site may be impacted by Project activities.		
** Excluding Project Site area		

J:\Reports\Botany Reports\Special Status Plants 2014 Report\August 2014\Fig 7 Round-leaved filaree.mxd

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Figure 7: Survey Results - Round-leaved filaree (California macrophylla)

California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)

September 2014

TURKEY FLAT RD

INSET

Cottonwood Creek

Matchline Sheet 1

Matchline Sheet 2

HIGHWAY 41

SHEET 1

SHEET 2

LEGEND

2014 Protocol Survey Areas

Biological Study Area (BSA)

Project Site

Navarretia nigelliformis ssp. radians

Density

- Low
- Low/Medium
- Medium
- Medium/High
- High

Species: Navarretia nigelliformis ssp. radians		
Location	**Count**	**Area (ac)**
Project Site*	850,111	297.83
BSA**	290,079	67.78
Total	**1,140,190**	**365.61**
* Not all plants occurring within the Project site may be impacted by Project activities.		
** Excluding Project Site area		

N

2,600 1,300 0 2,600

Feet

0 3,000

Feet

J:\Reports\Botany Reports\Special Status Plants 2014 Report\August 2014\Fig 8 Shining Navarretia.mxd

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Figure 8: Survey Results - Shining Navarretia (Navarretia nigelliformis ssp. radians)

California Flats Solar Project: 2014 Special-status Plant Survey Report (3544-02)

September 2014

Species: All Other				
	Project Site *		BSA**	
Species	Count	Area (ac)	Count	Area (ac)
Amsinckia douglasiana	0	0.00	500	0.13
Androsace elongata ssp. acuta	56	0.01	50	0.00
Atriplex coronata var. coronata	27	0.01	1,734	0.13
Calystegia collina ssp. venusta	19,588	6.60	5,636	1.30
Chorizanthe ventricosa	0	0.00	845	0.02
Convolvulus simulans	25,175	2.22	24,753	15.13
Deinandra halliana	1	0.00	0	0.00
Eriogonum elegans	25	0.05	361	0.86
Eriogonum nudum var. indictum	10	0.00	473	0.42
Eriogonum temblorense	0	0.00	5,700	0.06
Hesperevax caulescens	27,642	5.05	840	0.31
Madia radiata	0	0.00	200	0.01
Total	**72,524**	**13.93**	**41,092**	**18.37**

* Not all plants occurring within the Project site may be impacted by Project activities.

* Excluding Project Site area

N

2,600 1,300 0 2,600

Feet

TURKEY FLAT RD

Cottonwood Creek

HIGHWAY 41

Matchline Sheet 1

Matchline Sheet 2

0 3,000

Feet

SHEET 2

SHEET 1

LEGEND

2014 Protocol Survey Areas

Project Site

Biological Study Area (BSA)

Rare Plant Species

- Amsinckia douglasiana
- Androsace elongata ssp. acuta
- Atriplex coronata var. coronata
- Calystegia collina ssp. venusta
- Chorizanthe ventricosa
- Convolvulus simulans
- Deinandra halliana
- Eriogonum elegans
- Eriogonum nudum var. indictum
- Eriogonum temblorense
- Hesperevax caulescens
- Madia radiata

H:\Reports\Botany Reports\Special Status Plants 2014 Report\August 2014\Fig 9 All Other Rare Plant Species.mxd

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Figure 9: Survey Results - All Other Rare Plant Species

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3.2 Special-status Plant Species Detected in 2013 and 2014

Brief descriptions of the 14 special-status species found on the Project site, in the BSA, and/or in the Project Vicinity during the two consecutive years of surveys (2013 and 2014) are provided below, along with a summary of survey detections. None of these species is State- or federally listed; however, each has a California Rare Plant Rank (CRPR), as indicated.

3.2.1 Douglas' Fiddleneck (*Amsinckia douglasiana*) (CRPR: 4.2)

Classification and Distribution: Douglas' fiddleneck is an annual herb in the borage family (Boraginaceae) that blooms from March to May. This species occurs in dry Monterey shale soils in cismontane woodland, and in valley and foothill grassland habitats from 0 to 6398 feet in elevation. This California endemic has been documented in the counties of Kern, Monterey, Santa Barbara, San Benito, San Luis Obispo, and Ventura.

Douglas' Fiddleneck Occurrences in the Survey Areas: Douglas' fiddleneck was found on a steep, north-facing slope in oak woodland along the southern boundary of the BSA (outside the Project site). Approximately 500 plants occurred within the BSA boundary (Table 7; Figure 9), and the remainder (135,000 plants) occurred in the Project Vicinity. In 2013, Douglas' fiddleneck was not detected on the Project site or in the BSA.

3.2.2 California Androsace (*Androsace elongata* ssp. *acuta*) (CRPR: 4.2)

Classification and Distribution: California androsace is an annual herb in the primrose family (Primulaceae) that blooms from March through June. This species occurs on dry, grassy slopes (Hickman 1993) in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, and meadows and seeps. The species ranges from Baja California into Oregon at elevations between 492 and 3937 feet. California androsace is widespread in several counties, including Alameda, Contra Costa, Fresno, Kern, San Bernardino, San Diego, Siskiyou, San Joaquin, San Luis Obispo, and possibly Tehama counties. It is believed to be extirpated from Los Angeles County. It is considered endangered in Oregon (CNPS 2014a).

California Androsace Occurrences in the Survey Areas: California androsace was found in all three survey areas (the Project site, the BSA, and the Project Vicinity). Populations of California androsace were generally small and occurred on mesic, north-facing slopes in association with mostly native grasses and forbs. Fifty-six plants were detected on the Project site, 50 plants were detected outside the Project site but within the BSA, and 2285 plants were detected in the Project Vicinity (Table 7; Figure 9). No additional California androsace plants were detected on the Project site, in the BSA, or in the Project Vicinity during the 2014 surveys (Table 8).

3.2.3 Crownscale (*Atriplex coronata* var. *coronata*) (CRPR: 4.2)

Classification and Distribution: Crownscale is an annual herb in the goosefoot family (Chenopodiaceae) that blooms from March to October. Crownscale has one to a few stiff, generally gray, scaly stems that are

decumbent to erect. Crownscale is distributed across the Central Valley and the central California coast in strongly alkaline, often clay, soils in chenopod scrub, valley and foothill grassland, and vernal pools, at elevations from 3 to 1800 feet. Crownscale is a California endemic plant that is documented to occur in Alameda, Contra Costa, Fresno, Glenn, Kings, Kern, Merced, Monterey, San Luis Obispo, Solano, and Stanislaus counties (CNPS 2014a).

Crownscale Occurrences in the Survey Areas: Crownscale was found in all three survey areas. On the Project site and in the BSA, colonies were located in alkaline scalds along Turkey Flat Road (Figure 9). Twenty-seven plants were detected on the Project site and 1734 plants were detected in the BSA (Table 7). An additional 10,880 plants were identified in alkaline grassland and wetland habitats in the Project Vicinity. Many additional *Atriplex* sp. individuals were detected in the Project Vicinity during the 2014 surveys; however, they could not be definitively identified to the species taxonomic level because these areas were not revisited in the summer, as the Project vicinity surveys focused on spring-blooming target species.

3.2.4 Round-leaved Filaree (*California macrophylla*) (CRPR: 1B.1)

Classification and Distribution: Round-leaved filaree is an annual herb in the geranium (Geraniaceae) family that blooms from March to May. This species occurs on clay soils in valley and foothill grassland or open cismontane woodland at elevations from 49 to 3937 feet. It occurs in 122 USGS 7.5-minute quadrangles throughout the state, in Alameda, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Lake, Lassen, Los Angeles, Merced, Monterey, Napa, Riverside, Santa Barbara, San Benito, Santa Clara, San Diego, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, Stanislaus, Tehama, Tulare, Ventura, and Yolo counties, and in habitats from Oregon to Baja California. It is considered extirpated from Butte County and from Santa Cruz Island. Many collections of the species are historical (CNPS 2014a).

Round-leaved Filaree Occurrences in the Survey Areas: Round-leaved filaree is locally common on flats with heavy clays in the region, and is widely distributed across the Project site, BSA, and Project Vicinity. The largest and most dense populations occurred on Cropley silty clay soils. Approximately 258,230 plants were detected on the Project site, and 100,890 plants were detected within the BSA outside the Project site (Table 7; Figure 7). An additional 162,819 plants were detected in the Project Vicinity.

3.2.5 South Coast Range Morning Glory (*Calystegia collina* ssp. *venusta*) (CRPR: 4.3)

Classification and Distribution: South Coast Range morning glory a perennial rhizomatous herb in the bindweed family (Convolvulaceae) that blooms from April to June. This species occurs on serpentinite or sedimentary substrate in chaparral, cismontane woodland, and valley and foothill grassland from 1394 to 4888 feet in elevation. It is a California endemic known to occur in Fresno, Monterey, Santa Barbara, San Benito, and Santa Clara counties (CNPS 2014a).

South Coast Range Morning Glory Occurrences in the Survey Areas: South Coast Range morning glory was found in all three survey areas. This species occurred in grassland habitat on flat plains, hill slopes, and

hilltops. It often was found on silty clay loams derived from serpentinite parent material. A total of 19,588 plants were detected on the Project site, and 5636 plants were detected within the BSA outside the Project site (Table 7; Figure 9). An additional 43,919 plants were detected in the Project Vicinity.

3.2.6 Potbellied Spineflower (*Chorizanthe ventricosa*) (CRPR: 4.3)

Classification and Distribution: Potbellied spineflower is an annual herb in the knotweed family (Polygonaceae) that blooms from May to September. This species often occurs on soils derived from serpentinite, and is found in cismontane woodland and valley and foothill grassland from 1640 to 3280 feet in elevation. Potbellied spineflower is a California endemic documented in Fresno, Monterey, San Benito, and San Luis Obispo counties (CNPS 2014a).

Potbellied Spineflower Occurrences in the Survey Areas: Potbellied spineflower was found in the BSA, but not on the Project site itself. A total of 845 plants were detected within five small colonies, all of which were located close to one another, in the serpentine hills on the northern edge of the BSA (Table 7; Figure 9). An additional 2855 plants were detected in the Project Vicinity. No additional potbellied spineflower plants were detected on the BSA or on the Project site during the 2014 survey (Table 8).

3.2.7 Small-flowered Morning Glory (*Convolvulus simulans*) (CRPR: 4.2)

Classification and Distribution: Small-flowered morning glory is an annual herb in the morning glory family (Convolvulaceae) that blooms from March to July. This species occurs on clay soils or in serpentinite seeps in chaparral (openings), coastal scrub, and valley and foothill grassland from 98 to 2297 feet in elevation. Small-flowered morning glory is a California endemic documented in Contra Costa, Fresno, Kern, Los Angeles, Orange, Riverside, Santa Barbara, San Benito, San Diego, San Joaquin, San Luis Obispo, and Stanislaus counties. It has also been documented on three of the Channel Islands (San Clemente, Santa Catalina, and Santa Cruz islands) (CNPS 2014a).

Small-flowered Morning Glory Occurrences in the Survey Areas: Small-flowered morning glory was detected in all three survey areas. It generally occurred in grassland with flocculated clay soils, often in association with other special-status plants, including round-leaved filaree and shining navarretia. Approximately 25,175 plants were detected on the Project site; 24,753 plants were detected in the BSA (Table 7; Figure 9); and 47,212 were detected in the Project Vicinity. There was a substantial increase in the number of small-flowered morning glory individuals observed during the 2014 surveys (Table 8) in comparison to the previous year. For instance, this species was not detected the 2013 regional contextual survey area, but was found in large numbers in 2014.

3.2.8 Hall's Tarplant (*Deinandra halliana*) (CRPR: 1B.1)

Classification and Distribution: Hall's tarplant is an annual herb in the sunflower family (Asteraceae) that blooms from April to May. This species typically appears only in unusually wet years. Hall's tarplant occurs in clay soils in chenopod scrub, cismontane woodland, and valley and foothill grassland, from 984 to 3117 feet

in elevation. It is a California endemic documented in 12 USGS quadrangles in Fresno, Monterey, San Benito, and San Luis Obispo counties (CNPS 2014a).

Hall's Tarplant Occurrences in the Survey Areas: A single Hall's tarplant was found on the Project site, on the north side of Turkey Flat Road, during 2013 surveys (Table 7; Figure 9). This individual was likely the result of a dispersal event from a larger population occurring on privately owned land in the vicinity. Approximately 1500 plants were detected in the Project Vicinity in 2013, but this population was not revisited in 2014 due to lack of access. The single tarplant observed on-site in 2013 was not detected again in 2014.

3.2.9 Elegant Wild Buckwheat (*Eriogonum elegans*) (CRPR: 4.3)

Classification and Distribution: Elegant wild buckwheat is an annual herb in the buckwheat family (Polygonaceae) that blooms from May to November. This species usually occurs on sandy or gravelly soils, often in washes, and sometime on roadsides in cismontane woodland and valley and foothill grassland. It occurs at elevations from 650 to 5000 feet. The range of this California endemic includes Monterey, Santa Barbara, San Benito, San Luis Obispo, and Ventura counties (CNPS 2014a).

Elegant Wild Buckwheat Occurrences in the Survey Areas: Elegant wild buckwheat was found on the Project site and in the BSA during the 2014 surveys (including in the area of new Project improvements [Figure 9]), but not in the Project Vicinity (Table 8). The plants within both the Project site and BSA were located within the banks of Cholame Creek, on coarse-textured sandy and gravelly soils. Twenty-five plants were detected in the Project site and 361 were detected in the BSA.

3.2.10 Protruding Buckwheat (*Eriogonum nudum* var. *indictum*) (CRPR: 4.2)

Classification and Distribution: Protruding buckwheat is a perennial herb in the buckwheat family (Polygonaceae) that blooms from May to October, and sometimes as late as December. This variety occurs in clay and serpentinite substrate in chaparral, chenopod scrub, and cismontane woodland from 492 to 4800 feet in elevation. The range of this California endemic includes Fresno, Kern, Merced, Monterey, San Benito, and San Luis Obispo counties (CNPS 2014a).

Protruding Buckwheat Occurrences in the Survey Areas: Protruding buckwheat was found in all three survey areas. It often occurred on slopes or hilltops with rocky or gravelly soils. Ten plants were detected on the Project site and 473 plants were detected in the BSA (Table 7; Figure 9). An additional 46,383 plants were detected in the Project Vicinity.

3.2.11 Temblor Buckwheat (*Eriogonum temblorense*) (CRPR: 1B.2)

Classification and Distribution: Temblor buckwheat is a perennial herb in the buckwheat family (Polygonaceae) that blooms from April to September. This species occurs in barren clay or sandstone substrate in valley and foothill grassland from 492 to 4800 feet in elevation. The range of this California endemic includes Fresno, Kern, Monterey, and San Luis Obispo counties (CNPS 2014a).

Temblor Buckwheat Occurrences in the Survey Areas: Temblor buckwheat was not found on the Project site, but 5700 individuals were detected in the BSA (Table 7). Temblor buckwheat was detected only in the shale hills between the transmission line corridor and the main Project site (Figure 9). No additional Temblor buckwheat plants were detected on the Project site during the 2014 survey (Table 8).

3.2.12 Hogwallow Starfish (*Hesperevax caulescens*) (CRPR: 4.2)

Classification and Distribution: Hogwallow starfish is an annual herb in the sunflower family (Asteraceae) that blooms from March to June. This species occurs in mesic, clay sites or in shallow vernal pools in valley and foothill grassland from 0 to 1657 feet in elevation. The range of this California endemic includes Alameda, Amador, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Merced, Monterey, Sacramento, San Joaquin, San Luis Obispo, Solano, Stanislaus, Sutter, Tehama, and Yolo counties. The species is considered extirpated from Napa and San Diego counties (CNPS 2014a).

Hogwallow Starfish Occurrences in the Survey Areas: Hogwallow starfish was found in all three survey areas. It generally occurred in mesic grassland and seasonal wetland habitats with heavy clay soils, often in association with shining navarretia. Approximately 27,642 plants were detected on the Project site, mostly in the northern portion, whereas 840 plants were detected in the BSA (Table 7; Figure 9). An additional 20,114 plants were detected in the Project Vicinity.

3.2.13 Showy Golden Madia (*Madia radiata*) (CRPR: 1B.1)

Classification and Distribution: Showy golden madia is an annual herb in the sunflower family (Asteraceae) that blooms from March to May. This species occurs in cismontane woodland and valley and foothill grassland from 80 to 3990 feet in elevation. The range of this California endemic includes Fresno, Kern, San Benito, Santa Clara, San Luis Obispo, and Stanislaus counties (CNPS 2014a). It is presumed extirpated from Contra Costa, Kings, Monterey, Santa Barbara, and San Joaquin counties (CNPS 2014a).

Showy Golden Madia Occurrences in the Survey Areas: Showy golden madia was not detected on the Project site, but was found in both the BSA and the Project Vicinity during the 2014 surveys. This species had not been recorded the previous year. This species generally occurred on heavy clay soils in association with other special-status species, including round-leaved filaree and small-flowered morning glory. Approximately 200 plants were detected in the BSA (Figure 9), and 11,900 were detected in the Project Vicinity (Table 7).

3.2.14 Shining Navarretia (*Navarretia nigelliformis* ssp. *radians*) (CRPR: 1B.2)

Classification and Distribution: Shining navarretia is an annual herb in the phlox family (Polemoniaceae) that blooms from April to July. This subspecies occurs in cismontane woodland, valley and foothill grassland, and vernal pools from 249 to 3281 feet in elevation. It is a California endemic documented in 28 USGS quadrangles in Fresno, Merced, Monterey, San Benito, and San Luis Obispo counties (CNPS 2014a).

Shining Navarretia Occurrences in the Survey Areas: Shining navarretia is locally common on flats with heavy clays and in seasonal wetlands in the region. The largest and most dense populations occurred on Cropley silty clay soils. Shining navarretia is widely distributed across the Project site, BSA, and Project vicinity. Approximately 850,111 plants were detected on the Project site, and 290,079 plants were detected in the BSA (Table 7; Figure 8). An additional 547,825 plants were detected in the Project Vicinity.

Section 4.0 Discussion

4.1 Distribution and Abundance of Special-Status Plants in the Survey Areas

The 14 special-status plant species identified during the 2013–2014 surveys varied widely in their distribution and abundance in the survey areas because of the broad range of elevations, topography, soils, habitats, and microhabitats represented across the Project site, BSA, and Project Vicinity (Figures 6a–6e). The Project site supports a relatively unique combination of heavy clay soils, flat topography, mild serpentine influence, and southern exposures, the confluence of which is limited in the region. As a result, several species that thrive in these conditions (shining navarretia, round-leaved filaree, hogwallow starfish, and small-flowered morning glory) were found to be generally more abundant on the Project site compared to the Project Vicinity. However, the Project site generally lacks other habitat types (e.g., alkaline wetlands, shale hill slopes, serpentine bedrock) that support different suites of special-status plant species. For example, four species that were detected in the BSA were entirely absent from the Project site: Douglas' fiddleneck, potbellied spineflower, Temblor buckwheat, and showy golden madia (Table 7; Figure 9). Furthermore, five species occurred in only very small numbers (<100 individuals) on the Project site: California androsace, crownscale, elegant wild buckwheat, Hall's tarplant, and protruding buckwheat (Table 7; Figure 9).

4.2 Notable Findings of the 2013–2014 Surveys

Among the most notable findings of the 2013–2014 special-status plant surveys was the observed abundance of two species: round-leaved filaree and shining navarretia (Figures 7 and 8). Both species have a CRPR of 1B and are considered "rare, threatened, or endangered in California and elsewhere." However, both species were locally common across the BSA and occurred in very large numbers. According to CNDDB records, round-leaved filaree has been known to occur in very large numbers at several locations. In some places, it represents 1–5% relative plant cover across several acres, and populations can total more than 10,000 plants. Nonetheless, the metapopulation of round-leaved filaree on the Project site is likely among the largest known concentrations of this species, representing several hundred thousand plants. Similarly, the abundance of shining navarretia on the Project site is extremely high compared to what was previously known for this species. Most of the shining navarretia populations recorded in the CNDDB (2014) support fewer than 1000 individuals, with the largest population containing approximately 10,000 individuals. In contrast, the metapopulation of shining navarretia in the BSA represents more than one million plants. In 2014, both species were nearly as abundant as in 2013 (although fewer round-leaved filaree plants were noted in 2014 when compared to the same populations observed on-site in 2013). These abundances are attributable to the area's combination of conditions—a combination that is somewhat limited in the state and region—of heavy clay soils, flat topography, mild serpentine influence, and southern exposures.

Another notable finding was the presence of three rare (CRPR 1B) species in the BSA and/or Project Vicinity: Temblor buckwheat, Hall's tarplant, and showy golden madia. These species were absent from the Project site, with the exception of one individual Hall's tarplant (Table 7; Figure 9). These species are each known from fewer than 20 recent (<20 years old) occurrence records in the CNDDB (2014).

An additional species found on the Project site, small-flowered morning glory, is a CRPR 4 species and is not particularly rare in the state; however, this species is much more common in southern California and was not previously known to occur in Monterey County (CNPS 2014a). The discovery of other CRPR 4 species were notable not because of their rarity, but because they occurred in very large numbers. South Coast Range morning glory, hogwallow starfish, protruding buckwheat, and Douglas' fiddleneck were all found in large numbers (>40,000 plants each).

4.3 Importance of Regional Contextual Surveys

The Project Vicinity is unique in California in that the vast majority of land is privately owned and has generally been closed to the public for many decades. As such, very little recent botanical survey work has been conducted in the region, and little is known about the area's flora. Regional contextual surveys thus provide a valuable point of reference for interpreting the results of Project site surveys. Although regional contextual surveys were conducted in 2013, the survey effort was much greater in 2014. During the initial survey effort in 2013, the Project site was thought to possibly be unique in its abundance of round-leaved filaree and shining navarretia. After the greater survey effort of 2014, very similar areas in the Project Vicinity were discovered, and many populations of special-status plant species were located in the Project Vicinity without conducting protocol-level surveys across this vast area. Moreover, a greater abundance of special-status plant species was found in the Project Vicinity in comparison to the Project site (Table 7). Thus, it is possible that several species (e.g., round-leaved filaree, shining navarretia, hogwallow starfish, small-flowered morning glory, and South Coast Range morning glory) are not as limited in their abundance across the region as was previously thought.

4.4 Interannual Variation

An important caveat to the results of these surveys is that the species composition of California annual grasslands is known to vary significantly among survey years depending on the timing and quantity of rainfall (Reever-Morghan et al. 2007). During the 2012–2013 growing season, the region was in its second consecutive year of below-average rainfall. Nevertheless, most species on the target list (40 out of 50 species) were located during reference site visits. Well-below-normal rainfall continued into the 2013–2014 growing season (see Section 2.1.2, "Survey Timing and Precipitation"), but was not expected to adversely affect the identification of target special-status plants that have spring bloom periods (Table 4).

In addition to total precipitation, the timing of precipitation is also an important factor affecting the relative abundance of different species. During the 2012–2013 growing season, the Project Vicinity received above-

normal winter rainfall, but well-below-normal rainfall in the spring. In contrast, the 2013–2014 growing season displayed the opposite pattern of precipitation. Low rainfall from October 2013 to January 2014 decreased the germination of plant species, but near-normal levels of precipitation were received in February and March 2014 (Graph 1). Thus, plants typically identifiable in March germinated slightly later than normal, and reproductive phenology exhibited a similar lag. As a result of observations on the phenology of the target special-status plant species, the 2014 surveys began at a later calendar date (late March) than the previous year. At this time, most of the spring target species had started to bloom, most notably shining navarretia. By the time the initial survey of the BSA was completed in mid-April, all spring-blooming targets were producing flowers. The team revisited areas where shining navarretia identification to species level had been uncertain in late March.

Two notablespecies with interannual variation between 2013 and 2014 were round-leaved filaree and small-flowered morning glory. Round-leaved filaree was more abundant during the 2013 surveys, whereas small-flowered morning glory was recorded in much greater abundance during the 2014 surveys. Although the 2014 surveys started later in the growing season than those conducted the previous year, small- flowered morning glory still displayed its cotyledons during the initial site visits, and few plants were flowering at this time. The cotyledons of this species are large and fleshy (Photo 4), and allow for greater detection of individuals than is possible when the plant is in a more mature state (Photo 5). Once cotyledons are shed, the plant has small, linear leaves, and its flowers are open only in the cooler, morning hours. Thus, it is H. T. Harvey & Associates' professional judgment that the 2014 surveys were conducted during a period that facilitated the detection of small-flowered morning glory. Rechecks occurred throughout the species' blooming period, allowing the surveyors to confirm that the seedlings mapped while supporting visible cotyledons were indeed small-flowered morning glory.

The potential constraints on the 2014 surveys presented by environmental conditions were lessened by conducting protocol-level surveys, during which all species encountered on the Project site were identified to the lowest taxonomic level possible. In addition, interannual variation in plant phenology was accounted for by visiting the Project site, BSA, and Project Vicinity on multiple occasions over the course of the spring and summer (Table 5), and by visiting reference populations of 47 of 50 target special-status plant species (Table 6). During these reference site visits, 38 special-status plant species were located. Based on the detailed rare plant habitat information gathered during the 2014 surveys and the assessment of microhabitats and species across the BSA, it is H. T. Harvey & Associates' opinion that there is a very low probability that three of the target species would occur in the BSA, even in a wetter year, because suitable habitat is lacking. These species are La Panza mariposa lily and trumpet-throated gilia, both of which require sandy soils not observed in the BSA, and Panoche pepper-grass, which prefers white-grey, gypsum-laced, heavy clays that are scarce in the BSA and were not observed on the Project site.

Although some species that were identified during the 2013–2014 surveys may be more abundant in wetter years, other species were present in large numbers in spite of, or possibly because of, the low rainfall. In 2012, H. T. Harvey & Associates ecologists surveyed the Project site for habitats and jurisdictional waters. Despite

the slightly greater rainfall totals in 2012, the very dense, large populations of shining navarretia were not observed that year. Round-leaved filaree was detected in several locations on the Project site in 2012, in much lower abundance compared to the numbers seen in 2013. Because the survey areas have experienced three consecutive years of below-normal rainfall (2012–2014), there was a distinct lack of thatch during the start of the spring growing seasons in 2013 and 2014, and stands of grasses were very low to the ground. This lack of competition may have allowed species that do not compete well with non-native grasses to thrive and bloom more prolifically, and it is possible that short-statured species, such as round-leaved filaree and shining navarretia, may be less abundant in wetter years (or in a series of wetter years). Additionally, it should be noted that Hall's tarplant, which CNPS says "appears only in unusually wet years" (CNPS 2014a), was nevertheless detected in the 2013 surveys, including in one large population in the Project Vicinity.

Another effect of the low rainfall may have been an inflation of the numbers of some species, most notably shining navarretia. During the 2013 and 2014 surveys, H. T. Harvey & Associates plant ecologists observed very few fully mature, multistemmed individuals of shining navarretia. In fact, because one of the key characteristics of this species is the decumbent branching pattern of multiple stems (Appendix B, Photo 8), and because very few observed individuals had more than one stem, we sought expert concurrence on this species' identification. It was decided by the species taxonomic expert that these plants were, indeed, shining navarretia (Johnson pers. comm.). Because the rainfall during 2012–2014 was so far below average (Graph 1), it is likely that most of the observed shining navarretia plants were water stressed. In wetter years, a smaller number of large, multistemmed individuals with many flowers would likely occur.

Section 5.0 References Cited

5.1 Literature

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Appendix A. List of Plant Species Found in the California Flats Solar Project Biological Study Area

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
Adoxaceae	*Sambucus nigra* ssp. *coerulea*	Blue elderberry	-	Native	-
Agavaceae	*Chlorogalum pomeridianum* var. *pomeridianum*	Wavyleaf soap plant	-	Native	-
Alliaceae	*Allium crispum*	Crinkled onion	-	Native	-
Anacardiaceae	*Schinus molle*	Peruvian peppertree	-	Introduced	Limited
Apiaceae	*Bowlesia incana*	Hoary bowlesia	-	Native	-
	Daucus pusillus	American wild carrot	-	Native	-
	Lomatium macrocarpum	Bigseed biscuitroot	-	Native	-
	Lomatium utriculatum	Common lomatium	-	Native	-
	Sanicula bipinnata	Poison sanicle	-	Native	-
	Sanicula crassicaulis	Pacific blacksnakeroot	-	Native	-
	Torilis arvensis	Tall sock-destroyer	-	Introduced	Moderate
Apocynaceae	*Asclepias fascicularis*	Narrow-leaf milkweed	-	Native	-
	Asclepias eriocarpa	Woolypod milkweed	-	Native	-
Araceae	*Lemna minuta*	Least duckweed	-	Native	-
Asteraceae	*Asteraceae* sp.	varies	-	varies	-
	Achillea millefolium	Common yarrow	-	Native	-
	Achyrachaena mollis	Blow wives	-	Native	-
	Acroptilon repens	Russian knapweed	-	Introduced	Moderate
	Agoseris grandiflora var. *grandiflora*	Bigflower agoseris	-	Native	-
	Agoseris heterophylla var. *cryptopleura*	Annual agoseris	-	Native	-
	Ancistrocarphus filagineus	False neststraw	-	Native	-
	Calycadenia multiglandulosa	Sticky western rosinweed	-	Native	-
	Centaurea melitensis	Maltese star-thistle	-	Introduced	Moderate
	Centaurea solstitialis	Yellow star-thistle	-	Introduced	High

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
	Centromadia pungens ssp. *pungens*	Common tarweed	-	Native	-
	Chaenactis glabriuscula var. *glabriuscula*	Yellow pincushion	-	Native	-
	Chaenactis glabriuscula var. *megacephala*	Yellow pincushion	-	Native	-
	Chaenactis xantiana	Fleshy pincushion	-	Native	-
	Cirsium occidentale var. *californicum*	Cobwebby thistle	-	Native	-
	Corethrogyne filaginifolia	Common sandaster	-	Native	-
	Cotula coronopifolia	Common brassbuttons	-	Introduced	Limited
	Deinandra halliana	Hall's tarweed	1B.1	Native	-
	Deinandra kelloggii	Kellogg's tarweed	-	Native	-
	Deinandra pallida	Kern tarweed	-	Native	-
	Eriophyllum confertiflorum	Golden yarrow	-	Native	-
	Euthamia occidentalis	Western goldentop	-	Native	-
	Gutierrezia californica	San Joaquin snakeweed	-	Native	-
	Helianthus annuus	Common sunflower	-	Native	-
	Hesperevax caulescens	Dwarf-dwarf cudweed	4.2	Native	-
	Hesperevax sparsiflora var. *sparsiflora*	Erect dwarf cudweed	-	Native	-
	Heterotheca sessiliflora ssp. *echioides*	Sessileflower false goldenaster	-	Native	-
	Hypochaeris glabra	Smoot cat's-ear	-	Introduced	Limited
	Isocoma (acradenia)	Alkali goldenbush	-	Native	-
	Lactuca serriola	Prickly lettuce	-	Introduced	-
	Lagophylla ramosissima	Branched lagophylla	-	Native	-
	Lasthenia californica	California goldfields	-	Native	-
	Lasthenia fremontii	Fremont's goldfields	-	Native	-
	Lasthenia gracilis	Needle goldfields	-	Native	-
	Lasthenia microglossa	Small-ray goldfields	-	Native	-
	Lasthenia minor	Coastal goldfields	-	Native	-
	Layia platyglossa	Coastal tidy-tips	-	Native	-

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
	Lepidospartum squamatum	California broomshrub	-	Native	-
	Leptosyne bigelovii	Bigelow's tickseed	-	Native	-
	Lessingia nemaclada	Slender stem lessingia	-	Native	-
	Logfia filaginoides	California cottonrose	-	Native	-
	Madia radiata	Showy golden madia	1B.2	Native	-
	Malacothrix coulteri	Snake's-head	-	Native	-
	Matricaria discoidea	Disc mayweed	-	Native	-
	Micropus californicus var. *californicus*	Q-tips	-	Native	-
	Microseris douglasii ssp. *douglasii*	Douglas' silverpuffs	-	Native	-
	Microseris douglasii ssp. *tenella*	Douglas' silverpuffs	-	Native	-
	Monolopia lanceolata	Common monolopia	-	Native	-
	Packera breweri	Brewer's ragwort	-	Native	-
	Pseudognaphalium luteoalbum	Jersey cudweed	-	Introduced	-
	Rigiopappus leptocladus	Wireweed	-	Native	-
	Senecio vulgaris	Common groundsel	-	Native	-
	Silybum marianum	Blessed milkthistle	-	Introduced	Limited
	Stephanomeria sp.	Wirelettuce	-	Native	-
	Stephanomeria pauciflora	Brownplume wirelettuce	-	Native	-
	Stephanomeria virgata ssp. *pleurocarpa*	Rod wirelettuce	-	Native	-
	Taraxacum officinale	Common dandelion	-	Introduced	-
	Tragopogon dubius	Yellow salsify	-	Introduced	-
	Uropappus lindleyi	Lindley's silverpuffs	-	Native	-
	Xanthium strumarium	Cocklebur	-	Native	-
Azollaceae	*Azolla filiculoides*	Pacific mosquitofern	-	Introduced	-
Boraginaceae	*Amsinckia douglasiana*	Douglas' fiddleneck	4.2	Native	-
	Amsinckia intermedia	Common fiddleneck	-	Native	-
	Amsinckia lycopsoides	Bugloss-flowered fiddleneck	-	Native	-

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
	Amsinckia menziesii	Menzie's fiddleneck	-	Native	-
	Amsinckia tessellata var. *gloriosa*	Carrizo fiddleneck	-	Native	-
	Amsinckia tessellata var. *tessellata*	Desert fiddleneck	-	Native	-
	Cryptantha barbigera var. *barbigera*	Bearded cryptantha	-	Native	-
	Cryptantha clevelandii var. *florosa*	Coastal cryptantha	-	Native	-
	Cryptantha corollata	Coast range cryptantha	-	Native	-
	Cryptantha flaccida	Weak-stemmed cryptantha	-	Native	-
	Heliotropium curassavicum var. *oculatum*	Salt heliotrope	-	Native	-
	Nemophila heterophylla	Small baby blue eyes	-	Native	-
	Nemophila menziesii	Baby blue eyes	-	Native	-
	Nemophila pedunculata	Littlefoot nemophila	-	Native	-
	Pectocarya heterocarpa	Chuckwalla combseed	-	Native	-
	Pectocarya linearis ssp. *ferocula*	Sagebrush combseed	-	Native	-
	Pectocarya penicillata	Sleeping combseed	-	Native	-
	Phacelia ciliata	Great Valley phacelia	-	Native	-
	Phacelia distans	Distant phacelia	-	Native	-
	Phacelia egena	Kaweah River phacelia	-	Native	-
	Phacelia tanacetifolia	Lacy phacelia	-	Native	-
	Pholistoma membranaceum	White fiestaflower	-	Native	-
	Plagiobothrys acanthocarpus	Adobe popcornflower	-	Native	-
	Plagiobothrys arizonicus	Arizona popcornflower	-	Native	-
	Plagiobothrys canescens var. *canescens*	Valley popcornflower	-	Native	-
	Plagiobothrys fulvus var. *campestris*	Fulvous popcornflower	-	Native	-
	Plagiobothrys infectivus	Dye popcornflower	-	Native	-

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
	Plagiobothrys stipitatus var. *micranthus*	Stalked popcornflower	-	Native	-
	Plagiobothrys tenellus	Pacific popcornflower	-	Native	-
Brassicaceae	*Athysanus pusillus*	Common sandweed	-	Native	-
	Athysanus unilateralis	Ladiestongue mustard	-	Native	-
	Brassica nigra	Black mustard	-	Introduced	Moderate
	Capsella bursa-pastoris	Shepherd's purse	-	Introduced	-
	Caulanthus lasiophyllus	California mustard	-	Native	-
	Descurainia pinnata ssp. *brachycarpa*	Western tansymustard	-	Native	-
	Descurainia sophia	Herb sophia	-	Introduced	Limited
	Erysimum capitatum var. *capitatum*	Sanddune wallflower	-	Native	-
	Lepidium dictyotum	Alkali pepperwort	-	Native	-
	Lepidium nitidum	Shining pepperweed	-	Native	-
	Lepidium strictum	Upright pepperweed	-	Native	-
	Nasturtium officinale	Watercress	-	Native	-
	Raphanus sativus	Radish	-	Introduced	Limited
	Sinapis arvensis	Charlock mustard	-	Introduced	Limited
	Sisymbrium orientale	Indian hedgemustard	-	Introduced	-
	Thysanocarpus curvipes	Sand fringepod	-	Native	-
	Thysanocarpus laciniatus var. *laciniatus*	Mountain fringepod	-	Native	-
	Tropidocarpum gracile	Dobie pod	-	Native	-
Caryophyllaceae	*Cerastium glomeratum*	Sticky chickweed	-	Introduced	-
	Herniaria hirsuta var. *cinerea*	Hairy rupturewort	-	Native	-
	Minuartia californica	California sandwort	-	Native	-
	Spergularia rubra	Red sandspurry	-	Native	-
	Stellaria media	Common chickweed	-	Introduced	-
	Stellaria nitens	Shining chickweed	-	Native	-
Ceratophyllaceae	*Ceratophyllum demersum*	Coon's tail	-	Native	-

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
Chenopodiaceae	*Atriplex coronata* var. *coronata*	Crownscale	4.2	Native	-
	Atriplex fruticulosa	Ball saltbush	-	Native	-
	Chenopodium album	lambsquarters	-	Introduced	-
	Chenopodium californicum	California goosefoot	-	Native	-
	Monolepis nuttalliana	Nuttall's poverty weed	-	Native	-
Convolvulaceae	*Calystegia collina ssp. venusta*	South coast range morning glory	4.3	Native	-
	Convolvulus arvensis	Field bindweed	-	Introduced	-
	Convolvulus simulans	Small-flowered morning glory	4.2	Native	-
Crassulaceae	*Crassula connata*	Sand pygmyweed	-	Native	-
Cupressaceae	*Juniperus californica*	California juniper	-	Native	-
Curcurbitaceae	*Marah fabacea*	California man-root	-	Native	-
Cyperaceae	*Carex praegracilis*	Clustered field sedge	-	Native	-
	Cyperus (eragrostis)	Tall flatsedge	-	Native	-
	Eleocharis parishii	Parish's spikerush	-	Native	-
	Schoenoplectus americanus	Chairmaker's bullrush	-	Native	-
Euphorbiaceae	*Chamaesyce ocellata* ssp. *ocellata*	Contura Creek sandmat	-	Native	-
	Croton setiger	Dove weed	-	Native	-
	Euphorbia spathulata	Warty spurge	-	Native	-
Fabaceae	*Acmispon brachycarpus*	Foothill deervetch	-	Native	-
	Acmispon strigosus	Strigose lotus	-	Native	-
	Acmispon wrangelianus	Chilean bird's-foot trefoil	-	Native	-
	Astragalus didymocarpus var. *didymocarpus*	Dwarf white milkvetch	-	Native	-
	Astragalus douglasii var. *douglasii*	Parish's milkvetch	-	Native	-
	Astragalus gambelianus	Gambel's dwarf milkvetch	-	Native	-
	Astragalus oxyphysus	Mt. Diablo milkvetch	-	Native	-
	Lupinus albifrons	Silver lupine	-	Native	-
	Lupinus bicolor	Miniature lupine	-	Native	-

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
	Lupinus concinnus	Bajada lupine	-	Native	-
	Lupinus microcarpus var. *densiflorus*	Chick lupine	-	Native	-
	Lupinus microcarpus var. *microcarpus*	Chick lupine	-	Native	-
	Lupinus succulentus	Hollowleaf annual lupine	-	Native	-
	Medicago polymorpha	Burclover	-	Introduced	Limited
	Melilotus indicus	Annual yellow sweetclover	-	Introduced	-
	Trifolium albopurpureum	Rancheria clover	-	Native	-
	Trifolium depauperatum var. *amplectens*	Balloon sack clover	-	Native	-
	Trifolium depauperatum var. *depauperatum*	Dwarf sack clover	-	Native	-
	Trifolium gracilentum	Pinpoint clover	-	Native	-
	Trifolium willdenovii	Tomcat clover	-	Native	-
	Vicia villosa	Winter vetch	-	Introduced	-
Fagaceae	*Quercus douglasii*	Blue oak	-	Native	-
	Quercus lobata	Valley oak	-	Native	-
Frankeniaceae	*Frankenia salina*	Alkali seaheath	-	Native	-
Geraniaceae	*California macrophylla*	Round-leaved filaree	1B.1	Native	-
	Erodium botrys	Longbeak stork's bill	-	Introduced	-
	Erodium brachycarpum	Shortfruit stork's bill	-	Introduced	-
	Erodium cicutarium	Redstem stork's bill	-	Introduced	Limited
	Erodium moschatum	Musky stork's bill	-	Introduced	-
	Geranium dissectum	Cutleaf geranium	-	Introduced	Limited
Grossulariaceae	*Ribes aureum* var. *gracillimum*	Bitter gooseberry	-	Native	-
Juglandaceae	*Juglans hindsii*	Black walnut	-	Native	-
Juncaceae	*Juncus balticus*	Baltic rush	-	Native	-
	Juncus bufonius var. bufonius	Toad rush	-	Native	-
	Juncus mexicanus	Mexican rush	-	Native	-
	Juncus xiphioides	Iris-leaved rush	-	Native	-
Lamiaceae	*Marrubium vulgare*	Horehound	-	Introduced	Limited
	Salvia columbariae	Chia	-	Native	-

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
	Trichostema lanceolatum	Vinegarweed	-	Native	-
Malvaceae	*Malva parviflora*	Cheeseweed mallow	-	Introduced	-
	Malvella leprosa	Alkali mallow	-	Native	-
Montiaceae	*Calandrinia ciliata*	Fringed redmaids	-	Native	-
	Claytonia exigua ssp. *exigua*	Serpentine springbeauty	-	Native	-
	Claytonia parviflora ssp. *parviflora*	Streambank springbeauty	-	Native	-
	Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	-	Native	-
Myrtaceae	*Eucalyptus sp.*	Gum	-	Introduced	-
Oleaceae	*Olea europaea*	Olive	-	Introduced	Limited
Onagraceae	*Camissoniopsis intermedia*	Intermediate suncup	-	Native	-
	Clarkia affinis	Chaparral clarkia	-	Native	-
	Clarkia purpurea ssp. *quadrivulnera*	Winecup clarkia	-	Native	-
	Epilobium canum ssp. *canum*	Hummingbird trumpet	-	Native	-
	Epilobium ciliatum ssp. *ciliatum*	Fringed willowherb	-	Native	-
	Eremothera boothii ssp. *decorticans*	Booth's evening-primrose	-	Native	-
	Tetrapteron graciliflorum	Hill suncup	-	Native	-
Orobanchaceae	*Castilleja attenuata*	Valley tassels	-	Native	-
	Castilleja brevistyla	Shortstyle Indian paintbrush	-	Native	-
	Castilleja exserta ssp. *exserta*	Exserted Indian paintbrush	-	Native	-
Papaveraceae	*Eschscholzia californica*	California poppy	-	Native	-
	Platystemon californicus	Creamcups	-	Native	-
Phrymaceae	*Mimulus guttatus*	Seep monkeyflower	-	Native	-
Plantaginaceae	*Collinsia heterophylla* var. *heterophylla*	Purple Chinese houses	-	Native	-
	Collinsia sparsiflora var. *collina*	Spinster's blue eyed Mary	-	Native	-
	Plantago elongata	Prairie plantain	-	Native	-
	Plantago erecta	Dotseed plantain	-	Native	-

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
	Veronica anagallis-aquatica	Water speedwell	-	Native	-
Poaceae	*Agrostis (exarata)*	Spike bentgrass	-	Native	-
	Avena barbata	Slender oat	-	Introduced	Moderate
	Avena fatua	Wild oat	-	Introduced	Moderate
	Bromus diandrus	Ripgut brome	-	Introduced	Moderate
	Bromus hordeaceus	Soft brome	-	Introduced	Limited
	Bromus madritensis	Compact brome	-	Introduced	High
	Bromus tectorum	Cheatgrass	-	Introduced	High
	Crypsis schoenoides	Swamp pricklegrass	-	Introduced	-
	Cynodon dactylon	Bermuda grass	-	Introduced	Moderate
	Deschampsia danthonioides	Annual hairgrass	-	Native	-
	Distichlis spicata	Saltgrass	-	Native	-
	Elymus caput-medusae	Medusahead	-	Introduced	High
	Elymus multisetus	Big squirreltail	-	Native	-
	Elymus triticoides	Beardless wildrye	-	Native	-
	Festuca microstachys	Squirrelgrass	-	Native	-
	Festuca myuros	Annual fescue	-	Introduced	Moderate
	Festuca perennis	Italian rye grass	-	Introduced	Moderate
	Hordeum brachyantherum	Meadow barley	-	Native	-
	Hordeum depressum	Dwarf barley	-	Native	-
	Hordeum marinum ssp. *gussonianum*	Mediterranean barley	-	Introduced	Moderate
	Hordeum murinum ssp. *glaucum*	Smooth barley	-	Introduced	Moderate
	Hordeum murinum ssp. *leporinum*	Hare barley	-	Introduced	Moderate
	Lamarckia aurea	Goldentop grass	-	Introduced	-
	Melica californica	California melicgrass	-	Native	-
	Phalaris minor	Littleseed canarygrass	-	Introduced	-
	Phalaris paradoxa	Hood canarygrass	-	Introduced	-
	Poa secunda	Sandberg bluegrass	-	Native	-
	Polypogon monspeliensis	Annual rabbitsfoot grass	-	Introduced	Limited

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
	Schismus arabicus	Arabian schismus	-	Introduced	Limited
	Stipa cernua	Nodding needlegrass	-	Native	-
	Stipa pulchra	Purple needlegrass	-	Native	-
Polemoniaceae	*Gilia clivorum*	Purple spot gilia	-	Native	-
	Gilia jacens	Nevada gilia	-	Native	-
	Gilia tricolor	Bird's-eye gilia	-	Native	-
	Leptosiphon bicolor	True babystars	-	Native	-
	Leptosiphon parviflorus	Variable linanthus	-	Native	-
	Microsteris gracilis	Slender phlox	-	Native	-
	Navarretia mitracarpa	Pincushion plant	-	Native	-
	Navarretia nigelliformis spp. *radians*	Shining navarretia	1B.2	Native	-
Polygonaceae	*Chorizanthe biloba* var. *biloba*	Two-lobe spineflower	-	Native	-
	Chorizanthe membranacea	Pink spineflower	-	Native	-
	Chorizanthe ventricosa	Potbellied spineflower	4.3	Native	-
	Eriogonum angulosum	Angle-stem wild buckwheat	-	Native	-
	Eriogonum elegans	Elegant wild buckwheat	4.2	Native	-
	Eriogonum nudum var. *indictum*	Protruding buckwheat	4.2	Native	-
	Eriogonum temblorense	Temblor buckwheat	4.2	Native	-
	Hollisteria lanata	False spineflower	-	Native	-
	Polygonum aviculare ssp. *aviculare*	Knotweed	-	Introduced	-
	Polygonum aviculare ssp. *depressum*	Knotweed	-	Introduced	-
	Rumex californicus	Toothed willow dock	-	Native	-
	Rumex crispus	Curly dock	-	Introduced	Limited
	Rumex salicifolius	Willow dock	-	Native	-
	Rumex stenophyllus	Narrowleaf dock	-	Introduced	-
Primulaceae	*Androsace elongata* ssp. *acuta*	California rockjasmine	4.2	Native	-
Ranunculaceae	*Delphinium* sp.	Delphinium	-	Native	-

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating
	Delphinium (gypsophilum)	Gypsum-loving larkspur	-	Native	-
	Delphinium parryi ssp. *parryi*	Parry's larkspur	-	Native	-
	Ranunculus californicus var. *californicus*	California buttercup	-	Native	-
	Ranunculus hebecarpus	Delicate buttercup	-	Native	-
Rhamnaceae	*Frangula californica* ssp. *californica*	California coffeeberry	-	Native	-
Rosaceae	*Aphanes occidentalis*	Field parsley piert	-	Native	-
	Prunus dulcis	Sweet almond	-	Introduced	-
Rubiaceae	*Galium aparine*	Stickywilly	-	Native	-
	Galium parisiense	Wall bedstraw	-	Introduced	-
Salicaceae	*Populus fremontii*	Fremont cottonwood	-	Native	-
	Salix laevigata	Red willow	-	Native	-
	Salix lasiolepis	Arroyo willow	-	Native	-
Saururaceae	*Anemopsis californica*	Yerba mansa	-	Native	-
Saxifragaceae	*Micranthes californica*	Greene's saxifrage	-	Native	-
Simaroubaceae	*Ailanthus altissima*	Tree-of-heaven	-	Introduced	Moderate
Solanaceae	*Datura wrightii*	Sacred thorn-apple	-	Native	-
	Nicotiana glauca	Tree tobacco	-	Introduced	Moderate
Themidaceae	*Bloomeria crocea* var. *aurea*	Common goldenstar	-	Native	-
	Brodiaea terrestris ssp. *terrestris*	Dwarf brodiaea	-	Native	-
	Dichelostemma capitatum ssp. *capitatum*	Blue dicks	-	Native	-
Typhaceae	*Typha latifolia*	Broadleaf cattail	-	Native	-
Urticaceae	*Urtica dioica* ssp. *holosericea*	California nettle	-	Native	-
	Urtica urens	Dwarf nettle	-	Introduced	-
Valerianaceae	*Plectritis ciliosa*	Longspur seablush	-	Native	-
Verbenaceae	*Verbena lasiostachys* var. *scabrida*	Western vervain	-	Native	-
Viscaceae	*Phoradendron serotinum* ssp. *macrophyllum*	Big leaf mistletoe	-	Native	-
Zannichelliaceae	*Zannichellia palustris*	Horned pondweed	-	Native	-

Family Name	Scientific Name[1]	Common Name	CRPR[2]	Native/ Introduced	Cal-IPC Impact Rating

Notes: Cal-IPC Impact Rating = California Invasive Plant Council Invasive Plant Inventory rating; CNPS = California Native Plant Society; CRPR = California Rare Plant Rank.

[1] Use of parentheses indicates uncertainty in the identification of a specimen due to a lack of floral characteristics required for accurate identification (often related to early phenology during the site visit).

[2] California Rare Plant Rank definitions
1A = Plants presumed extinct in California and elsewhere.
1B = Plants that are rare, threatened, or endangered in California and elsewhere.
2A = Plants presumed extinct in California, but more common elsewhere.
2B = Plants rare, threatened, or endangered in California, but more common elsewhere.
3 = Plants about which more information is needed—a review list.
4 = A watch list of plants of limited distribution.

CNPS Threat Code Extensions
0.1: Seriously endangered in California.
0.2: Fairly endangered in California.
0.3: Not very endangered in California.

Sources: CNPS 2014a; Cal-IPC 2014.

Appendix B. Photographs

Photo 1. Shining Navarretia on the Left (with the Yellow Flower), and Paso Robles Navarretia on the Right (with the Purple Flower)

Photo 2. Round-leaved Filaree with an Immature Fruit

Photo 3. South Coast Range Morning Glory in Full Bloom

Photo 4. Small-flowered Morning Glory with Fleshy Cotyledons

Photo 5. Small-flowered Morning Glory with Flower and Immature Fruit

Photo 6. Hogwallow Starfish with Flowers

Photo 7. Shining Navarretia in Flower

Photo 8. Example of a Larger, Multistemmed Shining Navarretia Plant

Photo 9. Showy Golden Madia in Flower

Appendix C. Plant Ecologist Resumes

Patrick Boursier, Ph.D.

Principal, Plant Ecology

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AREAS OF EXPERTISE

- Plant ecology/rangeland science
- Land management plans
- Wetland delineation/assessment
- Environmental impact assessment
- Permitting/compliance

EDUCATION

- Ph.D. Plant Physiology, UC Davis, 1987
- M.S. Agronomy and Range Science, UC Davis, 1982
- B.S. Biological Sciences, UC Davis, 1979

PRIOR PROFESSIONAL EXPERIENCE

- Postdoctoral researcher, salt marsh ecophysiology, Univ. Sussex, Brighton, England 1989-1991
- Postdoctoral researcher, soil/plant relations, UC Davis 1988-1989
- Postdoctoral researcher, nitrogen biochemistry, Oregon State Univ., Corvallis 1987-1989
- Biological Technician, Interior Dept., Bureau of Land Management, Susanville 1978-1980

KEY PROJECTS

- San Jose General Plan Update EIR
- San Jose/Santa Clara Water Pollution Control Plant Long-Term Marsh Monitoring
- VTA Measure A/B Transportation Improvements
-

KEY PUBLICATIONS

Boursier, P. et al. 1989. Growth & nitrogen-fixing responses of subterranean clover to application and subsequent removal of ammonium nitrate. Crop Science 29:758-763.

Boursier, P. & A. Lauchli. 1989. Mechanisms of chloride partitioning in leaves of salt-stressed Sorghum bicolor. Physiologia Plantarum 77:537-544.

Boursier, P., F. J. Hanus, H. Papen, M. Becker, S. A. Russell and H. J. Evans. 1988. Selenium increases hydrogenase expression in autotrophically cultured *Bradyrhizobium japonicum* and is a constituent of the purified enzyme. J. Bacteriol. 170:5594-5600.

Complete list of publications available upon request

PROFESSIONAL PROFILE

Patrick is a principal and head of our plant ecology group, a role in which he provides direction, training, and oversight on technical studies related to environmental documents, wetland delineations/assessments, quantitative sampling, rare plant studies, and resource agency permit preparation and processing. He is also responsible for providing senior management across a broad spectrum of projects.

Prior to joining H. T. Harvey & Associates, Patrick was involved in monitoring and assessing the effects of environmental stresses on individual plant vigor and composition in Great Britain's coastal salt marsh communities. Pat's field experience includes mapping over one million acres of plant communities in desert and forest ecosystems over a three-year period for the Bureau of Land Management.

One of Patrick's primary focuses within the company is wetland delineation and permitting. He has prepared delineations covering tens of thousands of acres in a wide variety of habitats involving complex hydrologic and edaphic settings including vernal pools and swales, farmed wetlands, tidal salt marshes, atypical situations and problem areas. His permitting experience and expertise includes U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Game, California Coastal Commission, Bay Conservation and Development Commission, U.S. Coast Guard, U.S. Fish and Wildlife Service, and National Marine Fisheries Service.

Patrick has managed the compilation of biological resources sections of Environmental Impact Reports/Statements, Natural Environment Studies, and Management Plans for numerous private and public projects. The issues revolving around each of these projects generally involved the identification of sensitive biological resources, development of creative mitigations, and direct interaction with project engineers to minimize project impacts and develop a streamlined permitting strategy. He has directed numerous special-status plant surveys in a wide variety of plant communities throughout California, from coastal salt marshes to alpine meadows and deserts.

With H. T. Harvey & Associates, Dr. Boursier has overseen numerous large-scale projects for and within the City of San Jose. These have included: preparation of the San Jose General Plan Update EIR, San Jose/Santa Clara Water Pollution Control Plant Long-Term Marsh Monitoring, Ranch on Silver Creek, Communication Hill, Bailey Avenue/US 101 Interchange, Boulder Ridge Golf Course, and VTA Measure A/B Transportation Improvements. Recent agency permit approvals within Santa Clara County include numerous projects for Santa Clara County Roads and Airports including current bridge replacements over Stevens Creek, Llagas Creek, Alamitos Creek, and road repairs in New Almaden. Patrick is recently managing bridge replacement/retrofit projects for the City of San Jose over Coyote Creek. He has worked on numerous bicycle/pedestrian trail projects including trails where the primary focus of the project was construction of new trail facilities along sensitive habitats associated with Coyote Creek, Stevens Creek, and San Tomas Aquino Creek. In addition, Pat has worked on many housing development project and ranch management plans with significant trail components including work on Santa Clara County Open Space Authority.

Kelly Hardwicke, Ph.D.

Associate Plant Ecologist

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AREAS OF EXPERTISE

- Rare/endangered plant surveys
- Environmental impact assessment (NEPA/CEQA)
- Wetland delineation/assessment
- Permit Preparation and Assistance
- Entomological and Branchiopod Surveys

EDUCATION

- Ph.D. Ecology, Colorado State University, 2006
- B.A. Biology, Reed College, 1998

PRIOR PROFESSIONAL EXPERIENCE

- Instructor, Plant Identification, Colorado State University, 2006
- Researcher, Shortgrass Steppe Long-term Ecological Research Site, 2002-2006
- Teaching Assistant, Colorado State University, 2001-2006
- Field Researcher, US Geologic Survey, Grand Staircase Escalante National Monument, 2002
- Research Technician, Center for Cytometry & Molecular Imaging, Salk Institute, 1998-2001
- Field Biologist, El Paso County Parks Department, 1998

KEY PROJECTS

- ECCC HCP/NCCP CEQA Species Analysis
- California Valley Solar Ranch
- California Flats Solar Project
- City of San Mateo Kingridge Sanitary Sewer Project
- Oakland Army Base Regulatory Permitting Assistance
- James Donlon Boulevard ECCC HCP/NCCP Compliance
- Santa Clara Valley Water District Upper Llagas Creek Delineation

PROFESSIONAL PROFILE

Kelly is a plant and invertebrate ecologist whose work primarily involves classification and description of habitats and identification of the component flora and invertebrates of project sites. Her work also frequently includes surveying sites for special-status plants, performing wetland delineations, writing CEQA documents, and providing regulatory permit assistance. In addition, Kelly also has several years of experience in insect surveys, sample preparation, and identification, and studies of vernal pool invertebrates. She holds a recovery permit with the U.S. Fish and Wildlife Service to conduct wet season surveys for endangered branchiopods throughout California.

Kelly has over 12 years of experience characterizing plant and invertebrate communities of the San Francisco Bay Area, Central Coast Range, Mojave Desert, Colorado shortgrass steppe and Rocky Mountains, and the Great Basin and associated floristic provinces. Her strong research and botanical background gives her the skills necessary to determine the potential for a site to support special-status species, and her background in plant physiology allows her to analyze habitat requirements of rare plant species. In addition, her entomology and community ecology background enables her to distinguish significant plant-invertebrate community associations. Kelly's focus on pollination biology complements her familiarity with the rare and endemic plant species of the San Francisco Bay, Monterey Bay, Mojave Desert, Central Valley, and Transverse Range regions.

While with H. T. Harvey & Associates, Kelly has coordinated regulatory agency permitting for complex projects. Kelly is able to collaborate with project engineers to analyze, compile, and relay pertinent information on impacts to regulatory agencies. She has prepared individual and nationwide permits for the U.S. Army Corps of Engineers, 401 Water Quality Certification, Waste Discharge Requirements, Lake and Streambed Alteration Agreements, and Bay Conservation and Development Commission permits for a wide variety of private and public projects. She has also designed, managed, and performed large-scale protocol plant surveys conducted rare plant surveys on several thousands of acres in salt marsh, riparian, Mojavean scrub, chaparral, annual grassland, and vernal pool plant communities. She has written a management plan for a federally endangered plant, worked with the USFWS's Pollinator Task Force to census native bees on National Wildlife Refuges in the Central Coast region, and applied geographic information system techniques to create maps of sensitive habitats and populations in wetland, scrub, woodland, riparian, desert, and grassland plant communities across California. She has conducted planning surveys for habitat conservation plan compliance, including CEQA analysis of non-covered species occurring in plan areas, and she has also written numerous natural environment studies for the California Department of Transportation. Kelly has also conducted wet season sampling for vernal pool branchiopods in the Central Coast Range, Carrizo Plain, lower Sierra Nevada foothills, and Central Valley, and has surveyed for special-status insects and sampled terrestrial insect communities for a number of projects.

To complement her formal training in plant biology, Kelly has completed several courses emphasizing federal and state regulatory compliance and procedures, including wetland delineation training focused on soils and hydrology with the Wetland Training Institute; courses on the Clean Water Act (Section 404), nationwide permits, endangered species regulation and protection, and CEQA with UC Davis; and courses on branchiopod identification and ecology.

Colin Wilkinson, B.S.

Plant Ecologist

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Areas of Expertise

- Rare/endangered plant surveys
- Plant ecology
- Habitat Assessments
- Vegetation mapping, qualitative and quantitative plant sampling
- CEQA/NEPA document preparation
- Rare/endangered wildlife surveys

Education

- B.S. Ecology & Evolution, University of California, Santa Cruz, 2006

Prior Professional Experience

- Botanist/Biologist, ESRP California State University, Stanislaus, 2007-2010
- Biologist, USFS PSW, 2003
- Biologist, California State Parks, 2003
- Botanist/Biologist, Sequoia Riverlands Trust, 2003

Key Projects

- California Valley Solar Ranch, Rare Plant Surveys
- Panoche Valley Solar Farm Peer Review Surveys and Reporting
- PG&E San Joaquin Valley HCP Surveys and Monitoring
- San Joaquin River Water Quality Improvement Project, Wildlife Monitoring for Panoche Drainage District

Professional Profile

Colin is a Plant Ecologist in our San Joaquin Valley office, specializing in special-status plant surveys and habitat assessments.

Colin has worked as a botanist for numerous projects throughout California. His professional experience ranges from the southern California deserts, San Joaquin Valley, central and southern Coast Ranges, and the Sierra Nevada Mountains. In addition to his extensive background in special-status plant surveys he has also played a role in identifying and studying long-term vegetative trends and productivity in alkali scrub communities, and valley grassland in the southern and western San Joaquin Valley.

Colin has conducted special-status species surveys and botanical inventories throughout Fresno, Kern, Kings, Madera, San Benito, San Luis Obispo, and Tulare counties. Colin has contributed to projects including sensitive and invasive plant species mapping in the San Joaquin River drainage as part of a restoration effort; surveys and mapping of sensitive plant species, invasive plant species, and plant species that had been deemed culturally significant in Sierra National Forest in Madera county.

While employed with California State University (CSU) Stanislaus Endangered Species Recovery Program, Colin gained experience working on a variety of projects. He has performed vegetation mapping and productivity sampling, and identified habitats with the potential for sensitive plant associations, conducted vernal pool mapping and quality assessments; participated in research of native plant restoration involving the collection and processing of seed and native plant propagation. While at HTH, Colin has played an integral role on identifying rare plants and assessing habitat for these species on several projects.

In addition to his strong background as a botanist, Colin also has considerable experience conducting wildlife surveys. For four seasons he conducted protocol surveys for blunt-nosed leopard lizards and spotted owl and has assisted with protocol surveys for great grey owl. He also has experience conducting surveys and assessments for California red-legged frog and California tiger salamander. In addition he has assisted in census, population monitoring, habitat management and improvement for California red-legged frog in San Benito County and assisted in pit-fall trapping of adult and emergent larval California tiger salamander and dip or seine netting of their larvae in breeding pools in Fresno and Madera counties. Colin also has hundreds of hours of small mammal trapping experience and has assisted in trapping for endangered species including: giant kangaroo rat, Fresno kangaroo rat, Tipton kangaroo rat, and Buena Vista Lake shrew. He conducted a range-wide census in Kern, San Luis Obispo and San Benito counties for giant kangaroo rat in 2007. Further experience with endangered species includes surveys for valley elderberry long-horned beetle and spotlight surveys for San Joaquin kit fox. Colin has performed bird point count surveys in Fresno county for CA State Parks. He also performed bird point count surveys in Kern county for two seasons while participating in vegetation classification and sampling, and herpetological and small mammal surveys as part of a BLM-funded study on biodiversity.

Colin is a member of the California Native Plant Society and is a member/volunteer for the Sierra Foothill Conservancy.

Chris Winchell

Plant Ecologist

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AREAS OF EXPERTISE

- Plant ecology
- Habitat Assessments
- Rare/TES plant surveys
- Wetland delineations

EDUCATION

- B.S. Biology, Fresno State University, in progress

PRIOR PROFESSIONAL EXPERIENCE

- Biologist, McCormick Biological, 2006-2008
- Botanist, Sequoia Riverlands Trust, 2006
- Botanist, Sierra National Forest, 2005-2009
- Associate Botanist/Biologist, John Stebbins Biological Consulting, 2004-present
- Botanist, Barbara Leitner Biological Consulting, 2004-2005
- Botanist/Biologist, Phil Leitner Biological Consulting, 2005
- Botanist/Biologist, Live Oak Associates, 2005

KEY PROJECTS

- SCE's Tehachapi Renewable Transmission habitat mapping and noxious weed surveys
- California Valley Solar Farm in San Luis Obispo County
- Trilobite solar development project in the Mojave desert
- PG&E Central Valley HCP surveys and monitoring

KEY PUBLICATIONS

- *Helianthus winterii* (Asteraceae), A Perennial New Species from the Southern Sierra Nevada Foothills, California

PROFESSIONAL PROFILE

Chris is a field biologist and plant ecologist in our San Joaquin Valley office, specializing in special-status plant surveys and habitat assessments. His area of expertise covers the central California region, spanning westward from the Sierra Nevada Mountains to the central and southern Coast, having conducted surveys for and detected numerous special-status plants throughout the region.

Chris has worked as a botanical consultant for numerous projects throughout California. His professional experience ranges from the southern California deserts, San Joaquin Valley, central and southern Coast Ranges, Sierra Nevada Mountains, Mojave Desert, and the montane regions of southern California. In addition to his extensive background in special-status plant surveys he has also played a role in identifying and studying long-term vegetative trends in alkali scrub communities, valley grassland and wetland habitats, and montane to sub-alpine meadow complexes.

Chris has conducted numerous special-status species surveys and botanical inventories throughout California, including Fresno, Inyo, Kern, Kings, Los Angeles, Madera, Mariposa, Merced, Riverside, San Benito, San Bernardino, San Luis Obispo, Stanislaus, and Tulare counties. Chris has contributed to numerous local projects including botanical inventories and sensitive plant species mapping in the Kaweah, Kings, Merced, and San Joaquin River drainages; botanical inventories in the Sierra National Forest in Fresno and Madera counties, including surveys and mapping of sensitive plant species, invasive plant species, and plant species that had been deemed culturally significant; a biological inventory and assessment of various BLM parcels in the vicinity of the San Joaquin River Gorge in Fresno and Madera counties, including complete floristic level surveys, avian surveys, and wildlife surveys; and floristic level surveys conducted at alpine lakes in Tulare County for Southern California Edison's Hydroelectric project.

While employed with the Sierra National Forest, Chris gained experience working on a variety of projects. He has performed vegetation mapping and identified habitats with the potential for sensitive plant associations, conducted fen delineations in high montane meadows, and collected and maintained plant specimens for the Forest herbarium. He has experience conducting range assessments for grazing method revisions, as well as managing geographic information system data of threatened and endangered plants and noxious weeds. As a consultant, Chris also conducted wetland delineations and soil core sampling and implementing quadrat-sampling techniques to evaluate data required to meet mitigation reclamation performance standards.

In addition to his strong background as a botanist, Chris also has considerable experience conducting wildlife surveys. For four seasons he conducted protocol surveys for blunt-nosed leopard lizards and has assisted with protocol surveys for northern goshawk, burrowing owl, great grey owl, spotted owl, and Mohave ground squirrel. He also has experience conducting surveys and assessments for Yosemite toad, California red-legged frog, mountain yellow-legged frog, and foothill yellow-legged frog.

Chris is a member of the California Native Plant Society and is a member/volunteer for the Sierra Foothill Conservancy.

Chris Gurney, M.S.

Plant Ecologist

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Areas of Expertise

- Plant ecology
- Population & community ecology
- Conservation biology

Education

- M.S. Range Management, UC Berkeley, 2012
- B.A. Environmental Science, Claremont McKenna College, 2009

Prior Professional Experience

- Graduate Fellow, U.S. National Science Foundation, 2010-2012
- Field Biologist, UC Berkeley, 2009
- Research Assistant, Claremont McKenna College, 2008

Key Projects

- Anzar Road Bridge
- Black Rock Residential Development
- California Flats Solar Project
- California Valley Solar Ranch
- I-80/I-680/SR-12 Interchange
- Moller Residential Development
- Redwood Shores Lagoon Bridge Parkway
- South Bay Marsh Vegetation and Mapping
- Stevens Canyon Bridges

Key Publications

Restoring Natives in a Semi-arid Grassland: The Effects of Rodent Granivory and Soil Disturbance. (in revision). Journal of Arid Environments.

Professional Profile

Chris Gurney is a field biologist in the plant ecology division of our Bay Area office. He is responsible for permit preparation and processing, conducting special-status plant surveys, classifying and mapping vegetation, and performing wetland assessments/delineations.

Prior to joining H. T. Harvey Chris attended graduate school at UC Berkeley. He worked with Dr. Justin Brashares as part of a large-scale, long-term research project in the Carrizo Plain National Monument. The Carrizo Plain is California's largest remnant grassland and comprises critical habitats for numerous special status species endemic to the San Joaquin Valley Ecoregion. The goal of the Carrizo Plain Ecosystem Project is to enhance our understanding of multi-species interactions and to improve ecological management within the monument. Chris' thesis research focused on identifying how a keystone ecosystem engineer, the giant kangaroo rat, affects plant composition and structure. Specifically, he investigated how rodent granivory, soil disturbance, and seed caching affects competitive dynamics between native and exotic plant species.

As an undergraduate at Claremont McKenna College, Chris assisted Dr. Diane Thomson with research on tropical secondary forest succession in Costa Rica. He also conducted independent research modeling the population viability of a threatened lizard species, the Coachella Valley fringe-toed lizard. Throughout his career, Chris has also been active in field of conservation biology. He has served as president of the Berkeley Chapter of the Society for Conservation Biology, and as chair of the Bay Area Conservation Biology Symposium. He also traveled to South Africa and Kenya as part of a U.S. National Science Foundation sponsored program focused on quantitative conservation biology.

At H. T. Harvey & Associates, Chris has worked on a wide variety of both small- and large-scale Projects. Large-scale projects have included the South Bay Marshes Project, the California Flats Solar Project, and the California Valley Solar Ranch. For the South Bay Marshes Vegetation and Mapping Project Chris assisted with vegetation mapping across nearly 2000 ac of marsh, and for the California Flats Solar Project he assisted with the large-scale wetland delineation. Chris has also prepared and processed permit applications including U.S. Army Corps of Engineers (USACE) Section 404 Nationwide and Individual Permits, Regional Water Quality Control Board (RWQCB) Section 401 Water Quality Certification and Waste Discharge Requirements, and Lake and Streambed Alteration Agreements under Section 1600 of the State Fish and Game Code. He has also prepared or contributed to Natural Environment Study reports for various Caltrans projects, including for the Redwood Shores Lagoon Bridge Parkway Project and for the Anzar Road Bridge Project. Chris also has extensive botanical survey experience and has surveyed for rare and endangered plant species in a number of Californian habitats including grasslands, riparian, and chaparral.

Ethan M. Barnes, M.S.

Plant Ecologist

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AREAS OF EXPERTISE

- Plant Ecology
- Rare/Endangered Plant Surveys
- Wetland Delineation/Assessment
- Regulatory Agency Permitting
- Environmental Impact Assessment (CEQA/NEPA)
- Vegetation Classification and Assessment
- GIS Resource Mapping/Analysis

EDUCATION

- M.S. Forestry, Northern Arizona Univ., 2006
- B.S. Environmental Science (Terrestrial Ecology emphasis, Biology minor), Western Washington Univ. 1997

PRIOR PROFESSIONAL EXPERIENCE

- Adjunct Faculty, Biology, Fresno City College, 2007-2009
- Independent Ecological Consultant, 2004-2008
- Biological Science Technician, USDA Forest Service, 2004
- Botanist, Maxim Technologies, Inc., 2003-2004
- Botany/GIS Assistant, Bureau of Land Management, 2002-2003

KEY PROJECTS

- California Valley Solar Ranch, Rare Plant Surveys and Report, Jurisdictional Wetlands and Other Waters Delineation and Permitting, Blunt-Nosed Leopard Lizard Surveys, Giant Kangaroo Rat Relocation Efforts, and Construction Monitoring
- San Joaquin River Parkway Master Plan Update and EIR
- Adelanto Solar Project Biological Constraints Analysis for BP Solar Energy
- Marine Ocean Terminal Concord Special-Status Species Survey
- SCE's Tehachapi Renewable Transmission Project Rare Plant Survey and EIR

PROFESSIONAL PROFILE

Ethan is a plant ecologist in our San Joaquin Valley office, responsible for providing technical expertise related to habitat assessment, special-status plant surveys, wetland assessments and delineations, regulatory permit assistance, environmental impact analyses, and CEQA compliance.

Over the last 15 years as a professional botanist, Ethan has conducted surveys for special-status plant species and their habitats, performed wetland delineations, and mapped vegetative cover types in a wide variety of plant communities throughout California and the United States. His professional experience within California ranges from the San Joaquin Valley, California deserts, central and southern Coast Ranges, and the Sierra Nevada Mountains. Ethan's experience also extends to a wide variety of plant communities in geographically distinct parts of the western United States, including Arizona, Oregon, Washington, Idaho, Colorado, Montana, North Dakota, Texas, Nebraska, and Florida.

Since joining our firm, Ethan has assessed project-related environmental impacts, performed rare plant surveys, delineated jurisdictional wetlands and other waters, and applied geographic information system techniques to create maps of sensitive habitats and populations. His surveys have involved inventorying plant species from numerous habitat types including wetland, grassland, chaparral, oak woodland, desert, halophytic, and anthropogenic communities. Ethan has identified and observed over 100 special-status plant species in their native habitats throughout California. He has prepared numerous habitat assessments including the use of GPS/GIS technology to create maps of sensitive habitats and special-status plant populations. He has participated in several large-scale rare plant surveys for a number of solar energy projects in the Mojave Desert. Additionally, from 2010 through 2012 he assisted a team of botanists conducting annual comprehensive rare plant surveys for the on-going California Valley Solar Ranch (CVSR) solar energy project on the Carrizo Plain in San Luis Obispo County.

Ethan has contributed to several large field studies and reports, for compliance with state and federal regulations such as CEQA, NEPA, and the Clean Water Act. Examples of such Projects include the San Joaquin River Parkway Master Plan Update and EIR in Fresno and Madera Counties, CA and the Biological Resources Assessment Report for the California Valley Solar Ranch Project in San Luis Obispo, CA. Ethan's experience also includes permitting through the United States Army Corps of Engineers (USACE), the State Regional Water Quality Control Board (RWQCB), and permitting under Section 1600 of the California State Fish and Game Code under the Lake and Streambed Alteration Agreement Program (LSAA). Ethan assisted with the delineation of jurisdictional features (wetlands and other waters) for the California Valley Solar Ranch project, and drafting the LSAA and RWQCB permits for the project.

Brian Cleary, M.S.

Senior Plant Ecologist

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408-458-3232

AREAS OF EXPERTISE

- Plant ecology
- Wetland delineations
- Rare/endangered plant surveys
- Wetland communities ecology
- Vegetation mapping, qualitative and quantitative plant sampling
- Regulatory agency permitting
- CEQA/NEPA document preparation

EDUCATION

- M.S. Ecological Botany, California State Univ. Stanislaus, 1997
- B.S. Botany, California State Univ. Fresno, 1986

PRIOR PROFESSIONAL EXPERIENCE

- Senior Associate, Swanson Hydrology & Geomorphology, 2003-2005
- Botanist, H. T. Harvey & Associates 1998-2003
- Botanist, EA Engineering, Science & Technology, 1993-1997
- Professional Botanist, U.S. Forest Service, 1989-1993

KEY PROJECTS

- California Valley Solar Ranch (CVSR) rare plant surveys
- Concord Naval Weapons Station wetland delineation project
- Hunters Point Naval Shipyard wetland delineation project
- Tehachapi Renewable Transmission Project rare plant surveys
- Clark Slough Humboldt Bay wetland delineation project
- U.S. Highway 101 North and South wetland delineation project
- Neary vernal pool wetland delineation/mitigation project

PROFESSIONAL PROFILE

Brian is a senior plant ecologist and botanist responsible primarily for conducting wetland delineations and rare plant surveys in many different habitat types throughout California including vernal pools, freshwater marsh, coastal salt marsh and riparian communities. He is also a regulatory specialist involved in the permit preparation and processing of U.S. Army Corps of Engineers Section 404 nationwide and individual permits, Regional Water Quality Control Board Section 401 clean water certification applications, California Department of Fish and Game streambed alteration agreements and California Coastal Commission development permits.

Brian has over 20 of years experience performing comprehensive floristic and vegetation studies including surveys for hundreds of different rare plant species in California. He has conducted botanical investigations throughout much of the United States with particular emphasis on the myriad flora and terrestrial ecosystems of Northern, Central and Southern California including desert, montane, inland, and coastal communities. Brian is very experienced in the study of wetland ecology including quantitative and qualitative determination of wetland functions and values as well as field surveys for rare, threatened, endangered, and sensitive plant species that occur in California wetland communities. As a wetland scientist he has mapped tens of thousands of acres of wetlands in California including large and complex vernal pools that also support endangered plant species. Additionally, Brian served as an expert witness providing testimony for a controversial and high profile wetland delineation project in Humboldt County, California. In early 2009, Brian independently completed a 5000-acre wetland delineation for the inland portion of the Concord Naval Weapons Station as a part of the City of Concord's Land Reuse Plan. He was also involved in several large-scale rare plant surveys for a number of solar energy projects in the Mojave Desert. More recently in 2010 and 2011, Brian was a crew leader and field supervisor working with a team of botanists conducting comprehensive rare plant surveys for the on-going California Valley Solar Ranch (CVSR) solar energy project on the Carrizo Plain in San Luis Obispo County.

With H. T. Harvey & Associates, Brian also provides expertise in the preparation of various CEQA and NEPA related documents including environmental impact reports, natural environment studies, habitat conservation plans and biological assessments as a part of the Endangered Species Act (ESA) Section 7 agency consultation process. This work includes an assessment of project-related botanical and wetland impacts and formulation of mitigative management and restoration strategies for impacts to wetlands and rare, threatened, and endangered plant species in California. During his 9 years with H. T. Harvey & Associates, Brian has been involved in several hundred projects that require botanical adherence to CEQA, NEPA, and ESA guidelines.

Prior to his work for H. T. Harvey & Associates, Brian used the U.S. Forest Service's Ecological Unit Inventory technique for vegetation typing and geographic information system mapping of over 300,000 acres of land in Southern California. As a vegetation management specialist, Brian assisted in developing fire management prescriptions in chaparral and mixed conifer forest to enhance biodiversity and promote age class diversity. In Northern California, Brian carried out data analysis and description of over 400,000 acres of natural vegetation for Louisiana-Pacific's Sustained Yield Timber Management Plan and Habitat Conservation Plan related to Section 10 of the ESA.

Élan R. Alford, Ph.D.

Plant Ecologist

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408-458-3221

Areas of Expertise

- Rare/ endangered plant surveys
- Wetland delineation
- Permitting
- Environmental impact assessment

Education

- Ph.D. Ecology, Colorado State Univ., 2011
- M.S. Ecology, Colorado State Univ., 2006
- B.S. Ecology & Evolution, Univ. of Pittsburgh, 2002

Prior Professional Experience

- Research Associate, Center for Environmental Management of Military Lands, Colorado State Univ., 2012
- Research Assistant, Restoration Ecology Laboratory, Colorado State Univ., 2004-2011
- Research Associate, Univ. of Pittsburgh, 2002-2004
- Research Assistant, Carnegie Museum of Natural History, 2002
- Intern, Phipps Conservatory and Botanical Gardens, 1999

Key Projects

- Anderson Dam Seismic Retrofit, Floristic Surveys
- California Valley Solar Ranch, Habitat Mitigation and Monitoring
- California Flats Solar Project, Habitat Mapping and Wetland Delineation
- Union Road Bridge Replacement, Permitting
- Montague Expressway Widening, Permitting

Key Publications

Alford, É. R., E. A. H. Pilon-Smits, S. C. Fakra, M. W. Paschke. 2012. Selenium hyperaccumulation by *Astragalus* (Fabaceae) does not inhibit root nodule symbiosis. American Journal of Botany 99(12):1-12.

Alford, É. R., E. A. H. Pilon-Smits, M. W. Paschke. 2010. Metallophytes – a view from the rhizosphere. Plant and Soil 337:33-50.

Complete list of publications available upon request

Professional Profile

Élan is a Plant Ecologist and botanist at H. T. Harvey & Associates. She uses her expertise in plant ecology to assist clients with their botanical natural resource issues and regulatory permitting for projects with impacts to sensitive habitats.

Élan's scientific interests lie in beneficial plant-microbe interactions. She received her Ph.D. in Ecology from Colorado State University in 2011 on the role of root-microbe interactions in *Astragalus* species. During her Ph.D. training Élan was the recipient of a Memorial Scholarship from the American Society of Mining and Reclamation. Élan's interest in root-microbe interactions provides a strong foundation for understanding how plants are adapted to edaphic conditions.

Prior to joining H. T. Harvey & Associates, Élan had worked on numerous projects during her time at the Restoration Ecology Laboratory at Colorado State University. These projects involved the study of invasive species, soil processes and amendments, toxic compounds, and revegetation techniques. Projects were conducted on various sites including mines, well pads, and federal lands in the Rocky Mountain region. Her research in rhizosphere ecology and seven years of field work experience enables her to distinguish plant communities and analyze habitat requirements of rare plant species.

Since joining H. T. Harvey & Associates Élan has worked on several regulatory permitting projects and wetland delineations. Élan completed the Wetland Delineation course from the Wetlands Training Institute and has experience with vernal pools, wetlands, and other waters in the Arid West region. She has conducted delineations on small and large projects (2 to 350 acres) and has prepared permits under Sections 404 and 401 of the Clean Water Act. Her experience also includes permitting riparian impacts under Section 1600 of the California State Fish and Game Code under the Lake and Streambed Alteration Agreement Program (LSAA). Her work on several infrastructure improvement projects, such as the Union Road Bridge Replacement Project and the Montague Expressway Widening Project, have required permitting under all three of these regulatory agencies.

Élan has experience addressing the impacts of development and determining mitigation measures within the California Environmental Quality Act (CEQA) framework. She has written CEQA documents and Natural Environment Studies (NES). Examples of her work include the Kimber Park Environmental Impact Report (EIR), the Yerba Buena Island West-Side Bridges Retrofit Project NES, and the Fair Oaks Bridge Replacement Project NES MI. Élan has also contributed to the CEQA analysis for the California Flats Solar Project.

Assessing special-status plants and sensitive habitats are also a part of the work Élan has conducted while at H. T. Harvey & Associates. Élan aided large habitat mapping efforts on the 4,000 acre California Flats Solar Project. She helped implement the Habitat Mitigation and Monitoring Plan for rare plants at the California Valley Solar Ranch in the Carrizo Plain. Under this project she has worked in plant communities from vernal pools, scrub habitat, and California annual grassland doing surveys for and sampling special-status plants. Élan has also has experience with special-status species in coastal scrub and serpentine habitats through her work on the Yerba Buena Island NES and the Anderson Dam Seismic Retrofit Project.

Maya E. Goklany, M.S.

Field Biologist

mgoklany@harveyecology.com
408-458-3231

Areas of Expertise

- Plant Ecology
- Special-status Plant Surveys
- Wetland delineation
- Vegetation Classification and Habitat Assessment
- Environmental Impact Assessment

Education

- M.S., Biology, University of Oregon, 2012
- B.S., Ecology and Evolutionary Biology, University of North Carolina at Asheville, 2007

Prior Professional Experience

- Botanist, Carex Working Group, 2012-2013
- Graduate Teaching/Research Fellow, Departments of Biology and Environmental Science, University of Oregon, 2009-2012
- Vegetation Monitor, The Nature Conservancy, 2008
- Field Technician, City of Eugene Native Plant Materials Program, 2007
- Forest Technician, Southern Appalachian Forest Coalition, 2006
- Research Assistant, University of North Carolina at Asheville, 2005

Key Publications

Pfeifer-Meister L, Bridgham SD, Little CJ, Reynolds L, **Goklany ME**, and Johnson BR. 2013. Pushing the limit: experimental evidence of climate effects on plant range distributions. *Ecology* 94 (10): 2131-2137.

Horton J, Fortner R, and **Goklany ME**. 2010. Photosynthetic characteristics of the C_4 invasive exotic grass, *Miscanthus sinensis* Anderss., growing along gradients of light intensity in the Southeastern United States. *Castanaea* 75: 52-66.

Professional Profile

Maya is a Field Biologist in our Bay Area office, providing technical expertise to clients with botanically related natural resource issues. She specializes in surveying and mapping special-status plants and vegetative communities, conducting habitat assessments and floristic surveys, and assessing project-related environmental impacts.

Maya is professionally trained in botany, and has nine years of related professional and research experience in land management and academic settings. She has an extensive background in plant identification, quantitative and qualitative plant surveys, and plant community mapping in California, the Pacific Northwest, and the Southern Appalachian Mountains. Maya's research interests are focused on understanding ecological patterns and processes from the leaf to the ecosystem level by manipulating key ecological drivers in field experiments. Her graduate research assessed the response of upland prairies in the Pacific Northwest to projected regional climate change scenarios. Specifically, she examined growth, reproduction, and leaf physiology of perennial grasses to increased temperature and rainfall, and used multivariate statistical analyses to understand each species' mechanism for coping with drought.

Prior to joining H.T. Harvey & Associates, Maya worked with an ecological consulting firm to map habitat types and invasive plant species along the main stem of the Willamette River and its floodplain, one the largest remaining native grasslands in the Pacific Northwest. Maya's prior consulting experience also included wetland delineation; and creating management, restoration, and monitoring plans for conserved lands. She has worked in Oregon's Willamette Valley with several agencies in the River to Ridges Partnership to monitor rare, threatened, and endangered plant and lepidoptera populations; and to assist with the development native plant materials programs for ecological restoration projects in wetland, prairie, vernal pool, oak woodland, and riparian hardwood forest habitats. Maya has taught lab sections for introductory and upper level college courses at the University of Oregon, including Ecology, Plant Biology, Forest Biology, and Cell Biology. Further experience in the Eastern United States includes documenting and surveying tracts of old growth forests in the Southern Appalachians, and conducting physiological studies on the highly invasive Chinese silver grass as an undergraduate. During her undergraduate training, she was the recipient of the Bernhardt-Perry Award for Research Scholars.

At H.T. Harvey & Associates, Maya has participated in projects in San Benito, Santa Clara, Alameda, Monterey, and San Luis Obispo counties. As a certified wetland delineator, she has both led and participated in large scale wetland delineations for the California Flats Solar Project (CFSP), the South County Right of Way Water Pipeline Improvements Project, and the Upper Llagas Creek Flood Protection Project. Additionally, Maya has conducted aquatic resource monitoring on the Coyote Ridge and Kammerer Open Spaces in accordance with the Long-Term Management Plans for the properties. She has made notable contributions to special-status plant surveys for the CFSP and the Anderson Dam Seismic Retrofit Project; assessed environmental impacts for the Serra Substation and Serra-Brokaw Reconductoring Project, and assisted with mitigation monitoring for the Dublin Ranch Habitat Restoration Project. Moreover, she has prepared nationwide permits for the U.S. Army Corps of Engineers, 401 Water Quality Certification, and Lake and Streambed Alteration Agreements for a wide variety of public projects.

Appendix E.16

2012 CRLF Survey Memorandum

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

MEMORANDUM

22 August 2012 (Project No. 3308-01)

TO: Amy Sparks, J.D.
FROM: Jeff Wilkinson, Ph.D.
SUBJECT: California Flats Solar Project: Results of California Red-legged Frog Survey

H. T. Harvey & Associates' biologists Dr. J Wilkinson and Dr. K Setser conducted a California red-legged frog (*Rana draytonii*; CRLF) survey at the California Flats Solar Project Site (Figure 1) on 16 August 2012. They surveyed the lower half of Cottonwood Creek, Drainage 1 at sites A-D, Drainage 2 at site E, Drainage 3 at site N, Drainage 4 at site K, and Drainage 5 at site L (Figure 2); and Ponds 1 and 2 (Figure 3). They began the surveys approximately 1 hr after sundown, using flashlights to observe eye shine in the beam of the flashlight. The air temperature at the beginning of the survey was 84° F, and water temperature was 77° F. There was very little wind, and the sky was clear.

A total of 15 CRLF were observed at the following localities:

- One juvenile and one adult within a 2.5-ft-deep pool in Cottonwood Creek (UTM: 10S 743342 E 3968726 N).
- One juvenile and one adult within a 2.5–ft-deep pool in Cottonwood Creek (UTM: 10S 743548 E 3968957 N).
- One juvenile and one adult within a 2.5-ft-deep pool in Cottonwood Creek (UTM: 10S 743789 E 3969084 N).
- One juvenile within a 2-ft-deep pool in Cottonwood Creek (UTM: 10S 743813 E 3969086 N).
- Two adults within a 3-ft-deep pool in Cottonwood Creek (UTM: 10S 743872 E 3969151 N).
- Two adults within a 3.5-ft-deep pool in Cottonwood Creek (UTM: 10S 743922 E 3969174 N).
- Four adults within a 3-ft-deep pool in Drainage 2 (UTM: 10S 740866 E 3972133 N).

Because juvenile CRLF were observed within Cottonwood Creek, we presume that CRLF are breeding within the creek. However, there is also the possibility that juveniles dispersed to the creek from other localities (e.g., the pools A-D within Drainage 1 on Figure 2). Pools A-D within Drainage 1 were observed to be dry, and the pools within Drainages 4 and 5 were observed to be very shallow during the survey. CLRF were not observed in Ponds 1 and 2 on Figure 3. One western pond turtle was observed in each of Ponds 1 and 2.

California Red-legged Frog Survey Data Sheet

Survey results reviewed by_____
(FWS Field Office) (date) (biologist)

Date of Survey: 08/16/2012 **(mm/dd/yyyy)** **Survey Biologist:** Wilkinson, **(Last name)** Jeff **(first name)**

Site Location: 25 mi northeast of Paso Robles in southeastern Monterey Co.

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: California Flats Solar Project
Brief description of proposed action: Construction of a 280-Megawatt photovoltaic solar power plant, including solar arrays, related structures, electrical equipment, and infrastructure improvements, including a 230-kilovolt substation.

Type of Survey (circle one): **DAY** (**NIGHT**) **BREEDING** (**NON-BREEDING**)

Survey number (circle one): (**1**) **2 3 4 5 6 7 8**

Begin Time: 2030 **End Time:** 0145

Cloud cover: 0% **Precipitation:** 0

Air Temperature: 84 **Water Temperature:** 77

Wind Speed: 1 mph **Visibility Conditions:** 100%

Moon phase: no moon **Humidity:** 55%

Description of weather conditions: Clear and starry skies. No wind.

Brand name and model of light used to conduct surveys: Petzl 4 C headlamp, Maglite 3 D

Were binoculars used for the surveys (circle one)**?** (**YES**) **NO**

Brand, model, and power of binoculars: Swift Warbler #829 8x42

California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

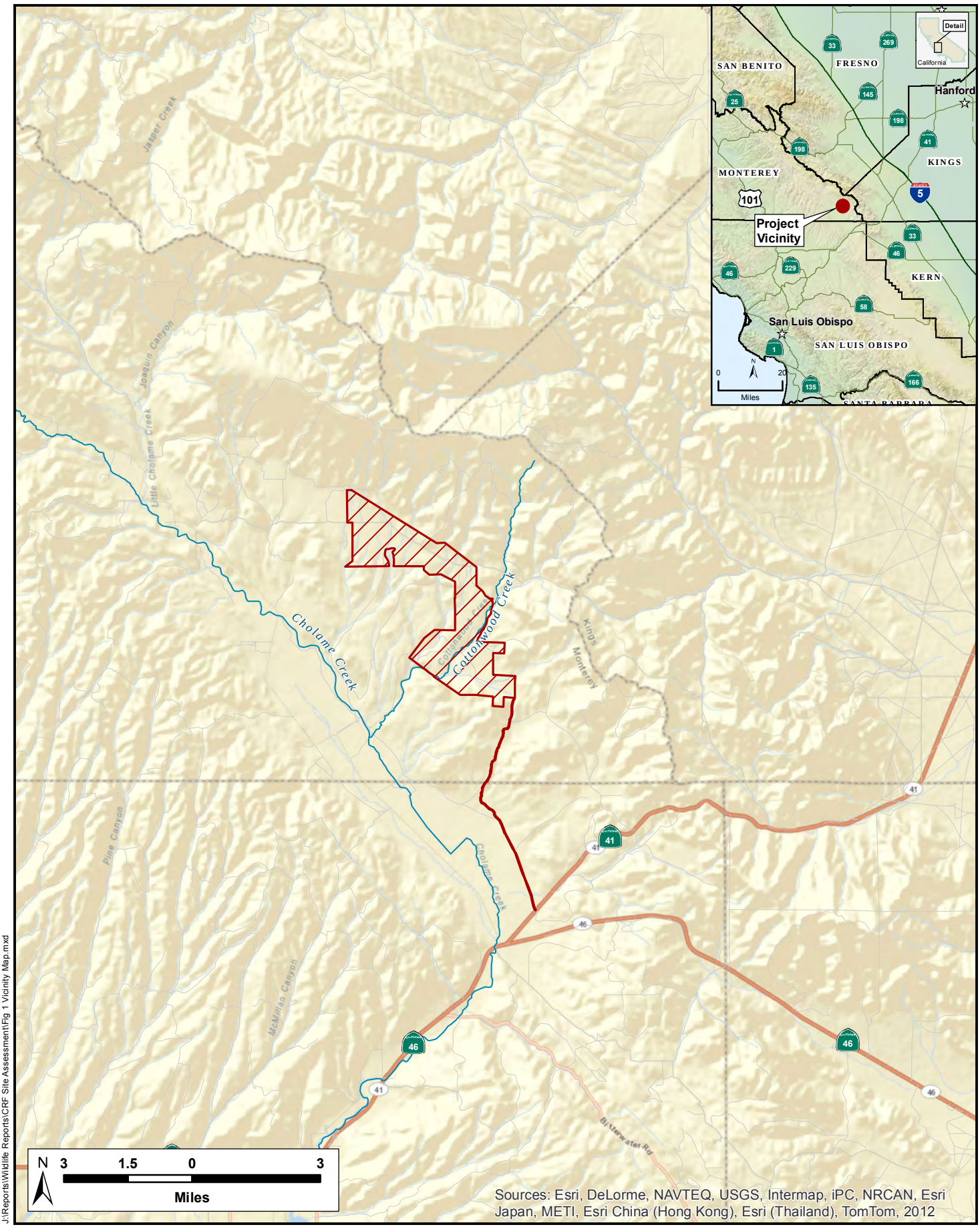
Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Rana draytonii	15	(O) Observed	Terrestrial	Juvenile, Adult	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: None observed.

Other notes, observations, comments, *etc*.

A total of 15 CRLF were observed at the following localities:

1. 1 juvenile and 1 adult within a 2.5 ft deep pool in Cottonwood Creek at 10S 743342 E 3968726 N.
2. 1 juvenile and 1 adult within a 2.5 ft deep pool in Cottonwood Creek at 10 S 743548 E 3968957 N.
3. 1 juvenile and 1 adult within a 2.5 ft deep pool in Cottonwood Creek at 10 S 743789 E 3969084 N.
4. 1 juvenile within a 2 ft deep pool in Cottonwood Creek at 10 S 743813 E 3969086 N.
5. 2 adults within a 3 ft deep pool in Cottonwood Creek at 10 S 743872 E 3969151 N.
6. 2 adults within a 3.5 ft deep pool in Cottonwood Creek at 10 S 743922 E 3969174 N.
7. 4 adults within a 3 ft deep pool in Drainage 2 at 10 S 740866 E 3972133 N.



J:\Reports\Wildlife Reports\CRF Site Assessment\Fig 1 Vicinity Map.mxd

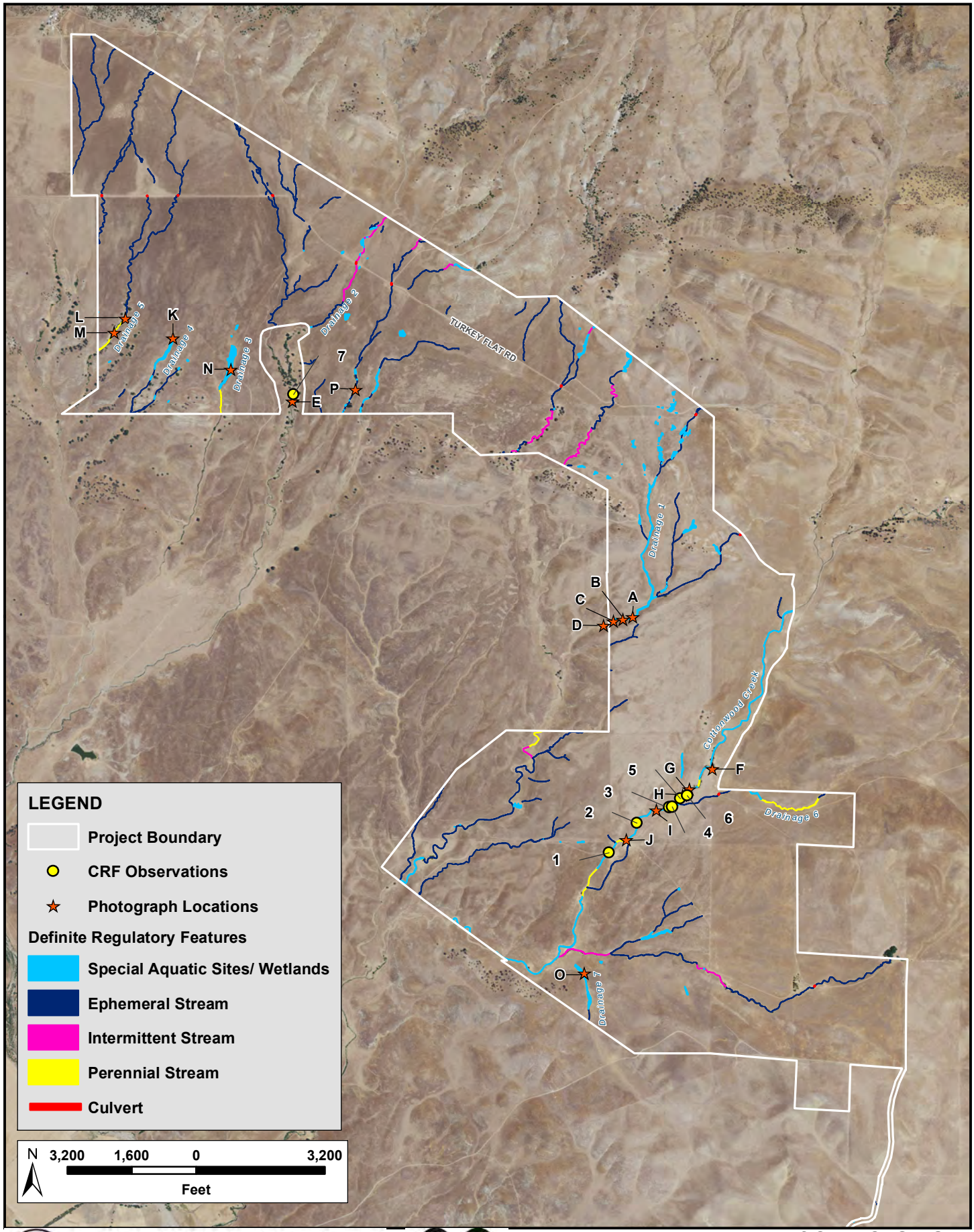
H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

elementpower

Figure 1: Vicinity Map

California Flats Solar Project – CRF Survey Report (3308-01)

August 2012



J:\Reports\Wildlife Reports\CRF Site Assessment\Fig 2 Wetlands Map of Core CFSR Site.mxd

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Figure 2: Wetlands Map of Core CFSR Site

California Flats Solar Project – CRF Survey Report (3308-01)
August 2012

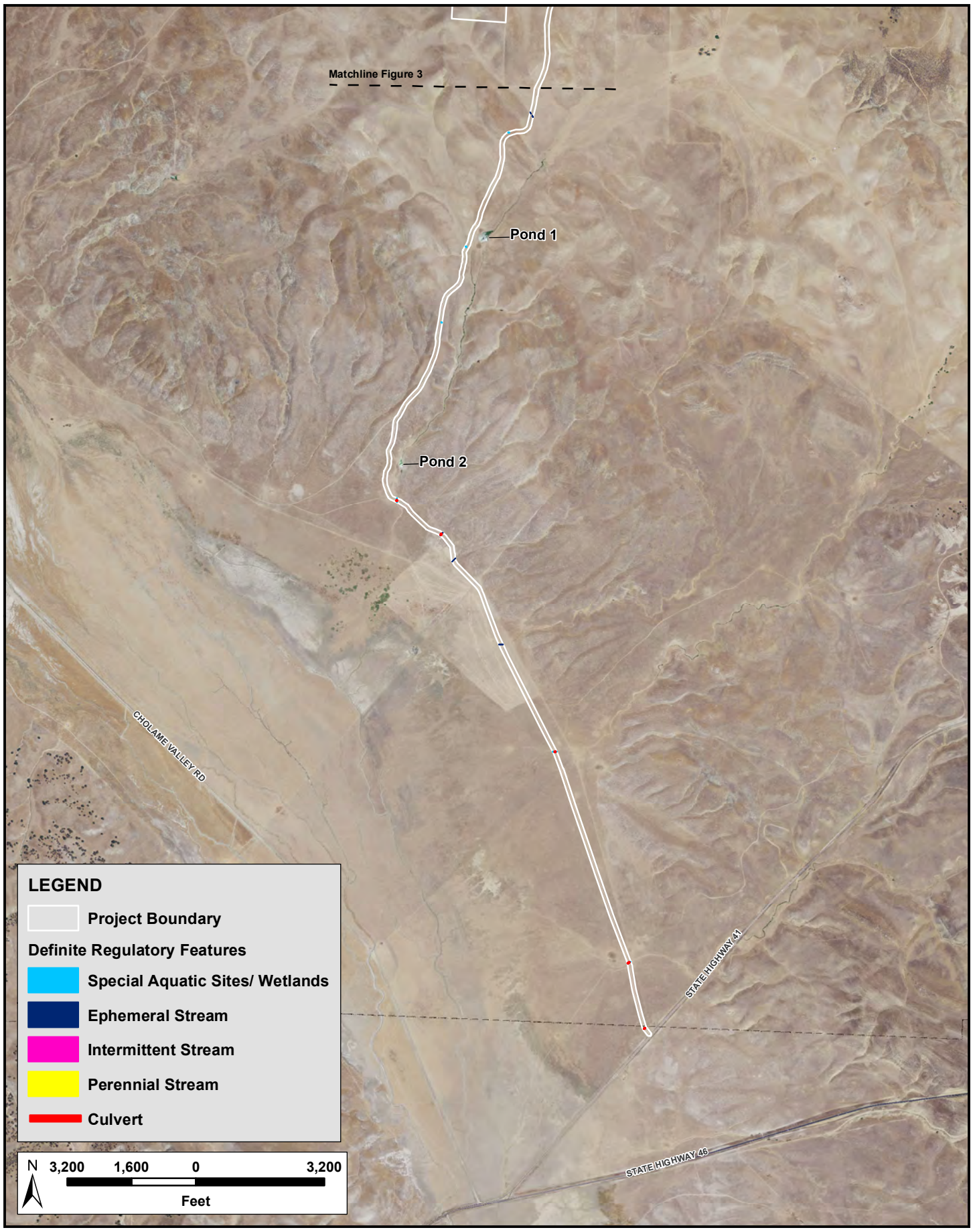

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Figure 3: Wetlands Map of Proposed Access Road

California Flats Solar Project – CRF Survey Report (3308-01)
August 2012

Appendix E.17

2013 Raptor Nest Survey Report

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

Baseline Raptor Nest Surveys for the Proposed California Flats Solar Project in Monterey County, California: 2013

Project # 3308-01

Prepared for:

California Flats, LLC
135 Main Street, 6th Floor
San Francisco, CA 94105

Prepared by:

H. T. Harvey & Associates

September 2013

Cal Poly Technology Park, Bldg. 83., Ste. 1B • San Luis Obispo, CA 93407 • Ph: 805.756.7400 • F: 805.756.7441

Executive Summary

The California Flats Solar Project (Project) is a 280-megawatt photovoltaic solar power plant proposed for development in southeastern Monterey County, California (Figure 1). When approved, the solar facility and related operations infrastructure (Project site) will be built on approximately 1037 hectares (2562 acres) of the 29,137-hectare (72,000-acre) Jack Ranch, which is a working cattle ranch. The overall development will include improvements to an existing access road and its connection to a California Department of Transportation (Caltrans) right-of-way at California State Route 41 (access road/Hwy 41 improvement areas). Together, the Project site and access road/Hwy 41 improvement areas constitute the 1058-hectare (2615-acre) Project impact area (PIA), where all direct, Project-related impacts will occur. A biological study area (BSA) was delineated around the PIA, within which most Project-related biological surveys and assessments are being conducted (Figure 1).

The landscape in the Project vicinity is dominated by gently rolling terrain and grasslands, surrounded by woodlands and shrublands where various trees and rocky outcrops provide nest substrates suited to eagles and other raptors. Before this study, golden eagles (*Aquila chrysaetos*) were known to occur in the area and nest in nearby regions, but their nesting distribution around the proposed Project site was not well known.

This report summarizes the results of baseline surveys for nesting raptors conducted around the Project in 2013. The goals of the surveys were to determine the degree to which Project development might influence the nesting and foraging activities of golden eagles whose home ranges overlap the PIA, and to assess the potential for Project development to adversely affect other raptors that nest or roost on or near the Project site.

The study involved both aerial (helicopter) and ground surveys. The primary objectives of the helicopter surveys, conducted in late March and mid-May, were: 1) achieve a comprehensive, baseline inventory of golden eagle, bald eagle (*Haliaeetus leucocephalus*), and California condor (*Gyps californicus*) occupied nesting territories, nest locations, and nesting activity within 16 kilometers (10 miles) of the Project site (Figure 1); 2) search for potential Swainson's hawk (*Buteo swainsoni*) nesting territories within 8 kilometers (5 miles) of the Project site; and 3) obtain an indication of nesting success and productivity for the local golden eagle population. The objective of the ground surveys, conducted from March through June, was to collect additional information about raptor nesting activity on the Project site and within a 500-meter (1640-foot) buffer area.

The aerial surveys confirmed 12 active (eggs laid) golden eagle nests, one active bald eagle nest, and no condors or Swainson's hawks within the overall survey area (Table 1, Figures 2 and 3). None of the active eagle nests were located in the PIA. The active bald eagle nest was located 6.5 kilometers (4.0 miles) southwest of the nearest PIA boundary. The active golden eagle nest closest to a PIA boundary was located 0.5 kilometer (0.3 mile) from a proposed solar array location. Two other active golden eagle nests were

located 3.0 and 3.2 kilometers (1.9 and 2.0 miles) west of the Project site. Five other active golden eagle nests were located ≤8 kilometers (5 miles) from the nearest PIA boundary. The distance from the nearest project-site boundary to a definitive eagle nest (active or inactive) averaged 7.7 kilometers with a standard deviation (SD) of ±5.1 kilometers (4.8±3.1 miles). The distance to the nearest access road/Hwy 41 improvement area averaged 9.2±5.6 kilometers (5.7±3.5 miles). Most eagle nests were in large gray pines (*Pinus sabiniana*), oaks (*Quercus douglasii* or *Q. lobata*), or black cottonwoods (*Populus trichocarpa*).

The available evidence indicated the following for golden eagles within 16 kilometers (10 miles) of the Project site:

- Twelve active (eggs laid) nests
- Two apparently inactive, confirmed territories occupied by distinct pairs of adult eagles and containing a well-maintained, definitive eagle nest
- Two inactive, confirmed territories occupied by an adult eagle and containing a well-maintained or newly constructed, definitive eagle nest
- Two inactive, probable territories occupied by an adult eagle and containing a definitive eagle nest
- Three inactive, probable territories occupied by a pair of adult eagles and containing a potential nest
- Six or seven inactive, possible territories occupied by an adult eagle and containing a potential nest
- One or two other distinct pairs of adult eagles that did not appear to be affiliated with a potential nest site
- Several other individual adult and subadult eagles that appeared to be "floaters" (i.e., potential breeding birds that have not yet established a breeding territory)

Of the 21 confirmed or probable golden eagle nesting territories, 7 (33%) were located in Cholame Valley, 6 (29%) were located in the Cholame Hills, 4 (19%) were located in other areas on the west side of the Diablo Range, 3 (14%) were located on the east side of the Diablo Range, and 1 (5%) was located in the northern Temblor Range (Figure 2). Most likely, at least two other golden eagle nesting areas were located on the east side of the Diablo Range, with other possibilities on the west side of the Diablo Range (1), in the northern Temblor Range (1), in the Cholame Hills (2), and in Cholame Valley (1).

For projects located near active golden eagle nests, the U.S. Fish and Wildlife Service (USFWS) typically recommends observing a 1.6-kilometer (1-mile) no-disturbance buffer around such nests (from 1 February through 31 August), unless vegetative or topographic features screen the nest from direct view, in which case a smaller buffer may be acceptable. Four of the confirmed or probable golden eagle nests (active nest 13A and occupied/inactive nests 18A, 19A, and 20A), and one other potential eagle nest (28A), were located within 1.6 kilometers (1 mile) of the PIA (Figure 4). Topographic features and woodland cover shielded nests 18A and 28A from direct view of the Project. Three other active golden eagle nests were in direct line-of-sight of the PIA, but at distances of 2.8–3.9 kilometers (1.7–2.4 miles; nests 2A, 4A, and 12A; Figures 4 and

5). Intervening hills and woodlands screened two other active golden eagle nests, located at similar distances, from view of the PIA (nests 11A and 14A; Figures 4 and 5).

Nearest-neighbor distances among the 13 active eagle (bald and golden) nests (i.e., the closest distance from one nest to another) ranged from 2.7–10.2 kilometers (1.7–6.3 miles) and averaged 5.8±2.8 kilometers (3.6±1.8 miles). When we included all nesting areas occupied by an adult eagle and containing a confirmed eagle nest, the average decreased to 4.9±2.5 kilometers (3.0±1.1 miles). When we included all potential nesting areas occupied by an adult eagle and containing at least a potential eagle nest, the average decreased to 4.0±1.7 kilometers (2.5±1.1 miles). Understanding that eagle home ranges are not necessarily circular in nature, the nearest-neighbor calculations for this study population suggested that the typical foraging range for territorial eagles that nest in the area might be on the order of 2–3 kilometers (1.2–1.9 miles). This range of values translates to a conservative projection that Project development is likely to affect the foraging home ranges of eagles that nest within 3 kilometers (1.9 miles) of the PIA. In 2013, such nests represented four confirmed (2A, 11A, 13A, and 18A), two probable (19A and 20A), and two possible (24A and 28A) golden eagle nesting territories (Figure 6).

We estimated complete nesting phenology (life-cycle timing) for nine golden eagle nests that produced chicks (Table 2). Incubation began between 5 February and 13 March, with an average start date of 24 February ± 13 days. Estimated hatching dates ranged from 19 March to 24 April (average 7 April ± 13 days), and fledging dates ranged from 25 May to 30 June (average 13 June ± 13 days). The indicated phenology was similar to the timing shown in a similar study area located 48–64 kilometers (30–40 miles) south of the Project, and was similar to that found elsewhere in central and southern California.

The single bald eagle nest failed during incubation or before the chicks reached an age that would have left behind definitive evidence (i.e., whitewash, downy feathers, and prey remains). Three of the 12 active golden eagle nests definitely failed before fledging chicks, two most likely during incubation and one with at least one and possibly two 5–7-week-old chicks dead on the nest (Table 3). By the May surveys, the nine remaining active golden eagle nests had each raised two chicks to ages ranging from 2–8 weeks. If all nine nests with live chicks in May successfully fledged two chicks, apparent nesting success would have been 75% of nest starts fledged, and the estimates of productivity would have been 1.5 fledglings per nest start and 2.0 fledglings per successful nest, a productive season for those pairs that nested.

Besides eagles, the aerial surveys documented numerous active and inactive red-tailed hawk (*Buteo jamaicensis*) nests scattered throughout the survey area (Figure 3). These included five active red-tailed hawk nests located on the Project site or within the 500-meter (1640-feet) buffer area (Table 4, Figure 4). In addition, the ground surveys confirmed an active great horned owl (*Bubo virginianus*) nest just outside the southeast boundary of the Project site, in an ornamental tree grove (Table 4). American kestrels (*Falco sparverius*) also likely nested in several areas of the Project site or buffer zone (Figure 4). The only other non-vulture raptor species documented on or near the PIA during the survey period were several burrowing owls (*Athene cunicularia*), a short-eared owl (*Asio flammeus*), and several prairie falcons (*Falco mexicanus*). It is likely that at

least one active burrowing owl nest occurred along the northwest border of the Project site, whereas a lack of suitable grassland cover likely precluded short-eared owls from nesting in the area in 2013. For prairie falcons, we documented no nest locations on or in the immediate vicinity of the PIA. There were, however, active prairie falcon nests 2.1 kilometers (1.3 miles) northwest and 3.2 kilometers (2.0 miles) east of the Project site, and several more active nests 6–10 kilometers (3.7–6.2 miles) from the PIA (Figure 3). We recorded foraging prairie falcons in the Project vicinity on several occasions.

This baseline survey resulted in a solid initial assessment of the apparent territory-occupancy, nest-activity, and productivity patterns of eagles in the overall survey area, and of other raptors on or near the PIA. As such, it provides a sound basis for formulating initial projections of the potential for Project development to affect nesting raptors.

Table of Contents

List of Figures

List of Tables

List of Contributors

Brian Boroski, Ph.D., Vice President and Senior Wildlife Ecologist—Principal-in-Charge
Scott B. Terrill, Ph.D., Vice President and Senior Ornithologist—Technical Advisor
Jeff P. Smith, Ph.D., Senior Wildlife Ecologist—Project Manager and Report Author
Jeff Zirpoli, M.S., Wildlife Ecologist—Assistant Surveyor and Report Author
Colleen Lenihan, Ph.D., Wildlife Ecologist—Assistant Surveyor

Section 1.0 Introduction

The California Flats Solar Project (Project) is a 280-megawatt photovoltaic solar power plant proposed for development in southeastern Monterey County, California (Figure 1). When approved, the solar facility and related operational infrastructure (Project site) will be built on approximately 1037 hectares (2562 acres) of private ranchland. The 29,137-hectare (72,000-acre) Jack Ranch is a working cattle ranch located in an unincorporated area of southeastern Monterey County and northeastern San Luis Obispo County, near the borders of Kings and Fresno counties (Figure 1). The Project will include construction, installation, and operation of energy-related infrastructure (e.g., solar panels, inverters, substations, and new power poles and lines) and improvements needed to operate and maintain energy-related facilities (e.g., buildings, internal roadways, access roads, fencing, and lighting). The overall development will also include improvements to an existing access road and its connection to the California Department of Transportation (Caltrans) right-of-way at California State Route (Hwy) 41, approximately 8 kilometers (5 miles) south of the Project site (Figure 1). The access road/Hwy 41 improvement areas will encompass approximately 21.4 hectares (53 acres). Together, the Project site and access road/Hwy 41 improvement areas constitute the 1058-hectare (2615-acre) Project impact area (PIA), where all direct, Project-related impacts will occur. A biological study area (BSA) also was delineated around the PIA, within which most Project-related biological surveys and assessments are being conducted (Figure 1).

California Flats Solar, LLC, has developed a plan to construct and operate the proposed Project within the Competitive Renewable Energy Zone under the State's Renewable Energy Transmission Initiative. The site elevation and generally flat, south-facing topography creates an ideal place for solar development. Sunlight is plentiful year-round because the elevation places the site above the coastal marine layer, and the site does not receive winter fog from the Central Valley. The flat, south-facing topography minimizes the need for mass grading and alteration of landforms to position panels in a way that favors collection of solar energy. In addition, the Morrow Bay–Gates 230-kilovolt transmission line crosses the Project site, with capacity sufficient to accommodate the new power plant (partially represented in Figure 1).

The Project site is a landscape dominated by gently rolling terrain and grasslands, interspersed with several, mostly ephemeral, riparian corridors and drainages. The Project site is surrounded by woodlands and shrublands where various trees and rocky outcrops provide nest substrates suited to a variety of raptors.

This report summarizes the results of baseline surveys for nesting raptors conducted by H. T. Harvey & Associates (HTH) ecologists during the 2013 breeding season. The goals of the surveys were to determine the degree to which Project development might influence the nesting and foraging activities of golden eagles (*Aquila chrysaetos*) whose home ranges overlap the PIA, and to assess the potential for Project development to adversely affect other raptors that nest or roost on or near the PIA. Other special-status raptors of interest included bald eagle (*Haliaeetus leucocephalus*; state-listed as endangered), California condor (*Gyps californicus*; federally and state-listed as endangered), Swainson's hawk (*Buteo swainsoni*; state-listed as threatened), white-

N

3 1.5 0 3

Miles

4 2 0 4

Kilometers

LEGEND

- Biological Study Area
- Project Site
- Access Road/Highway 41 Improvements
- 8-Kilometer (5-Mile) Radius Aerial Survey Area
- 16-Kilometer (10-Mile) Radius Aerial Survey Area
- Morrow Bay–Gates Transmission Line

Avenal

Kettleman City

Parkfield

San Miguel

Cholame

Shandon

Paso Robles

Devils Den

DIABLO RANGE

TEMBLOR RANGE

CHOLAME HILLS

CHOLAME VALLEY

SUNFLOWER VALLEY

MIDDLE DOME

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

J:\Reports\Wildlife Reports\Avian Activity Surveys\Annual Raptor Nest Survey_July 2013\Fig 1 Study Area Map.mxd

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

First Solar.

Figure 1: Study Area Map

California Flats Solar Project, California - Annual Raptor Nest Survey Report (3308-01)

September 2013

tailed kite (*Elanus leucurus*; fully protected in California), northern harrier (*Circus cyaneus*; California species of special concern [CSSC]), long-eared owl (*Asio otus*; CSSC), and short-eared owl (*Asio flammeus*; CSSC). Burrowing owls (*Athene cunicularia*; CSSC) also occur on the Project site (HTH 2013).

The survey work involved aerial (helicopter) and ground surveys. The objectives of the aerial surveys were: 1) achieve a comprehensive, baseline inventory of occupied golden eagle, bald eagle, and California condor nesting territories, nest locations, and nesting activity within 16 kilometers (10 miles) of the Project site (Figure 1); 2) search for potential Swainson's hawk nesting territories within 8 kilometers (5 miles) of the Project site; and 3) obtain an initial indication of nesting success and productivity for all active (eggs laid) eagle nests. The objective of the ground surveys was to collect additional information about raptor nesting activity on the Project site and within a 500-meter (1640-foot) buffer area, emphasizing species not easily discerned from the air, such as the cavity-nesting American kestrel (*Falco sparverius*).

Golden eagles forage throughout the year in the Project vicinity (HTH 2013). Golden eagles that forage in the area probably include both area residents and seasonal visitors; however, the relative contributions of year-round residents, seasonal residents, and transients to the population are unknown, as are the ranging dynamics of eagles that nest in the area. The Bald and Golden Eagle Protection Act (Eagle Act; U.S. Fish and Wildlife Service [USFWS] 2009a, 2009b, 2010) restricts actions that compromise the survival and productivity of both golden and bald eagles. Such actions include those that cause direct mortality of adults, eggs, or young, as well as those that, based on sound science, are known to lead indirectly to reduced eagle productivity and survival. The latter actions include modifying foraging habitat to a degree sufficient to cause abandonment of nesting territories, reduced nesting success and productivity, and/or lower juvenile or adult survival. Golden eagles are also designated by the State of California as fully protected, which affords the species additional protection (California Department of Fish and Wildlife [CDFW] 2013a).

To delineate the local nesting population of eagles in a proposed project area, the USFWS (2009a, 2012, 2013) recommends conducting baseline surveys throughout a 16-kilometer (10-mile) radius surrounding the proposed project site. The gathered information is used to estimate the average nearest-neighbor distance between nesting territories in the area. This metric is used as a coarse-scale indicator of average home-range size for the local population, which in turn is used as an indicator of the likely spatial sensitivity of specific nesting pairs to disturbance within their home ranges. Heretofore, the primary focus of the USFWS guidance has been wind-energy projects; however, the principles translate well to setting the stage for evaluating the potential impacts of other developments, such as solar facilities.

Prior to this survey work, the California Natural Diversity Database (CNDDB) (CDFW 2013b) contained no nesting records for golden or bald eagles within 32 kilometers (20 miles) of the Project, with the closest golden eagle nest located approximately 35 kilometers (22 miles) southwest, and the closest bald eagle nest located approximately 70 kilometers (27 miles) west of the site. Breeding bird atlas results for Monterey County (Roberson and Tenney 1993) did, however, indicate several confirmed and probable golden eagle

breeding locations around the periphery of Cholame Valley and the Project site, and golden eagles are a known breeder in the mountains of this region and farther south (Thelander 1974, Latta 2010, HTH 2012).

Historically, Swainson's hawks nested throughout much of California in foothill and lowland areas where riparian woodlands and oak savannahs provided key nesting substrates and adjacent or intermixed native bunchgrass prairies were used as foraging habitat (Bloom 1980). Currently, however, only a fraction of once-prevalent native prairie and suitable riparian habitats remain in the state. As a result, nesting Swainson's hawks have been extirpated from most of their former range in southern California and now nest primarily in the Central Valley (Bradbury 2009). The nearest nesting records reported in the CNDDB (CDFW 2013b) were located more than 32 kilometers (20 miles) northeast and southeast of the Project site in the western San Joaquin Valley. Roberson (2002) reported that a few pairs nested around Cholame Valley until the mid-1970s, but since then there has been no confirmed nesting of Swainson's hawks in Monterey County, with most nesting in the general region shifted to the agricultural habitats of the Central Valley. There has, however, been one Swainson's hawk nesting territory active just west of Shandon (see Figure 1) in San Luis Obispo County for the past several years, approximately 21 kilometers (13 miles) southwest of the Project site and 19 kilometers (12 miles) from the beginning of the access road at Hwy 41 (Edell 2013). This activity and another nest in southern San Luis Obispo County represent a recent return of Swainson's hawk nesting activity to San Luis Obispo County (Edell, personal communication).

Moderately suitable nesting habitat for Swainson's hawks remains in the riparian and oak woodland portions of Cholame Valley, and the grasslands and nearby agricultural habitats (alfalfa) could again provide potential foraging habitat. The CDFW typically requires compensatory mitigation for any development that compromises Swainson's hawk nesting or foraging habitat within 5–10 miles of a known, recently active (within ≤5 years) nest site (California Department of Fish and Game [CDFG] 1994, CDFG and Yolo County HCP/NCCP Joint Powers Agency 2002, California Energy Commission and CDFG 2010). For these reasons, a secondary objective of this study was to search for nesting Swainson's hawks within 8 kilometers (5 miles) of the Project site.

The Project site lies within the historic and current range of the California condor, and provides potentially suitable foraging habitat for the species. Recent global positioning system (GPS) tracking data indicate that captive-released California condors periodically occur in the mountain ranges that border the Project site to the west, north, and east, and that condors were recorded in the Project vicinity in 2005 and 2006 (California Condor Wind Energy Work Group 2011, USFWS 2011). Because of this knowledge and the presence of potentially suitable roosting and nesting habitat in the surrounding mountain ranges, another objective of this study was to search for evidence of nesting or roosting condors throughout the aerial survey area.

Section 2.0 Methods

2.1 Study Area

The aerial survey area encompassed all of Cholame Valley (herein considered to encompass the PIA); roughly 42 kilometers (25 miles) of the southern Diablo Range to the east, north, and northwest; a small portion of the northern Temblor Range to the south; and the Cholame Hills to the west and southwest (Figure 1). Most of the drainages found in Cholame Valley are seasonally ephemeral, including most of Cholame Creek, which runs the length of the valley. Cottonwood Creek, which drains the southeastern Diablo Range and crosses the southeastern portion of the Project site, is semi-perennial. A sparse array of livestock ponds and other small, artificial reservoirs also dot the landscape.

The rural community of Parkfield is 7.6 kilometers (4.7 miles) northwest of the Project site, in upper Cholame Valley. The Hwy 41 and Hwy 46 corridors converge in the southeastern section of the survey area; the single two-lane highway then continues west through the town of Shandon, about 4.2 kilometers (2.6 miles) outside the southwestern margin of the survey area, and on to Paso Robles and the north-south U.S. Interstate 101 corridor, about 28 kilometers (17.5 miles) farther west. Otherwise, most of the survey area and surrounding landscape consists of working cattle ranches with sparse residential settlements, as well as other private landholdings containing small farms and remote hunting/recreation areas with cabins. In addition, portions of Jack Ranch and other landholdings around Parkfield, in the floodplain areas of Cholame Valley, support limited areas of dry-farmed and variably-irrigated grain crops and hayfields.

The overall survey area and Project site provide habitat for diverse plant and animal species, including several federal and California special-status species besides the raptors already discussed. These species include San Joaquin kit fox (*Vulpes macrotis mutica*; federally and state-listed as endangered), western pond turtle (*Actinemys marmorata*; CSSC), loggerhead shrike (*Lanius ludovicianus*; CSSC), and shining navarretia (*Navarretia nigelliformis*; California Native Plant Society Rank 1B). Several other raptor species also use the area for nesting, foraging, and wintering.

The Project site supports primarily California annual grassland dominated by non-native grasses typical of the region, but also a healthy complement of native forbs. Other habitats found on the Project include wildflower field, serpentine bunchgrass grassland, Valley needlegrass grassland, grassland riparian, interior Coast Range goldenbush scrub, willow–cottonwood riparian woodland, gray pine woodland, ornamental non-native woodland, blue oak woodland, valley oak riparian woodland, ephemeral stream, intermittent stream, perennial stream, perennial marsh, seasonal wetland, and developed/ruderal grassland.

The portion of the Diablo Range that runs through the aerial survey area rises to a maximum elevation of approximately 1180 meters (3871 feet) about 9.2 kilometers (5.7 miles) north-northwest of the Project site. In the survey area, the eastern portions of the Diablo Range contain a variety of rocky outcrops and ridgelines

potentially suited to nesting golden eagles, prairie falcons (*Falco mexicanus*), and common ravens (*Corvus corax*). Otherwise, much of the middle- and high-elevation portions of the Diablo Range are covered by dense chaparral and scrubby oak woodlands, interspersed with gray pines (*Pinus sabiniana*) in many areas. The gray pines and cliffs/outcrops in such habitat may support an occasional golden eagle nest, if located close enough to suitable foraging areas, but such densely vegetated areas do not constitute suitable foraging habitat for eagles. In contrast, the lower-elevation areas, with open oak savannas (blue oak [*Quercus douglasii*] and some valley oak [*Q. lobata*]), scattered stands of gray pines, and riparian corridors with large black cottonwoods (*Populus trichocarpa*) and valley oaks surrounded by grassland, provide combinations of suitable nesting substrates (large oaks, pines, and cottonwoods) and nearby, open foraging habitat with prey favored by golden eagles, such as California ground squirrels (*Otospermophilus beecheyi*) and black-tailed jackrabbits (*Lepus californicus*). A few areas along the southwestern flanks of the Diablo Range, southeast of the Project site, also contain relatively extensive collections of small to moderately sized rocky outcrops that potentially could support nesting eagles, but are more apt to support prairie falcons, American kestrels, barn owls (*Tyto alba*), common ravens, and possibly great horned owls (*Bubo virginianus*) and red-tailed hawks (*Buteo jamaicensis*). In addition to natural nest substrates, the electrical transmission and distribution lines that cross the survey area support nesting red-tailed hawks, common ravens, and potentially golden eagles.

West of the Project site and Cholame Valley, the Cholame Hills (representing the southwestern tip of the Diablo Range) grade northward into dense chaparral, oak, and gray pine vegetation communities unsuited to foraging eagles. However, most of this portion of the survey area, and continuing southward across the Hwy 41/46 corridor to the northernmost section of the Temblor Range, supports favorable oak woodland and interspersed grassland habitat.

2.2 Survey Methods

2.2.1 Aerial Surveys

HTH ecologists conducted aerial surveys from a Bell Jet Ranger Model B206BII helicopter, following guidelines outlined in Pagel et al. (2010) and Driscoll (2010). All surveys included Dr. Jeff Smith as the lead surveyor in the front seat, responsible for survey coordination, navigation, data management, and nest finding. Dr. Smith has more than 15 years of experience coordinating and conducting extensive golden eagle and other raptor nest surveys in the western U.S., and has conducted aerial surveys in a variety of circumstances. He also has more than 25 years of experience studying the movement ecology of various raptors, including golden eagles, in western North America. Dr. Colleen Lenihan served as assistant surveyor on all flights. Situated in the backseat behind the lead surveyor, she was responsible for taking photos, recording data, and helping to find nests. Dr. Lenihan has more than 20 years of experience monitoring and studying nesting golden eagles and other raptors in California and elsewhere, including by helicopter.

During each survey, we flew with the doors removed or open on the surveyor side to maximize visibility. We used an iPad equipped with a GPS, GIS Kit® software (Garafa LLC, Provo, UT), relevant project files, and

aerial imagery available through Google Earth to facilitate navigation and record notes, survey tracks, and Universal Transverse Mercator (UTM) coordinates for all nests. We used a Canon 60D digital single-lens reflex (SLR) camera, equipped with a Canon EF 18–135-millimeter lens and an image-stabilized 100–400-millimeter lens, to further document nest locations, structures, and contents.

We conducted two rounds of aerial surveys. The first general-reconnaissance survey occurred in late March and focused on locating eagles and eagle nests, and on documenting initial territory occupancy and nest initiation. The second survey occurred in mid-May and focused on confirming eagle territory occupancy, the activity status of occupied but inactive eagle territories/nest sites, and the hatching success and nestling production of active eagle nests.

During the March surveys, we flew over all habitats potentially suited to nesting eagles and condors within the 16-kilometer-radius (10-mile-radius) survey area, as well as all habitats potentially suited to nesting Swainson's hawks within 8 kilometers (5 miles) of the Project site and access road (Figure 1). We flew at low speeds over all areas that included trees, rocky substrates, or electrical transmission towers of sufficient stature to support an eagle or Swainson's hawk nest. We often needed to make several passes at different altitudes to cover areas of complex terrain. During the May surveys, we prioritized areas of known eagle nesting activity, revisited several areas where we had previously noted eagle activity but no active nest, rechecked all areas within 8 kilometers (5 miles) of the Project site that were potentially suited to nesting Swainson's hawks, and collected additional photographs and other data to complete our records. During these surveys, we did not focus equal attention on documenting the nests of non-eagle species, but we did record the nesting locations of numerous red-tailed hawks and several other species.

To age golden eagle nestlings to the nearest week, we used the photographic guides provided in Hoechlin (1976) and Driscoll (2010). We used photographs to confirm or adjust our initial field estimates of both activity status and nestling ages.

For identification purposes, we assigned species-specific number series to nesting territories and a distinct letter to each alternate nest site within a territory. For example, golden eagle nests 12A, 12B, and 12C identified three alternate nest sites within golden eagle nesting territory number 12.

2.2.2 Ground Surveys

Ground surveys occurred periodically from March through June, generally around the times during which HTH ecologists conducted standardized point counts to quantify general avian activity on the Project site. Initially, these surveys involved a combination of driving along dirt roads and walking within the BSA wherever trees occurred, and using binoculars and a spotting scope to observe potential nesting activity from a distance. Beginning in late May and early June, when most raptor species have produced chicks and are less susceptible to disturbance, we walked through all wooded areas located within the BSA to further discern the specific locations and activity status of any nesting raptors.

2.3 Data Analysis

2.3.1 Delineation of Golden Eagle Nesting Areas

Accurate delineation of golden eagle nesting territories (here defined as a cluster of nests presumed to represent the unique, core nesting area of a specific breeding pair; USFWS 2013) typically requires several years of intensive monitoring (e.g., see Smith and Slater 2010). Valuable information can be gleaned from a single season of surveys in the Project region despite that established breeding pairs often do not nest every year, nesting territories often encompass multiple, alternate nest sites, and limited surveys may produce biased assessments because successful pairs are easier to locate and identify than pairs that have failed (Steenhof et al. 1997, Kochert et al. 2002, Steenhof and Newton 2007, Watson 2010, Smith and Slater 2010, Pagel et al. 2010). Especially in central California, where most adult eagles are non-migratory residents, territory distributions tend to remain fairly stable, and established breeding pairs tend to remain in the vicinity of their nesting territories year-round to maintain a hold on their domain (Hunt 2002). In general, golden eagles show high breeding-site fidelity as established breeders. Even in non-breeding years, established breeding pairs often make discernible improvements to their nests (e.g., adding bits of greenery or refurbishing nest margins), especially early in the year as part of pair-bonding rituals (Watson 2010). Accordingly, careful, repeated surveys to locate pairs of adult eagles that appear associated with obvious but currently inactive eagle nests can reveal much about the probable distribution of territories, even if some pairs are not actively nesting. To the trained eye, eagle nests often can be easily distinguished from those of other raptors by their location on the substrate, their overall size, and the types and sizes of sticks used in their construction. Confident identification is more difficult, however, where trees of modest size and durability (e.g., oaks, cottonwoods, and gray pines) are commonly used as nest substrates, because the nature of the substrate often limits the size and durability of the nest, which in turn limits the nest's distinctiveness). Such is often the case throughout much of central California.

We used the initial March survey to document occurrences of apparent mated pairs of adult eagles, displaying males, associated nest sites, and active nests. We considered a smaller male and larger female observed together in close proximity on multiple occasions to be a mated pair. We used this information to delineate the approximate distribution of likely nesting territories. We then followed up with the second survey in May to determine if a similar distribution of adult eagles was still apparent, re-verify the activity status of individual nests (emphasizing the need for at least two surveys conducted ≥30 days apart to confirm that a given nest/territory was inactive; Pagel et al. 2010), search for additional nests potentially missed during the first survey, and confirm the productivity status of all active nests. In some cases, the ground surveys provided additional insight about eagle activity patterns and potential nest locations on and in the immediate vicinity of the Project site. We used this additional information to refine the delineation of likely territories. For summary purposes, we considered a nesting territory "occupied" if a pair of breeding-age adults or a displaying, territorial, adult male was present near a confirmed or probable eagle nest during any survey period, or if a single breeding-age adult was present near such a nest during both survey periods.

This delineation then formed the basis for estimating the nearest-neighbor distances between golden eagle nesting areas using the measurement capabilities of ArcGIS 10.1 (ESRI, Redlands, CA). For this purpose, if a given nesting territory contained more than one known or probable alternate nest site, we calculated nearest-neighbor distances based on the centroid location for the cluster of alternate nest sites. Otherwise, we calculated nearest-neighbor distances based on three hierarchical classification levels: 1) active nests only; 2) all nesting areas occupied by a pair of adult eagles and containing a confirmed eagle nest (based on nest characteristics or eagle activity at the nest), whether currently active or not; and 3) all potential nesting areas occupied by an adult eagle and containing a potential eagle nest.

2.3.2 Nest Success and Productivity

We considered an active nest, or nest start, to be one where the available evidence suggested eggs were laid (e.g., an adult observed in an incubating posture on a nest). Typically, a raptor nest is considered successful if one or more chicks reach 80% of the average fledging age for the species, and productivity is typically quantified as the number of chicks raised to 80% of fledging age per occupied territory, nest start, or successful nest (Steenhof and Newton 2007). The fledging age for golden eagles in California often is stated as 10 weeks (Hoechlin 1976, Peeters and Peeters 1995, Kochert et al. 2002, Hunt 2002), which translates to 56 days as the 80% fledging age. This value is the standard recommended for confirming fledging in USFWS (2012) and Driscoll (2010). In some areas of interior western North America, however, 9 weeks (64 days) has been shown to be the average fledging age (Kochert et al. 2002, Smith and Slater 2010), which translates to just over 7 weeks (51 days) as the 80% fledging age. This value is the standard recommended for confirming fledging in Pagel et al. (2010). Recent monitoring suggests that earlier fledging (9–9.5 weeks) may also be common among golden eagles raised around the Carrizo Plain, roughly 48–64 kilometers (30–40 miles) south of the Project (HTH 2012, in preparation). Therefore, for the purpose of this assessment, we equated a successful nest with producing one or more 7-week-old nestlings. To characterize the phenology of the 2013 nesting season, we estimated initiation of incubation, hatching, and fledging dates based on nestling ages, using 42 days as the average incubation period and 64 days as the average brood-rearing period (Kochert et al. 2002, Smith and Slater 2010).

Section 3.0 Results

3.1 Survey Effort

Surveys conducted from 20–23 March involved 27.7 hours of flight time (including ferry time from Paso Robles airport and refueling time at a helipad site on the Jack Ranch property), including 11 individual flights that each lasted 2.2–2.8 hours. Surveys conducted from 14–16 May involved 13.5 hours of flight time, including six individual flights that each lasted 2.2–2.3 hours. Driving and walking surveys that focused specifically on detecting and observing nesting raptors occurred on 26 March, 17 April, 7 May, and 6 June. Additional observations of golden eagle activity were recorded during other standardized avian activity counts.

3.2 Eagles

3.2.1 Distribution of Nesting Territories

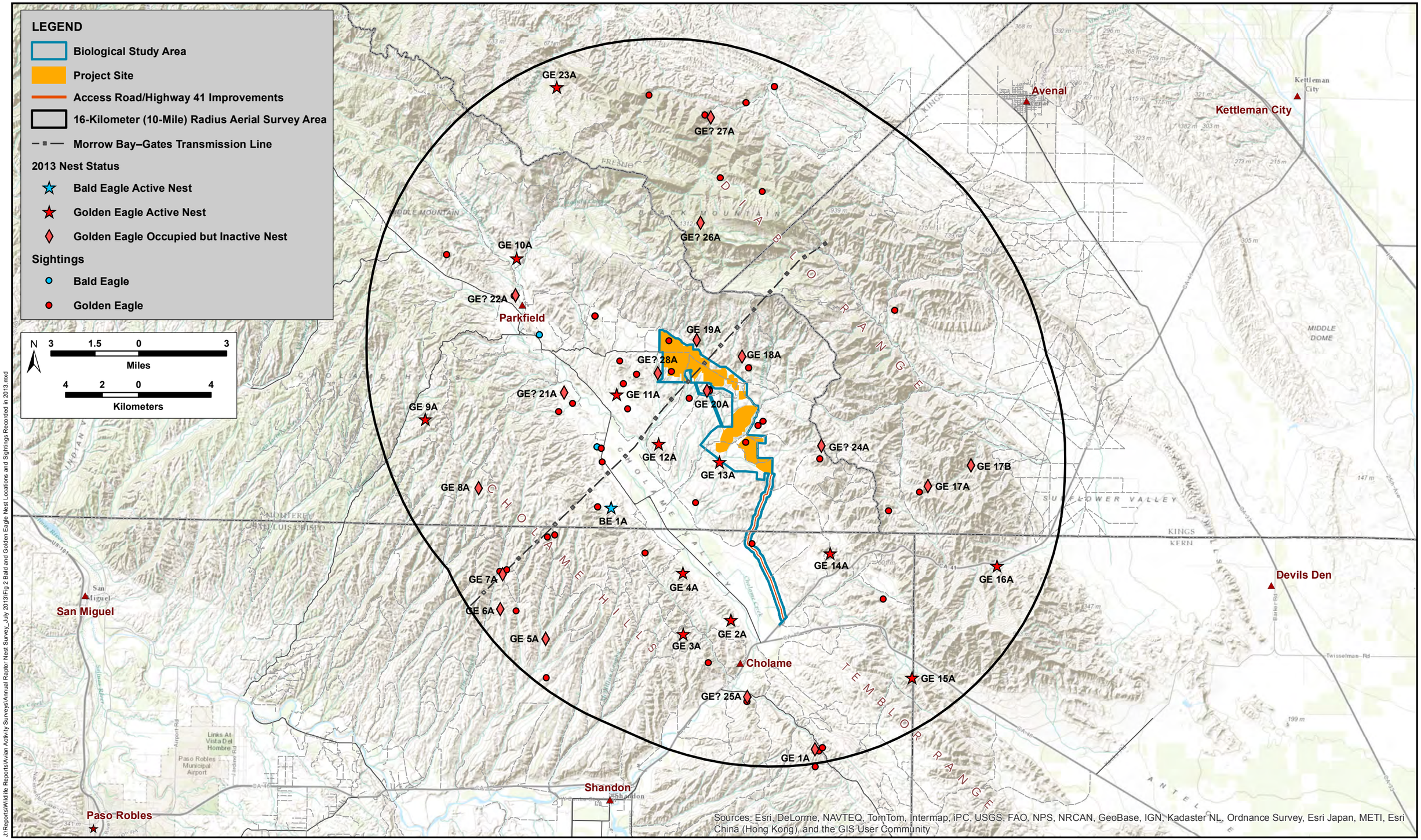
We confirmed 12 active golden eagle nests, one active bald eagle nest, and no Swainson's hawks or California condors within the overall aerial survey area (Table 1, Figure 2). None of the active eagle nests were located in the PIA. The single bald eagle nest was located along the eastern edge of the Cholame Hills, 6.5 kilometers (4.0 miles) southwest of the nearest Project boundary. Active golden eagle nest 13A was located in Cholame Valley on an oak-covered hillside southwest of the Project site and 0.5 kilometer (0.3 mile) from a proposed solar array location. Active golden eagle nests 11A and 12A were located 3.0–3.2 kilometers (1.9–2.0 miles) west of the Project site in Cholame Valley, in a gray pine and oak, respectively. Five other active golden eagle nests were located on oak hillsides ≤8 kilometers (5 miles) from the Project site or access road/Hwy 41 improvement areas: golden eagle nests 14A and 15A were located south of the Project in the western foothills of the Diablo Range; golden eagle nests 2A and 4A were located in the southeastern Cholame Hills overlooking Cholame Valley; and golden eagle nest 3A was located in the southwestern Cholame Hills. The four remaining, active golden eagle nests were located >8 kilometers (5 miles) from the Project or access road/Hwy 41 improvement areas: golden eagle nest 10A was located in a gray pine along an edge of upper Cholame Valley, north of Parkfield; golden eagle nest 9A was located in a gray pine in the northwestern Cholame Hills; golden eagle nest 16A was located in a cottonwood riparian area next to Hwy 41 in the southeastern Diablo Range; and golden eagle nest 23A was located on the northeastern face of a large rock outcrop in the eastern Diablo Range, 14.6 kilometers (9.1 miles) north-northwest of the Project site. Another alternate nest structure was located a few meters away from active nest 23A on the same outcrop. We found no other probable alternate nests in any of the other active golden eagle territories.

Table 1. Location Information for Golden Eagle Nests Monitored Near the California Flats Solar Project in 2013

Territory / Nest	2013 Status	Location[1]	Distance to Project Site (km)	Distance to Access Road (km)	Nest Substrate	Habitat
1A	Occupied pair—inactive	N Temblor Range	15.3	7.3	Oak	Oak woodland/savanna and grazed grassland
2A	Active—nestlings	Cholame Hills	8.3	2.8	Oak	Oak woodland/savanna and grazed grassland
3A	Active—nestlings—failed	Cholame Hills	10.0	5.5	Oak	Oak woodland/savanna and grazed grassland
4A	Active—nestlings	Cholame Hills	7.3	3.9	Oak	Oak woodland/savanna and grazed grassland
5A	Occupied—inactive	Cholame Hills	13.9	12.7	Oak	Oak woodland/savanna and grazed grassland
6A	Occupied pair—inactive	Cholame Hills	14.7	14	Oak	Oak woodland/savanna and grazed grassland
7A	Occupied—inactive	Cholame Hills	13.6	13.6	Transmission tower	Oak woodland/savanna and grazed grassland
8A	Occupied?—inactive	Cholame Hills	12.1	15.1	Gray pine	Gray pine/oak woodland and grazed grassland
9A	Active—fledged	Cholame Hills	13.5	18.9	Gray pine	Gray pine/oak woodland and grazed grassland
10A	Active—nestlings	Upper Cholame Valley	8.8	18.3	Gray pine	Gray pine/oak woodland, chaparral, and grazed grassland
11A	Active—incubating / brooding—failed	Cholame Valley	3.0	9.5	Gray pine	Gray pine/oak woodland and grazed grassland
12A	Active—nestlings	Cholame Valley	3.2	6.5	Oak	Oak woodland/savanna and grazed grassland
13A	Active—nestlings	Cholame Valley	0.5	2.9	Oak	Oak woodland/savanna and grazed grassland
14A	Active—nestlings	W Diablo Range	5.4	3.6	Oak	Oak woodland/savanna and grazed grassland

Territory/ Nest	2013 Status	Location[1]	Distance to Project Site (km)	Distance to Access Road (km)	Nest Substrate	Habitat
15A	Active—nestlings	W Diablo Range	13.6	7.7	Oak	Oak woodland/savanna and grazed grassland
16A	Active—fledged	E Diablo Range	13.6	11.9	Cottonwood	Willow-cottonwood riparian
17A	Occupied—nest building/ inactive	E Diablo Range	8.6	8.7	Oak	Oak woodland/savanna and grazed grassland
17B	Occupied—inactive	E Diablo Range	10.9	11.0	Oak	Valley oak riparian/grassland and chaparral
18A	Occupied pair—inactive	W Diablo Range	1.1	6.7	Gray pine	Gray pine/oak woodland and grazed grassland
19A	Occupied pair—inactive	W Diablo Range	0.3	8.5	Oak	Oak woodland/savanna and grazed grassland
20A	Occupied pair—inactive	Cholame Valley	0.4	5.8	Oak	Oak woodland/savanna and grazed grassland
21A	Occupied?—inactive	Cholame Valley	5.7	12.5	Gray pine	Gray pine/oak woodland and grazed grassland
22A	Occupied pair?—inactive	Upper Cholame Valley	8.2	7.2	Gray pine	Gray pine/oak woodland, chaparral, and grazed grassland
23A	Active—incubating/ brooding—failed	E Diablo Range	14.6	24.4	Cliff/outcrop	Gray pine/oak woodland, chaparral, and grazed grassland
24A	Occupied?—inactive	W Diablo Range	2.8	3.1	Oak	Oak woodland/savanna, grazed grassland, and desert scrub
25A	Occupied?—inactive	N Temblor Range	12.2	4.3	Oak	Oak woodland/savanna and grazed grassland
26A	Occupied?—inactive	E Diablo Range	6.3	14.4	Cliff/outcrop	Gray pine/juniper woodland and chaparral
27A	Occupied?—inactive	E Diablo Range	12.1	19.9	Cliff/outcrop	Gray pine/oak woodland and chaparral
28A	Occupied?—inactive	Cholame Valley	0.5	8.3	Oak	Oak woodland/savanna and grazed grassland

[1] Please contact the Monterey County Planning and Building Department to request specific location data (map and UTM coordinates) and photographs for all nest sites.



J:\Reports\Wildlife Reports\Avian Activity Surveys\Annual Raptor Nest Survey_July 2013\Fig 2 Bald and Golden Eagle Nest Locations and Sightings Recorded in 2013.mxd

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Figure 2: Bald and Golden Eagle Nest Locations and Sightings: March – June 2013

California Flats Solar Project, California - Annual Raptor Nest Survey Report (3308-01)

September 2013

In addition to the 12 pairs tending active nests, we documented five other pairs of adult golden eagles near an inactive nest or nests that clearly did not belong to another pair's core nesting area. Two of these pairs were associated with large, distinctive eagle nests (1A and 18A) that were in good shape and had been built up over several years. Nest 18A was located in a gray pine in the hills 1.1 kilometers (0.7 mile) east of the Project site (Figure 2), with the pair of eagles routinely present around this site. Nest 1A was located on an oak hillside adjacent to Bitterwater Road in the north Temblor Range, 15.3 kilometers (9.5 miles) south of the Project site and 7.3 kilometers (4.5 miles) from the south end of the access road. When first found, the two eagles in this area were using well-worn perch sites. In May, we also found nest 25A, a likely eagle nest in fair shape located 4.7 kilometers (2.9 miles) north-northwest of nest 1A, with an adult eagle hunting nearby at the time. It is possible that nests 1A and 25A are part of the same nesting territory; however, we documented closer or comparable spacing of active nests in similar oak woodland habitat in both the southern Cholame Hills and Cholame Valley.

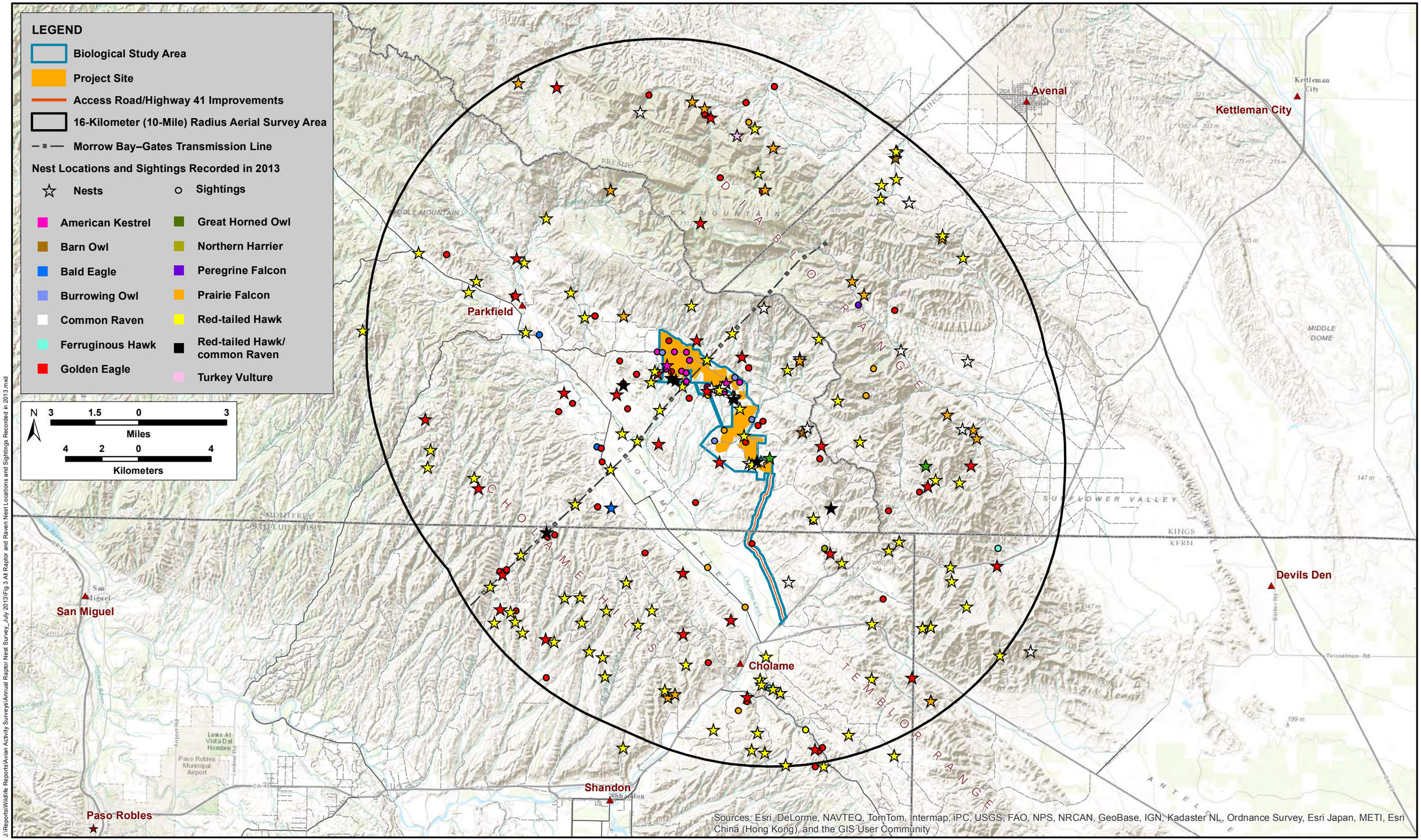
Other nest sites with apparent pairs of golden eagles found in the area included 6A, 19A, and 20A (Figure 2). At the 6A site, which was located in the Cholame Hills 14.7 kilometers (9.1 miles) west of the Project site, there were actually two different nest structures in oaks. In only fair shape, neither of these was unequivocally classifiable as an eagle nest. We found a pair of adult eagles perched in the immediate vicinity of these nests in March, but did not find any eagles in the area again in May. On several occasions, we saw another pair of golden eagles perched and hunting near nest 19A, which was located on an oak hillside 0.3 kilometer (0.2 mile) east of the Project site. This nest was in good shape, but not unequivocally classifiable as an eagle nest. Although not reliably distinguished from a red-tailed hawk nest based on only an aerial assessment, this nest was similar in stature to other active eagle nests found during the study. Nest 20A was located in the central portion of the BSA, 0.4 kilometer (0.2 mile) from the Project site. Ground observations confirmed structural characteristics that supported classification of this nest as a former eagle nest, but it was in disrepair and had not been tended recently. We recorded eagles foraging and flying in this area on several occasions and, during a ground survey, we found an adult female perched near the nest, with an apparent male hunting in the nearby hills; however, whether or not these eagles were established, resident breeders is uncertain.

Two other locations clearly represented other distinct golden eagle nesting areas, but we were unable to confirm the presence of established breeding pairs. In March, roughly 10 kilometers (6.1 miles) southeast of the Project site in the southern Diablo Range, we found an adult golden eagle building nest 17A (Figure 2) on an oak hillside in the upper portion of a drainage (we later found the nest incomplete in May). At that time, we also found probable alternate nest 17B in a cottonwood riparian area 2.6 kilometers (1.6 miles) farther down the same drainage. Inactive and in good shape, this nest could have been a red-tailed hawk nest, but eagles were the only raptors we saw in the area. During March, we also saw an adult eagle hunting west of the 17A area, but in May we found only a subadult eagle hunting near nest 17A. Nest 5A, which was located in the Cholame Hills 13.9 kilometers (8.6 miles) from the Project site, also was a definitive golden eagle nest, inactive and in good shape. In March, we observed an adult male displaying near this nest while a subadult female soared and hunted nearby, and in May we again found an adult eagle perched near the nest.

In several other locations, we found confirmed or potential eagle nests with one or more eagles in the general area, but we were unable to confidently classify the situation as an occupied territory, because either eagle presence in the area was inconclusive, we could not confidently classify the nest as a definitive eagle nest, or we could confidently classify the situation as separate from another confirmed territory. In the western Cholame Hills, we located several nests on towers supporting the Morrow Bay–Gates transmission line. These included three active red-tailed hawk nests, with inter-nest spacing of 2.5 and 4.0 kilometers (1.5 and 2.5 miles; Figure 3). Potential golden eagle nest 7A was in fair shape and located roughly midway between the western and central red-tailed hawk nests (Figures 2 and 3). This nest was not unequivocally classifiable as an eagle nest, but an adult eagle resided in the area in both March and May. On the other side of the central red-tailed hawk nest, about midway between it and the eastern red-tailed hawk nest, we found another pair of adult eagles in March; however, we were unable to find a probable nest site in this area and found no eagles in the area in May. About midway between this area and active golden eagle nest 9A, in March we found another, different adult eagle perched near nest 8A, which was potentially an old remnant, eagle nest in a gray pine. This situation may have reflected another distinct nesting area, but it is also possible that this eagle and nest were part of territory 9.

In upper Cholame Valley, 2.1 kilometers (1.3 miles) south of active golden eagle nest 10A, we found nest 22A in a gray pine, inactive, in fair shape, and almost certainly a former eagle nest (Figure 2). In May, we found two adult golden eagles (not from nest 10A) just west of nest 22A, feeding on a cow carcass with about 20 turkey vultures (*Cathartes aura*). Earlier in March, we found a pair of adult golden eagles (not from nest 10A) perched together atop a ridgeline about 4 kilometers (2.5 miles) northwest of nest 22A, after which the eagles flew off to the south. We found no other probable eagle nests in upper Cholame Valley in the Parkfield area, farther north, or farther northwest up Vineyard Canyon. Therefore, it is possible that both sightings involved the same pair of golden eagles, associated with nest 22A. That said, in March we also found a pair of adult bald eagles perched together about 2.5 kilometers (1.6 miles) south of nest 22A, which were not associated with the active bald eagle nest we documented farther south in a gray pine. Therefore, nest 22A may have been a former golden eagle nest, but it also may have been a former bald eagle nest.

Farther south in Cholame Valley, 3.6 kilometers (2.2 miles) north of the Jack Ranch hay barn, nest 21A was located in a gray pine and appeared to be another definite eagle nest, inactive and in fair shape (Figure 2). We recorded single adult golden eagles flying just south of this nest site on three occasions in March. About 0.5 kilometer (0.3 mile) west of the northwestern portion of the Project site, we found potential golden eagle nest 28A and another inactive nest in two oaks (Figures 2 and 3). Both of these nests could have been either golden eagle or red-tailed hawk nests. In March, we found a single golden eagle flying to the northwest, and in May we noted a pair of adult eagles active in this area. In both cases, these individuals appeared to be different eagles than those affiliated with the other nearby confirmed or potential golden eagle nests (11A, 19A, and 20A; Figure 2).



J:\Reports\Wildlife Reports\Avian Activity Surveys\Annual Raptor Nest Survey_July 2013\Fig 3 All Raptor and Raven Nest Locations and Sightings Recorded in 2013.mxd

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Figure 3: All Raptor and Raven Nest Locations and Sightings: March – June 2013

California Flats Solar Project, California - Annual Raptor Nest Survey Report (3308-01)

September 2013

In May, we discovered nest 24A on an oak hillside 2.8 kilometers (1.7 miles) east of the southern portion of the Project site, with an adult golden eagle foraging nearby (Figure 2). It is possible that this nest represented another distinct golden eagle nesting area; however, it was not unequivocally classifiable as an eagle nest, and the foraging eagle may have been from active nest 13A, located 5.5 kilometers (3.4 miles) to the west.

Finally, besides around active nest 23A, we recorded adult golden eagles on several occasions in the northeastern Diablo Range (Figure 2). This flank of the Diablo Range features extensive cliff lines with numerous potholes suitable for golden eagle nests. Nest 26A was located in a pothole on a cliff line near the top of the highest ridge in the area and at the upper margin of a distinct drainage. Roughly 5.8 kilometers (3.6 miles) farther north, near the lower margin of the same drainage, nest 27A was located in a pothole on another cliff line. Although neither of these was easily confirmed as an eagle nest, we noted adult golden eagles on several occasions in both areas, as well as farther northeast out on the flats where the drainage turned to cottonwood riparian habitat. We also found an adult golden eagle in March near the head of another drainage 3.5 kilometers (2.2 miles) to the northeast, but found no probable nest site in this area. Many of the cliffs in these areas were so pockmarked with potholes potentially suited to an eagle nest that, despite the rigorous aerial survey effort, we might have overlooked other inactive nests. Regardless, this region of the survey area was clearly occupied by at least two and possibly several adult golden eagles, and may have contained as many as three other potential golden eagle nesting areas.

In summary, the available evidence indicated the following for golden eagles within 16 kilometers (10 miles) of the Project site:

- Twelve active (eggs laid) nests
- Two apparently inactive, confirmed territories occupied by distinct pairs of adult eagles and containing a well-maintained, definitive eagle nest
- Two inactive, confirmed territories occupied by an adult eagle and containing a well-maintained or newly constructed, definitive eagle nest
- Two inactive, probable territories occupied by an adult eagle and containing a definitive eagle nest
- Three inactive, probable territories occupied by a pair of adult eagles and containing a potential nest
- Six or seven inactive, possible territories occupied by an adult eagle and containing a potential nest
- One or two other distinct pairs of adult eagles that we were unable to affiliate with a potential nest site
- Several other individual adult and subadult eagles that may have been "floaters" (i.e., potential breeding birds that have not yet established a breeding territory)

Of the 21 confirmed or probable golden eagle nesting territories, 7 (33%) were located in Cholame Valley, 6 (29%) were located in the Cholame Hills, 4 (19%) were located in other areas on the west side of the Diablo Range, 3 (14%) were located on the east side of the Diablo Range, and 1 (5%) was located in the northern Temblor Range (Figure 2). Most likely, at least two other distinct golden eagle nesting areas are located on

the east side of the Diablo Range, with other possibilities on the west side of the Diablo Range (1), in the northern Temblor Range (1), in the Cholame Hills (2), and in Cholame Valley (1).

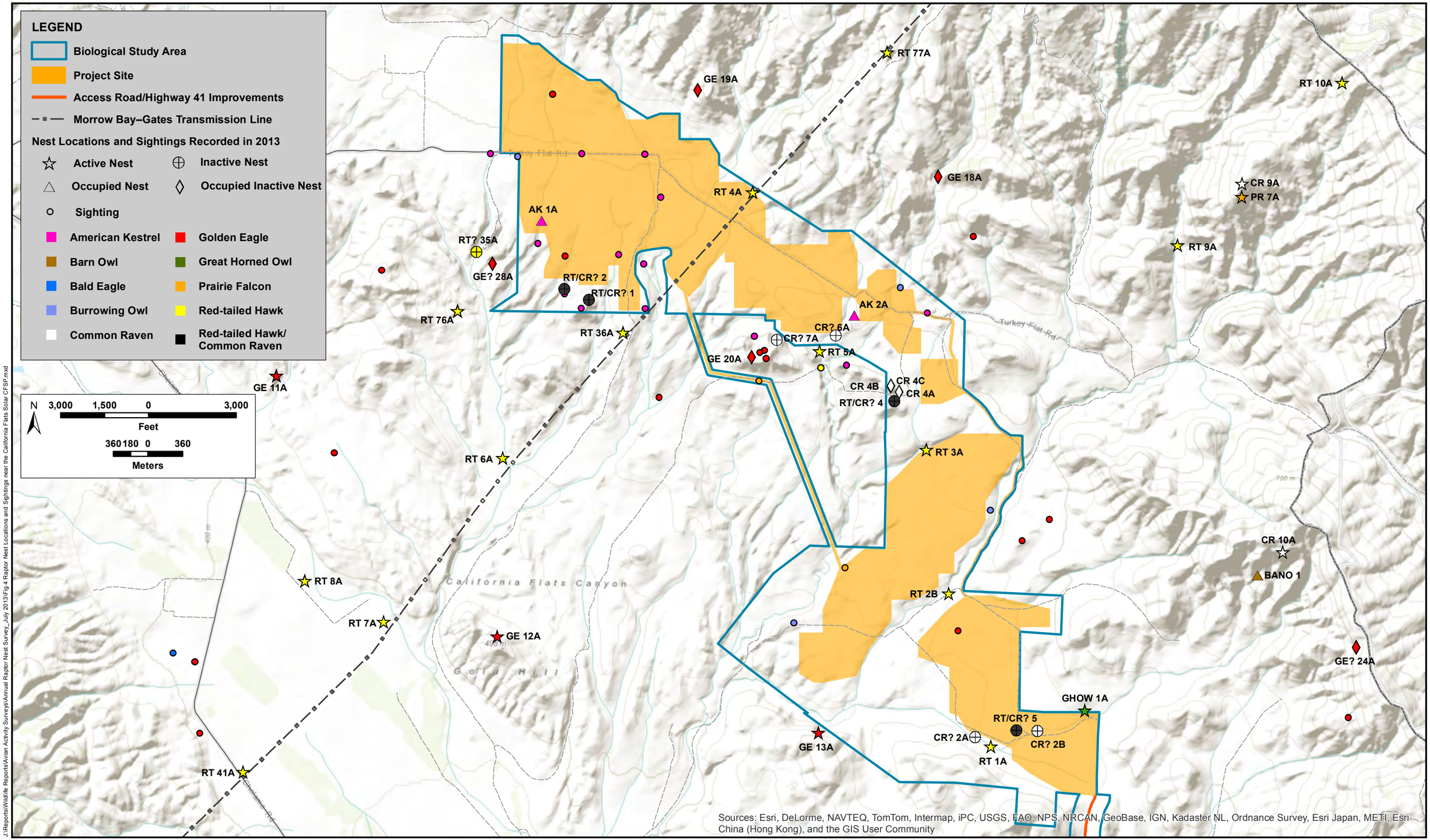
The distance from the nearest Project boundary to an active golden eagle nest averaged 8.5 kilometers with a standard deviation (SD) of ±4.8 kilometers (5.3±3.0 miles), and ranged from 0.5–14.6 kilometers (0.3–9.1 miles]). The distance from the nearest access road/Hwy 41 improvement areas to an active golden eagle nest averaged 9.7±7.2 kilometers (6.0±4.5 miles) and ranged from 2.8–24.4 kilometers (1.7–15.2 miles). If we include in these calculations all definitive eagle nests (bald and golden eagle), the distance to the nearest Project boundary averaged 7.7±5.1 kilometers (4.8±3.1 miles), and the distance to the nearest access road/Hwy 41 improvement areas averaged 9.2±5.6 kilometers (5.7±3.5 miles).

USFWS Region 8 recommends a 1.6-kilometer (1-mile) no-disturbance buffer between proposed projects and active golden eagle nests (from 1 February through 31 August), unless vegetative or topographic features screen the nest from direct view, in which case a smaller buffer may be acceptable (Beeler, personal communication; also see Suter and Joness 1981, Richardson and Miller 1997, and Romin and Muck 2002). Four confirmed or probable golden eagle nests were located within 1.6 kilometers (1 mile) of the Project (active nest 13A and occupied but inactive nests 18A, 19A, and 20A; Table 1, Figure 4). In addition, although highly tentative in terms of both demonstration of occupancy and species ownership, potential eagle nest 28A also was located within 1.6 kilometers (1 mile) of the Project. Of these, only nests 18A and 28A were shielded from direct view of the Project by topographic features and woodland cover.

Three other active golden eagle nests were farther away but also in line-of-sight of the Project site or access road/Hwy 41 improvement areas. Active nest 12A was 3.2 kilometers (2 miles) away and in line-of-sight of the Project site (Figure 4). Active nests 2A and 4A were 2.8 kilometers (1.7 miles) and 3.9 kilometers (2.4 miles) away and in line-of-sight of the access road/Hwy 41 improvement areas (Figure 5). Conversely, intervening hills and woodlands effectively screened active nest 11A from view of the Project (3.1 kilometers [1.9 miles] away) and active nest 14A from view of the access road/Hwy 41 improvement areas (3.6 kilometers [2.2 miles] away). Nevertheless, it is possible that the foraging home ranges of all of these breeding pairs overlapped either the Project site or access road/Hwy 41 improvement areas.

To further refine projections of the likely spatial sensitivity of specific nesting pairs to disturbance within their home ranges, the USFWS (2012, 2013) recommends using nearest-neighbor distances among occupied core nesting areas to estimate the size of foraging home ranges. The nearest-neighbor distances for the 13 active eagle nests ranged from 2.7–10.2 kilometers (1.7–6.3 miles) and averaged 5.8±2.8 kilometers (3.6±1.8 miles). Including all nesting areas occupied by an adult eagle and containing at least one confirmed eagle nest, the range of values remained the same, but the average decreased to 4.9±2.5 kilometers (3.0±1.1 miles). Including all potential nesting areas occupied by an adult eagle and containing at least one confirmed or potential eagle nest, the range of values changed slightly to 1.9–8.6 kilometers (1.2–5.3 miles), and the average decreased to 4.0±1.7 kilometers (2.5±1.1 miles). Eagle home ranges are not necessarily circular in nature, but half the average nearest-neighbor distance is used as a coarse-scale indicator of the approximate radial area

covered by a typical, individual home range. This understood, the nearest-neighbor calculations for this study population suggest that the typical foraging range for territorial eagles that nest in the area may be on the order of 2–3 kilometers (1.2–1.9 miles). In turn, these values translate to a conservative projection that Project development is likely to affect the foraging home ranges of any eagles that nest within 3 kilometers (1.9 miles) of the Project site or access road/Hwy 41 improvement areas. Four confirmed, two probable, and two possible golden eagle territories were located within this range (Figure 6).



J:\Reports\Wildlife Reports\Avian Activity Surveys\Annual Raptor Nest Survey_July 2013\Fig 4 Raptor Nest Locations and Sightings near the California Flats Solar CFSP.mxd

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Figure 4: Raptor Nest Locations and Sightings near the California Flats Solar Project: March – June 2013

California Flats Solar Project, California - Annual Raptor Nest Survey Report (3308-01)
September 2013

LEGEND

Biological Study Area

Project Site

Access Road/Highway 41 Improvements

Nest Locations and Sightings Recorded in 2013

Nests

Inactive Nest

Occupied

Occupied Inactive

Sightings

Barn Owl

Burrowing Owl

Common Raven

Golden Eagle

Great Horned Owl

Northern Harrier

Prairie Falcon

Red-tailed Hawk

Red-tailed Hawk/ Common Raven

N

3,000 1,500 0 3,000

Feet

360 180 0 360

Meters

RT 3A

RT 2B

CR 10A

BANO 1

GE? 24A

GHOW 1A

RT/CR? 5

CR? 2A

CR? 2B

RT 1A

Stone Corral Flats

RT/CR? 3

RT 13A

GE 14A

GE 4A

CR? 3A

GE 2A

GE 3A

RT 24A

Cholame Valley Rd

Cholame Valley

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

J:\Reports\Wildlife Reports\Avian Activity Surveys\Annual Raptor Nest Survey_July 2013\Fig 5 Raptor Nest Locations and Sightings near the Access Road\Hwy 41 Improvement Area.mxd

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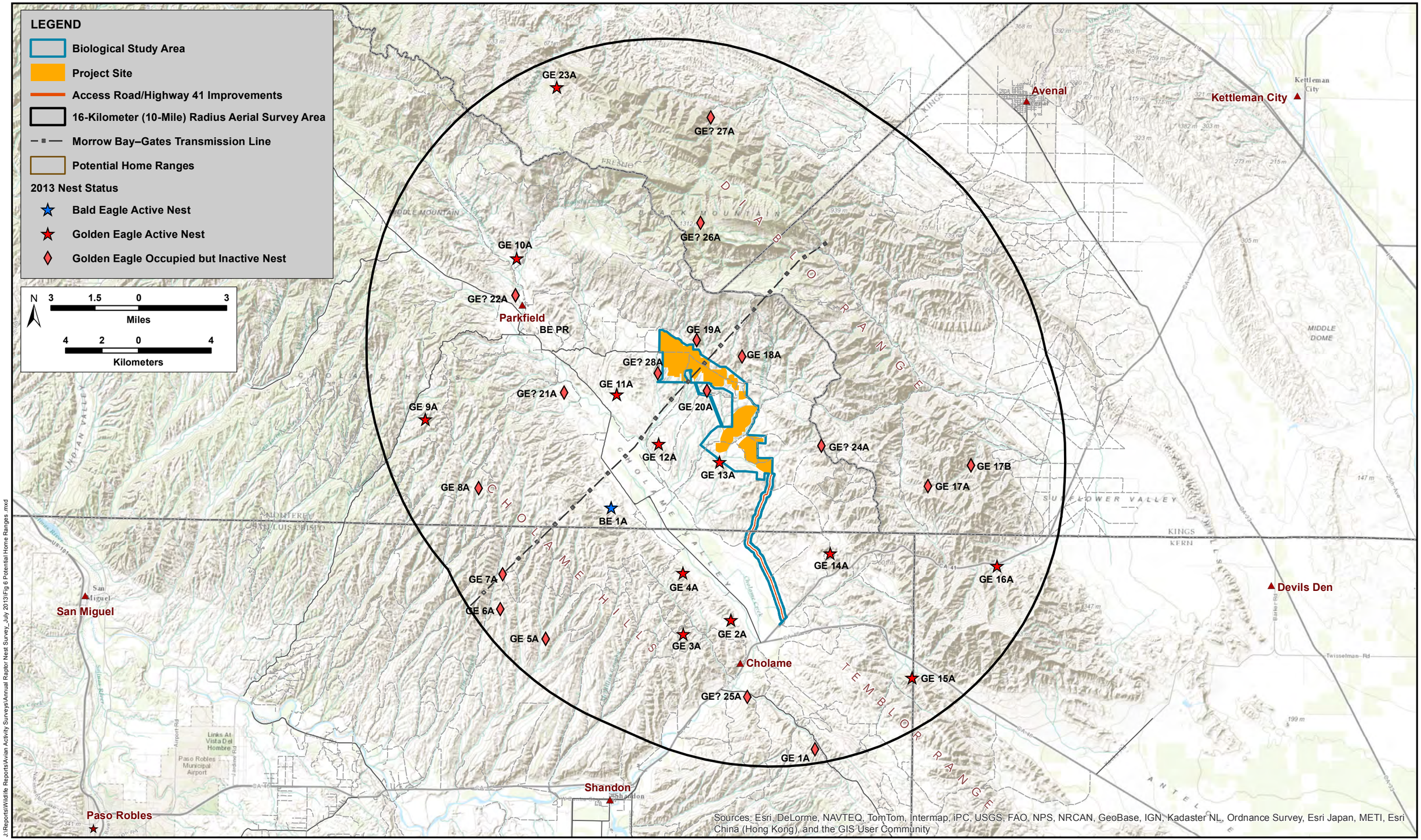
Figure 5: Raptor Nest Locations and Sightings near the Access Road/Hwy 41 Improvement Areas: March – June 2013

California Flats Solar Project, California - Annual Raptor Nest Survey Report (3308-01)

September 2013



J:\Reports\Wildlife Reports\Avian Activity Surveys\Annual Raptor Nest Survey_July 2013\Fig 6 Potential Home Ranges .mxd

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Figure 6: Hypothetical Eagle Home Ranges Based on Average Nearest-Neighbor Distances of Territories Occupied during the 2013 Breeding Season

California Flats Solar Project, California - Annual Raptor Nest Survey Report (3308-01)

September 2013

3.2.2 Nest-Site Characteristics

The single, active bald eagle nest was located in a large gray pine in an area of mixed pines, oaks, and various shrubs, interspersed with open grassy areas grazed by cattle. The nearest aquatic habitats, which occasionally support limited numbers of waterfowl, included a 0.5-hectare (1.3-acre) variably watered livestock pond located 1.7 kilometers (1.1 miles) northwest; a 1.0-hectare (2.5-acre) perennial livestock pond located 5.0 kilometers (3.1 miles) northeast; a stretch of semi-perennial, small stream/pond areas located 3.4–4.5 kilometers (2.1–2.8 miles) east; and a variably watered marshy/pond area located 3.6 kilometers (2.2 miles) southeast. Given the limited water features, it appeared that the bald eagles in Cholame Valley, including two subadults that resided in the area, were focused on hunting rabbits and ground squirrels, rather than the species' more typical prey of fish and waterfowl.

Among the 12 active golden eagle nests documented in 2013, 7 (58%) were located in oaks (e.g., Figure 7), 3 (25%) in gray pines (e.g., Figure 8), 1 (8%) in a cottonwood (e.g., Figure 9), and 1 (8%) on a rock outcrop (e.g., Figure 10) (Table 1). Although cliff nesting is more common elsewhere, tree nesting is common in central California (Hunt et al. 1995, Kochert et al. 2002). Most of the other confirmed or potential golden eagle nests were located in oaks or gray pines, but two were located in cliff potholes and one was located on an electrical transmission tower (Table 1). The most common habitat association for nesting golden eagles throughout most of the survey area was a low-elevation, hillside oak or pine/oak woodland adjacent to open grassland, with a large riparian oak or cottonwood adjacent to open grassland also occasionally used. The probability that golden eagles would nest on a cliff or large outcrop was higher on the east side of the Diablo Range, where rock features were more prevalent.

Figure 7. Active Golden Eagle Nest (Female with Two 4-Week-Old Nestlings) in a Blue Oak in the Cholame Hills

Figure 8. Active Golden Eagle Nest (Two 6-Week-Old Nestlings) in a Gray Pine in Cholame Valley

Figure 9. Active Golden Eagle Nest (Two 7–8-Week-Old Nestlings) in a Black Cottonwood in the Southern Foothills of the Diablo Range

Figure 10. Active Golden Eagle Nest (Incubating Adult) on a Rock Outcrop in the Diablo Range

3.2.3 Nesting Phenology

We estimated nesting phenology (life cycle timing) for 10 golden eagle nests that produced chicks (Table 2). For nine of these nests, for which we aged live chicks, the estimates were fairly precise (±2–3 days). For the tenth nest, the estimates were less precise because they were based on only the remains of older, dead chicks. For two other nests that failed during incubation, we can only be certain of when we first found them incubating.

The estimated start of incubation for the nine nests with live nestlings ranged from 5 February to 13 March, and averaged 24 February ± 12.7 days (Table 2). Two pairs began incubating in early February, four in mid-to-late February (including the one with dead chicks), and four in early-to-mid March. For the nine nests with live nestlings, estimated hatching dates ranged from 19 March to 24 April (average 7 April ± 12.7 days), and estimated fledging dates ranged from 25 May to 30 June (average 13 June ± 12.7 days).

Table 2. Phenology of Golden Eagle Nests Monitored near the California Flats Solar Project in 2013

Nest	Began Incubation	Hatched	Fledged
2A	5 Mar	16 Apr	22 Jun
3A	~9–19 Feb	~23 Mar–2 Apr	failed
4A	20 Feb	3 Apr	9 Jun
9A	5 Feb	19 Mar	25 May
10A	20 Feb	3 Apr	9 Jun
11A	<20 Mar	failed	–
12A	6 Mar	17 Apr	23 Jun
13A	13 Mar	24 Apr	30 Jun
14A	27 Feb	10 Apr	16 Jun
15A	6 Mar	17 Apr	23 Jun
16A	6 Feb	20 Mar	26 May
23A	<22 Mar	failed	–
Minimum	5 Feb	19 Mar	25 May
Maximum	13 Mar	24 Apr	30 Jun
Average	24 Feb	7 Apr	13 Jun
SD (days)	12.72	12.72	12.72

3.2.4 Nesting Success and Productivity

The single bald eagle nest failed either during incubation or before the chicks reached an age that would have left behind definitive evidence of their presence (i.e., whitewash, downy feathers, or prey remains).

Our calculations suggested that incubation began at some nests as much as six weeks before we started our survey in early March, and that some nests would not have fledged until as much as five weeks after the May surveys (Table 2). Accordingly, the gathered data allow for only tentative estimates of success and productivity, because the late-May survey resulted in only two nests being tracked long enough to confirm chicks at 80% of fledging age (Table 3).

Three of the 12 active golden eagle nests definitely failed prior to fledging (Table 3). Nests 11A and 23A failed either during incubation or before the chicks left behind definitive evidence. In May, we discovered at least one and possibly two 5–7-week-old chicks dead on nest 3A. It was difficult to discern what may have happened without a detailed ground-based assessment, but the one obvious carcass clearly had been eaten or scavenged, with feathers that had been clipped off at the base apparent, and feathers scattered about the nest. We suspect a mammalian predator/scavenger was able to climb into the nest and render the damage after the adults abandoned the effort. Golden eagles generally do not abandon large chicks unless one or both of the adults dies or is otherwise incapacitated; consistent with this pattern, there were no adults present in the area when we found the dead chick(s).

Table 3. Success and Productivity of Golden Eagle Nests Monitored Near the California Flats Solar Project in 2013

Nest	Status First Check	Nest Fate	Dead Eggs	Nestlings	Nestling Age (weeks)	80% Fledglings
2A	Nestlings	Nestlings	0	2	4	?
3A	Incubating	Nestlings—Failed	0	1–2	5–7	0
4A	Incubating	Nestlings	0	2	6	?
9A	Incubating	80% Fledglings	0	2	8	2
10A	Incubating	Nestlings	0	2	6	?
11A	Incubating	Failed	?	0	–	0
12A	Incubating	Nestlings	0	2	4	?
13A	Incubating	Nestlings	0	2	2–3	?
14A	Incubating	Nestlings	0	2	4–5	?
15A	Incubating	Nestlings	0	2	4	?
16A	Nestlings	80% Fledglings	0	2	7–8	2
23A	Incubating	Failed	?	0	–	0

Otherwise, by the May surveys, two other nests (9A and 16A) each had raised two chicks to at least 80% of fledging age (7–8 weeks), two nests (4A and 10A) each had two chicks aged about 6 weeks, four nests (2A, 12A, 14A, and 15A) each had two chicks aged 4–5 weeks, and one nest (13A) had two chicks aged 2–3 weeks. These strong productivity records further suggest that one or both of the adults at nest 3A suffered an ill fate.

If all nine nests with live chicks in May successfully fledged two chicks, then the estimate of apparent nesting success would be 75% of nest starts fledged, and the estimates of productivity would be 1.5 fledglings per nest start and 2.0 fledglings per successful nest, a productive season for those pairs that were able to nest (e.g., see Hunt et al. 1997, Kochert et al. 2002, Smith and Slater 2010, and HTH 2012). This potential insight would be tempered, however, by evidence that perhaps as many as 40–50% of the pairs present in the survey area either did not nest or nested but failed quickly, before we began our surveys. The proportion of territorial pairs that lay eggs typically is the most sensitive and variable indicator of interannual productivity for golden eagles (Steenhof et al. 1997, McIntyre and Adams 1999, Kochert et al. 2002).

3.3 Other Raptors

During the aerial surveys, we documented 62 active and dozens more probable, inactive red-tailed hawk nests scattered throughout much of the 16-kilometer (10-mile) survey area (Figure 3). Moreover, this tally is only a partial representation of this species' nesting activity in the overall survey area, because we focused on comprehensive documentation of red-tailed hawk nests only in the immediate vicinity of the Project site. Documentation elsewhere was simply a byproduct of searching for eagle and Swainson's hawk nests. Regardless, the red-tailed hawk is by far the most common raptor nesting in the area.

We documented five active red-tailed hawk nests in the BSA and on, or within 500 meters (1640 feet) of, the Project site (Table 4, Figure 4). Two of these nests were located on the boundary of the Project site as currently delineated, with nest 4A on a transmission tower along the northeastern border of the Project site, and nest 3A in a cottonwood in the center portion of the site. Nest 4A produced two nestlings, with their final fate unknown; nest 3A fledged three young (Table 4). Another active red-tailed hawk nest (1A) was located in a riparian corridor just outside the southwestern margin of the Project site; we did not confidently determine if this nest fledged chicks. Near this nest, within the Project boundary, there were two other inactive raven/buteo nests in the ornamental tree grove and on the windmill located in this area. We also found an active great horned owl nest (formerly a raven nest) in the ornamental grove located just outside the southeastern boundary of the Project site (Table 4). The fourth active red-tailed hawk nest (2B, with alternate 2A nearby in a cottonwood) was located on a windmill near another riparian corridor in the southwestern portion of the BSA, about 125 meters (410 feet) from the nearest Project-site boundary. This nest fledged three young. The fifth active red-tailed hawk nest (5A; with an alternate nest nearby) was located in an oak about 180 meters (591 feet) from the central portion of the Project site. This nest produced two nestlings, but we did not determine their final fate.

Table 4. Characteristics of Non-Eagle Raptor Nests Confirmed Active within 500 Meters of the California Flats Solar Project in 2013

Species	Nest	Nest Substrate	2013 Status	Distance to Project (km)	Distance to Access Road (km)	Nestlings	Fledglings	Nestling Age (weeks)
Red-tailed hawk	1A	Cottonwood	Failed/fledged?	0.1	1.2	?	?	?
Red-tailed hawk	2B	Windmill	Fledged	0.1	2.6	3	3	10
Red-tailed hawk	3A	Oak	Fledged	0	4.0	3	3	6
Red-tailed hawk	4A	Transmission tower	Nestlings	0	7.7	2	?	5
Red-tailed hawk	5A	Oak	Nestlings	0.2	5.4	2	?	4
Great horned owl	1A	Tree of heaven	Failed	0.02	0.9	?	0	?

The surveys revealed American kestrels in several portions of the Project site or immediate buffer areas (Figure 4). In two cases, pairs were associated with known or probable nest cavities in oak snags, with one such site located in the northwestern section of the Project site and the other located 50 meters (164 feet) from the Project site in the central portion of the BSA. We observed another pair of kestrels about 500 meters (1640 feet) south of the latter location, near a rock outcrop that also may have supported a nest. Other sightings within and just outside the boundaries of the Project site involved mostly males but some females, and may or may not have represented other nesting areas (Figure 4). We did not engage in intensive efforts to verify actual nesting by this species, but it appeared that several kestrel home ranges overlapped the Project site.

The only other non-vulture raptors documented on or near the Project site and access road/Hwy 41 improvement areas during the survey period were several burrowing owls, a short-eared owl, and several prairie falcons. Our surveys did not focus on documenting possible nesting by burrowing owls or short-eared owls, but it is likely that at least one active burrowing owl nest occurred along the northwest border of the Project site. In contrast, the short-eared owl was likely a lingering winter resident or spring transient, because a lack of suitable grassland cover largely precluded nesting by short-eared owls in the area in 2013.

We documented no prairie falcon nest locations on, or in the immediate vicinity of, the Project site or access road/Hwy 41 improvement areas. We did, however, document an active nest with chicks 2.1 kilometers (1.3 miles) northwest of the Project site, another nest with chicks 3.2 kilometers (2.0 miles) east of the Project site, and several more active nests with chicks within 6–10 kilometers (3.7–6.2 miles) of the Project site and access road/Hwy 41 improvement areas, to the southwest, south, and east (Figure 3). Multiple observations of foraging birds in the Project vicinity likely reflected overlap of the foraging home ranges of at least the most proximate of these nesting pairs (Figures 4 and 5).

Section 4.0 Discussion

4.1 Distribution of Nesting Territories and Use of Project Site

Adult golden eagles may easily range several kilometers from their nest sites in search of prey, and their breeding-season home ranges often extend across tens of square kilometers (Kochert et al. 2002). The available data suggest that adult eagles most often forage within 1–3 kilometers (0.6–1.9 miles) of their nest site while provisioning chicks (Marzluff et al. 1997, Hunt 2002). That said, the nearest-neighbor analysis indicated that the approximate average home range of golden eagles nesting in the Project area encompasses a radial area of only 2–3 kilometers (1.2–1.9 miles), which translates to home-range sizes of 13–28 square kilometers (5–11 square miles). These home-range sizes suggest that the Project area supports a high density of nesting golden eagles. The highest known density of nesting golden eagles is located in central California in the northern Diablo Range, in oak savannah and woodland habitat similar to that found in the Project area (Hunt and Hunt 2006). In this study area, extensive radio-telemetry research demonstrated home-range sizes that are similar to those that our initial assessment suggested may be the case for the population nesting in Cholame Valley and the southern Diablo Range (Hunt et al. 1995, 1999; Hunt 2002). Elsewhere in the western U.S., population densities have ranged from 29–251 square kilometers/pair (11–97 square miles/pair; Kochert et al. 2002).

Given the initial projections of average home-range size and apparent density of nesting eagles in Cholame Valley and the adjacent hills, it appears unlikely that the golden eagles nesting in the Cholame Hills, in the eastern and southern portions of the Diablo Range, and in the northern Temblor Range would routinely, if ever, travel onto the Project site to provision their chicks. Instead, foraging on the Project site during the nesting season appears likely only for eagles occupying the confirmed and potential territories located in the eastern half of Cholame Valley and the adjacent western foothills of the Diablo Range (i.e., potentially territories 11, 12, 13, 18, 19, 20, 24, and 28; Figures 2 and 6). There is, however, a reasonable likelihood that the foraging home ranges of golden eagle territories 2, 4, and 14 overlap the access road area (Figures 2 and 6). Regardless, the oak and pine woodlands and interspersed savannas that characterize Cholame Valley and the adjacent foothills of the Cholame Hills and Diablo Range provide ideal nesting and foraging habitat for golden eagles, as well as red-tailed hawks, American kestrels, prairie falcons (using scattered rock outcrops for nest substrates), great horned owls, and even an atypical (but see, for example, Boal et al. 2006) pair of bald eagles (possibly two). The ground squirrels, jackrabbits, and feral pigs found in the region provide abundant food resources for the eagles.

The availability of suitable, natural nesting substrates clearly constrains most nesting golden eagles to the wooded and cliff/outcrop areas located primarily outside the PIA. The electrical transmission line that crosses the Diablo Range and the Project site from northeast to southwest is a possible exception (Figure 1). In 2013, although there were several active red-tailed hawk and common raven nests on the transmission towers, we found no active golden eagle nests on this transmission line within the survey area. Probable

inactive eagle nest 7A was located on a transmission tower, however, and an adult eagle was present nearby each time we passed through the area. Surveys conducted for a nearby project located on the Carrizo Plain revealed several active golden eagle territories centered on transmission-tower nests (HTH 2012). Therefore, the potential clearly exists for golden eagles to nest on the transmission towers in the Project area.

Golden eagles are less territorial outside the breeding season and may extend their foraging range considerably during this time of year (Kochert et al. 2002). Therefore, the Project site and access road/Hwy 41 improvement areas may support additional golden eagle foraging activity outside the breeding season, because of both greater ranging by local residents and influxes of transients and winter residents. The point counts being conducted by HTH biologists on the Project site through March 2014 may reveal additional, relevant insight.

4.2 Nesting Phenology

The estimated timing of when incubation began for the nine golden eagle nests that produced chicks ranged from 5 February to 13 March, and averaged 23 February (Table 2). The Carrizo Plain golden eagle population showed a similar pattern, except that the latest nest was relatively early in 2012 (incubation began between 3 February and 1 March, averaging 20 February; HTH 2012) but relatively late in 2013 (incubation began between 4 February and 20 March, averaging 22 February; HTH in preparation). The estimated hatching dates in the Project study area ranged from 19 March to 24 April, averaging 7 April, and predicted fledging dates ranged from 28 May to 3 July, averaging 15 June. Again, these date ranges are similar to those documented by the Carrizo Plain study to the south (HTH 2012, in preparation). The indicated timing also is similar to that observed in other parts of central and southern California (Dixon 1937, Hunt et al. 1995). It is also important to understand that, among resident breeders, territorial displays, courtship rituals, and nest building/tending activities may occur at any time of year, but generally begin in earnest at least several weeks before egg-laying commences (Hunt et al. 1995, Kochert et al. 2002).

These data provide insight about favorable timing for documenting and monitoring golden eagle nesting activity in the study area. They also provide important insight about when Project construction and maintenance activities have the greatest potential to influence the behavior and activities of eagles that nest near the PIA. Raptors, in general, are most sensitive to disturbance during the early stages of the nesting cycle (Fyfe and Olendorff 1976, Richardson and Miller 1997). Once the eggs hatch, and especially once the chicks are 2–3 weeks old and can be left alone, the adults tend to be more tenacious and do not easily abandon their nesting effort. The CDFW typically equates 15 January through 31 August as the breeding season for eagles, during which time proximate disturbance of nests is prohibited; however, the period from mid-January through early May, by which time most chicks have hatched and grown for at least a couple of weeks, is the most critical time to avoid disturbing nesting eagles.

4.3 Nesting Success and Productivity

The gathered data allowed for tentative estimates of the nesting success and productivity of golden eagles in the Project area in 2013. Some of the occupied golden eagle territories, with well-maintained but apparently inactive nests, might have been active but failed before our first survey. Similarly, one or more additional surveys would have been necessary to confirm the level of nesting success and fledgling production achieved (Steenhof and Newton 2007). Nevertheless, the completed surveys did provide a solid, initial impression of the productivity of the local nesting population. Although 2013 was a very dry year, it was a year in which field evidence suggested that ground squirrels fared well and likely helped support good productivity among the golden eagles that chose to nest.

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Appendix E.18

2014 Baseline Avian Activity Survey Report

H.T. HARVEY & ASSOCIATES

Ecological Consultants

Baseline Avian Activity Surveys for the Proposed California Flats Solar Project in Monterey County, California: March 2013–March 2014

Project #3544-01
Task Orders 7-1 and 11-4

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Executive Summary

The California Flats Solar Project (Project) is a 280-megawatt photovoltaic solar power plant proposed for development in southeastern Monterey County, California (Figure 1). When approved, the solar facility and related operations infrastructure (Project site) will be built on approximately 1058 hectares (2615 acres). The overall development will include improvements to an existing access road and its connection to a California Department of Transportation (Caltrans) right-of-way at California State Route 41 (access road/Hwy 41 improvement areas), and development of a new utility line corridor. Because the utility corridor was added to the Project plan after the avian activity surveys reported here began, we did not survey that portion of the Project, and the Project-area statistics presented here are based on pre-utility corridor figures. In that light, the Project site and access road/Hwy 41 improvement areas constitute the original 1122-hectare (2772-acre) Project impact area (PIA), where all direct, Project-related impacts were projected to occur. A Biological Study Area (BSA) was then delineated around the PIA, within which most Project-related biological surveys and assessments are being conducted (Figure 1).

This final report summarizes the results of 12 months of baseline surveys for avian activity conducted on and around the Project site from March 2013 through March 2014. The goal of the surveys was to quantify general avian activity and establish a baseline for assessing the potential for Project development to adversely affect birds that nest and forage on or in the immediate vicinity of the proposed Project site.

The specific objectives of this study were as follows:

1) Quantify avian species composition and activity rates across the Project landscape and adjacent areas during a full annual cycle prior to initiation of Project development.
2) While accounting for natural seasonal variation in avian activity patterns, evaluate use of different habitat types in relation to specific areas proposed for development.
3) Integrate data collected during these surveys with nest-survey data collected in 2013 to help evaluate the home-range dynamics of raptors that nest on and adjacent to the Project site.

Methods

H. T. Harvey & Associates (HTH) ecologists conducted modified point counts (bird use counts [BUC]) at eight sites chosen to represent the proposed Project site, including the area proposed for installation of a new transmission line (Table 1). The 800-meter-radius (0.5-mile-radius) viewsheds of the eight survey areas collectively covered approximately 44% of the Project site and 30% of the BSA (as described above), effectively representing the proposed development areas and the primary habitats found in the BSA (Table 2; Figure 2).

Each month, beginning in late March 2013, we sought to conduct two counts at each BUC site, one during morning hours (AM) and one during afternoon hours (PM). Counts generally occurred semimonthly, on one day each, during the first and third weeks of the month. The order in which surveys occurred each month was based on a random-start, systematic-progression protocol designed to ensure equitable coverage of all sites during morning and afternoon hours. Data recording included documenting all birds seen or heard within 800 meters (0.5 miles) of each count location; estimating approximate detection distances, flight heights, and flight directions; recording standardized behavior information and habitat associations, including use of specific perching substrates; noting details about bird interactions with exisitng infrastructure and any predator-prey interactions observed; and recording weather data at the beginning of each survey.

For summary purposes, we translated raw counts into sightings per hour, and examined patterns of variation for five distinct species groups: raptors (hawks, eagles, falcons, owls, and vultures), shorebirds (sandpipers, plovers, and allies), corvids (Corvidae: ravens, crows, magpies, and jays), icterids (Icteridae: blackbirds, orioles, and starlings), and other, mostly smaller, birds (passerines, hummingbirds, swallows/swifts, woodpeckers, quail, etc.) (Appendix B lists the common and scientific names of all bird species recorded in the Project area during the survey period). We also organized the data according to quarterly seasons, as follows:

Spring: March through May
Summer: June through August
Fall: September through November
Winter: December through February

We evaluated metrics of activity for the five groups of birds as a function of site and season. For each group of birds, we summarized the data by averaging sightings across all surveys at each of the eight points within seasons. We then fit a linear model (ANOVA) to the data for raptors, corvids, and other small birds, and Kruskal-Wallis rank sum tests to the data for shorebirds and icterids. We evaluated significance at $\alpha = 0.05$, but also considered marginally significant results at $\alpha = 0.10$. We did not evaluate interactions between the predictor variables quantitatively because of limited degrees of freedom following data summarization; however, we qualitatively evaluated possible interactions through graphical comparisons of average sightings rates by season and site.

Results

From late March 2013 through early March 2014, we conducted 200 twenty-minute surveys, with each count site surveyed 25 times across the four seasons (Table 3; Appendix A). Throughout the survey period, moderate to severe drought conditions prevailed across the entire region and Project site. The low precipitation resulted in minimal to no growth of grassland vegetation and limited seasonal development of wetlands and intermittent streams preceding and during the survey period.

We recorded 4061 individual birds of 45 species during the surveys (Table 4; Appendix C). We observed five special-status species during the scheduled surveys: Swainson's hawk (State-listed as threatened), golden eagle (California fully protected), northern harrier (California species of special concern [CSSC]), burrowing owl (CSSC), and loggerhead shrike (CSSC). We also observed two short-eared owls (CSSC) on the Project site outside of the scheduled survey times. Species diversity was higher in spring and winter than in summer and fall (Table 4). Combined-species activity rates summarized across all seasons averaged highest at BUC Site 4 (117 sightings/hour) and BUC Site 8 (82 sightings/hour), with slightly lower rates at BUC Sites 2, 3, and 7 (51–64 sightings/hour), and the lowest rates at BUC Sites 1, 5, and 6 (38–41 sightings/hour) (Appendix C).

We recorded nine species of raptors and vultures during the surveys (Table 4). American kestrels and red-tailed hawks were relatively abundant and recorded during all seasons. We also recorded golden eagles during all seasons and at most sites, and turkey vultures generally were present year round. We observed ferruginous hawks relatively frequently during fall and winter; prairie falcons between October and June (they nested in the nearby foothills); and northern harriers, burrowing owls, and Swainson's hawks only once or twice each during the scheduled fall, winter, and spring counts. We detected golden eagles 16 times during the scheduled counts (Table 4; Appendix C). Six observations occurred at BUC Site 5, which we chose to represent the central portion of the proposed transmission line, but none occurred at BUC Site 2, which overlapped the southern portion of the proposed transmission corridor.

The ANOVA results confirmed marginally significant seasonal variation in overall raptor activity, as well as significant variation across sites (Table 5, Figure 5). Average raptor activity was lower in fall and lower at BUC Sites 2, 5, 7, and 8. Sites 1, 3, and 4 encompassed active red-tailed hawk nests, and Sites 1 and 3 were among the survey areas closest to an active golden eagle nest. The Kruskall-Wallis analysis of shorebird activity rates indicated no overall seasonal variation, but indicated marginally higher activity at BUC Site 3 compared to the sites where we observed no shorebird activity (Sites 5, 6, and 8; Table 6, Figure 6). The ANOVA results for corvids indicated significant seasonal and site-to-site variation in activity rates, with activity higher in spring than in summer and fall, and activity marginally higher at BUC Sites 6 and 7 than at Sites 2, 4, and 5. The Kruskall-Wallis analysis of icterid activity rates confirmed similar seasonal variation as for corvids, but no significant overall variation across sites; however, overall icterid activity tended to higher at BUC Site 4, and lower at Sites 5, 6, and 8 (Table 8, Figure 8). The ANOVA analysis for the other small birds group also indicated significant seasonal variation, but no significant variation across sites (Table 9, Figure 9). In this case, however, the group activity rate increased from spring through winter, with the high winter activity reflecting primarily a large influx of horned larks. Although no significant overall site effect was apparent based on the combined-species analysis, the post-hoc assessment suggested that the average other-small-bird activity rates at BUC Site 4 and 8 were at least marginally higher than at other sites, reflecting relatively high activity of several species at BUC Site 4, and primarily high horned lark activity at BUC Site 8, especially in fall and winter (Appendix C).

Of 4061 bird sightings recorded during the year-long survey period, 91% occurred in or over grassland habitats, 4% in natural, upland woodlands, 3% in riparian woodlands, 2% in ornamental non-native

woodlands, and <1% each in marsh/wetland habitats, interior Coast Range goldenbush scrub, and developed habitats (Table 10). The diversity of habitats used by birds was lowest in summer. Shorebirds used grassland habitats exclusively, and we sighted raptors (red-tailed hawks, in particular) more frequently than other groups in woodland habitats. For all primary species groups, proportional use of grassland habitat generally matched its relative availability in the BSA (Figure 10), whereas natural and ornamental woodlands were used more often than expected based on availability, except by shorebirds (Figure 10). Delineated marsh, wetland, and aquatic habitats were poorly represented during the surveys, owing to a combination of drought conditions and the distance of these habitats from the survey points.

We recorded 285 observations of perched birds during the surveys (Table 11). Across all species, 69% of these observations involved trees as the perch substrate, with an additional 4% of the observations involving other vegetation or rock substrates. Six percent of the observations involved perching on the existing transmission towers or lines, primarily by red-tailed hawks (26% of the species-specific observations). Both red-tailed hawks and common ravens nested on the existing transmission line during the survey period. Perching on other artificial substrates composed the remaining 21% of the relevant observations: fences (9.5%), windmills (6%), water troughs (2.5%), other structures (2.5%), and one observation (<1%) of a raven perched on a ranch building.

Discussion

Although populations were probably somewhat depauperate because of the drought, the observed species constituted a diurnal assemblage typical of the open grassland, oak savanna woodland, and riparian habitats of the inner Coast Ranges of central California, with species representation varying by season. The observed seasonal patterns were similar to those shown in point counts conducted concurrently at another solar project in grassland habitat 64 kilometers (40 miles) to the south. Most species, including all of the special-status species, had been observed previously in the Project area during the preliminary surveys and reconnaissance work conducted since November 2011. The surveys confirmed broad use, by a variety of species, of the grassland habitats proposed as sites for array installation, but also underscored the importance of woodland habitats in the area, especially for the raptors, ravens, Brewer's blackbirds, woodpeckers, and other birds that nest and roost in such habitats. The survey areas that supported the highest species diversity and general abundances of birds tended to be those that contained mixes of grassland, riparian, and woodland habitats. If drought conditions had not prevailed throughout the survey period, the use of seasonal wetland and riparian habitats also likely would have been even greater than what we observed.

Based on these surveys, the species most likely to have their habitat modified by installation of the solar arrays in grassland habitat are horned larks, western meadowlarks, Savannah sparrows, and long-billed curlews, but each of these species is relatively common and abundant and unlikely to be substantially influenced by the habitat modification resulting from this Project. For most of the species tied primarily to woodland habitats, development of this Project is not expected to pose a substantial threat, because woodland habitat will not be directly affected. Golden eagles nest in woodland areas in the Project vicinity;

the BUC data revealed limited activity on and over several areas proposed as sites for installation of solar arrays. Further assessment work during non-drought periods may reveal additional patterns of habitat use in relevant areas.

The occurrence of other special-status avian species in the Project vicinity has been limited to date. Drought conditions probably constrained the activity patterns of birds in the Project area during the survey period. This may be particularly important for accurately assessing use of the Project site by golden eagles, as well as for ascertaining the occurrence patterns of other special-status species that were scarce or not detected during this breeding season, such as burrowing owls, grasshopper sparrows, loggerhead shrikes, and tricolored blackbirds.

Table of Contents

Figures

Tables

Appendices

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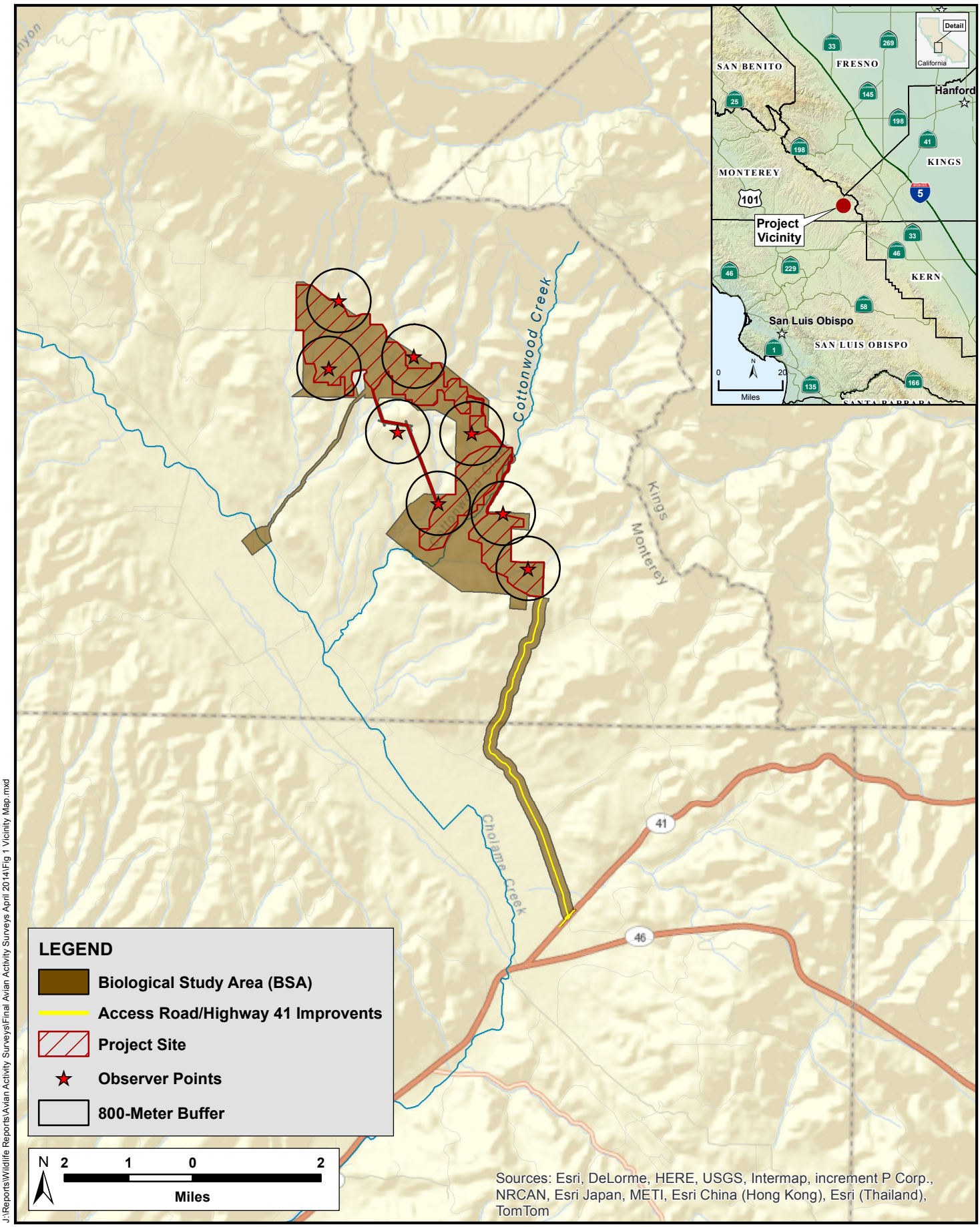
Section 1.0 Introduction

The California Flats Solar Project (Project) is a 280-megawatt photovoltaic solar power plant proposed for development in southeastern Monterey County, California (Figure 1). When approved, the solar facility and related operational infrastructure (Project site) will be built on approximately 1058 hectares (2615 acres) of private ranchland. The Project will include construction, installation, and operation of energy-related infrastructure (e.g., solar panels, inverters, substations, and new power poles and lines) and improvements needed to operate and maintain energy-related facilities (e.g., buildings, internal roadways, access roads, fencing, and lighting). The overall development will also include improvements to an existing access road and its connection to the California Department of Transportation (Caltrans) right-of-way at California State Route (Hwy) 41, approximately 8 kilometers (5 miles) south of the Project site, as well as a new utility corridor. Because the utility corridor was added to the Project plan after the avian activity surveys reported here began, we did not survey that area and the Project-area statistics presented here are based on pre-utility-corridor figures. In that light, the Project site and access road/Hwy 41 improvement areas constituted the original 1122-hectare (2772-acre) Project impact area (PIA), where all direct, Project-related impacts were projected to occur. A Biological Study Area (BSA) delineated around the PIA identified the area in which most Project-related biological surveys and assessments were to be conducted (Figure 1).

California Flats Solar, LLC, has developed a plan to construct and operate the proposed Project within the Competitive Renewable Energy Zone, under the State's Renewable Energy Transmission Initiative. The Project site's elevation and generally flat, south-facing topography creates an ideal place for solar development. Sunlight is plentiful year round because the elevation places the site above the coastal marine layer, and the site does not receive winter fog from the Central Valley. The flat, south-facing topography minimizes the need for mass grading and alteration of landforms to position panels in a way that favors collection of solar energy. In addition, the Morro Bay–Gates 230-kilovolt transmission line crosses the Project site, with capacity sufficient to accommodate the new power plant (partially represented in Figure 1).

This report summarizes the results of baseline avian activity surveys conducted on the Project site by H. T. Harvey & Associates (HTH) ecologists from late March 2013 through early March 2014. We modeled the avian activity surveys after the "long-duration, large-plot" bird surveys or "bird use counts" (BUCs) typically recommended for assessments of avian activity at wind-energy facilities in California and elsewhere (California Energy Commission and California Department of Fish Game 2007; Strickland et al. 2011; U.S. Fish and Wildlife Service [USFWS] 2012). BUCs are modified point counts during which an observer records bird detections from a single vantage point over an 800-meter (0.5-mile) radial area for 20–30 minutes. The survey technique provides information on bird species composition, relative abundance, and behavior relative to different habitat elements and Project infrastructure. The primary value of counts conducted in this fashion is documenting the distribution, relative abundance, and activity patterns of larger birds such as raptors and waterbirds. The counts also provide useful insight about the general distribution, relative



J:\Reports\Wildlife Reports\Avian Activity Surveys\Final Avian Activity Surveys April 2014\Fig 1 Vicinity Map.mxd

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Figure 1: Project Vicinity Map

California Flats Solar Project, California (3544-01)

May 2014

abundance, and habitat associations of smaller birds (Strickland et al. 2011). Even longer counts (3–4 hours) typically are recommended for conducting intensive activity assessments for larger birds such as eagles. In choosing the count protocols for this study, we adopted a methodology that would provide solid baseline information about the overall avian activity patterns in the proposed development area.

The specific objectives of this study are as follows:

1) Quantify avian species composition and activity rates across the Project landscape for one full year before Project construction begins.
2) Evaluate the potential influence of Project development on birds by:
    a. comparing species composition and activity rates across seasons and in different habitat types,
    b. recording data on perch use to evaluate the potential for new Project infrastructure to elevate the risk of bird electrocutions and augment the availability of hunting perches for raptors, and
    c. recording data on predator-prey interactions to evaluate possible changes in community dynamics.
3) Collect avian activity data to facilitate comparisons with the raptor nesting data collected as part of other biological monitoring tasks for the Project.

Section 2.0 Methods

2.1 Study Site

Cholame Valley, wherein the Project site is located, is a landscape dominated by gently rolling terrain, open grassland, oak savannah, and hillsides supporting mixed oak (*Quercus douglasii* and *Q. lobata*) and gray pine (*Pinus sabiniana*) woodlands. Cholame Valley lies within the southern Diablo Range and meets the northern extent of the Temblor Range toward its lower, southern margin. East of the Project site, the higher-elevation portions of the Diablo Range are mostly covered by relatively dense oak and gray pine woodlands, scrubby oak and juniper (*Juniperus* spp.) woodlands, and dense chaparral. West of the Project site and Cholame Valley, the Cholame Hills (representing the southwestern tip of the Diablo Range) feature primarily oak woodlands interspersed with open grassland habitat to the south, but grade into dense chaparral, oak, and gray pine communities to the north. The rural community of Parkfield is 7.6 kilometers (4.7 miles) northwest of the Project site, in upper Cholame Valley. Otherwise, the landscape surrounding the Project site consists of working cattle ranches with sparse residential settlements, as well as other private landholdings containing small farms and remote hunting/recreation areas with cabins. In addition, portions of Jack Ranch and other landholdings around Parkfield, in the floodplain areas of Cholame Valley, support limited areas of dry-farmed and variably irrigated grain crops and hayfields.

Cholame Valley also features several riparian corridors and drainages, some of which traverse the Project site. Most of the drainages found in Cholame Valley are seasonally ephemeral, including most of Cholame Creek, which runs the length of the valley. Cottonwood Creek, which drains the southeastern Diablo Range and crosses the southeastern portion of the Project site, is semi-perennial. Some of the area's riparian corridors support riparian woodlands consisting primarily of willows (*Salix* spp.), black cottonwoods (*Populus trichocarpa)*, and valley oaks (*Q. lobata*). A sparse array of livestock ponds and other small, artificial reservoirs dot the valley and adjacent foothills landscape.

For this study, we chose seven count sites (BUC Sites 1–4 and 6–8) to represent the area proposed for installation of the solar arrays and associated facility infrastructure, and BUC Site 5 to represent the central portion of the corridor proposed for installation of a new transmission line, which will connect the power generation facility to the existing transmission line that crosses the Project site (Table 1; Figure 2). The BUC Site 2 survey area also encompassed a portion of the proposed transmission corridor. We did not select any count sites to assess activity patterns along the access road/Hwy 41 improvement area; the relatively sparse, open grassland/scrub habitats along this corridor likely support similar, but less dense and diverse, bird communities as those present in the remainder of the BSA. The proposed utility corridor was not specifically covered by any of the BUC sites, because the corridor was not planned for development until the surveys were more than half complete. Habitats along this corridor likely support similar bird communities as are

found in the original BSA, except that the utility corridor runs adjacent to a relatively large pond that attracts waterfowl and other waterbirds (Figure 1).

Table 1. Count Site Locations

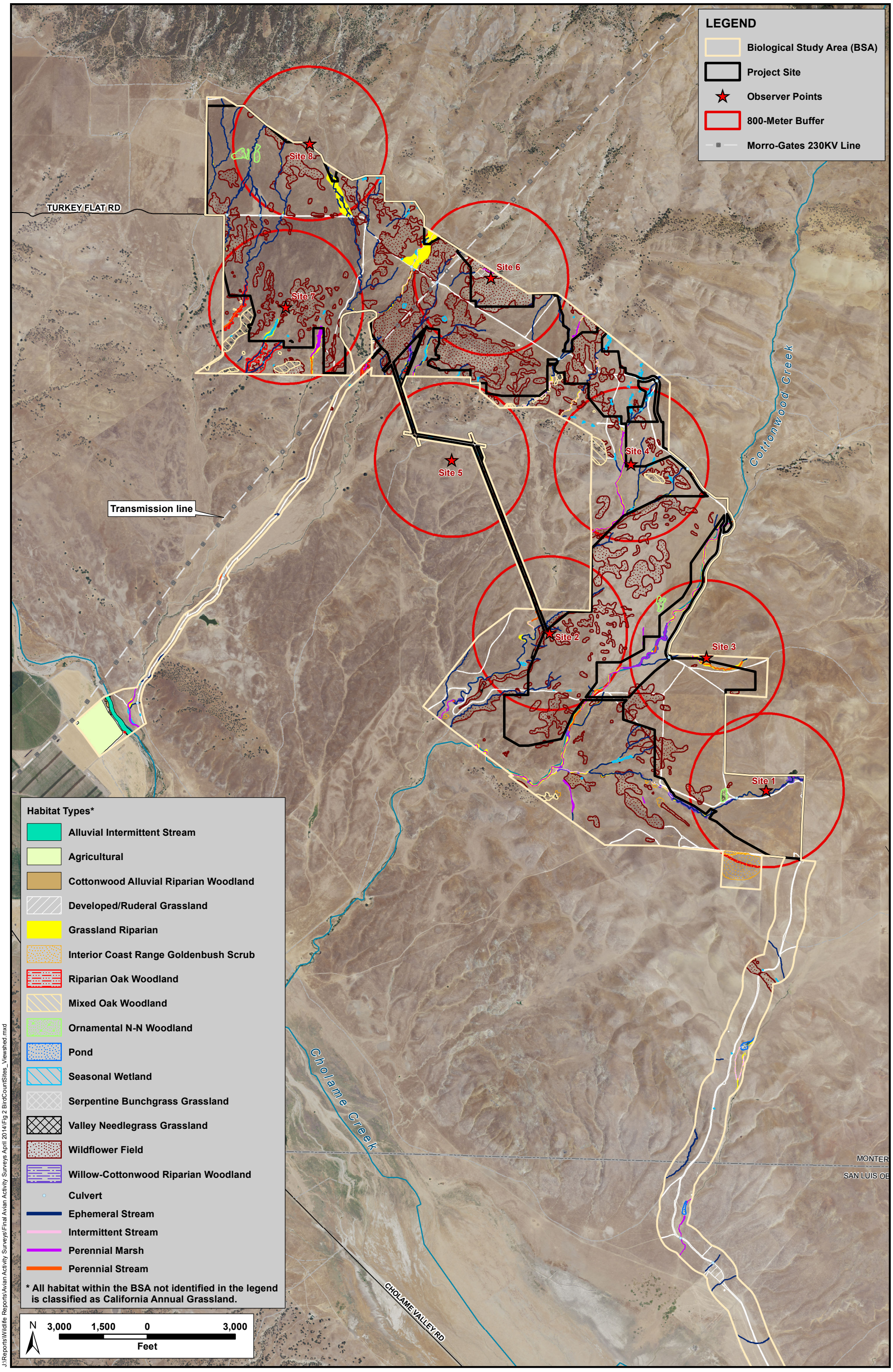
Site[1]	UTM East[2]	UTM North[2]	Location Description
1	745227	3967853	Open grassy knoll in southeastern BSA
2	742908	3969394	Open grassy knoll in southwestern BSA near terminus of proposed transmission line
3	744549	3969210	Open grassy knoll in southeastern BSA
4	743681	3971183	Open grassy knoll in central BSA
5	741814	3971151	Open grassy knoll ~200 meters (656 feet) south of proposed transmission line
6	742145	3973061	Open rocky hillside along northeastern border of BSA, ~40 meters (131 feet) east of existing transmission line
7	740024	3972669	Open grassland in northwestern BSA with views of oak woodlands, ephemeral streams, wooded riparian corridors, and a perennial marsh area
8	740204	3974380	Open grassy knoll in northern BSA with coverage including portions of foothills adjacent to Project site, including areas of gray pine/oak woodland

[1] See Figure 2 for mapped locations.

[2] Universal Transverse Mercator coordinates, zone 10S, datum NAD83.

We strategically located the count sites to provide largely unobstructed, nonoverlapping views of the surrounding terrain out to a radius of 800 meters (0.5 miles). The viewsheds of the eight count sites collectively covered approximately 44% of the Project site and 30% of the original BSA, effectively representing the proposed development areas and the primary habitats found in the BSA (Figure 2).

HTH (2013a) botanists and geographic information system (GIS) specialists used ground surveys (spring–summer 2012) to map habitats in the BSA (Figure 2). The Project site supports primarily California annual grassland (covering all areas of the BSA not occupied by other habitat types specifically identified in Figure 2; hereafter called simply "annual grassland"), dominated by non-native grasses typical of the region, but also a healthy complement of native forbs. Other habitats found in the BSA include wildflower field, serpentine bunchgrass grassland, Valley needlegrass grassland, grassland riparian, interior Coast Range goldenbush scrub, willow–cottonwood riparian woodland, ornamental non-native woodland, blue oak woodland, valley oak riparian woodland, ephemeral stream, intermittent stream, perennial stream, perennial marsh, seasonal wetland, and developed/ruderal grassland (Figure 2).



J:\Reports\Wildlife Reports\Avian Activity Surveys\Final Avian Activity Surveys April 2014\Fig 2 BirdCountSites_Viewshed.mxd

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Figure 2: Distribution of Bird Count Sites in Relation to Project Infrastructure and Mapped Habitats

California Flats Solar Project, California (3544-01)

May 2014

Each of the 800-meter-radius (0.5-mile-radius) survey areas extended outside the BSA, such that the habitat mapping excluded portions (10–85%) of all BUC survey areas (Figure 2). Nevertheless, the available data provide a good sense of the habitat coverage involved. Two habitat types were found in the survey areas (BUC Sites 6 and 8; Figure 2) but not in the mapped BSA: juniper woodland and gray pine woodland. In addition, a 2012 fire removed approximately 50% of the grass/forb cover in the BUC Site 1 and 3 survey areas, with signs of the fire still evident in these locations during the remainder of the surveys.

Annual grassland is by far the most common habitat type in both the overall BSA/PIA and in the BUC survey areas (Table 2; Figure 2). This category made up 91% of the habitat mapped in the BSA and 51–91% of the habitat mapped in individual BUC survey areas. Several other distinctive grassland variants made up the remainder of the overall grassland habitat matrix in the Project area, and combined constituted 96% of the mapped habitat in the BSA and 92–98% of the mapped habitat in individual BUC survey areas (Table 2). Among the variants included in the grassland category, wildflower field was the second most abundant individual habitat type in the BSA (4%) and BUC survey areas (2–42% of mapped habitat). Wildflower fields were mapped in all survey areas except BUC Site 1, but most likely are represented, at least ephemerally, in all survey areas. When installed, the solar arrays will be situated primarily in the dominant annual grassland habitat and in smaller areas of wildflower field (Figure 2).

Woodlands constituted 2% of the BSA habitat and were found in all BUC survey areas, but were not part of the mapped habitat in the BUC Site 6 survey area (Table 2; Figure 2). The percentage of woodland among the mapped habitats varied from <1% to 6%, depending on the BUC survey area. Mixed oak woodland was the most prevalent woodland type within mapped portions of the BUC survey areas, followed by riparian oak woodland, ornamental non-native woodland, and willow–cottonwood riparian woodland. For BUC Sites 5, 6, and 8, the known proportion of woodland would be noticeably higher if the habitats in the survey areas were completely mapped. Also, as alluded to previously, BUC Sites 6 and 8 encompassed juniper and gray pine woodlands, which were not represented in the BSA mapping.

All other habitat types mapped in the BSA constituted <1% of the total, whether classified individually or in groups; i.e., shrublands, aquatic, marsh, and developed/ruderal (Table 2; Figure 2). The same pattern generally applied to habitats mapped in the BUC survey areas; however, interior Coast Range goldenbush scrub made up 3% of the mapped habitat around BUC Site 1; marsh/wetland habitats made up 1–3% of the mapped habitat around BUC Sites 4 and 5; and developed/ruderal habitats made up 1–2% of the mapped habitat around BUC Sites 1, 3, and 6.

We presumed that unmapped portions of each BUC survey area supported habitat mixes roughly similar to those in the mapped portions, except for the juniper and gray pine woodlands found outside the BSA but within the survey areas of BUC Sites 6 and 8.

Table 2. Proportional Representation of Primary Habitat Types in the Biological Study Area (BSA) and Bird Use Count (BUC) Survey Areas

Habitat Type	BSA[1]	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	All Sites
California annual grassland	0.904	0.486	0.617	0.534	0.574	0.119	0.297	0.688	0.348	0.458
Wildflower field	0.038	0.009	0.112	0.019	0.106	0.025	0.246	0.135	0.085	0.092
Serpentine bunchgrass grassland	0.001	–	0	–	–	–	0.009	–	–	0.001
Valley needlegrass grassland	0.001	–	0.001	–	–	–	–	<0.001	–	<0.001
Grassland riparian	0.013	0.003	0.008	0.011	0.011	0.001	0.021	0.011	0.021	0.011
Mixed oak woodland	0.008	–	–	–	0.024	0.001	0	0.034	–	0.007
Riparian oak woodland	0.003	–	–	–	<0.001	0	0	0.024	–	0.003
Willow–cottonwood riparian woodland	0.002	0.004	<0.001	0.006	–	–	–	–	–	0.001
Ornamental non-native woodland	0.002	0.004	–	0.004	–	–	–	–	0.010	0.002
Interior Coast Range goldenbush scrub	0.006	0.018	–	–	–	–	–	–	–	0.002
Ephemeral stream	0.002	0.001	0.002	<0.001	0.001	<0.001	0.001	0.002	0.002	0.001
Intermittent stream	<0.001	–	<0.001	–	–	<0.001	<0.001	–	–	<0.001
Perennial stream	<0.001	–	<0.001	0.001	–	–	–	<0.001	–	<0.001
Pond	<0.001	–	–	–	–	–	–	–	–	0
Seasonal wetland	0.001	–	0.001	–	0.006	0.004	0.001	0.002	0.001	0.002
Perennial marsh	0.002	<0.001	<0.001	0.003	0.004	0	<0.001	0.005	0	0.002
Developed/ruderal grassland	0.013	0.012	0.003	0.008	0.007	0.001	0.006	0.002	0.002	0.005
Not mapped	0	0.463	0.255	0.414	0.266	0.849	0.417	0.097	0.532	0.412

[1] As defined prior to addition of the new utility corridor.

Following are summary descriptions of the habitats in the BUC survey areas:

Site 1: Mostly annual grassland, with patches of ornamental non-native woodland and interior Coast Range goldenbush scrub, and a willow–cottonwood riparian corridor along a mostly ephemeral stream

Site 2: Mostly annual grassland, with large patches of wildflower field, and a mostly grassland riparian corridor that includes patches of perennial marsh and strips of willow–cottonwood riparian woodland

Site 3: Mostly annual grassland, with patches of wildflower field, a willow–cottonwood riparian corridor with sections of perennial marsh, another grassland riparian corridor with small sections of perennial stream, and a patch of ornamental non-native woodland

Site 4: Mostly annual grassland, with large patches of wildflower field, oak woodland, grassland riparian corridors with areas of perennial marsh, and several seasonal wetlands

Site 5: Mostly annual grassland, with patches of wildflower field and oak woodland, and an intermittent, grassland riparian corridor

Site 6: Mostly annual grassland, with large patches of wildflower field, small areas of serpentine bunchgrass grassland, several ephemeral, grassland riparian corridors, and patches of juniper woodland and partially wooded (oak) riparian corridors in the foothills east of the BSA

Site 7: Mostly annual grassland, with large sections of wildflower field, patches of mixed oak woodland, several riparian corridors with mixes of grassland riparian and riparian oak woodland, and various patches of intermittent and perennial stream, perennial marsh, and seasonal wetland

Site 8: Mostly annual grassland, with patches of wildflower field, ornamental non-native woodland, and seasonal wetland, several ephemeral, grassland riparian corridors, and mixed oak, gray pine, and juniper woodlands in the foothills east of the BSA

2.2 Data Collection

We began the counts in March 2013 and thereafter sought to conduct two counts per month at each of the eight BUC sites, once during morning hours (8:00 AM to 12:00 PM Pacific Standard Time [PST]) and once during afternoon hours (12:00 to 4:00 PM PST). The counts generally occurred on one day during the first week of each month and a second day during the third week of each month. Each individual count lasted 20 minutes. Counts did not occur during excessively inclement or windy weather; they occurred only during periods when there was little or no precipitation, lateral visibility was ≥1 kilometer (0.8 mile) and vertical

visibility was ≥250 meters (0.2 mile) in all directions, and wind speeds were ≤40 kilometers/hour (25 miles/hour). The choice of 40 kilometers/hour as a wind-speed threshold represented a balance between recognizing that wind makes it difficult to detect birds by ear, but at least moderately strong winds often create ideal foraging conditions for larger raptors, such as red-tailed hawks and golden eagles.

To avoid time-of-day biases and ensure equitable coverage of all sites in both morning and afternoon hours, each month the observer followed a standardized protocol for selecting a start point and then proceeding systematically in the most efficient manner through the remainder of that month's surveys:

1) For the first round of surveys each month, choose a random start point.

2) If the randomly chosen start is an odd number, survey all odd-numbered sites in the morning and all even-numbered sites in the afternoon; vice versa if an even-numbered start.

3) After conducting the first count, proceed through the remaining morning and afternoon counts according to the appropriate sequence, identified below, to maximize travel efficiency:

    - 1, 3, 5, 7 AM, 8, 6, 4, 2 PM
    - 2, 4, 6, 8 AM, 7, 5, 3, 1 PM
    - 3, 1, 5, 7 AM, 8, 6, 4, 2 PM
    - 4, 2, 6, 8 AM, 7, 5, 3, 1 PM
    - 5, 7, 3, 1 AM, 2, 4, 6, 8 PM
    - 6, 8, 4, 2 AM, 1, 3, 5, 7 PM
    - 7, 5, 3, 1 AM, 2, 4, 6, 8 PM
    - 8, 6, 4, 2 AM, 1, 3, 5, 7 PM

4) For the second round of surveys in the month, if the random start point for the first round of surveys was an odd number, start at a point randomly chosen from among the even-numbered sites and proceed according to the relevant sequence above.

One highly experienced observer conducted the March and April counts, while accompanied by, and ensuring necessary training of, a second capable observer. The second observer then conducted the remainder of the surveys from May 2013 to March 2014.

The observers recorded data on a standard form. The counts involved documenting all birds seen or heard within 800 meters (0.5 mile) of each count site. For informational purposes, the observers also occasionally and separately recorded larger birds, such as eagles, seen beyond the 800-meter (0.5-mile) radius, but we did not include such sightings in the analyses and summaries presented herein. The observers classified all sightings according to the approximate distance (to the nearest 10 meters [33 feet]) from the count center.

When relevant, they also recorded the flight direction (N, NE, E, SE, S, SW, W, NW, or V[ariable]) and flight height of each bird or group of birds, with flight height estimated relative to the observer's ground-level position as follows:

-1 = more than 10 meters (33 feet) below observer's eye level
0 = within ±10 meters (33 feet) of observer's position
1 = 10–50 meters (33–164 feet) above observer's position (upper limit roughly equivalent to the maximum height where risk of collision with the transmission line may occur)
2 = 50–150 meters (164–492 feet) above observer's position (local-area movers/commuters and some foraging raptors)
3 = >150 meters (492 feet) above observer's position (high-soaring ravens/raptors and migrants/regional movers)

The observers recorded basic behavior information for all birds observed, using the following codes:

(P)erched: (r)esting, (p)reening, (f)eeding, (c)ourting/mating
(G)round: (r)esting, (p)reening, (f)oraging/feeding, (c)ourting/mating
(F)lying: (m)igrating, (t)ransit, (s)oaring, (f)oraging, (c)ourtship/territorial, (d)efensive/escape
(N)esting: (b)uilding, (c)opulating, (i)ncubating, (t)ending young, (f)eeding
(V)oice only: (c)alling, (s)inging

The observers also recorded the current habitat associations for all observations, based primarily on the categories outlined in HTH (2013a) (e.g., see Table 2). When relevant, the observers also recorded details about bird use of specific perching substrates (e.g., shrub, tree, fence, powerline or pole, or building) and any predator-prey interactions observed (e.g., species involved, setting, and outcome).

During all counts, the observers sought to minimize double counting of individual birds or groups of birds by keeping track of individual sightings and locations. For small birds whose entire home ranges were generally contained in an individual survey area, observers simply tallied individual occurrences. For larger birds such as raptors and ravens, whose home ranges often extended well beyond the bounds of a single survey area, the observers also recorded time-on-plot estimates for each individual to provide more useful information about how long the birds foraged in, or otherwise used, particular areas.

Lastly, the observers recorded the weather conditions at the beginning of each survey using a handled Kestrel 4500 Pocket Weather Tracker (Nielsen-Kellerman Company, Boothwyn, Pennsylvania). Recorded data included cloud cover estimates and types, presence/absence and type of precipitation, estimates of horizontal and vertical visibility when restricted, barometric pressure, ambient temperature, and wind speed and direction. For synoptic summary purposes, we augmented the data collected on site with data available through the weather station located approximately 8 kilometers (5 miles) northwest of the BSA, in Parkfield (MesoWest Database 2013).

2.3 Data Analysis

To describe patterns of variation in bird activity levels, we calculated frequency of occurrence by species or species groups as the number of surveys during which at least one individual was recorded, and we translated the raw survey counts into estimates of sightings per hour. For summary purposes, we examined patterns of variation for five distinct species groups: raptors (hawks, eagles, falcons, owls, and vultures), shorebirds (sandpipers, plovers, and allies), corvids (Corvidae: ravens, crows, magpies, and jays), icterids (Icteridae: blackbirds, orioles, and starlings), and other mostly smaller birds (passerines, hummingbirds, swallows/swifts, woodpeckers, quail, etc.).

For summary purposes, we assigned surveys to quarterly seasons as follows:

Spring: March through May
Summer: June through August
Fall: September through November
Winter: December through February

These quarterly divisions are useful for distinguishing approximate spring and fall migration periods from summer breeding and winter periods for most species. In California, however, and depending on the species, the nesting season may begin as early as January and continue well into September. Similarly, spring passerine migration often continues throughout May, or even June, and fall migration often continues through November and into early December for some raptor species.

We evaluated metrics of activity of the five groups of birds as a function of site and season. For each group of birds, we summarized the data by averaging sightings across surveys at each of the eight points within a season. Averaging detections in this way is a recommended and commonly used way of summarizing point count data (Nur et al. 1999), and helps avoid invalid inference that may result from temporally pseudoreplicated data. We then fit a linear model (ANOVA) to the data for each species group. We evaluated normality of residuals by visually inspecting q-q plots and applying Shapiro-Wilk tests. Two groups, icterids and shorebirds, did not meet these criteria for normality; for these groups, we used the Kruskal-Wallis rank sum test, and pairwise Mann-Whitney U tests, both nonparametric tests that do not assume normality of the data, to evaluate the separate effect of the two predictor variables, site and season, on the sightings rates. We evaluated significance at $\alpha = 0.05$, but also considered marginally significant results at $\alpha = 0.10$. We did not evaluate interactions between the predictor variables quantitatively because there were limited degrees of freedom following data summarization; however, we qualitatively evaluated possible interactions through graphical comparisons of average sighting rates by season and site.

Section 3.0 Results

3.1 Observation Effort

From late March 2013 through early March 2014, we conducted 200 twenty-minute surveys, with each count site surveyed at least six times during each quarterly season (spring, summer, fall, and winter) across the year-long survey period. Most counts occurred as planned on one day each during the first and third weeks of each month, but some exceptions occurred (Appendix A). Most notably, all of the March 2013 surveys occurred on two days during the last week of the month, because of contract-related constraints, and four of the April counts did not occur according to the expected randomized schedule, owing to constraints imposed by the landowner. In addition, a scheduling error resulted in the May counts consisting of only two AM counts at four sites and two PM counts at the other four sites. In the end, we covered all sites an equal number of times during both seasonal periods and at least once during AM and PM hours, but with an AM/PM sampling imbalance during the 2013 spring quarter (Table 3). In addition, we conducted only one round of surveys in early March 2014, as originally scheduled to provide a full year of coverage.

Table 3. Number of Monthly Surveys Conducted by Count Site and Season during Morning (AM) and Afternoon (PM) Hours at the Proposed California Flats Solar Project Site

Site	Spring		Summer		Fall		Winter		Total
	AM	PM	AM	PM	AM	PM	AM	PM	
1	2	5	3	3	3	3	3	3	25
2	4	3	3	3	3	3	3	3	25
3	2	5	3	3	3	3	3	3	25
4	4	3	3	3	3	3	3	3	25
5	3	4	3	3	3	3	3	3	25
6	5	2	3	3	3	3	3	3	25
7	3	4	3	3	3	3	3	3	25
8	5	2	3	3	3	3	3	3	25
All sites	28	28	24	24	24	24	24	24	200

3.2 Habitat and Climatic Conditions

At the onset of the survey period, the Project area and surrounding region was experiencing moderate drought conditions, which developed into severe drought conditions that prevailed across the entire region and Project site throughout the remainder of the survey period. The 30-year average annual precipitation (1970–2000) for the area ranges from 34.5–45.5 centimeters (13.6–17.9 inches) across the site (PRISM

Climate Group 2013). Precipitation during the 2012–2013 water year (1 October 2012 through 30 September 2013) amounted to only 41% of the long-term average, with the majority falling during several big storm events in late November and December 2012. By the end of the survey period, the precipitation total was only 36% the long-term average for the relevant portion of the water year (1 October 2013 to 31 March 2014).

The low precipitation resulted in minimal to no growth of grassland vegetation and limited seasonal development of wetlands and intermittent streams preceding and during the survey period. This lack of habitat development probably precluded some bird species or individuals from nesting or occupying the Project site during the survey period. For example, the lack of moisture likely reduced prey availability and contributed to depressed nesting activity and productivity of golden eagles in the region (HTH 2013b, 2013c).

3.3 Species Occurrences and General Patterns of Distribution and Abundance

We recorded 4061 individual bird sightings of 45 species during the BUC surveys (Table 4; also see Appendix B for a complete list of species recorded on or adjacent to the Project site during the standardized surveys, earlier reconnaissance surveys, and incidentally during travel around the Project site). The tally included five special-status species: Swainson's hawk (State-listed as threatened), golden eagle (State fully protected), northern harrier (California Species of Special Concern [CSSC]), burrowing owl (CSSC), and loggerhead shrike (CSSC).

We recorded nine species of raptors, two species of shorebirds, four species of corvids, greater roadrunner, and 30 species of passerines and other mostly smaller birds (Table 4). The 11 most abundant species were horned lark, western meadowlark, common raven, Brewer's blackbird, house finch, red-tailed hawk, mourning dove, Savannah sparrow, western kingbird, white-crowned sparrow, and American kestrel (*Falco sparverius*) (the latter two were equally abundant). The most commonly detected and widely distributed species was horned lark, which was the only species that we recorded in all survey areas and in all seasons (Table 4; Appendix C). We detected common raven, mourning dove, western meadowlark, Savannah sparrow, and American kestrel in all survey areas, but not in all seasons (e.g., Savannah sparrow was absent in summer). We recorded no other species in all survey areas; however, American kestrel, Brewer's blackbird, house finch, red-tailed hawk, Say's phoebe, golden eagle, and western kingbird were nearly ubiquitous across the sites. Most of these species are year-round residents in the area, but western kingbirds were absent in winter (Table 4; Appendix C).

We detected 14 species in all seasons, 9 species in three seasons, 10 species in only two seasons, and 12 species in only one season (Table 4). We detected five species only in spring: Swainson's hawk, Bullock's oriole, northern mockingbird, cliff swallow, oak titmouse, and white-breasted nuthatch. We detected two species each only in summer (California towhee and barn swallow), fall (ruby-crowned kinglet and Nuttall's

woodpecker), and winter (burrowing owl and rock pigeon); however, several of these species are year-round residents in the area.

At the species-group level, raptors, shorebirds, corvids, and icterids showed higher activity rates in spring, lower activity rates in summer, and then higher activity rates again from late fall through winter (Figure 3; Appendix C). The overall raptor pattern was driven primarily by the activity of red-tailed hawks, the most abundant and ubiquitous raptor in the Project area, whose activity rate was more than twice as high in spring and winter than in summer and especially fall. The activity rates of kestrels, golden eagles, and ferruginous hawks also were relatively high in winter, but the eagle activity rate was higher in summer than in spring, and kestrels and turkey vultures were most active in the summer. Among the icterids, Brewer's blackbirds were much more active in spring and summer than in fall or winter, whereas western meadowlarks were most active and apparent in spring and especially winter. In contrast to the pattern shown by the other species groups, the other smaller birds as a group showed relatively low activity from March through October, but then high activity from late fall through winter. This pattern was driven by winter influxes of horned larks, house finches, Savannah sparrows, and white-crowned sparrows. Species included in the other smaller birds group that were most active in summer included ash-throated flycatcher, California quail, greater roadrunner, loggerhead shrike, and mourning dove.

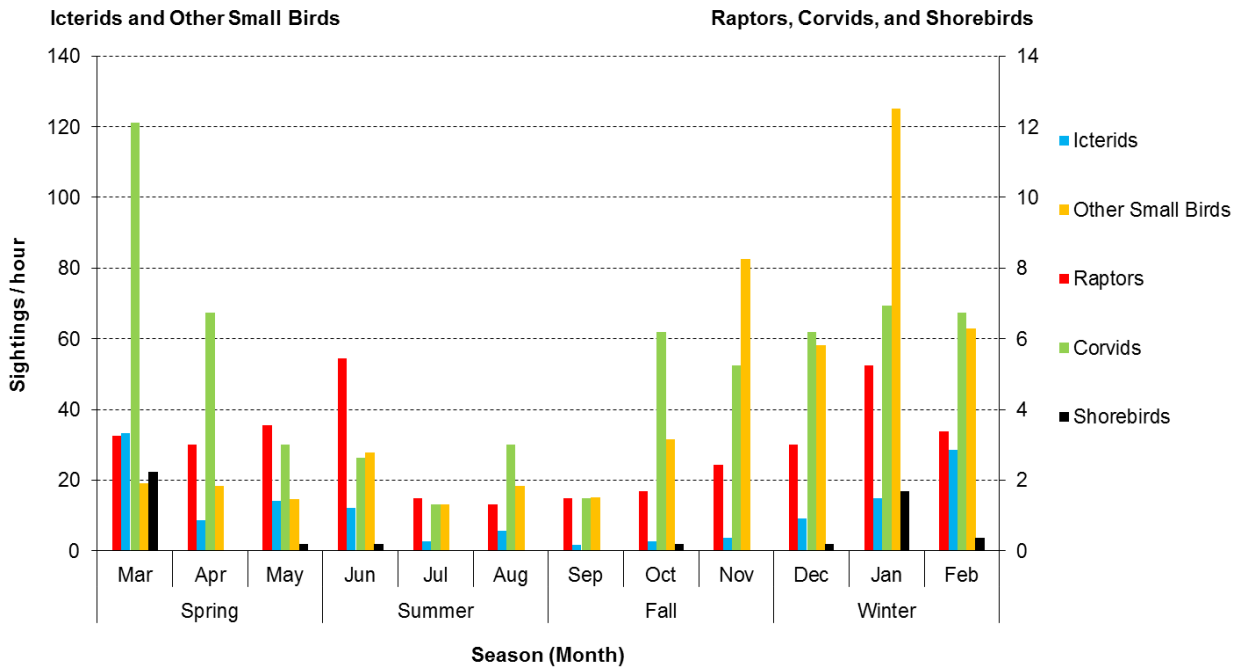

Figure 3. Seasonal Activity Patterns of Primary Species Groups

With data for all species combined and summarized across all seasons, the highest average activity rates occurred at BUC Site 4 (117 sightings/hour) and BUC Site 8 (82 sightings/hour), with slightly lower rates at BUC Sites 2, 3, and 7 (51–64 sightings/hour), and the lowest rates at BUC Sites 1, 5, and 6 (38–41 sightings/hour) (Appendix C). The high overall activity rates at BUC Sites 4 and 8 mostly reflect relatively large wintering flocks of horned larks and house finches (Figure 4). Examination of site-specific activity rates across seasons revealed that most sites supported at least moderate activity during at least one season (Figure 4).

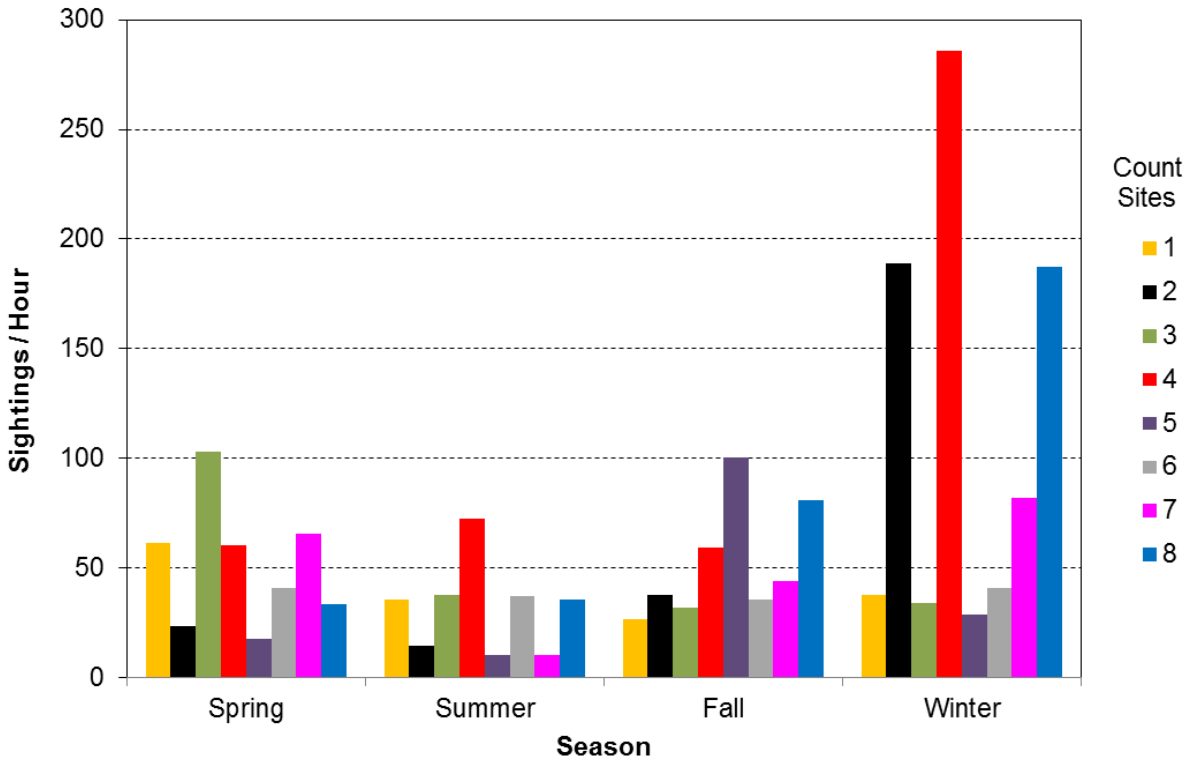

Figure 4. All-Bird Average Activity Rates by Count Site and Season

Table 4. Frequency of Occurrence and Total Sightings by Species and Season

Species	Spring		Summer		Fall		Winter		Total Sightings
	Frequency[1]	Sightings	Frequency	Sightings	Frequency	Sightings	Frequency	Sightings	
American Crow	1[1]	3	0	0	0	0	1	9	12
American Goldfinch	0	0	0	0	2	3	2	7	10
American Kestrel	6	6	9	15	6	6	9	12	39
Ash-throated Flycatcher	1	1	5	9	0	0	0	0	10
Barn Swallow	0	0	1	1	0	0	0	0	1
Brewer's Blackbird	8	213	10	93	3	3	7	22	331
Bullock's Oriole	5	5	0	0	0	0	0	0	5
Burrowing Owl	0	0	0	0	0	0	1	1	1
California Towhee	0	0	1	1	0	0	0	0	1
California Quail	1	1	1	4	1	1	0	0	6
Cliff Swallow	2	7	0	0	0	0	0	0	7
Common Raven	39	144	12	36	22	66	29	91	337
European Starling	5	19	1	4	1	1	2	6	30
Ferruginous Hawk	0	0	0	0	5	6	5	5	11
Golden Eagle	3	4	4	4	2	2	6	6	16
Greater Roadrunner	0	0	2	2	0	0	1	1	3
House Finch	6	46	12	21	9	38	9	137	242
Horned Lark	47	155	35	191	44	550	43	1067	1963
Killdeer	2	2	1	1	1	1	3	3	7
Lark Sparrow	7	10	2	2	1	3	0	0	15
Long-billed Curlew	2	17	0	0	0	0	3	9	26
Lewis's Woodpecker	5	9	1	2	5	10	2	4	25
Loggerhead Shrike	2	3	4	5	3	3	3	4	15
Mourning Dove	15	27	16	51	2	12	3	4	94
Northern Flicker	0	0	0	0	3	3	1	1	4
Northern Harrier	1	1	0	0	1	1	0	0	2

Species	Spring		Summer		Fall		Winter		Total Sightings
	Frequency[1]	Sightings	Frequency	Sightings	Frequency	Sightings	Frequency	Sightings	
Northern Mockingbird	3	5	0	0	0	0	0	0	5
Nuttall's Woodpecker	0	0	0	0	1	1	0	0	1
Oak Titmouse	1	1	0	0	0	0	0	0	1
Prairie Falcon	3	3	0	0	1	1	1	1	5
Ruby-crowned Kinglet	0	0	0	0	1	1	0	0	1
Rock Pigeon	0	0	0	0	0	0	1	2	2
Rock Wren	7	15	3	5	7	8	6	8	36
Red-tailed Hawk	28	46	12	18	11	13	20	36	113
Red-winged Blackbird	10	33	0	0	0	0	1	2	35
Say's Phoebe	1	1	0	0	10	11	9	9	21
Savannah Sparrow	7	13	0	0	17	29	16	47	89
Swainson's Hawk	1	1	0	0	0	0	0	0	1
Turkey Vulture	0	0	6	7	1	1	1	1	9
White-breasted Nuthatch	1	1	0	0	0	0	0	0	1
White-crowned Sparrow	1	1	0	0	3	16	5	22	39
Western Kingbird	13	33	10	22	0	0	0	0	55
Western Meadowlark	47	120	11	12	15	40	22	250	422
Western Scrub-Jay	2	2	0	0	2	2	1	1	5
Yellow-billed Magpie	0	0	1	1	1	1	3	5	7
All Species		**948**		**507**		**833**		**1773**	**4061**

[1] Values reflect the number of individual site-specific AM and PM surveys in each season (56 in spring, 48 in other seasons) during which at least one individual of the species was recorded.

3.3.1 Raptors

We recorded nine species of raptors during the surveys (Table 4). American kestrels and red-tailed hawks were relatively abundant and recorded during all seasons, with kestrels seen at all sites and red-tailed hawks at all sites except BUC Site 5. We recorded golden eagles during all seasons and at all sites except BUC Site 2 (incidental observations of eagles were recorded in this area outside of the standardized survey period). We recorded turkey vultures in all but the spring counts, but know from other observations that they were present in the general area in May. Ferruginous hawks were observed relatively frequently during fall and winter at five sites. Five prairie falcon observations occurred at BUC Sites 1, 2, 3, 4, and 8 between October and May during the scheduled surveys, but we observed this species on several other occasions in the general area through June. Northern harriers, burrowing owls, and Swainson's hawks were scarcer, sighted only once or twice each during the fall, winter, or spring scheduled counts. The harrier observations at BUC Site 2 and 8 involved an adult coursing low over annual grassland. The Swainson's hawk observation at BUC Site 4 involved a migrant of unknown age flying north at an altitude >150 meters (492 feet) during late March. The single burrowing owl observation during a scheduled count occurred at BUC Site 2 in January 2014. Our aerial survey work revealed several active prairie falcon nests in the foothills east of the Project site, whereas harriers and Swainson's hawks did not appear to be present in the area during the summer (HTH 2013b).

We detected golden eagles 16 times during the scheduled counts in all seasons and at all sites except BUC Site 2 (Table 4). We recorded sightings during 7.5% of the surveys: seven during morning surveys and nine during afternoon surveys. Slightly more sightings occurred in winter than in other seasons: six in winter (one in December, two in January, and three in February), four in spring (one in March, two in April, and one in May), four in summer (three in June and one in August), and two in the fall (November) (Appendix C). Six sightings occurred at BUC Site 5, three at BUC Site 3, two each at BUC Sites 1 and 4, and one each at BUC Sites 6, 7, and 8. We observed eight adults, six subadults, and two eagles of unknown age. All observations recorded during the scheduled counts were of eagles in flight, either foraging or in transit, and all occurred over annual grassland habitat. Seven of the 16 eagles were flying at altitudes >150 meters (492 feet), five were flying at altitudes of 50–150 meters (164–492 feet), and four were flying at altitudes of 10–50 meters (33–164 feet). Other observations recorded during aerial and ground surveys for nesting raptors conducted during the BUC survey period documented additional eagle occurrences on or over proposed development areas in all of the BUC survey areas, as well as outside the PIA (HTH 2013b).

BUC Site 5, where we recorded the most eagle observations, was the site chosen to represent the central portion of the proposed transmission line corridor, and was the only survey area that encompassed a known golden eagle nest. Although the nest was inactive in 2013, we recorded adult eagles near the nest and in the surrounding area on several occasions, during both ground and aerial surveys for nesting raptors (HTH 2013b). During the BUC Site 5 surveys, we recorded four adult eagles traveling southward and two eagles (one adult, one of unknown age) soaring above the count site for periods of up to 5 minutes, while gradually floating southwestward. Overall, the observations we recorded in the vicinity of BUC Site 5, during both

ground and aerial surveys, indicated both localized activity involving golden eagles that did not breed in 2013 (adults and subadults) and movements from the vicinity of the survey area toward active eagle nests located 3.5–3.6 kilometers (2.2 miles) southwest and south of the count site.

We detected red-tailed hawks during all seasons and at all sites except BUC Site 5 (Table 4), with the highest activity rates recorded at BUC Sites 1, 3, 4, and 6 (Appendix C). All these locations are situated near woodland areas, which in several areas supported active red-tailed hawk nests in 2013 (HTH 2013b). The lack of red-tailed hawk sightings during the official surveys of BUC Site 5 in the 2013 nesting season was surprising, given the presence of an active nest just northeast of the survey area. We recorded red-tailed hawks during 50% of the spring surveys, 25% of the summer surveys, 23% of the fall surveys, and 42% of the winter surveys (Table 4). We typically observed red-tailed hawks in or over annual grassland and woodland habitats on the Project site. Two active red-tailed hawk nests were visible from the count sites, one (which successfully fledged three young) on a windmill platform in the BUC Site 3 survey area, and the other (which produced two chicks that reached an age of at least 5–6 weeks) on a transmission tower in the BUC Site 6 survey area (HTH 2013b). Other active red-tailed hawk nests were located in the BUC Site 1 and 4 survey areas, and between the BUC Site 4 and 5 survey areas, but these nests were not readily observable from the count sites, and we did not confirm chick production in them.

During the scheduled counts, we detected American kestrels at all BUC sites (Appendix C). Kestrels were ubiquitous in the BSA during all seasons, with 12 observations each in the summer and winter surveys, and six observations each during the fall and spring surveys. These observations were particularly common wherever perch substrates (e.g., trees, power poles, and fences) were available for use during foraging. Sighting rates averaged highest at BUC Sites 1 and 7 (Appendix C), which were situated near woodland (Figure 2) and rocky outcrop habitats where we suspect several pairs of kestrels nested. Other sightings, recorded outside of the BUC surveys, revealed concentrated kestrel foraging activity in the northwestern and north-central sections of the Project site, where the birds routinely perched on fencelines as they foraged and consumed prey (HTH 2013b).

The ANOVA confirmed marginally significant seasonal variation in overall raptor activity, as well as significant variation across sites (Table 5; Figure 5). Post-hoc comparisons indicated that the overall fall activity rate was at least marginally lower than the spring and winter activity rates, and that, across the entire survey year, the average raptor activity rates were significantly lower at BUC Sites 2, 5, and 8, and marginally lower at Site 7, compared to Sites 1 and 3, and to a slightly lesser degree Site 4 (Figure 5; Appendix C). Each of the latter survey areas encompassed an active red-tailed hawk nest, and Sites 1 and 3 were among the survey areas closest to an active golden eagle nest (HTH 2013b).

Table 5. ANOVA Results for Raptors Evaluating the Influence of Site and Season on Average Bird Use Count (BUC) Sightings per Hour

Variable	Degrees of Freedom	Sum of Squares	Mean Square	*F*	*P*
Season	3	7.652	2.551	3.05	0.051
Site	7	25.087	3.582	4.28	0.004
Residuals	21	17.564	0.836	–	–
		Estimate	**Standard Error**	***t***	***P***
(Intercept)		2.991	0.536	5.58	0.000
Season:Summer [1]		-0.345	0.457	-0.76	0.459
Season:Fall		-0.929	0.457	-2.03	0.055
Season:Winter		0.405	0.457	0.89	0.386
Site 2		-1.345	0.647	-2.08	0.050
Site 3		0.452	0.647	0.70	0.492
Site 4		-0.131	0.647	-0.20	0.841
Site 5		-2.000	0.647	-3.09	0.006
Site 6		-0.310	0.647	-0.48	0.637
Site 7		-1.131	0.647	-1.75	0.095
Site 8		-2.036	0.647	-3.15	0.005

[1] Reference categories: Site1 and Spring.

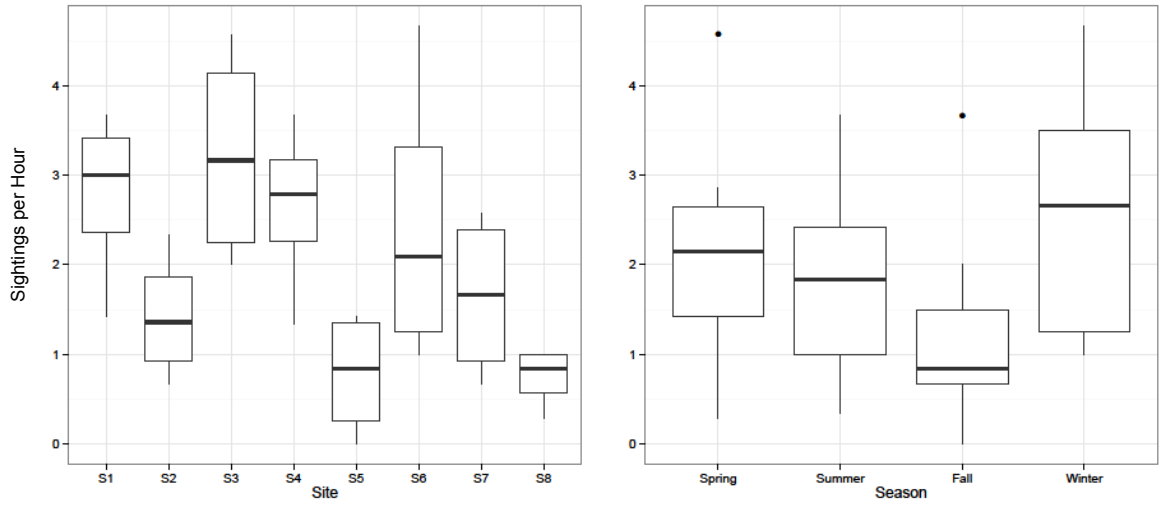

Figure 5. Box Plots Illustrating Variation in Average Sighting Rates for Raptors across Sites and Seasons

3.3.2 Shorebirds and Other Waterbirds

During the BUC surveys, we observed no waterfowl, but we did observe killdeer on several occasions, during all seasons, and long-billed curlews on multiple occasions during winter and spring (Table 4), all within grassland or grassland riparian habitats. We recorded a group of 15 curlews at BUC Site 7 and two curlews at BUC Site 2 in late March 2013, a group of seven curlews at BUC Site 3 in January 2014, and one curlew each at BUC Sites 1 and 2 in December and February (Appendix C). Two of the curlews were flying when observed, at an altitude that would have put them at risk of collision with the proposed transmission line. At other times outside of the BUC surveys, we observed a flock of whimbrels over the BSA in April, mallards along Cottonwood Creek in the BSA on several occasions, and a variety of other waterbirds at a stock pond not far from the BSA and utility corridor (Appendix B).

The observation sample size was low; nevertheless, the Kruskall-Wallis analysis of shorebird (curlew and killdeer) activity rates indicated no overall seasonal variation, but marginally significant variation among the BUC survey areas, with the average sighting rate at BUC Site 3 higher than at Sites 5, 6, and 8, where we documented no relevant activity (Table 6; Figure 6).

Table 6. Kruskall-Wallis Results for Shorebirds Evaluating the Influence of Site and Season on Average Bird Use Count (BUC) Sightings per Hour

	X^2	Degrees of Freedom	*P*
Season	4.67	3	0.198
Site	12.92	7	0.074

Mann-Whitney Pairwise U tests

	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7
Site 2	0.620						
Site 3	0.180	0.457					
Site 4	1.000	0.620	0.180				
Site 5	0.453	0.186	0.020	0.453			
Site 6	0.453	0.186	0.020	0.453	–		
Site 7	1.000	0.869	0.298	1.000	0.453	0.453	
Site 8	0.453	0.186	0.020	0.453	–	–	0.453

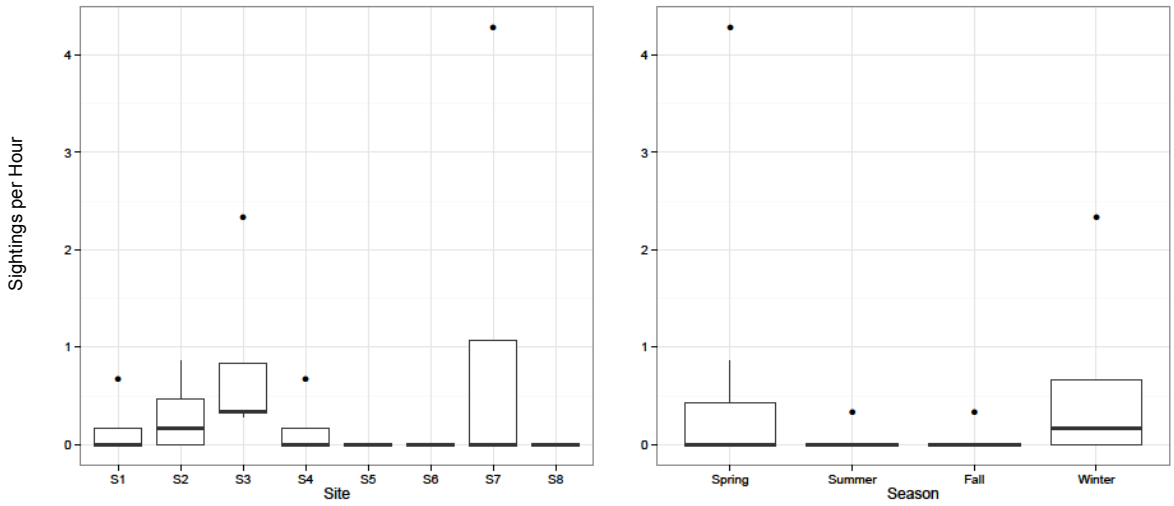

Figure 6. Box Plots Illustrating Variation in Average Sighting Rates for Shorebirds across Sites and Seasons

3.3.3 Corvids

We recorded four corvid species during the BUC surveys: common raven, American crow, western scrub-jay, and yellow-billed magpie. Common ravens were by far the most numerous representative of this group, with relatively few additional observations of American crows, yellow-billed magpies, and western scrub-jays (Table 4). The five western scrub-jay sightings occurred in February, March, and November, all in the BUC Site 7 survey area, which contained a high proportion of woodland habitat. Five of the seven magpie sightings occurred at BUC Site 1, between November and February. In contrast, ravens generally occurred in all survey areas throughout the year (Appendix C).

The ANOVA results indicated significant seasonal and site-to-site variation (Table 7; Figure 7). The overall spring activity rate was higher than in summer and fall, and activity was at least marginally higher at BUC Sites 6 and 7 than at Site 2, and to a lesser degree Sites 4 and 5. Overall, corvid activity was most concentrated in the northern section of the BSA; however, we observed active raven nests in the BUC Site 1 and 4 areas in 2013.

Table 7. ANOVA Results for Corvids Evaluating the Influence of Site and Season on Average Bird Use Count (BUC) Sightings per Hour

Variable	Degrees of Freedom	Sum of Squares	Mean Square	*F*	*P*
Season	3	67.021	22.340	5.76	0.005
Site	7	79.220	11.317	2.92	0.027
Residuals	21	81.512	3.882	–	–
		Estimate	**Standard Error**	***t***	***P***
(Intercept)		5.128	1.155	4.44	0.000
Season:Summer [1]		-3.780	0.985	-3.84	0.001
Season:Fall		-2.446	0.985	-2.48	0.022
Season:Winter		-0.905	0.985	-0.92	0.369
Site 2		-2.476	1.393	-1.78	0.090
Site 3		0.583	1.393	0.42	0.680
Site 4		-0.738	1.393	-0.53	0.602
Site 5		-1.083	1.393	-0.78	0.445
Site 6		2.631	1.393	1.89	0.073
Site 7		2.190	1.393	1.57	0.131
Site 8		0.440	1.393	0.32	0.755

[1] Reference categories: Site1 and Spring.

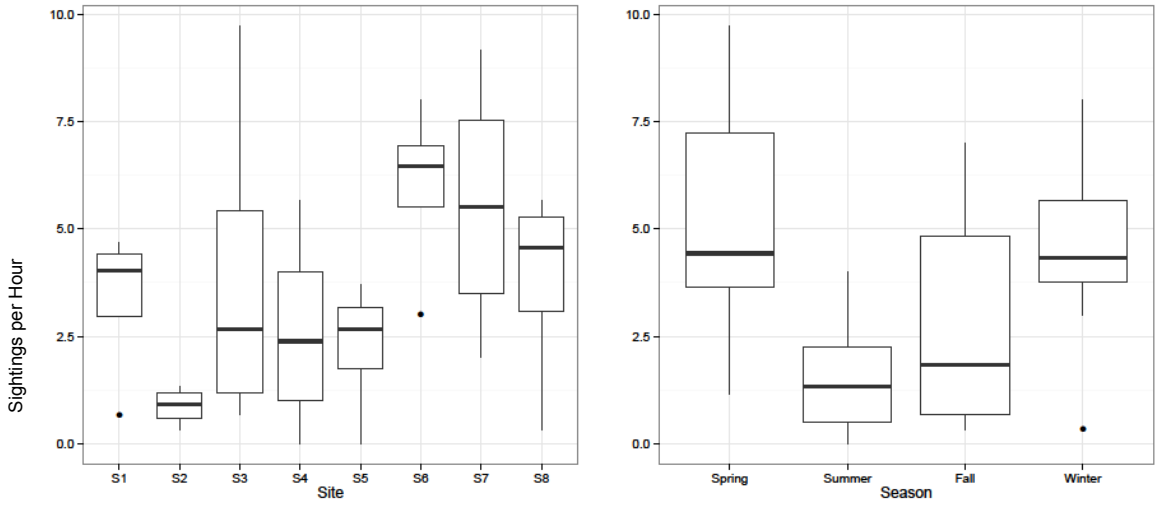

Figure 7. Box Plots Illustrating Variation in Average Sighting Rates for Corvids across Sites and Seasons

3.3.4 Icterids

We recorded five species of icterids and starlings during the BUC surveys: Brewer's blackbird, red-winged blackbird, Bullock's oriole, western meadowlark, and European starling (Table 4). Brewer's blackbirds and western meadowlarks were by far the most abundant of these species in the Project area, and were present in all seasons. All five species showed relatively high abundance in spring, but western meadowlarks were most frequently detected in winter (Table 4; Appendix C). The Kruskall-Wallis analysis indicated significant seasonal variation in the overall icterid and starling activity rates, but no significant overall variation across sites (Table 8). The overall spring activity rate was higher than in summer and fall, and the plots of average activity by site also suggested that the activity rate at BUC Site 4 tended to be higher, and the activity rate at BUC Sites 5, 6, and 8 tended to be lower, than at other sites (Figure 8). Overall icterid and starling activity tended to most concentrated in the southern half of the BSA; however, western meadowlarks, in particular, were nearly ubiquitous throughout the Project site wherever grassland habitat was found.

Table 8. Kruskall-Wallis Results for Icterids Evaluating the Influence of Site and Season on Average Bird Use Count (BUC) Sightings per Hour

	X^2	Degrees of Freedom	*P*
Season	10.01	3	0.018
Site	10.70	7	0.152
Mann-Whitney Pairwise U tests			
	Spring	**Summer**	**Fall**
Summer	0.018		
Fall	0.002	0.916	
Winter	0.195	0.268	0.207

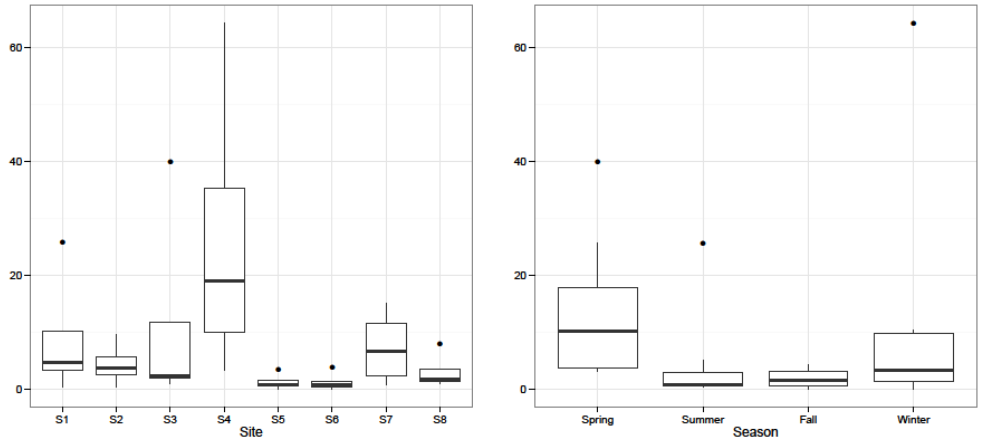

Figure 8. Box Plots Illustrating Variation in Average Sighting Rates for Icterids across Sites and Seasons

3.3.5 Other Small Birds

We recorded 25 other species of mostly smaller birds during the BUC surveys (Table 4). By far the most abundant and ubiquitous species in this group was the horned lark, which we recorded in all survey areas throughout all seasons (Appendix C). The only other species in this group that we recorded throughout the survey year and in many of the survey areas were house finch and mourning dove; however, Savannah sparrows were routinely encountered in small numbers in most survey areas in all seasons except summer; Say's phoebe occurred in small numbers in most survey areas during fall and winter; and western kingbird occurred in small numbers in most survey areas in spring and summer. All other species were encountered only in scattered small numbers at various times of year or in a few cases in moderate numbers at one or two sites during certain times of year. For example, Lewis's woodpeckers were sighted fairly frequently at BUC Site 7 in spring and fall; white-crowned sparrows were relatively abundant in fall and winter at BUC Site 7; and rock wrens were relatively abundant in summer at BUC Site 6 (Appendix C). Excluding the three most common species in this group (horned lark, house finch, and mourning dove), BUC Sites 1, 4, 6, and 7 supported the most overall small bird activity, across the seasons. Each of these survey areas included relatively diverse mixes of riparian, woodland, wildflower field, and shrub/scrub habitats (Table 2; Figure 2).

The ANOVA analysis indicated significant seasonal variation in the overall activity rates of the other small birds group, but no significant variation across sites (Table 9). The overall activity rates increased from spring through winter, and the average winter rate was significantly higher than the average spring rate (Figure 9). The high winter activity rate reflected primarily a large influx of horned larks. Although no significant overall site effect was apparent based on the combined-species analysis, the post-hoc assessment suggested that the average activity rates at BUC Sites 4 and 8 were at least marginally higher than at other sites, reflecting relatively high activity by several species at BUC Site 4, and primarily high horned lark activity at BUC Site 8, especially in fall and winter (Appendix C).

The only special-status species represented in this group and observed during the scheduled counts was loggerhead shrike (CSSC). During the scheduled counts, we recorded this species only at BUC Site 1, during all seasons (Table 4; Appendix C). This survey area encompassed ornamental, non-native woodland that supported at least one breeding pair of shrikes, with several fledglings present by mid-April 2013. Although we did not observe shrikes anywhere else during the BUC surveys, we opportunistically recorded other individuals in the BSA near BUC Site 7, in the BUC Site 3 survey area, and in other woodland areas.

Table 9. ANOVA Results for Other Small Birds Evaluating the Influence of Site and Season on Average Sightings per Hour from the BUC Surveys

Variable	Degrees of Freedom	Sum of Squares	Mean Square	*F*	*P*
Season	3	9556.528	3185.509	4.37	0.015
Site	7	6422.372	917.482	1.26	0.317
Residuals	21	15300.239	728.583	–	–
		Estimate	**Standard Error**	***t***	***P***
(Intercept)		-3.512	15.826	-0.22	0.827
Season:Summer [1]		1.417	13.496	0.10	0.917
Season:Fall		16.958	13.496	1.26	0.223
Season:Winter		42.958	13.496	3.18	0.004
Site 2		25.310	19.086	1.33	0.199
Site 3		3.250	19.086	0.17	0.866
Site 4		36.095	19.086	1.89	0.072
Site 5		10.131	19.086	0.53	0.601
Site 6		4.179	19.086	0.22	0.829
Site 7		6.321	19.086	0.33	0.744
Site 8		36.810	19.086	1.93	0.067

[1] Reference categories: Site1 and Spring.

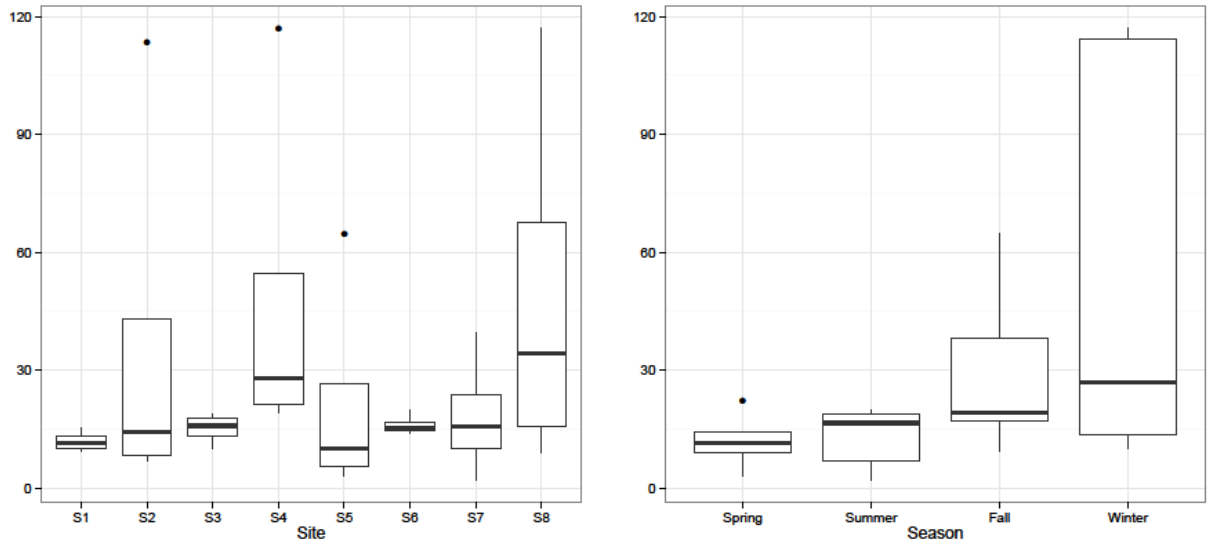

Figure 9. Box Plots Illustrating Variation in Average Sighting Rates for Other Small Birds across Sites and Seasons

3.4 Habitat Use

Of 4061 bird sightings recorded during the year-long survey period, 91% occurred in or over grassland habitats, 4% in natural, upland woodlands, 3% in riparian woodlands, 2% in ornamental, non-native woodlands, and <1% each in marsh/wetland habitats, interior Coast Range goldenbush scrub, and developed habitats (Table 10). Restricting the evaluation to 1384 confirmed or probable (aural detections only) observations involving nonflying birds further emphasized use of woodland habitats, but otherwise did not alter the overall picture appreciably; the relevant figures were approximately 79% in grassland, 11% in natural upland woodlands, 6% in riparian woodlands, 5% in ornamental woodlands, and <1% each in marsh/wetland habitats, interior coast range goldenbush scrub, and developed habitats. Examined at the group level, shorebirds were found exclusively in grassland habitats; icterids and starlings ranked second highest in proportional use of grassland habitats (82% of nonflying observations) and lowest in use of woodland habitats (17%); raptors (red-tailed hawks, in particular) were sighted more frequently than other groups in woodland habitats (35%); and corvids showed the highest proportion of sightings in juniper woodland habitats (18%; although at the species level, lark sparrows, white-crowned sparrows, and ash-throated flycatchers were more abundant in this habitat).

The diversity of habitats in which we documented birds was the lowest in summer (Table 10). For all species groups, most sightings occurred in association with grassland habitats, in proportions that corresponded fairly closely to the proportional availability of this habitat in the BSA (Figure 10). Habitats that were used by all species groups, except shorebirds, more than expected based on their proportional availability in the BSA included all three types of natural and ornamental woodlands (Figure 10). Based on this coarse-scale comparison, other habitat types appeared to be used less often than expected based on their availability. However, note that the utility of such comparisons is limited, because private property considerations precluded mapping the distribution of habitats outside the BSA. This limitation precluded developing a robust evaluation of habitat selection in the BUC survey areas, because large portions of most of the areas extended beyond the boundaries of the delineated BSA. In addition, delineated marsh, wetland, and aquatic habitats were poorly represented during the surveys, owing to a combination of drought conditions and the distance of these habitats from the survey points.

We recorded 285 observations of perched birds during the surveys (Table 11). Across all species, 69% of these observations involved trees as the perch substrate, with an additional 4% of the observations involving other vegetation or rock substrates. We recorded 13 species perching on trees, comprising two species of raptors, ravens, three species of icterids and starlings, and seven species of other smaller birds. American kestrels, common ravens, and Say's phoebes used the broadest ranges of both natural and artificial perch substrates. In contrast, rock wrens and horned larks perched exclusively on rock substrates (along with one kestrel, which we suspected was nesting in a rocky outcrop in the BSA), and European starlings, lark sparrows, Lewis's woodpeckers, and white-crowned sparrows were recorded perching only in trees. Six percent of the observations involved birds perching on the existing transmission towers or lines, primarily

Table 10. Total Counts for Species Groups by Season and Habitat

Season	Habitat	Raptors	Shorebirds	Corvids	Icterids	Other Birds	All Species
Spring	Grassland	53	18	133	351	258	813
	Serpentine bunchgrass grassland					14	14
	Grassland riparian		1				1
	Perennial marsh				1		1
	Willow-cottonwood riparian woodland	3		2	23	1	29
	Riparian oak woodland	2		6	12	16	36
	Oak woodland	2		6	1	8	17
	Gray pine woodland					5	5
	Juniper woodland			1		8	9
	Ornamental woodland	1			2	19	22
	Farm/ranch facility			1			1
	Spring total	**61**	**19**	**149**	**390**	**329**	**948**
Summer	Grassland	37	1	35	91	271	435
	Serpentine bunchgrass grassland					5	5
	Willow-cottonwood riparian woodland	2			5	1	8
	Oak woodland	3		1	13	11	28
	Gray pine woodland					2	2
	Juniper woodland			1		16	17
	Ornamental woodland	2				10	12
	Summer total	**44**	**1**	**37**	**109**	**316**	**507**
Fall	Grassland	20	1	63	19	591	694
	Serpentine bunchgrass grassland					9	9
	Grassland riparian	2			23	52	77
	Willow-cottonwood riparian woodland	2					2
	Riparian oak woodland	1		1	1	12	15
	Oak woodland			2		14	16
	Juniper woodland					7	7
	Ornamental woodland	5		3		4	12
	Interior Coast Range goldenbush scrub				1		1
	Fall total	**30**	**1**	**69**	**44**	**689**	**833**
Winter	Grassland	53	12	98	152	1085	1400
	Serpentine bunchgrass grassland					8	8
	Grassland riparian				109	142	251
	Willow-cottonwood riparian woodland	1				1	2
	Riparian oak woodland	1			11	4	16
	Oak woodland	3		2	1	40	46
	Gray pine woodland			3			3
	Juniper woodland			2		18	20
	Ornamental woodland	4		1	7	15	27
	Winter total	**62**	**12**	**106**	**280**	**1313**	**1773**
Total		**197**	**33**	**361**	**823**	**2647**	**4061**

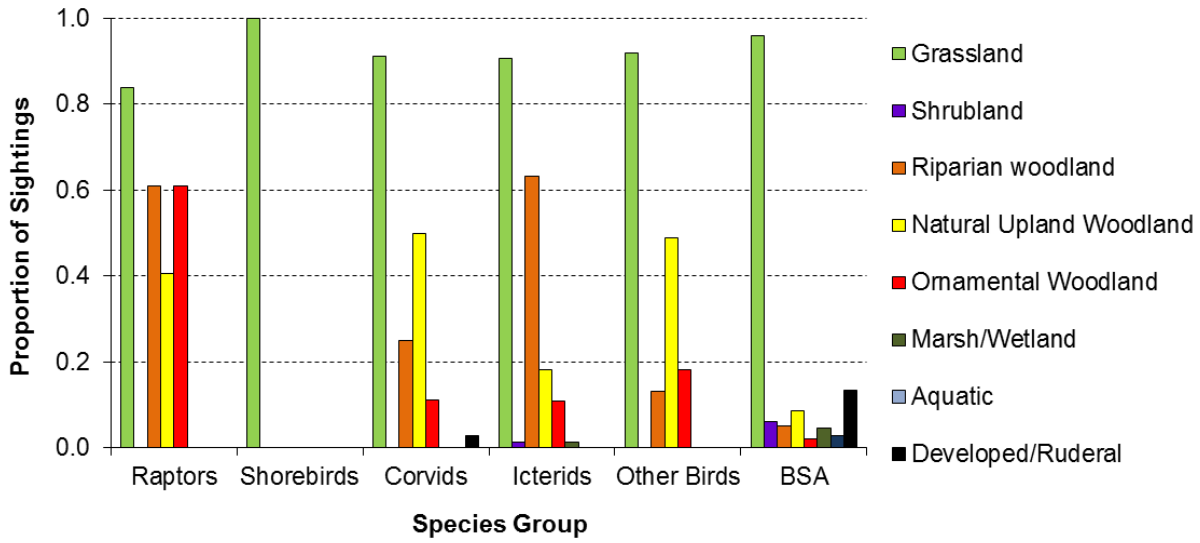

Figure 10. Proportions of Sightings for Species Groups by Habitat Type, in Relation to the Proportional Representation of Habitats in the Biological Study Area (BSA)

red-tailed hawks (26% of the species-specific observations), plus two ravens and a kestrel. Both red-tailed hawks and common ravens nested on the existing transmission line during the survey period.

Perching on other artificial substrates composed the remaining 21% of the relevant observations: fences (9.5%), windmills (6%), water trough (2.5%), other structure (2.5%), and one observation (<1%) of a raven perched on a ranch building. In terms of diversity of species use, fences were the second most popular perch substrate after trees, used by American kestrels, ferruginous hawks, ravens, western meadowlarks, loggerhead shrikes, and especially Brewer's blackbirds and western kingbirds. Windmills (mostly nonfunctional) were used primarily by red-tailed hawks, which nested successfully on one such structure in the BUC Site 3 survey area in 2013.

3.5 Observations of Predator–prey Interactions

Although we recorded many observations of raptors that appeared to be foraging, throughout the surveys we recorded no definitive prey captures, other than kestrels taking insects, and only one observation of a raptor with prey (a red-tailed hawk defending its prey, most likely a ground squirrel or rodent, from a raven).

Table 11. Observations of Perched Birds in Relation to Different Substrate Types

		Perch Substrate										
Group	**Species**	**Tree**	**Other Vegetation**	**Rock**	**Transmission Tower**	**Powerline**	**Building**	**Fence**	**Other Structure**	**Water Trough**	**Windmill**	**Total**
Raptors	American kestrel	3		1		1		2			1	8
	Ferruginous hawk							1			1	2
	Red-tailed hawk	32			16				1		13	62
	All raptors	**35**		**1**	**16**	**1**		**3**	**1**		**15**	**72**
Corvids	Common raven	13			2		1	1	5		1	23
	Yellow-billed magpie								1			1
	All corvids	**13**			**2**		**1**	**1**	**6**		**1**	**24**
Icterids	Brewer's blackbird	26						11		6		43
	European starling	8										8
	Western meadowlark	35						1				36
	All icterids	**69**						**12**		**6**		**87**
Other	House finch	40										40
small	Horned lark			3								3
birds	Lark sparrow	3										3
	Lewis's woodpecker	6										6
	Loggerhead shrike	6						1				7
	Rock wren			4								4
	Say's phoebe	1	2					2		1	1	7
	White-crowned sparrow	12										12
	Western kingbird	12						8				20
	All other small birds	**80**	**2**	**7**				**11**		**1**	**1**	**102**
All species		**197**	**2**	**8**	**18**	**1**	**1**	**27**	**7**	**7**	**17**	**285**

Section 4.0 Discussion

4.1 Species Composition

Although populations were probably somewhat depauperate because of the drought, the observed species constituted a diurnal assemblage typical of the open grassland, oak savanna woodland, and riparian habitats of the inner Coast Ranges of central California, with species representation varying by season. Most species, including all of the special-status species, had been observed previously in the Project area during the preliminary surveys and reconnaissance work conducted since November 2011 (HTH 2013a). Species notably absent from the survey counts included waterfowl and most other aquatic-oriented species. These species generally are not expected in upland grassland habitats, but are expected to be more prevalent in the area during years when drought conditions do not prevail, including in the seasonal wetland habitats identified on the Project site and along the riparian corridors that transect the area.

The overall seasonal patterns, much of the species composition, and the activity rates were similar to those documented over a two-year period (fall 2011 to fall 2013, and ongoing) at the California Valley Solar Ranch (CVSR) on the open grassland habitats of the Carrizo Plain, approximately 64 kilometers (40 miles) to the south (HTH 2014a). However, the Project site features a considerably greater abundance of woodland habitat than is found at CVSR, and the observed species composition therefore includes several additional species more characteristic of such habitats; e.g., Bullock's oriole, ash-throated flycatcher, Lewis's woodpecker, Nuttall's woodpecker, and yellow-billed magpie. In addition, the density and relative proximity of tree-nesting raptors such as golden eagles and red-tailed hawks is greater in this Project area. For most of these additional species, however, development of this Project is not expected to pose a substantial threat, because woodland habitat will not be directly affected.

The occurrence of special-status species in the Project vicinity has been limited, with the exception of breeding golden eagles (State fully protected), which are relatively abundant in the Project area (HTH 2013b). Besides those species recorded during the BUC surveys and discussed above, since HTH began survey and assessment work in the Project area in November 2011, our biologists have confirmed only two other special-status bird species in the BSA (Appendix B). During March 2013, as we were scouting for BUC survey points, we documented small numbers of tricolored blackbirds (CSSC) in two areas on the Project site. We opportunistically sighted this species again in March 2014, foraging in a mixed-species flock of blackbirds in grassland habitat. Tricolored blackbirds are an expected winter resident and transient, and are known to breed in some areas of Cholame Valley; however, the availability of potentially suitable breeding habitat is limited in the immediate Project vicinity (HTH 2013a). In November 2012 and April 2013, HTH biologists opportunistically recorded sightings of individual short-eared owls (CSSC) in the BUC Site 1 and 6 survey areas. Since then, no short- eared owls have been observed incidentally or during the BUC surveys.

Previous surveys for burrowing mammals revealed evidence and sightings of burrowing owls (CSSC) during winter (HTH 2013a). This species appeared to be much scarcer throughout the remainder of the survey period. One owl was detected during a winter BUC survey (BUC Site 2). The presence of a few owls was confirmed into at least early summer in two locations in the BSA in 2013, and in winter 2014. Sightings occurred near the Turkey Flats Road entrance to the Project site and along the southwest margin of the BUC Site 2 survey area. Whether or not these owls nested in 2013 is unknown. The severe drought conditions may have affected the wintering and nesting patterns of burrowing owls in the Project area during the survey year.

Although we observed no bald eagles (State-listed as endangered) during the BUC surveys, a pair nested 6 kilometers (9 miles) west of the BSA (HTH 2013b). Most likely, one of these adults was sighted in February, perched near the margin of the BSA in the riparian corridor that runs along the southeastern edge of BUC Site 7. In addition, while conducting ground surveys for nesting raptors, we recorded a subadult bald eagle apparently foraging over the foothills just east of the BSA. Otherwise, observed bald eagle activity (two pairs of adults and several subadults) has been confined to elsewhere in central and northern Cholame Valley, away from the Project site.

Other special-status species with the potential to occur on the Project site, but which HTH biologists have not recorded there, include California condor (*Gymnogyps californianus*; federally and State-listed as endangered), white-tailed kite (*Elanus leucurus*; State fully protected), American peregrine falcon (*Falco peregrinus anatum*; State fully protected; recorded during aerial surveys in the mountains east of the Project site; HTH 2013b), long-eared owl (*Asio otus*; CSSC), mountain plover (*Charadrius montanus*; CSSC), lesser sandhill crane (*Grus canadensis canadensis*; CSSC), and grasshopper sparrow (*Ammodramus savannarum*; CSSC).

- USFWS tracking revealed the occurrence of a condor in the Project area in 2003, but more recent tracking has shown only limited activity in the southern Diablo Range (HTH 2013a), and HTH aerial survey work revealed no suitable roosting/nesting habitat for this species, except along the eastern flanks of the Diablo Range (HTH 2013b).

- Drought conditions and a lack of necessary grassland cover may have precluded grasshopper sparrows from nesting in the area in 2013.

- Mountain plovers would occur only in winter; we did not observe them opportunistically or during the standard surveys.

- Sandhill cranes are generally rare in Monterey County and are likely to be seen only as occasional transients, and they are most likely to occur in either harvested grain fields in the Cholame Valley or in wetland areas during more mesic periods.

- Ground-based raptor nest surveys around the Project site revealed no nesting long-eared owls in 2013 (HTH 2013b), but there is potentially suitable nesting habitat in the Project vicinity, and the species may occur in the area during more mesic periods.

- Like long-eared owls, white-tailed kites could nest in the area; however, the complete lack of sightings to date suggests that this species most likely is not a common breeder in the Project vicinity.

- During aerial surveys (HTH 2013b), we spotted a probable peregrine falcon on the ridgeline east of the Project site, but the closest suitable nesting habitat for this species is on the east side of the Diablo Range; therefore, it is unlikely that this species will occur on the Project site except as an occasional transient and possible winter visitor.

4.2 Habitat Use in Relation to Proposed Development Areas and Project Infrastructure

The surveys conducted to date confirmed broad use, by a variety of species, of the grassland habitats proposed for array installation, but also emphasized the importance of woodland habitats in the general area, especially for raptors, ravens, Brewer's blackbirds, woodpeckers, and other birds that nest and roost in such habitats. More specifically, the survey areas that supported the highest species diversity and general abundances of birds tended to be those that contained mixes of grassland, woodland, and riparian habitats. If drought conditions had not prevailed throughout the survey period, the use of seasonal wetland and riparian habitats likely would have been greater. Moreover, the drought and general lack of grassland growth may have precluded sightings of one special-status species that we expected to observe in the area, but did not: grasshopper sparrow (CSSC). Similarly, although HTH biologists opportunistically recorded two observations of short-eared owls (CSSC) during the survey period, fairly abundant sign and sightings of burrowing owls (CSSC) in winter and early spring, and a few observations of northern harriers (CSSC) during and outside of the BUC surveys, each of these species might have been more prevalent in the area given more mesic conditions and healthier grassland habitat. Otherwise, based on these surveys, the species most likely to have their habitat altered by installation of the solar arrays in grassland habitat are horned larks, western meadowlarks, Savannah sparrows, and long-billed curlews, but each of these species is relatively common and abundant and unlikely to be substantially influenced by the habitat modification resulting from the Project.

The survey data also confirmed golden eagle activity on and over several areas proposed for installation of solar arrays, but within the BUC survey plots we observed the greatest flight activity in the area proposed for the new Project transmission line. Other eagle flight activity data (recorded outside the BUC surveys during other ground-survey and nest-survey work) confirmed additional activity around the proposed Project site and in neighboring areas. Because the new line will be designed to standards of the Avian Power Line Interaction Committee (APLIC) to reduce risk of electrocution (APLIC 2006) and collision (ALIC 2012), the towers associated with the new transmission line may be an asset for eagles by providing useful hunting

perches. The data on perch use and the occurrence of active nests on the existing transmission line suggest that red-tailed hawks and ravens, as well as American kestrels, also will use the new transmission line. For example, installation of a new generation-tie line at the CVSR facility resulted in increased red-tailed hawk and kestrel activity at that site (HTH 2104c).

Section 5.0 Literature Cited

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Appendix A. Surveys Conducted by Date, Period, and Site

		Site								
Date	**Period**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
26-Mar-13	AM					1	1	1	1	4
	PM	1	1	1	1					4
27-Mar-13	AM	1	1	1	1					4
	PM					1	1	1	1	4
12-Apr-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
23-Apr-13	AM					1	1	1	1	4
	PM	1	1	1	1					4
7-May-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
23-May-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
6-Jun-13	AM	1		1		1		1		4
	PM		1		1		1		1	4
19-Jun-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
8-Jul-13	AM	1		1		1		1		4
	PM		1		1		1		1	4
18-Jul-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
7-Aug-13	AM	1		1		1		1		4
	PM		1		1		1		1	4
22-Aug-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
5-Sep-13	AM	1		1		1		1		4
	PM		1		1		1		1	4
19-Sep-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
3-Oct-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
17-Oct-13	AM	1		1		1		1		4
	PM		1		1		1		1	4
7-Nov-13	AM	1		1		1		1		4
	PM		1		1		1		1	4
19-Nov-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
5-Dec-13	AM	1		1		1		1		4

		Site								
Date	**Period**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
	PM		1		1		1		1	4
18-Dec-13	AM		1		1		1		1	4
	PM	1		1		1		1		4
9-Jan-14	AM		1		1		1		1	4
	PM	1		1		1		1		4
23-Jan-14	AM	1		1		1		1		4
	PM		1		1		1		1	4
5-Feb-14	AM	1		1		1		1		4
	PM		1		1		1		1	4
25-Feb-14	AM		1		1		1		1	4
	PM	1		1		1		1		4
7-Mar-14	AM	1		1		1		1		4
	PM		1		1		1		1	4
Total		**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**200**

[1] See Figure 2 for site locations.

Appendix B. Bird Species Observed on or in the Immediate Vicinity of the Project Site by HTH Biologists since November 2011

Common Name	Scientific Name	Status[1]
American avocet	*Recurvirostra americana*	
American coot	*Fulica americana*	-
American crow	*Corvus brachyrhynchos*	-
American goldfinch	*Spinus tristis*	-
American kestrel	*Falco sparverius*	-
American pipit	*Anthus rubescens*	-
Ash-throated flycatcher	*Myiarchus cinerascens*	-
Bald eagle	*Haliaeetus leucocephalus*	SE, SFP
Barn owl	*Tyto alba*	
Bewick's wren	*Thryomanes bewickii*	-
Black phoebe	*Sayornis nigricans*	-
Brewer's blackbird	*Euphagus cyanocephalus*	-
Bufflehead	*Bucephala albeola*	-
Bullock's oriole	*Icterus bullockii*	-
Burrowing owl	*Athene cunicularia*	CSSC
California quail	*Callipepla californica*	-
California towhee	*Melozone crissalis*	-
Canvasback	*Aythya valisineria*	
Cliff swallow	*Petrochelidon pyrrhonota*	-
Common raven	*Corvus corax*	-
Common merganser	*Mergus merganser*	
Common yellowthroat	*Geothlypis trichas*	-
Cooper's hawk	*Accipiter cooperi*	-
Dark-eyed junco	*Junco hyemalis*	-
European starling	*Sturnus vulgaris*	-
Ferruginous hawk	*Buteo regalis*	-
Golden eagle	*Aquila chrysaetos*	SFP
Great egret	*Ardea alba*	-
Great horned owl	*Bubo virginianus*	-
Greater roadrunner	*Geococcyx californianus*	-
Greater yellowlegs	*Tringa melanoleuca*	
Green-winged teal	*Anas crecca*	-
Horned lark	*Eremophila alpestris*	-
House finch	*Carpodacus mexicanus*	-

Common Name	Scientific Name	Status[1]
Killdeer	*Charadrius vociferus*	-
Lark sparrow	*Chondestes grammacus*	-
Lawrence's goldfinch	*Spinus lawrencei*	-
Lewis's woodpecker	*Melanerpes lewis*	-
Loggerhead shrike	*Lanius ludovicianus*	CSSC
Long-billed curlew	*Numenius americanus*	-
Mallard	*Anas platyrhynchos*	-
Mountain bluebird	*Sialia currucoides*	-
Mourning dove	*Zenaida macroura*	-
Northern flicker	*Colaptes auratus*	-
Northern harrier	*Circus cyaneus*	CSSC
Northern mockingbird	*Mimus polyglottos*	-
Nuttall's woodpecker	*Picoides nuttallii*	-
Oak titmouse	*Baeolophus inornatus*	-
Pacific-slope flycatcher	*Empidonax difficilis*	-
Prairie falcon	*Falco mexicanus*	-
Red-breasted sapsucker	*Sphyrapicus ruber*	
Red-tailed hawk	*Buteo jamaicensis*	-
Red-winged blackbird	*Agelaius phoeniceus*	-
Ring-necked duck	*Aythya collaris*	-
Rock dove	*Columba livia*	-
Rock wren	*Salpinctes obsoletus*	-
Rough-legged hawk	*Buteo lagopus*	
Ruby-crowned kinglet	*Regulus calendula*	-
Ruddy duck	*Oxyura jamaicensis*	-
Sage thrasher	*Oreoscoptes montanus*	
Savannah sparrow	*Passerculus sandwichensis*	-
Say's phoebe	*Sayornis saya*	-
Short-eared owl	*Asio flammeus*	CSSC
Song sparrow	*Melospiza melodia*	-
Swainson's hawk	*Buteo swainsoni*	ST
Tree swallow	*Tachycineta bicolor*	-
Tricolored blackbird	*Agelaius tricolor*	CSSC
Western bluebird	*Sialia mexicana*	-
Western kingbird	*Tyrannus verticalis*	-
Western meadowlark	*Sturnella neglecta*	-
Western scrub-jay	*Aphelocoma californica*	-
Western tanager	*Piranga ludoviciana*	-
Whimbrel	*Numenius phaeopus*	
White-breasted nuthatch	*Sitta carolinensis*	-
White-crowned sparrow	*Zonotrichia leucophrys*	-

Common Name	Scientific Name	Status[1]
Wilson's snipe	*Gallinago gallinago*	-
Wilson's warbler	*Cardellina pusilla*	-
Yellow-billed magpie	*Pica nuttalli*	-
Yellow-rumped warbler	*Setophaga coronata*	-

[1] CSSC = California Species of Special Concern; SE = State-listed as endangered; SFP = State fully protected; ST = State-listed as threatened.

Appendix C Average Sightings per Hour by Species and Count Site for Each Season

Table C-1. Average Sightings per Hour by Species and Count Site in Spring and Summer

		Spring									Summer								
Group	**Species**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**All sites**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**All Sites**
Raptor	American kestrel	0.0[1]	0.0	0.4	0.0	0.4	0.4	1.3	0.0	0.3	2.0	0.0	0.5	2.5	0.0	0.0	1.5	1.0	0.9
	Burrowing owl	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ferruginous hawk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Golden eagle	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.2	0.5	0.0	0.5	0.0	0.5	0.0	0.5	0.0	0.3
	Northern harrier	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Prairie falcon	0.4	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Red-tailed hawk	1.7	2.1	6.4	3.0	0.0	3.9	2.6	0.0	2.5	1.5	0.5	2.0	2.5	0.0	2.0	0.5	0.0	1.1
	Swainson's hawk	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Turkey vulture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.5	0.0	0.0	1.0	0.5	0.4
	All raptors	**2.1[2]**	**2.6**	**6.9**	**3.9**	**2.1**	**4.3**	**3.9**	**0.4**	**3.3**	**4.0**	**1.5**	**3.5**	**5.5**	**0.5**	**2.0**	**3.5**	**1.5**	**2.8**
Corvid	American crow	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Common raven	5.6	1.7	14.6	5.1	5.6	9.9	11.6	7.7	7.7	1.0	2.0	2.0	0.0	0.0	4.0	3.0	6.0	2.3
	Western scrub-jay	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Yellow-billed magpie	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.1
	All corvids	**5.6**	**1.7**	**14.6**	**5.1**	**5.6**	**9.9**	**13.7**	**7.7**	**8.0**	**1.0**	**2.0**	**2.0**	**0.0**	**0.0**	**4.5**	**3.0**	**6.0**	**2.3**
Shorebird	Killdeer	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.1
	Long-billed curlew	0.0	0.9	0.0	0.0	0.0	0.0	6.4	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	All shorebirds	**0.0**	**1.3**	**0.4**	**0.0**	**0.0**	**0.0**	**6.4**	**0.0**	**1.0**	**0.0**	**0.0**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**
Icterid	Brewer's blackbird	28.7	0.0	43.3	9.9	0.0	0.0	9.4	0.0	11.4	4.5	0.0	3.0	38.5	0.0	0.5	0.0	0.0	5.8
	Bullock's oriole	0.9	0.0	0.4	0.0	0.0	0.0	0.9	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	European starling	1.3	0.0	0.0	1.3	0.0	0.0	5.6	0.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	Red-winged blackbird	2.1	0.4	9.9	0.9	0.0	0.4	0.4	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Western meadowlark	5.6	4.3	6.4	6.4	5.1	5.1	6.4	12.0	6.4	1.0	0.5	0.5	0.0	1.0	0.5	1.0	1.5	0.8
	All icterids	**38.6**	**4.7**	**60.0**	**18.4**	**5.1**	**5.6**	**22.7**	**12.0**	**20.9**	**7.5**	**0.5**	**3.5**	**38.5**	**1.0**	**1.0**	**1.0**	**1.5**	**6.8**
Other	American goldfinch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
birds	Ash-throated flycatcher	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.5	0.0	0.0	1.5	0.0	2.5	0.0	0.0	0.6
	Barn swallow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	California towhee	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.1

		Spring									Summer								
Group	**Species**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**All sites**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**All Sites**
	California quail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.3
	Cliff swallow	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Greater roadrunner	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.1
	House finch	0.9	0.0	0.0	18.4	0.0	0.0	0.4	0.0	2.5	1.0	1.0	3.0	4.0	0.0	0.0	0.5	1.0	1.3
	Horned lark	2.6	12.4	20.1	3.4	3.9	8.6	4.7	10.7	8.3	4.0	9.0	18.0	15.0	8.0	16.0	2.0	23.5	11.9
	Lawrence's goldfinch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Lark sparrow	0.0	0.4	0.0	0.4	0.0	3.4	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.1
	Lewis's woodpecker	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.5	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.1
	Loggerhead shrike	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	Mourning dove	2.6	0.0	0.0	0.9	0.0	0.9	5.1	2.1	1.4	12.0	0.5	6.5	2.0	0.5	2.5	0.5	1.0	3.2
	Northern flicker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Northern mockingbird	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Nuttall's woodpecker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Oak titmouse	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ruby-crowned kinglet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Rock pigeon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Rock wren	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.3
	Say's phoebe	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Savannah sparrow	0.9	0.4	0.9	2.6	0.4	0.4	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	White-breasted nuthatch	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	White-crowned sparrow	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Western kingbird	1.7	0.0	0.4	7.3	0.4	0.4	3.9	0.0	1.8	2.5	0.0	0.5	4.5	0.5	2.0	0.0	1.0	1.4
	All other birds	**15.4**	**13.3**	**21.4**	**33.0**	**4.7**	**21.0**	**18.9**	**13.3**	**17.6**	**23.0**	**10.5**	**28.0**	**28.5**	**9.0**	**29.5**	**3.0**	**26.5**	**19.8**
All species		**61.7[3]**	**23.6**	**103.3**	**60.4**	**17.6**	**40.7**	**65.6**	**33.4**	**50.8**	**35.5**	**14.5**	**37.5**	**72.5**	**10.5**	**37.0**	**10.5**	**35.5**	**31.7**

[1] Values are averages of species-specific sighting rates (count per hour) for all individual, site-specific, AM and PM surveys.

[2] Values are averages of group-specific sighting rates (count per hour) for all individual, site-specific, AM and PM surveys.

[3] Values are averages of combined-species sighting rates (count per hour) for all individual, site-specific, AM and PM surveys.

Table C-2. Average Sightings per Hour by Species and Count Site in Fall and Winter

		Fall									Winter									
Group	**Species**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**All sites**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**All Sites**	**All Combined**
Raptor	American kestrel	1.5[1]	0.0	0.0	0.0	0.0	0.0	0.5	1.0	0.38	0.5	1.0	0.5	0.0	1.5	2.0	0.5	0.0	0.75	0.59
	Burrowing owl	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.02
	Ferruginous hawk	1.5	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.38	0.0	0.0	1.5	0.5	0.0	0.5	0.0	0.0	0.31	0.17
	Golden eagle	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.13	0.0	0.0	1.0	0.5	0.5	0.5	0.0	0.5	0.38	0.24
	Northern harrier	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.03
	Prairie falcon	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.06	0.08
	Red-tailed hawk	2.0	0.0	2.0	0.5	0.0	1.5	0.5	0.0	0.81	4.5	2.0	3.0	3.5	0.0	4.0	0.5	0.5	2.25	1.70
	Swainson's hawk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
	Turkey vulture	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.06	0.14
	All raptors	**5.5[2]**	**1.0**	**3.0**	**2.0**	**0.0**	**1.5**	**1.0**	**1.0**	**1.9**	**5.0**	**3.5**	**6.0**	**4.5**	**2.0**	**7.0**	**1.5**	**1.5**	**3.9**	**3.0**
Corvid	American crow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.56	0.18
	Common raven	6.0	1.0	1.0	2.0	3.5	9.5	9.5	0.5	4.13	5.0	0.5	6.0	4.0	4.5	12.0	5.0	8.5	5.69	5.06
	Western scrub-jay	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.13	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.06	0.08
	Yellow-billed magpie	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	2.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.31	0.11
	All corvids	**6.5**	**1.0**	**1.0**	**2.0**	**3.5**	**9.5**	**10.5**	**0.5**	**4.3**	**7.0**	**0.5**	**6.0**	**8.5**	**4.5**	**12.0**	**6.0**	**8.5**	**6.6**	**5.4**
Shorebird	Killdeer	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.06	0.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.19	0.11
	Long-billed curlew	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.5	0.5	3.5	0.0	0.0	0.0	0.0	0.0	0.56	0.39
	All shorebirds	**0.0**	**0.0**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**1.0**	**0.5**	**3.5**	**1.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.8**	**0.5**
Icterid	Brewer's blackbird	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.19	1.5	0.0	0.0	5.0	0.0	0.0	4.5	0.0	1.38	4.97
	Bullock's oriole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.08
	European starling	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.06	1.5	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.38	0.45
	Red-winged blackbird	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.53
	Western meadowlark	0.5	6.5	1.5	3.5	0.0	1.0	4.0	3.0	2.50	2.5	14.5	3.5	91.5	1.5	0.0	9.5	2.0	15.63	6.33
	All icterids	**0.5**	**6.5**	**1.5**	**5.0**	**0.0**	**1.0**	**4.5**	**3.0**	**2.8**	**6.5**	**14.5**	**3.5**	**96.5**	**1.5**	**0.0**	**15.5**	**2.0**	**17.5**	**12.3**
Other	American goldfinch	0.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.19	0.0	0.0	0.5	0.0	0.0	3.0	0.0	0.0	0.44	0.15
birds	Ash-throated flycatcher	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.15
	Barn swallow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
	California towhee	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
	California quail	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.09
	Cliff swallow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.11

		Fall									Winter									
Group	Species	1	2	3	4	5	6	7	8	All sites	1	2	3	4	5	6	7	8	All Sites	All Combined
	Greater roadrunner	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.06	0.05
	House finch	0.0	5.0	4.5	0.5	0.0	9.0	0.0	0.0	2.38	6.5	25.0	1.5	34.5	0.0	0.0	1.0	0.0	8.56	3.63
	Horned lark	10.0	16.5	12.5	45.0	97.0	5.0	13.5	75.5	34.38	7.0	143.0	9.0	136.5	20.0	4.0	41.0	173.0	66.69	29.45
	Lawrence's goldfinch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
	Lark sparrow	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.23
	Lewis's woodpecker	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.63	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.25	0.38
	Loggerhead shrike	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.19	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.25	0.23
	Mourning dove	0.0	2.0	4.0	0.0	0.0	0.0	0.0	0.0	0.75	0.0	1.0	0.5	0.0	0.0	0.5	0.0	0.0	0.25	1.41
	Northern flicker	0.5	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.19	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.06
	Northern mockingbird	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.08
	Nuttall's woodpecker	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
	Oak titmouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
	Ruby-crowned kinglet	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
	Rock pigeon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.03
	Rock wren	0.0	0.0	0.0	0.5	0.0	3.0	0.0	0.5	0.50	0.0	0.0	0.0	0.5	0.0	2.0	0.0	1.5	0.50	0.54
	Say's phoebe	0.5	0.0	2.5	1.0	0.0	0.5	1.0	0.0	0.69	1.0	0.0	0.5	1.0	1.0	0.5	0.0	0.5	0.56	0.32
	Savannah sparrow	1.5	4.5	2.0	3.5	0.0	1.0	1.5	0.5	1.81	0.5	1.0	3.0	2.5	0.0	3.0	13.0	0.5	2.94	1.34
	White-breasted nuthatch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
	White-crowned sparrow	0.0	0.0	0.0	0.0	0.0	2.0	6.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	9.0	2.0	0.0	1.38	0.59
	Western kingbird	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.83
	All other birds	**14.0**	**29.0**	**26.0**	**50.5**	**97.0**	**23.5**	**28.0**	**76.5**	**43.1**	**18.5**	**170.0**	**15.0**	**175.5**	**21.0**	**22.0**	**59.0**	**175.5**	**82.1**	**39.7**
All species		**26.5[3]**	**37.5**	**32.0**	**59.5**	**100.5**	**35.5**	**44.0**	**81.0**	**52.1**	**38.0**	**189.0**	**34.0**	**286.0**	**29.0**	**41.0**	**82.0**	**187.5**	**110.8**	**60.9**

[1] Values are averages of species-specific sighting rates (count per hour) for all individual, site-specific, AM and PM surveys.

[2] Values are averages of group-specific sighting rates (count per hour) for all individual, site-specific, AM and PM surveys.

[3] Values are averages of combined-species sighting rates (count per hour) for all individual, site-specific, AM and PM surveys.

Appendix E.19

2012 CTS Site Assessment

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

CALIFORNIA TIGER SALAMANDER SITE ASSESSMENT

CALIFORNIA FLATS SOLAR RANCH

Prepared by

H. T. HARVEY & ASSOCIATES

Brian Boroski, Ph.D., Principal-in-Charge
Amy Sparks, J.D., Senior Regulatory Specialist
Jeff Wilkinson, Ph.D., Senior Herpetologist

Prepared for

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31 October 2012 Project Number 3308-01

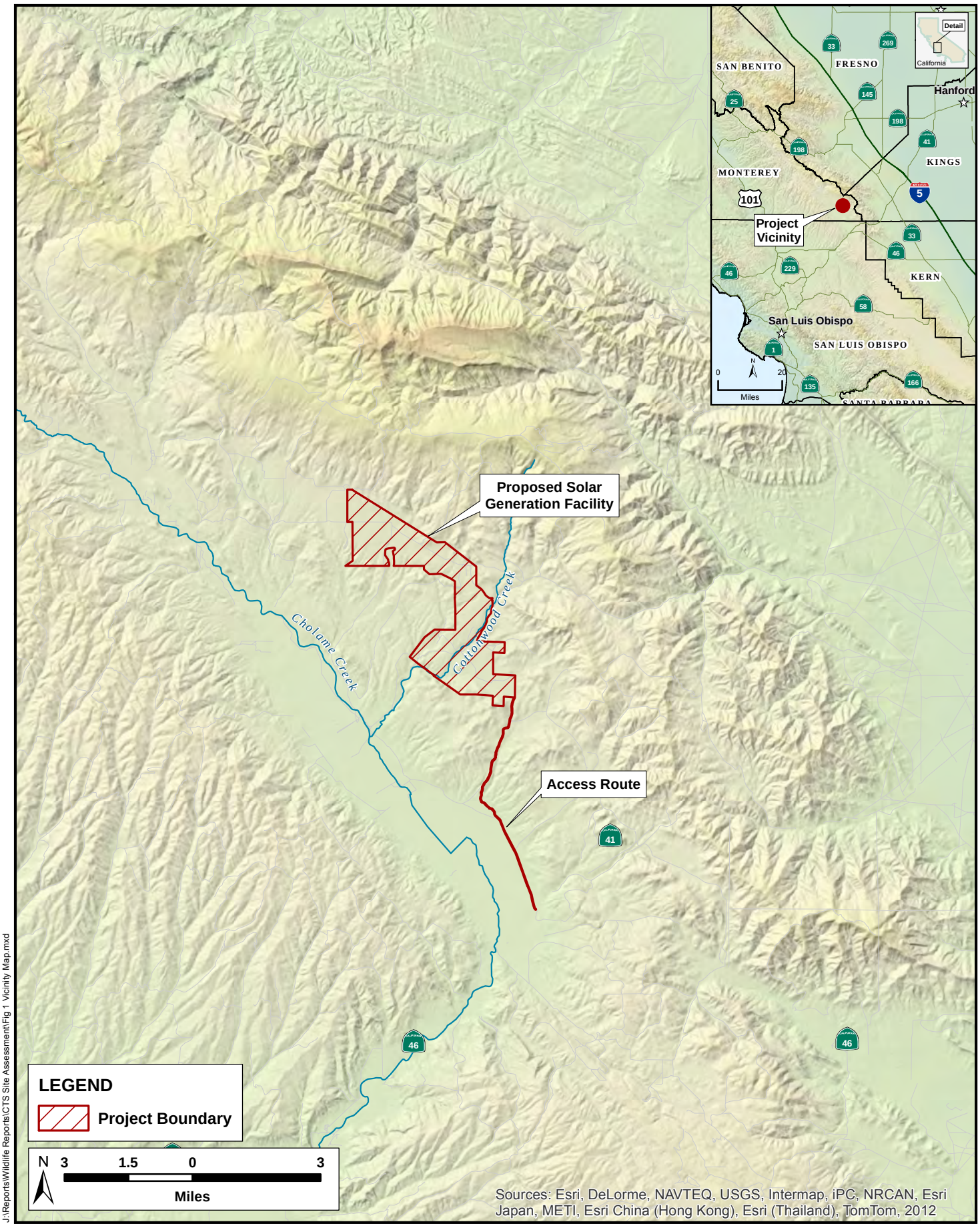
TABLE OF CONTENTS

FIGURES:

INTRODUCTION

In June 2012, H. T. Harvey & Associates prepared a preliminary biotic report for a 2485-acre Project site known as the "California Flats Solar Ranch" (Project) site located in Monterey County, California (Figure 1). This report determined that there was a potential for occurrence of California tiger salamanders (CTS; *Ambystoma californiense*) on the site, as suitable upland habitat and aquatic breeding habitat (2 stock ponds and a vernal pool adjacent to the access route) are present or nearby and occurrence within the region is documented in the California Natural Diversity Data Base (CNDDB; Figure 2). Thus, it was determined that more information was needed to determine presence or absence of the species within the proposed site of the Solar Generation Facility and along the proposed access route to the site.

In accordance with the October 2003 *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* issued by the U.S. Fish and Wildlife Service (USFWS), H. T. Harvey & Associates has prepared this site assessment report documenting conditions on the proposed Solar Generation site and along the proposed access route as they pertain to CTS and the location of these areas relative to known occurrences of CTS. This site assessment report should be used to determine the likelihood that CTS may occur in these areas and if field surveys are appropriate. This assessment report will be provided to the USFWS and the CDFG with a request to conduct surveys to determine presence or a negative finding of CTS within the proposed California Flats Solar Ranch Project site.



J:\Reports\Wildlife Reports\CTS Site Assessment\Fig 1 Vicinity Map.mxd

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Figure 1: Vicinity Map

California Flats Solar Project - CTS Site Assessment (3308-01)

October 2012

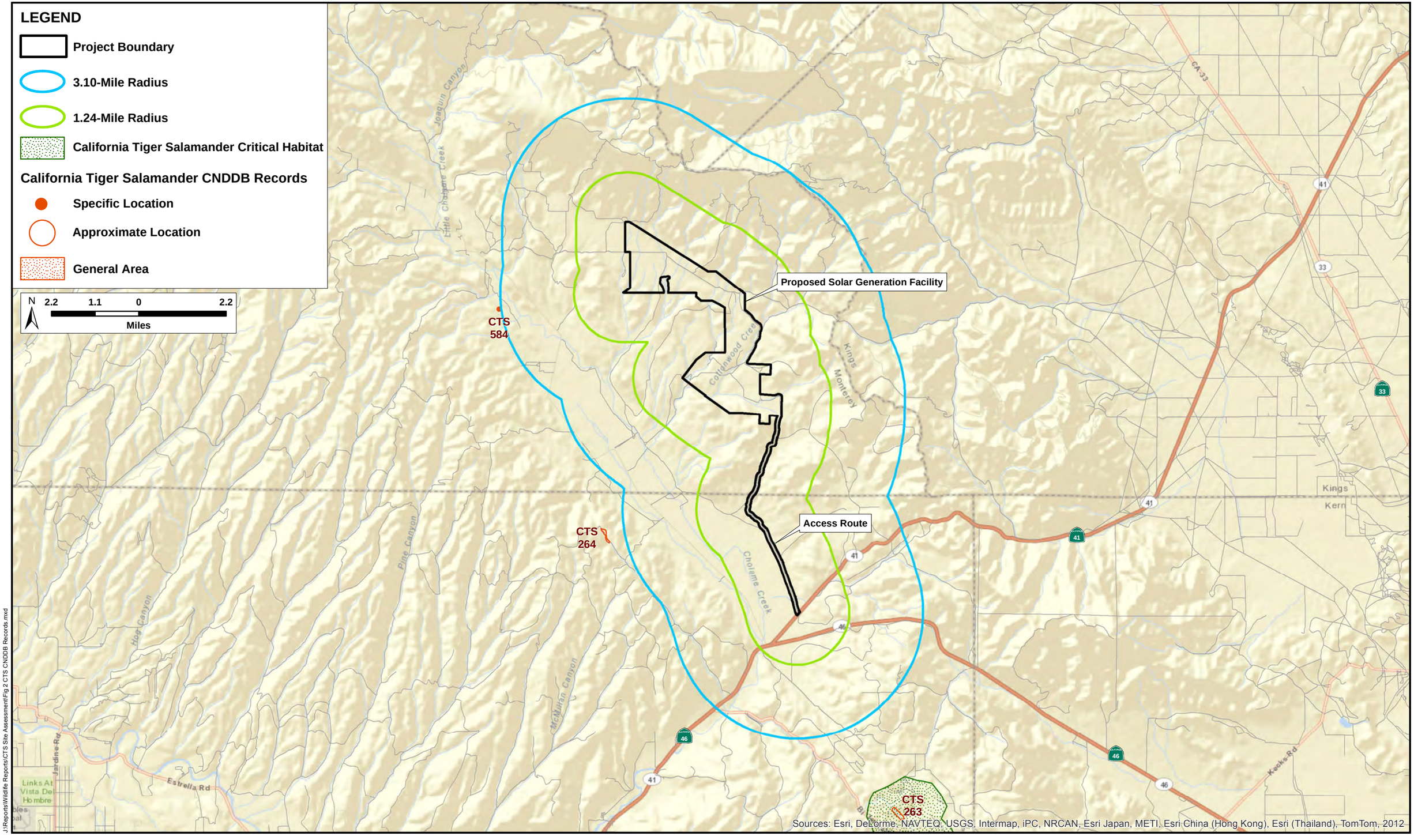

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Figure 2: California Tiger Salamander CNDDB Records

California Flats Solar Project - CTS Site Assessment (3308-01)

October 2012

SITE ASSESSMENT METHODS

Reconnaissance-level surveys of the Project site were conducted by H. T. Harvey & Associates herpetologist Jeff Wilkinson, Ph.D. on 18, 19, and 26 April 2012. The surveys were conducted by visiting all potential wetland features delineated in April 2012 (Figure 3) focusing on assessing the potential for the habitat conditions to support the California tiger salamander. Biotic habitats adjacent to the proposed Solar Generation Facility and access route were also assessed for potential suitability as habitat for this species by viewing these habitats from the Project site during the site visits and reviewing background material prior to and following the fieldwork. Background material reviewed included:

- An aerial photograph of the property;
- A topographic map of the property; and
- CNDDB, Search Results (20 April 2012).

SITE ASSESSMENT RESULTS

1. ARE THE SOLAR GENERATION FACILITY AND ACCESS ROUTE WITHIN THE RANGE OF THE CTS?

The Solar Generation Facility and access route are located in the Cholame Hills, approximately 25 mi northeast of the city of Paso Robles in southeastern Monterey County near the Kings County, San Luis Obispo County, and Fresno County borders, California (Figure 1). The areas are within the current range of the CTS according to the IUCN (http://maps.iucnredlist.org/map.html?id=1098), USFWS (http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D01T) species range maps for this species, and known detections within the region. The Solar Generation Facility and access route are not within designated critical habitat for CTS. The closest designated critical habitat is Unit 6 of the Central Coast Region, approximately 9.5 mi south of the Solar Generation Facility and 4.8 south of the southern extension of the access route, respectively (Figure 2).

2. WHAT ARE THE KNOWN LOCALITIES OF CTS WITHIN THE PROJECT SITE AND WITHIN 3.1 MILES (5.0 KILOMETERS) (KM) OF THE PROJECT BOUNDARIES?

In order to place the Project site in a regional perspective, the CNDDB was consulted to determine the known CTS occurrences within 3.1 mi of the Project site as required by the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander*. According to the CNDDB, there are no known CTS occurrences from the Project areas or within 3.1 mi of these areas. The closest known occurrence of CTS (Occurrence No. 584) is slightly over 3.1 mi west of the boundary of the Solar Generation Facility. A second occurrence (Occurrence No. 264) is approximately 4.4 mi southwest of the southern boundary of the Solar Generation Facility. This same record is approximately 3.6 mi west of the nearest section of the proposed access route (Figure 2). A third CTS occurrence (Occurrence No. 263) is approximately 5.6 mi south of the intersection of the proposed access route with Highway 41.

3. WHAT ARE THE HABITATS WITHIN THE PROJECT SITE AND WITHIN 1.24 MILES (2 KM) OF THE PROJECT BOUNDARIES?

Description of the Habitat within the Solar Generation Facility

Sixteen habitat types were characterized within the Solar Generation Facility site including: California annual grassland (91%), wildflower field (4%), serpentine bunchgrass grassland (<0.5%), valley needlegrass grassland (<0.5%), grassland riparian (1%), interior coast range goldenbush scrub (<0.5%), willow – cottonwood riparian woodland (<0.5%), ornamental non-native woodland (<0.5%), mixed oak woodland (<1%), valley oak riparian woodland (<0.5%), ephemeral stream (<0.5%), intermittent stream (<0.5%), perennial stream (<0.5%), perennial marsh <0.5%), seasonal wetland (<0.5%), and developed/ruderal grasslands (1%). California ground squirrel (*Otospermophilus beecheyi*) burrow complexes are extensive throughout the upland portions of these habitat types.

Standing water within this area consists of brief ponding in ephemeral drainages during precipitation events with the possibility of the water remaining for a short duration (up to 2 - 3 days) after the event. A few depressions in the bed of some ephemeral drainages may support ponding up to 2 weeks or more. In these areas ponding is driven by surface runoff and, in some cases, augmented by seep hydrology. Additionally, plunge pools and areas of scour could potentially pond up to 12 inches of water throughout the rainy season.

Other forms of standing water are wetland areas found in stretches of the intermittent streams, typically fed by seeps found within the banks of these features, or by seasonal groundwater rise in some areas. These features do not pond for a significant time following precipitation events. Plunge pools and in-stream pools occur in the perennial stream habitats. For the majority of the time ponding of water does not occur due to the active flows, although in-drainage pools may reach up to 3 ft deep in some areas (Photos 1 and 2, A and B on Figure 3). Finally, perennial marshes occur south of Turkey Flay Road (C on Figure 3), and on the southern boundary of the Project site (D on Figure 3). Water depth in these features ranges from 2-3 inches in the grazed southeastern marsh to over 12 inches within the fenced southwestern marsh (Photo 3).

Description of the Habitat along the Proposed Access Route

As with the general description of the Solar Generation Site, the habitats along the proposed access route comprise annual grasslands with ephemeral to perennial streams within rolling hills. However, 2 stock ponds were constructed within the stream in Stone Corral Canyon (Ponds 1 and 2 on Figure 4). Both ponds are relatively deep (over 3 ft deep) and Pond 1 in particular possesses extensive emergent vegetation in the shallower portions of the pond (Photo 4), whereas, Pond 2 lacks emergent vegetation (Photo 5). Pond 1 is approximately 1 mi and Pond 2 is approximately 2.1 mi south of the southern boundary of the proposed Solar Generation Facility. In addition to these stock ponds, a vernal pool (Pond 3 on Figure 4) occurs approximately 0.2 mi east of the proposed access route, 0.6 mi north of the intersection of the proposed access route with Highway 41, and 4.2 mi south of the proposed Solar Generation Facility. This pool was dry during the site visits (Photo 6).

Other Potential Aquatic Breeding Sites within 1.24 mi of the Project Boundaries

In addition to the 2 stock ponds and one vernal pool adjacent to the proposed access route, there are 4 potential aquatic breeding sites within 1.24 mi of the proposed Solar Generation Facility (Ponds 4-7 on Figure 4): an in-stream stock pond approximately 1.13 mi west of the southwest corner of the northern boundary of the Solar Generation Facility (Pond 4); a possible pond at the northwest corner of the Solar Generation Facility (Pond 5); a stock pond approximately 0.12 mi north of the northwest corner of the Solar Generation Facility (Pond 6); and a stock pond approximately 1.00 mi north of the northwest corner of the Solar Generation Facility (Pond 7). The 1.24 mi distance is considered the observed mobility of this species according to the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander*.

The possible pond at the northwest corner of the Project boundary was observed from the Project site to be dry during the site visits (Photo 7). The other 3 potential breeding sites (Ponds 4, 6, 7

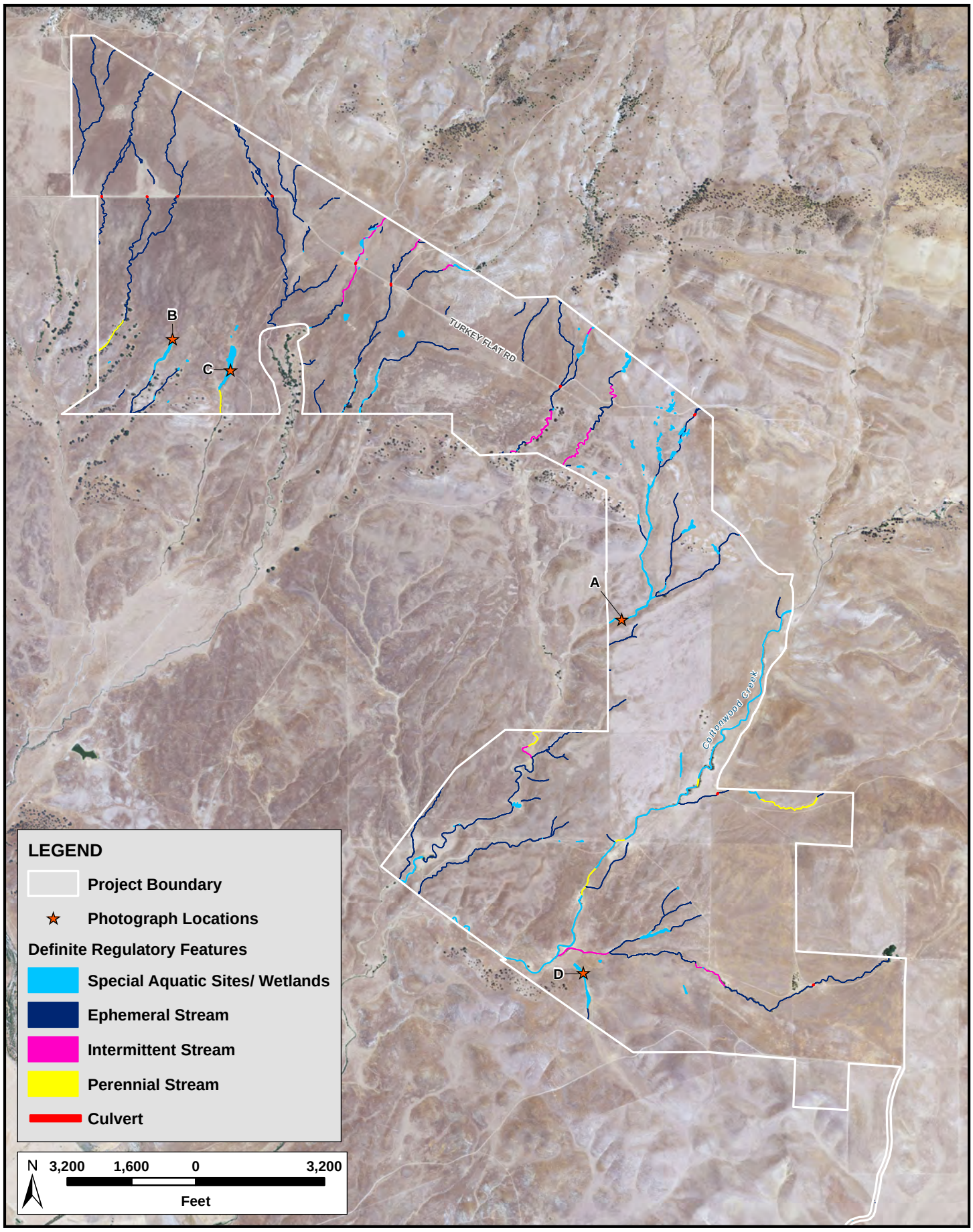
on Figure 4) were not observed during the site visits because they are off-site and permission to visit them was not obtained, so their suitability as CTS breeding habitat were not assessed.

Potential for California Tiger Salamander Occurrence on the Project Site

The upland grassland and oak woodlands on the proposed Solar Generation Facility is considered appropriate dispersal and aestivation habitat with ground squirrel burrow complexes and no barriers to dispersal. However, because of the lack of standing water for 10 weeks or more during years of normal rainfall, which is typically required for successful metamorphosis of larval CTS, the aquatic habitats on the proposed Solar Generation Facility do not appear to be suitable as breeding habitat for CTS. The possible pond at the northwest corner of the proposed Solar Generation Facility may provide breeding habitat for CTS if it contains standing water. However, because this possible pond was dry during the site visits, its suitability as CTS breeding habitat could not be assessed at this time and depends on if and to what extent it contains standing water during a year of normal rainfall.

The upland habitat surrounding the proposed access route is considered appropriate dispersal and aestivation habitat with ground squirrel burrow complexes and no barriers to dispersal. The vernal pool and the 2 stock ponds adjacent to the access route south of the proposed Solar Generation Facility may provide breeding habitat for CTS. Because the vernal pool adjacent to the access route was dry during the site visits, its suitability as CTS breeding habitat could not be assessed at this time and depends on the extent to which it contains standing water during a year of normal rainfall.

Based on the presence of potential aquatic breeding habitat for CTS near the northwest corner of the Solar Generation Facility and adjacent to the proposed access route, surrounded by suitable upland dispersal and aestivation habitat, and no barriers to dispersal, we recommend larval surveys for this species in the aquatic habitats (Ponds 1 through 7 of Figure 4) to better ascertain the likelihood of occurrence of CTS within these aquatic habitats.



J:\Reports\Wildlife Reports\CTS Site Assessment\Fig 3 Wetlands Map of Core CFSR Site.mxd

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Figure 3: Wetlands Map of Core CFSR Site

California Flats Solar Project - CTS Site Assessment (3308-01)

October 2012

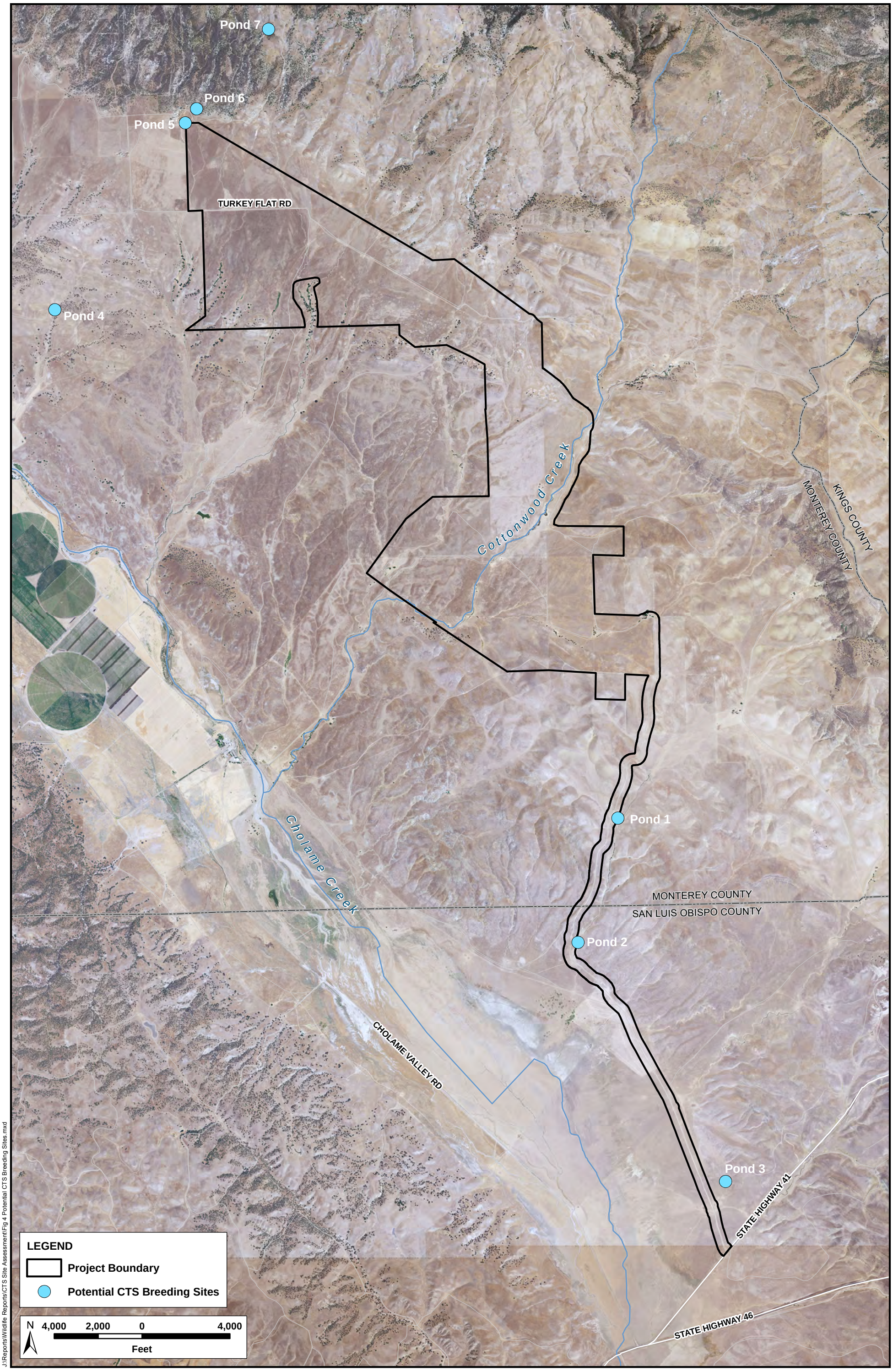

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Figure 4: Potential CTS Breeding Sites

California Flats Solar Project - CTS Site Assessment (3308-01)

October 2012

SITE PHOTOS

Photo 1. In-stream plunge pool.

Photo 2. In-stream plunge pool.

Photo 3. Marsh wetland.

Photo 4. Pond 1 on Figure 4.

Photo 5. Pond 2 on Figure 4.

Photo 6. Vernal pool (Pond 3 on Figure 4).

Photo 7. Possible pond (Pond 5 on Figure 4).

Appendix E.20

2013 Wet Season Branchiopod Survey Report

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

California Flats Solar Project
2012 Wet-season Branchiopod Survey Report

Project # 3308-02

Prepared for:

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Prepared by:

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31 January 2013

Table of Contents

Figures

Tables

Appendices

List of Preparers

Brian Boroski, Ph.D., Principal
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Kelly Hardwicke, Ph.D., Plant Ecologist
Élan Alford, Ph.D., Plant Ecologist

Section 1.0 Executive Summary

Dr. Kelly Hardwicke (Permit No. TE-797267-14.2) of H. T. Harvey & Associates conducted wet-season surveys for vernal pool branchiopods within pools and wetlands occurring in and in the vicinity of proposed impact areas for the California Flats Solar Project (CFSP) Project, a proposed 280-megawatt alternating current (AC) photovoltaic (PV) solar energy power plant located on an approximately 2540-acre (ac) site in southeastern Monterey County, California. This report addresses the results of U.S. Fish and Wildlife Service (USFWS)-approved wet-season surveys conducted from winter 2011 through spring 2012 for branchiopods on the CFSP Biological Study Area (BSA), an approximately 4,504-acre area at the time of these studies that comprises the proposed improvements related to the Project as well as the access road from State Route 41, and lands surrounding the proposed Project area.

Pools on the CFSP Project site were monitored and, where there was sufficient ponding, sampled from November 2011 to May 2012. The site was visited specifically to monitor for ponding of potentially suitable branchiopod habitat, or to wet-sample ponded areas on 20 dates throughout this period. In January 2012, the Project was redesigned and the survey area was changed to reflect the new Project site. The purpose of these surveys was to 1) characterize the vernal pool branchiopod communities within vernal pools on-site and 2) assess the potential presence and distribution of listed vernal pool crustaceans within waterbodies located in impact areas of the CFSP Project site in order to determine the impacts of the proposed CFSP Project prior to construction, as required by the Federal Endangered Species Act of 1973 (as amended). These surveys were authorized under File No. 2008-B-0281 via e-mail communications between Douglass Cooper of the USFWS and Dr. Hardwicke on 17 November 2011 and 23 January 2012. In these communications, it was requested that the entire 4504-ac BSA for the Project be surveyed for branchiopods. Additionally, it was advised by the USFWS on 24 January 2012 that negative survey results may be considered void if rainfall totals were 70% or less of the average rainfall for the area. The 30-year average annual precipitation (1970-2000) for the area has been estimated at 13.42-inches, but the area received only 54% of average precipitation, (7.25-inches) from May 2011-April 2012 (PRISM Climate Group 2012).

All features were assessed for their suitability and ability to support listed branchiopods, particularly vernal pool fairy shrimp (*Branchinecta lynchi*) and longhorn fairy shrimp (*Branchinecta longiantenna*). Wetland habitat was considered potentially suitable if it was observed to pond, or may be able to pond at least 8 consecutive days in years of normal rainfall, supported seasonal rather than perennial ponding, and was not subjected to steady or rapid water currents or scouring seasonal flows such as occurs in most drainages on the site. A wetland delineation team transected the entire site at 50-200 ft transects in January 2012 to determine the locations of all potential seasonal wetlands. These were then inspected by Dr. Hardwicke to determine their potential suitability as listed branchiopod habitat. Seasonal ponding was observed in a small number of features across the site, although seasonal ponding for at least 8 consecutive days was rare in 2012. While additional features than those identified in 2011-2012 may provide suitable habitat with sufficient inundation hydroperiods for branchiopods to develop to reproductive age in more favorable rain years, prior disking of the site has muted

topography, and the grassland soils are relatively free-draining in most areas such that seasonal, rainfall-driven hydrology preferred by vernal pool fairy shrimp and longhorn shrimp, as well as other listed species, appears to be rare and widely scattered at the site. No listed branchiopod species, or large branchiopod species of any kind, were detected during these surveys anywhere within the CFSP BSA.

Section 2.0 Introduction

2.1 Biological Study Area Description

The Biological Study Area (BSA) for the Project at the time of the 2012 wet season surveys[1] was an approximately 4504-acre (ac) study area located in an unincorporated area of southeastern Monterey County and northeastern San Luis Obispo County, California, near the Kings County and Fresno County borders (Figure 1). The BSA is located along the eastern rim of the Cholame Valley and occurs on 3 U.S. Geological Survey (USGS) 7.5-minute quadrangle maps: The Dark Hole, Cholame Valley, and Cholame (Figure 2). Cottonwood Creek crosses through the Project Site and the San Andreas Rift Zone trends northwest-southeast, south of the BSA (Figure 2). Elevations range from 1,180 feet National Geodetic Vertical Datum (NGVD), at the southern end of the access road where it intersects with Hwy 41, to approximately 1,860 feet NGVD, along the northwest edge of the BSA.

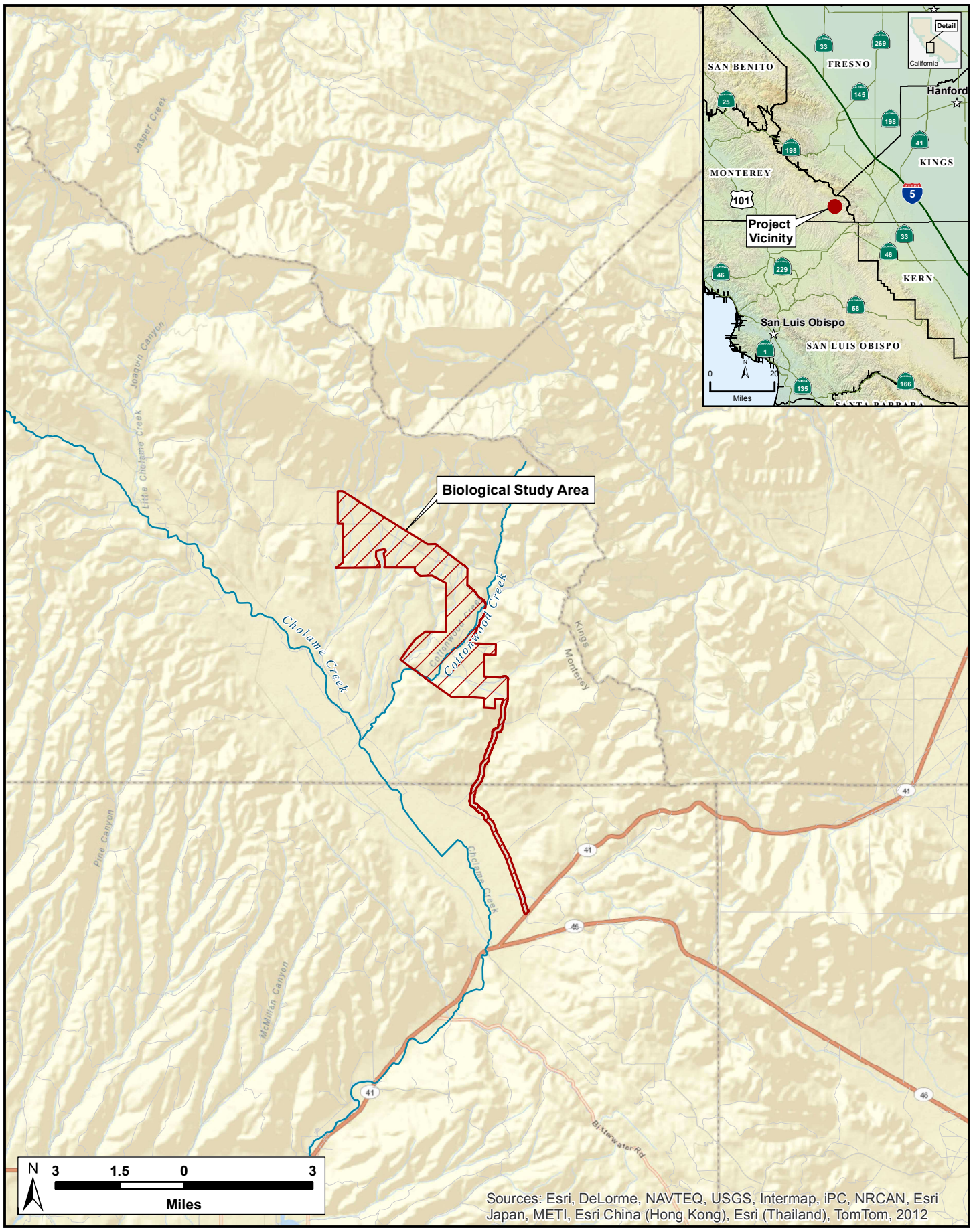
Two terms are used in this document to refer to areas within the 4504-ac BSA, the Project area and the access road. The definitions for each of these, as used in this document, are as follows:

- The "Project area" as used in this document is a subset of the BSA and includes the Project area and immediately surrounding areas, but does not include the access road south of the Project area. It is the approximately 2485-ac area for the proposed project.
- The "access road" extends from the Project area south into San Luis Obispo County to the junction with Hwy 41, surrounded by a 250-ft buffer.

Topography within the BSA consists of steeply rolling hills along the periphery, with extensive alluvial terraces forming wide level plains in much of the central portions of the site. These plains and hills are bisected by a number of drainages that typically flow from north to south, with drainage eventually to the Cholame Valley. The BSA is bounded by mostly undeveloped land in all directions and the BSA itself is used for cattle ranching. Sparse residential settlements and small farms are located south and east of the BSA. Most level areas in the BSA (i.e., the area north of the access road spur to Hwy 41) have been historically disked and dryland farmed for hay and grain production.

California annual grassland is the predominant habitat on the BSA. The grasslands are dominated by non-native grasses typical of the region and also support a healthy complement of native forbs. Other habitats include wildflower field, serpentine bunchgrass grassland, valley needlegrass grassland, grassland riparian, interior coast range goldenbush scrub, willow – cottonwood riparian woodland, ornamental non-native woodland, mixed oak woodland, mixed oak riparian woodland, ephemeral stream, intermittent stream,

[1] The BSA for the Project has since been enlarged based on continuing Project design, and all future surveys will cover the new BSA and/or Project site limits



J:\Reports\Botany Reports\Branchiopod Surveys\2012 WetSeason Branchiopod Survey\Fig 1 Vicinity Map.mxd

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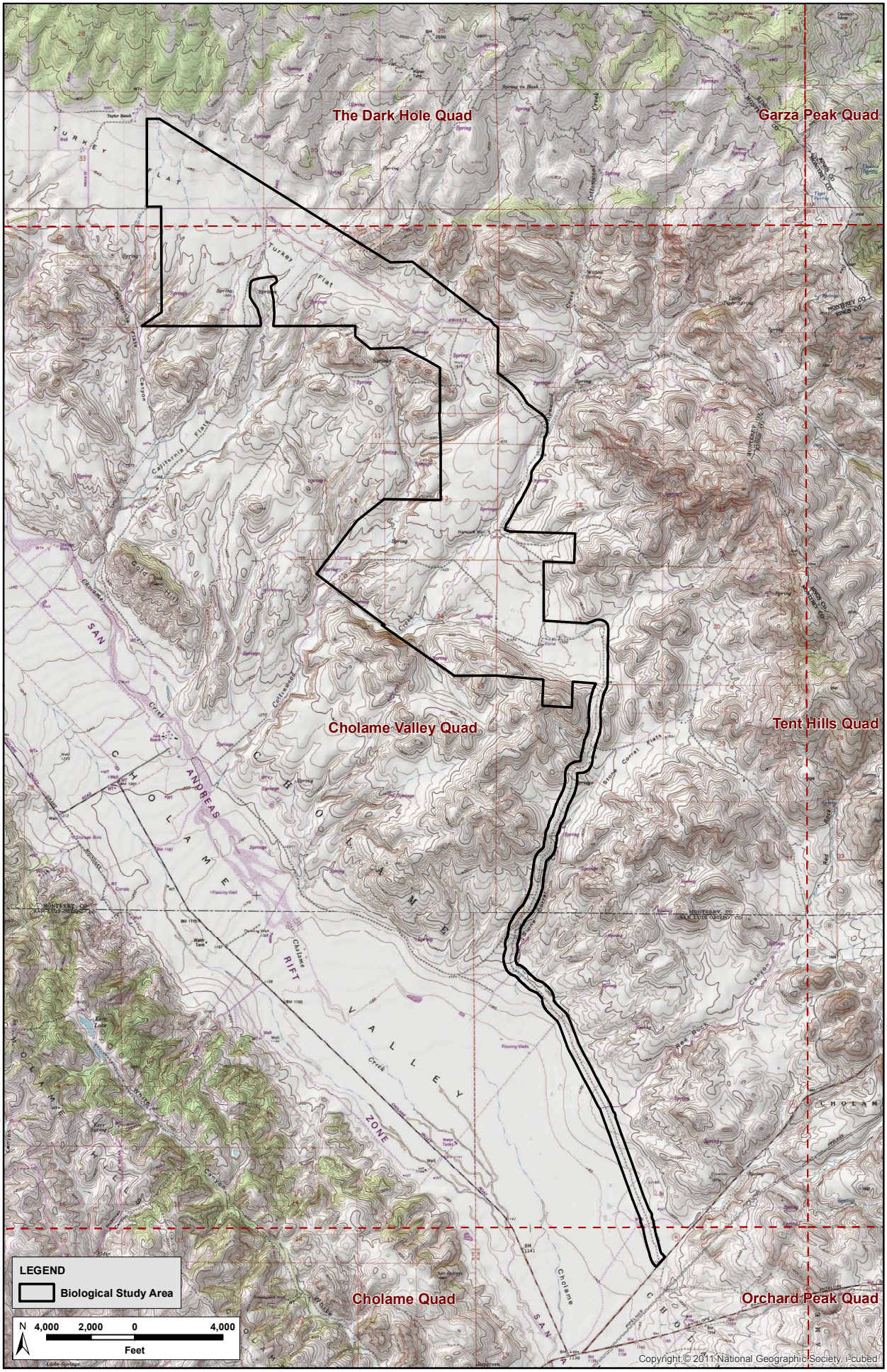
Figure 1: Vicinity Map
California Flats Solar Project, 2012 Protocol-level Wet-season Branchiopod Survey Report (3308-02)
January 2013



J:\Reports\Botany Reports\Branchiopod Surveys\2012 WetSeason Branchiopod Survey\Fig 2 USGS Map.mxd

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Figure 2: USGS Map
California Flats Solar Project, 2012 Protocol-level Wet-season Branchiopod Survey Report (3308-02)
January 2013

perennial stream, perennial marsh, seasonal wetlands, pond, and developed/ruderal grassland. Three types of seasonal wetlands exist on the BSA, including disked seasonal wetlands, alkali wetlands, and *Juncus* swales. All three seasonal wetland types have some potential to support branchiopods in features where seasonal ponding occurs without heavy scouring storm flows. However, many of the seasonal wetlands on site do not support ponding, due to unfavorable hillside topography, or being situated on convex areas such as creek banks with ample groundwater or stream hydrology inputs. Of the three types, *Juncus* swales were least likely to support ponding even in wet years as many of these were associated with hillslope topography fed by groundwater seepage, and lacking any visual indicators (e.g., soil cracking, bare soil, deep cattle punch with water lines, dried algal matting) of seasonal ponding.

The Project consists of constructing and operating a 280-Megawatt photovoltaic facility and off-site improvements to an existing private ranch road. The Project will include solar arrays, related structures, electrical equipment, and infrastructure improvements, including 2 substations that will provide an interconnect to the Pacific Gas & Electric Company (PG&E) owned Morro – Gates transmission line and a new 230-kilovolt transmission line that will connect the 2 substations. The Project will utilize an existing on-site transmission line that currently connects the Morro Bay and Diablo Canyon power plants to PG&E's Gates substation in the Central Valley. Permanent Project improvements will be located on approximately 1,900 acres of the Project area. Primary access to the Project area will be provided from the aforementioned access road, which is an existing well-maintained private ranch road off Hwy 41.

There are 31 soil types present within the BSA (Table 1). The water bodies sampled within the BSA mainly occurred on six different, well-drained soils. The majority of the sampled wetlands overlay Parkfield clay, 2 to 9 percent slopes. Cropley silty clay, 2 to 9 percent slopes, had the second highest number of sampled wetlands. Several water bodies occurred on Mocho silty clay loam, 2 to 9 percent slopes. A few water bodies were present on Ayar silty clay, 5 to 15 percent slopes; Nacimiento silty clay, 30 to 50 percent slopes; and loamy Xerorthents.

Table 1. Soil Type, Texture, Drainage Classification, and Mean Annual Precipitation for Soil Types Occurring Within the CFSP Site Subject to Ponding. [1]

Soil Symbol	Soil Name	Soil Texture	Drainage Classification	Mean Annual Precipitation (inches)
AaC	Alo silty clay, 2 to 9% slopes	Silty clay	Well drained	15 - 25
AaD	Alo silty clay, 9 to 15% slopes	Silty clay	Well drained	15 - 25
AaF	Alo silty clay, 30 to 50% slopes	Silty clay	Well drained	15 - 25
Ab	Alo-Millsholm complex	Silty clay/ loam	Well drained	15 - 25
AyD	Ayar silty clay, 5 to 15% slopes	Silty clay	Well drained	13-25

Soil Symbol	Soil Name	Soil Texture	Drainage Classification	Mean Annual Precipitation (inches)
AyE	Ayar silty clay, 15 to 30% slopes	Silty clay	Well drained	13-25
AyF	Ayar silty clay, 30 to 50% slopes	Silty clay	Well drained	13-25
Ck	Climara-Montara complex	Clay/Clay loam	Well drained	10-25
CnC	Cropley silty clay, 2 to 9% slopes	Silty clay	Well drained	12-18
DdB	Dibble silt loam, 9 to 15% slopes	Silt loam	Well drained	18-27
DdE	Dibble silt loam, 15 to 30%slopes	Silt loam	Well drained	18-27
Fa	Fluvents, stony	Sandy loam/ sand/cobbles	Excessively drained	Not given
GdF	Gaviota sandy loam, 30 to 75% slopes	Sandy loam	Excessively drained	15-35
LhE	Lopez shaly loam, 15 to 30% slopes	Shaly loam	Excessively drained	12-25
MbG	McCoy-Gilroy complex, 30 to 75% slopes	Clay loam/ gravely loam	Well drained	12-25
MhG	Millsholm loam, 30 to 75% slopes	Loam	Well drained	15-45
MoA	Mocho silty clay loam, 0 to 2% slopes	Silty clay loam	Well drained	10-16
MoC	Mocho silty clay loam, 2 to 9% slopes	Silty clay loam	Well drained	10-16
Mp	Montara-Rock outcrop complex	Clay loam/ rock	Well drained	10-25
NaD	Nacimiento silty clay loam, 9 to 15% slopes	Silty clay loam	Well drained	12-30
NaE	Nacimiento silty clay loam, 15 to 30% slopes	Silty clay loam	Well drained	12-30
NaF	Nacimiento silty clay loam, 30 to 50% slopes	Silty clay loam	Well drained	12-30
PcC	Parkfield clay, 2 to 9% slopes	Clay	Well drained	13-20
RaC	Rincon clay loam, 2 to 9% slopes	Clay loam	Well drained	12-20

Soil Symbol	Soil Name	Soil Texture	Drainage Classification	Mean Annual Precipitation (inches)
SbA	Salinas clay loam, 0 to 2% slopes	Clay loam	Well drained	10-15
Xc	Xerorthents, loamy	Loam	Well drained	10-25
114	Balcom-Nacimiento association, moderately steep	Fine loam	Well drained	12-20
122	Capay silty clay	Clay	Moderately well drained	12
173	Mocho clay loam, 0 to 2% slopes	Clay loam	Well drained	12-20
174	Mocho clay loam, 2 to 9% slopes	Clay loam	Well drained	12-20
195	San Emigdio fine sandy loam, 2 to 9% slopes	Sandy loam	Well drained	12-20

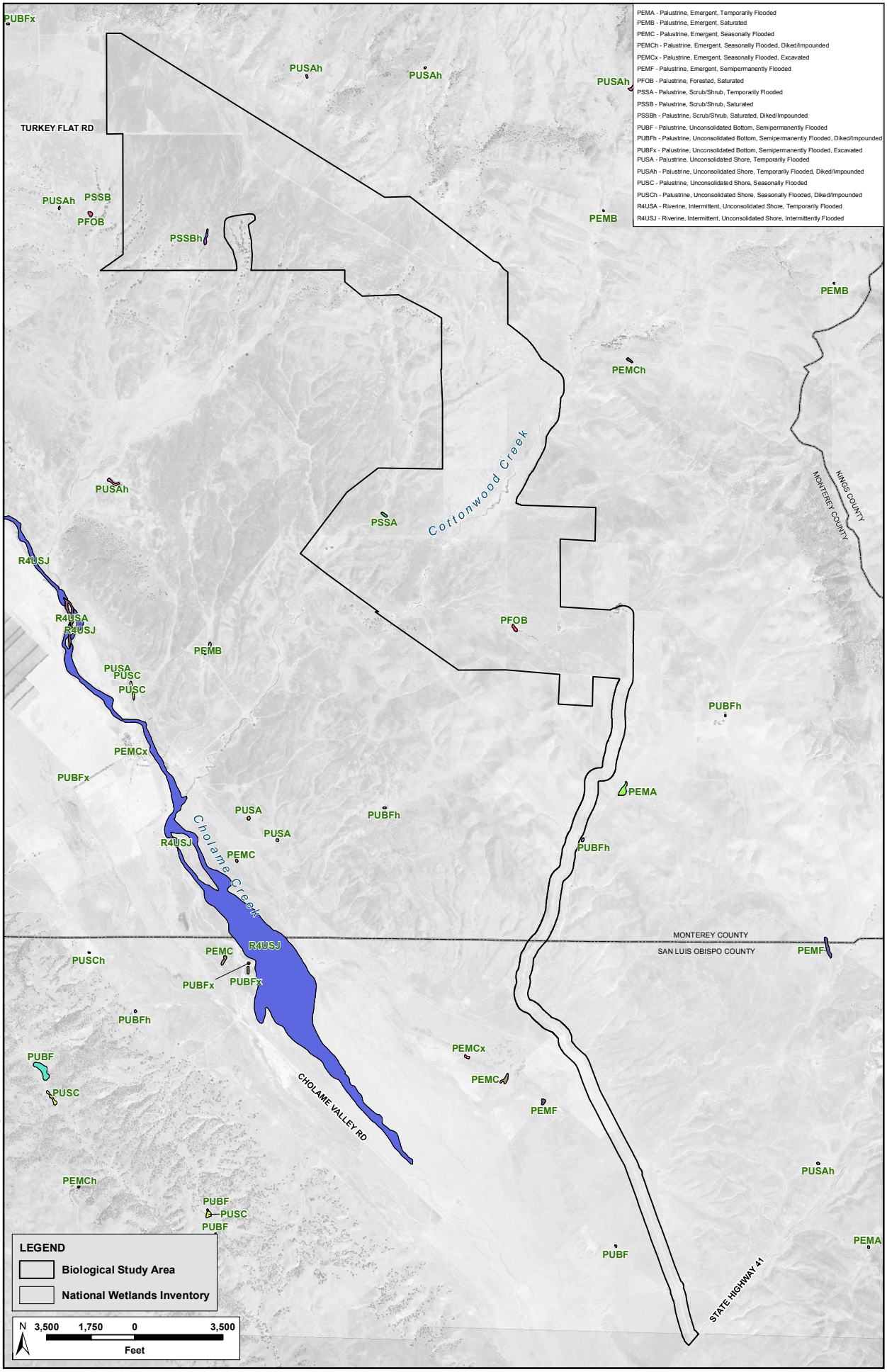
[1] Source: (SCS 1978, 1983)

The National Wetlands Inventory (NWI) identifies three freshwater pond features on the Project Site and one additional pond feature adjacent to the access road (Figure 3) (USFWS 2012). The northern feature is described as a palustrine, diked or impounded feature with a scrub/shrub community that is saturated. The feature located to the northwest of Cottonwood Creek is a temporarily flooded palustrine feature in a scrub/shrub habitat. The third feature within the BSA is along a tributary to Cottonwood Creek and is described as palustrine, forested, and saturated. A fourth feature that is palustrine with an unconsolidated bottom and is semipermanently flooded is adjacent to the access road, but does not occur within the BSA. No additional aquatic resources are mapped on-site by the NWI, but several palustrine features are located within the Project vicinity.

2.2 Survey Purpose

The pupose of this survey is to determine if federally listed species of branchiopods occur within the BSA. The California Natural Diversity Database (CNDDB) records and maps occurrences and critical habitat for special-status species within the state of California. Critical habitat for the federally threatened species vernal pool fairy shrimp (*Branchinecta lynchi*) is present approximately 10 miles southwest of the CFSP Project site, yet no mapped critical habitat is present within the BSA (Figure 4) (CNDDB 2012). Occurrences of vernal pool fairy shrimp have not been recorded within the BSA or a 10-mi radius of the Project (Figure 4) (CNDDB 2012). No CNDDB records exist for the federally endangered longhorn fairy shrimp (*Branchinecta longiantenna*) within the BSA or its vicinity (CNDDB 2012). Despite being considered unlikely to occur for these reasons, as well as the scarcity and low density of features expected to support appropriate seasonal ponding, surveys for federally listed branchiopods within the BSA were conducted. Since branchiopod survey data in this region is scarce, a lack of known records may not be a good indicator of presence or either species' absence

from the Project vicinity. Additionally, there are some seasonal wetlands on the BSA that provide at least potentially suitable habitat for federally listed branchiopods.



J:\Reports\Botany Reports\Branchiopod Surveys\2012 WetSeason Branchiopod Survey\Fig 3 National Wetlands Inventory Map.mxd

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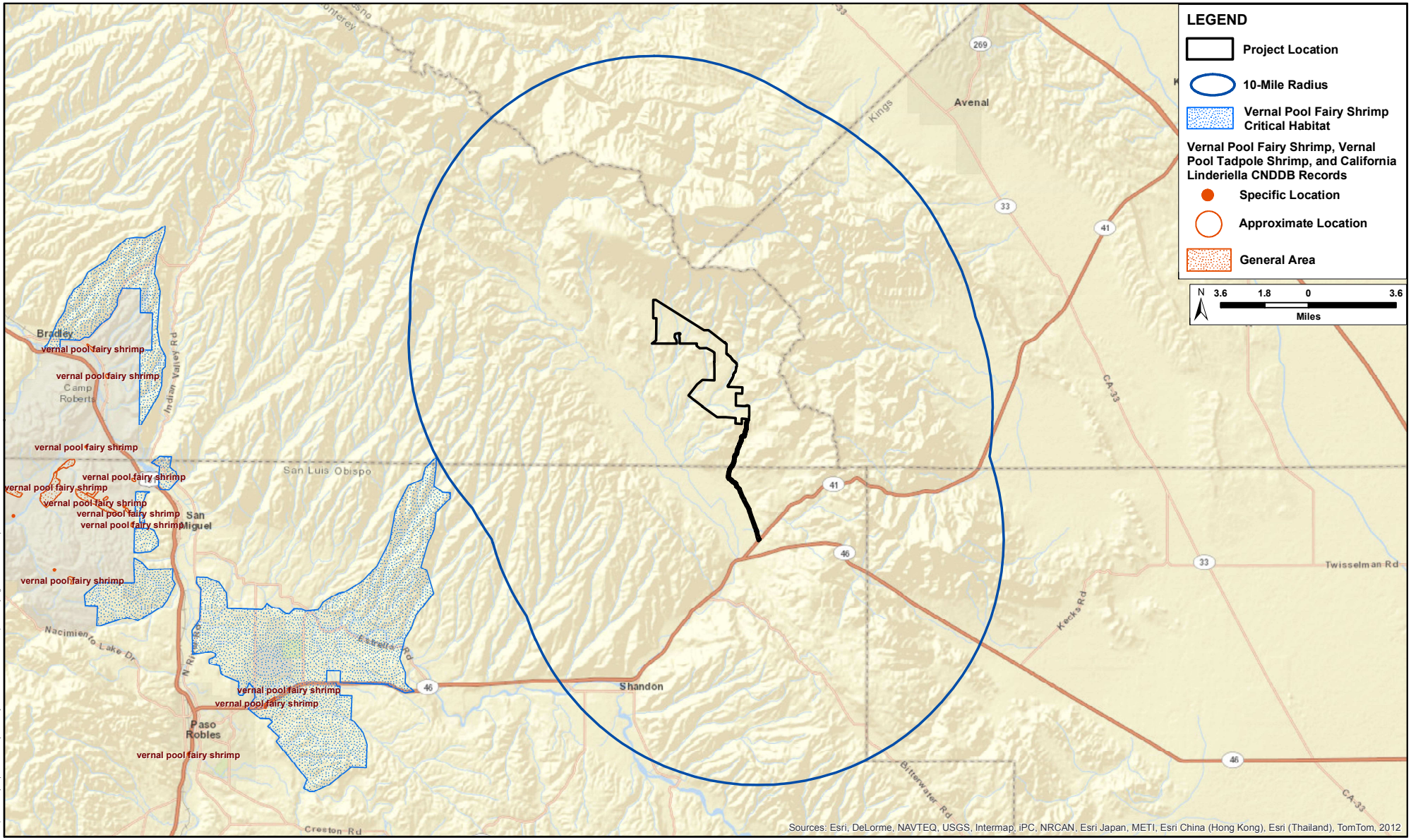
Figure 3: National Wetlands Inventory Map
California Flats Solar Project, 2012 Protocol-level Wet-season Branchiopod Survey Report (3308-02)
January 2013



J:\Reports\Botany Reports\Branchiopod Surveys\2012 WetSeason Branchiopod Survey\Fig 4 CNDDB Branchiopod Records.mxd

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Figure 4: Branchiopod CNDDB Records and Critical Habitats
California Flats Solar Project, 2012 Protocol-level Wet-season Branchiopod Survey Report (3308-02)
January 2013

Section 3.0 Methods

All surveys were conducted by senior plant/invertebrate ecologist Dr. Kelly Hardwicke, except for surveys on 3 February 2012 conducted by Matt Wacker, M.S., both under the USFWS recovery permit number TE-797267-14.2. Initially, the large site was monitored by Dr. Hardwicke and Jacquie Brownstein, M.S. during the fall and early winter of 2011 to determine whether ponding was occurring, and also to begin identifying all potentially suitable habitat within the large (then 4888 ac) study area. In late 2011 and early 2012, the Project was redesigned to avoid a large area to the south of Turkey Flat Road that was believed to contain a high density of wetlands. After the 23 January 2012 USFWS approval of the new survey boundary, a team of wetland delineators consisting of Ethan Barnes, M.S., Catherine Roy, M.S., Matt Parsons, M.S., Christopher Bronny, M.S., Brian Cleary, M.S., and Colin Wilkinson, B.S. were instructed by K. Hardwicke on characteristics of potentially suitable habitat for listed branchiopods at the site, and were employed in searching the site for such features. Later in 2012, additional wetland delineation and hydrology monitoring work was conducted by Élan Alford, Ph.D. and Annie Eicher, M.S.

3.1 Site Surveys Methods and Timing

The delineation team transected the whole BSA at 50-200 ft transects looking for potential wetlands of any type. This team was instructed to record locations and photos of those potential wetlands that were depressional features within the BSA that could potentially support seasonal ponding, and might be absent strong scouring flows. Such features were then visited by Dr. Hardwicke for further evaluation. This initial transecting of the entire site took place within the week following a major multi-day storm event that deposited 1.19 inches of rain (PRISM Climate Group 2012) in late January 2012. The hope was that a large team transecting the entire site directly after a multi-day rain event would allow the team to best identify areas that became ponded or at least exhibited soil saturation following incident precipitation. Following the initial transecting that took place from 24 January – 2 February 2012, and the initial wet sampling round, which lasted from 30 January – 3 February 2012, the site was visited by Dr. Hardwicke at approximately 2-week intervals for the remainder of the wet season, through May 2012. Precipitation was monitored and data for the year was collected from the PRISM climate group (2012) and is presented below in Table 2.

Table 2. Precipitation data for 2011-2012 wet season, California Flats Solar Project BSA/Parkfield, California.

Month	Long Term Average 1971-2000	2012 Survey Season 2011-2012 Rain Year
September	0.31	0.09
October	0.55	0.61
November	1.21	1.55
December	1.89	0.12
January	2.80	1.19

Month	Long Term Average 1971-2000	2012 Survey Season 2011-2012 Rain Year
February	3.05	0.22
March	2.42	1.57
April	0.83	1.99
May	0.31	0.00
Season Total	**13.42**	**7.25**

Source: PRISM Climate Group 2012

The site was monitored closely for actual rainfall events, soil saturation levels, and ponding duration from November 2011 – May 2012. Following the initial transecting that took place from 24 January – 1 February 2012, and the following initial wet sampling round lasting from 30 January – 3 February 2012, the site was visited by Dr. Hardwicke at approximately 2-week intervals for the remainder of the wet season, until May 2012. The distribution of wetlands and features that ponded such that at least one wet-sampling event was conducted are shown following Table 3 in Figures 5a and 5b. Site visit dates during which biologists were either specifically monitoring for seasonal ponding, conducting wet-season sampling events, and/or monitoring general hydrology are listed below in Table 3.

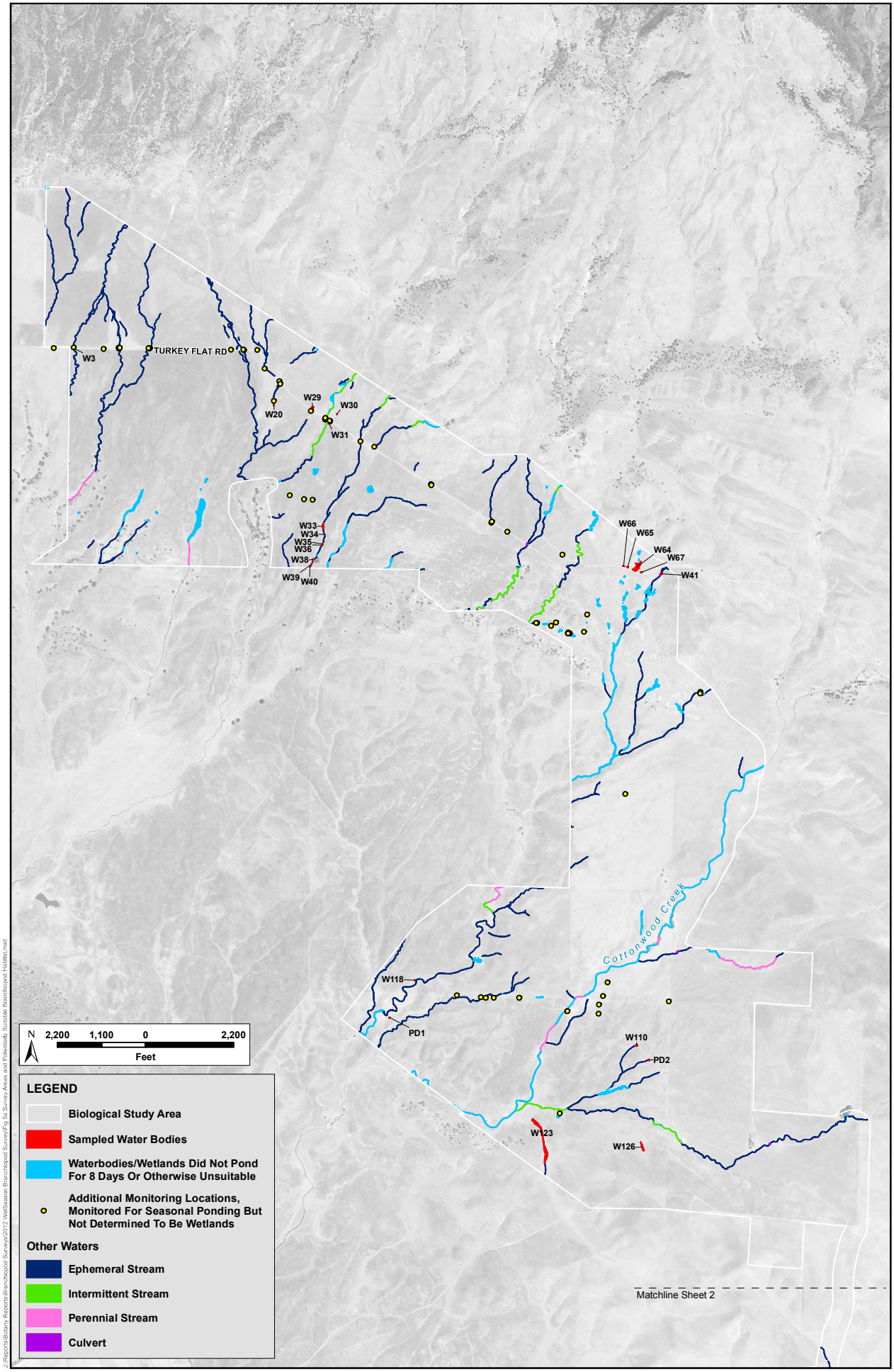

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Figure 5a: Survey Areas and Potentially Suitable Branchiopod Habitat
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January 2013

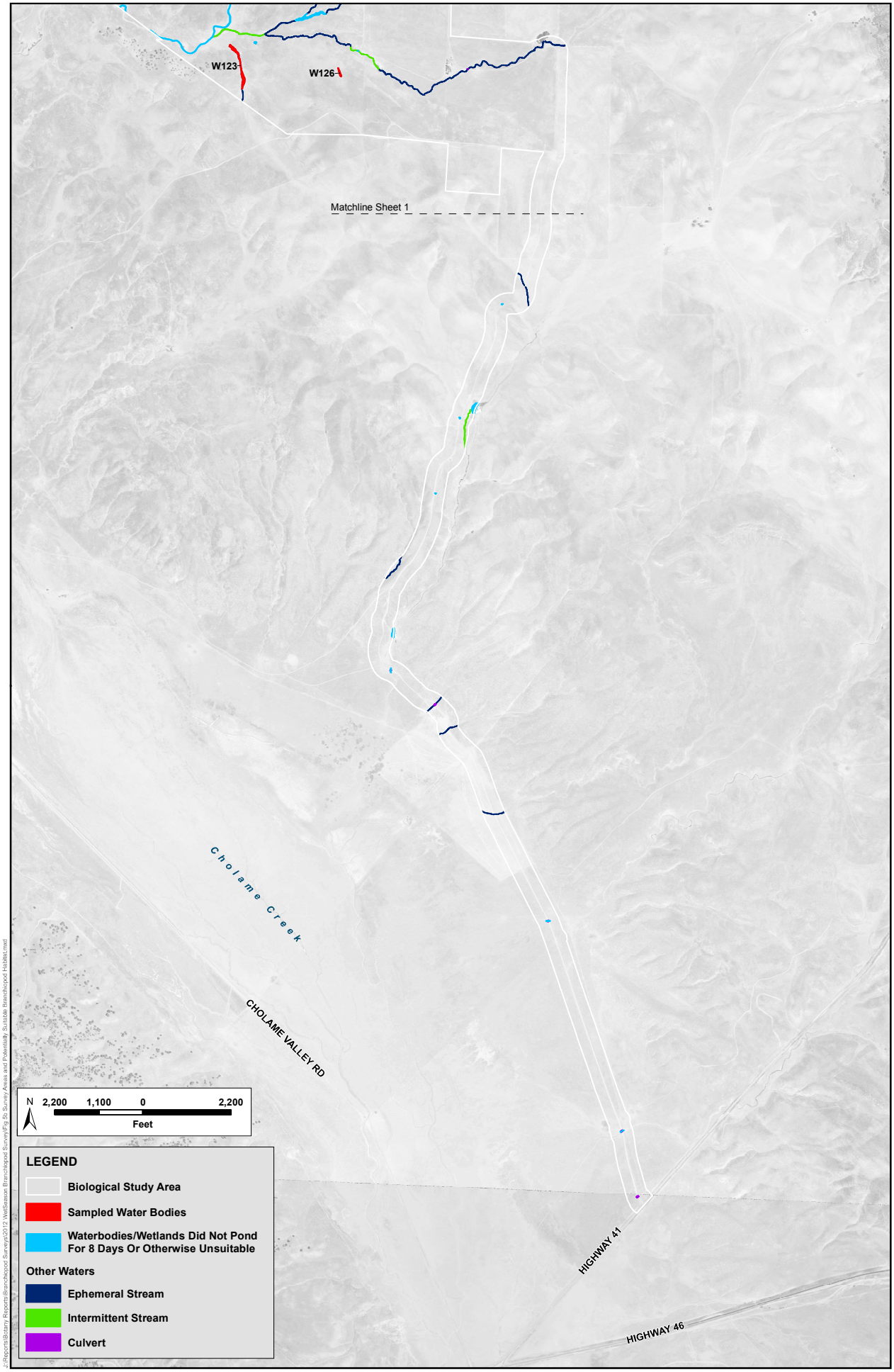

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Figure 5a: Survey Areas and Potentially Suitable Branchiopod Habitat
California Flats Solar Project, 2012 Protocol-level Wet-season Branchiopod Survey Report (3308-02)
January 2013

Table 3. Sampling and monitoring dates for 2012 wet-season surveys for listed branchiopods on the CFSP BSA.

Dates	Location	Task(s)	Biologists
15 November 2011	Original CFSP BSA.	Check on-site hydrology, look for seasonal ponding. No seasonal ponding observed, although some intermittent streams and the perennial streams were flowing.	• Jacquie Brownstein
29 November 2011	Original CFSP BSA	Check on-site hydrology, look for seasonal ponding. No seasonal ponding observed, although some intermittent streams and the perennial streams were flowing.	• Jacquie Brownstein
5 December 2011	Original CFSP BSA	Recovery permit holder conduct initial site evaluation, search for areas capable of supporting seasonal ponding, senior wetland scientist consult. A large wetland south of Turkey Flat Road was observed ponded but was confirmed to be a perennial seep based on conversations with land managers, USGS topo, and aerials, and was rejected for branchiopod suitability.	• Brian Boroski • Pat Boursier • Amy Sparks • Kelly Hardwicke
16 December 2011	Original CFSP BSA, including access road	Check on-site hydrology, look for seasonal ponding, walk level areas of the site with greatest potential to support seasonal depressions and vernal pools. Reconnaissance survey in access road corridor. W123 (see Figure 5a) located and wet-sampled.	• Brian Boroski • Kelly Hardwicke
5 January 2012	Original CFSP BSA, including access road	Check on-site hydrology, look for seasonal ponding. W123 (see Figure 5a) wet-sampled.	• Kelly Hardwicke • Jeff Zirpoli
24 – 27 January 2012	CFSP BSA (Figures 1 – 5)	Begin wetland transecting. Recovery permit holder wet-sampled ponded areas W123, W20, W64, PD2, W110, W126, PD1, and W118 (see Figure 5a). Recovery permit holder visited features identified as potential habitat by team members.	• Kelly Hardwicke • Ethan Barnes • Catherine Roy • Christopher Bronny • Colin Wilkinson • Matt Parsons

Dates	Location	Task(s)	Biologists
30 – 31 January 2012	CFSP BSA (Figures 1 – 5)	Continue wetland transecting. Recovery permit holder wet-sampled W123, W20, W3, W64, PD2, W110, W126, PD1, and W118 wet-sampled (see Figure 5a). Recovery permit holder visited additional features identified as potential habitat by team members.	• Kelly Hardwicke • Ethan Barnes • Catherine Roy • Christopher Bronny • Brian Cleary • Matt Parsons
1 – 2 February 2012	CFSP BSA (Figures 1 – 5)	Continue wetland transecting, mainly restricted to drainages at this time. Finish wetland transecting.	• Ethan Barnes • Catherine Roy • Christopher Bronny • Brian Cleary • Matt Parsons
3 February 2012	CFSP BSA (Figures 1 – 5)	Recovery permit holder visited additional features identified as potential habitat by team members, wet-sampled W38, W39, and W40 (see Figure 5a).	• Matt Wacker
17 February 2012	CFSP BSA (Figures 1 – 5)	Check on-site hydrology, look for seasonal ponding in all previously identified suitable features. W123, W126, and W33, W35, and W38-40 (see Figure 5a) wet-sampled. No precipitation on site since the following sampling event.	• Kelly Hardwicke
23 February 2012	CFSP BSA (Figures 1 – 5)	Check on-site hydrology.	• Ethan Barnes
8 March 2012	CFSP BSA (Figures 1 – 5)	Check on-site hydrology, look for seasonal ponding in all previously identified suitable features. W123, W126, and W35-40 (see Figure 5a) wet-sampled. No appreciable precipitation on site since the following sampling event.	• Kelly Hardwicke
21 and 22 March 2012	CFSP BSA (Figures 1 – 5)	Check on-site hydrology, look for seasonal ponding in all previously identified suitable features. wet-sampled W123, W3, W29-31, W41, W20, W64, W65, W67, PD2, W110, W126, PD1, W118, W33-36, and W38-40 wet-sampled (see Figure 5a). Precipitation had occurred the week prior to this survey effort.	• Kelly Hardwicke

Dates	Location	Task(s)	Biologists
4 and 5 April 2012	CFSP BSA (Figures 1 – 5)	Check on-site hydrology, look for seasonal ponding in all previously identified suitable features. Wet-sampled W123, W3, W20, W31, W64, W65, W67, PD2, W110, W126, PD1, W118, and W33, W35, and W38-40 wet-sampled (see Figure 5a). Wetland delineation team on-site and rechecking all areas for indicators of seasonal ponding. Precipitation had occurred the week prior to this survey effort.	• Kelly Hardwicke • Pat Boursier • Ethan Barnes • Catherine Roy • Christopher Bronny • Matt Parsons • Annie Eicher
9 – 12 April 2012	CFSP BSA (Figures 1 – 5)	Check on-site hydrology, look for seasonal ponding. Heavy storm began 11 April and rained crew out morning of 12 April.	• Ethan Barnes • Catherine Roy • Élan Alford • Colin Wilkinson
17 - 19 April 2012	CFSP BSA (Figures 1 – 5)	Check on-site hydrology, look for seasonal ponding in all previously identified suitable features. Wet-sampled W123, W3, W20, W64, W67, W126, PD1, and W33, W35, and W38-40 wet-sampled (see Figure 5a). Wetland delineation team on-site and rechecking all areas for indicators of seasonal ponding. Heavy precipitation had occurred the week prior to this survey effort, and small amounts of precipitation occurred during this sampling effort. However many features shallowly ponded on 17 April were already dry by 19 April.	• Kelly Hardwicke • Ethan Barnes • Colin Wilkinson
3 May 2012	CFSP BSA (Figures 1 – 5)	Check on-site hydrology, look for seasonal ponding in all previously identified suitable features. W123, W126, and W33, W35, and W38-40 (see Figure 5a) wet-sampled. No appreciable precipitation on site since the following sampling event.	• Kelly Hardwicke
17 May 2012	CFSP BSA (Figures 1 – 5)	Check on-site hydrology, look for seasonal ponding in all previously identified suitable features. All features determined to be dry for the season, except W123, which may be perennial.	• Kelly Hardwicke • Ethan Barnes

3.2 Site Selection

Criteria for selection of wetlands that have potentially suitable habitat to support federally listed branchiopod species include closed depressional features supporting seasonal hydrology with periods of dry-down. The seasonal hydrology must provide a period of at least 2.5 weeks of consecutive ponding in some years and scouring events cannot occur.

On the BSA waterbodies were wet-sampled when found to be ponded if these met the criteria for seasonal ponding of approximately 5-8 days following a rain event and lack of heavy scouring flows (Figures 5a and 5b). All wetlands shown on Figures 5a and 5b were evaluated by Dr. Hardwicke for potential branchiopod habitat suitability. Additionally, other potential features detected by the delineation team but later determined not to meet characteristics of jurisdictional wetlands were evaluated and monitored until a final unsuitability determination was made (Figure 5a). Many of these features were determined to be unsuitable upon visual inspection by Dr. Hardwicke, due to lack of any indicators of seasonal ponding such as cracked soil, algal matting, hydric soil indicators, hydrophytic vegetation, deep cattle punch with water lines, etc. These depressions did not function as wetlands (e.g., wildlife or livestock wallows, feral pig damage, in-stream pools in ephemeral drainages that only hold water while the stream is flowing after rain events, scour pools near culverts under Turkey Flat Road, etc.) (Figure 5a). Other sites inspected by Dr. Hardwicke had one or more indicators of seasonal wetlands such as hydrophyic vegetation, soil cracking, soil mottling, bare compacted soil, sediment lines or water marks, or mesic hydrology compared to surrounding uplands, and were monitored throughout the spring but never ponded for longer than 5-8 consecutive days, or in many cases were never observed to pond at all in 2012.

Most depressional features identified on the site were in-stream pools located within ephemeral, intermittent, or perennial streams with heavy seasonal scouring flows, and were thus excluded from additional hydrology monitoring for suitable branchiopod habitat. In one ephemeral drainage, several deep plunge pools (W38-40) and nearby wetlands (W33-37) were included because no scouring flows were observed within the drainage during this year, and, particularly for W38-40, these in-stream pools more closely resembled typical potentially suitable habitat for listed branchiopods (Photo 1, Figure 5a). These were also some of the few features on site that had continuous, largely non-flowing inundation for a time period that

Photo 1. Pool W38, a deep (approx. 12-inch) in-stream plunge pool, was continuously ponded for approximately 2 months.

could reasonably be expected to support adult branchiopods and allow for their detection, approximately 8 weeks from mid-March 2012 to early May 2012. Thus in an attempt to be conservative and detect any species that could be present on the site, these particular in-stream features were included.

The access road had three potentially suitable wetlands but none of these were observed to pond during the surveys for the requisite 8-day minimum, or in many cases, did not pond at all (Figure 5b). The remainder of wetlands and waterbodies along the access road included a perennial stock pond at the very periphery of the 250-ft buffer or streams with scouring flows and thus were not considered suitable. Similarly, several deep depressions near culverts under Turkey Flat Road were carefully monitored throughout the surveys but were never observed to pond, and instead held only scouring flows during and directly following rain events.

3.3 Wet-sampling Protocol

Ponded waterbodies meeting the above criteria were sampled using dip nets that were swept throughout the water column in order to capture bottom-dwelling notostracans (e.g., *Triops* and *Lepidurus*) as well as free-swimming anostracans (e.g., *Branchinecta* and *Linderiella*). The perimeter of each pool was mapped using a Trimble© Global Positioning System (GPS) unit, and also estimated for depth. Temperature and pH of the water was recorded if deep enough to accommodate a sampling probe, and qualitative observations were taken on water turbidity, color, and associate species. As per USFWS request, ingress into the features during sampling was avoided wherever feasible (large features such as W123 required some small ingress along edges). The surveyors also estimated pool depth, and completed a vernal pool wet-season sampling datasheet (Appendix A). No datasheets were collected for monitoring events, which simply confirmed lack of ponding within a given feature. No living samples were collected due to the absence of observed nauplii or adult large branchiopods of any species in all pools.

Section 4.0 Results and Discussion

No listed branchiopods, or immature or adult large branchiopods of any kind, were detected on the site in 2012. Detailed results of the wet season surveys and data on the sampled pools are reported within the sampled pool data summary at the end of this section (Table 4), and within the pool sampling datasheets, Appendix A.

All sampled water bodies are shown in red in Figures 5a and 5b.

4.1 Seasonal Weather, Precipitation, and Observed Hydrology

The 2011-2012 wet season was a year with lower-than-average precipitation. The 30-year normal precipitation reported for the area from 1971 – 2000 is 13.42 inches per year (PRISM Climate Group 2012, Table 2). The site total for the 2011-2012 rain year is 7.25 inches (Table 2). This corresponds to only 54% of the average annual rainfall. Of this 2011-2012 rain-year total, 2.25 inches of precipitation fell in September – early November 2011, before sampling had commenced on the site. Thus, only approximately 5 inches of rain was received by the site during the effective 2012 wet season sampling period.

Photo 2. Sampled pool W65, showing ponding in deeper cattle punch only. Many of the wet-sampled features that remained ponded for a period of weeks dried down to similar levels or lower during periods of continuous ponding.

Appreciable rain that could lead to ponding on-site only occurred in a few events during spring 2012. These were 1) a multi-day storm in late January 2012, 2) a multi-day series of storms in mid-March 2012, and 3) several days of rain the second week of April 2012. The longest observed periods of ponding in features with no detectable connection to groundwater occurred in sampled features W20, W31, W64, PD2, W110, and PD1 (Table 3, Figure 5a). Of these waterbodies, all except W64 either occurred within existing ranch roads where compacted soil allowed for longer ponding periods, or along fencelines. After being inundated by the mid-March 2012 storms, these features were all ponded continuously throughout the next 4 weeks. Despite somewhat heavy rains the second week of April 2012, sampling that took place the 3rd week of April 2012 indicated that these features were all very close to final dry-down due to increasing heat at that time. "Continuous ponding" was defined as any standing water left within the feature, and for many of these features, was only supported over a period of weeks in the deep holes left by cattle punch (Photo 2).

Wetlands W123, W126, W33, W35, and W38-40 were all also ponded continuously for 6 weeks or more (several months in the case of W123) (Table 3, Figure 5a). However, each of these features was not fed solely by incident rainfall and all had hydrology augmented by groundwater input. W123 may be a perennial wetland, as it was never been observed to dry down completely through later May (Photo 3, Figure 5a).

In general, the greatest number of ponded features was always observed within 1 week after a serious rain event. Although several features ponded in late January (Table 3), these areas had for the most part dried by 3 February, except for those features with groundwater inputs. W126, W123, and W35-40 held water in mid-February 2012 and early March 2012, but all other features on the site were dry during this period.

Photo 3. Sampled pool W123, which is fed primarily by groundwater seepage and augmented with seasonal run-off. This feature was sampled throughout the season as it was not known if the feature exhibited true seasonal hydrology. However, it was observed to be continuously wetted from November 2011-May 2012 and therefore may be fully perennial. Sampling occurred throughout this feature but focused on the small cattle-punch pools along the wetland edges, where seasonal dry down does occur.

Therefore, although some features did pond for long enough to support the development of detectable and identifiable listed branchiopods, many of these features represented less suitable habitat (W33-40 being located in a drainage, and W123, W126, and W33-40 all being fed by groundwater seepage more than incident rainfall). In the small number of depressional features fed primarily or completely by storm runoff, a sufficient duration of continuous ponding was observed in a limited number of features. However this continuous period of ponding was limited to a very short stretch of the overall wet season and this ponding also occurred somewhat later than is typical of seasonal wetlands in California and the site, as indicated by the February climate normals for the area (Table 2).

4.2 Survey Results

None of the federally listed branchiopod species, including vernal pool fairy shrimp, longhorn fairy shrimp, San Diego fairy shrimp (*Branchinecta sandiegoensis*), Conservancy fairy shrimp (*Branchinecta conservatio*) or vernal pool tadpole shrimp (*Lepidurus packardi*), were detected in any of the pools or wetlands sampled on the CFSP

BSA (Figure 5a and 5b). Additionally, no branchinectan or anostracan nauplii were observed during any sampling event. Common associate species observed within the features included seed shrimp (ostrocoda), copepods, cladocerans, horsehair worms (Nematomorpha), Turbellarian worms, hydrophilid beetles, water boatmen (Corixidae), water striders (Notonectidae), and in W33-38, the invasive New Zealand mudsnail (*Potamopyrgus antipodarum*) was observed in high numbers. No amphibian larva or adults were observed in any feature.

Sampled pools on site were variable, from groundwater-fed wetlands at toe-of-slope or downhill of seepage points, to in-stream plunge pools, to persistent puddles within some of the ranch roads, to *Juncus*-dominated swales fed by groundwater seepage, to small vernal pools or depressions within clayey soils in the grassland areas of the site. In general, water tended to be slightly on the alkaline side of neutral, and was turbid to clear and tea-colored. Detailed characteristics of features that were wet-sampled, including pictures, are provided in Table 4 (next page).

Table 4. Characteristics of Sampled Pools on the CFSP Project Site.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
PD2	5	0.0113	Low	7.31	Road puddle		Persistent road puddle at headwaters of ephemeral stream in between two broad hills.
PD1	6	0.0201	Low	7.40	Road puddle		Persistent road puddle in low area at toe of slope. No hydric soil features observed,

[2] Maximum observed depth during 2011-212 surveys.
[3] Maximum observed ponded area during 2011-2012 survey.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W3	5	0.0002	Mod.	7.18	Seasonal pool		Small pool to south of Turkey Flat Road at head of ephemeral drainage.
W20	7	0.0024	High	7.22	Seasonal pool		Small pool to south of Turkey Flat Road at terminus of ephemeral drainage.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W29	1	0.055	High	7.47	Seasonal pool		Moderate-sized shallow vernal pool within intermittent drainage floodplain, only observed ponded once on 21 March in a small area of the pool.
W30	0.5	0.003	High	Too shallow	Seasonal Pool		Small-sized shallow vernal pool within intermittent drainage floodplain, only observed ponded once on 21 March in a small area of the pool.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W31	6	0.009	Low	7.08	Seasonal Pool		Moderate-sized vernal pool, deeper on south side of fence, ponded for relatively long approximately 4-week duration in 2012 (see Table 3).
W33	4	0.078	High	7.53	In-stream wetland		In-stream pool, wetted for long periods due to groundwater. Partially under willow canopy.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W34	1	0.007	High	7.65	In-stream wetland		In-stream wetland pool, mostly observed to be saturated instead of ponded.
W35	25	0.012	Low	7.60	In-stream wetland		In-stream pool, wetted for long periods due to groundwater. Partially under willow canopy. Connected to smaller pool downstream, W36, just visible in lower portion of this picture.
W36	8	0.005	Mod.	7.63	In-stream wetland	See above	In-stream pool, often merely saturated and not ponded.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W38	30	0.013	Mod.-High	7.58	In-stream plunge pool		Deep, in-stream plunge pool. Fed by groundwater and incident runoff.
W39	9	0.005	Mod.	7.73	In-stream plunge pool		Smaller plunge pool, hydrology augmented by groundwater seepage.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W40	8	0.007	Mod.	7.49	In-stream plunge pool		Smaller plunge pool, hydrology augmented by groundwater seepage. Photo from 5 April, showing pool close to dry-down before being slightly refilled the following week. Of W38-W40, this pool exhibited the least amount of groundwater hydrology.
W41	0.5	0.023	High	Too shallow	Scour pool near culvert		Small area of standing water near culvert sampled.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W64	6	0.405	High	8.21	Alkaline seasonal pool		Several small areas within cattle punch ponded in this large wetland, but the majority of the wetland only supported saturated soils in 2012.
W65	0.5	0.019	High	Too shallow	Alkaline seasonal pool		Areas of ponding restricted to cattle punch.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W66	0.5	0.009	High	Too Shallow	Alkaline seasonal pool		Only observed to hold standing water once in 2012, very shallow water when sampled, mud-like viscosity.
W67	2	0.014	High	8.34	Alkaline seasonal pool		Ponded water observed in deep cattle punch.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W110	8	0.033	Mod.	7.22	Road puddle		Persistent road puddle at headwaters of ephemeral stream. Ponding relatively deep within ruts. Hydric soils observed.
W118	4	0.005	Mod.	7.54	Road puddle		Persistent road puddle near low point in road by intermittent stream. Ponding relatively deep within ruts. Hydric soils observed.

Pool #	Pool Depth[2] (cm)	Pool Area[3] (acres)	Turbidity	pH	Waterbody Type	Photo	Notes
W123	18	0.929	Mod.	7.91	Ground water-fed juncus swale		May be perennial, carpeted in grassy hydrophytes with water ponding in cattle punch throughout large wetland.
W126	9	0.106	High	8.20	Ground water-fed alkaline swale		Visible salt crust and high alkalinity, however wetland stayed ponded for long duration with water persisting in up to 12-inch-deep cattle punch.

4.3 Conclusions and Next Steps

Wetlands capable of supporting large branchiopods occur at very low densities on the CFSP BSA. While suitable habitat does exist, these features tend to be small, shallow, do not pond for long periods, and often are related to anthropogenic disturbances such as the road, or mildly altered topography along fencelines. Other features that were observed to pond for longer periods in 2012 were augmented by groundwater and many of these would be likely to experience scouring seasonal flows in at least some years. Branchiopod populations may not be able to persist in such habitats, due to cysts washing downstream during such flows. Similarly, several wetlands on the BSA either do not support ponding (exhibiting lack of any indicators of prior ponding) and instead are driven by saturation, or are perennial. In general, the site does not support a vernal pool-dense habitat within the level grasslands such as might be expected to support a diverse and numerous meta-population of branchiopods. That being said, 2012 was a poor year with below-normal hydrology. Additional features on the BSA may pond in years with normal or above normal rainfall that provide suitable habitat for listed branchiopods. In many cases, features that did not pond, or only ponded for very short duration, could remain inundated for the approximately 2.5-3 weeks required to attain sexual maturity in vernal pool fairy shrimp and longhorn fairy shrimp. Similarly, the completely negative results observed within this survey may be an artifact of the poor year, such that in years with better weather some of the sampled features may support listed or common branchiopods not detected in 2012. Again, the site is not near known records of listed branchiopod species, however much of the area is privately owned and likely poorly sampled, and critical habitat for vernal pool fairy shrimp is mapped approximately 10 miles away from the site (Figure 4).

The Project is requesting authorization to conduct dry season surveys in all areas sampled during the wet season, as well as in additional wetlands that may provide suitable habitat in better years.

Section 6.0 Literature Cited

[CNDDB] California Natural Diversity Database. 2012. Rarefind 3.1.0, a program created by the California Department of Fish and Game, allowing access to the CNDDB.

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Appendix A. CFSP Wet-Season Sampling Data Sheets

Project: California Flats Solar Project Surveyor(s): Kelly Hardwicke TE-797267-14 Weather Cond: clear, cool, and sunny

Date: 12/16/2011 Time: 1:30 PM Air Temperatue (F): 60

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample
LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition
UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing
UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans				Large Brachiopods						Insecta												Mollusca			Turbellaria	Acari	Collembola	Herps			
										Copepods									Coleoptera			Hemiptera			Odonata		Diptera													
Pool No.	Water Temp (^oF)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliplidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other	Habitat Condition	Comments
W123	59	7.92	3	2	6	6	2000	1700	x																								x				D,G-Cm	clear tea-colored water in punch

Project: California Flats Solar Project Surveyor(s): Kelly Hardwicke TE-797267-14 Weather Cond: clear, cool, and sunny

Date: 1/5/2012 Time: 2:00 PM Air Temperatue (F): 58

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample
LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition
UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing
UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans										Insecta													Mollusca			Turbellaria	Acari	Collembola	Herps			
										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera													
Pool No.	Water Temp (^oF)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliplidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other	Habitat Condition	Comments
W123	57	7.86	3	2	6	6	2000	1700	x											x			x										x					D,G-Cm	clear tea-colored water in punch

Project: California Flats Solar Project Surveyor(s): Kelly Hardwicke TE-797267-14 Weather Cond: clear, cool, sunny

Date: 1/24/2012 Time: 10:30:00 AM - 2:00pm Air Temperatue (F): 52

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample
LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition
UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing
UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans				Insecta															Mollusca			Turbellaria	Acari	Collembola	Herps			
										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera												
Pool No.	Water Temp (^{0}F)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliplidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other	Habitat Condition	Comments
W20	48	7.71	2	1.5	12	6	100	60				X																					X				UD,G-Cm	turbid water, mud bottom
W64	49	8.03	1	1	4	3	1000	400																									X				UD,G-Cm	turbid water, no veg.
PD2	49	7.24	3	2	6	4	600	450	X																												D-tt,G-Cm	clear water in compacted wheel ruts
W110	48	7.66	2	2	4	2	400	150	X														X														D-tt,G-Cm	clear water in compacted wheel ruts
PD1	50	7.46	2	2	6	4	600	450																													D-tt,G-Cm	clear water in compacted wheel ruts
W118	51	7.42	2	2	4	3	600	450	X																												D-tt,G-Cm	clear water in compacted wheel ruts
W123	51	7.76	4	3	6	4	2000	1700				X											X														UD,G-Cm	may be perennial
W126	48	7.92	5	2	8	6	300	200																									X				UD,G-Cm	very turbid, deep punch in sttep swale

Project: California Flats Solar Project Surveyor(s): Kelly Hardwicke TE-797267-14 Weather Cond: clear, cool, sunny

Date: 1/31/2012 Time: 9:30 AM - 3:30pm Air Temperatue (F): 52

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample
LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition
UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing
UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans										Insecta													Mollusca			Turbellaria	Acari	Collembola	Herps			
										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera														
Pool No.	Water Temp (^oF)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliliidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other	Habitat Condition	Comments
W3	46	7.3	1	0.5	6	4	50	25	X																												UD,G-Cm	turbid, very shalllow, in punch
W20	47	7.68	2	1	12	6	100	60	X			X																						X				UD,G-Cm	turbid water, mud bottom
W31	48	7.53	3	1.5	6	4	120	60	X			X																						X				UD,G-Cm	low spot at fence, turbid
W64	50	8.14	2	1	4	3	1000	400																										X				UD,G-Cm	turbid water, no veg.
PD2	52	7.41	3	2	6	4	600	450	X																													D-tt,G-Cm	clear water in compacted wheel ruts
W110	55	7.53	2	2	4	2	400	150	X														X															D-tt,G-Cm	clear water in compacted wheel ruts
PD1	56	7.56	3	3	6	4	600	450																														D-tt,G-Cm	clear water in compacted wheel ruts
W118	56	7.41	2.5	2	4	3	600	450	X																													D-tt,G-Cm	clear water in compacted wheel ruts
W123	51	7.76	4	3	6	4	2000	1700				X											X															UD,G-Cm	probably perennial
W126	48	7.92	5	2	8	6	300	200																										X				UD,G-Cm	very turbid, isolated punch pools

Project: California Flats Solar Project Surveyor(s): Matt Wacker TE-797267-14 Weather Cond: clear, cool, and sunny

Date: 2/3/2012 Time: 11:00-11:45 AM Air Temperatue (F): 53

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample
LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition
UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing
UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans										Insecta														Mollusca			Turbellaria	Acari	Collembola	Herps			
										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera															
Pool No.	Water Temp (^oF)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliplidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other:Nematomorpha	Habitat Condition	Comments
W38	53		4	2	18	12	100	24	x			X								x		X						X										UD,G-Cm	turbid water in plunge pool
W39	54		8	5	18	12	100	48	X													X	X															UD,G-Cm	turbid water in plunge pool
W40	54		5	4	18	12	100	48	X			X								X			X														X	UD,G-Cm	turbid water in plunge pool

Project: California Flats Solar Project Surveyor(s): Kelly Hardwicke TE-797267-14 Weather Cond: clear, cool, and sunny

Date: 2/17/2012 Time: 9:30 AM - 3:00 PM Air Temperatue (F): 63

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample
LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition
UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing
UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans										Insecta														Mollusca			Turbellaria	Acari	Collembola	Herps			
										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera															
Pool No.	Water Temp (^oF)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliplidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other-NZ mud snail	Habitat Condition	Comments
W38	53	7.54	4	2	18	12	100	24	x			X								x		X						X										UD,G-Cm	turbid water in plunge pool
W39	55	7.65	8	5	18	12	100	48	X													X	X															UD,G-Cm	turbid water in plunge pool
W40	56	7.55	5	4	18	12	100	48	X			X								X			X															UD,G-Cm	turbid water in plunge pool
W33	55	7.53	5	4	8	6	240	160				X										X						X									X	UD,G-Cm	pool in drainage under willow
W35	53	7.6	6	4	12	8	200	120	X			X										X						X										UD,G-Cm	in-stream pool near willows, grndwater
W123	58	7.76	4	3	6	4	2000	1700				X											X															UD,G-Cm	probably perennial
W126	54	7.92	5	2	8	6	300	200																										X				UD,G-Cm	very turbid, isolated punch pools

Project: California Flats Solar Project Surveyor(s): Kelly Hardwicke TE-797267-14 Weather Cond: clear, warm, and sunny

Date: 3/8/2012 Time: 10:00 AM -2:00 PM Air Temperatue (F): 65

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample
LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition
UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing
UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans										Insecta														Mollusca			Turbellaria	Acari	Collembola	Herps	Other-NZ mud snail		
										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera														
Pool No.	Water Temp (^oF)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliplidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni				Habitat Condition	Comments
W38	52		2	1.5	18	12	100	24	x			X								x		x	X					X										UD,G-Cm	turbid water in plunge pool
W39	54		4	3	18	12	100	48	X														X					X										UD,G-Cm	turbid water in plunge pool
W40	55		3	2	18	12	100	48	X			X								X			X					X										UD,G-Cm	turbid water in plunge pool
W33	56		5	4	8	6	240	160				X										X						X									X	UD,G-Cm	pool in drainage under willow
W35	53		6	4	12	8	200	120	X			X										X						X										UD,G-Cm	in-stream pool near willows, grndwater
W123	61		4	3	6	4	2000	1700				X											X															UD,G-Cm	probably perennial
W126	58		4	1.5	8	6	300	200																									X					UD,G-Cm	very turbid, isolated punch pools

Project: California Flats Solar Project Surveyor(s): Kelly Hardwicke TE-797267-14 Weather Cond: clear, warm, sunny

Date: 3/21/2012 Time: 9:30 AM - 3:30pm Air Temperatue (F): 64

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample
LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition
UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing
UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans										Insecta														Mollusca			Turbellaria	Acari	Collembola	Herps			
										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera															
Pool No.	Water Temp (^{0}F)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other	Habitat Condition	Comments
W3	48		1	0.5	6	4	50	25	X																													UD,G-Cm	turbid, very shalllow, in punch
W20	51		2	1	12	6	100	60	X			X																						X				UD,G-Cm	turbid water, mud bottom
W29	53		1	0.5	3	3	300	128																														UD,G-Cm	very shallow water, will likely dry in a day
W30	53		1	0.5	5	4	64	48																														UD,G-Cm	very shallow water, will likely dry in a day
W31	53		3	1.5	6	4	120	60	X			X																						X				UD,G-Cm	low spot at fence, turbid
W65	57		1	0.5	4	3	84	64																														UD,G-Cm	very shallow water, will likely dry in a day
W67	58		1	0.5	5	3	128	72																														UD,G-Cm	very shallow water, will likely dry in a day
W64	59		3	2	4	3	420	20																										X				UD,G-Cm	turbid water, no veg.
W41	59		3	2	6	4	600	450	X																													UD, G-h	turbid water in low area near culvert

Project: California Flats Solar Project Surveyor(s): Kelly Hardwicke TE-797267-14 Weather Cond: clear, warm, and sunny

Date: 3/22/2012 Time: 9:30 AM -2:00 PM Air Temperatue (F): 64

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)

Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample

LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition

UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing

UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans										Insecta															Mollusca			Turbellaria	Acari	Collembola	Herps			
										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera															
Pool No.	Water Temp (^{0}F)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliplidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other-NZ mud snail	Habitat Condition	Comments
W38	52		2	1.5	18	12	100	24	x			X								x		X	X					X											UD,G-Cm	turbid water in plunge pool
W39	54		4	3	18	12	100	48	X														X					X											UD,G-Cm	turbid water in plunge pool
W40	55		3	2	18	12	100	48	X			X								X			X					X											UD,G-Cm	turbid water in plunge pool
W33	56		5	4	8	6	240	160				X										X						X									X	UD,G-Cm	pool in drainage under willow
W34	56		2	0.5	3	2	100	64	X													X						X									X	UD,G-Cm	in-stream wetland, cattle punch
W35	57		6	4	12	8	200	120	X			X										X						X										UD,G-Cm	in-stream pool near willows, grndwater
W36	58		5	3	8	5	200	100																														UD,G-Cm	in-stream pool near willows
W123	61		4	3	6	4	2000	1700				X											X															UD,G-Cm	probably perennial
W126	58		4	1.5	8	6	300	200				X																						X				UD,G-Cm	very turbid, isolated punch pools
PD2	60		3	2	6	4	600	450	X																													D-tt,G-Cm	clear water in compacted wheel ruts
W110	60		2	2	4	2	400	150	X														X											X				D-tt,G-Cm	clear water in compacted wheel ruts
PD1	59		2	2	6	4	600	450																				X										D-tt,G-Cm	clear water in compacted wheel ruts
W118	58		2	2	4	3	600	450	X																													D-tt,G-Cm	clear water in compacted wheel ruts

Project: California Flats Solar Project | Surveyor(s): Kelly Hardwicke TE-797267-14 | Weather Cond: clear, warm, and sunny

Date: 4/5/2012 | Time: 8:00 AM -4:30 PM | Air Temperatue (F): 70

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)

Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample

LB Redroductive Status: I = immature, m = mature, g = gravid (with eggs)

Habitat Condition

UD = undisturbed, D = disturbed - tt = tire tracks, t = trash, p = plowing

UG = ungrazed, G = grazed - C = cattle, H = horse, S = sheep, l = light grazing, m = moderate grazing, h = heavy grazing

			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crustaceans										Insecta												Mollusca			Turbellaria	Acari	Collembola	Herps			
									Ostracods	Copepods		Cladocera	Large Brachiopods						Coleoptera			Hemiptera		Ephemeroptera	Odonata		Diptera		Tricoptera										Other:NZ mud snail		
Pool No.	Water Temp (°F)	pH	Max	Ave.	Max	Ave.	Max	Ave.		Calanoida	Cyclopoda		LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Hallidae	Notonectidae	Corixidae		Zygoptera	Anisoptera	Culicidae	Chironomidae		Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni				Habitat Condition	Comments
W38	52	7.58	4	3	18	12	100	32	x			X								x		X	X					X										UD,G-Cm	turbid water in plunge pool
W39	54	7.73	6	3.5	18	12	100	64	X														X					X										UD,G-Cm	turbid water in plunge pool
W40	55	7.49	6	3	18	12	100	64	X			X								X			X					X										UD,G-Cm	turbid water in plunge pool
W33	56	7.53	7	5	8	6	240	180				X										X						X									X	UD,G-Cm	pool in drainage under willow
W35	56	7.6	6	4	12	8	200	140	X			X										X						X										UD,G-Cm	in-stream pool near willows, grndwater
W123	63	7.91	4	3	6	4	2000	1700				X											X											X				UD,G-Cm	probably perennial
W126	60	8.2	3	1.5	8	6	300	200				X																						X				UD,G-Cm	very turbid, isolated punch pools
PD2	65	7.31	4	3	6	4	700	500	X													X																D-tt,G-Cm	clear water in compacted wheel ruts
W110	66	7.22	3	2	4	2	400	150	X														X											X				D-tt,G-Cm	clear water in compacted wheel ruts
PD1	66	7.4	2	2	6	4	600	450																				X										D-tt,G-Cm	clear water in compacted wheel ruts
W118	58	7.54	2	2	4	3	600	450	X																													D-tt,G-Cm	clear water in compacted wheel ruts
W3	48	7.18	2	1	6	4	50	25	X																													UD,G-Cm	turbid, very shalllow, in punch
W20	51	7.22	2	1	12	6	100	60	X			X																						X				UD,G-Cm	turbid water, mud bottom
W31	53		3	1.5	6	4	120	60	X			X																						X				UD,G-Cm	low spot at fence, turbid
W65	57		1	0.5	4	3	84	64																														UD,G-Cm	very shallow water, will likely dry in a day
W67	58	8.34	1	0.5	5	3	128	72																														UD,G-Cm	very shallow water, will likely dry in a day
W64	59	8.23	3	2	4	3	420	20																										X				UD,G-Cm	turbid water, no veg.

Project: California Flats Solar Project | Surveyor(s): Kelly Hardwicke TE-797267-14 | Weather Cond: clear, warm, and sunny

Date: 5/3/2012 | Time: 10:00 am - 2:00 PM | Air Temperatue (F): 78

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
Hydrology: D = dry, N/P = not ponding, M = moist, S = saturated to surface, I/P = intermittent ponding, X = present but not observed in 1 meter sample
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Habitat Condition
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			Present Depth (in)		Potential Depth (in)		Surface Area (ft^2)		Crusataceans										Insecta																Mollusca			Turbellaria	Acari	Collembola	Herps	Other-NZ mud snail		
										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera																	
Pool No.	Water Temp (^{0}F)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliplidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other-NZ mud snail	Habitat Condition	Comments
W38	58		2	0.5	18	12	100	32	x			X								x		x	X					X											UD,G-Cm	turbid water in plunge pool
W39	59		2	0.5	18	12	100	64	X														X					X											UD,G-Cm	turbid water in plunge pool
W40	61		0.5	0.5	18	12	100	64	X			X								X			X					X											UD,G-Cm	turbid water in plunge pool
W33	63		4	2	8	6	240	180				X										X						X										X	UD,G-Cm	pool in drainage under willow
W35	63		4	2	12	8	200	140	X			X										X						X											UD,G-Cm	in-stream pool near willows, grndwater
W123	70		3	2	6	4	2000	1700				X											X											X					UD,G-Cm	probably perennial
W126	69		2	1	8	6	300	200				X																						X					UD,G-Cm	very turbid, isolated punch pools
W64	72		0.5	1	4	3	420	20																										X					UD,G-Cm	turbid water, no veg.

Project: California Flats Solar Project | Surveyor(s): Kelly Hardwicke TE-797267-14 | Weather Cond: clear, warm, and sunny

Date: 5/3/2012 | Time: 10:00 am - 2:00 PM | Air Temperatue (F): 78

Abundance: R = Rare (<2 Individuals), NC = Not Common (3-10 Individuals), C = Common (11-50 Individuals), VC = Very Common (51-100 Individuals, A = Abundant (>100 Individuals)
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										Copepods			Large Brachiopods						Coleoptera			Hemiptera			Odonata		Diptera																	
Pool No.	Water Temp (^{0}F)	pH	Max	Ave.	Max	Ave.	Max	Ave.	Ostracods	Calanoida	Cyclopoda	Cladocera	LIOC	BRLY	BRME	LEPA	other:	other:	Dytiscidae	Hydrophilidae	Haliplidae	Notonectidae	Corixidae	Ephemeroptera	Zygoptera	Anisoptera	Culicidae	Chironomidae	Tricoptera	Lymaeidae	Physidae	Planorbidae	Micro-turbularian	Hydracanni			Other-NZ mud snail	Habitat Condition	Comments
W38	58		2	0.5	18	12	100	32	x			X								x		x	X					X											UD,G-Cm	turbid water in plunge pool
W39	59		2	0.5	18	12	100	64	X														X					X											UD,G-Cm	turbid water in plunge pool
W40	61		0.5	0.5	18	12	100	64	X			X								X			X					X											UD,G-Cm	turbid water in plunge pool
W33	63		4	2	8	6	240	180				X										X						X										X	UD,G-Cm	pool in drainage under willow
W35	63		4	2	12	8	200	140	X			X										X						X											UD,G-Cm	in-stream pool near willows, grndwater
W123	70		3	2	6	4	2000	1700				X											X											X					UD,G-Cm	probably perennial
W126	69		2	1	8	6	300	200				X																						X					UD,G-Cm	very turbid, isolated punch pools
W64	72		0.5	1	4	3	420	20																										X					UD,G-Cm	turbid water, no veg.

Appendix E.21

2012 CRLF Site Assessment

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

CALIFORNIA RED-LEGGED FROG SITE ASSESSMENT

CALIFORNIA FLATS SOLAR PROJECT

Prepared by

H. T. HARVEY & ASSOCIATES

Brian Boroski, Ph.D., Principal-in-Charge
Amy Sparks, J.D., Senior Regulatory Specialist
Jeff Wilkinson, Ph.D., Senior Herpetologist

Prepared for

CALIFORNIA FLATS SOLAR, LLC
421 SW Sixth Avenue, Suite 1000
Portland, OR 97204

30 July 2012 Project Number 3308-01

TABLE OF CONTENTS

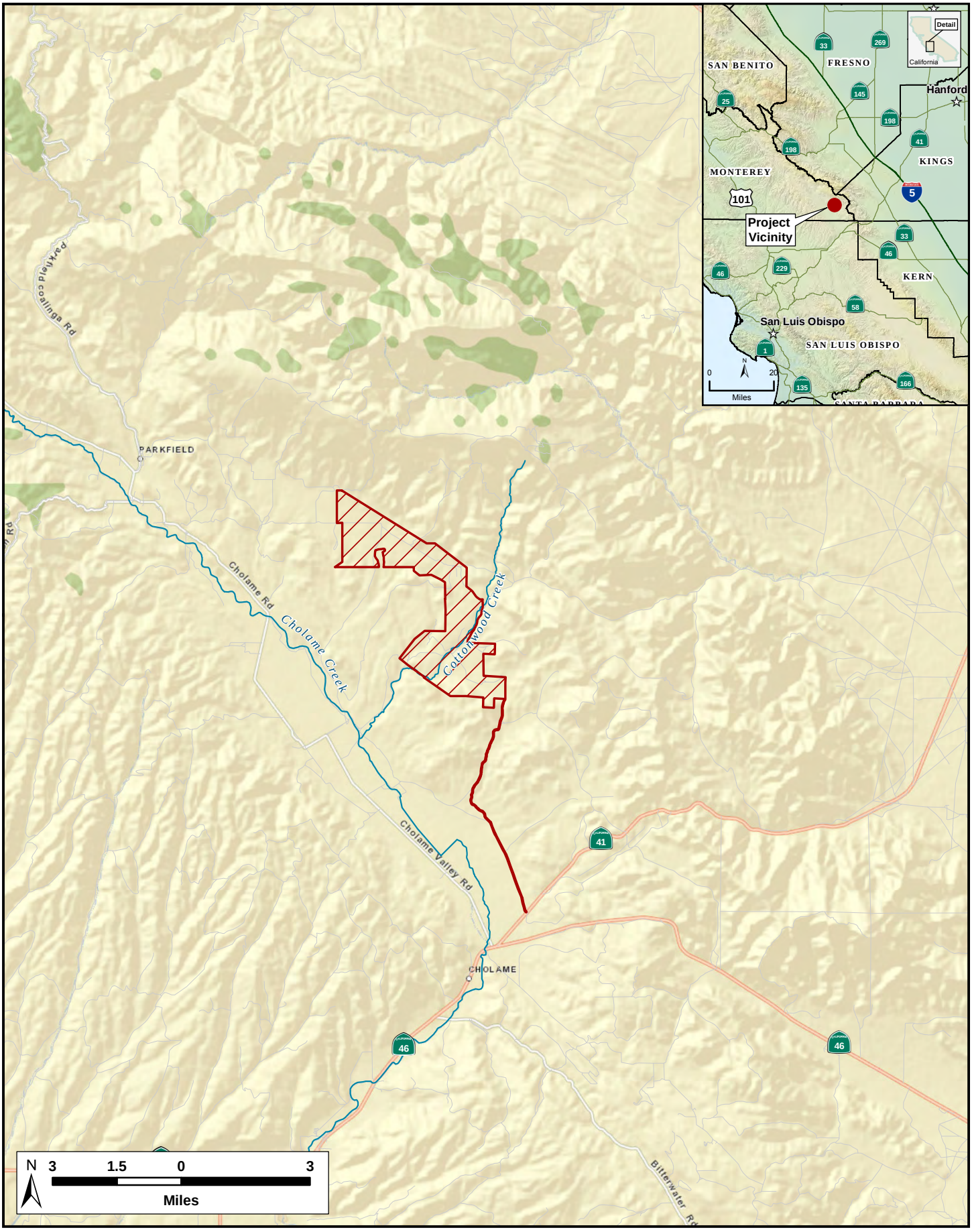
FIGURES:

INTRODUCTION

California Flats Solar, LLC (the project proponent), proposes to construct and operate a 280 megawatt (MW) alternating current (AC) photovoltaic (PV) solar energy project – the California Flats Solar Project (project) – on an approximately 2,600-acre site in southeastern Monterey County, California, near the borders of Monterey County, San Luis Obispo County, Kings County, and Fresno County (Figure 1). The proposed project includes solar arrays, related structures, electrical equipment and infrastructure improvements, including two substations and a switching station that will provide an interconnect to the Pacific Gas & Electric Company (PG&E) owned Morro Bay – Gates 230 kilovolt (kV) transmission line, which currently transects the project site, and an operations and maintenance (O&M) facility. Project improvements will be located on approximately 1,900 acres of the site. Primary access to the site will be provided from an existing private roadway (access road) off of California State Route 41 (Highway 41), and emergency access also will be available from Turkey Flat Road.

In June 2012, H. T. Harvey & Associates conducted a preliminary biological review for the project site. This preliminary biological review determined that there was a potential for occurrence of California red-legged frogs (CRF; *Rana draytonii*) on the site, as suitable upland and aquatic breeding habitat may be present and occurrence within the region is documented in the California Natural Diversity Data Base (CNDDB; Figure 2). Thus, it was determined that more information was needed to determine presence or absence of the species from the site.

In accordance with the August 2005 *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (Guidance) issued by the U.S. Fish and Wildlife Service (USFWS), H. T. Harvey & Associates has prepared this site assessment documenting site conditions and the location of the site relative to known occurrences of CRF. This site assessment will be submitted to the USFWS to obtain a determination regarding whether field surveys are necessary, and any other relevant guidance on the performance of field surveys according to the USFWS protocol to determine presence or absence of the species.



J:\Reports\Wildlife Reports\CRF Site Assessment\Fig 1 Vicinity Map.mxd

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Figure 1: Vicinity Map

California Flats Solar Project - CRF Site Assessment (3308-01)

July 2012

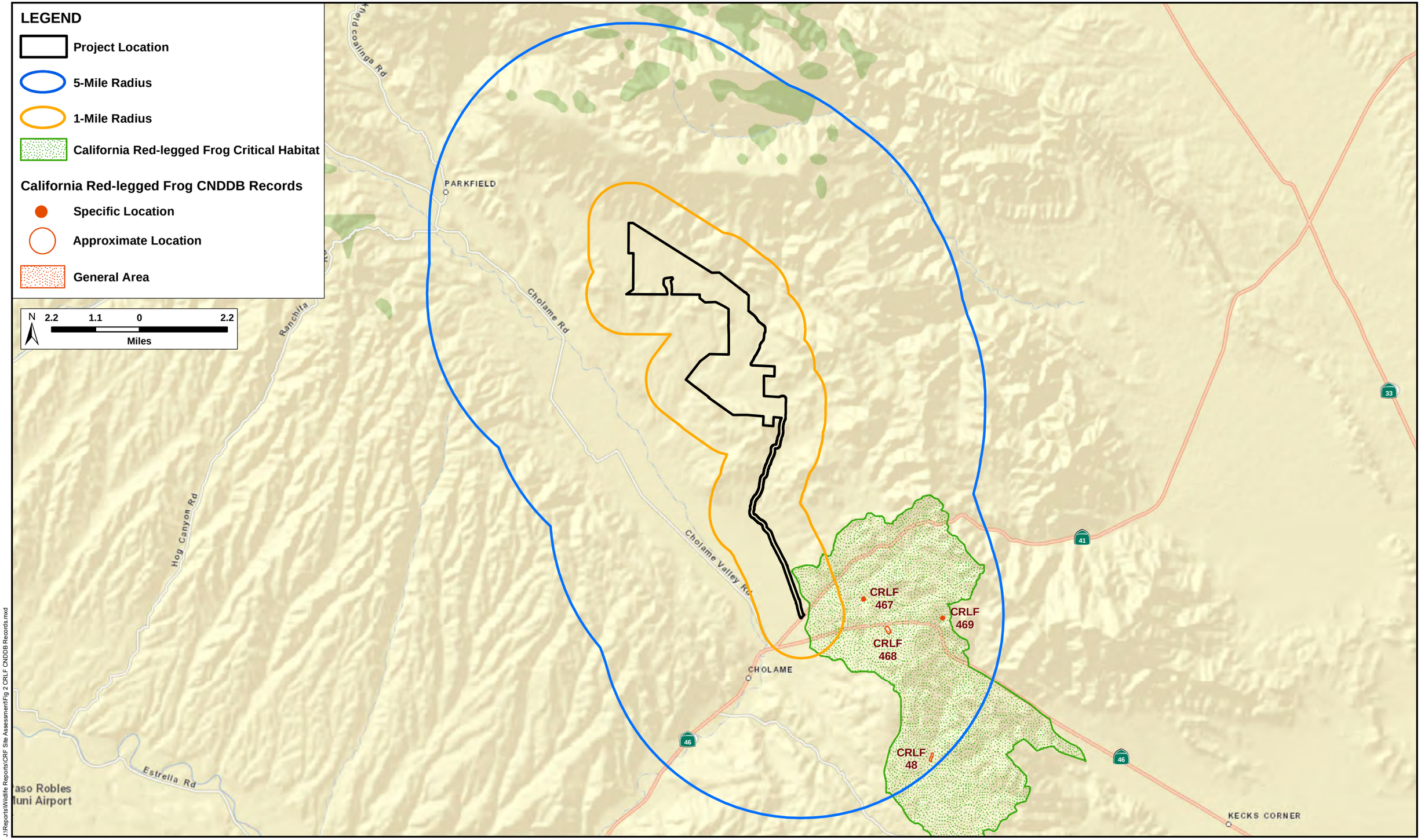

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Figure 2: California Red-legged Frog CNDDB Records

California Flats Solar Project - CRF Site Assessment (3308-01)

July 2012

SITE ASSESSMENT METHODS

Reconnaissance-level surveys of the site were conducted by H. T. Harvey & Associates herpetologist Jeff Wilkinson, Ph.D. on 18, 19, and 26 April 2012. The surveys were conducted by visiting all potential wetland features delineated in April 2012 (Figures 3 and 4) focusing on assessing the project site and access road's potential to support the CRF through an evaluation of on-site habitat conditions. Biotic habitats adjacent to the project site and access road were also assessed for potential suitability as habitat for this species. A review of background materials was conducted prior to and following the fieldwork. Background material reviewed included:

- An aerial photograph of the property;
- A topographic map of the property; and
- CNDDB, Search Results (20 April 2012).

SITE ASSESSMENT RESULTS

1. IS THE SITE WITHIN THE CURRENT OR HISTORIC RANGE OF THE CRF?

The project site is located in the Cholame Hills, approximately 25 mi northeast of the city of Paso Robles in southeastern Monterey County near the Kings County, San Luis Obispo County, and Fresno County borders, California (Figure 1). Based on its location, the project site is considered within the current range of the CRF according to the IUCN (http://maps.iucnredlist.org/map.html?id=136113) and USFWS (http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D02D) species range maps for this species. The southern section of the access road is adjacent to the Cholame Unit (SLO-1) of designated Critical Habitat for this species (Figure 2).

2. ARE THERE KNOWN RECORDS OF CRF AT THE SITE OR WITHIN A 1.6-KILOMETER (1-MILE) RADIUS OF THE SITE?

The 1-mile radius was selected as recommended by the Guidance based on telemetry data collected by Bulger et al. (2003). There are no records of CRF occurrences within 1 mi of the project site. According to the CNDDB, the closest known occurrence of CRF (Occurrence No. 467) is approximately 4.9 mi south southeast of the southern boundary of the CFS site. This same record is approximately 1.6 mi east of the intersection of the access road with Highway 41 (Figure 2). Two other CRF records are 2.2 mi (Occurrence No. 468) and 3.5 mi (Occurrence No. 469) east of the same intersection, respectively. Other than these 3 records there are no other records of CRF occurrence within 5 mi of the projectsite or the access road. These 3 records are within the Cholame Unit (SLO-1) of designated Critical Habitat.

3. WHAT ARE THE HABITATS WITHIN THE PROJECT SITE AND WITHIN 1.6 KILOMETERS (1-MILE) OF THE PROJECT BOUNDARY?

Description of the Site

Sixteen habitat types are characterized on the project site and access road including: California annual grassland (91%), wildflower field (4%), serpentine bunchgrass grassland (<0.5%), valley needlegrass grassland (<0.5%), grassland riparian (1%), interior coast range goldenbush scrub (<0.5%), willow – cottonwood riparian woodland (<0.5%), ornamental non-native woodland (<0.5%), mixed oak woodland (<1%), valley oak riparian woodland (<0.5%), ephemeral stream (<0.5%), intermittent stream (<0.5%), perennial stream (<0.5%), perennial marsh <0.5%), seasonal wetland (<0.5%), and developed/ruderal grasslands (1%). California ground squirrel (*Otospermophilus beecheyi*) burrow complexes are extensive throughout the upland portions of these habitat types.

Over 8 ac of ephemeral stream habitats occur throughout the project site and access road (Figures 3 and 4). Some streams have cobble beds, incised edges, and low vegetative cover in the beds with denser vegetation occurring up on the floodplains. Others are more shallowly incised and swale-like, with moderate to dense vegetative cover occurring within the bed that essentially matches the surrounding grassland. Stream flow is expected to occur primarily during and immediately after precipitation events. In most stretches of the ephemeral streams ponding will

not occur due to the well-drained nature of the alluvial soils within the stream beds. However, brief ponding may occur in reaches with supporting basin microtopography during precipitation events with the possibility of the water remaining for a short duration (up to 2 - 3 days) after the event. A few depressions in the bed of drainages may support ponding up to 2 weeks or more. In these areas, ponding is driven by surface runoff and, in some cases, augmented by seep hydrology. Additionally, plunge pools and areas of scour could potentially pond up to 12 in of water throughout the rainy season. The small pools typically have a muddy to gravelly bottom and deep cow punches with little vegetation, surrounded by hydrophytes. These pools are likely dry by mid-summer during most years.

Intermittent stream habitats are found on over 2 ac of the project site, and are evenly distributed throughout the north and south regions (Figures 3). They typically occur downstream of ephemeral streams where the slope increases and on steep hillsides, and form where a seasonal groundwater rise can augment run-off-based hydrology within these channels. Wetland areas (described separately below) are found in stretches of the intermittent streams and are typically fed by seeps found within the banks of these features, or by seasonal groundwater rise in some areas. At the time of the surveys, up to 3 in of ponded water was observed in some locations (Photo 18).

Perennial stream habitats are also found across the project site and support flows year-round (Figure 3). These perennial streams may support perennial marsh vegetation (discussed separately below), however the sections discussed here include areas where bare cobble rock, gravel, and mud form the bed substrate. As with the other stream types, streams north of Turkey Flat Road tend to be less incised and downcut than reaches and streams to the south of the road (Photo 16). Precipitation events will alter flow rates, with flow slowing during summer months. For the majority of the time, ponding of water does not occur due to the active flows, although in-drainage pools may reach up to 3 ft deep in some areas (Photos 1-13).

Perennial marsh occurs on over 8 ac of the project site within the major perennial streams such as Cottonwood Creek, portions of perennial tributaries, and in some large springs. During the time of the surveys, the depth of water flowing in the vegetated portions of these streams was approximately 4 - 6 in deep. In the large spring south of Turkey Flat Road (N on Figure 3), and another large spring on the southern boundary of the project site (O on Figure 3), the substrate is comprised of silty, mucky soils that contain a large amount of organic matter at various levels of decomposition. The wetland vegetation in the northern feature is tall and well-developed (Photo 14). In contrast, the southern wetland is dominated by low-stature rushes (Juncus sp.). Water depth in these features ranges from 2-3 in in the grazed southeastern marsh to over 12 in within the fenced southwestern marsh.

Seasonal wetland habitats occur on over 7 ac of the project site and access road, and include disked wetlands, alkali wetlands, and Juncus swales. The ponding in the disked wetlands is of a short duration, up to one week following precipitation events, and of negligible depth except in deeper areas of cow punch. Infiltration occurs rapidly for clay soils in most of these features and these wetlands are primarily supported by soil saturation rather than ponding. The alkali wetlands on the project site are concentrated in the northeastern corner where alkaline minerals have accumulated in the foothills and valley floor, forming a wetland complex where surface and

subsurface water drains into the project site from watersheds to the northeast. These features do not pond for a significant time following precipitation events, as for the most part they are located on stream banks that are not expected to support ponding. The Juncus swales are wetlands within intermittent streams that are fed by groundwater rise. These wetlands are supported by a seasonally high water table, and do not occur in favorable landscape positions to pond water for a significant duration throughout the year. Water from precipitation and/or groundwater flows through these areas during the rainy months, but rapidly percolates into the ground during the dry summer months when the groundwater table falls.

Potential for California Red-legged Frog Occurrence on the Site

The aquatic habitats on the project site and access road are consistent with the general type of habitat that supports CRF elsewhere in the region. Specifically, the perennial reaches of the streams on the project site possess several deep plunge pools that may be used as foraging habitat, cover, and possibly even breeding habitat by CRF (A-M on Figure 3; photos 1-13). Cottonwood Creek, in particular, contains several pools interspersed among shallower runs that would support CRF breeding, foraging, and dispersing (F-J on Figure 3; photos 6-10). Marsh habitat on the project site (N and O on Figure 3; photos 14 and 15) appears suitable for hiding, dispersing and foraging by CRF due to the extensive emergent vegetation, but is considered too shallow and lacks the open deeper ponded areas of typical breeding habitat for this species. The remaining aquatic habitats are relatively shallow perennial (photos 16 and 17), intermittent (photo 18), or ephemeral streams, which are expected to provide only dispersal habitat for CRF. The upland habitats between the aquatic habitats on the project site and access road present no barriers to dispersal.

In addition to the potential CRF habitat on the project site and access road, there are 2 in-stream stock ponds adjacent to the access road that are suitable aquatic breeding habitat for CRF (Pond 1 and Pond 2 in Figure 4, photos 19-22). Both ponds are relatively deep (over 3 ft deep) and Pond 1 in particular possesses patches of emergent vegetation in the shallower portions of the pond. Pond 2 lacks emergent vegetation but due to its depth (over 3 ft deep) is still considered suitable as CRF breeding habitat.

Though known CRF occurrences are not within 1 mi of the project site, based on the presence of CRF occurrences within the region and suitable aquatic habitat for CRF on the project site and in the stock ponds adjacent to the access road, we feel that surveys for this species is necessary to determine presence or absence within these various aquatic habitats on the site and adjacent to the access road.

References

Bulger, J. B., N. J. Scott Jr., and R. B. Seymour. 2003. Terrestrial activity and conservation of adult California Red-legged Frogs *Rana aurora draytonii* in coastal forests and grasslands. Biological Conservation 110:85–95.

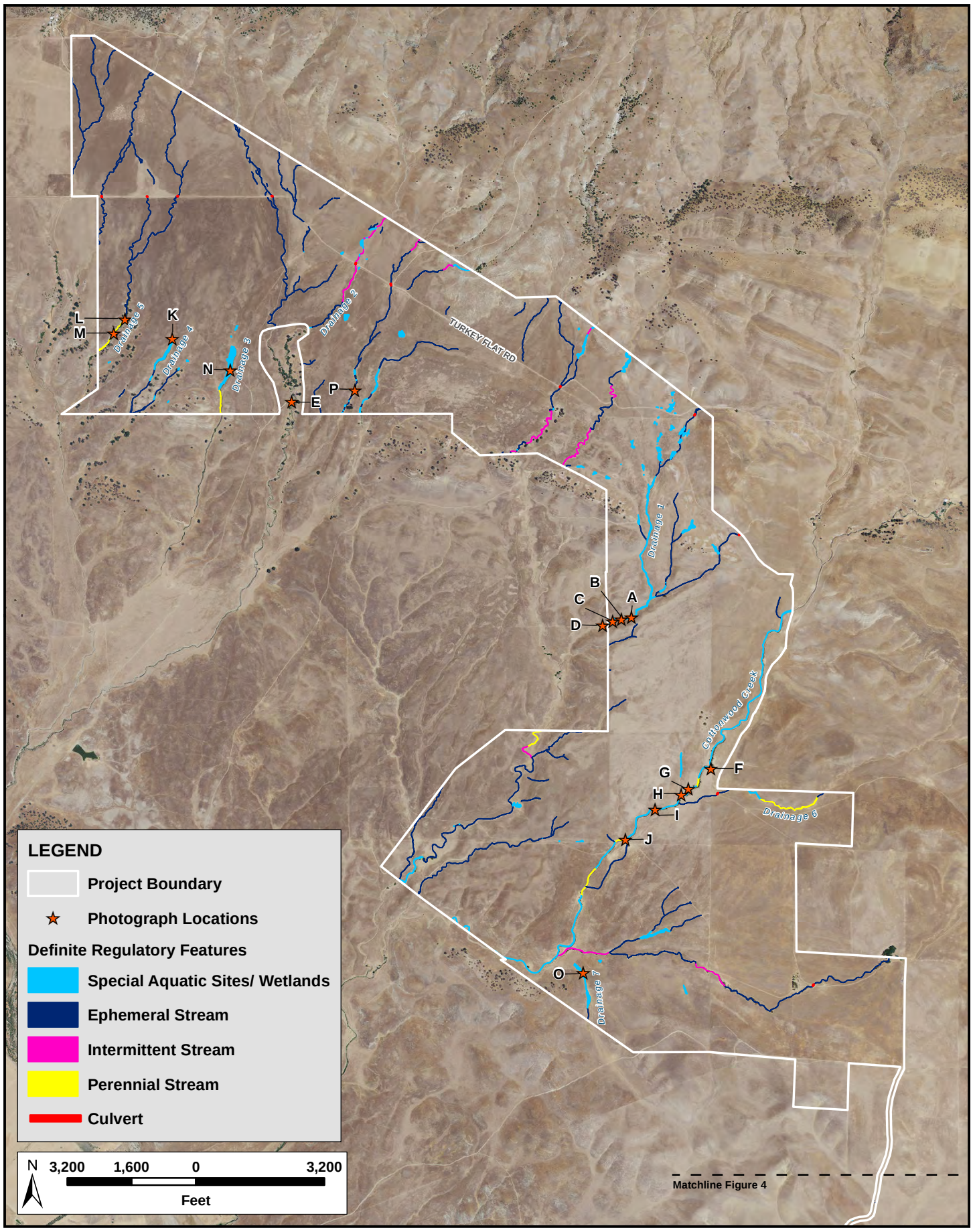

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Figure 3: Wetlands Map of Core CFSR Site

California Flats Solar Project - CRF Site Assessment (3308-01)

July 2012

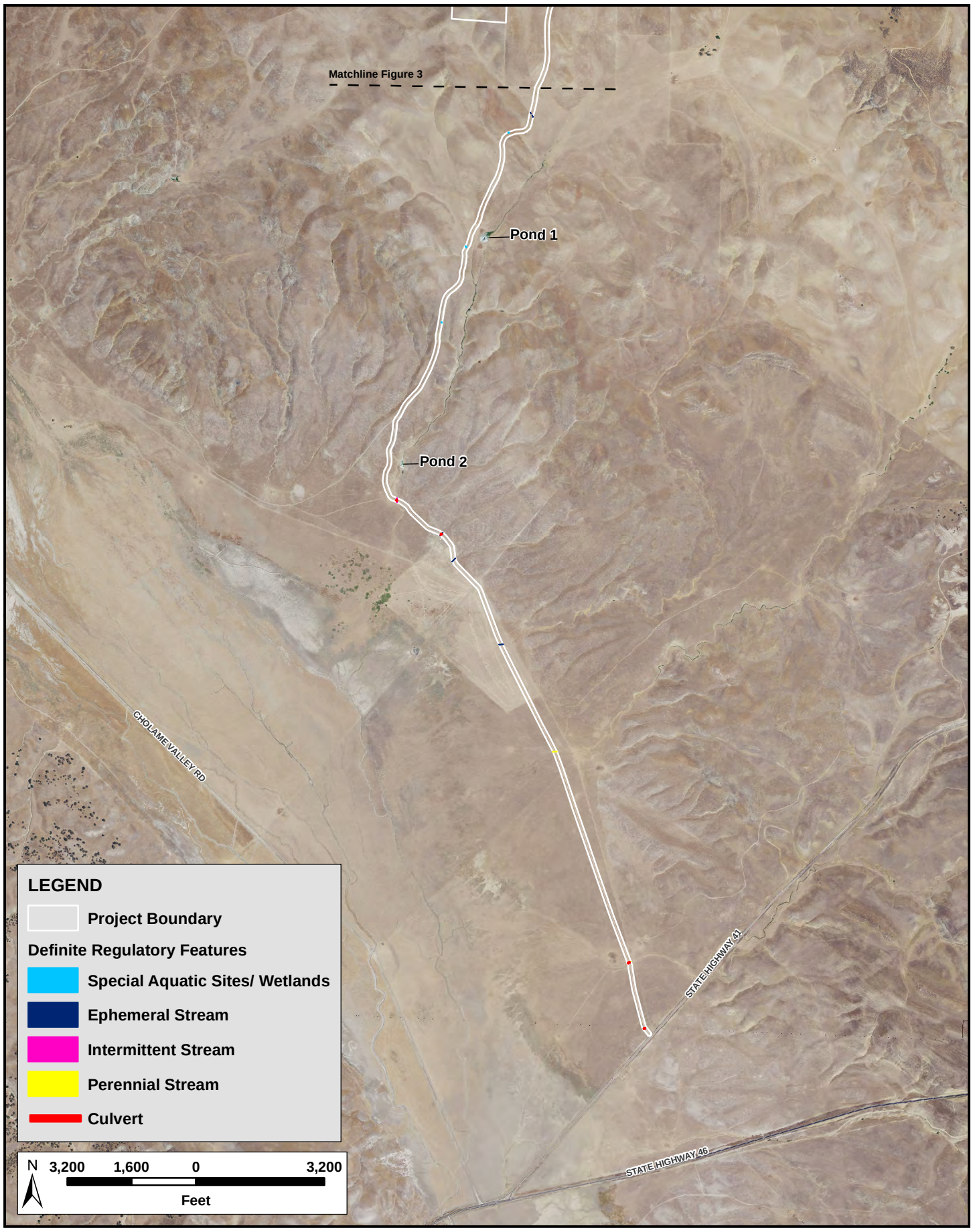

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Figure 4: Wetlands Map of Proposed Access Road

California Flats Solar Project - CRF Site Assessment (3308-01)

July 2012

SITE ASSESSMENT DATA SHEETS

California Red-legged Frog Habitat Site Assessment Data Sheet

Site Assessment reviewed by:_____
(FWS Field Office) (date) (biologist)

Date of Site Assessment: **04/30/2012**
(mm/dd/yyyy)

Site Assessment Biologists: **Wilkinson, Jeff** _____
(Last name) (first name) (Last name) (first name)

Site Location: **Monterey Co, California Flats**
10S 593566mE 4153813mN

(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: California Flats Solar Project
Brief description of proposed action: The proposed project is a 280 megawatt alternating current photovoltaic solar power plant in southern Monterey County, California.

1) Is this site within the current or historic range of the CRF (circle one)? YES NO

2) Are there known records of CRF within 1.6 km (1-mi) of the site (circle one)? YES NO
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND: Pond 1
Size: 415 x 235 ft Maximum depth: over 3 ft

Vegetation: emergent, overhanging, dominant species: emergent, cattails.

Substrate:_____

_____

Perennial or Ephemeral *(circle one).* If ephemeral, date it goes dry:_____

California Red-legged Frog Habitat Site Assessment Data Sheet

POND: Pond 2

Size: 458 x 132 ft Maximum depth: over 1-m

Vegetation: emergent, overhanging, dominant species: no emergent vegetation.

Substrate: _____

_____

Perennial **or Ephemeral** *(circle one).* If ephemeral, date it goes dry: _____

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM: Cottonwood Creek

Bank full width: 15 ft

Depth at bank full: 2 ft during high winter flows

Stream gradient: under 10%

Are there pools (circle one)? [YES] NO

If yes, size of stream pools: largest is 15 ft x 100 ft

Maximum depth of stream pools: 2-3 ft in deepest pool

Characterize non-pool habitat: run, riffle, glide, other: Most of the drainage outside of the pools can be represented by shallow glide type habitat.

Vegetation: emergent, overhanging, dominant species: see description for perennial drainages.

Substrate: Substrate within drainage consists of clay loam and clay, with scattered cobbles.

Bank description: Portions of the banks are nearly vertical and scoured, interspersed with more gently sloping sections.

[Perennial] or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:
Fish were observed in the drainage. Six pools were observed to be suitable as possible CRF breeding sites due to their depth, undercut banks, root wads, and emergent and submergent vegetation (F-J on Figure 3; Photos 6-10).

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM: Drainage 1

Bank full width: 10 ft

Depth at bank full: less than 2 ft during high winter flows

Stream gradient: under 10%

Are there pools (circle one)? YES NO

If yes, size of stream pools: largest is 10 ft x 60 ft

Maximum depth of stream pools: 1-m in deepest pool

Characterize non-pool habitat: run, riffle, glide, other: The drainage can be represented by very shallow flow less than 2 cm deep outside of pools, many sections dry.

Vegetation: emergent, overhanging, dominant species: Extensive submergent vegetation within pools, see description for perennial drainages.

Substrate: As with Cottonwood Creek, substrate within this drainage consists of clay loam and clay, with some cobble type substrate.

Bank description: Banks are generally gently sloping and vegetated with grasses.

Perennial **or Ephemeral** *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:
Tadpoles (not identified to species) were observed in the pools. The drainage was very shallow or dry outside of the pools. Very little emergent vegetation occurs throughout the drainage. Six pools were observed to be suitable as CRF breeding sites due to depth, size, presence of undercut banks, and submergent vegetation (A-D on Figure 3; Photos 1-4).

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM: Drainage 2

Bank full width: 10 ft

Depth at bank full: less than 2 ft during high winter flows

Stream gradient: under 10%

Are there pools (circle one)? [YES] NO

If yes, size of stream pools: One pool at 10 ft x 12 ft

Maximum depth of stream pools: 2-3 ft deep

Characterize non-pool habitat: run, riffle, glide, other: The drainage can be represented by very shallow flow less than 4 inches deep.

Vegetation: emergent, overhanging, dominant species: No vegetation within drainage on site.

Substrate: Substrate within this drainage consists of clay loam and clay, with cobble type substrate.

Bank description: Banks are gently sloping and vegetated with grasses.

[Perennial] or Ephemeral *(circle one).* If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:
The drainage was very shallow through the site (photo 16). A single pool approximately 3 ft deep was observed just south of the project site to be suitable as CRF foraging or possibly breeding habitat (E on Figure 3; Photo 5) due to depth and presence of root wads. Tadpoles (not identified to species) were observed in the pool.

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM: Drainage 3

Bank full width: 30 ft at marsh reduces to 10 ft in channel
Depth at bank full: less than 2 ft during high winter flows
Stream gradient: under 10%

Are there pools (circle one)? YES [NO]
If yes, size of stream pools: _____
Maximum depth of stream pools: _____

Characterize non-pool habitat: run, riffle, glide, other: The drainage can be represented by very shallow flow less than 6 ft deep through a marsh wetland then narrowing at the southern end into a more defined channel.

Vegetation: emergent, overhanging, dominant species: Extensive emergent vegetation, see description for perennial drainages.

Substrate: Substrate within this drainage consists of clay loam and clay.

Bank description: Banks are gently sloping to the marsh wetland.

[Perennial] or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:
Extensive emergent vegetation through a shallow slow flow marsh wetland provides cover for foraging and dispersing CRF on the CFSR site (N on Figure 3; Photo 14).

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM: Drainage 4

Bank full width: 15 ft
Depth at bank full: less than 2 ft during high winter flows
Stream gradient: under 10%

Are there pools (circle one)? YES NO
If yes, size of stream pools: largest is 15 ft x 30 ft
Maximum depth of stream pools: 3 ft

Characterize non-pool habitat: run, riffle, glide, other: The drainage is represented by a plunge pool at the northern end that becomes marshy southward to a more developed channel. Outside of the plunge pool the flow is relatively shallow at 4 inches deep.

Vegetation: emergent, overhanging, dominant species: Emergent vegetation within pool and marsh, see description of perennial drainages.

Substrate: Substrate within this drainage consists of clay loam and clay.

Bank description: Except at the north end, the banks are gently sloping and vegetated with grasses.

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:
Tadpoles (not identified to species) were observed in the plunge pool. Outside of the plunge pool, the drainage is very shallow through the CFSR site. The plunge pool is approximately 2-3 ft deep, with submergent and emergent vegetation, and appears to be suitable as CRF foraging or possibly breeding habitat (K on Figure 3; Photo 11).

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM: Drainage 5

Bank full width: 15 ft
Depth at bank full: less than 0.5 meter during high winter flows
Stream gradient: under 10%

Are there pools (circle one)? YES NO
If yes, size of stream pools: largest is 10 ft x 30 ft
Maximum depth of stream pools: 2-3 ft

Characterize non-pool habitat: run, riffle, glide, other: The drainage is represented by a plunge pool at the northern end with at least 2 more in-stream pools.

Vegetation: emergent, overhanging, dominant species: Emergent vegetation within the drainage was sparse, but the riparian vegetation (willows, etc.) was extensive.

Substrate: Substrate within this drainage consists of clay loam and clay.

Bank description: The banks slope into a sharp V shaped channel, the slopes are degraded where cattle access the drainage.

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:
A plunge pool at the north end of the drainage is approximately 3 ft deep and may be suitable as CRF foraging, habitat (L on Figure 3; photo 12). An additional one or 2 in-stream pools may also provide foraging habitat for CRF (M on Figure 3; Photo 13).

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM: Drainage 6

Bank full width: 10 ft
Depth at bank full: less than 2 ft during high winter flows
Stream gradient: under 10%

Are there pools (circle one)? YES NO
If yes, size of stream pools_____
Maximum depth of stream pools:_____

Characterize non-pool habitat: run, riffle, glide, other: The drainage can be represented by very shallow flow less than 4 inches deep.

Vegetation: emergent, overhanging, dominant species: Low emergent vegetation was extensive through the drainage.

Substrate: Substrate within this drainage consists of clay loam and clay.

Bank description: The banks were gently sloping consisting of grasses.

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:
The drainage was very shallow through the site and provides only dispersal habitat for CRF (Photo 17).

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM: Drainage 7

Bank full width: 10 ft
Depth at bank full: less than 2 ft during high winter flows
Stream gradient: under 10%

Are there pools (circle one)? YES NO
If yes, size of stream pools_____
Maximum depth of stream pools:_____

Characterize non-pool habitat: run, riffle, glide, other: The drainage can be represented by very shallow flow less than 4 inches deep.

Vegetation: emergent, overhanging, dominant species: Low emergent vegetation was extensive through the drainage.

Substrate: Substrate within this drainage consists of clay loam and clay.

Bank description: The banks were gently sloping consisting of grasses.

Perennial or Ephemeral *(circle one).* If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:
The drainage is very shallow and marshy through the site and provides only dispersal habitat for CRF (Photo 15).

SITE PHOTOS

Photo 1. Plunge pool at location A in Drainage 1.

Photo 2. Plunge pool at location B in Drainage 1.

Photo 3. Plunge pool at location C in Drainage 1.

Photo 4. Plunge pool at location D in Drainage 1.

Photo 5. Plunge pool at location E in Drainage 2.

Photo 6. In-stream pool at location F in Cottonwood Creek.

Photo 7. In-stream pool at location G in Cottonwood Creek.

Photo 8. In-stream pool at location H in Cottonwood Creek.

Photo 9. In-stream pool at location I in Cottonwood Creek.

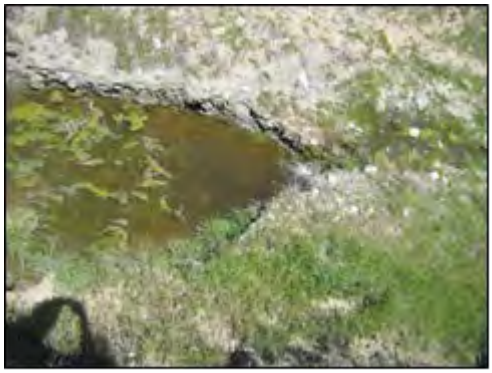


Photo 10. Plunge pool at location J in Cottonwood Creek.

Photo 11. Plunge pool at location K in Drainage 4.

Photo 12. Plunge pool at location L in Drainage 5.

Photo 13. In-stream pool at location M in Drainage 5.

Photo 14. Marsh habitat at location N in Drainage 3.

Photo 15. Marsh habitat at location O in Drainage 7.

Photo 16. Reach of Drainage 2 north of Turkey Flats Road.

Photo 17. Reach of Drainage 6 within the boundary of CFSR site.

Photo 18. Very shallow pooling at location P in an intermittent drainage.

Photo 19. In-stream stock pond (Pond 1) looking east.

Photo 20. In-stream stock pond (Pond 1) looking south.

Photo 21. In-stream stock pond (Pond 2) looking south.

Photo 22. In-stream stock pond (Pond 2) looking north.

Appendix N

Phase I Environmental Site Assessment

A Professional Environmental Service Corporation

KTA Associates, Inc.
800 5th Avenue
Suite 4100
Seattle, WA 98104
206-447-1450
www.ktainc.net

February 3, 2014

Koryn Kendall
Manager, Real Estate
First Solar, Inc.
135 Main Street, 6th floor
San Francisco, CA 94105

Dear Koryn,

KTA Associates, Inc. is pleased to provide the Phase 1 Environmental Site Assessment for the California Flats Project Site located in Central California. If you have any questions, please do not hesitate to contact me. We very much appreciate the opportunity to support you and First Solar with this important matter.

Sincerely,

Ken Taylor
Senior Environmental Engineer

Enclosure (1)


KTA

AST	Above-ground Storage Tank
ASTM	American Society for Testing and Materials
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
EDR	Environmental Data Resources, Inc.
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
KTA	KTA Associates, Inc.
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
NFA	No Further Action
NPL	National Priority List
PCB	Polychlorinated Biphenyls
RCRA	Resource Conservation and Recovery Act
SLIC	Spills, Leaks, Investigation, and Cleanup
SQG	Small Quantity Generator
TSDF	Treatment, Storage, Disposal Facility
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank

This report represents the findings of a Phase I Environmental Site Assessment (ESA) for the California Flats Project Site located in Central California (hereinafter referred to as the “Site”). The specific location of the Site is further described in Section 1.4, Scope of Activity. The objective of this Phase 1 ESA is to identify and characterize obvious or potential environmental concerns that may exist at the Site. To accomplish this objective, a Phase I ESA was performed focusing on a review of the: (1) information disclosed by the landowner, (2) current and historical Site uses, (3) surrounding property use, (4) environmental regulatory records and (5) Site visit.

This report documents and summarizes work performed to fulfill tasks described in the Statement of Work agreed to by First Solar, Inc. (hereinafter referred to as “First Solar”) and KTA Associates, Inc. (hereinafter referred to as “KTA”) on November 18, 2013 (herein referred to as the “SOW”). The SOW is based upon the American Society for Testing and Materials Standard E1527-05 (herein referred to as the “ASTM Standard”) for Phase 1 ESAs. The ASTM Standard is intended to permit a user to satisfy one of the requirements to qualify for "innocent landowner" defense to CERCLA liability. However, while KTA has conducted this Phase 1 ESA consistent with standard industry care, KTA makes no claims, warranties, or guarantees with regard to this environmental review. The performance of services by KTA is governed by the terms in the above-referenced SOW.

This report is based upon the application of scientific principles and professional judgment to certain facts with resulting subjective interpretations. Professional judgments expressed herein are based upon the facts currently available within the limits of the existing data, SOW, budget, and schedule. To the extent that more definitive conclusions are desired by the client than are warranted by the current available facts, it is specifically KTA’s intent that the conclusions and recommendations stated herein will be intended as guidance and not necessarily a firm course of action except where explicitly stated as such. WE MAKE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES AS TO MERCHANTABILITY OR FITNESS OF THE SITE FOR A PARTICULAR PURPOSE. In addition, the information provided in this report is not to be construed as legal advice.

The Scope of Activity for this project is presented in the SOW. The Site subject to this Phase 1 ESA is identified on the Site Map included in Appendix A. The specific property which constitutes the Site is the area described on the Site Map as “Project Parcels”.

The Phase 1 ESA developed under this SOW has been performed consistent with established protocols in the ASTM Standard for Phase 1 ESAs. The focus of the Phase 1 ESA is to determine whether or not Recognized Environmental Conditions (RECs) exist on the Site. RECs are defined in the ASTM Standard as:

> *"Recognized Environmental Conditions indicate the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws.* ***The term is not intended to include deminimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be deminimis are not recognized environmental conditions.****"*

The key to this definition is the portion included above in bold. Specifically, the properties we have identified as not having RECs are those that likely would not be subject to an enforcement order to conduct additional investigation or cleanup if viewed by the U.S. Environmental Protection Agency (EPA) or the State of California Department of Toxic Substance Control (DTSC).

The general Site location is approximately 175 miles southeast of San Francisco, CA and 25 northeast of Paso Robles, CA. The general location of the Site is shown in Figure 1. A more detailed map of the Site is included on the Site Map in Appendix A.

The Site is approximately 1,600 feet above sea level (with variation based on the presence of hills on the Site). Grassland is the primary vegetation present on the Site. Surface soils at the Site consist of silt and clay. These soils are characterized as having limited infiltration rates (i.e., water does not easily infiltrate through the soil). Bedrock exists at very shallow depths throughout the Site. Figure 2 includes a representative picture of the Site.

Given the hills present on the Site, limited springs are present. However, due to the current drought conditions present in California, the presence of surface water on the Site is very limited. Additionally, the elevation of groundwater beneath the Site has reduced significantly over the past 10 years. Further geology, soil, surface water and groundwater information is presented in the EDR Regulatory Review Report in Appendix D.

The Site is owned by The Hearst Corporation (both California and Delaware Corporations). Mr. Ben Higgins, Director of Agricultural Operations for The Hearst Corporation, is authorized to represent The Hearst Corporation for this matter. Mr. Ken Taylor of KTA contacted Mr. Higgins to obtain information regarding the Site. Mr. Higgins was asked the following questions:

- Are you aware of any spills of hazardous substances which have occurred on the Site that could result in a future environmental cleanup?
- Are you aware of any other environmental contamination issues within the Site, including landfills or mining activities?
- Are you aware of any environmental contamination or activities that might require a cleanup on any neighboring properties?

Mr. Higgins provided the answered no, to the best of his knowledge, to the three questions listed above.

The user of this Phase 1 ESA is First Solar. Ms. Koryn Kendall represents First Solar for this project. Mr. Ken Taylor contacted Ms. Kendall and asked the three following questions:

- Are you aware of specialized knowledge of the Site's environmental condition as it relates to potential contamination?
- Are you aware of commonly known information regarding the Site's environmental condition as it relates to potential contamination?
- Are the potential lease costs related to the Site discounted due to the presence of environmental contamination?

Ms. Kendall had the following responses to the three questions above, in the order the questions are presented: (1) no, other than what is disclosed in this Phase 1 ESA, (2) no, other than what is disclosed in this Phase 1 and (3) no.

The Site is currently used for livestock grazing as shown in Figure 3. Several water tanks and feed containers are located throughout the Site to provide water and feed for livestock. Additionally, there are locations on the Site where seasonal streams have been blocked to

provide water for livestock as shown in Figure 4. Gravel and dirt roads provide good access to the Site as shown in Figure 5. An electrical transmission line travels through the northern portion of the Site as shown in Figure 6. The specific location of the electrical transmission line is shown on the Overview Map included on the EDR Regulatory Review Report which is located in Appendix D.

The historical Site use is the same as the current Site use with one exception. Three petroleum wells have been drilled on the Site. Additionally, six petroleum wells have been drilled adjacent to Site boundaries. The specific location of these wells is provided in the map and table included in Appendix F. These wells have each been plugged and abandoned. It does not appear that a significant amount of petroleum, if any, was produced from the wells. Further, there is no significant evidence of petroleum production infrastructure on the Site. As a side note, in the very unlikely chance that future contamination/cleanup requirements were to be identified in association with these petroleum wells, First Solar would not have liability for the cleanup under CERCLA[i]. Regardless, there is no evidence that plugged and abandoned petroleum wells impact the Site in a manner that would result in the designation of an REC.

Additional historical research related documents for the Site have been identified. These reports are described in Section 2.6.1 through 2.6.4.

Information regarding Title Reports for the property on the Site may be found in the Title Insurance document included in Appendix C. Further Title information, including property deeds, may be found in the EDR LienSeach Report which is located in Appendix D. With regard to potential historical uses related to hazardous substances, the Title Report related information identifies property uses previously identified in this Phase 1 ESA with one exception. Easements for gas pipelines are identified on several parcels. The easements are associated with the transfer of natural gas. Given the gaseous nature of natural gas, even if releases of natural gas were to occur from buried pipelines, it is unlikely that any cleanup under CERCLA would be required. In fact, following migration through the soil, the natural gas would be released to the

atmosphere. No releases of natural gas were identified during the course of developing this Phase 1 ESA. There is no evidence that these pipelines impact the Site in a manner that would result in the designation of an REC.

Current and historical aerial photographs are provided in Appendix B. No historical Site uses are identified on the photographs beyond the uses already identified in this Phase 1 ESA.

Given the rural location, no Sanborn Maps are available for the property that makes up the Site.

Given the rural location, no City Directory reports are available for the property that makes up the Site.

The use of property immediately adjacent to the Site is the same as that on the Site with the exception of the petroleum wells previously discussed and two ranching compounds. A picture of the ranching compound located directly north of the Site is provided in Figure 7. There is no evidence that these ranching compounds impact the Site in a manner that would result in the designation of an REC.

Between 1.4 and 5 miles north of the Site, there are several mineral occurrences/prospects, some of which include relatively small mines. The specific locations of these mineral occurrences/prospects/mines are identified on the map included in Appendix F. The minerals include copper, magnesium, mercury, chromium, and asbestos. There are no significant streams or creeks which connect these mineral occurrences/prospects/mines to the Site. There is no evidence that these mineral occurrences/prospects/mines impact the Site in a manner that would result in the designation of an REC.

This section describes the results of the regulatory agency database review for sites of concern (SOCs) by Environmental Data Resources, Inc. (EDR). EDR is a firm that acquires data from government agencies. The purpose of the regulatory agency database review is to screen for potential sources of contamination or activities of environmental concern for the Site and adjacent properties. Additionally, given the remote location of the Site, the information obtained from this database is used to satisfy the local agency interview ASTM Standard requirement. All reviewed databases are updated and current as required by the ASTM Standard.

The search of available environmental regulatory databases was conducted by EDR. The search was conducted for the Site and a buffer of one mile beyond the Site boundary. Detailed descriptions for each of the databases along with the search results may be found in the EDR Regulatory Review Report included in Appendix D. Based on the information included in the EDR Regulatory Review Report, the only SOCs located on the Site are those associated with the petroleum wells previously discussed in Section 2.6. As stated in Section 2.6, there is no evidence that these petroleum wells impact the Site in a manner that would result in the designation of an REC.

Due to inadequate address information in the environmental database, there were several SOCs (herein referred to as “orphan sites”) that were not mapped and/or were not considered in EDR’s search of “reasonably ascertainable” records, either on the Site or within the one mile buffer beyond the Site boundary. These sites are listed in the EDR Regulatory Review Report included in Appendix D. Following an evaluation, KTA has concluded that these orphan sites are either located outside of the one mile buffer beyond the Site boundary or are located such that they do not have the potential to impact the Site.

This section describes the results of a review of whether deed restrictions have been designated on any parcels that make up the Site. Both a review of whether environmental related liens or other activity or use limitations (AULs) for the parcels were conducted by EDR. The results of this review are provided in Appendix D. No environmental related liens or AULs were identified.

Mr. Ken Taylor of KTA toured the Site on January 24, 2014. The strategy for the Site Visit included driving or hiking through all portions of the Site and obtaining visual observations. General information developed during the Site visit is provided below.

The Site is very rural and undeveloped as shown in Figure 2. No significant improvements are located on the Site. The Site shows no obvious signs of environmental impairment. An overall pictorial summary of the Site may be found in Appendix E. Additional Site observations are provided in the following sections.

No underground storage tanks containing hazardous substances were identified or reported to be present on the Site.

No aboveground storage tanks containing hazardous substances were identified or reported to be present on the Site. There are numerous aboveground storage tanks that are present on the Site and used to provide water for livestock as shown in Figure 8.

No indication of PCB releases were identified on the Site.

No significant solid waste was identified on the Site.

There is no wastewater generated on the Site. Very limited surface water is present on the Site. During significant rainfall events, storm water fills seasonal streams. An example of a seasonal stream bed on the Site is provided in Figure 9. A limited amount of spring water feeds this stream as well.

No staining of soil or pavement was identified on the Site.

No onsite potable water wells were identified on the Site. Wells used to obtain water for livestock are present on the Site as shown in Figure 8. No contamination resulting from the release of hazardous substances was identified in these wells.

There are no air emission sources on or near the Site that have the potential to result in the designation of an REC.

There are no significant structures on the Site which appear to have been demolished or burned in a fire.

No releases of hazardous substances were identified during the Site visit.

KTA has performed a Phase I ESA in conformance with the scope and limitations of ASTM Standard E1527-05 and the SOW for our services. This assessment has revealed no RECs in connection with the Site.

Exceptions exist when a review requirement identified in the ASTM Standard E1527-05 is not conducted. There are no exceptions associated with this Phase 1 ESA.

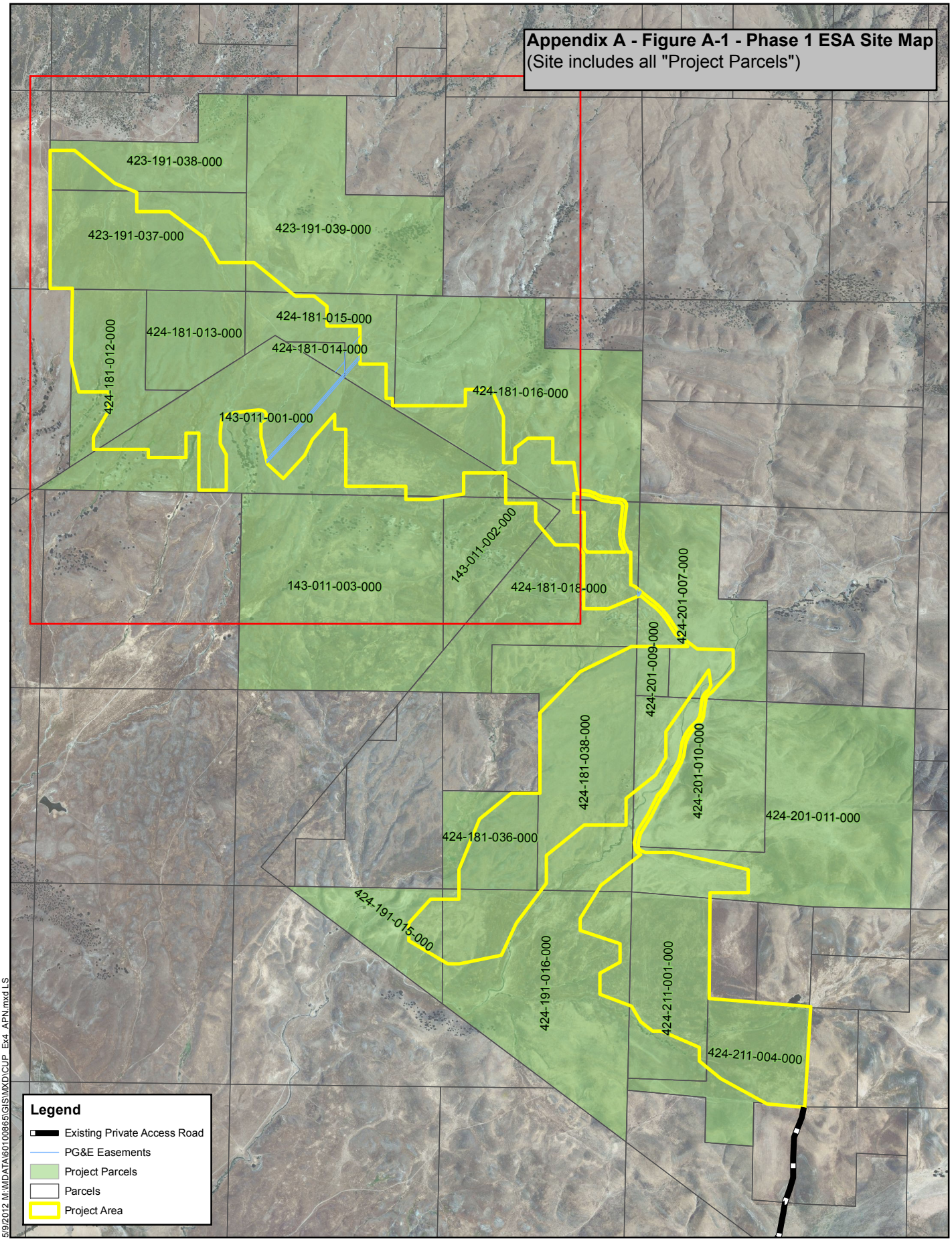
“I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312, and;

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Site. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 30 CFR 312.” A copy of my resume is included in Appendix G.

[i] CERCLA imposes liability for cleanup of "hazardous substances" on "owners" and "operators" of property regardless of whether they caused such contamination, 42 U.S.C. 9607(a). The USEPA may sue liable parties to recover remedial action costs it has incurred at a property, 42 U.S.C. 9607(a). Private entities and states who incur remedial action costs at a site may also sue liable parties for cost recovery. See United States v. Atlantic Research Corp., 127 S. Ct. 2331 (2007) (holding that 42 U.S.C. 9607(a) authorizes remedial action cost recovery actions by "innocent" and liable private entities).

Crude oil may contain hazardous substances, including benzene, ethyl benzene, toluene and xylene ("BTEX"). However, the CERCLA definition of "hazardous substances" excludes "petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance." 42 U.S.C. 9601(14). This exclusion includes crude oil and refined petroleum products, but does not include waste oil to which hazardous substances have been added. See 50 Fed. Reg. 13456, 13460 (Apr. 4, 1985).

This CERCLA petroleum exclusion will protect First Solar from liability for cleaning up historical or future releases of natural gas or crude oil development and production related fluids.



elementpower

0 0.25 0.5 1 Miles

Source: NAIP 2010 (Imagery)

CALIFORNIA FLATS SOLAR

APN Map

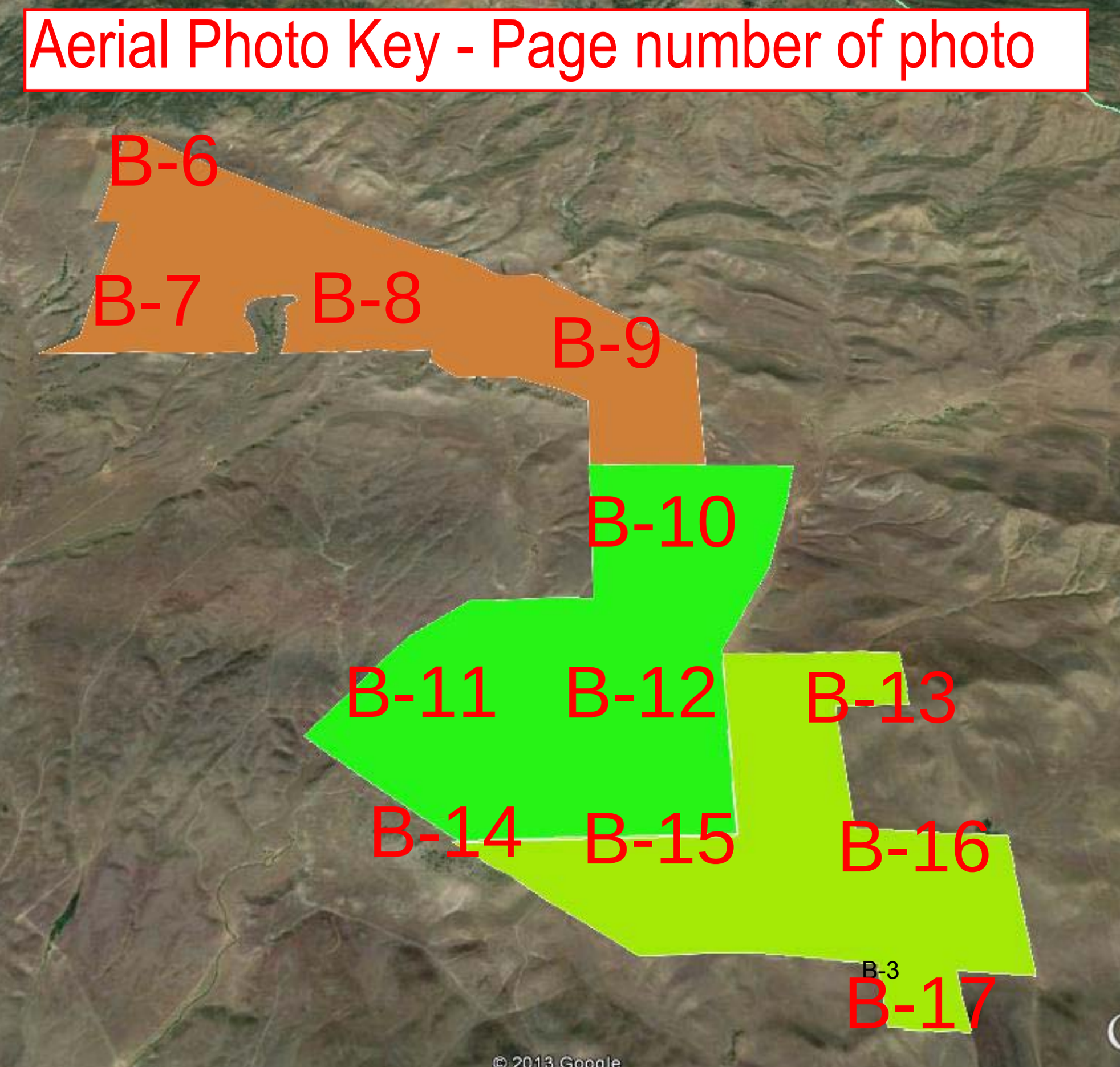
5/11/2012 • Exhibit 4

California Flats ESA

B-3	First Solar	Aerial Photo Study Area & Aerial Photo Key
B-4	Goggle Earth	Project Overview, Google, 2013
B-5	USGS	Project Overview, USGS, 1994
B-6 - B--17	Goggle Earth	High resolution photos, Google, 2013

			NW-Lat	NW-Lng	NE-Lat	NE-Lng	SE-Lat	SE-Lng	SW-Lat	SW-Lng
B-18	USAF	Legacy photo, 1960	35°58'42.22"N	120°23'32.77"W	35°58'34.90"N	120°14'27.05"W	35°51'11.31"N	120°14'36.49"W	35°51'18.66"N	120°23'41.36"W
B-19	USAF	Legacy photo, 1960	35°53'13.45"N	120°18'46.95"W	35°53'39.40"N	120°09'42.66"W	35°46'16.45"N	120°09'11.25"W	35°45'50.58"N	120°18'14.71"W
B-20	USAF	Legacy photo, 1960	35°53'13.38"N	120°22'09.66"W	35°53'35.01"N	120°13'05.11"W	35°46'11.85"N	120°12'39.02"W	35°45'50.30"N	120°21'42.74"W

Aerial Photo Key - Page number of photo



Google earth

miles 2
km 4

Google earth

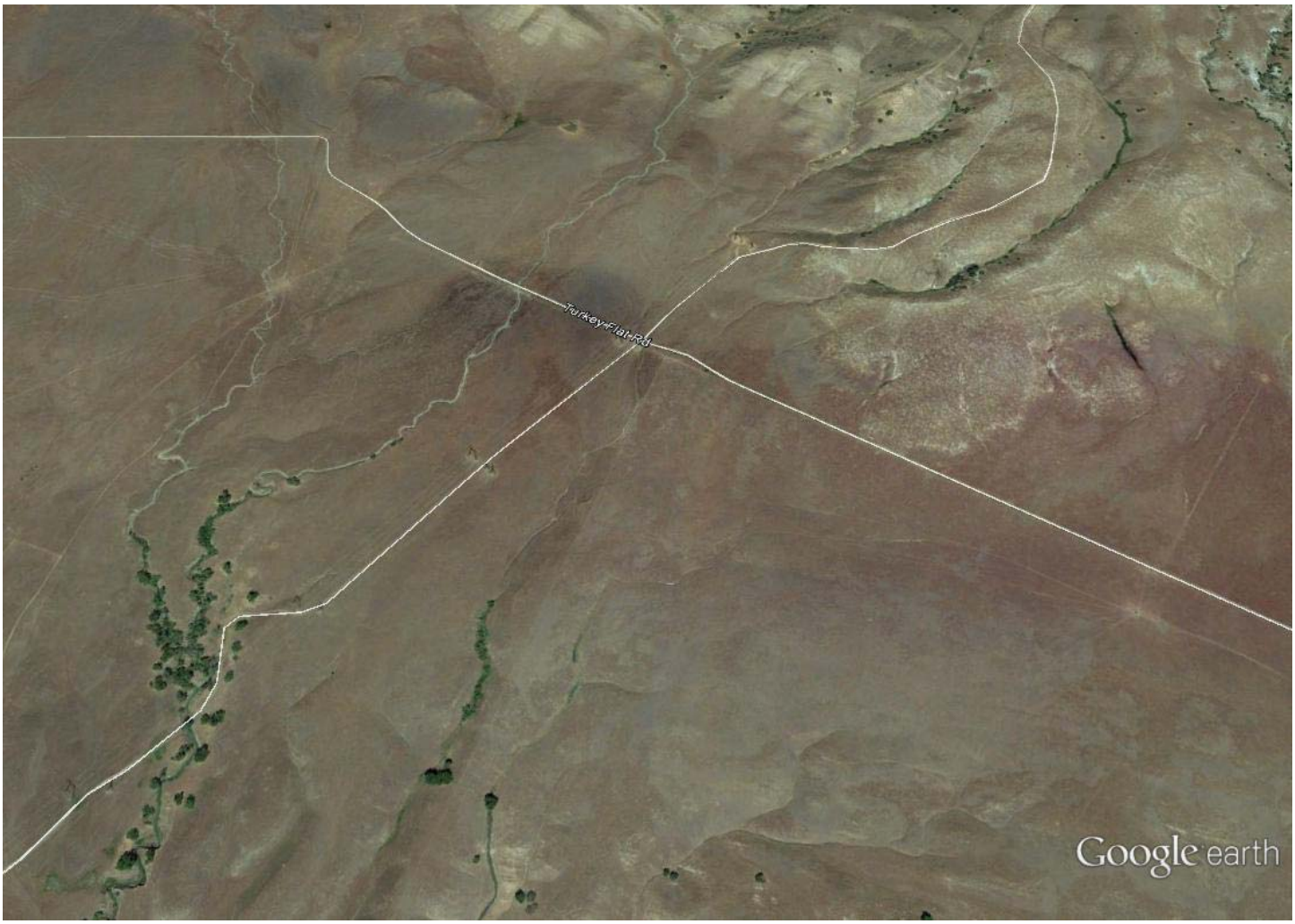
miles 2
km 4

Google earth

feet 3000
meters 900

Google earth

feet 3000
meters 900



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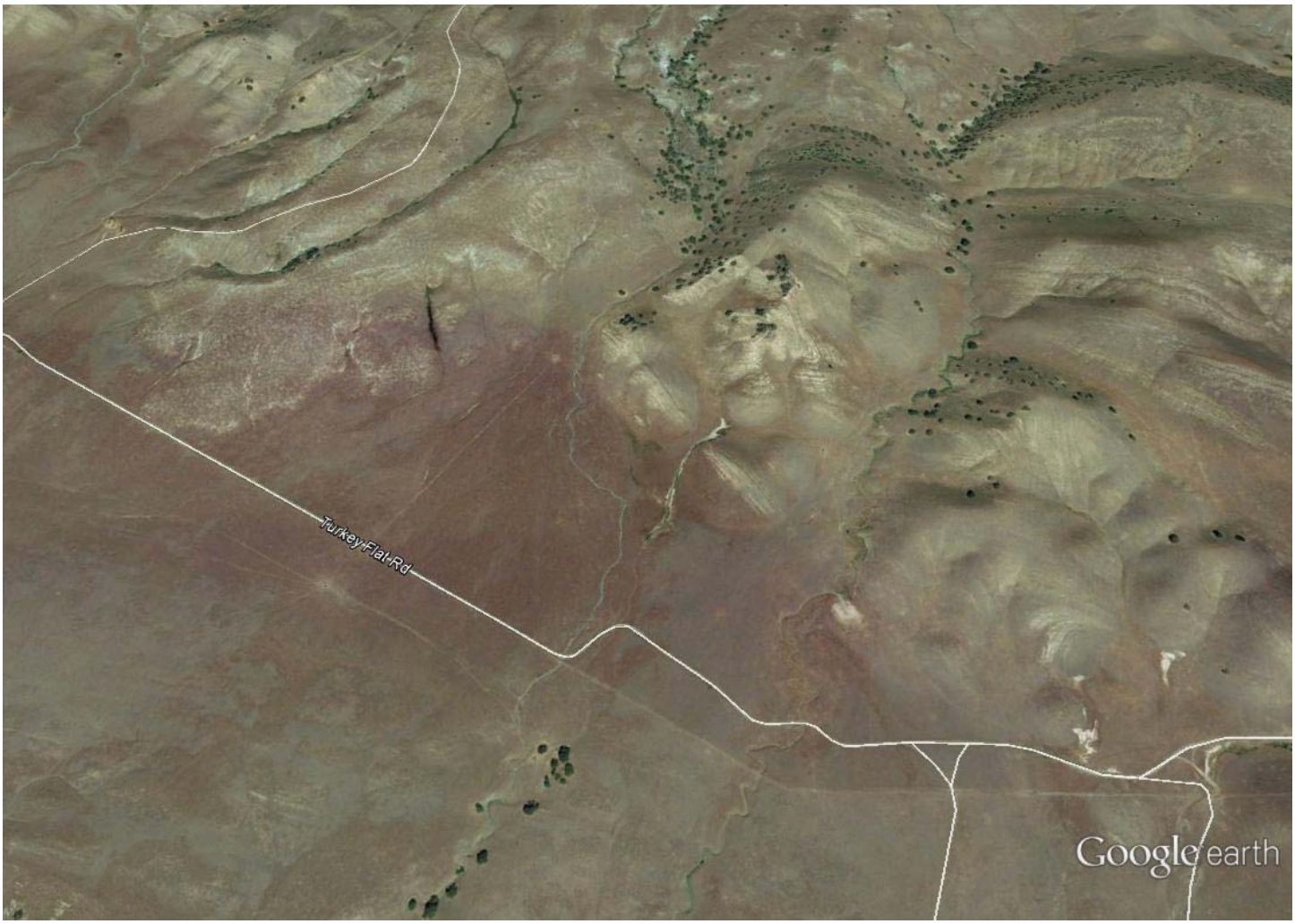

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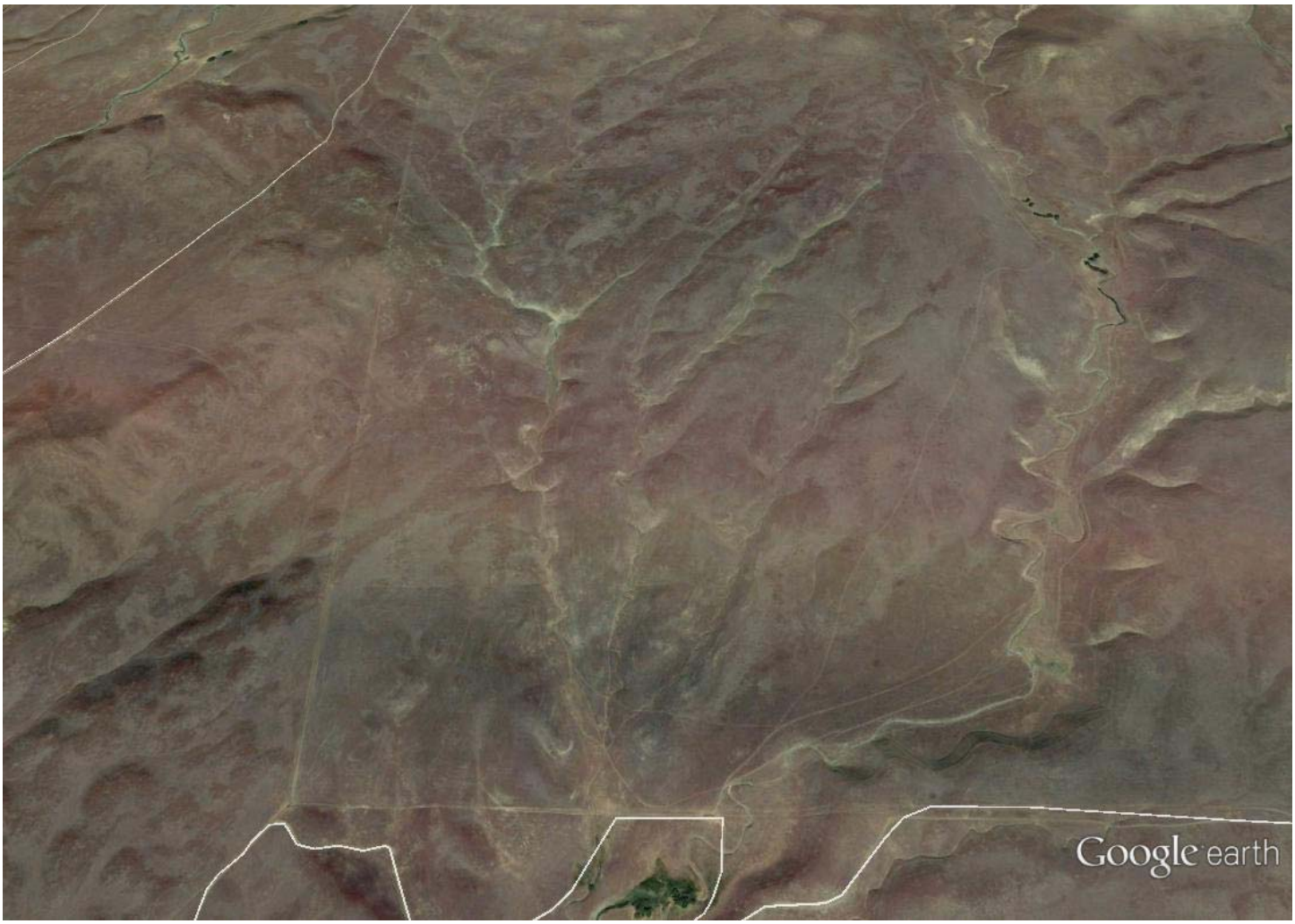

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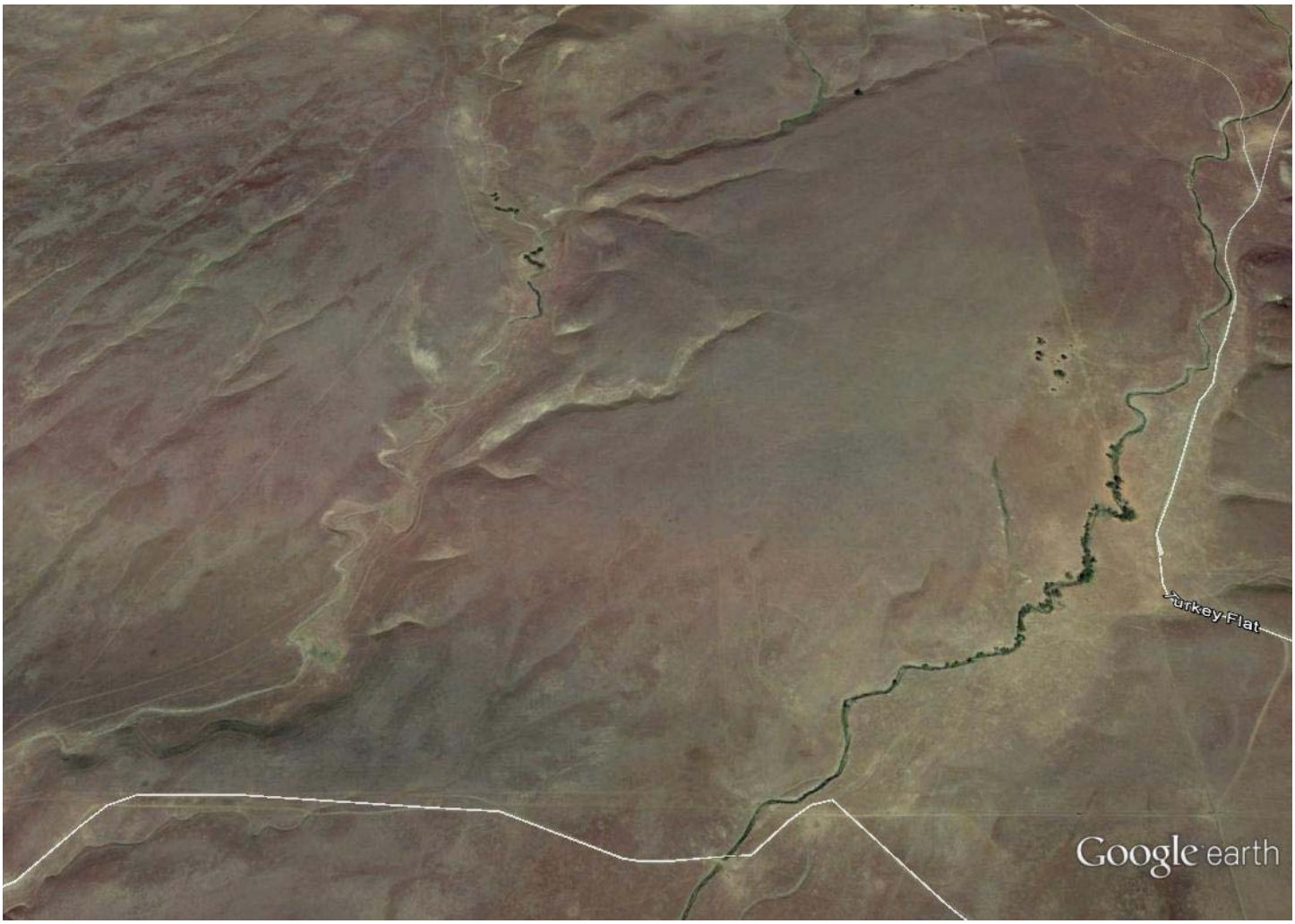

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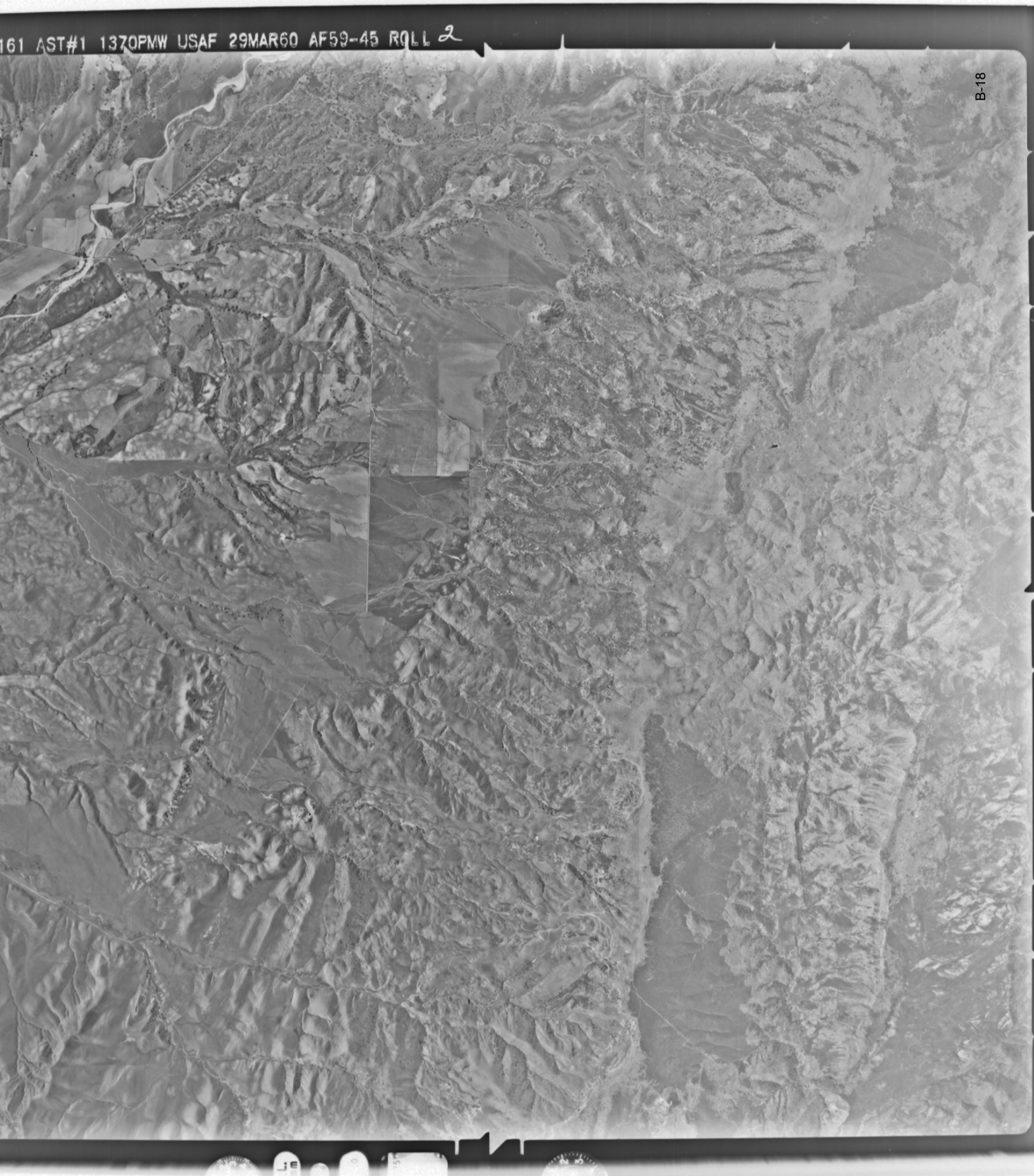

161 AST#1 1370PMW USAF 29MAR60 AF59-45 ROLL 2
B-18

161 AST#1 137OPMW USAF 29MAR60 AF59-45 ROLL 2

161 AST#1 1370PMW USAF 29MAR60 AF59-45 ROLL 2

Amended 11-25-2013

First American Title Insurance Company

National Commercial Services

30 North LaSalle Street, Suite 2700
Chicago, IL 60602

November 14, 2013

Koryn Kendall
First Solar
135 Main Street, 6th floor
San Francisco, CA 94105
Phone: (415)935-2522

Order Number: NCS-640235-CHI2

Property: Vacant Land, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

TABLE OF CONTENTS

YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: November 05, 2013 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

   (A) ALTA Extended Owner Policy - 2006 $To Be Determined

   Proposed Insured:

   To Be Determined

   (B) ALTA Extended Loan Policy - 2006 $To Be Determined

   Proposed Insured:

   To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

   Fee Simple

   (B) Title to said estate or interest at the date hereof is vested in:

   The Hearst Corporation, a Delaware corporation, as to Parcels One, Two, Four, Five, Eight and Eleven; The Hearst Corporation, a California corporation, as to Parcels Three, Six, Seven, Nine Ten

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Monterey, State of California, and is described as follows:

   PARCEL ONE:

   ALL THAT CERTAIN PORTION OF THE RANCHO CHOLAME, AS SAID RANCHO IS DESCRIBED IN THE PATENT FROM THE UNITED STATES OF AMERICA TO ELLEN F. WHITE, RECORDED FEBRUARY 10, 1888 IN BOOK B OF PATENTS, AT PAGE 471, MONTEREY COUNTY RECORDS, BEING ALL FRACTIONAL SECTIONS 1, 2, 3, 11 and 12 IN TOWNSHIP 24 SOUTH, RANGE 15 EAST, M. D. B. & M., WHICH LIES WITHIN THE BOUNDARY LINE OF SAID CHOLAME RANCHO, AS SHOWN ON THAT CERTAIN MAP ENTITLED "CHOLAME RANCHO, ASSESSOR'S PLATS MONTEREY COUNTY".

   PARCEL TWO:

   THE SOUTH HALF (S ½) OF THE NORTHWEST QUARTER (NW ¼), SOUTHWEST QUARTER (SW ¼) OF THE NORTHEAST QUARTER (NE ¼), EAST HALF (E ½) OF THE NORTHEAST QUARTER (NE ¼) AND THE SOUTH HALF (S ½) OF SECTION 34, TOWNSHIP 23 SOUTH, RANGE 15 EAST, MOUNT DIABLO MERIDIAN.

   THE WEST HALF (W ½) AND SOUTHEAST QUARTER (SE ¼) OF SECTION 35, TOWNSHIP 23 SOUTH, RANGE 15 EAST, MOUNT DIABLO MERIDIAN.

   THE SOUTH HALF (S ½), NORTHWEST QUARTER (NW ¼) AND SOUTH HALF (S ½) OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 1, TOWNSHIP 24 SOUTH, RANGE 15 EAST, MOUNT

DIABLO MERIDIAN.

EXCEPTING THEREFROM ANY PORTION THEREOF WHICH LIES WITHIN THE BOUNDARY LINE OF CHOLAME RANCHO, AS SHOWN ON THAT CERTAIN MAP ENTITLED "CHOLAME RANCHO, ASSESSOR'S PLATS MONTEREY COUNTY".

LOTS 1, 5 AND 7, THE SOUTHEAST QUARTER (SE ¼) OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 2, TOWNSHIP 24 SOUTH, RANGE 15 EAST, MOUNT DIABLO MERIDIAN.

EXCEPTING THEREFROM A 1/16TH INTEREST OF ALL COAL, OIL, GAS AND OTHER MINERAL DEPOSITS CONTAINED IN LOTS OF SECTION 2, TOWNSHIP 24 SOUTH, RANGE 15 EAST, AS PROVIDED BY AN ACT OF THE LEGISLATURE APPROVED MAY 25, 1921 (CHAPTER 303, STATUTES OF CALIFORNIA 1921) RESERVED BY THE STATE OF CALIFORNIA, IN PATENT RECORDED OCTOBER 31, 1927 IN BOOK 132, PAGE 122 OF OFFICIAL RECORDS OF MONTEREY COUNTY.

LOTS 2, 7 AND 8, THE SOUTHEAST QUARTER (SE ¼) OF THE NORTHWEST QUARTER (NW ¼).

ALSO ALL THAT PORTION OF LOTS 1 AND 9, THE SOUTHWEST QUARTER (SW ¼) OF THE NORTHWEST QUARTER (NW ¼), AND THE NORTHWEST QUARTER (NW ¼) OF THE SOUTHWEST QUARTER (SW ¼) LYING EASTERLY OF A LINE RUNNING PARALLEL WITH AND 8.58 CHAINS EASTERLY FROM (MEASURED AT RIGHT ANGLES) THE WESTERLY LINE OF SECTION 3, TOWNSHIP 24 SOUTH, RANGE 15 EAST, MOUNT DIABLO MERIDIAN.

LOT 1 OF SECTION 11 AND LOTS 1, 2 AND 3, THE SOUTHWEST QUARTER (SW ¼) OF THE SOUTHWEST QUARTER (SW ¼), NORTHEAST QUARTER (NE ¼) OF THE SOUTHWEST QUARTER (SW ¼), NORTH HALF (N ½) OF THE SOUTHEAST QUARTER (SE ¼), NORTHEAST QUARTER (NE ¼) OF THE NORTHEAST QUARTER (NE ¼), AND THE SOUTH HALF (S ½) OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 12, TOWNSHIP 24 SOUTH, RANGE 15 EAST, MOUNT DIABLO MERIDIAN.

ALL OF SECTIONS 23 AND 24, AND LOT 1 OF SECTION 25, TOWNSHIP 24 SOUTH, RANGE 15 EAST, MOUNT DIABLO MERIDIAN.

EXCEPTING THEREFROM ANY PORTION THEREOF WHICH LIES WITHIN THE BOUNDARY LINE OF CHOLAME RANCHO, AS SHOWN ON THAT CERTAIN MAP ENTITLED "CHOLAME RANCHO, ASSESSOR'S PLATS MONTEREY COUNTY".

LOTS 3, 4, 5, 6, 8 AND 9 OF SECTION 7, TOWNSHIP 24 SOUTH, RANGE 16 EAST, MOUNT DIABLO MERIDIAN.

LOTS 2, 3, 4, 5, 6 AND THE NORTH HALF (N ½) OF LOTS 8 AND 9 OF SECTION 18, TOWNSHIP 24 SOUTH, RANGE 16 EAST, MOUNT DIABLO MERIDIAN.

PARCEL THREE:

THE NORTHWEST QUARTER (NW ¼) AND THE SOUTHWEST QUARTER (SW ¼) OF SECTION 13, TOWNSHIP 24 SOUTH, RANGE 15 EAST, MOUNT DIABLO MERIDIAN.

EXCEPTING THEREFROM THAT PORTION OF THE SOUTHWEST QUARTER (SW ¼) OF SECTION 13 CONVEYED TO DAVID GREENWIG AND H.H. CAHILL, AND H.W. PARKERSON, AS TRUSTEES OF REDMOND SCHOOL DISTRICT BY DEED RECORDED OCTOBER 10, 1893 IN BOOK 41 OF DEEDS, PAGE 252, MONTEREY COUNTY RECORDS.

LOTS 3, 4, 5 AND 6, SECTION 3, TOWNSHIP 24 SOUTH, RANGE 15 EAST, MOUNT DIABLO MERIDIAN.

EXCEPTING THEREFROM AN UNDIVIDED ONE-HALF INTEREST IN AND TO THE PROCEEDS OF ANY OIL, GAS, OR MINERALS PRODUCED IN COMMERCIAL QUANTITIES, AS RESERVED IN THE

DEED FROM ERNEST R. HOFFMANN, ET AL., RECORDED MARCH 01, 1948 IN VOLUME 1040 OF OFFICIAL RECORDS, AT PAGE 494, MONTEREY COUNTY RECORDS.

PARCEL FOUR:

LOTS 2, 3, 4 AND 6 OF SECTION 2, TOWNSHIP 24 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF MONTEREY, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL MINERAL RIGHTS ON, IN AND UNDER THE HEREINABOVE DESCRIBED LANDS, INCLUDING ALL HYDROCARBONS, MINERALS, PLACER MINERALS AND LODE MINERALS RESERVED IN THOSE CERTAIN DEEDS RECORDED DECEMBER 24, 1958 IN BOOK 1920 OF OFFICIAL RECORDS, AT PAGES 579 AND 582, AND ON MARCH 26, 1965 IN REEL 396 OF OFFICIAL RECORDS, AT PAGE 1037, MONTEREY COUNTY RECORDS.

PARCEL FIVE:

SOUTH HALF OF SOUTHEAST QUARTER AND SOUTHEAST QUARTER OF SOUTHWEST QUARTER OF SECTION 12; THE EAST HALF OF SECTION 13; ALL IN TOWNSHIP 24 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN.

LOT 7 OF SECTION 7, TOWNSHIP 24 SOUTH, RANGE 16 EAST, MOUNT DIABLO BASE AND MERIDIAN.

EXCEPT ONE-HALF OF OIL, GAS, MINERALS OR OTHER HYDROCARBONS AS RESERVED IN DEEDS FROM IRENE HANCOCK, ET AL RECORDED DECEMBER 30, 1958 IN BOOK 1920, PAGE 579, MONTEREY COUNTY RECORDS AND RECORDED DECEMBER 30, 1958 IN BOOK 1920, PAGE 582, MONTEREY COUNTY RECORDS.

ALSO EXCEPT 25% OF ALL OIL, GAS, MINERALS OR OTHER HYDROCARBONS IN, ON AND UNDER THE HEREIN DESCRIBED PROPERTY AS EXCEPTED AND RESERVED IN DEED RECORDED MARCH 26, 1965 IN REEL 396, PAGE 1037, MONTEREY COUNTY RECORDS.

PARCEL SIX:

LOTS 3, 7 AND THE WEST HALF (W ½) OF THE SOUTHEAST QUARTER (SE ¼) OF SECTION 14, TOWNSHIP 24 SOUTH, RANGE 15 EAST, M. D. 8. & M.

PARCEL SEVEN:

LOT 1 AND THE SOUTHEAST QUARTER (SE ¼) OF THE NORTHEAST QUARTER (NE ¼) AND THE EAST HALF (E ½) OF THE SOUTHEAST QUARTER (SE ¼) OF SECTION 14, TOWNSHIP 24 SOUTH, RANGE 15 EAST, M. D. B. & M.

PARCEL EIGHT:

LOT 7 AND THE SOUTH OF LOTS 8 AND 9 OF SECTION 18, TOWNSHIP 24 SOUTH, RANGE 16 EAST M. D. B. & M.

EXCEPT ONE HALF OF ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEEDS RECORDED DECEMBER 30, 1958 IN BOOK 1920, PAGE 579 AND BOOK 1920 PAGE 582 OF OFFICIAL RECORDS.

PARCEL NINE:

LOTS 3, 4, 5, 6 AND THE NORTH 12.12 ACRES OF LOT 7 AND THE NORTH 65.29 ACRES OF LOT 8, OF SECTION 19, TOWNSHIP 24 SOUTH, RANGE 16 EAST, M. D. B. & M.

PARCEL TEN:

LOT 2 SECTION 30, TOWNSHIP 24 SOUTH RANGE 16 EAST AND LOTS 9 AND 10, AND THE SOUTH 14.71 ACRES OF LOT 8, AND THE SOUTH 7.36 ACRES OF LOT 7, SECTION 19, TOWNSHIP 24 SOUTH, RANGE 16 EAST, M. D. B. & M.

PARCEL ELEVEN:

LOTS 3, 4, 5, 6, 7, 8, 9, SOUTH HALF OF LOT 2, THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER, THE NORTH HALF OF THE SOUTHEAST QUARTER, AND THE SOUTH QUARTER OF THE NORTHEAST QUARTER OF SECTION 30, LOT 1 OF SECTION 31, LOTS 1 AND 2 OF SECTION 32, TOWNSHIP 24 SOUTH, RANGE 16 EAST M. D. B. & M.

APN: 143-011-001 through 143-011-003 (Affects: Parcel One); 423-191-037, 423-191-038, 423-191-39, 424-181-012, 424-181-014, 424-181-016, 424-181-018, 424-191-015, 424-191-016, 424-201-007, and 424-201-010 (Affects: Parcel Two); 424-181-013, 424-181-36, and 424-181-37 (Affects: Parcel Three); 424-181-015 (Affects: Parcel Four); 424-181-038 and 424-201-009 (Affects: Parcel Five); 424-181-035 (Affects: Parcel Six and Parcel Seven); a portion of 424-201-011 (Affects Parcel Eight); 424-211-001 (Affects Parcel Nine); 424-211-004 (Affects Parcel Ten) and 424-211-025 (Affects Parcel Eleven)

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form(as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[X] (I) An ALTA/ACSM survey of recent date, which complies with the current minimum standard detail requirements for ALTA/ACSM land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[X] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[**X**] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

[] (R) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (S) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (T) A copy of the construction contract must be submitted to the Company for review.

[] (U) An inspection of the land must be performed by the Company for verification of the phase of construction.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$156.92, OPEN
Penalty:	$0.00
Second Installment:	$156.92, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	143-011-001-000

(Affects a portion of Parcel One)

2. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$156.23, OPEN
Penalty:	$0.00
Second Installment:	$156.23, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	143-011-002-000

(Affects a portion of Parcel One)

3. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$649.32, OPEN
Penalty:	$0.00
Second Installment:	$649.32, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	143-011-003-000

(Affects a portion of Parcel One)

4. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$331.79, OPEN
Penalty:	$0.00
Second Installment:	$331.79, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	423-191-037-000

(Affects a portion of Parcel Two)

5. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$177.26, OPEN
Penalty:	$0.00
Second Installment:	$177.26, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	423-191-038-000

(Affects a portion of Parcel Two)

6. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$377.93, OPEN
Penalty:	$0.00
Second Installment:	$377.93, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	423-191-039-000

(Affects a portion of Parcel Two)

7. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$204.49, OPEN
Penalty:	$0.00
Second Installment:	$204.49, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	424-181-012-000

(Affects a portion of Parcel Two)

8. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$15.38, OPEN
Penalty:	$0.00
Second Installment:	$15.38, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	424-181-014-000

(Affects a portion of Parcel Two)

9. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$497.92, OPEN
Penalty:	$0.00
Second Installment:	$497.92, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	424-181-016-000

(Affects a portion of Parcel Two)

10. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$334.06, OPEN
Penalty:	$0.00
Second Installment:	$334.06, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	424-181-018-000

(Affects a portion of Parcel Two)

11. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$109.21, OPEN
Penalty:	$0.00
Second Installment:	$109.21, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	424-191-015-000

(Affects a portion of Parcel Two)

12. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$488.58, OPEN
Penalty:	$0.00
Second Installment:	$488.58, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	424-191-016-000

(Affects a portion of Parcel Two)

13. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$279.98, OPEN
Penalty:	$0.00
Second Installment:	$279.98, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	424-201-007-000

(Affects a portion of Parcel Two)

14. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$270.06, OPEN
Penalty:	$0.00
Second Installment:	$270.06, OPEN
Penalty:	$0.00
Tax Rate Area:	106-000
A. P. No.:	424-201-010-000

(Affects a portion of Parcel Two)

15. General and special taxes and assessments for the fiscal year 2013-2014.

First Installment:	$156.92, OPEN

Penalty: $0.00
Second Installment: $156.92, OPEN
Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-181-013-000

(Affects a portion of Parcel Three)

16. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $172.83, OPEN
Penalty: $0.00
Second Installment: $172.83, OPEN
Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-181-036-000

(Affects a portion of Parcel Three)

17. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $172.83, OPEN
Penalty: $0.00
Second Installment: $172.83, OPEN
Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-181-037-000

(Affects a portion of Parcel Three)

18. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $577.34, OPEN
Penalty: $0.00
Second Installment: $577.34, OPEN
Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-181-015-000

(Affects Parcel Four)

19. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $744.43, OPEN
Penalty: $0.00
Second Installment: $744.43, OPEN
Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-181-038-000

(Affects a portion of Parcel Five)

20. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $51.44, OPEN
Penalty: $0.00
Second Installment: $51.44, OPEN

Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-201-009-000

(Affects a portion of Parcel Five)

21. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $333.19, OPEN
Penalty: $0.00
Second Installment: $333.19, OPEN
Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-181-035-000

(Affects Parcel Six and Parcel Seven)

22. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $984.96, OPEN
Penalty: $0.00
Second Installment: $984.96, OPEN
Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-201-011-000

(Affects Parcel Eight)

23. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $230.47, OPEN
Penalty: $0.00
Second Installment: $230.47, OPEN
Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-211-001-000

(Affects Parcel Nine)

24. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $246.04, OPEN
Penalty: $0.00
Second Installment: $246.04, OPEN
Penalty: $0.00
Tax Rate Area: 106-000
A. P. No.: 424-211-004-000

(Affects Parcel Ten)

25. General and special taxes and assessments for the fiscal year 2013-2014.
First Installment: $429.89, OPEN
Penalty: $0.00
Second Installment: $429.89, OPEN
Penalty: $0.00
Tax Rate Area: 106-000

A. P. No.: 424-211-025-000

(Affects Parcel Eleven)

26. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

27. Rights, rights of way, reservations and exceptions in the patent recorded April 02, 1890 in Book C of Patents, Page 121.

(Affects NW ¼ of Section 13, T24S R15E (APN 424-181-37)

28. Rights, rights of way, reservations and exceptions in the patent recorded April 18, 1890 in Book C of Patents, Page 142.

(Affects Section 23, T24S R15E (APN 424-191-15)

29. Rights, rights of way, reservations and exceptions in the patent recorded April 04, 1891 in Book C of Patents, Page 447.

(Affects Lot 1 of Section 25, T24S R15E (APN 424-191-16)

30. Rights, rights of way, reservations and exceptions in the patent recorded April 06, 1891 in Book C of Patents, Page 448.

(Affects SW ¼ of Section 34, T23S, R15E (423-191-37)

31. Rights, rights of way, reservations and exceptions in the patent recorded June 23, 1891 in Book D of Patents, Page 51.

(Affects Lots 2 and 3, SW ¼ SW ¼, NE ¼ SW ¼, NW ¼ SE ¼ of Section 12, T24S R15E (APN 424-181-18)

32. Rights, rights of way, reservations and exceptions in the patent recorded June 23, 1891 in Book D of Patents, Page 52.

(Affects Lots 8 and 9 of Section 7, T24S R16E (APN 424-201-007)

33. Rights, rights of way, reservations and exceptions in the patent recorded February 23, 1892 in Book D of Patents, Page 274.

(Affects Lots 2, 3, 4 & 6 of Section 2, T24S R15E (APN 424-181-15)

34. Rights, rights of way, reservations and exceptions in the patent recorded April 08, 1892 in Book D of Patents, Page 321.

(Affects SE ¼ of Section 34, T23S, R15E (423-191-37)

35. Rights, rights of way, reservations and exceptions in the patent recorded October 06, 1892 in Book D of Patents, Page 454.

(Affects NE ¼ Section 13, T24S R15E (APN 424-181-38)

36. Rights, rights of way, reservations and exceptions in the patent recorded October 06, 1892 in Book F of Patents, Page 54.

(Affects Lot 7 of Section 7, T24S R16E (APN 424-201-009)

37. Rights, rights of way, reservations and exceptions in the patent recorded January 07, 1893 in Book G of Patents, Page 37.

(Affects Lots 3, 4, 5 and 6 of Section 7, T24S R16E (APN 424-201-007)

38. Rights, rights of way, reservations and exceptions in the patent recorded April 07, 1893 in Book G of Patents, Page 83.

(Affects SW ¼ of Section 13, T24S R15E (APN 424-181-36)

39. Rights, rights of way, reservations and exceptions in the patent recorded September 26, 1894 in Book H of Patents, Page 99.

(Affects Parcel Six)

40. Rights, rights of way, reservations and exceptions in the patent recorded January 03, 1895 in Book G of Patents, Page 232.

(Affects N ½ SE ¼ and S ½ NE ¼ of Section 1, T24S R15E (APN 424-181-16)

41. Rights, rights of way, reservations and exceptions in the patent recorded January 03, 1895 in Book G of Patents, Page 233.

(Affects Lots 5, 6 and 7, SE ¼ SE ¼ of Section 1 & Lot 7 of Section Two, T24S R15E (APN 424-181-16)

42. Rights, rights of way, reservations and exceptions in the patent recorded January 03, 1895 in Book H of Patents, Page 121.

(Affects 1, NE ¼ NE ¼, S ½ NE ¼ of Section 12, T24S R15E (APN 424-181-18)

43. Rights, rights of way, reservations and exceptions in the patent recorded February 26, 1895 in Book G of Patents, Page 244.

(Affects SW ¼ of NE ¼ & S ½ of NW ¼ of Section 34, T23S, R15E (423-191-38)

44. Rights, rights of way, reservations and exceptions in the patent recorded August 21, 1896 in Book G of Patents, Page 370.

(Affects SE ¼ of Section 13, T24S R15E (APN 424-181-38)

45. Rights, rights of way, reservations and exceptions in the patent recorded October 26, 1896 in Book G of Patents, Page 385.

(Affects Lots 1, 2, 3 and 4, NW ¼ SE ¼, of Section 24, T24S R15E (APN 424-191-16)

46. Rights, rights of way, reservations and exceptions in the patent recorded June 25, 1900 in Book J of Patents, Page 52.

(Affects SE ¼ of Section 35, T23S R15E (APN 423-191-39)

47. Rights, rights of way, reservations and exceptions in the patent recorded November 09, 1903 in Book I of Patents, Page 177.

(Affects Parcel Seven)

48. Rights, rights of way, reservations and exceptions in the patent recorded April 18, 1906 in Book I of Patents, Page 245.

(Affects E ½ SE ¼ of Section 24, T24S R15E (APN 424-191-16)

49. Rights, rights of way, reservations and exceptions in the patent recorded March 28, 1907 in Book I of Patents, Page 270.

(Affects Lots 1 and 2, S ½ NW ¼ of Section 3, T24S R15E (APN 424-181-12)

50. Rights, rights of way, reservations and exceptions in the patent recorded December 14, 1908 in Book I of Patents, Page 315.

(Affects E ½ of NW ¼ of Section 35, T23S R15E (APN 423-191-39)

51. Rights, rights of way, reservations and exceptions in the patent recorded December 14, 1908 in Book J of Patents, Page 541.

(Affects E ½ of NE ¼ of Section 34, W ½ of NW ¼ of Section 35, T23S, R15E (423-191-38 & 39)

52. Rights, rights of way, reservations and exceptions in the patent recorded October 28, 1919 in Book L of Patents, Page 1.

(Affects Lots 3 through 7 of Section 3, T24S R15E (APN 424-181-12 & 13)

53. Rights, rights of way, reservations and exceptions in the patent recorded December 06, 1921 in Book L of Patents, Page 196.

(Affects Lots 3 and 4, S ½ NW ¼, SE ¼ SW ¼ of Section 1; Lot 1, SE ¼ NE ¼ of Section 2, T24S R15E (APN 424-181-16)

54. Rights, rights of way, reservations and exceptions in the patent recorded October 31, 1927 as Book 132, Page 122 of Official Records.

(Affects Lot 5 of Section 2, T24S R15E (APN 424-181-14)

55. An oil and gas lease executed by Avenales Land & Cattle Co., a corporation as lessor and J.A. Roberts and John W. Handwork as lessee, recorded March 11, 1936 as Book 467, Page 483 of Official Records.

Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

(Affects S ½ of Section 34, T23S R15E (APN 423-191-37)

56. An oil and gas lease executed by Avenales Land & Cattle Co., a Corporation, et al as lessor and J.A. Roberts and John W. Handwork as lessee, recorded March 11, 1936 as Book 472, Page 149 of Official Records.

Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

(Affects Lots 1 and 2, S ½ NW ¼ of Section 3, T24S R15E (APN 424-181-12)

57. An easement for ingress, egress, pipe line, rights and utilities and incidental purposes, recorded November 20, 1937 as Book 546, Page 490 of Official Records.

In Favor of:	William Ford
Affects:	SW ¼ of Section 34, T23S R15E (APN 423-191-37)

Note: Similar rights were also reserved in mesne subsequent documents recorded December 29, 1937 in Book 554, Page 332, January 08, 1938 in Book 556, Page 191, January 11, 1938 in Book 555, Page 360, January 25, 1938 in Book 557, Page 363, February 03, 1938 in Book 558, Page 364, February 23, 1938 in Book 564, Page 69, February 21, 1939 in Book 605, Page 385, August 05, 1939 in Book 624, Page 381 and October 6, 1942 in Book 777, Page 392.

58. An oil and gas lease executed by R. E. Jack Co., a California corporation as lessor and C. W. Colgrove as lessee, recorded August 04, 1949 as Book 1153, Page 519 of Official Records.

Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

(Affects a portion of Parcel One)

59. An oil and gas lease executed by Irene Hancock as lessor and R.B. Jackson and Essie L. Jackson as lessee, recorded October 11, 1950 as Instrument No. 46298 in Book 1251, Page 454 of Official Records.

Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

(Affects Lots 3 and 4 of Section 2, T24S R15E (APN 424-181-15)

60. An oil and gas lease executed by R.E. Jack Co., a California corporation as lessor and C. W. Colgrove as lessee, recorded February 08, 1951 as Instrument No. 5618 in Book 1280, Page 167 of Official Records.

Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

(Affects Lots 3, 4, 5, 6, 8 & 9 of Section 7, T24S R16E (APN 424-201-007); Lots 2, 3, 4, 5, 6, N ½ Lots 8 & 9 of Section 18, T24S R16E (APN 424-201-010); SE ¼ of Section 35, T23S R15E (APN 423-191-39); portions of Sections 1, 2, 12, 14, 23, 24 and 25, T24S R15E (APN 424-181-16, 424-181-18, 424-181-34, 424-191-15 & 424-191-16)

61. An easement for the transmission of electric energy and communication and incidental purposes, recorded May 12, 1954 as Instrument No. 18847 in Book 1530, Page 547 of Official Records.

In Favor of:	Pacific Gas and Electric Company, a California corporation
Affects:	a portion of Parcel One; and SE 1/4 of Section 35, T23S R15E (APN 423-191-39) as described therein

62. An easement for pole line purposes and incidental purposes, recorded June 07, 1954 as Instrument No. 19139 in Book 1531, Page 403 of Official Records.

In Favor of:	Pacific Gas and Electric Company, a California corporation
Affects:	Lots 2, 3, 4 and 6 of Section 2, T24S R15E (APN 424-181-15)

63. An easement for the transmission of electric energy and communication and incidental purposes, recorded September 07, 1954 as Instrument No. 26757 in Book 1550, Page 439 of Official Records.

In Favor of:	Pacific Gas and Electric Company, a California corporation
Affects:	a portion of Parcel One, Section 35 T23S R15E (APN 423-191-39), Lots 1 and 5 of Section 2 T24S R15E (APN 424-181-14 & 424-181-16) as described therein

64. An easement for pipelines and incidental purposes, recorded November 29, 1961 as Book 2207, Page 98 of Official Records.

In Favor of:	Pacific Gas and Electric Company
Affects:	As described therein (APN 424-181-38, 424-201-001)

65. An easement for pipe line conveying gas and right of way and incidental purposes, recorded January 10, 1962 as Instrument No. 1257 in Reel 8, Page 352 of Official Records.

In Favor of:	Pacific Gas and Electric Company, a California corporation
Affects:	Lots 8 and 9 of Section 7, T24S R16E (APN 424-201-007)

66. Rights, rights of way, reservations and exceptions in the patent recorded February 07, 1963 as Instrument No. 5069 in Reel 143, Page 129 of Official Records.

(Affects Lots 8 and 9, NW ¼ SW ¼ of Section 3, T24S R15E (APN 424-181-12)

67. An oil and gas lease executed by R. E. Jack Co., a California corporation as lessor and Lyle A. Garner as lessee, recorded August 02, 1965 as Reel 417, Page 896 of Official Records.

Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

(Affects a portion of Parcel One)

68. An easement for the transmission of electric energy and communication and incidental purposes, recorded August 08, 1969 as Instrument No. G19832 in Reel 616, Page 660 of Official Records.

In Favor of:	Pacific Gas and Electric Company, a California corporation
Affects:	a portion of Parcel One; SE ¼ of Section 35, T23S R15E (APN 423-191-39); and Lot 5 of Section 2, T24S R15E (APN 424-181-14) as described therein

69. An easement for pole line purposes and incidental purposes, recorded November 04, 1969 as Instrument No. 27150 in Reel 627, Page 813 of Official Records.

In Favor of:	Pacific Gas and Electric Company, a California corporation
Affects:	Lots 2, 3, 4 and 6 of Section 2, T24S R15E (APN 424-181-15)

70. An easement for electric transmission facilities and incidental purposes, recorded November 19, 1971 as Reel 737, Page 181 of Official Records.

In Favor of:	Pacific Gas and Electric Company, a California corporation
Affects:	Parcel One as described therein

71. An easement for electric transmission facilities and incidental purposes, recorded November 19, 1971 as Instrument No. 37503 in Reel 737, Page 184 of Official Records.

In Favor of:	Pacific Gas and Electric Company, a California corporation
Affects:	a portion of Parcel One; and Lot 1 of Section 2 and Lot 5 of Section 2, T24S R15E (APN 424-181-14 & 424-181-16) as described therein

72. An easement for a right of way, ingress and egress, a telephone line or system, the right to cut, trim and control the growth of trees and shrubbery and incidental purposes, recorded December 28, 1971 as Instrument No. 41655 in Reel 743, Page 617 of Official Records.

In Favor of:	Redwood Empire Telephone Company, a corporation
Affects:	S ½ of Section 34, T23S R15E (APN 423-191-37)

73. An easement for utilities and incidental purposes, recorded December 28, 1971 as Reel 743, Page 624 of Official Records.

In Favor of:	Redwood Empire Telephone Company, a corporation
Affects:	Parcel One as described therein

The location of the easement cannot be determined from record information.

74. An easement for a right of way, ingress and egress, a telephone line or system, the right to cut, trim and control the growth of trees and shrubbery and incidental purposes, recorded December 28, 1971 as Instrument No. 41657 in Reel 743, Page 631 of Official Records.

In Favor of:	Redwood Empire Telephone Company, a corporation
Affects:	Sections 7 and 18, T24S R16E (APN 424-201-007 & 424-201-010)

75. An easement for utilities and incidental purposes, recorded December 28, 1971 as Reel 743, Page 649 of Official Records.

In Favor of:	Redwood Empire Telephone Company, a corporation
Affects:	Parcel One as described therein

The location of the easement cannot be determined from record information.

76. An oil and gas lease executed by Helen F. McAllister, et al as lessor and Del Paso Exploration Co., a California corporation as lessee, recorded November 07, 1980 as Instrument No. 43081 in Reel 1445, Page 584 of Official Records.

Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

(Affects APN 424-181-13)

77. Terms, provisions, covenants, restrictions and conditions contained in a document executed pursuant to the California Land Conservation Act of 1965 (Williamson Act) and recorded February 1, 1994 as Instrument No. 08688 in Reel 3061, Page 794 of Official Records.

78. An easement for private road and incidental purposes, recorded September 22, 1997 as Instrument No. 9754714 of Official Records.

In Favor of:	Scobie and Sons, a California Partnership
Affects:	Parcel Two as described therein

79. An option in favor of California Flats Solar, LLC, a Delaware limited liability company as contained in or disclosed by a document recorded May 25, 2012 as Instrument No. 2012031068 of Official Records.

The terms and provisions contained in the document entitled "Memorandum of Option for Electrical Collection Easement" recorded September 11, 2012 as Instrument No. 2012053117 of Official Records.

80. Water rights, claims or title to water, whether or not shown by the public records.

81. This item has been intentionally deleted.

82. Rights of the public in and to that portion of the land lying within Turkey Flat Road.

83. Any facts, rights, interests or claims which would be disclosed by a correct ALTA/ACSM survey.

84. Rights of parties in possession.

85. Any rights, interests, or easements in favor of the public, which exist or are claimed to exist over any portion of said land covered by water.

INFORMATIONAL NOTES

1. The property covered by this report is vacant land.

2. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

3. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

*****To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.
In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.
There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.
FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.
Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.
Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.
Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.
Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.
Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)
EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building b. zoning
   c. land use d. improvements on the land
   e. land division f. environmental protection
   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

(i) the occupancy, use, or enjoyment of the Land;

(ii) the character, dimensions, or location of any improvement erected on the Land;

(iii) the subdivision of land; or

(iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

(a) a fraudulent conveyance or fraudulent transfer, or

(b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

(i) the occupancy, use, or enjoyment of the Land;

(ii) the character, dimensions, or location of any improvement erected on the Land;

(iii) the subdivision of land; or

(iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

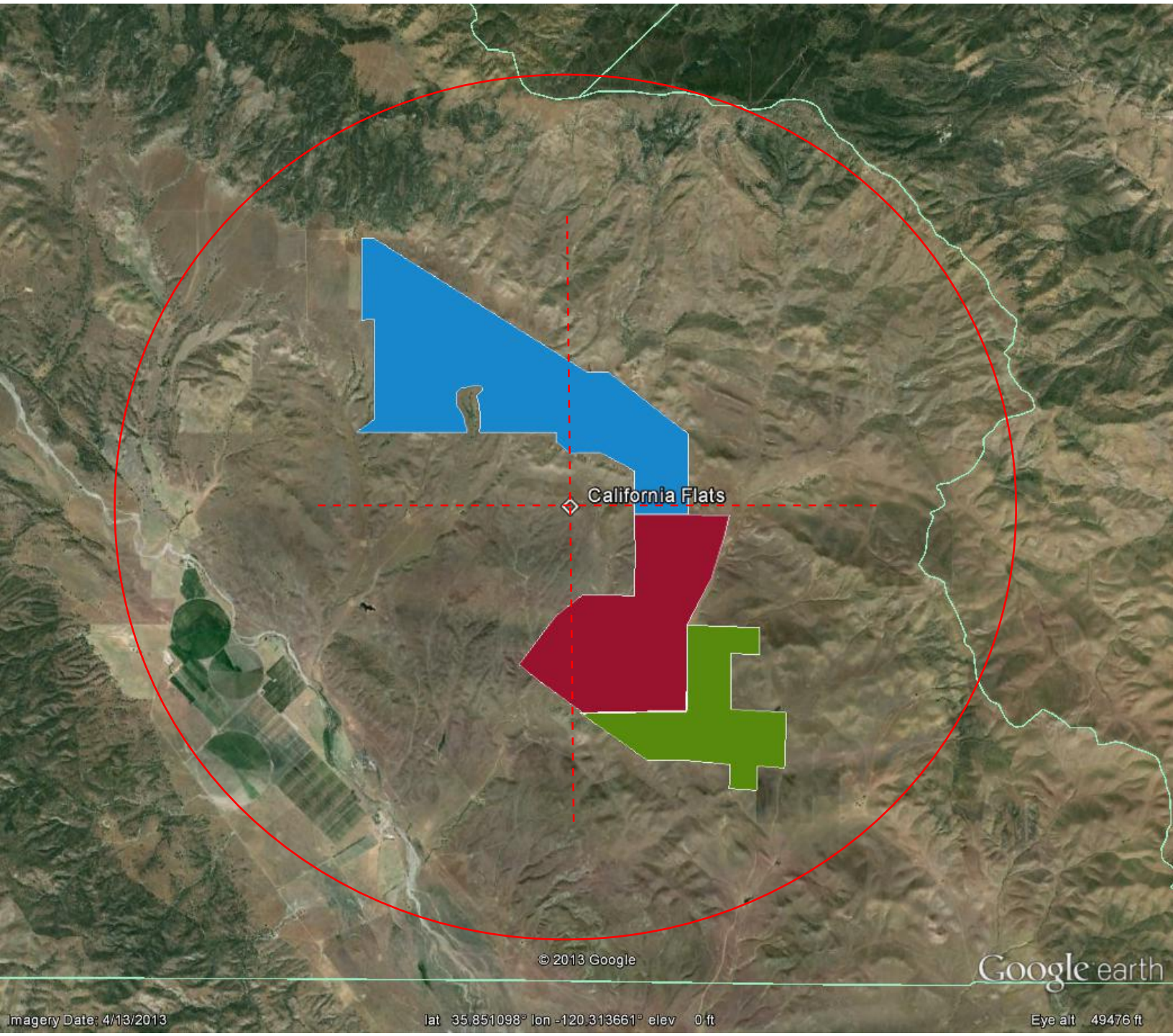
16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.



Appendix D - Figure D-1 - EDR Regulatory Review Report Location Reference Map

California Flats
Turkey Flat Road
San Miguel, CA 93451

Inquiry Number: 3830753.6s
January 14, 2014

The EDR Radius Atlas™ with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

TURKEY FLAT ROAD
SAN MIGUEL, CA 93451

COORDINATES

Latitude (North):	35.8527000 - 35° 51' 9.72''
Longitude (West):	120.3165000 - 120° 18' 59.40''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	742340.2
UTM Y (Meters):	3970736.2
Elevation:	1599 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	35120-G3 CHOLAME VALLEY, CA
Most Recent Revision:	1993

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

EXECUTIVE SUMMARY

Federal CERCLIS list

CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls
LUCIS ..... Land Use Control Information System

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ..... EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST ..... Geotracker's Leaking Underground Fuel Tank Report
SLIC ..... Statewide SLIC Cases
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ..... Active UST Facilities

AST ---- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---- Underground Storage Tanks on Indian Land
FEMA UST ---- Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing
VCP ---- Voluntary Cleanup Program Properties

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI ---- Open Dump Inventory
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
WMUDS/SWAT ---- Waste Management Unit Database
SWRCY ---- Recycler Database
HAULERS ---- Registered Waste Tire Haulers Listing
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---- Clandestine Drug Labs
HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
Toxic Pits ---- Toxic Pits Cleanup Act Sites
CDL ---- Clandestine Drug Labs
US HIST CDL ---- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST ---- Facility Inventory Database
HIST UST ---- Hazardous Substance Storage Container Database
SWEEPS UST ---- SWEEPS UST Listing

Local Land Records

LIENS 2 ---- CERCLA Lien Information
LIENS ---- Environmental Liens Listing
DEED ---- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators

EXECUTIVE SUMMARY

DOT OPS	Incident and Accident Data
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
CA BOND EXP. PLAN	Bond Expenditure Plan
NPDES	NPDES Permits Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE	Hazardous Waste & Substance Site List
CUPA Listings	CUPA Resources List
Notify 65	Proposition 65 Records
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
ENF	Enforcement Action Listing
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
WDS	Waste Discharge System
PRP	Potentially Responsible Parties
US AIRS	Aerometric Information Retrieval System Facility Subsystem
2020 COR ACTION	2020 Corrective Action Program List
LEAD SMELTERS	Lead Smelter Sites
Financial Assurance	Financial Assurance Information Listing
HWT	Registered Hazardous Waste Transporter Database
HWP	EnviroStor Permitted Facilities Listing
US FIN ASSUR	Financial Assurance Information
COAL ASH DOE	Steam-Electric Plant Operation Data
MWMP	Medical Waste Management Program Listing
PROC	Certified Processors Database
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
EPA WATCH LIST	EPA WATCH LIST

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

EDR US Hist Auto Stat ------- EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners ------- EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST ---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

UIC: A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

A review of the UIC list, as provided by EDR, and dated 09/25/2013 has revealed that there are 9 UIC sites within approximately 4 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JENE D MUNSON		NNE 1 - 2 (1.121 mi.)	3	33
GAMMON & GAMMON		ENE 1 - 2 (1.501 mi.)	5	34
LEN OWENS & ASSOC.		SSE >2 (2.613 mi.)	6	34
CALIFORNIA OILS INC.		WNW >2 (3.266 mi.)	8	35

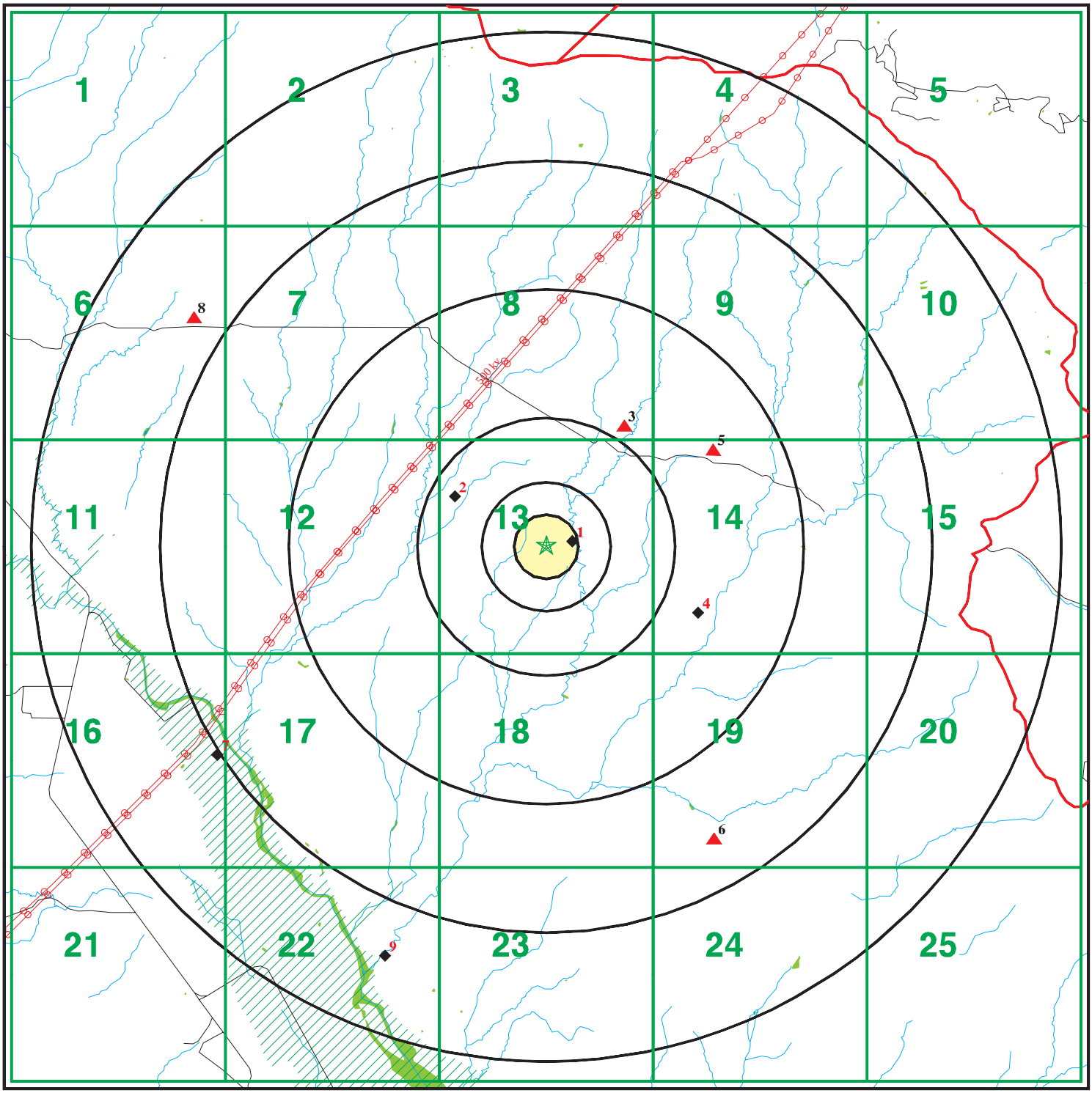
Lower Elevation	Address	Direction / Distance	Map ID	Page
THE BRITISH AMERICAN OIL PRODU		ENE 1/8 - 1/4 (0.207 mi.)	1	32
THE BRITISH AMERICAN OIL PRODU		WNW 1/2 - 1 (0.809 mi.)	2	32
THE BRITISH AMERICAN OIL PRODU		ESE 1 - 2 (1.286 mi.)	4	33
NORCAL PETROLEUM CORP.		WSW >2 (3.023 mi.)	7	35
LYLE A. GARNER		SSW >2 (3.416 mi.)	9	36

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 33 records.

Site Name	Database(s)
CALIFORNIA NATIONAL GUARD	NPDES
CAMP ROBERTS PV POWER PLANT	NPDES
PAJARO MEDIAN BARRIER	NPDES
SHOULDER WIDENING AND RUMBLE STRIP	NPDES
WATER SOTRAGE AND TRANSMISSION FAC	NPDES
EAGLE FEATHER TRADING POST #2	CUPA
CA ARMY NATIONAL GUARD	CUPA
COALINGA COMM & CARGO AIRLINE	HIST UST,CUPA
VERIZON WIRELESS-WEST PALMER	CUPA
FRANCISCO SALCEDO RANCH	CUPA
VERIZON WIRELESS-TABLE MOUNTAIN	CUPA
VERIZON CALIFORNIA-PARKFIELD CO	CUPA
BAE SYSTEMS	CUPA
WHITFIELD'S REEF CITY	UST
CA ARMY NATIONAL GUARD- CAMP ROBER	UST
DARELL ZWANG RANCH	HIST UST
COTTONWOOD STATION	HIST UST
WELL TEC	HIST UST
RANCHO AGUAGE	HIST UST
DEVILS DEN SUB STATION	HAZNET
KIEWIT PACIFIC COMPANY	HAZNET
CALTRANS D-5/CONSTR/EA05-464104	HAZNET
USACOE/CAMP ROBERTS	HAZNET
DWR MOBIL EQUIPMENT SHOP	HAZNET
CDWR COALINGA O&M CENTER	HAZNET
COLINGA #2 SUB STATION	HAZNET
CALTRANS DIST 6/CONSTRUCTION	HAZNET
GRANITE CONSTRUCTION COMPANY	HAZNET
A & I TRUCKING INC	HAZNET
TANIMURA & ANTLE INC	HAZNET
UNOCAP COALINGA PUMP STATION	HAZNET
CHEMICAL WASTE MGMT INC	HAZNET
VERIZON WIRELESS - KETTLEMAN RIDGE	EMI

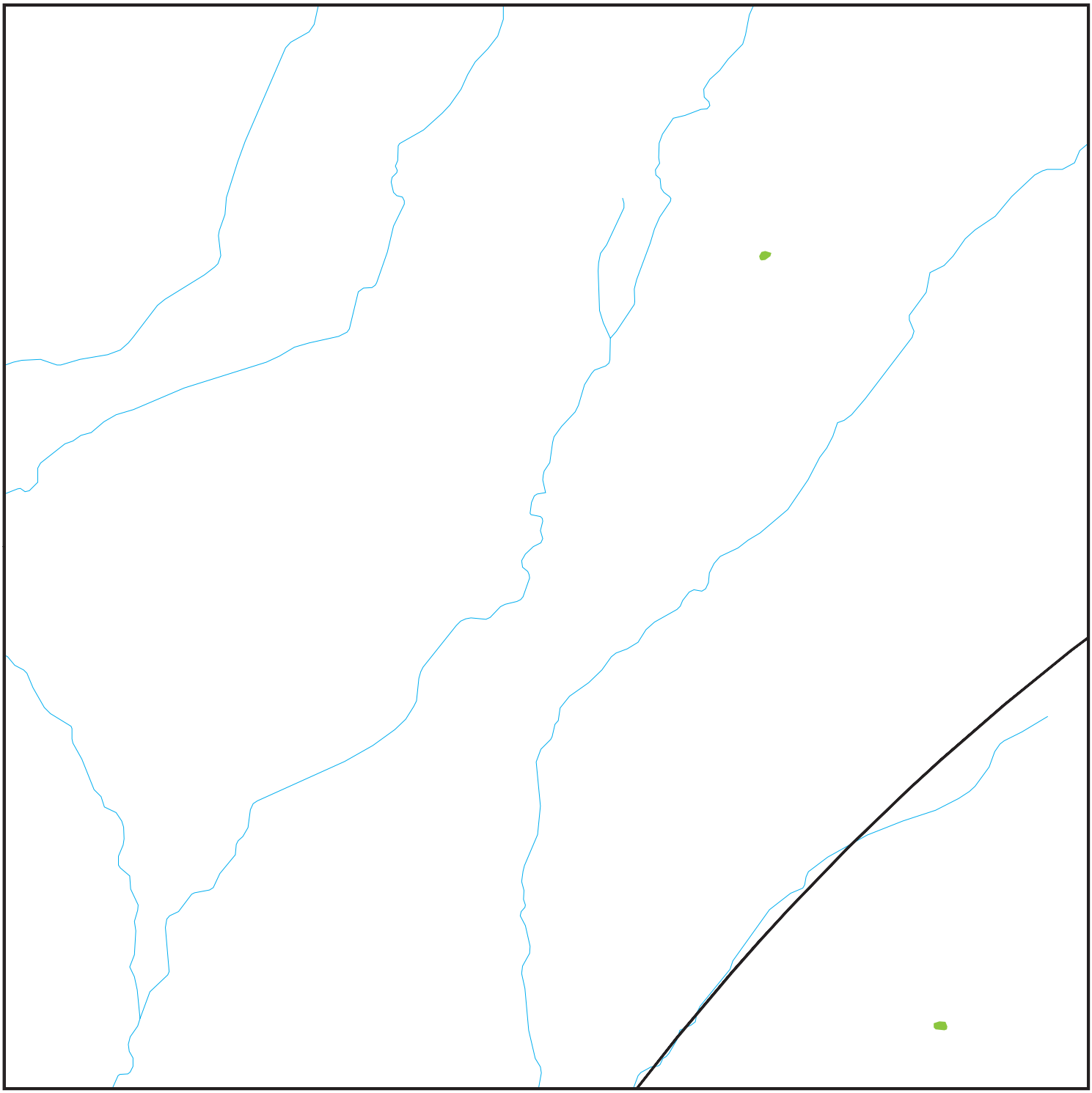
OVERVIEW MAP - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

SITE NAME:	California Flats	CLIENT:	KTA Associates, Inc.
ADDRESS:	Turkey Flat Road	CONTACT:	Lenora Westbrook
	San Miguel CA 93451	INQUIRY #:	3830753.6s
LAT/LONG:	35.8527 / 120.3165	DATE:	January 14, 2014 5:33 pm

DETAIL MAP 1 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

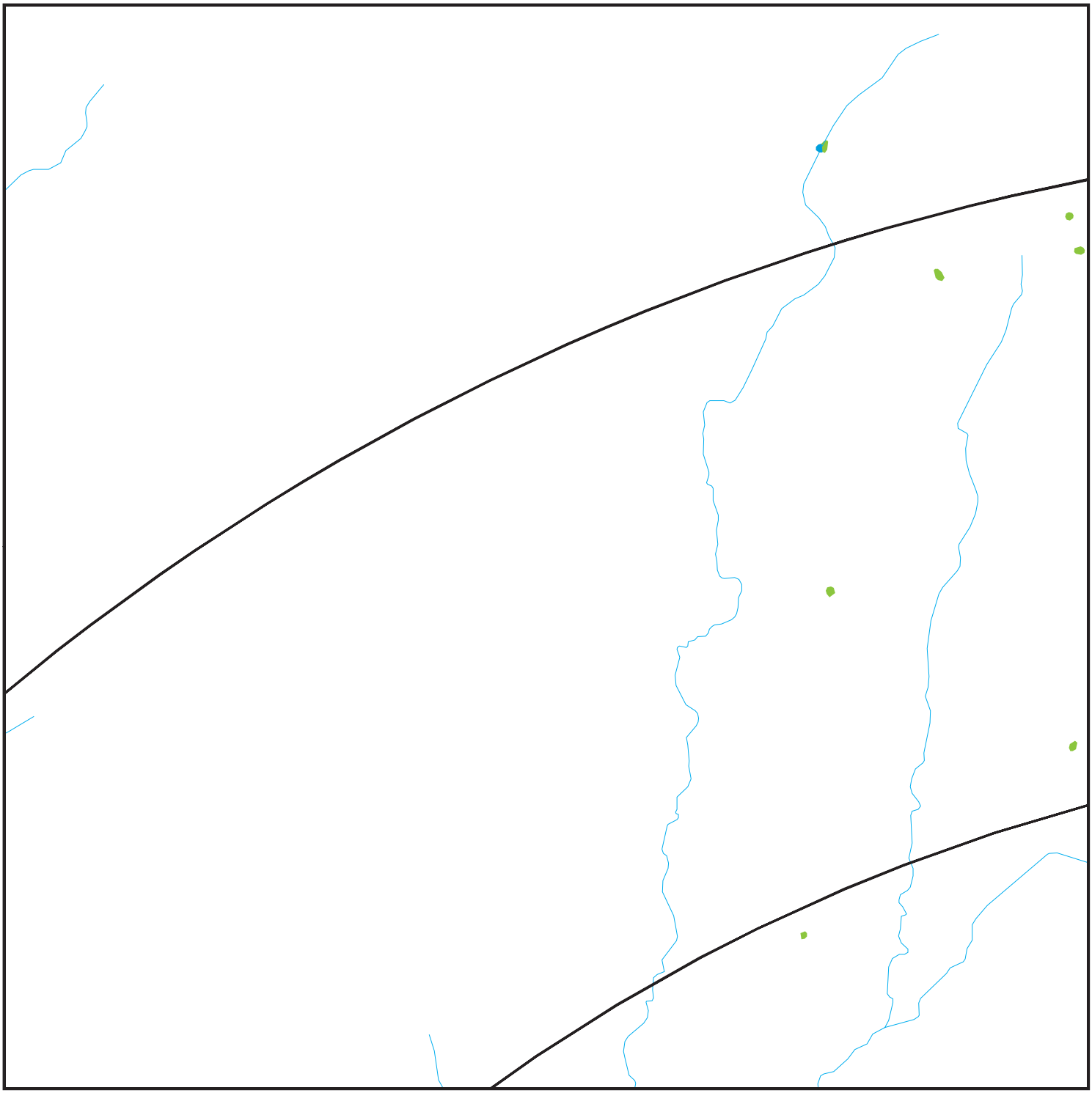
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:34 pm

DETAIL MAP 2 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

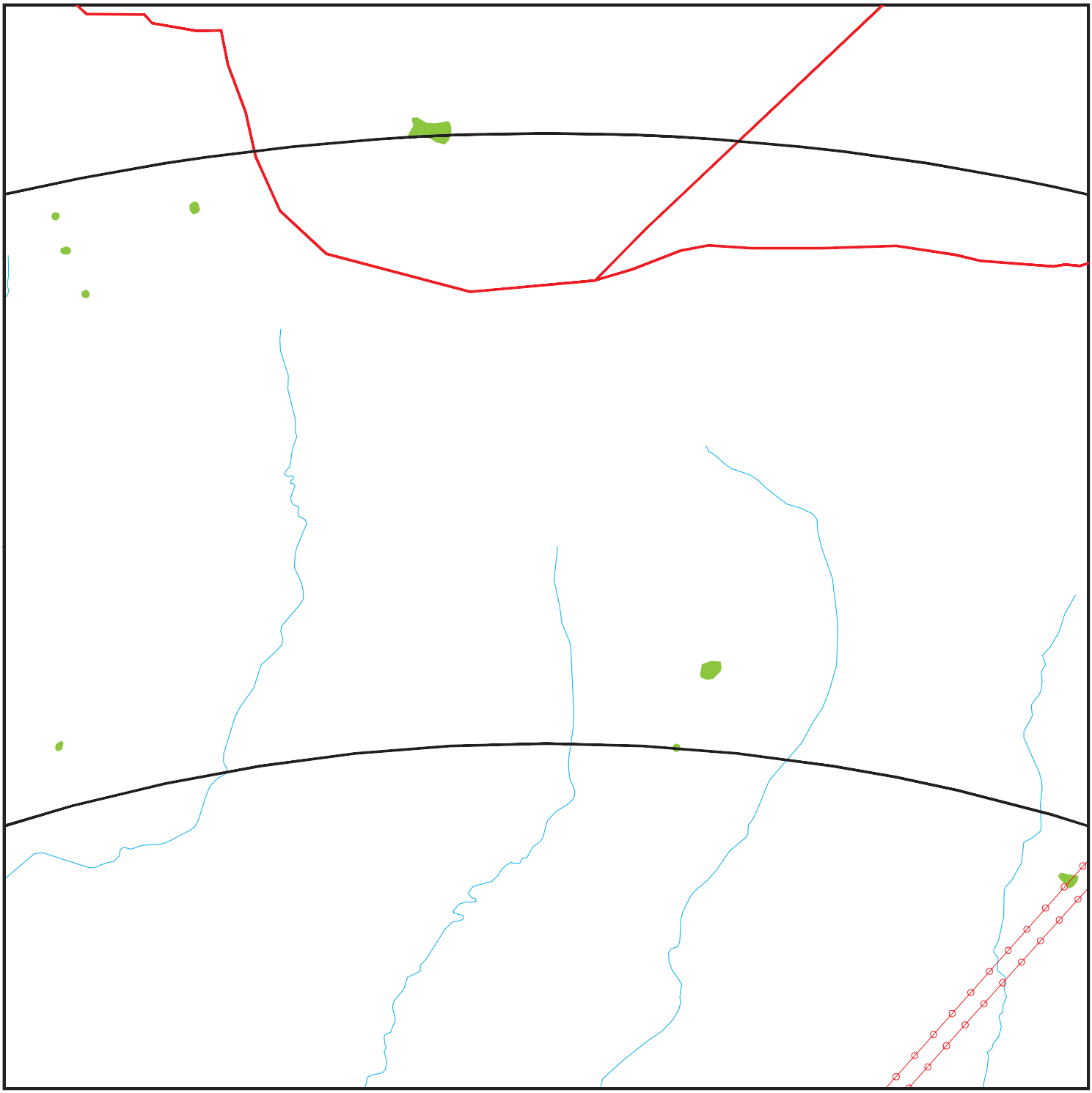
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:35 pm

DETAIL MAP 3 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

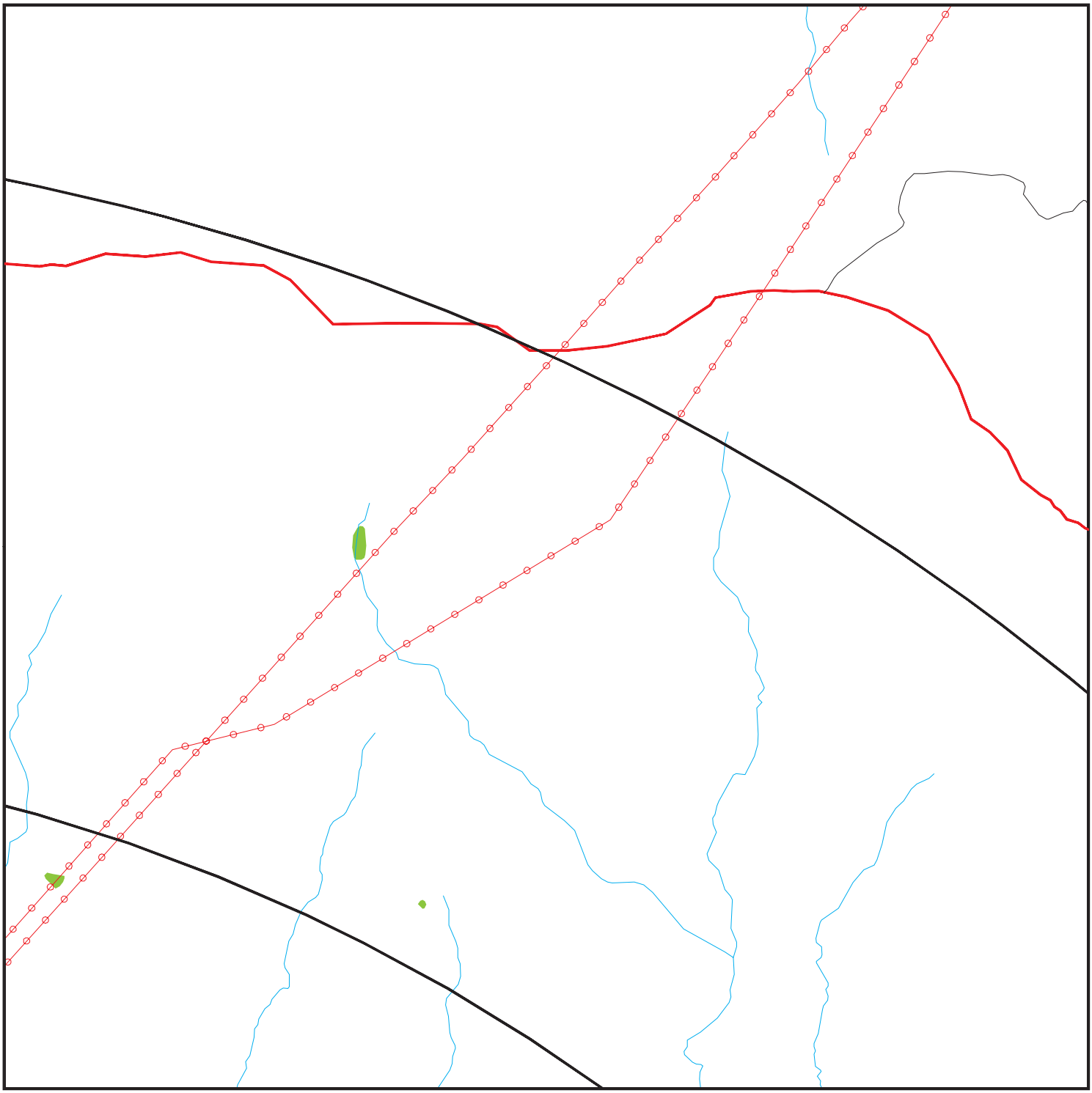
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:36 pm

DETAIL MAP 4 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

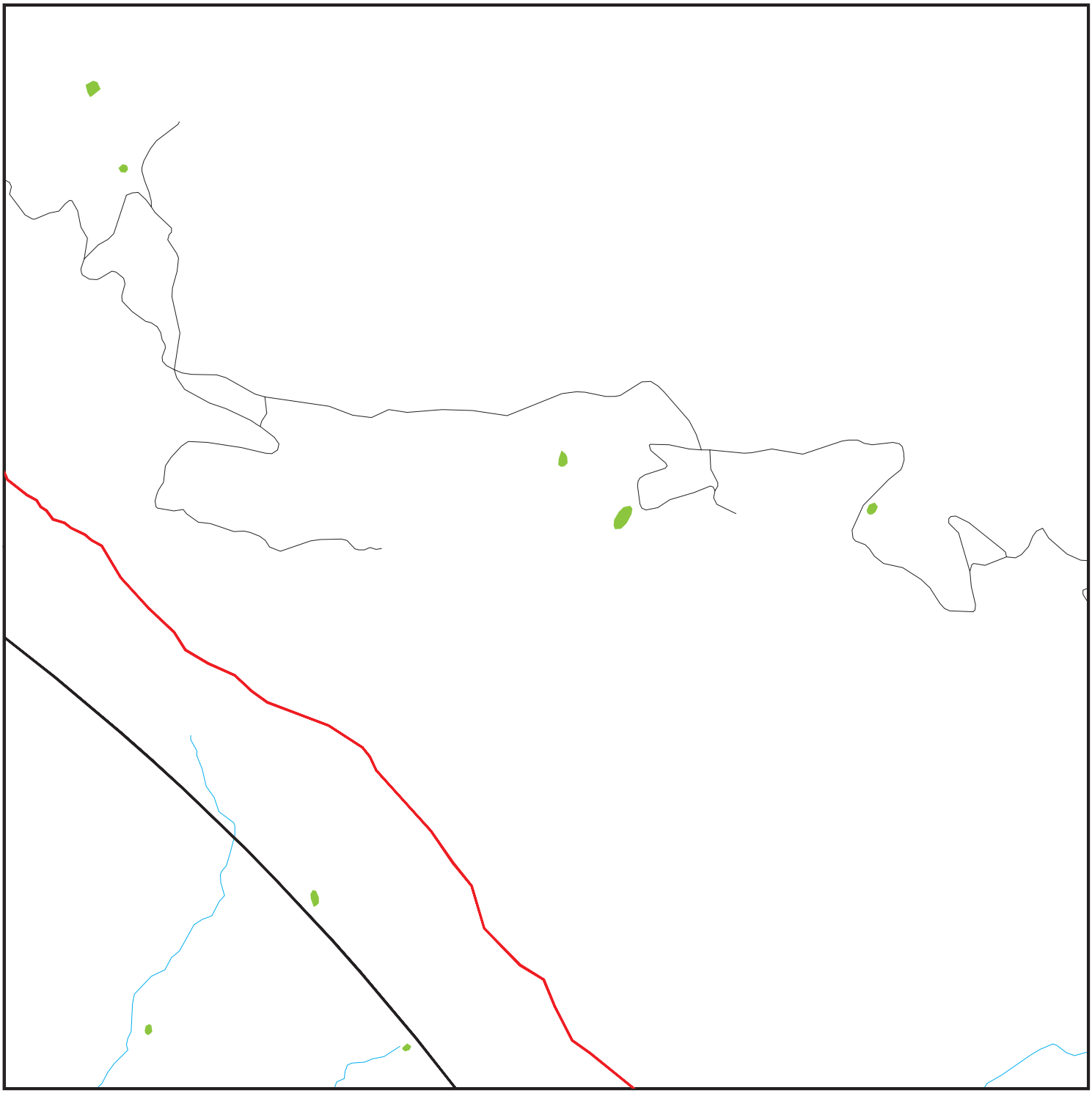
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME:	California Flats	CLIENT:	KTA Associates, Inc.
ADDRESS:	Turkey Flat Road San Miguel CA 93451	CONTACT:	Lenora Westbrook
LAT/LONG:	35.8527 / 120.3165	INQUIRY #:	3830753.6s
		DATE:	January 14, 2014 5:37 pm

DETAIL MAP 5 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

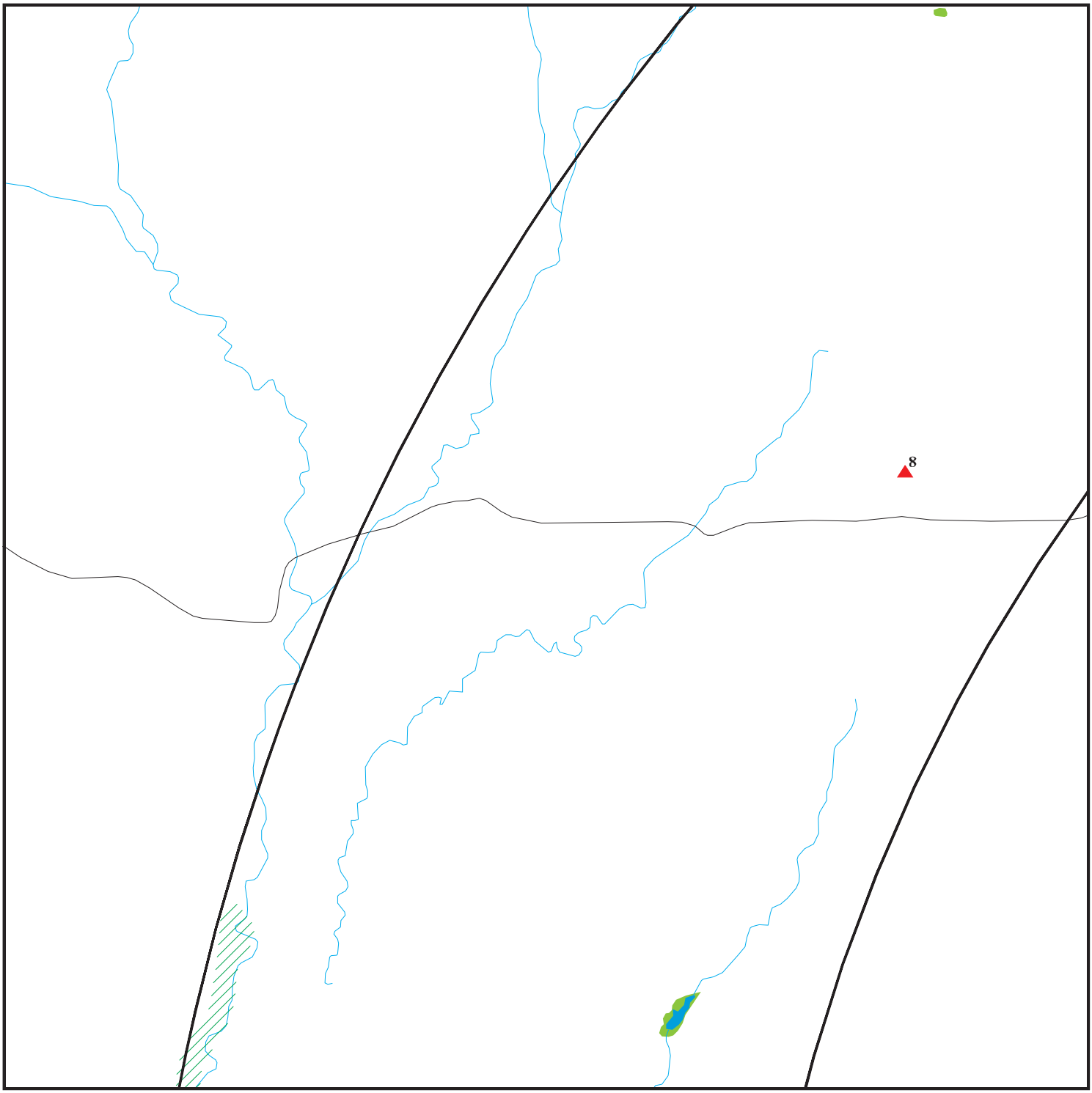
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- County Boundary
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:38 pm

DETAIL MAP 6 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

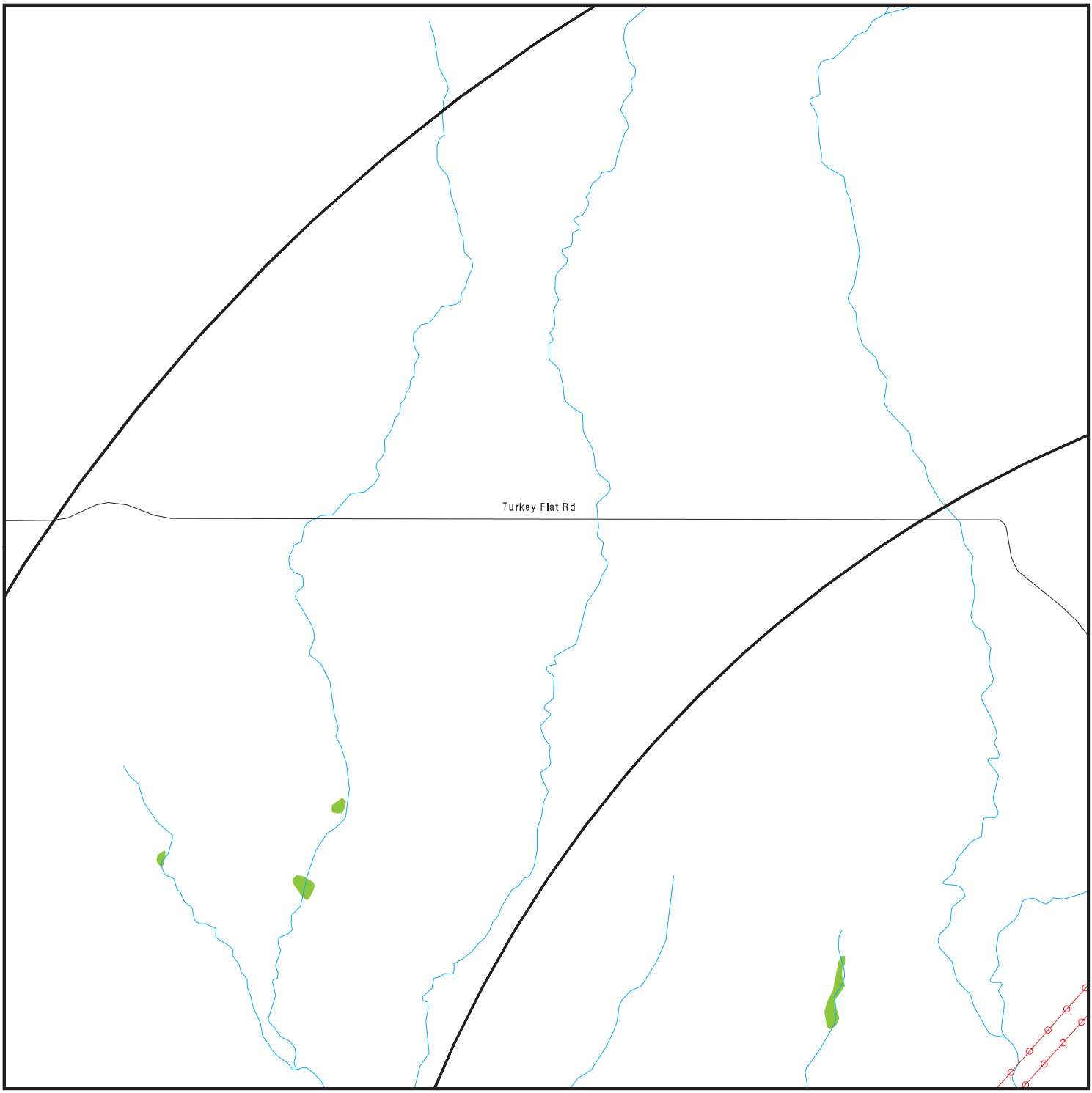
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:39 pm

DETAIL MAP 7 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

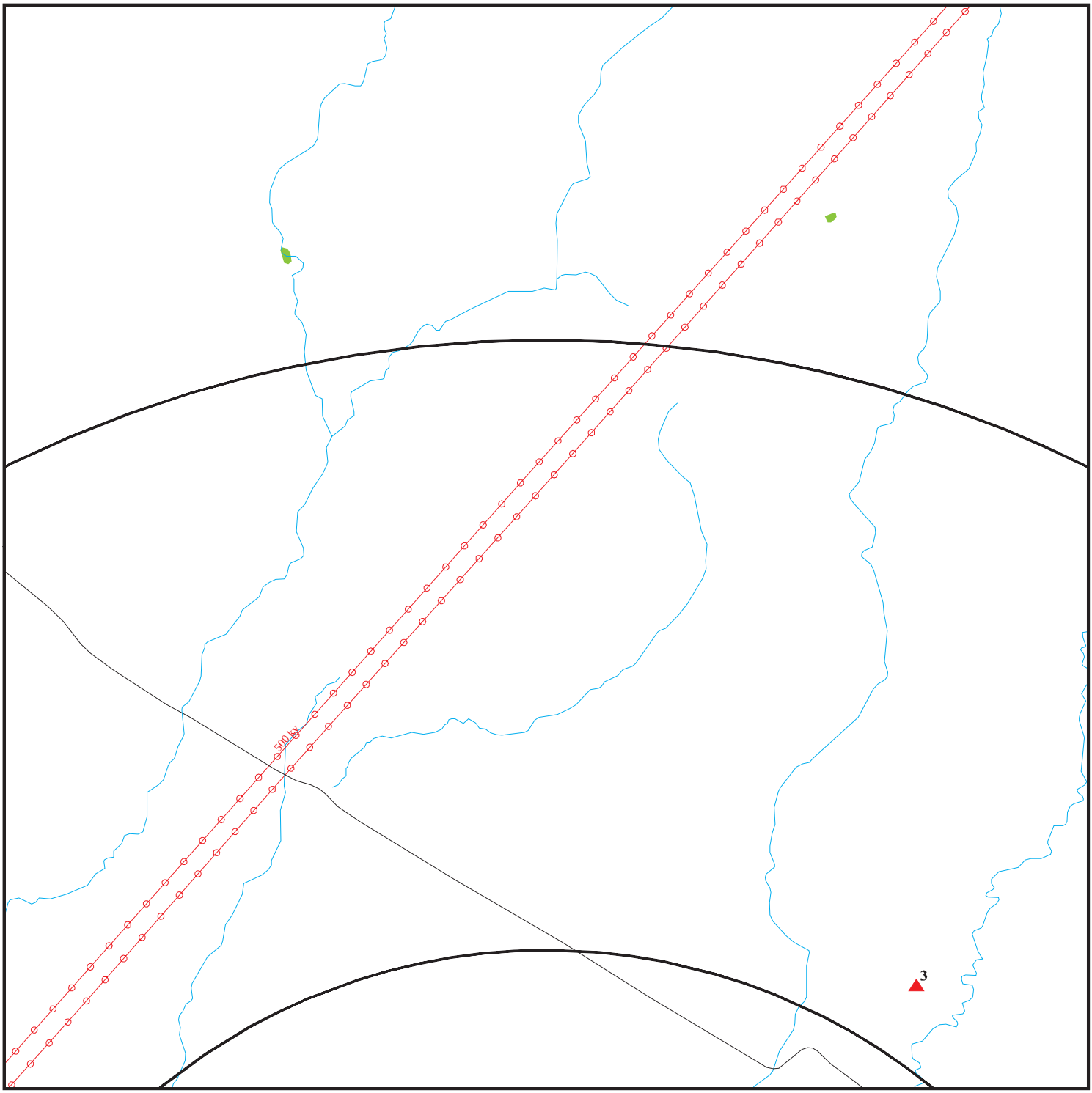
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:40 pm

DETAIL MAP 8 of 25 - 3830753.6s

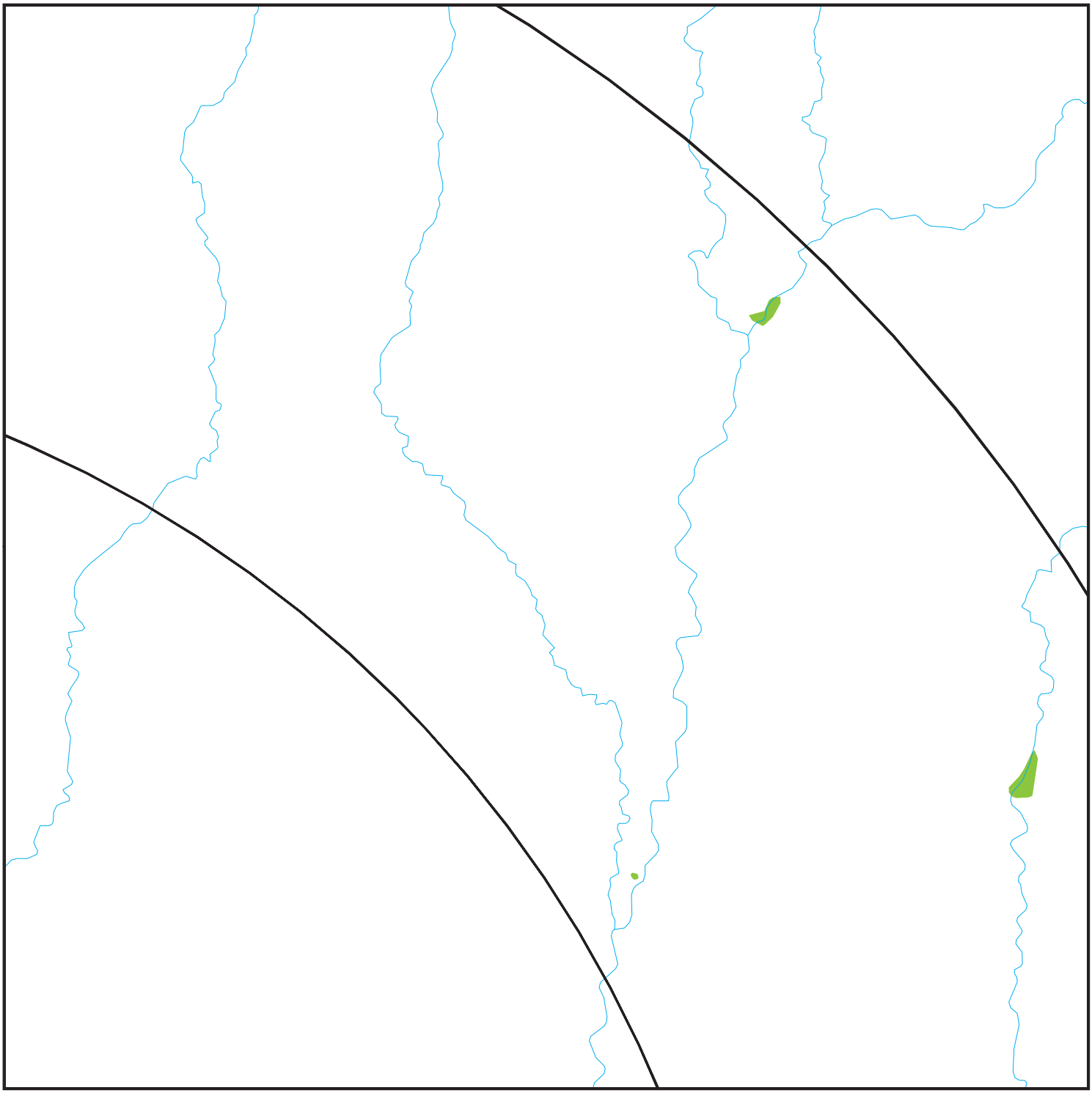


0 1/8 1/4 1/2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road San Miguel CA 93451	CONTACT: Lenora Westbrook
LAT/LONG: 35.8527 / 120.3165	INQUIRY #: 3830753.6s DATE: January 14, 2014 5:40 pm

DETAIL MAP 9 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

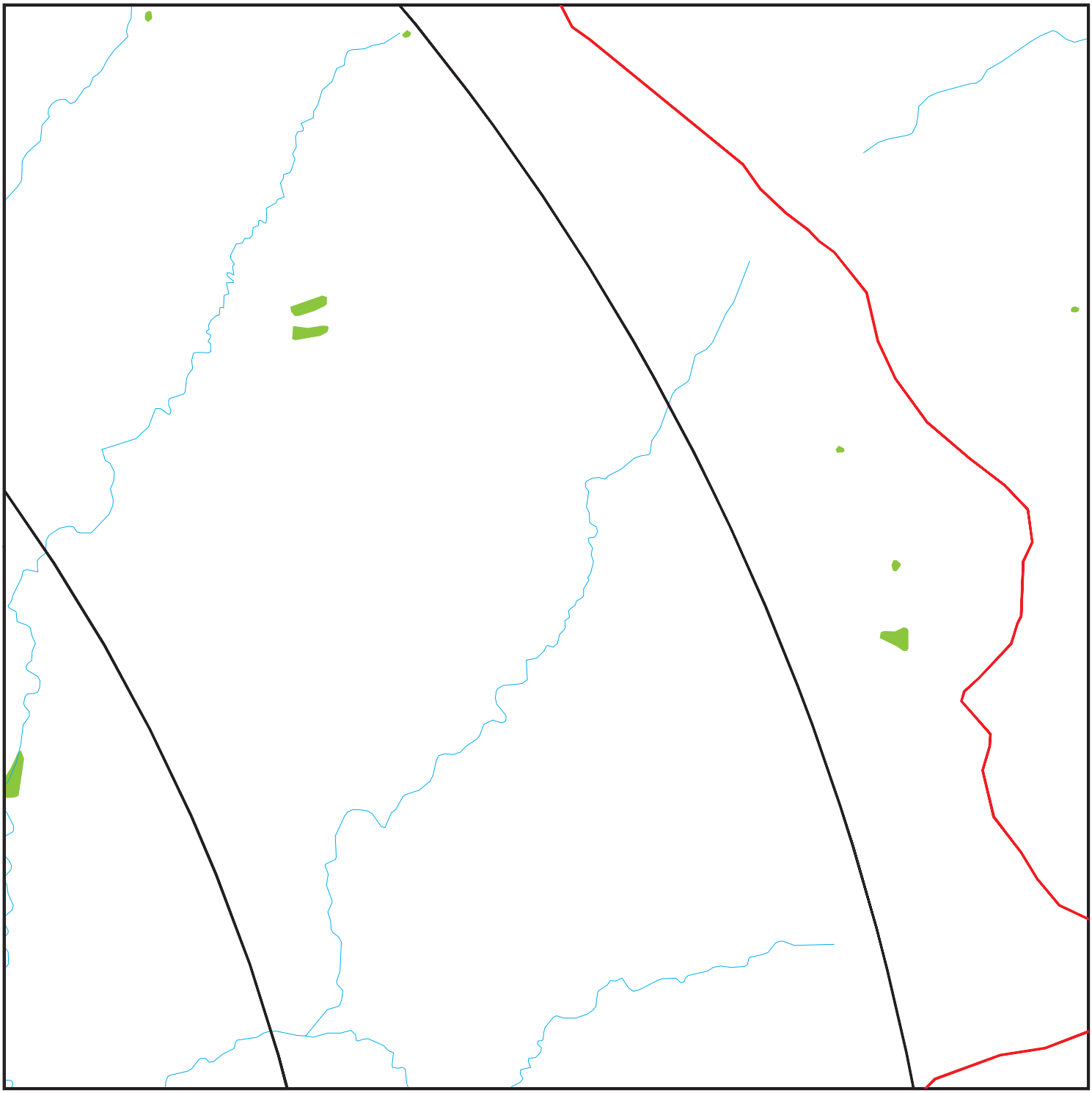
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:41 pm

DETAIL MAP 10 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

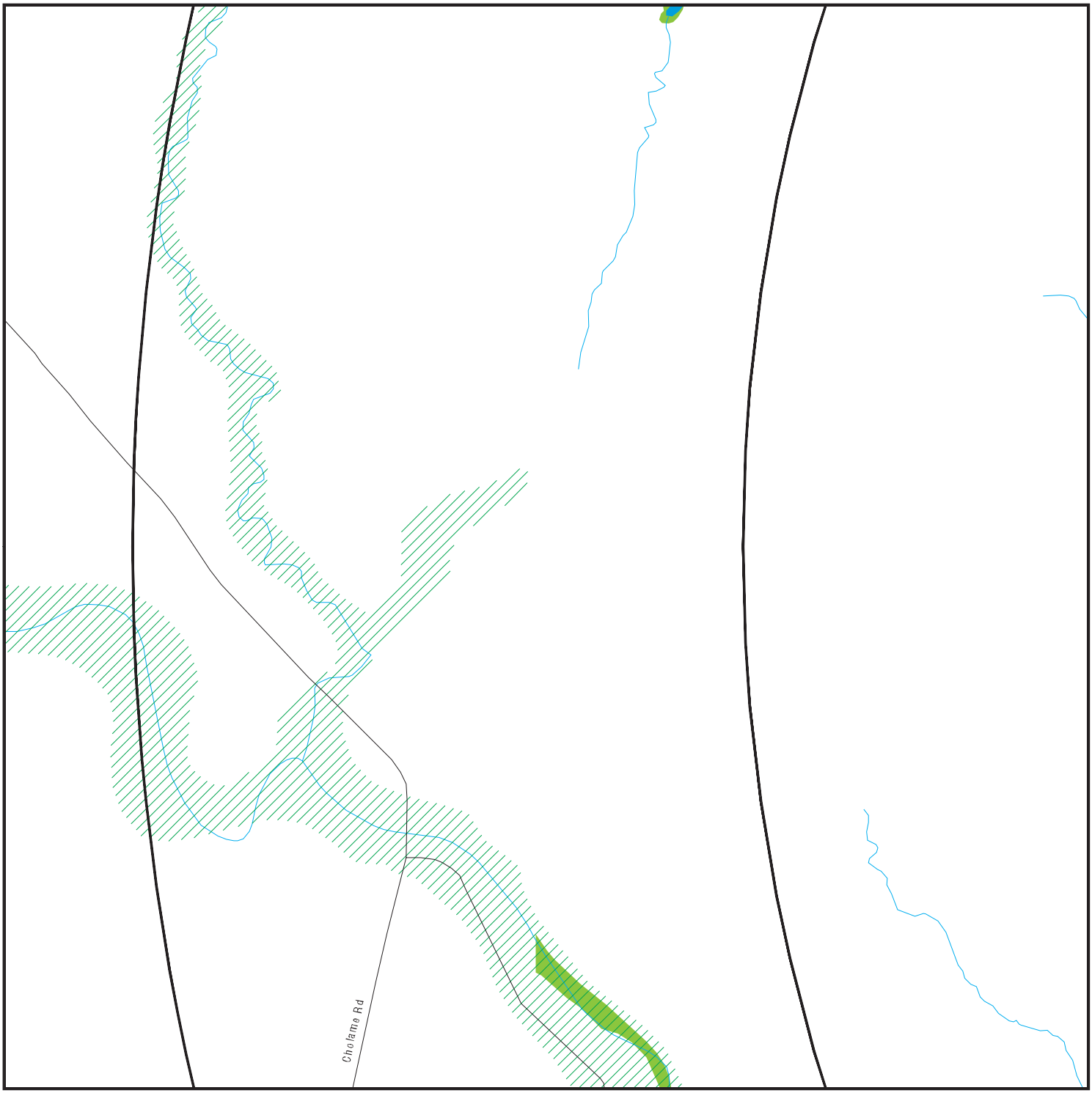
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- County Boundary
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:43 pm

DETAIL MAP 11 of 25 - 3830753.6s

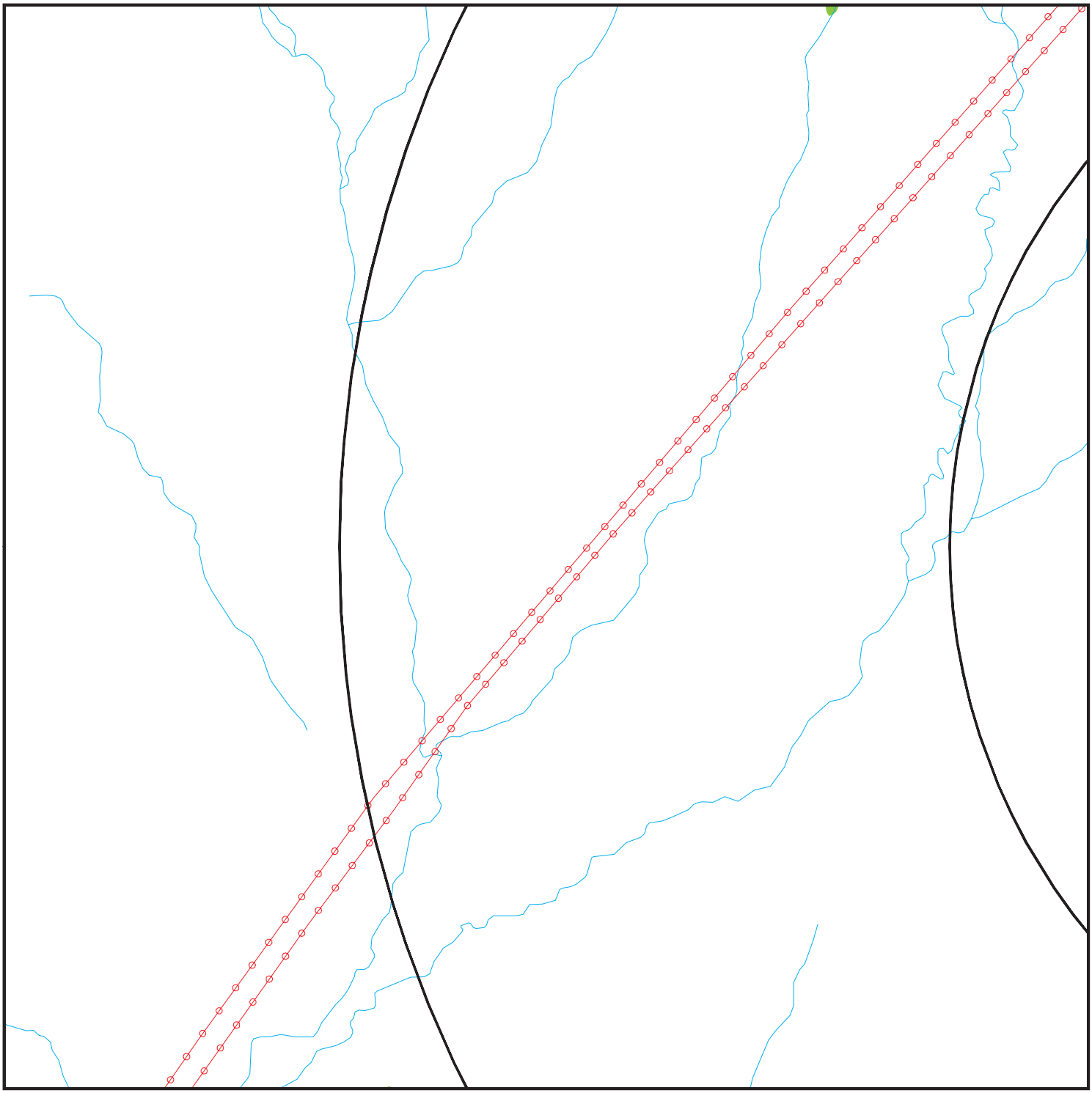


0 1/8 1/4 1/2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

SITE NAME:	California Flats	CLIENT:	KTA Associates, Inc.
ADDRESS:	Turkey Flat Road San Miguel CA 93451	CONTACT:	Lenora Westbrook
LAT/LONG:	35.8527 / 120.3165	INQUIRY #:	3830753.6s
		DATE:	January 14, 2014 5:44 pm

DETAIL MAP 12 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

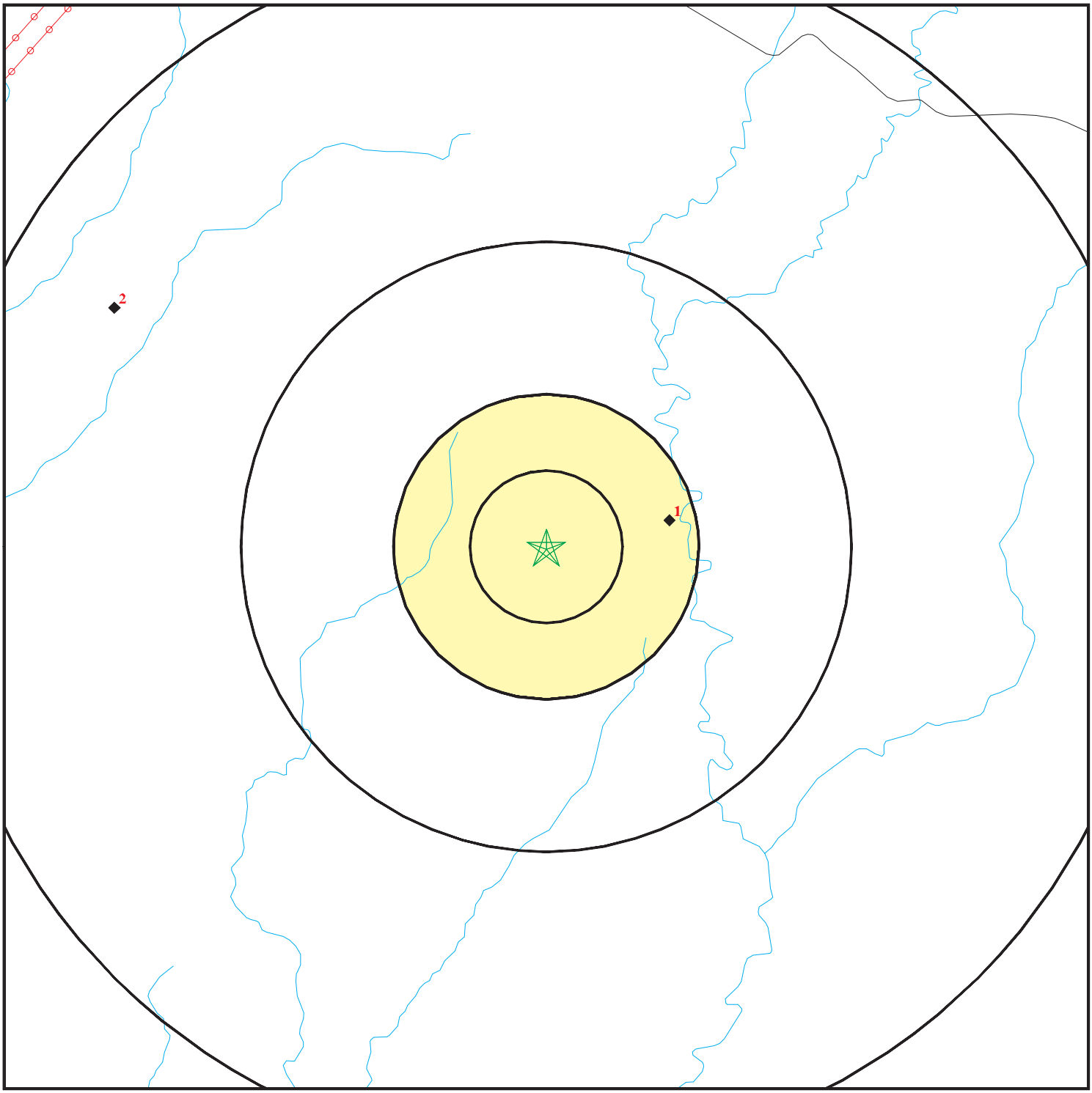
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:45 pm

DETAIL MAP 13 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

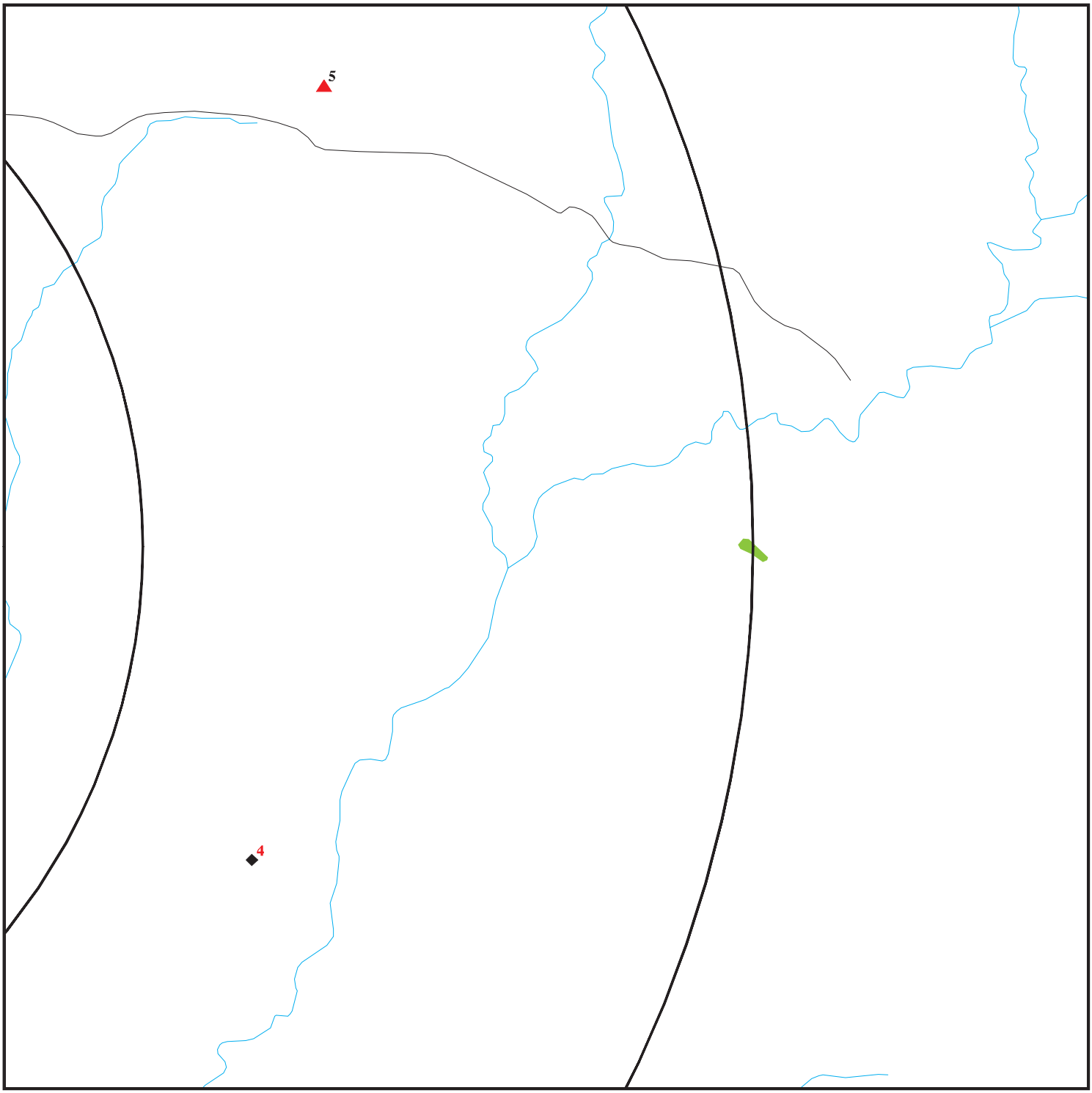
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:46 pm

DETAIL MAP 14 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

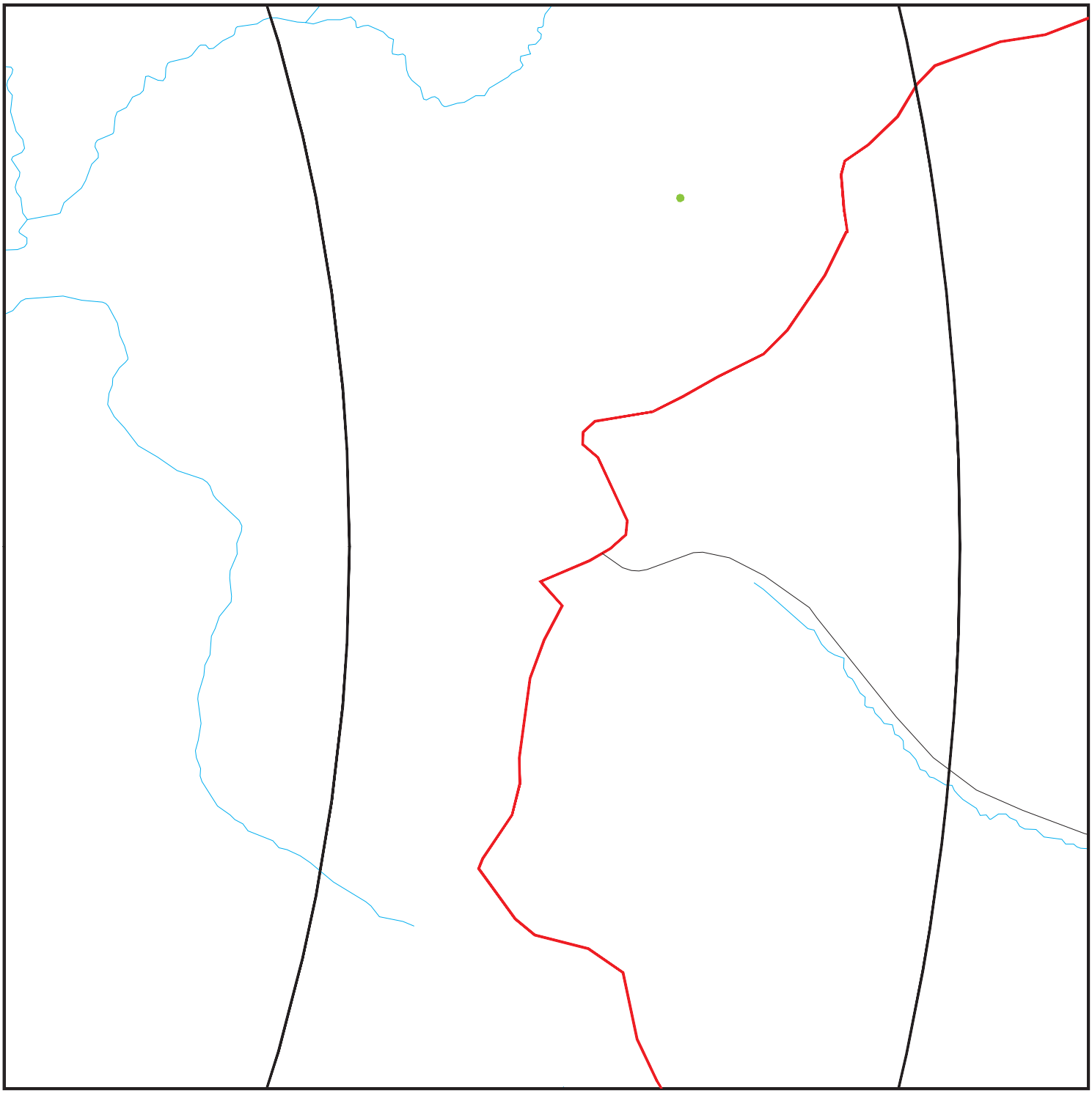
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME:	California Flats	CLIENT:	KTA Associates, Inc.
ADDRESS:	Turkey Flat Road San Miguel CA 93451	CONTACT:	Lenora Westbrook
LAT/LONG:	35.8527 / 120.3165	INQUIRY #:	3830753.6s
		DATE:	January 14, 2014 5:46 pm

DETAIL MAP 15 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

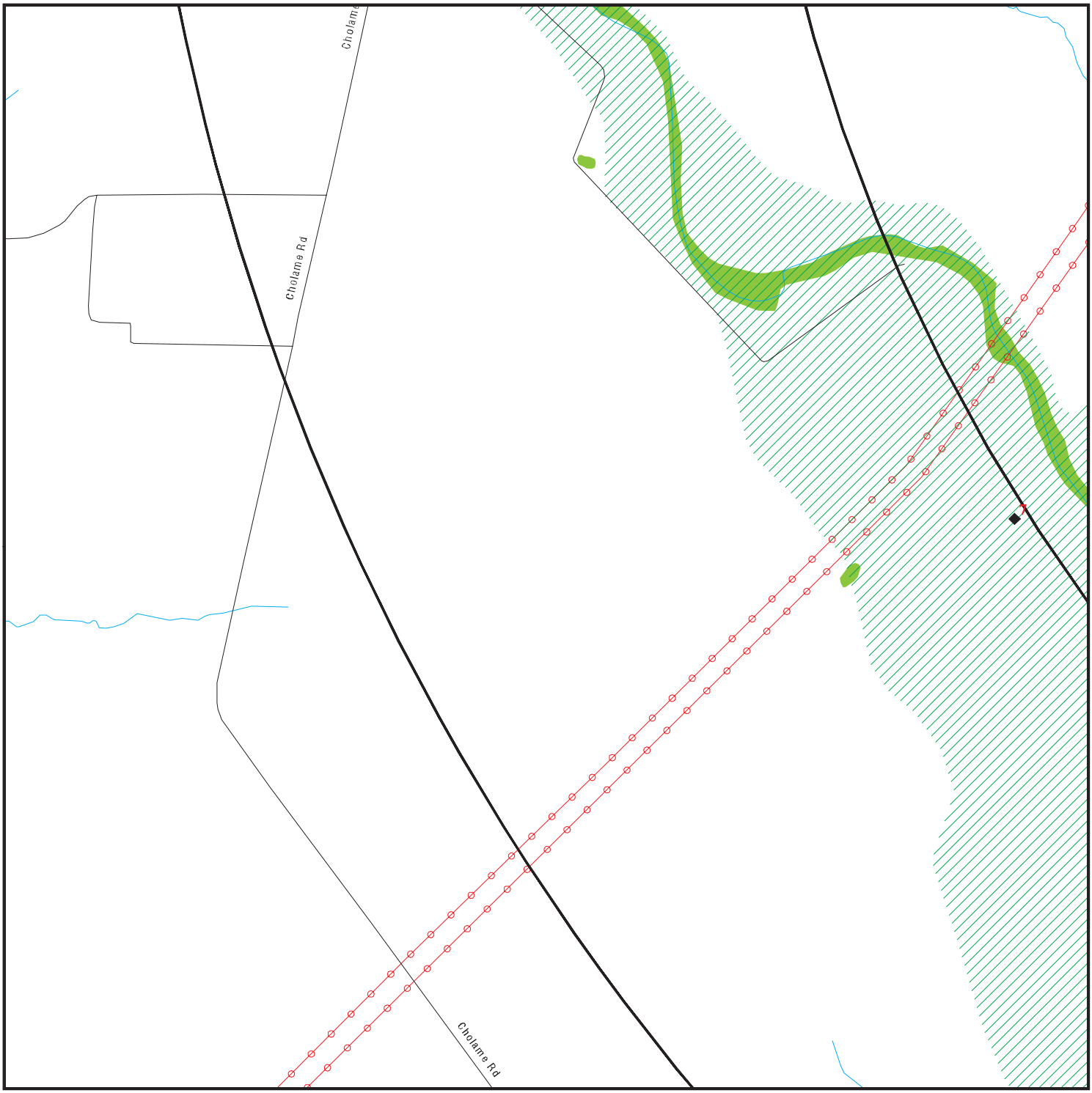
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- County Boundary
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:47 pm

DETAIL MAP 16 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

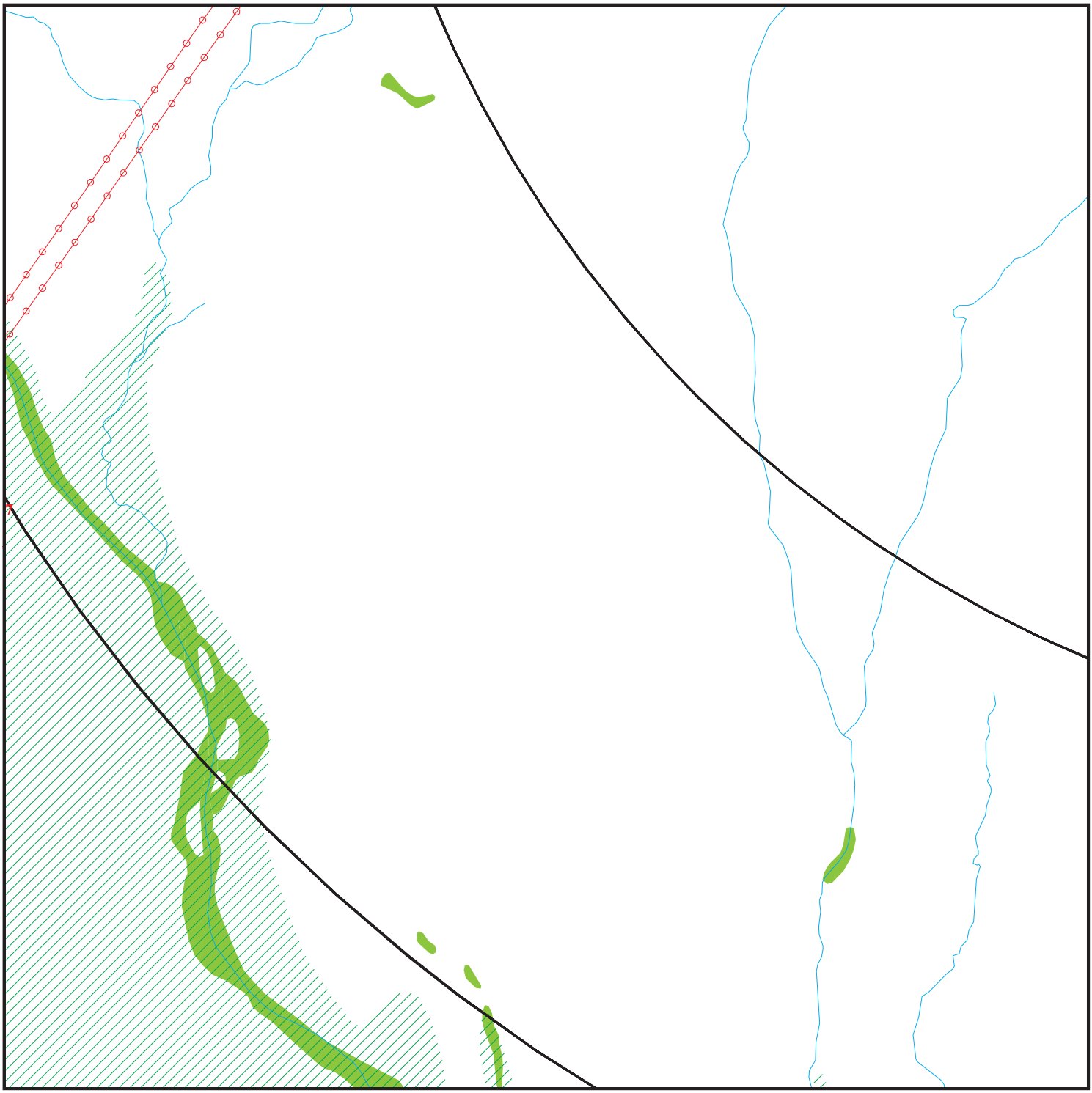
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:48 pm

DETAIL MAP 17 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

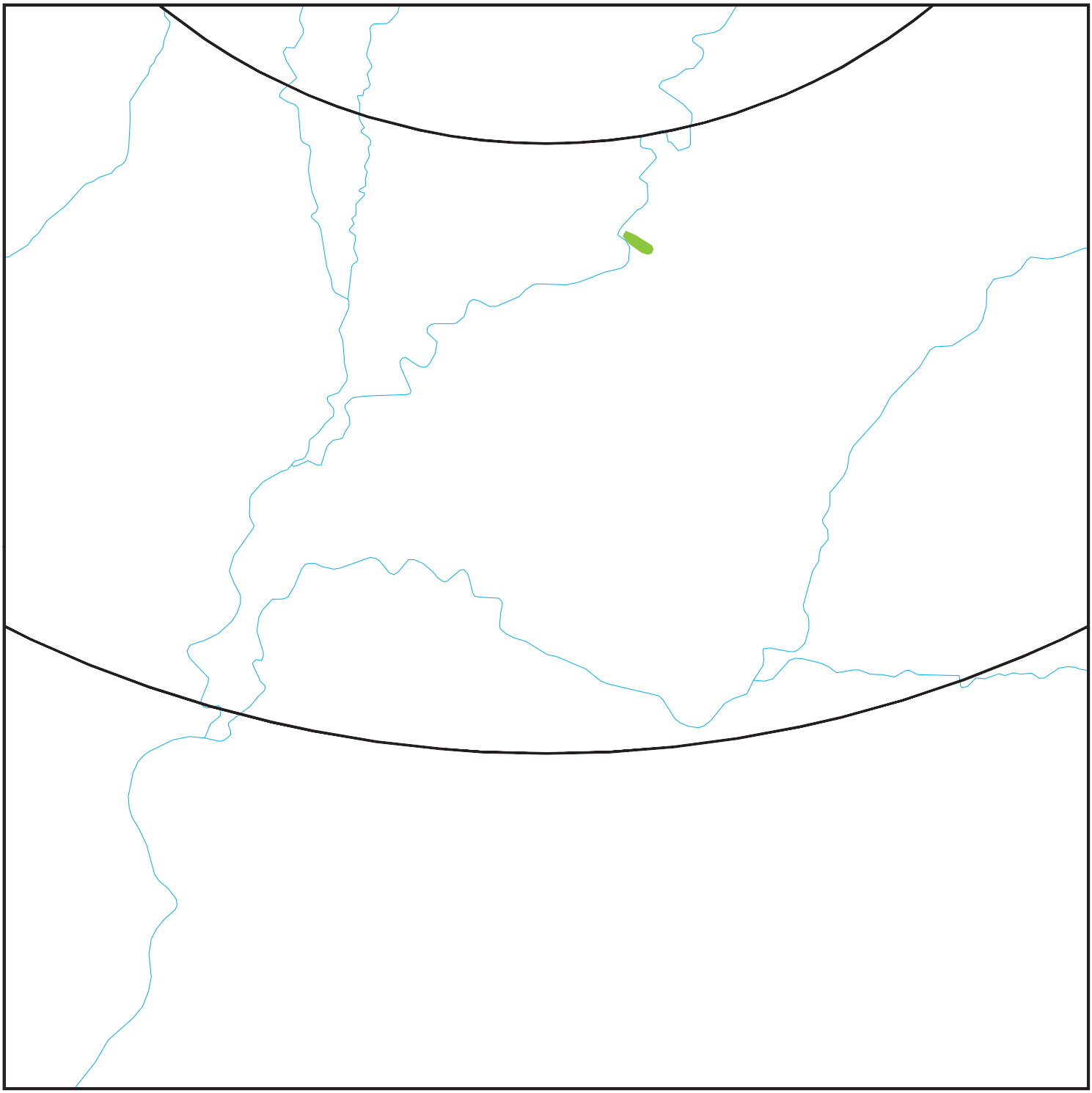
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:49 pm

DETAIL MAP 18 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

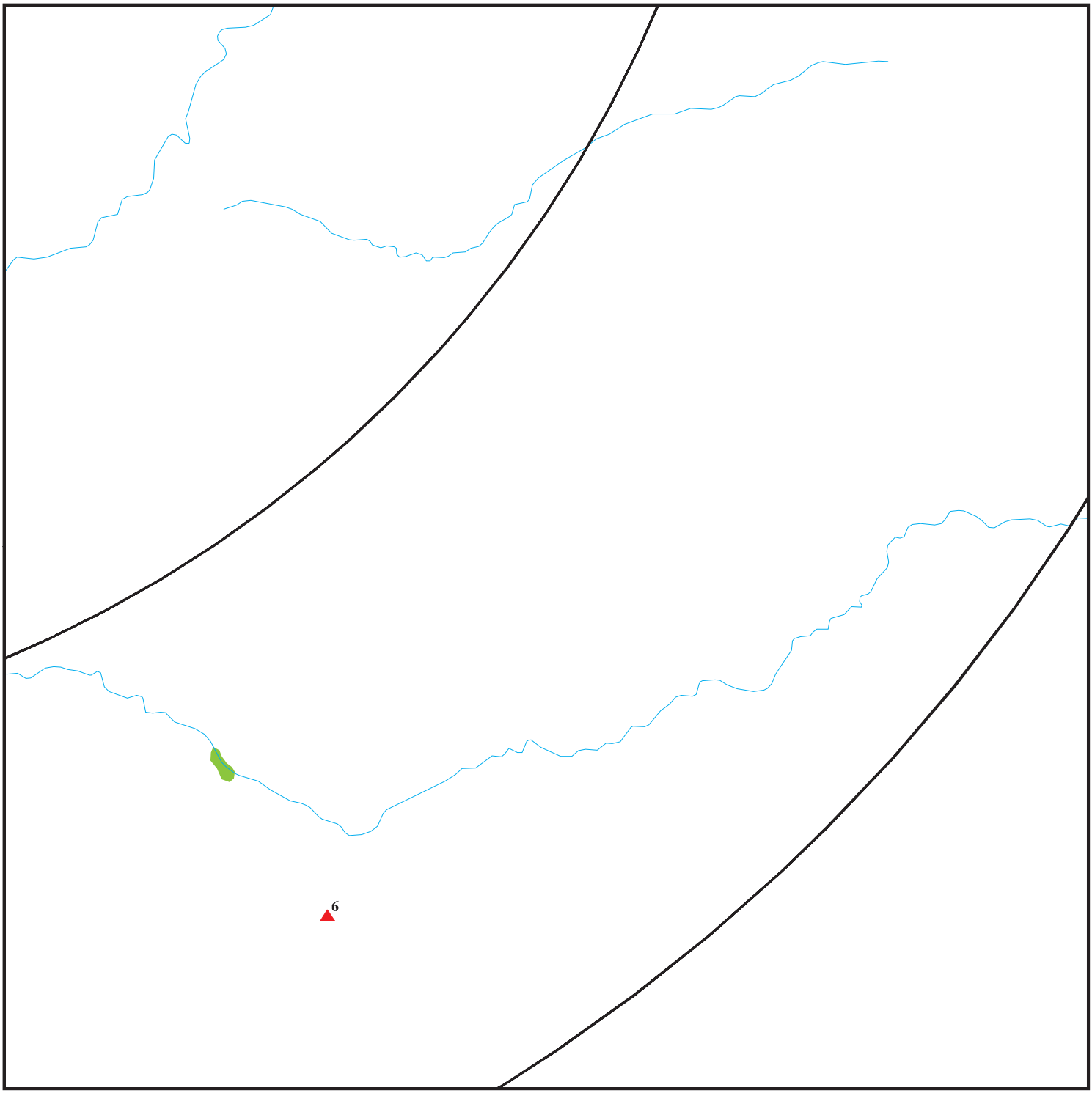
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road San Miguel CA 93451	CONTACT: Lenora Westbrook
LAT/LONG: 35.8527 / 120.3165	INQUIRY #: 3830753.6s DATE: January 14, 2014 5:50 pm

DETAIL MAP 19 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

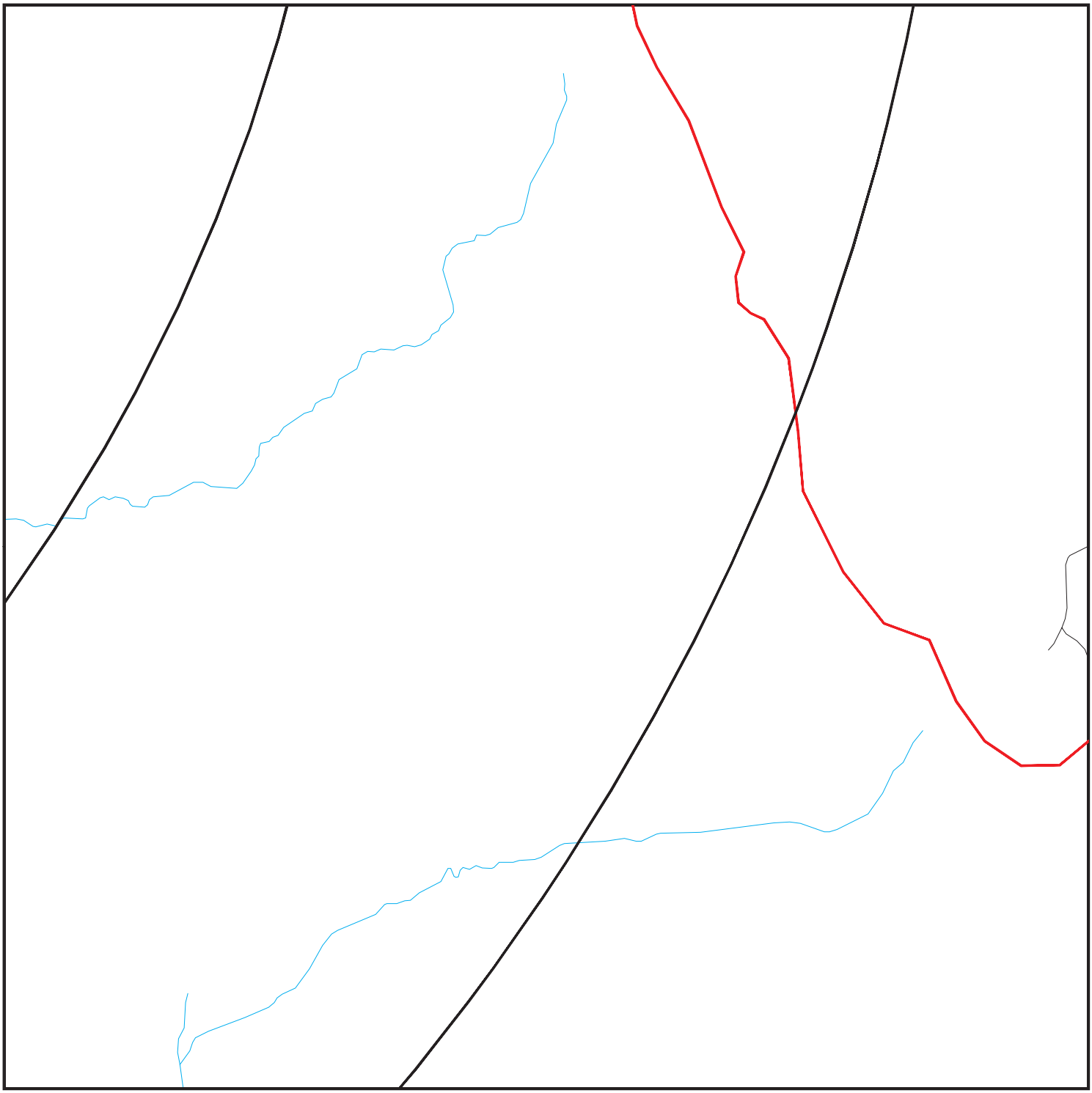
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:51 pm

DETAIL MAP 20 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

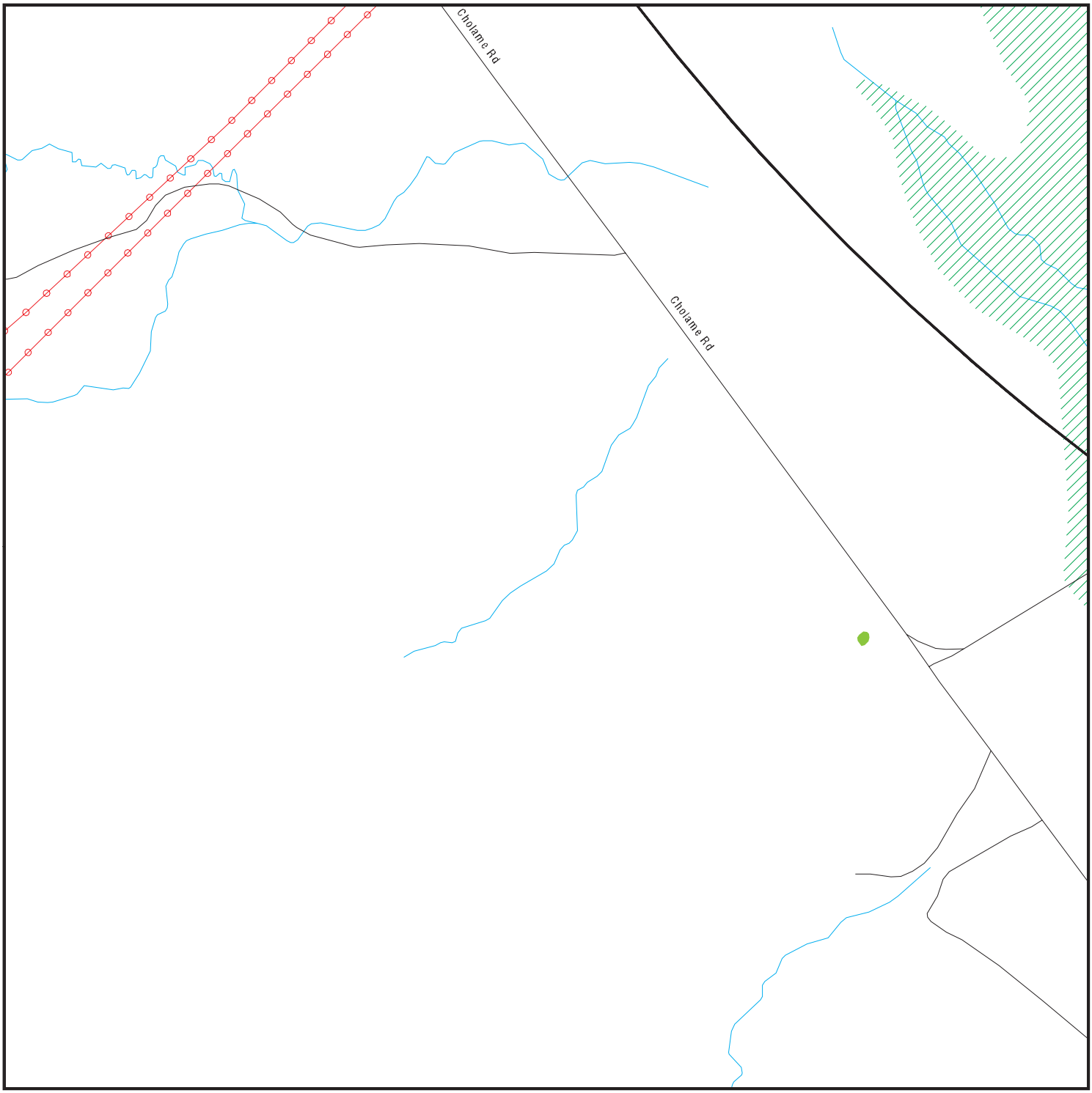
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- County Boundary
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:52 pm

DETAIL MAP 21 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:53 pm

DETAIL MAP 22 of 25 - 3830753.6s

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

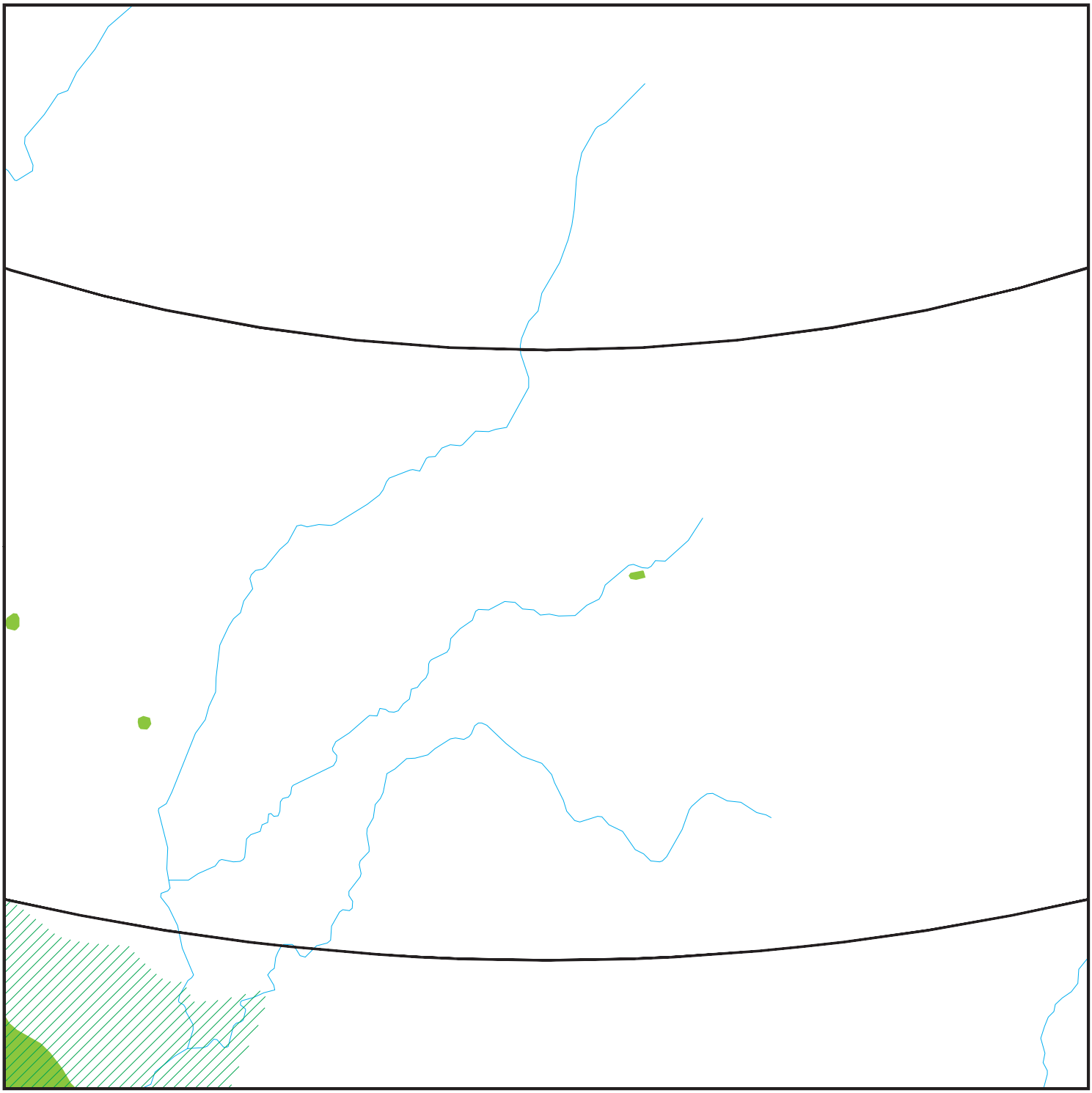
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:54 pm

DETAIL MAP 23 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

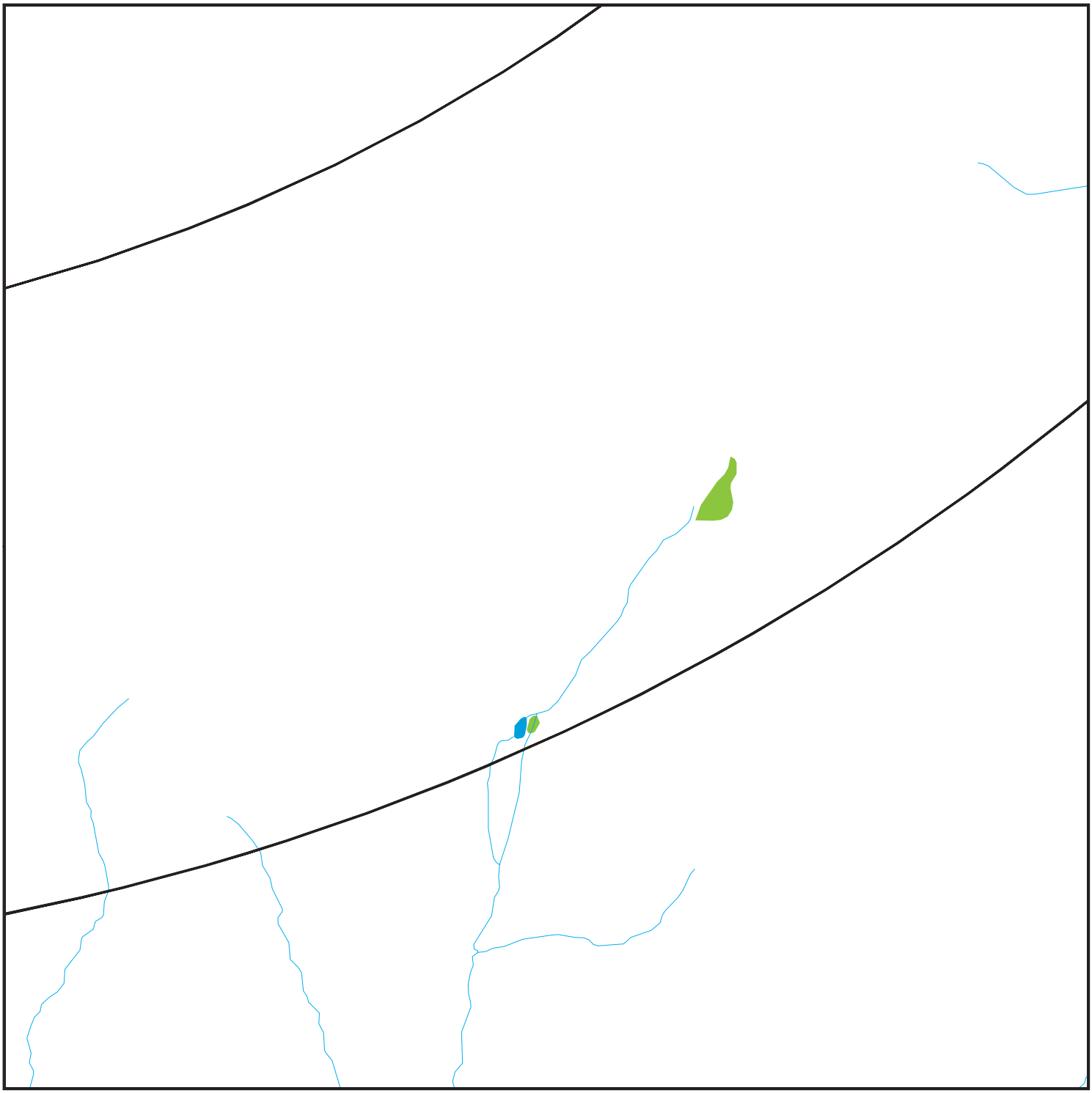
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:55 pm

DETAIL MAP 24 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

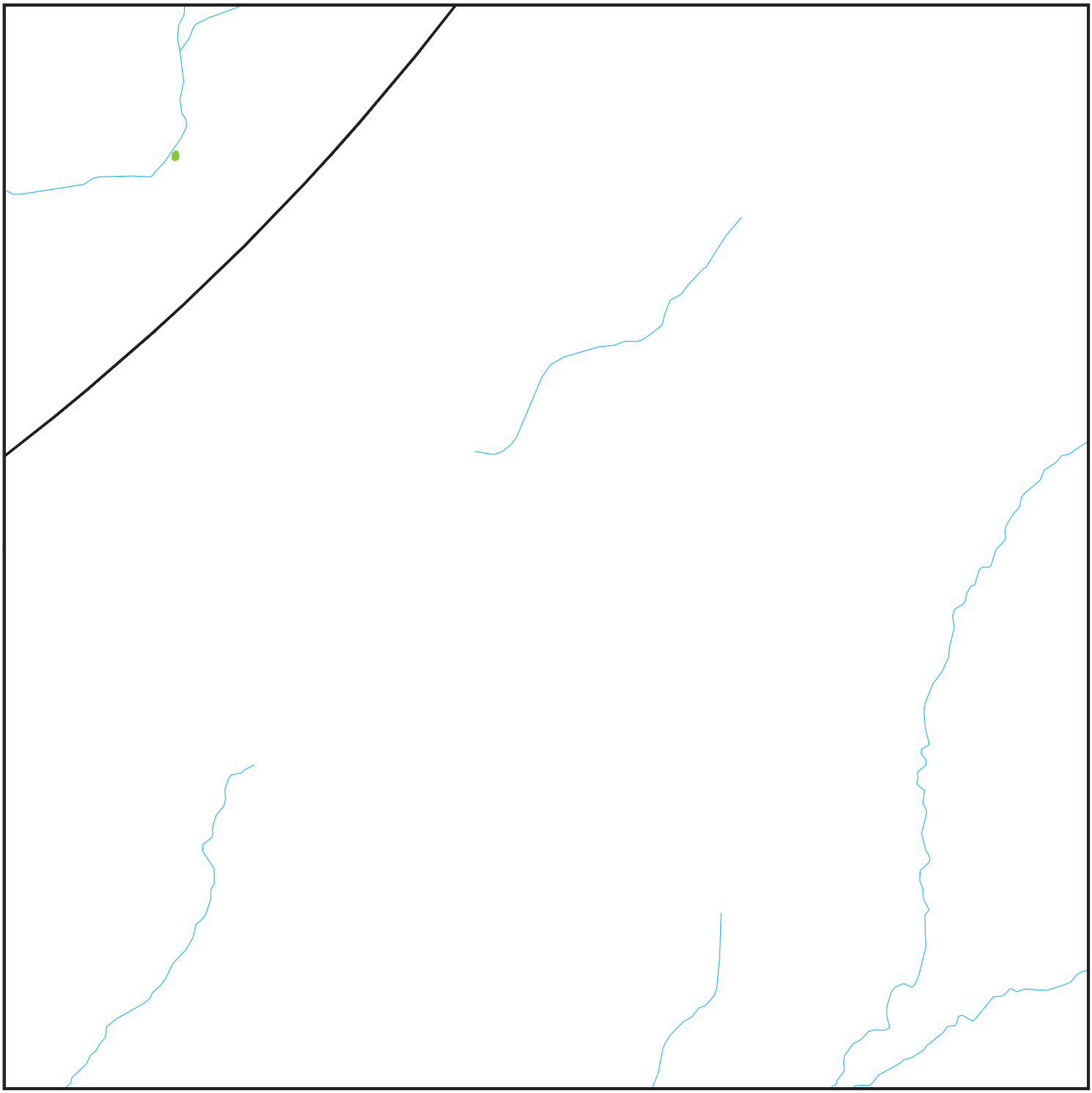
0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road	CONTACT: Lenora Westbrook
San Miguel CA 93451	INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:56 pm

DETAIL MAP 25 of 25 - 3830753.6s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road San Miguel CA 93451	CONTACT: Lenora Westbrook
LAT/LONG: 35.8527 / 120.3165	INQUIRY #: 3830753.6s DATE: January 14, 2014 5:57 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	4.000		0	0	0	0	0	0
Proposed NPL	4.000		0	0	0	0	0	0
NPL LIENS	4.000		0	0	0	0	0	0
Federal Delisted NPL site list								
Delisted NPL	4.000		0	0	0	0	0	0
Federal CERCLIS list								
CERCLIS	4.000		0	0	0	0	0	0
FEDERAL FACILITY	4.000		0	0	0	0	0	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	4.000		0	0	0	0	0	0
Federal RCRA CORRACTS facilities list								
CORRACTS	4.000		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	4.000		0	0	0	0	0	0
Federal RCRA generators list								
RCRA-LQG	4.000		0	0	0	0	0	0
RCRA-SQG	4.000		0	0	0	0	0	0
RCRA-CESQG	4.000		0	0	0	0	0	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	4.000		0	0	0	0	0	0
US INST CONTROL	4.000		0	0	0	0	0	0
LUCIS	4.000		0	0	0	0	0	0
Federal ERNS list								
ERNS	4.000		0	0	0	0	0	0
State- and tribal - equivalent NPL								
RESPONSE	4.000		0	0	0	0	0	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	4.000		0	0	0	0	0	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	4.000		0	0	0	0	0	0
State and tribal leaking storage tank lists								
LUST	4.000		0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	4.000		0	0	0	0	0	0
INDIAN LUST	4.000		0	0	0	0	0	0
State and tribal registered storage tank lists								
UST	4.000		0	0	0	0	0	0
AST	4.000		0	0	0	0	0	0
INDIAN UST	4.000		0	0	0	0	0	0
FEMA UST	4.000		0	0	0	0	0	0
State and tribal voluntary cleanup sites								
INDIAN VCP	4.000		0	0	0	0	0	0
VCP	4.000		0	0	0	0	0	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	4.000		0	0	0	0	0	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	4.000		0	0	0	0	0	0
DEBRIS REGION 9	4.000		0	0	0	0	0	0
WMUDS/SWAT	4.000		0	0	0	0	0	0
SWRCY	4.000		0	0	0	0	0	0
HAULERS	4.000		0	0	0	0	0	0
INDIAN ODI	4.000		0	0	0	0	0	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	4.000		0	0	0	0	0	0
HIST Cal-Sites	4.000		0	0	0	0	0	0
SCH	4.000		0	0	0	0	0	0
Toxic Pits	4.000		0	0	0	0	0	0
CDL	4.000		0	0	0	0	0	0
US HIST CDL	4.000		0	0	0	0	0	0
Local Lists of Registered Storage Tanks								
CA FID UST	4.000		0	0	0	0	0	0
HIST UST	4.000		0	0	0	0	0	0
SWEEPS UST	4.000		0	0	0	0	0	0
Local Land Records								
LIENS 2	4.000		0	0	0	0	0	0
LIENS	4.000		0	0	0	0	0	0
DEED	4.000		0	0	0	0	0	0
Records of Emergency Release Reports								
HMIRS	4.000		0	0	0	0	0	0
CHMIRS	4.000		0	0	0	0	0	0
LDS	4.000		0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	4.000		0	0	0	0	0	0
SPILLS 90	4.000		0	0	0	0	0	0
Other Ascertainable Records								
RCRA NonGen / NLR	4.000		0	0	0	0	0	0
DOT OPS	4.000		0	0	0	0	0	0
DOD	4.000		0	0	0	0	0	0
FUDS	4.000		0	0	0	0	0	0
CONSENT	4.000		0	0	0	0	0	0
ROD	4.000		0	0	0	0	0	0
UMTRA	4.000		0	0	0	0	0	0
US MINES	4.000		0	0	0	0	0	0
TRIS	4.000		0	0	0	0	0	0
TSCA	4.000		0	0	0	0	0	0
FTTS	4.000		0	0	0	0	0	0
HIST FTTS	4.000		0	0	0	0	0	0
SSTS	4.000		0	0	0	0	0	0
ICIS	4.000		0	0	0	0	0	0
PADS	4.000		0	0	0	0	0	0
MLTS	4.000		0	0	0	0	0	0
RADINFO	4.000		0	0	0	0	0	0
FINDS	4.000		0	0	0	0	0	0
RAATS	4.000		0	0	0	0	0	0
RMP	4.000		0	0	0	0	0	0
CA BOND EXP. PLAN	4.000		0	0	0	0	0	0
NPDES	4.000		0	0	0	0	0	0
UIC	4.000		0	1	0	1	7	9
Cortese	4.000		0	0	0	0	0	0
HIST CORTESE	4.000		0	0	0	0	0	0
CUPA Listings	4.000		0	0	0	0	0	0
Notify 65	4.000		0	0	0	0	0	0
DRYCLEANERS	4.000		0	0	0	0	0	0
WIP	4.000		0	0	0	0	0	0
ENF	4.000		0	0	0	0	0	0
HAZNET	4.000		0	0	0	0	0	0
EMI	4.000		0	0	0	0	0	0
INDIAN RESERV	4.000		0	0	0	0	0	0
SCRD DRYCLEANERS	4.000		0	0	0	0	0	0
WDS	4.000		0	0	0	0	0	0
PRP	4.000		0	0	0	0	0	0
US AIRS	4.000		0	0	0	0	0	0
2020 COR ACTION	4.000		0	0	0	0	0	0
LEAD SMELTERS	4.000		0	0	0	0	0	0
Financial Assurance	4.000		0	0	0	0	0	0
HWT	4.000		0	0	0	0	0	0
HWP	4.000		0	0	0	0	0	0
US FIN ASSUR	4.000		0	0	0	0	0	0
COAL ASH DOE	4.000		0	0	0	0	0	0
MWMP	4.000		0	0	0	0	0	0
PROC	4.000		0	0	0	0	0	0
COAL ASH EPA	4.000		0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PCB TRANSFORMER	4.000		0	0	0	0	0	0
EPA WATCH LIST	4.000		0	0	0	0	0	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	4.000		0	0	0	0	0	0
EDR US Hist Auto Stat	4.000		0	0	0	0	0	0
EDR US Hist Cleaners	4.000		0	0	0	0	0	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LUST	4.000		0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
ENE
1/8-1/4
0.207 mi.
1092 ft.

THE BRITISH AMERICAN OIL PRODUCING COMPANY
MONTEREY (County), CA

UIC **S111633979**
N/A

Relative:
Lower

Actual:
1521 ft.

UIC:

API Number:	05301138
Confidential Well:	N
Well Number:	26A
Direction:	Not Directionally drilled
Lease Name:	Cholame Ranch
Well Located On A BLW Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	12
Township:	24S
Range:	15E
Base And Meridian; Part Of The PLSS:	MD
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	35.85333
Longitude:	-120.3129
GIS Source Code:	hud
Comments:	Not reported

2
WNW
1/2-1
0.809 mi.
4270 ft.

THE BRITISH AMERICAN OIL PRODUCING COMPANY
MONTEREY (County), CA

UIC **S111633978**
N/A

Relative:
Lower

Actual:
1529 ft.

UIC:

API Number:	05301137
Confidential Well:	N
Well Number:	2
Direction:	Not Directionally drilled
Lease Name:	Cholame Ranch Core Hole
Well Located On A BLW Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	11
Township:	24S
Range:	15E
Base And Meridian; Part Of The PLSS:	MD
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	35.85838
Longitude:	-120.3291
GIS Source Code:	hud
Comments:	Not reported

3
NNE
> 1
1.121 mi.
5919 ft.

JENE D MUNSON

MONTEREY (County), CA

Relative:
Higher

Actual:
1706 ft.

UIC **S111634328**
N/A

UIC:

API Number:	05301488
Confidential Well:	N
Well Number:	1
Direction:	Not Directionally drilled
Lease Name:	Jack
Well Located On A BLW Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	1
Township:	24S
Range:	15E
Base And Meridian; Part Of The PLSS:	MD
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	35.86637
Longitude:	-120.3057
GIS Source Code:	hud
Comments:	Not reported

4
ESE
> 1
1.286 mi.
6789 ft.

THE BRITISH AMERICAN OIL PRODUCING COMPANY

MONTEREY (County), CA

Relative:
Lower

Actual:
1571 ft.

UIC **S111633980**
N/A

UIC:

API Number:	05301139
Confidential Well:	N
Well Number:	1
Direction:	Not Directionally drilled
Lease Name:	Cholame Ranch Core Hole
Well Located On A BLW Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	18
Township:	24S
Range:	16E
Base And Meridian; Part Of The PLSS:	MD
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	35.84526
Longitude:	-120.2955
GIS Source Code:	hud
Comments:	Not reported

5
ENE
> 1
1.501 mi.
7927 ft.

GAMMON & GAMMON
MONTEREY (County), CA

UIC **S111634010**
N/A

Relative:
Higher

Actual:
1712 ft.

UIC:

API Number:	05301170
Confidential Well:	N
Well Number:	1
Direction:	Not Directionally drilled
Lease Name:	Hancock
Well Located On A BLW Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	6
Township:	24S
Range:	16E
Base And Meridian; Part Of The PLSS:	MD
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	35.86366
Longitude:	-120.2934
GIS Source Code:	hud
Comments:	Not reported

6
SSE
> 1
2.613 mi.
13796 ft.

LEN OWENS & ASSOC.
MONTEREY (County), CA

UIC **S111634122**
N/A

Relative:
Higher

Actual:
1645 ft.

UIC:

API Number:	05301282
Confidential Well:	N
Well Number:	1
Direction:	Not Directionally drilled
Lease Name:	Jordan
Well Located On A BLW Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	19
Township:	24S
Range:	16E
Base And Meridian; Part Of The PLSS:	MD
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	35.81985
Longitude:	-120.2933
GIS Source Code:	hud
Comments:	Not reported

7
WSW
> 1
3.023 mi.
15960 ft.

NORCAL PETROLEUM CORP.

MONTEREY (County), CA

UIC **S111634330**
N/A

Relative:
Lower

Actual:
1262 ft.

UIC:

API Number:	05301490
Confidential Well:	N
Well Number:	1
Direction:	Not Directionally drilled
Lease Name:	Jack Company
Well Located On A BLW Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	21
Township:	24S
Range:	15E
Base And Meridian; Part Of The PLSS:	MD
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	35.82927
Longitude:	-120.3620
GIS Source Code:	hud
Comments:	Not reported

8
WNW
> 1
3.266 mi.
17242 ft.

CALIFORNIA OILS INC.

MONTEREY (County), CA

UIC **S111633984**
N/A

Relative:
Higher

Actual:
1634 ft.

UIC:

API Number:	05301143
Confidential Well:	N
Well Number:	1
Direction:	Not Directionally drilled
Lease Name:	Not reported
Well Located On A BLW Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	33
Township:	23S
Range:	15E
Base And Meridian; Part Of The PLSS:	MD
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	35.87858
Longitude:	-120.3652
GIS Source Code:	hud
Comments:	Not reported

9
SSW
> 1
3.416 mi.
18034 ft.

LYLE A. GARNER

MONTEREY (County), CA

UIC **S111634011**
N/A

Relative:
Lower

Actual:
1220 ft.

UIC:

API Number:	05301171
Confidential Well:	N
Well Number:	27-1
Direction:	Not Directionally drilled
Lease Name:	Jack
Well Located On A BLW Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	27
Township:	24S
Range:	15E
Base And Meridian; Part Of The PLSS:	MD
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	35.80661
Longitude:	-120.3388
GIS Source Code:	hud
Comments:	Not reported

Count: 33 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
KETTLEMAN CITY	S110504169	VERIZON WIRELESS - KETTLEMAN RIDGE	36006 HIGHWAY 41	93204	EMI
SAN MIGUEL	S110737342	WATER SOTRAGE AND TRANSMISSION FAC	W OF HWY 101 OPPOSITE 14TH ST	93451	NPDES
CAMP ROBERTS	S110739234	CA ARMY NATIONAL GUARD	HIGHWAY 101	93451	CUPA
PARKFIELD	S110739532	VERIZON WIRELESS-TABLE MOUNTAIN	TABLE MTN-TURKEY FLAT RD	93451	CUPA
SAN MIGUEL	S110739597	BAE SYSTEMS	HIGHWAY 101 BLDG 7026	93451	CUPA
PARKFIELD	S110740101	VERIZON CALIFORNIA-PARKFIELD CO	VINEYARD CYN & CHOLAME RD	93451	CUPA
COALINGA	S110741036	FRANCISCO SALCEDO RANCH	71654 W HWY 198	93210	CUPA
AVENAL	S110761608	EAGLE FEATHER TRADING POST #2	40103 HIGHWAY 33	93204	CUPA
CAMP ROBERTS	S111214405	CALIFORNIA NATIONAL GUARD	HWY 101 BLDG 108	93451	NPDES
CAMP ROBERTS	S111459445	CAMP ROBERTS PV POWER PLANT	HIGHWAY 101	93451	NPDES
	S112832634	PAJARO MEDIAN BARRIER	ROUTE 1 HIGHWAY		NPDES
	S112832793	SHOULDER WIDENING AND RUMBLE STRIP	101 HIGHWAY		NPDES
COALINGA	S112852754	COLINGA #2 SUB STATION	HWY 33 1 MI S/W OF HEY 198 THE	93210	HAZNET
AVENAL	S112863367	DEVILS DEN SUB STATION	HWY 33 16 MILES SOUTH OF	93204	HAZNET
COALINGA	S112922188	CALTRANS DIST 6/CONSTRUCTION	HWY 33 KILOPOST 26.6-27.3	93210	HAZNET
CAMP ROBERTS	S112923176	USACOE/CAMP ROBERTS	6033 HWY 101	93451	HAZNET
COALINGA	S112931592	A & I TRUCKING INC	INTERSTATE 5 & STATE ROUTE 198	93210	HAZNET
BRADLEY	S112974399	CALTRANS D-5/CONSTR/EA05-464104	RTE 101 NB/SB PM R3.1-R5.2	93451	HAZNET
COALINGA	S113002631	UNOCAP COALINGA PUMP STATION	1 MI S/OF COALINGA ON HWY 33	93210	HAZNET
COALINGA	S113008294	DWR MOBIL EQUIPMENT SHOP	ROUTE 1 FRESNO COALINGA HWY	93210	HAZNET
COALINGA	S113033582	TANIMURA & ANTLE INC	29191 FRESNO-COALINGA HWY 145	93210	HAZNET
COALINGA	S113033846	GRANITE CONSTRUCTION COMPANY	38940 HIGHWAY 33	93210	HAZNET
COALINGA	S113061390	CDWR COALINGA O&M CENTER	HIGHWAY 145 3 MI EAST OF I-5I-	93210	HAZNET
AVENAL	S113146265	KIEWIT PACIFIC COMPANY	HIGHWAY 41 PM 3.2	93204	HAZNET
KETTLEMAN CITY	S113179455	CHEMICAL WASTE MGMT INC	KETTLEMAN N DOME LDFL HWY 41	93210	HAZNET
COALINGA	S113408293	VERIZON WIRELESS-WEST PALMER	HIGHWAY 33	93210	CUPA
AVENAL	U001580826	COTTONWOOD STATION	HIGHWAY 41	93204	HIST UST
AVENAL	U001580827	DARELL ZWANG RANCH	HWY 41 5 MI. SW OF REEF CITY	93204	HIST UST
COALINGA	U001580932	COALINGA COMM & CARGO AIRLINE	HIGHWAY 33	93210	HIST UST,CUPA
COALINGA	U001580985	WELL TEC	HWY 198 SOUTH	93210	HIST UST
SAN MIGUEL	U001585862	RANCHO AGUAGE	PARKFIELD ROUTE, VINEYARD CANY	93451	HIST UST
AVENAL	U003971409	WHITFIELD'S REEF CITY	40103 HIGHWAY 33	93204	UST
CAMP ROBERTS	U004182253	CA ARMY NATIONAL GUARD- CAMP ROBER	HIGHWAY 101	93451	UST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 01/21/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 01/09/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 01/09/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/29/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 72

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 11/11/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/31/2013
Date Data Arrived at EDR: 07/08/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 151

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/10/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/29/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 72

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 11/11/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 10/02/2013
Date Made Active in Reports: 12/16/2013
Number of Days to Update: 75

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 01/02/2014
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 10/02/2013
Date Made Active in Reports: 12/16/2013
Number of Days to Update: 75

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/02/2014
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 10/02/2013
Date Made Active in Reports: 12/16/2013
Number of Days to Update: 75

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/02/2014
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 10/02/2013
Date Made Active in Reports: 12/16/2013
Number of Days to Update: 75

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/02/2014
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 10/02/2013
Date Made Active in Reports: 12/16/2013
Number of Days to Update: 75

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/02/2014
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 06/17/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 06/17/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 70

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 66

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/10/2014
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/18/2013
Date Data Arrived at EDR: 11/21/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 42

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/17/2013
Date Made Active in Reports: 01/04/2014
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 10/16/2013
Date Data Arrived at EDR: 10/17/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 41

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/07/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 70

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 184

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/01/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 08/27/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 66

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 42
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/17/2013
Date Made Active in Reports: 01/07/2014
Number of Days to Update: 21
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21
Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 01/03/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 70
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 09/28/2012
Date Data Arrived at EDR: 11/07/2012
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 156

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/01/2014
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/05/2013
Date Data Arrived at EDR: 02/06/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 65

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 07/29/2013
Date Data Arrived at EDR: 07/30/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 129

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 07/29/2013
Date Data Arrived at EDR: 08/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 92

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 02/28/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 43

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/13/2014
Next Scheduled EDR Contact: 04/28/2014
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/17/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 66

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 01/03/2014
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/24/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/24/2013
Next Scheduled EDR Contact: 04/07/2014
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30
Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/17/2013
Date Made Active in Reports: 01/07/2014
Number of Days to Update: 21
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/20/2013
Date Data Arrived at EDR: 11/25/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 36
Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/06/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 22

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 12/05/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 09/03/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/13/2014
Next Scheduled EDR Contact: 04/28/2014
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/06/2013
Date Data Arrived at EDR: 04/25/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/13/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 10/08/2013
Date Data Arrived at EDR: 10/15/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 43

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 12/09/2013
Date Data Arrived at EDR: 12/10/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 24

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 12/10/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/16/2013
Number of Days to Update: 76

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/03/2014
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 10/14/2013
Date Data Arrived at EDR: 10/30/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 34

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 10/30/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/17/2013
Date Made Active in Reports: 01/04/2014
Number of Days to Update: 18

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/17/2013
Date Made Active in Reports: 01/04/2014
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 10/02/2013
Date Made Active in Reports: 12/16/2013
Number of Days to Update: 75

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/02/2014
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 15

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 12/13/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/07/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 57

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 12/26/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 06/11/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 143

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/12/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/26/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 28

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/06/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/27/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/26/2013
Next Scheduled EDR Contact: 04/07/2014
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 11/21/2014
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/09/2014
Next Scheduled EDR Contact: 04/28/2014
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2013
Date Data Arrived at EDR: 07/17/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 107

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/22/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/09/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 23

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/10/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 03/08/2013
Date Data Arrived at EDR: 03/21/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 111

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 12/10/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/08/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/25/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/19/2013
Date Data Arrived at EDR: 11/21/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 42

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 09/25/2013
Date Data Arrived at EDR: 12/17/2013
Date Made Active in Reports: 01/07/2014
Number of Days to Update: 21
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 56
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/31/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 04/07/2014
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 35
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Annually

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/26/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/09/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 56

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/16/2013
Date Made Active in Reports: 08/26/2013
Number of Days to Update: 41

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/15/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 06/25/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 58

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/26/2013
Next Scheduled EDR Contact: 04/07/2014
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/18/2013
Date Data Arrived at EDR: 11/19/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 42

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 11/26/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 35
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/26/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/15/2013
Date Data Arrived at EDR: 10/15/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 43
Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/14/2014
Next Scheduled EDR Contact: 04/28/2014
Data Release Frequency: Quarterly

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339
Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: N/A

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 10/28/2013
Date Data Arrived at EDR: 10/29/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 38
Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 04/15/2013
Date Data Arrived at EDR: 07/03/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 72
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 01/02/2014
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List
The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/15/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 09/20/2013
Date Data Arrived at EDR: 12/11/2013
Date Made Active in Reports: 01/04/2014
Number of Days to Update: 24

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/17/2013
Date Made Active in Reports: 01/07/2014
Number of Days to Update: 21

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/15/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/01/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 12/26/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 12/26/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Annually

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/13/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 10/31/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/25/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/29/2013
Date Data Arrived at EDR: 02/14/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 01/03/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 01/13/2014
Next Scheduled EDR Contact: 04/28/2014
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Proprietary Historic Dry Cleaners - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Auto Stat: EDR Proprietary Historic Gas Stations - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: EDR
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 11/13/2013
Date Data Arrived at EDR: 11/15/2013
Date Made Active in Reports: 12/16/2013
Number of Days to Update: 31

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/30/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 11/13/2013
Date Data Arrived at EDR: 11/15/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 46

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/30/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 12/05/2013
Date Data Arrived at EDR: 12/10/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 24

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 20

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/13/2014
Next Scheduled EDR Contact: 04/28/2014
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 56

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/30/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/20/2013
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 39

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 11/15/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/18/2013
Date Data Arrived at EDR: 11/19/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 42

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/09/2013
Date Data Arrived at EDR: 01/10/2013
Date Made Active in Reports: 02/25/2013
Number of Days to Update: 46

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/18/2013
Date Data Arrived at EDR: 11/19/2013
Date Made Active in Reports: 01/14/2014
Number of Days to Update: 56

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/16/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 42

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/13/2014
Next Scheduled EDR Contact: 04/28/2014
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/17/2013
Date Made Active in Reports: 01/07/2014
Number of Days to Update: 21

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 28

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/12/2013
Date Data Arrived at EDR: 12/13/2013
Date Made Active in Reports: 01/07/2014
Number of Days to Update: 25

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/23/2013
Date Data Arrived at EDR: 01/25/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 33

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 04/07/2014
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/28/2013
Date Data Arrived at EDR: 06/17/2013
Date Made Active in Reports: 08/21/2013
Number of Days to Update: 65

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/13/2014
Next Scheduled EDR Contact: 04/28/2014
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/21/2013
Date Data Arrived at EDR: 10/22/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 36

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/22/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/17/2013
Next Scheduled EDR Contact: 11/04/2013
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/30/2013
Date Data Arrived at EDR: 02/21/2013
Date Made Active in Reports: 03/25/2013
Number of Days to Update: 32

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 10/21/2013
Date Data Arrived at EDR: 10/25/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 33

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 07/15/2013
Date Data Arrived at EDR: 07/18/2013
Date Made Active in Reports: 08/20/2013
Number of Days to Update: 33

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/13/2014
Next Scheduled EDR Contact: 04/28/2014
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 09/20/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/18/2013
Number of Days to Update: 24

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 10/07/2013
Date Data Arrived at EDR: 10/09/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 48

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/03/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/23/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 42

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 12/02/2013
Date Data Arrived at EDR: 12/03/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 30

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 09/11/2013
Date Data Arrived at EDR: 09/12/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 32

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/07/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 27

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/04/2013
Date Data Arrived at EDR: 11/13/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/04/2013
Date Data Arrived at EDR: 11/13/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/04/2013
Date Data Arrived at EDR: 11/13/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

PLACER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/09/2013
Date Data Arrived at EDR: 12/10/2013
Date Made Active in Reports: 01/07/2014
Number of Days to Update: 28
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/10/2013
Date Data Arrived at EDR: 10/22/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 36
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/19/2013
Next Scheduled EDR Contact: 04/07/2014
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/10/2013
Date Data Arrived at EDR: 10/22/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 36
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/19/2013
Next Scheduled EDR Contact: 04/07/2014
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/05/2013
Date Data Arrived at EDR: 10/10/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 47
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/06/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/05/2013
Date Data Arrived at EDR: 10/10/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 47
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/06/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/26/2013
Date Data Arrived at EDR: 11/27/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 34

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2013
Date Data Arrived at EDR: 11/19/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 42

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/18/2013
Date Data Arrived at EDR: 12/19/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 20

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 04/07/2014
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/26/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 44

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 10/01/2013
Date Data Arrived at EDR: 10/08/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 49

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/16/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/12/2013
Date Data Arrived at EDR: 12/17/2013
Date Made Active in Reports: 01/07/2014
Number of Days to Update: 21

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/12/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 09/03/2013
Date Data Arrived at EDR: 09/04/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 36

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 12/02/2013
Date Data Arrived at EDR: 12/03/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 30

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/12/2013
Date Data Arrived at EDR: 11/15/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 49

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 12/09/2013
Date Data Arrived at EDR: 12/10/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 24

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 12/03/2013
Date Data Arrived at EDR: 12/04/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 29

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/18/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 21

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 12/12/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/19/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 20

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 12/12/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 56

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/30/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/01/2013
Date Data Arrived at EDR: 10/02/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 55

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/30/2013
Next Scheduled EDR Contact: 04/14/2014
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/10/2013
Date Data Arrived at EDR: 12/11/2013
Date Made Active in Reports: 01/04/2014
Number of Days to Update: 24

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 11/04/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 28

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 10/29/2013
Date Data Arrived at EDR: 11/21/2013
Date Made Active in Reports: 01/14/2014
Number of Days to Update: 54

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/19/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/03/2014
Next Scheduled EDR Contact: 04/21/2014
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/19/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 10/02/2013
Date Data Arrived at EDR: 10/30/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 28

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/26/2013
Date Data Arrived at EDR: 12/18/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 21

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/16/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 12/18/2013
Date Data Arrived at EDR: 12/24/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 15

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/17/2013
Next Scheduled EDR Contact: 04/07/2014
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 12/06/2013
Date Data Arrived at EDR: 12/10/2013
Date Made Active in Reports: 01/04/2014
Number of Days to Update: 25

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 12/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/22/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 11/01/2013
Date Data Arrived at EDR: 11/07/2013
Date Made Active in Reports: 11/18/2013
Number of Days to Update: 11

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 11/07/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/24/2013
Date Made Active in Reports: 08/19/2013
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 08/05/2013
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/25/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 08/09/2013
Date Made Active in Reports: 09/27/2013
Number of Days to Update: 49

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/11/2013
Next Scheduled EDR Contact: 03/31/2014
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CALIFORNIA FLATS
TURKEY FLAT ROAD
SAN MIGUEL, CA 93451

TARGET PROPERTY COORDINATES

Latitude (North):	35.8527 - 35° 51' 9.72''
Longitude (West):	120.3165 - 120° 18' 59.40''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	742340.2
UTM Y (Meters):	3970736.2
Elevation:	1599 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	35120-G3 CHOLAME VALLEY, CA
Most Recent Revision:	1993

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

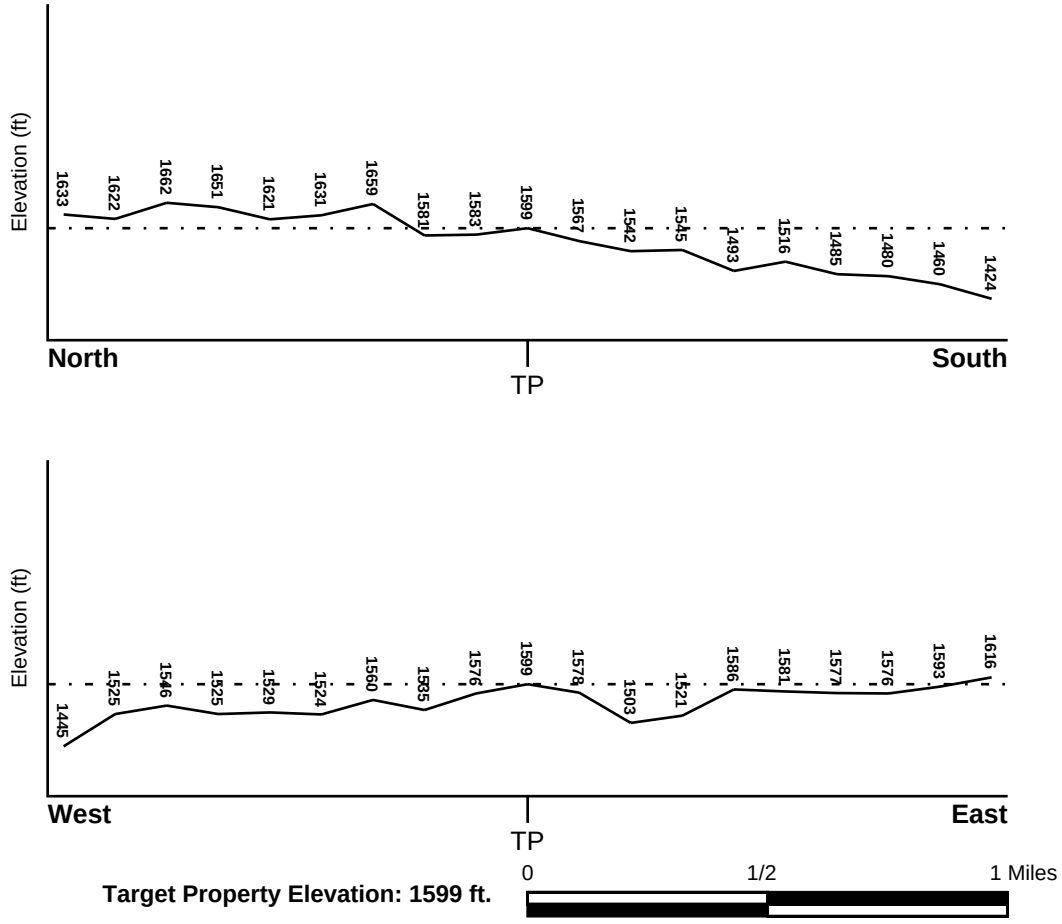
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
MONTEREY, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	06053C - FEMA DFIRM Flood data
Additional Panels in search area:	06019C - FEMA DFIRM Flood data 06031C - FEMA DFIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
CHOLAME VALLEY	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

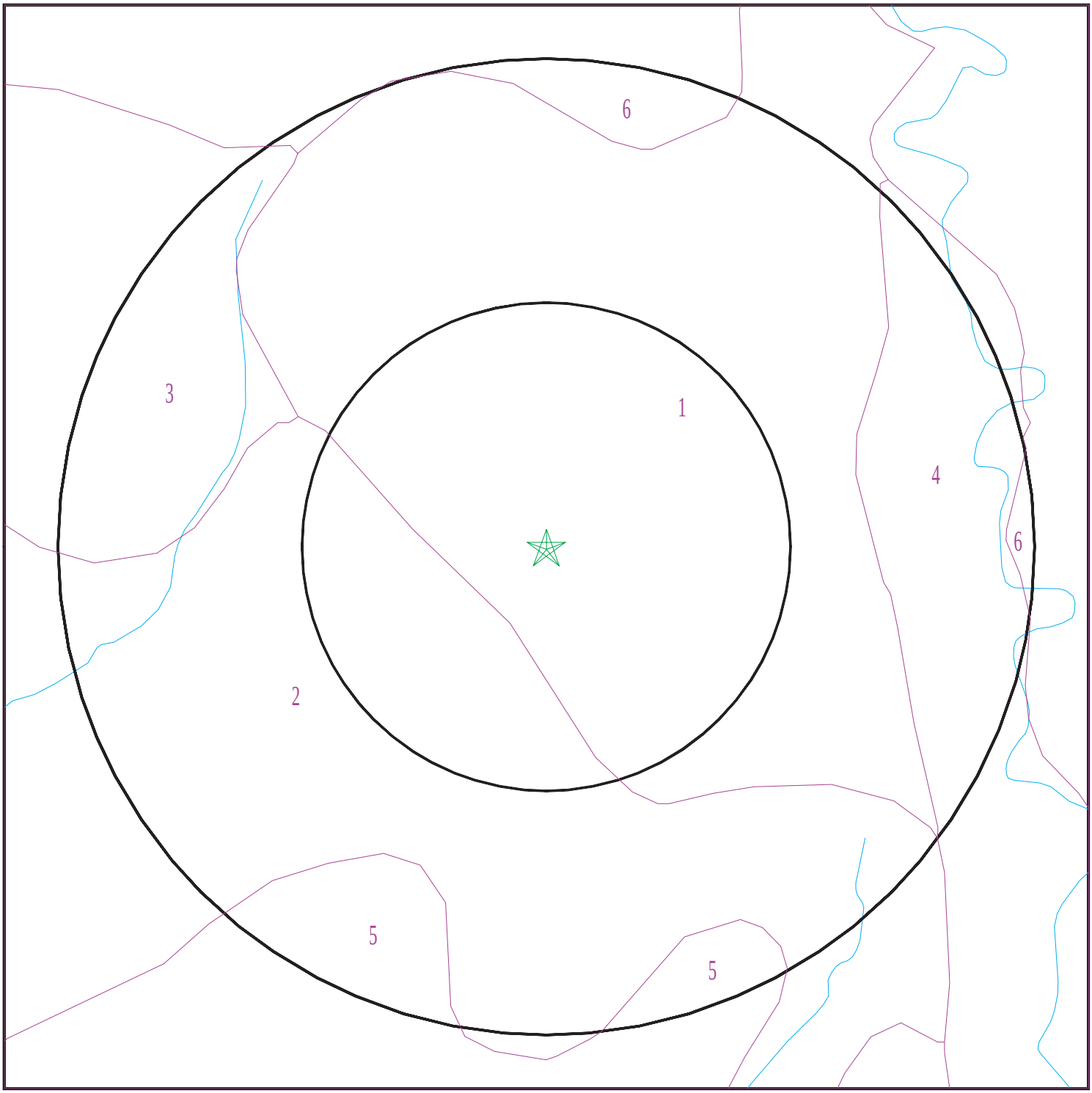
Era:	Cenozoic
System:	Tertiary
Series:	Miocene
Code:	Tm *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 3830753.6s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	California Flats	CLIENT:	KTA Associates, Inc.
ADDRESS:	Turkey Flat Road San Miguel CA 93451	CONTACT:	Lenora Westbrook
LAT/LONG:	35.8527 / 120.3165	INQUIRY #:	3830753.6s
		DATE:	January 14, 2014 5:57 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Alo

Soil Surface Texture: silty clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches	silty clay	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
2	35 inches	40 inches	weathered bedrock	Not reported	Not reported	Max: 1.4 Min: 0	Max: Min:

Soil Map ID: 2

Soil Component Name: Alo

Soil Surface Texture: silty clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches	silty clay	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.1
2	35 inches	40 inches	weathered bedrock	Not reported	Not reported	Max: 1.4 Min: 0	Max: Min:

Soil Map ID: 3

Soil Component Name: Nacimiento

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	31 inches	silty clay loam	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	31 inches	35 inches	weathered bedrock	Not reported	Not reported	Max: 1.4 Min: 0	Max: Min:

Soil Map ID: 4

Soil Component Name: Xerorthents, loamy

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	59 inches	loam	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 6.1

Soil Map ID: 5

Soil Component Name: Parkfield

Soil Surface Texture: clay

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	clay	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 7.3 Min: 5.6
2	14 inches	24 inches	clay	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6
3	24 inches	29 inches	unweathered bedrock	Not reported	Not reported	Max: 4 Min: 1.4	Max: Min:

Soil Map ID: 6

Soil Component Name: Alo

Soil Surface Texture: silty clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 43 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches	silty clay	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
2	35 inches	40 inches	weathered bedrock	Not reported	Not reported	Max: 1.4 Min: 0	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	4.000
Federal FRDS PWS	Nearest PWS within 4.000 miles
State Database	4.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

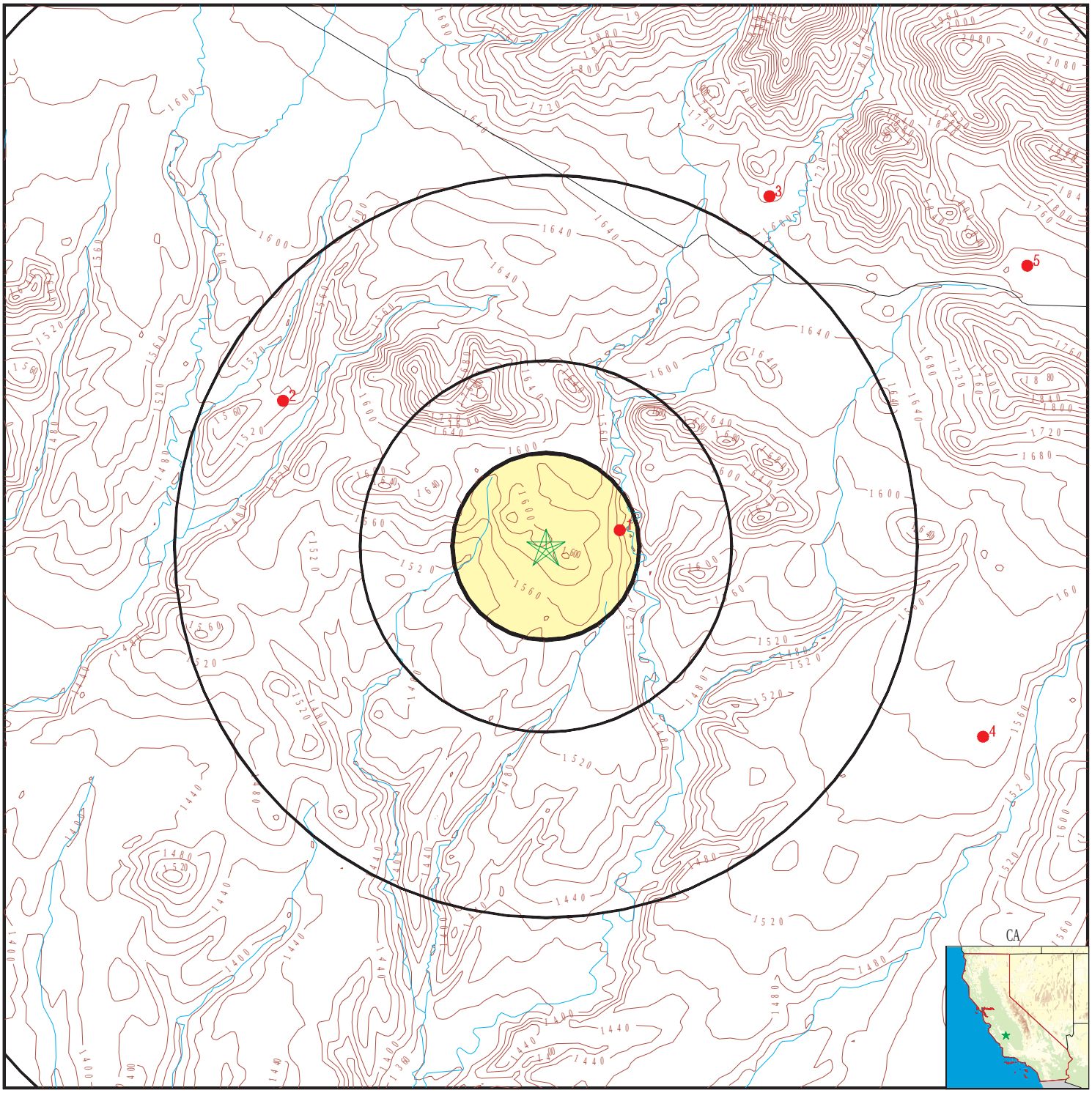
MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG9A000186013	1/8 - 1/4 Mile ENE
2	CAOG9A000186067	1/2 - 1 Mile WNW
3	CAOG9A000186120	1 - 2 Miles NNE
4	CAOG9A000185897	1 - 2 Miles ESE
5	CAOG9A000186102	1 - 2 Miles ENE
6	CAOG9A000185700	2 - 3 Miles SSE
7	CAOG9A000185764	3 - 4 Miles WSW
8	CAOG9A000186163	3 - 4 Miles WNW
9	CAOG9A000185528	3 - 4 Miles SSW

PHYSICAL SETTING SOURCE MAP - 3830753.6s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: California Flats	CLIENT: KTA Associates, Inc.
ADDRESS: Turkey Flat Road San Miguel CA 93451	CONTACT: Lenora Westbrook INQUIRY #: 3830753.6s
LAT/LONG: 35.8527 / 120.3165	DATE: January 14, 2014 5:57 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

1
ENE
1/8 - 1/4 Mile

OIL_GAS **CAOG9A000186013**

Districtnu:	3	Apinumber:	05301138
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The British American Oil Producing Company		
Countyname:	Monterey	Fieldname:	Any Field
Areaname:	Any Area		
Section:	12		
Township:	24S	Range:	15E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	35.853334		
Glong:	-120.312961		
Gissourcec:	HUD		
Comments:	Not Reported		
Leasename:	Cholame Ranch	Wellnumber:	26A
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	POG	Site id:	CAOG9A000186013

2
WNW
1/2 - 1 Mile

OIL_GAS **CAOG9A000186067**

Districtnu:	3	Apinumber:	05301137
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The British American Oil Producing Company		
Countyname:	Monterey	Fieldname:	Any Field
Areaname:	Any Area		
Section:	11		
Township:	24S	Range:	15E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	35.858389		
Glong:	-120.329104		
Gissourcec:	HUD		
Comments:	Not Reported		
Leasename:	Cholame Ranch Core Hole	Wellnumber:	2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	POG	Site id:	CAOG9A000186067

3
NNE
1 - 2 Miles

OIL_GAS **CAOG9A000186120**

Districtnu:	3	Apinumber:	05301488
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Jene D Munson		
Countyname:	Monterey	Fieldname:	Any Field
Areaname:	Any Area		
Section:	1		
Township:	24S	Range:	15E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	35.866372		
Glong:	-120.305782		
Gissourcec:	HUD		
Comments:	Not Reported		
Leasename:	Jack	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	POG	Site id:	CAOG9A000186120

4
ESE **OIL_GAS** **CAOG9A000185897**
1 - 2 Miles

Districtnu:	3	Apinumber:	05301139
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The British American Oil Producing Company		
Countyname:	Monterey	Fieldname:	Any Field
Areaname:	Any Area		
Section:	18		
Township:	24S	Range:	16E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	35.84527		
Glong:	-120.295541		
Gissourcec:	HUD		
Comments:	Not Reported		
Leasename:	Cholame Ranch Core Hole	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	POG	Site id:	CAOG9A000185897

5
ENE **OIL_GAS** **CAOG9A000186102**
1 - 2 Miles

Districtnu:	3	Apinumber:	05301170
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Gammon & Gammon		
Countyname:	Monterey	Fieldname:	Any Field
Areaname:	Any Area		
Section:	6		
Township:	24S	Range:	16E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	35.863661		
Glong:	-120.293424		
Gissourcec:	HUD		
Comments:	Not Reported		
Leasename:	Hancock	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	POG	Site id:	CAOG9A000186102

6
SSE **OIL_GAS** **CAOG9A000185700**
2 - 3 Miles

Districtnu:	3	Apinumber:	05301282
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Len Owens & Assoc.		
Countyname:	Monterey	Fieldname:	Any Field
Areaname:	Any Area		
Section:	19		
Township:	24S	Range:	16E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	35.819853		
Glong:	-120.29333		
Gissourcec:	HUD		
Comments:	Not Reported		
Leasename:	Jordan	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	POG	Site id:	CAOG9A000185700

7
WSW **OIL_GAS** **CAOG9A000185764**
3 - 4 Miles

Districtnu:	3	Apinumber:	05301490
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Norcal Petroleum Corp.		
Countyname:	Monterey	Fieldname:	Any Field
Areaname:	Any Area		
Section:	21		
Township:	24S	Range:	15E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	35.829277		
Glong:	-120.36208		
Gissourcec:	HUD		
Comments:	Not Reported		
Leasename:	Jack Company	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	POG	Site id:	CAOG9A000185764

8
WNW **OIL_GAS** **CAOG9A000186163**
3 - 4 Miles

Districtnu:	3	Apinumber:	05301143
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	California Oils Inc.		
Countyname:	Monterey	Fieldname:	Any Field
Areaname:	Any Area		
Section:	33		
Township:	23S	Range:	15E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	35.878589		
Glong:	-120.365206		
Gissourcec:	HUD		
Comments:	Not Reported		
Leasename:	Not Reported	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	POG	Site id:	CAOG9A000186163

9
SSW **OIL_GAS** **CAOG9A000185528**
3 - 4 Miles

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Districtnu:	3	Apinumber:	05301171
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Lyle A. Garner		
Countyname:	Monterey	Fieldname:	Any Field
Areaname:	Any Area		
Section:	27		
Township:	24S	Range:	15E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	35.806611		
Glong:	-120.338871		
Gissourcec:	HUD		
Comments:	Not Reported		
Leasename:	Jack	Wellnumber:	27-1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	POG	Site id:	CAOG9A000185528

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93451	10	2

Federal EPA Radon Zone for MONTEREY County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 93451

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	-0.100 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

California Flats
Turkey Flat Road
San Miguel, CA 93451

Inquiry Number: 3830753.4S
January 23, 2014

The EDR Environmental LienSearch™ Report

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Environmental LienSearch™ Report

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EDR Environmental LienSearch™ Report

TARGET PROPERTY INFORMATION

ADDRESS

California Flats
Turkey Flat Road
San Miguel, CA 93451

RESEARCH SOURCE

Source 1: Monterey County, California Assessor

Source 2: Monterey County, California Recorder

PROPERTY INFORMATION

Deed 1:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 579 acres, more or less, being a portion of Sections 2 and 3 in Township 24 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 143-011-001

Deed 2:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 144 acres, more or less, being a portion of Section 12 in Township 24 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 143-011-002

Deed 3:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 620 acres, more or less, being a portion of Section 11 in Township 24 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 143-011-003

Deed 4:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 320 acres, more or less, being the South Half of Section 34 in Township 23 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 423-191-037

Deed 5:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 200 acres, more or less, being the South Half of the Northwest Quarter, Southwest Quarter of the Northeast Quarter, and the East Half of the Northeast Quarter of Section 34 in Township 23 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 423-191-038

EDR Environmental LienSearch™ Report

Deed 6:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 480 acres, more or less, being the West Half and the Southeast Quarter of Section 35 in Township 23 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 423-191-039

Deed 7:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 204 acres, more or less, being a portion of Lots 1 and 8, and all of Lot 2 and the Southeast Quarter of the Northwest Quarter and a portion of the Southwest Quarter of the Northwest Quarter and that portion of the Northwest Quarter of the Southwest Quarter of Section 3 in Township 24 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 424-181-012

Deed 8:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a California corporation

Title received from: Letitia R. Bailey and Ida H. Kelly, each dealing with her separate property

Deed Dated: 07/26/1972

Deed Recorded: 08/14/1972

Reel: 790

Page: 1062

Legal Description: All that certain piece or parcel of land containing 144.7 acres, more or less, being portions of Lots 3, 4, 5 and 6, Section 3, Township 24 South, Range 15 East, Mount Diablo Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a California corporation

Property Identifiers: 424-181-013

EDR Environmental LienSearch™ Report

Deed 9:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 11.66 acres, more or less, being Lot 5 in Section 2 in Township 24 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 424-181-014

Deed 10:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: Donnita R. Scobie, as the Surviving Trustee of the James W. Scobie Revocable Trust dated 05/10/1978

Deed Dated: 07/17/1991

Deed Recorded: 07/23/1991

Reel: 2670

Page: 1226

Legal Description: All that certain piece or parcel of land containing 160.38 acres, more or less, being Lots 2, 3, 4 and 6 of Section 2, Township 24 South, Range 15 East, Mount Diablo Base and Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 424-181-015

Deed 11:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 608.39 acres, more or less, being the South Half, the Northwest Quarter, and the South Half of the Northeast Quarter of Section 1 and Lots 1 and 7 and a portion of the Southeast Quarter of the Northeast Quarter in Section 2, Township 24 South, Range 15 East, Mount Diablo Base and Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 424-181-016

EDR Environmental LienSearch™ Report

Deed 12:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 393.19 acres, more or less, being Lot 1 in Section 11 and Lots 1, 2 and 3 and the Southwest Quarter of the Southwest Quarter, the Northeast Quarter of the Southwest Quarter, the North Half of the Southeast Quarter, the Northeast Quarter of the Northeast Quarter and the South Half of the Northeast Quarter of Section 12 in Township 24 South, Range 15 East, Mount Diablo Base and Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 424-181-018

Deed 13:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a California corporation

Title received from: Foster L. Jordan, dealing herein with his separate property

Deed Dated: 07/19/1972

Deed Recorded: 08/14/1972

Reel: 790

Page: 1066

Legal Description: All that certain piece or parcel of land containing 316.7 acres, more or less, being Lots 1, 3 and 7, the Southeast Quarter of the Northeast Quarter, the East Half of the Southeast Quarter and the West Half of the Southeast Quarter in Section 14, Township 24 South, Range 15 East, Mount Diablo Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a California corporation

Property Identifiers: 424-181-035

EDR Environmental LienSearch™ Report

Deed 14:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a California corporation

Title received from: Letitia R. Bailey and Ida H. Kelly, each dealing with her separate property

Deed Dated: 07/26/1972

Deed Recorded: 08/14/1972

Reel: 790

Page: 1062

Legal Description: All that certain piece or parcel of land containing 160 acres, more or less, being the Southwest Quarter of Section 13, Township 24 South, Range 15 East, Mount Diablo Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a California corporation

Property Identifiers: 424-181-036

Deed 15:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a California corporation

Title received from: Letitia R. Bailey and Ida H. Kelly, each dealing with her separate property

Deed Dated: 07/26/1972

Deed Recorded: 08/14/1972

Reel: 790

Page: 1062

Legal Description: All that certain piece or parcel of land containing 160 acres, more or less, being the Northwest Quarter of Section 13, Township 24 South, Range 15 East, Mount Diablo Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a California corporation

Property Identifiers: 424-181-037

EDR Environmental LienSearch™ Report

Deed 16:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a California corporation

Title received from: Donnita R. Scobie, as Successor-Trustee of the William E. Johns Trust Agreement, dated 07/16/1972 and Amendments thereto dated 04/02/1973 and 01/21/1976, respectively and Donnita R. Scobie, as Successor Trustee of the James W. Scobie Revocable Trust dated 05/10/1978

Deed Dated: 12/01/1992

Deed Recorded: 12/11/1992

Reel: 2883

Page: 1261

Legal Description: All that certain piece or parcel of land containing 440 acres, more or less, being the South Half of the Southeast Quarter and the Southeast Quarter of the Southwest Quarter of Section 12 and the East Half of Section 13 in Township 24 South, Range 15 East, Mount Diablo Base and Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a California corporation

Property Identifiers: 424-181-038

Deed 17:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 123.71 acres, more or less, being a portion of Lots 1, 2 and 3 in Section 23 in Township 24 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 424-191-015

EDR Environmental LienSearch™ Report

Deed 18:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 577.51 acres, more or less, being Lots 1, 2, 3 and 4, the North Half, the Northwest Quarter of the Southeast Quarter and the East Half of the Southeast Quarter in Section 24 and Lot 1 in Section 25 in Township 24 South, Range 15 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 424-191-016

Deed 19:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 328.11 acres, more or less, being Lots 3, 4, 5, 6, 8 and 9 of Section 7 in Township 24 South, Range 16 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 424-201-007

EDR Environmental LienSearch™ Report

Deed 20:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a California corporation

Title received from: Donnita R. Scobie, as Successor-Trustee of the William E. Johns Trust Agreement, dated 07/16/1972 and Amendments thereto dated 04/02/1973 and 01/21/1976, respectively and Donnita R. Scobie, as Successor Trustee of the James W. Scobie Revocable Trust dated 05/10/1978

Deed Dated: 12/01/1992

Deed Recorded: 12/11/1992

Reel: 2883

Page: 1261

Legal Description: All that certain piece or parcel of land containing 27.47 acres, more or less, being Lot 7 of Section 7 in Township 24 South, Range 16 East, Mount Diablo Base and Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a California corporation

Property Identifiers: 424-201-009

Deed 21:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a Delaware corporation

Title received from: R. E. Jack Co., sometimes referred to as R. E. Jack Company, a California corporation

Deed Dated: 10/31/1966

Deed Recorded: 11/01/1966

Reel: 482

Page: 153

Legal Description: All that certain piece or parcel of land containing 316.26 acres, more or less, being Lots 2, 3, 4, 5, 6, and the North Half of Lots 8 and 9 of Section 18 in Township 24 South, Range 16 East, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a Delaware corporation

Property Identifiers: 424-201-010

EDR Environmental LienSearch™ Report

Deed 22:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a California corporation

Title received from: Donnita R. Scobie, as Successor-Trustee of the William E. Johns Trust Agreement, dated 07/16/1972 and Amendments thereto dated 04/02/1973 and 01/21/1976, respectively and Donnita R. Scobie, as Successor Trustee of the James W. Scobie Revocable Trust dated 05/10/1978

Deed Dated: 12/01/1992

Deed Recorded: 12/11/1992

Reel: 2883

Page: 1261

Legal Description: All that certain piece or parcel of land containing 583.32 acres, more or less, being Lots 1, 7 and 10 and the South Half of Lots 8 and 9 and the East Half of Section 18 in Township 24 South, Range 16 East, Mount Diablo Base and Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a California corporation

Property Identifiers: 424-201-011

Deed 23:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a California corporation

Title received from: Letitia R. Bailey and Ida H. Kelly, each dealing with her separate property

Deed Dated: 07/26/1972

Deed Recorded: 08/14/1972

Reel: 790

Page: 1062

Legal Description: All that certain piece or parcel of land containing 221.52 acres, more or less, being portions of Lots 3, 4, 5 and 6 and the North 12.12 acres of Lot 7 and the North 65.29 acres of Lot 8, Section 19, Township 24 South, Range 16 East, Mount Diablo Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a California corporation

Property Identifiers: 424-211-001

EDR Environmental LienSearch™ Report

Deed 24:

Type of Deed: Grant Deed

Title is vested in: The Hearst Corporation, a California corporation

Title received from: Foster L. Jordan, dealing herein with his separate property

Deed Dated: 07/19/1972

Deed Recorded: 08/14/1972

Reel: 790

Page: 1066

Legal Description: All that certain piece or parcel of land containing 222.06 acres, more or less, being Lots 9 and 10, and the South 14.71 acres of Lot 8, and the South 7.35 acres of Lot 7, all in Section 19 and the North Half of Lot 2 in Section 30, Township 24 South, Range 16 East, Mount Diablo Meridian, situate and lying in the County of Monterey, State of California.

Legal Current Owner: The Hearst Corporation, a California corporation

Property Identifiers: 424-211-004

EDR Environmental LienSearch™ Report

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

If found:

1st Party:

2nd Party:

Dated:

Recorded:

Book:

Page:

Docket:

Volume:

Instrument:

Comments:

Miscellaneous:

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found ☐ Not Found ☒

If found:

1st Party:

2nd Party:

Dated:

Recorded:

Book:

Page:

Docket:

Volume:

Instrument:

Comments:

Miscellaneous:

EDR Environmental LienSearch™ Report

DEED EXHIBIT

Return deed to:
Title Insurance and Trust Co.
P.O.Box 810
San Luis Obispo, California
MAIL TAX STATEMENTS TO:
The Hearst Corporation
1110 Hearst Building
San Francisco 3, California

T.I. - Ins. Co. 10 + 0.17

REEL 482 PAGE 153

GRANT DEED

For value received, the receipt of which is herewith acknowledged, R. E. JACK CO., sometimes referred to as R. E. JACK COMPANY, a California corporation, as Grantor, herewith grants unto THE HEARST CORPORATION, a Delaware corporation, as Grantee, the following described real property situate in the Counties of San Luis Obispo and Monterey, in the State of California:

G 29099

Parcel 1

Rancho Cholame, as said Rancho is described in the patent from the United States of America to Ellen F. White, recorded in Book A, page 24 of Patents in the office of the County Recorder of San Luis Obispo County, California, and in Book B, page 471 of Patents, records of Monterey County, California.

Parcel 2

All that real property in the County of Monterey, State of California, described as follows:

Township 23 South, Range 14 East, M.D.B.& M.
Section 23: SW¼ and W½SE¼
Section 36: SE¼

Township 23 South, Range 15 East, M.D.B.& M.
Section 26: SW¼NE¼, SE¼NW¼, W½SE¼, E½SW¼ and NE¼SE¼
Section 34: S½NW¼, SW¼NE¼, E½NE¼, and S½
Section 35: W½ and SE¼
Section 36: All

Township 24 South, Range 14 East, M.D.B.& M.
Section 9: SW¼
Section 11: SW¼NE¼, NW¼SE¼, S½SW¼
Section 14: N½SW¼, NW¼, SE¼SE¼
Section 16: All
Section 17: S½NE¼, SE¼
Section 21: E½SW¼, W½NW¼, NE¼NW¼, NW¼SW¼ and E½
Section 22: N½N½, SE¼NE¼, SW¼NW¼, NE¼SE¼, SE¼SE¼
Section 23: N½NE¼, NE¼NW¼.
Section 25: S½SW¼, SE¼, E½NE¼
Section 26: SW¼
Section 27: NE¼SE¼, E½NE¼
Section 34: SE¼
Section 35: All
Section 36: All

G 29099
RECORDED AT REQUEST OF
Title Insurance and Trust Company
Nov 1 11 39 AM '56
OFFICE OF RECORDER
COUNTY OF MONTEREY
SALINAS, CALIFORNIA
760

REEL 482 PAGE 153

Township 24 South, Range 15 East, M.D.B.& M.
Section 1: S½, NW¼, S½NE¼
Section 2: Lots 1, 5, 7, SE¼NE¼
Section 3: Lots 2, 7, 8, SE¼NW¼, also all that portion of Lots 1 and 9, SW¼NW¼ and N½SW¼ lying Easterly of a line running parallel with and 8.58 chains Easterly from (measured at right angles) the Westerly line of Section 3.
Section 11: Lot 1
Section 12: Lots 1, 2, 3, SW¼SW¼, NE¼SW¼, N½SE¼, NE¼NE¼, S½NE¼
Section 14: Lots 4, 5 and 6
Section 19: Lots 2, 3, 4, SE¼SW¼
Section 23: All
Section 24: All
Section 25: Lot 1
Section 28: Lot 1
Section 29: Lots 1, 2, 3, 4, NW¼NW¼, SE¼NW¼, W½SE¼, NE¼SW¼, S½SW¼, NW¼SW¼
Section 30: SW¼, W½SE¼, NE¼SE¼, SE¼NW¼, S½NE¼, SE¼SE¼
Section 31: Lots 1, 2, 3, 4, E½NW¼, W½NE¼, E½E½, E½SW¼, W½SE¼
Section 32: W½SE¼, E½SW¼, W½W½, W½NE¼, E½E½ and E½NW¼

Township 24 South, Range 16 East, M.D.B.& M.
Section 7: Lots 3, 4, 5, 6, 8 and 9
Section 18: Lots 2, 3, 4, 5, 6, N½ of Lots 8 and 9
Section 28: All oil gas and other hydrocarbon and mineral rights in SE¼
Section 29: SW¼SW¼
Section 30: Lots 3, 4, 5, 6, 7, 8, 9, S½ of Lot 2, SE¼SE¼ N½SE¼ and SE¼NE¼
Section 31: Lot 1
Section 32: Lots 1 and 2
Section 33: All oil, gas and other hydrocarbon and mineral rights in NE¼

Parcel 3.

All that real property in the County of San Luis Obispo, State of California, described as follows:

Township 25 South, Range 14 East, M.D.B.& M.
Section 1: Lots 1 and 2 of the NW¼
Section 12: W½ and NE¼

Township 25 South, Range 15 East, M.D.B.& M.
Section 3: NW¼SW¼, S½SW¼ and Lots 2, 3, 4 and 5.
Section 10: Lot 1, W½NE¼, SE¼NE¼, NW¼ and SE¼
Section 11: All
Section 13: All
Section 14: W½NE¼, E½NW¼, N½SE¼ and Lots 1 and 2
Section 15: NE¼
Section 16: SE¼
Section 21: E½NE¼
Section 22: SW¼NW¼ and NW¼SW¼
Section 24: SW¼NE¼, SW¼ and Lots 1, 2 and 3.
Section 25: E½ and NW¼
Section 35: NE¼NE¼, S½NE¼, NW¼ and SE¼
Section 36: All

Township 25 South, Range 16 East, M.D.B.& M.
Section 10: Lot 1
Section 22: All
Section 29: All
Section 30: SE¼ and Lot 5
Section 31: E½ and E½SW¼ and Lots 3 and 4
Section 32: All

Township 26 South, Range 16 East, M.D.B.& M.
Section 4: That portion of the SW¼ of said Section described as: Beginning at the southwest corner of said Section; thence North 1° West along the west line of said Section 36.25 chains to the southerly line of the Palo Prieto and Kern County road, as said road existed May 15, 1925; thence along the southerly line of said road South 45½° East 10.27 chains; South 73° East 23 chains; South 51° East 10.50 chains, South 25° East 7.90 chains to the east line of said quarter section; thence southerly along said line to the quarter section corner on the south line of said Section 4; thence West along said line 40.25 chains to the point of beginning.
Section 5; N½, NE¼SW¼ and SE¼
Section 6: Lots 1, 2 and 3, SE¼NW¼, S½NE¼ and E½SW¼
Section 7: NE¼NW¼, SE¼NE¼, S½N½NE¼, and S½N½N½NE¼
Section 8: N½NE¼, SW¼NW¼, S½N½N½NW¼ and S½N½NW¼
Section 9: N½NW¼, SE¼NW¼, SW¼NE¼ and E½E½
Section 10: All
Section 11: SW¼, SE¼NW¼ and SW¼SE¼
Section 15: N½ and SW¼
Section 16: All
Section 17: SE¼
Section 19: Lot 1
Section 20: NE¼
Section 21: NW¼

GRANTOR EXCEPTS, RETAINS AND RESERVES unto itself, its successors and transferees, the following described lands, property interests, rights, rights of way and easements, upon the limitations and upon and subject to the covenants and conditions hereinafter set forth, to wit:

1. An undivided one-half (½) interest in and to that portion of Parcel I (Rancho Cholame) described as follows:

Beginning at the northwesterly terminus of course (5) recited as "S. 60° 45' 01" E. 101.49 feet" in the deed to the State of California, recorded July 11, 1958 in Book 948, page 239 of Official Records in the office of the county recorder of said county; thence along the boundary of the land described in said deed to the State of California, as follows:

South 60° 45' 01" East 101.49 feet,
North 65° 00' 28" East 881.88 feet,
North 42° 30' 20" East 355.00 feet,
North 22° 55' 57" East 191.05 feet,
North 42° 30' 20" East 100.00 feet and
North 78° 45' 34" East 186.00 feet,

thence continuing along the northwesterly line of the land described in said deed and the northwesterly line of the land described in Parcel 1 of the deed to the State of California recorded November 29, 1935 in Book 184, page 471 of said

Official Records, North 42° 30' 20" East 1100.00 feet; thence North 47° 29' 40" West 1300.00 feet; thence South 50° 08' 55" West 2252.53 feet to the center line of the public road, 60 feet wide, described in the deed to the County of San Luis Obispo, recorded October 23, 1925 in Book 6, page 392 of said Official Records; thence along said center line South 22° 23' East 1220.00 feet to the northwesterly line of the land described in said deed to the State of California, recorded in Book 948, page 239 of Official Records; thence along said northwesterly line North 67° 18' 05" East to the point of beginning,

containing 80.16 acres, more or less, subject to all restrictions, covenants and conditions set forth in Memorandum of Agreement dated contemporaneously with this Grant Deed and executed by the parties hereto.

2. All oil, gas and other hydrocarbon substances, and other minerals, in and under and which may be produced from the following described lands in Monterey County, California, to wit:

T23S, R14E, MD B&M
Section 23: SW¼, W½SE¼
Section 36: SE¼

for a term of ten (10) years from and after the date of the recording hereof and for so long thereafter as such substances or any of them are produced therefrom in commercial quantities, TOGETHER WITH the sole and exclusive right to drill for, produce, extract, take and remove oil, gas and other hydrocarbons and other minerals therefrom with the reasonable right of entry for said purposes and to construct, use, maintain, repair and replace thereon such underground pipelines and utilities and such machinery as may be reasonably required to carry on drilling, producing and marketing operations and subject to the terms and conditions hereinafter stated. Prior to entering on said land Grantor, its agents, lessees, representatives, employees, successors or assigns, shall enter into an agreement with Grantee, its successors or assigns, which shall be mutually satisfactory to both parties and shall outline and define the areas of ingress and egress, the distances between wells, the number and depth of pipes, storage facilities, and all other relevant factors.

3. All oil, gas, and other hydrocarbon substances, in and under and that may be produced from the lands made the subject of that certain oil and gas lease between the Grantor, as Lessor, and LaVerne Anderson et al, as Lessee, dated January 12, 1966, and recorded January 28, 1966 in Reel 445, page 498 of Official Records of Monterey County, California for and during the continuance of said oil and gas lease and only during the continuance thereof, together with all rents and royalties reserved by and/or payable to the Lessor under said oil and gas lease, and together with full power and authority to waive or otherwise cure any defaults of the lessee and/or to affirm and ratify said oil and gas lease and to consent to any assignment or assignments of the lessee's interest or estate therein during the one year primary term thereof, but not thereafter, provided that if said oil and gas lease should continue during the "thereafter" term thereof, that is, after January 12, 1967, by

virtue of the production of oil or gas, or casinghead gas, or other hydrocarbon substances, or either of them, from the leased premises, or the conducting of drilling operations thereon, in accordance with the relevant provisions of said oil and gas lease, Grantor, its successors and assigns, shall strictly enforce the performance of the covenants and conditions of said oil and gas lease provided therein to be performed by the lessee. All rights of the lessor under said oil and gas lease not expressly hereinbefore reserved unto the Grantor its successors and assigns, are herewith transferred to and vested in the Grantee, and upon the termination of said oil and gas lease all rights of every sort and nature of the Grantor, its successors and assigns, are herewith transferred to and vested in the Grantee, and upon the termination of said oil and gas lease all rights of every sort and nature of the Grantor, its successors and assigns in and to said oil and gas lease, and in or to the leased lands described therein shall terminate ipso facto and shall be at an end, and Grantor, its successors and transferees, shall then, at the request of Grantee, execute and deliver to Grantee a recordable quitclaim deed to evidence such termination.

4. An undivided one-half (1/2) interest in and to all oil, gas and other hydrocarbon substances in and under, and that may be produced from the lands made the subject of that certain oil and gas lease between the Grantor herein, as Lessor, and Frank C. Rich and Norcal Petroleum Corporation, as Lessee, dated May 30, 1966, and recorded June 9, 1966 in Reel 464, page 1106 of Official Records of Monterey County, California, for and during the continuance of said oil and gas lease and only during the continuance thereof, together with an undivided one-half (1/2) interest in all rents and royalties payable to and/or reserved by the Lessor under said oil and gas lease, and together with full power and authority to waive or otherwise cure any defaults of the lessee and/or to affirm and ratify said oil and gas lease and to consent to any assignment or assignments of the lessee's interest or estate therein during the first year of the primary term thereof, but not thereafter, provided that if said oil and gas lease should continue during the "thereafter" term thereof by virtue of the production of oil or gas, or casinghead gas, or other hydrocarbon substances, or either of them, from the leased premises, or the conducting of drilling operations thereon, in accordance with the relevant provisions of said oil and gas lease, Grantor, its successors and assigns, and Grantee, its successors and assigns shall strictly enforce the performance of the covenants and conditions of said oil and gas lease provided therein to be performed by the lessee. All rights of the lessor under said oil and gas lease not expressly hereinbefore reserved unto the Grantor, its successors and transferees, are herewith transferred to and vested in the Grantee, and upon the termination of said oil and gas lease all rights of every sort and nature of the Grantor, its successors and transferees, in or to said oil and gas lease, and in or to the leased lands described therein, shall terminate ipso facto and shall be at an end, and Grantor, its successors and transferees shall then at the request of Grantee execute and deliver to Grantee a recordable quitclaim deed so as to evidence such termination.

5. Non-exclusive rights to an existing roadway known as Palo Prieto Road approximately thirty (30) feet in width running from Palo Prieto Canyon Road through the South half (S½) of Section 31, T25S, R16E, and through the NE¼ Section 6 T26S, R16E, MDB&M, for the purpose of ingress and egress to and from the following described lands in San Luis Obispo County, California, to wit:

T26S, R16E, MDB&M
Sec. 5: S½SW¼ and NW¼SW¼
Sec. 6: SE¼
Sec. 7: N½N½N½NE¼
Sec. 8: N½N½N½NW¼

containing 320 acres, and sometimes referred to as "orchard ranch", together with the right to improve and maintain said roadway and to re-route the same with the approval of the Grantee, all such improvements to be without cost or risk on the part of Grantee, and together with the right and easement to construct and maintain a telephone line either along said right of way or using existing electric power poles for the purpose of providing telephone service to said orchard ranch.

If any interest herein provided to be vested in Grantee under any of the exceptions or reservations hereinbefore made upon the happening of any condition or expiration of any limitation therein specified, shall not have sooner vested, then the same shall in any event vest upon the expiration of twentyone years after the death of the last surviving of those descendants of William Randolph Hearst (now deceased) newspaper owner and publisher, who are now living.

AND ALSO EXCEPTING FROM SAID LANDS, the following described real property interests and rights, heretofore conveyed to third parties by the Grantor or excepted and/or reserved unto third parties, to wit:

1. The following portions of parcels 1 and 3:

(a) That portion of said Rancho Cholame and Section 36 T25S, R15E, MDBM described in the deed to the State of California, recorded November 23, 1953 in Book 734, page 385 of Official Records in the office of the County Recorder of San Luis Obispo County.

(b) That portion of Rancho Cholame described in the deed to the State of California, recorded July 11, 1958 in Book 948, page 239 of Official Records in the office of the county recorder of San Luis Obispo County.

(c) That portion of Rancho Cholame described in the deed to the State of California, recorded January 19, 1966 in Book 1382, page 553 of Official Records in the office of the County Recorder of San Luis Obispo County.

(d) That portion of Sections 35 and 36, T25S, R15E, MDBM, described in the deed to the State of California, recorded July 25, 1958 in Book 950, page 279 of Official Records in the office of the County Recorder of San Luis Obispo County.

2. The following portions of Parcels 1 and 2:

(a) The interest in that certain strip of land 60 feet wide conveyed to the County of San Luis Obispo by

deed recorded October 6, 1898 in Book 42, page 202 of Deeds in the office of the county recorder of said county.

(b) That portion of Cholame Road, conveyed by deed from R. E. Jack Co., a California corporation, to the County of Monterey, a body politic and corporate, recorded March 13, 1963 in Reel 156, page 353 Official Records of said County.

(c) That portion of SW¼ Section 23, T23S, R14E, MDBM lying within the county road, 60 feet wide, leading from Parkfield to Coalinga as described in the deed from R. E. Jack Co., a California corporation, to the County of Monterey, recorded December 4, 1931, in Book 319 page 222, Official Records of said County.

(d) That portion of Section 29, T24S, R15E, MDB&M lying within the limits of that certain county road, 30 feet wide, conveyed by deed from J. Senneth to the County of Monterey, recorded November 3, 1927, in Book 130 page 130 Official Records of said County.

3. The following portions of, or interests in, Parcel 2:

(a) An undivided 1/16 interest in all coal, oil, gas and other mineral deposits, contained in the NE¼SE¼ Section 26, T23S, R15E, MDBM, as provided by an Act of the Legislature approved May 25, 1921 (Chapter 303, Statutes of California 1921) as reserved by the State of California in patent recorded September 20, 1927, in Book 125 page 186 Official Records of Monterey County.

(b) All minerals, including oil, petroleum, asphaltum and like substances, and the right to prospect for, develop, mine, dig or bore for, take and remove the same, in the SE¼SE¼ Section 22, and the NE¼SE¼ and E½NE¼ Section 27, all in T24S, R14E, MDBM, as reserved by Adolph Mayer and Hazel A. Mayer, his wife, in Deed to R. E. Jack Co., a corporation recorded September 15, 1927 in Book 105, page 33 Official Records of Monterey County.

(c) All mines and minerals, including oil, petroleum, asphaltum and like substances, situate, lying and being within or under the SE¼SE¼ Section 14, and N½NE¼ and NE¼NW¼ Section 23, all in T24S, R14E, MDBM, as reserved in the deed from Lena Wall and Thomas W. Wall, her husband, to R. E. Jack Co., a California corporation recorded February 15, 1927, in Book 105, page 34, Official Records of Monterey County.

(d) An undivided 1/16 interest of all coal, oil, gas and other mineral deposits contained in the NE¼NW¼ Section 22, T24S, R14E, as provided by an Act of the Legislature, approved May 25, 1921 (Chapter 303, Statutes of California 1921) as reserved by the State of California in patent, recorded April 22, 1927, in Book 109 page 226 Official Records of Monterey County.

(e) A 1/16th interest of all coal, oil, gas and other mineral deposits contained in Lot 5 of Section 2, T24S, R15E, as provided by an Act of the Legislature approved May 25, 1921 (Chapter 303, Statutes of California 1921) reserved by the State of California, in patent recorded October 31, 1927, in Book 132, page 122 Official Records of Monterey County.

(f) An undivided 1/2 interest in and to all minerals, oil, gas and/or other hydrocarbon substances, situate, lying and being within or under the E½NW¼ and W½NE¼ Section 32, T24S, R15E, MDBM, as excepted in the deed from Ada S. Prefumo, a widow, to R. E. Jack Co., a California corporation, recorded March 10, 1943 in Book 795, page 90 Official Records of Monterey County.

(g) An undivided 1/2 interest in and to all minerals, oils, gas and other hydrocarbon substances, in, under or upon the S½SW¼ and NW¼SW¼ Section 29, the SE¼SE¼ Section 30, the E½NE¼, SE¼ and E½SW¼ Section 31, and the W½W½ Section 32, all in T24S, R15E, MDBM, as excepted in the deed from William A. Lange and Sara G. Lange, his wife, to R. E. Jack Co., a California corporation, recorded February 13, 1940, in Book 654, page 7 Official Records of Monterey County.

(h) All the coal and other minerals in Lots 3 and 4 and the W½NE¼ Section 31, T24S, R15E, together with the right to prospect for, mine, and remove the same pursuant to the provisions and limitations of the Act of December 29, 1916 (39 Statutes 862) contained in Patent from the United States of America, recorded August 12, 1932 in Book 340, page 345 Official Records of Monterey County.

4. The following interest in Parcel 3:

All mineral rights in and under the E½E½ Section 9; the W½ and SE¼ Section 10; and the SW¼ and SE¼NW¼ and SW¼SE¼ Section 11, all in T26S, R16E, MDBM, as reserved by Rosa H. Hazelton, in deed recorded June 1, 1916 in Book 110, page 217 of Deeds in the office of the County Recorder of San Luis Obispo County.

WITNESS the execution hereof in duplicate by the Grantor this 31st day of October, 1966.

R. E. JACK CO.

By Howard V. Jack
President

By Virginia V. Tynan
Secretary

(Corporation)

STATE OF CALIFORNIA
COUNTY OF San Luis Obispo } SS.

On October 31, 1966 before me, the undersigned, a Notary Public in and for said County and State, personally appeared Howard V. Jack, known to me to be the President, and Virginia Tynan, known to me to be Secretary of the corporation that executed the within instrument, known to me to be the persons who executed the within instrument on behalf of the corporation therein named, and acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

Peter R. Andre
Name (Typed or Printed)

Notary Public in and for said County and State

PETER R. ANDRE NOTARY PUBLIC — CALIFORNIA PRINCIPAL OFFICE IN SAN LUIS OBISPO COUNTY — MY COMMISSION EXPIRES JULY 27, 1969

STAPLE HERE

8 -

END OF DOCUMENT

(2)

Order No.
Escrow No. SLO 784528 MS
Loan No.

WHEN RECORDED MAIL TO:

THE HEARST CORPORATION
200 Hearst Building
San Francisco, Calif. 94103

EATCC 10894

G 29045 REEL 790 PAGE 1062

RECORDED AT REQUEST OF
FIRST AMERICAN TITLE COMPANY
OF MONTEREY COUNTY
AUG 14 10 33 AM '72 4.00

OFFICE OF ... RECORDER
COUNTY OF ... MONTEREY
SALINAS, CALIF. ...
REEL 790 PAGE 1062

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO:

Above Addressee

DOCUMENTARY TRANSFER TAX $ 112.20
XX Computed on the consideration or value of property conveyed; OR
..... Computed on the consideration or value less liens or encumbrances remaining at time of sale.

Signature of Declarant or Agent determining tax – Firm Name

FOR: FIRST AMERICAN TITLE INSURANCE CO.

GRANT DEED

$ 112.20
TRANSFER TAX PAID
MONTEREY COUNTY

G 29045

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

LETITIA R. BAILEY and IDA H. KELLY, each dealing with her separate property

hereby GRANT(S) to

THE HEARST CORPORATION, a California corporation

the real property in the City of (unincorporated area)
County of Monterey, State of California, described as

That certain real property situated in the County of Monterey, State of California:

PARCEL 1:

The Northwest quarter (NW 1/4) and the Southwest quarter (SW 1/4) of Section 13, Township 24 South, Range 15 East, Mount Diablo Meridian;

Lots 3, 4, 5, 6 and the North 12.12 acres of Lot 7 and the North 65.29 acres of Lot 8, Section 19 Township 24 South, Range 16 East, Mount Diablo Meridian.

PARCEL 2:

Lots 3, 4, 5, and 6, Section 3, Township 24 South, Range 15 East, Mount Diablo Meridian.

EXCEPTING THEREFROM an undivided one-half interest in and to the proceeds of any oil, gas, or minerals produced in commericial quantities, as reserved in the deed from Ernest R. Hoffmann, et al., recorded March 1, 1948 in Volume 1040 of Official Records, at page 494.

Dated July 26, 1972

Letitia R. Bailey

Ida H. Kelly

STATE OF CALIFORNIA
COUNTY OF Tulare } ss.

On July 28, 1972
before me, the undersigned, a Notary Public in and for said State, personally appeared Ida H. Kelly

known to me to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same.

WITNESS my hand and official seal.

Signature Nora Florez

OFFICIAL SEAL
NORA FLOREZ
NOTARY PUBLIC-CALIF.
PRINCIPAL OFFICE IN
TULARE COUNTY
My Commission Expires May 2, 1976

(This area for official notarial seal)

1002 (10/69)

MAIL TAX STATEMENTS AS DIRECTED ABOVE

STATE OF CALIFORNIA

COUNTY OF Napa } ss.

REEL 790 PAGE 1063

On August 2, 1972, before me, the undersigned, a Notary Public in and for said State, personally appeared Letitia R. Bailey

known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same.

WITNESS my hand and official seal.

Signature Ivan C. Hartzell

Ivan C. Hartzell

Name (Typed or Printed)

OFFICIAL SEAL
IVAN C. HARTZELL
NOTARY PUBLIC - CALIFORNIA
NAPA COUNTY
My Commission Expires June 28, 1974

(This area for official notarial seal)

END OF DOCUMENT

Form 3001—(Individual) First American Title Company

Order No.
Escrow No. 122598 KB
Loan No.

WHEN RECORDED MAIL TO:

Hearst Corporation
200 Hearst Building
San Francisco, Ca. 94103

R	
M	
RF	
T	

Recorded at the Request of
FIRST AMERICAN TITLE CO.

42357

JUL 23 1991

8:00 A.M.

MONTEREY COUNTY RECORDER

REC. 2670 PAGE 1226

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO:

SAME AS ABOVE

DOCUMENTARY TRANSFER TAX $ 165.00

XX Computed on the consideration or value of property conveyed; OR

..... Computed on the consideration or value less liens or encumbrances remaining at time of sale.

Donnita R. Scobie, Trustee for

Signature of Declarant or Agent determining tax — Print Name

First American Title Insurance Company

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

DONNITA R. SCOBIE, AS THE SURVIVING TRUSTEE OF THE JAMES W. SCOBIE REVOCABLE TRUST DATED MAY 10, 1978

hereby GRANT(S) to

THE HEARST CORPORATION , a Delaware Corporation

the real property in the ~~CITY~~ ~~OF~~ ~~XXXX~~
County of Monterey , State of California, described as

Lots 2,3,4 and 6 of Section 2, Township 24 South, Range 15 East, Mount Diablo Base and Meridian, in the County of Monterey, State of California, according to the Official Plat thereof.

Southeast Quarter of Southeast Quarter of Section 26, Northeast Quarter of Section 35, all in Township 23 South, Range 15 East, Mount Diablo Base and Meridian, in the County of Monterey, State of California, according to the Official Plat thereof.

AP: 423-191-40
424-181-15

$ 165.00
TRANSFER TAX PAID
MONTEREY COUNTY

Dated July 17, 1991

Donnita R. Scobie, Trustee

STATE OF CALIFORNIA
COUNTY OF San Luis Obispo } ss.

On July 19, 1991

before me, the undersigned, a Notary Public in and for said State, personally appeared Donnita R. Scobie, Trustee--

personally known to me (~~or proved to me on the basis of satisfactory~~ ~~evidence~~) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same.

WITNESS my hand and official seal.

Signature Margie B. Danley

MARGIE B. DANLEY

MARGIE B. DANLEY
NOTARY PUBLIC-CALIFORNIA
PRINCIPAL OFFICE IN
SAN LUIS OBISPO COUNTY
My Commission Expires Aug. 12, 1991

END OF DOCUMENT

MAIL TAX STATEMENTS AS DIRECTED ABOVE

1082 (8/85)

STAPLE HERE

Order No.
Escrow No.
Loan No.

WHEN RECORDED MAIL TO:

HEARST CORPORATION
200 Hearst Building
San Francisco, Calif. 94103

FAT CO 10893

MAIL TAX STATEMENTS TO:

Above addressee

G 29048

REEL 790 PAGE 1066

RECORDED AT REQUEST OF
FIRST AMERICAN TITLE COMPANY
OF MONTEREY COUNTY

AUG 14 10 35 AM '72 4.00

OFFICIAL RECORDS
COUNTY OF MONTEREY
SALINAS, CALIF.

REEL 790 PAGE 1066

SPACE ABOVE THIS LINE FOR RECORDER'S USE

DOCUMENTARY TRANSFER TAX $ 89.10

XX. Computed on the consideration or value of property conveyed; OR

..... Computed on the consideration or value less liens or encumbrances remaining at time of sale

Signature of Declarant or Agent determining tax Firm Name

FOR: FIRST AMERICAN TITLE INSURANCE COMPANY

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

FOSTER L. JORDAN, dealing herein with his separate property

hereby GRANT(S) to

THE HEARST CORPORATION, a California corporation

$ 89.10
TRANSFER TAX PAID
MONTEREY COUNTY

G 29048

the real property in the City of (Unincorporated area)
County of Monterey, State of California, described as

Legal description shown on Exhibit "A" attached hereto and made a part hereof.

Buyer shall receive all mineral rights persently held by seller.

Dated July 19, 1972

X Foster L. Jordan
Foster L. Jordan

STATE OF CALIFORNIA
COUNTY OF San Luis Obispo } ss.

On July 25th 1972
before me, the undersigned, a Notary Public in and for said State, personally appeared

Foster L. Jordan

known to me to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same.

WITNESS my hand and official seal.

Signature John P. Gallagher

Official Seal
JOHN P. GALLAGHER
Notary Public in and for said County and State
San Luis Obispo County
My Commission Expires MAR. 8, 1976

(This area for official notarial seal)

1002 (10/69)

MAIL TAX STATEMENTS AS DIRECTED ABOVE

EXHIBIT "A"

PARCEL 1:

Lot 1, and the Southeast quarter of the Northeast quarter, and the East half of the Southeast quarter, all in Section 14, Township 24 South, Range 15 East, Mount Diablo Meridian, in the county of Monterey, state of California.

Lots 9 and 10, and the South 14.71 acres of Lot 8, and the South 7.35 acres of Lot 7, all in Section 19, Township 24 South, Range 16 East, Mount Diablo Meridian, in the county of Monterey, state of California.

The North half of Lot 2 in Section 30, Township 24 South, Range 16 East, Mount Diablo Meridian, in the county of Monterey, state of California.

PARCEL 2:

Lots 3 and 7, and the West half of the Southeast quarter of Section 14, Township 24 South, Range 15 East, Mount Diablo Meridian, in the county of Monterey, state of California.

"END OF DOCUMENT"

RECORDING REQUESTED BY
CHICAGO TITLE COMPANY
AND WHEN RECORDED MAIL THIS DEED AND, UNLESS OTHERWISE SHOWN BELOW, MAIL TAX STATEMENTS TO:

NAME THE HEARST CORPORATION
ADDRESS 5 Third Street Suite 200
San Francisco, CA 94103
Attention: Mr. Cooke

88422

REEL 2883 PAGE 1261

R	4
M	4
RF	3
TC	0
T	11

Recorded at the Request of
CHICAGO TITLE

DEC 11 1992

8:00 A.M.
MONTEREY COUNTY RECORDER

Title Order No. 450486-JB Escrow No. 450486-MC

SCOBIE

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned declares that the documentary transfer tax is $338.80 and is

[X] computed on the full value of the interest or property conveyed, or is

[ ] computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.

The undersigned declares that the city/county transfer tax is

The land, tenements or realty is located in [X] unincorporated area [ ] City of

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
SEE ATTACHED EXHIBIT

hereby GRANT(S) to
THE HEARST CORPORATION, A DELAWARE CORPORATION

the following described real property in the unincorporated area,
County of Monterey, State of California:
SEE ATTACHED DESCRIPTION

$ 338.80
TRANSFER TAX PAID
MONTEREY COUNTY

Dated December 1, 1992

DONNITA R. SCOBIE, as Successor-Trustee of the WILLIAM E. JOHNS TRUST AGREEMENT, dated July 16, 1972 and Amendments thereto

Donnita R. Scobie

DONNITA R. SCOBIE, SUCCESSOR TRUSTEE

Donnita R. Scobie

DONNITA R. SCOBIE, SUCCESSOR TRUSTEE

DONNITA R. SCOBIE, as Successor Trustee of the JAMES W. SCOBIE REVOCABLE TRUST dated May 10, 1978

Donnita R. Scobie

STATE OF CALIFORNIA
COUNTY OF Monterey) ss.
On December 1, 1992 before me, a Notary Public in and for said County and State, personally appeared
DONNITA R. SCOBIE

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
WITNESS my hand and official seal.

Signature of Notary

FOR NOTARY SEAL OR STAMP

VRS2 MAUREEN T. CHUBBUCK VRS2
COMM. #971867
Notary Public-California
Monterey County
My Comm. Exp. Nov. 22, 1996

Assessor's Parcel No.

MAIL TAX STATEMENTS TO PARTY SHOWN ON FOLLOWING LINE: IF NO PARTY SO SHOWN, MAIL AS DIRECTED ABOVE

Name Street Address City, State & Zip

Order No. 450486-JB

Escrow No. 450486 - MC
Page 1

EXHIBIT

DONNITA R. SCOBIE, as Successor-Trustee of the William E. Johns Trust Agreement, dated July 16, 1972 and Amendments thereto dated April 2, 1973 and January 21, 1976, respectively.

DONNITA R. SCOBIE, as Successor Trustee of the James W. Scobie Revocable Trust dated May 10, 1978

DESCRIPTION

South half of Southeast quarter and Southeast quarter of Southwest quarter of Section 12; the East half of Section 13; all in Township 24 South, Range 15 East, Mount Diablo Base and Meridian; Lot 7 of Section 7, Township 24 South, Range 16 East, Mount Diablo Base and Meridian; Lots 1, 7 and the South half of Lots 8 and 9; all of Lot 10 and the East half of Section 18, Township 24 South, Range 16 East, Mount Diablo Base and Meridian; the Southwest quarter and North half of the Northwest quarter of Section 17, Township 24 South, Range 16 East, Mount Diablo Base and Meridian, in the County of Monterey, State of California, according to the Official Plat thereof.

Except one-half of oil, gas, minerals or other hydrocarbons as reserved in Deeds from Irene Hancock, et al, recorded December 30, 1958, in Book 1920, page 579, Monterey County Records and recorded December 30, 1958 in Book 1920, Page 582, Monterey County Records, which Deeds recite as follows:

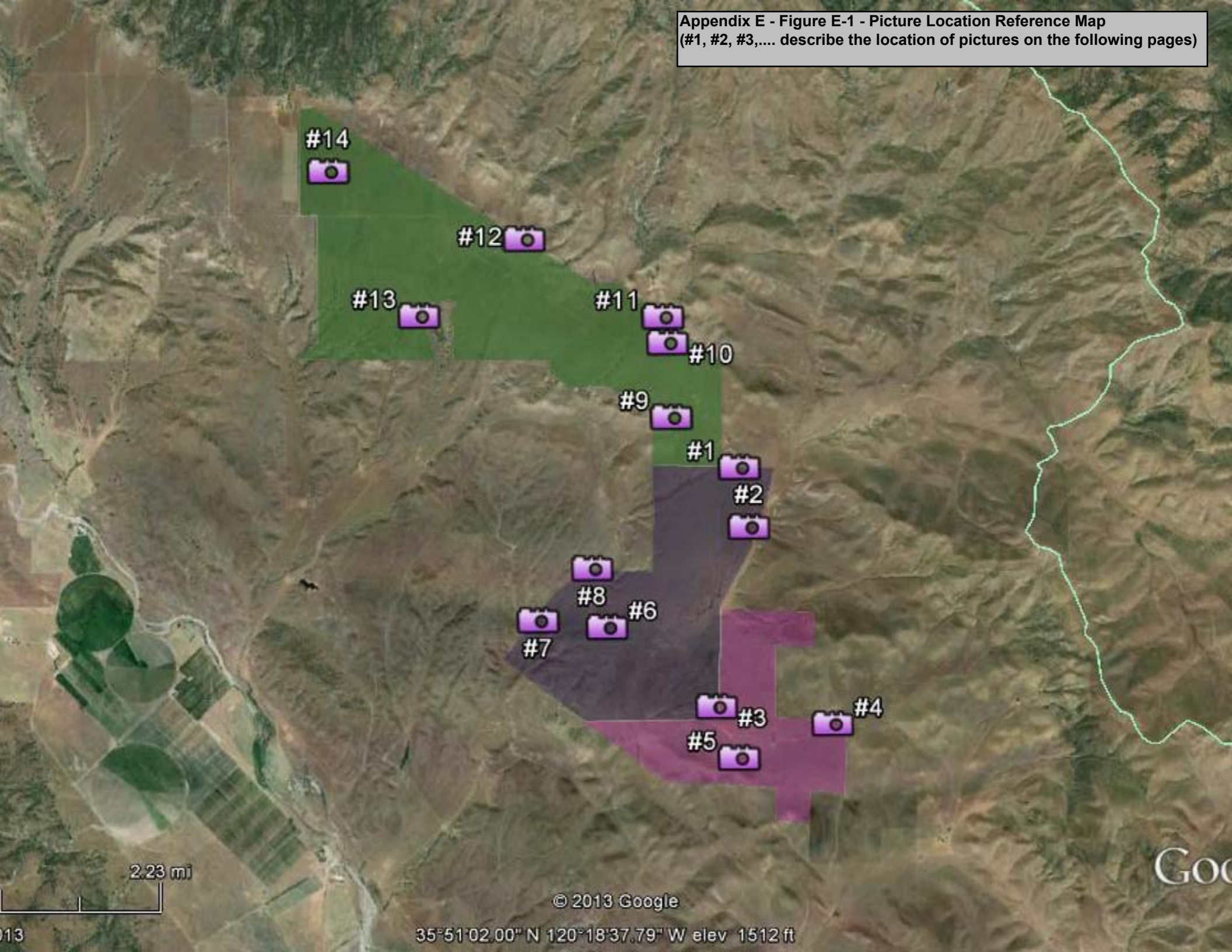
"Excepting, retaining and reserving unto the grantors, Hazel Rolando, Ruth Merriott and Ina Gonser, their heirs, successors and assigns, one-half of any and all rights the grantors, or any of them may have to the oil, gas, minerals or other hydrocarbons on, in and under all the hereinabove described lands situated in the Counties of Monterey and Kings, together with full and free right to enter upon said lands and use so much of the surface thereof as may be reasonably necessary in operating, drilling and marketing the production thereof, insofar as their one-half interest is concerned; subject, however to the limitation that if no oil, gas, or minerals are discovered in paying quantities within a period of twenty (20) years from the date hereof, such exception and reservation shall be of no further force or effect. Grantees shall have the right to draw all oil and gas leases affecting said lands."

Also except 25% of all oil, gas, minerals or other hydrocarbons in, on and under Parcels 4, 5 and 7 herein described, situate in the Counties of Monterey and Kings, together with full and free right to enter upon said lands and use so much of the surface thereof as may be reasonably necessary in operating, drilling and marketing the production thereof, insofar as their 25% interest is concerned; subject, however to the limitation that if no oil, gas or minerals are discovered in paying quantities within the period prior to December 17, 1978, such exception and reservation shall be of no further force or effect, as reserved by Rega D. Freeman, et ux, in Deed recorded March 26, 1965, in Reel 396, Page 1037, Monterey County Records.

A.P. NO. 424-181-018
424-201-009
424-201-011
424-201-012
424-201-014

END OF DOCUMENT

Appendix E - Figure E-1 - Picture Location Reference Map
(#1, #2, #3,.... describe the location of pictures on the following pages)



1

#1

Representative Conditions at Picture Location

2

#1

Representative Conditions at Picture Location

3

#1

Representative Conditions at Picture Location

4

#1

Representative Ground Cover and Soil Conditions on the Site

5

#2

Representative Empty Stream Bed on the Site

6

#2

Water well powered by wind mill. Tank is used to store water for livestock.

7

#3

Representative Picture of Cattle Grazing on the Site

8

#3

Representative Conditions at Picture Location

9

#4

Area at Photo location where range fire had occurred

10

#4

Former Grain storage area now used to store fire water

11

#5

Representative Picture of Water Tanks located on the Site

12

#5

Representative Conditions at Photo Location

13

#5

Picture of most of the central and northern portion of the Site

14

#6

Representative Conditions at Picture Location

15

#7

Representative Conditions at Picture Location

16

#8

Representative Conditions at Picture Location

17

#9

Representative Conditions at Picture Location. Typical road condition on the Site.

18

#9

Livestock water tank

19

#10

Typical gate located on the Site

20

#11

Soil berm to force stormwater runoff from the adjacent hill to pool and provide water for livestock

21

#12

Representative Conditions at Picture Location. Power Transmission Line traveling through northern portion of the Site.

22

#13

Representative Conditions at Picture Location

23

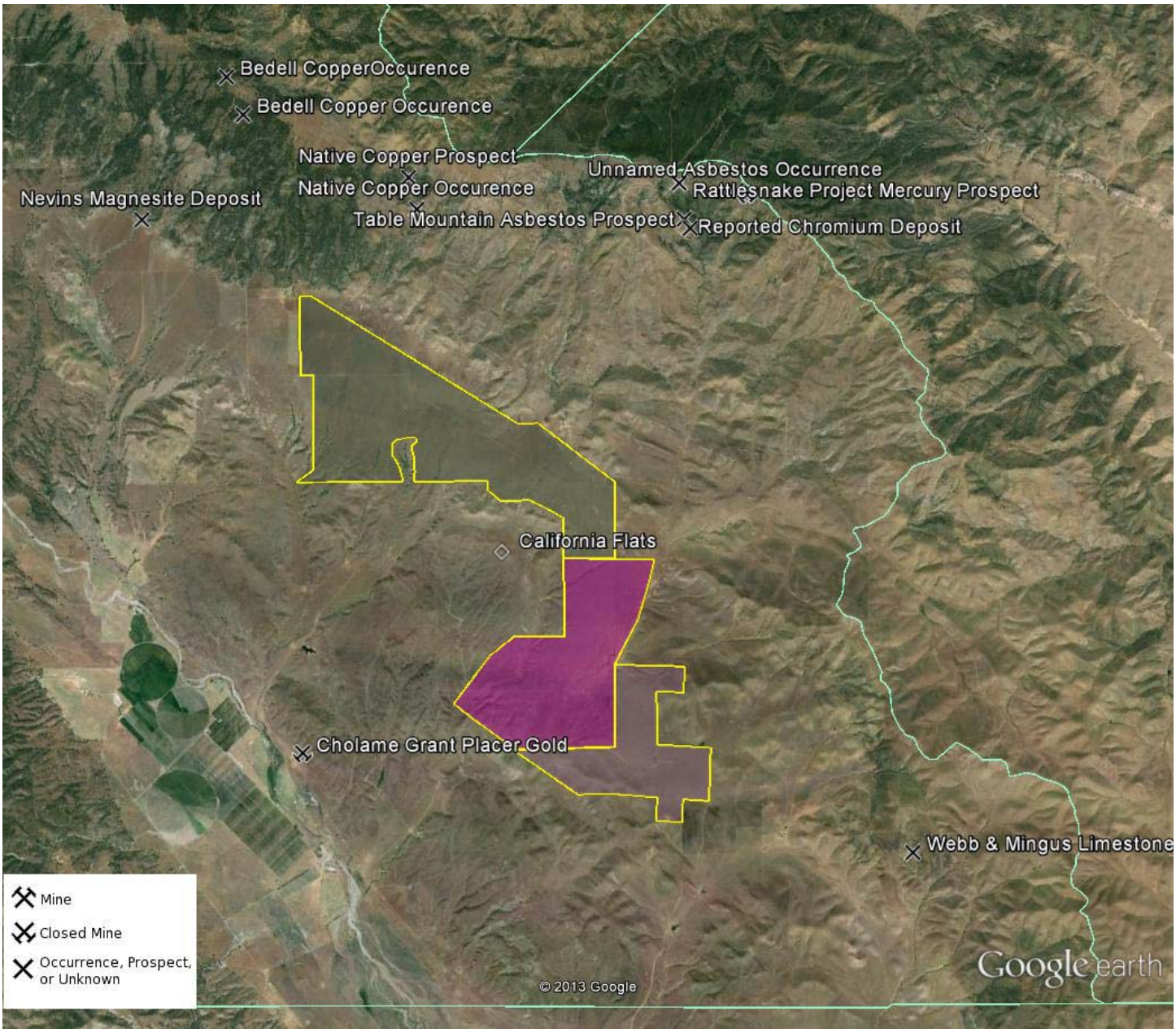
#14

Representative Conditions at Picture Location

24

#14

Ranch located directly
beyond the northern boundary of the Site



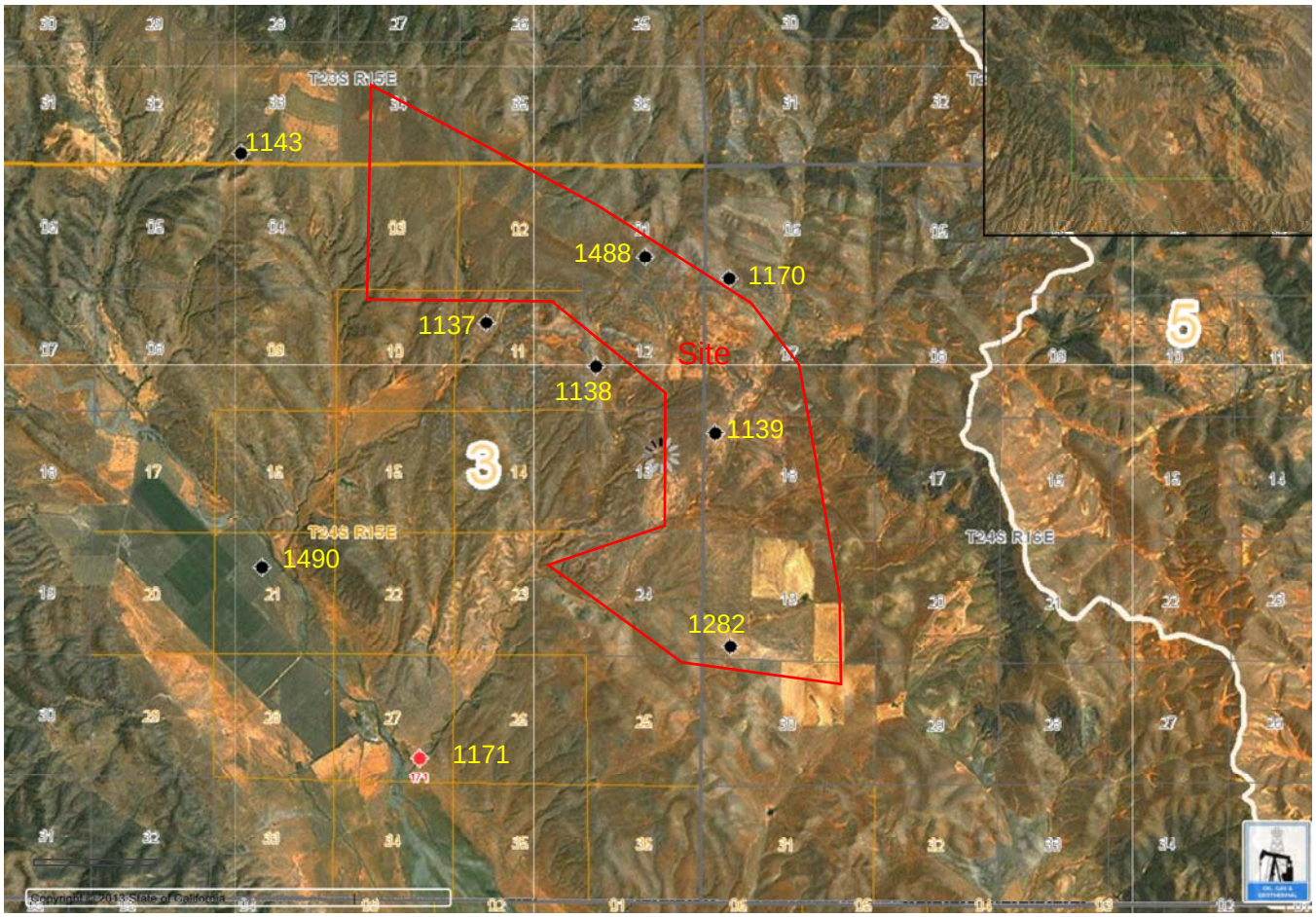
Google Earth Pro

miles 5
km 8

Appendix F - Figure F-1 - USGS MRDS Mine Location Map

State of California Department of Conservation

DOGGR Online Mapping System



Appendix F - Figure F-2 - Location of Oil/Gas Wells on the Site

California Department of Conservation -- Division of Oil, Gas and Geothermal Resources (DOGGR) -- Well Information

Source: http://maps.conservation.ca.gov/doms/doms-app.html

API Number	Well Type	Status	Operator	Operator Code	Operator Status	Lease	Well No.	County	Section	Township	Range	Latitude (NAD83)	Longitude (NAD83)
WELLS WITHIN SITE BOUNDARIES													
5301282	Oil-Gas	Plugged	Len Owens & Assoc.	5272	InActive	Jordan	1	Monterey	19	24S	16E	35.81985	-120.293300
5301139	Oil-Gas	Plugged	British Petroleum Oil	8329	InActive	Cholame Ranch	26A	Monterey	12	24S	15E	35.85333	-120.312961
5301488	Oil-Gas	Plugged	Jene D Munson	4617	InActive	Jack	1	Monterey	1	24S	15E	35.86637	-120.305782
WELLS OUTSIDE SITE BOUNDARIES													
5301170	Oil-Gas	Plugged	Gammon & Gammon	3238	InActive	Hancock	1	Monterey	6	24S	16E	35.86366	-120.293424
5301137	Oil-Gas	Plugged	British Petroleum Oil	8329	InActive	Cholame Ranch Core Hole	2	Monterey	11	24S	15E	35.85839	-120.329104
5301138	Oil-Gas	Plugged	British Petroleum Oil	8329	InActive	Cholame Ranch Core Hole	1	Monterey	18	24S	16E	35.84527	-120.295541
5301171	Oil-Gas	Plugged	Lyle A. Garner	5492	InActive	Jack	27-1	Monterey	27	24S	15E	35.80661	-120.338871
5301490	Oil-Gas	Plugged	Norcal Petroleum Corp.	6278	InActive	Jack Company	1	Monterey	21	24S	15E	35.82928	-120.362080
5301143	Oil-Gas	Plugged	California Oils Inc.	1250	InActive	--	1	Monterey	33	23S	15E	35.87859	-120.365206

0530	Lyle A. Garner	Jack	27-1	OG	P	35.806611	-120.338871

Appendix F - Table F-1 Cont. - Information Regarding Wells Identified in Figure F-2

KEN TAYLOR

SUMMARY OF EXPERTISE

Mr. Taylor has more than 22 years of experience successfully managing environmental programs or advising clients on such matters. He is highly respected by colleagues, clients, and regulators throughout the United States. Mr. Taylor, an engineer by training, combines his in-depth knowledge with proven management and decision making skills to solve complicated problems and deliver results. Mr. Taylor has demonstrated these skills on activities ranging from: (1) managing environmental and safety programs for U.S. Department of Energy nuclear and laboratory facilities to (2) providing EPA, DoD, large law firms and private sector clients with strategic guidance on environmental management and environmental restoration to (3) advising clients on the acquisition of contaminated property and companies with environmental liabilities. Mr. Taylor is a recognized expert with the development and implementation of Environmental Management Systems (including ISO 14001 systems). He also has extensive knowledge regarding the evaluation of management and cost decisions and associated risks, including the use of software applications to support such evaluations.

EXPERIENCE

2001 – Present KTA Associates, Inc

President

Responsible for all environmental consulting services provided by KTA Associates, Inc. In this role he develops consulting opportunities, puts together teams of experts to provide clients necessary support and ensures support is provided in a high quality and cost effective manner. He serves as an environmental advisor for several corporate companies. He coordinates and provides local environmental courses to students in Washington and Oregon.

1998–2001 The Environmental Company, Inc. Seattle, WA

Western Manager for Commercial Consulting

Responsible for all Commercial sectors consulting services in Western United States. In this role he developed consulting opportunities, puts together teams of experts to provide clients necessary support and ensured support was provided in a high quality and cost effective manner. Additionally, he served as an environmental advisor for several clients with operations in Western United States. These clients included one of the nation's largest wood product engineering companies, one of the northwest's largest concrete companies, several aluminum manufacturer facilities and law firms.

1996–1998 Stoel Rives LLP Portland, OR

Environmental Technical Advisor

Served as the Environmental Technical Advisor for Stoel Rives offices in Portland, Seattle, Boise and Salt Lake City. Stoel Rives is an extremely successful law firm providing legal services to a large number of businesses in the Northwest. He advised over 50 companies on a wide variety of environmental and safety issues including environmental compliance, cleanup and management programs.

1993–1996 Ecology and Environment, Inc. Seattle, WA

Senior Environmental Engineer

Managed personnel and projects for environmental consulting services provided to the U.S. Environmental Protection Agency, the U.S. Navy, the U.S. Department of Energy and various private clients. Mr. Taylor used his broad knowledge base to provide clients with Environmental and Safety Compliance Programs and Environmental Restoration Programs. His extensive management experience was used to provide strategic environmental management consulting to the U.S. Department of Energy. He identified and developed consulting opportunities, negotiated work assignments, developed and managed project teams and personnel, managed the completion of projects and associated costs, worked as direct interface with client and/or regulator, and evaluated project personnel.

1991–1993 Westinghouse Idaho Nuclear CompanyIdaho Falls, Il

Environmental Engineer

Supported the Westinghouse Idaho Nuclear Company's efforts to manage and operate the Idaho Chemical Processing Plant, (ICPP). This facility, located at the Idaho National Engineering Laboratory (INEL), was used to store and reprocess spent nuclear fuel. Mr. Taylor was the coordinator for all groundwater and surface water programs at the ICPP. Additionally, he provided RCRA support. As coordinator for the groundwater and surface water programs, he implemented monitoring activities, developed permits, and negotiated with the State of Idaho and U.S. Environmental Protection Agency, Region 10 on permit conditions and CERCLA cleanup requirements. In his RCRA support role, Mr. Taylor provided guidance to plant personnel on day-to-day waste management issues, conducted compliance reviews, and developed RCRA Closures Plans for hazardous waste treatment, storage, and disposal facilities. Mr. Taylor served on the Westinghouse Radiation, Environmental, and Safety Committee as the Safety Chairman and environmental advisor. This committee was responsible for approving all documents related to radiation, environment and safety prior to implementation at the facility and/or approval by the Westinghouse Idaho Nuclear Company President.

1987–1991 U.S. Department of Energy Idaho Falls, ID

Project Manager

Served as a manager for several National Conservation and Renewable Energy Programs. The programs included Geothermal and Geopressured Energy, Energy from Municipal Waste, Electric Vehicle Propulsion and Strategic Materials Research. The projects which Mr. Taylor managed included field operations, construction, drilling, and laboratory research conducted nationwide. This position required Mr. Taylor to oversee a large number of contractor personnel. His annual project budget was approximately $10 million. He was responsible for providing technical, contractual, financial and emergency management. In this role, he was responsible for assuring all applicable environmental and safety regulations and requirements were met. Mr. Taylor often spoke in public as part of this position. This included speaking at conferences, on radio talk shows, and giving television interviews.

EDUCATION

1982–1987 University of Texas Austin, TX

- B.S. Mechanical Engineering – Energy and Fluid Systems
- University of Texas Scholar

INTERESTS

Coaching children's basketball teams, golf, skiing, biking, computers and cooking.

Appendix O

Pacific Gas & Electric
Interconnection Facilities Environmental Summary

Appendix O.1

California Flats Solar Project
Pacific Gas & Electric Interconnection Facilities Environmental Summary Appendix

California Flats Solar Project

Pacific Gas & Electric Interconnection Facilities
Environmental Summary Appendix
December 2014

Applicant

California Flats Solar, LLC.
Contact: Scott Dawson
135 Market Street, 6th Floor
San Francisco, California 94105

Representative

Denise Duffy & Associates, Inc.
Contact: Tyler Potter, AICP
947 Cass Street, Suite 5
Monterey, CA 93940

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Table of Contents

ACRONYMS AND ABBREVIATIONS

AC	alternating current
AF	acre-feet
AFY	acre-feet per year
AMBAG	Association of Monterey Bay Area Governments
AQMP	Air Quality Management Plan
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CGP	Construction General Permit
CNEL	community noise equivalent level
CO	carbon monoxide
CPUC	California Public Utilities Commission
DD&A	Denise Duffy & Associates, Inc.
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
F	Farmland (zoning)
FMMP	California Farmland Mapping and Monitoring Program
GHG	greenhouse gas
GIS	Geographic Information System
kV	kilovolt
LOS	level of service
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MRZ	mineral resource zone
MW	megawatt
NAHC	Native American Heritage Commission
NCCAB	North Central Coast Air Basin
NO_x	oxides of nitrogen
NRCS	Natural Resources Conservation Service
O&M	operations and maintenance
PG	Permanent Grazing (zoning)
PG&E	Pacific Gas & Electric
PRC	Public Resources Code
PV	photovoltaic
RG	Rural Grazing (zoning)

SO_x	oxides of sulfur
SR	State route
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compounds

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EXECUTIVE SUMMARY

California Flats Solar, LLC (project proponent) has proposed to construct, operate and eventually decommission (or repower) a 280 megawatt (MW) alternating current (AC) photovoltaic (PV) solar energy project and related improvements (project or proposed project) within an approximately 3,000-acre site in southeastern Monterey County, California, near the borders of Monterey County, San Luis Obispo County, Kings County and Fresno County. The County of Monterey, as the California Environmental Quality Act (CEQA) Lead Agency, has prepared a Draft Environmental Impact Report (Draft EIR) that evaluates the potential environmental effects associated with the construction and operation of the proposed project. The project, as more thoroughly described in the Draft EIR, includes the construction and operation of a proposed switching station and related PG&E interconnection improvements. As described in further detail, the proposed switching station would be constructed by the project proponent and may eventually be purchased by PG&E. PG&E would be responsible for the installation of transmission line improvements, as more thoroughly described below. The Draft EIR evaluated the entirety of the project, including the environmental effects associated with the proposed PG&E switching station and related interconnection facilities, in accordance with the requirements of CEQA.

The California Public Utilities Commission (CPUC) has exclusive jurisdiction regarding the siting and design of PG&E's interconnection facilities (the switching station, transmission line work and associated facilities) and is acting as a Responsible Agency in connection with this CEQA review. The following environmental summary has been prepared to facilitate CPUC review of the proposed PG&E interconnection facilities by separately identifying and summarizing the individual effects associated with the proposed switching station, transmission line construction and associated interconnection facilities independently from within the broader scope of environmental effects described and evaluated in the Draft EIR. As described herein, all potential environmental effects associated with the proposed switching station and related PG&E interconnection facilities are identified and evaluated in the Draft EIR within the context of the overall project. As a result, no "significant new information" is identified in connection with the PG&E interconnection facilities beyond the information identified in the Draft EIR and, therefore, recirculation is not required pursuant to CEQA. *See* Pub. Res. Code § 21092.1; 14 Cal. Code Regs. § 15088.5. The Draft EIR appropriately evaluates potential impacts associated with the proposed project and this summary report is intended solely to facilitate CPUC review by concisely summarizing the individual effects of the PG&E interconnection facilities as an appendix to the Final EIR to facilitate independent review by the CPUC of the proposed PG&E facilities.

As set forth in the discussion below, all environmental impacts associated with PG&E's interconnection facilities are evaluated in the Draft EIR as part of the overall proposed project. In sum, the extent of environmental effects associated with the proposed PG&E interconnection facilities would be limited to approximately 7.5 acres of the project site, which includes approximately 6 acres for the switching station and approximately 1.5 acres associated with the transmission line work. While the Draft EIR describes the overall extent of impacts associated with the entirety of the project, the extent of direct and indirect effects with PG&E interconnections would be considerably less than the overall impacts associated with the project. For the purposes of CPUC review, the individual direct and indirect effects associated with the construction and operation of PG&E facilities would be less-than-significant with the incorporation of best management practices (BMPs) and PG&E avoidance and protection measures (APMs). As described in the Draft EIR, the proposed project, which includes all of the various project components, would result in potentially significant and unavoidable impacts related to air quality and traffic/transportation. However, for the purposes of CPUC review, and as described below, the individual effects of PG&E facilities would be less-than-significant.

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CHAPTER 1.0 INTRODUCTION

California Flats Solar, LLC (project proponent), proposes to construct, operate and eventually decommission (or repower) a 280 megawatt (MW) alternating current (AC) photovoltaic (PV) solar energy project on an approximately 3,000-acre site in southeastern Monterey County, California, near the borders of Monterey County, San Luis Obispo County, Kings County and Fresno County. The project includes solar modules, related structures, electrical equipment and infrastructure improvements, including two substations and a switching station that would interconnect the project to the Pacific Gas & Electric Company (PG&E) owned Morro Bay – Gates 230 kilovolt (kV) transmission line, which transects the project site, and an operations and maintenance (O&M) facility.

The County of Monterey, as the CEQA Lead Agency, prepared and circulated a Draft EIR that evaluated the environmental effects of the proposed California Flats Solar Project (herein referred to as "project" or "proposed project"), including the various project subcomponents and related improvements. The Draft EIR includes a detailed description of the individual project components and the Draft EIR evaluated the potential environmental effects of the entirety of the project consistent with the requirements of CEQA (CEQA Guidelines Sect. 15003(h) and 15378(a)). The County of Monterey released the Draft EIR on August 6, 2014 for public review. The public review period on the Draft EIR ended on September 22, 2014. As part of the Draft EIR, the County of Monterey evaluated the potential direct and indirect environmental effects associated with the construction, operation and decommissioning (or repower) of the proposed project, including potential environmental effects associated with the proposed switching station, which would be constructed by the project proponent, and related PG&E interconnection facilities.

While the County of Monterey evaluated the potential environmental effects associated with the entirety of the action in accordance with the requirements of CEQA, the Draft EIR did not specifically identify the individual effects of each individual component of the project. Since the proposed PG&E facilities are under the exclusive jurisdiction of the CPUC, California Flats Solar, LLC (CFS) has prepared, and the County of Monterey has independently reviewed and adopted, as modified, the following appendix to summarize the potential environmental effects associated with the PG&E interconnection facilities to facilitate CPUC review. The information described herein concerning the extent of potential impacts associated with the construction and operation of the proposed switching station and PG&E facilities was derived from the analysis of potential environmental effects contained in the Draft EIR, as supplemented by additional technical information that was submitted to the County of Monterey from PG&E.

The purpose of this analysis is to help facilitate CPUC review of the proposed switching station and related PG&E interconnection facilities. As discussed below, this report summarizes the findings of the Draft EIR as they pertain to the proposed interconnection facilities. No significant new environmental information is identified and no new environmental effects would occur in connection with the proposed PG&E interconnection facilities. All impacts associated with the proposed project, including the switching station and related facilities, are described and evaluated in the Draft EIR.

The information presented herein would not warrant the recirculation of the Draft EIR. According to CEQA Section 15088.5, recirculation of an EIR is only required when "significant new information" is added to the EIR. The following summary of environmental effects specific to the proposed switching station and proposed PG&E interconnection facilities does not identify any additional potentially significant environmental effects beyond those identified in the Draft EIR. This appendix incorporates the additional project description refinements provided by PG&E in their comment letter on the Draft EIR sent to Monterey County on September 22, 2014. As described in detail below, the project description refinements provided in PG&E's comment letter do not trigger any potential new significant impacts or significantly increase the severity of an environmental impact described in the Draft EIR. The refinements in PG&E's comment letter provide clarifications and make insignificant modifications to the Draft EIR.

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CHAPTER 2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The proposed project is located along the eastern rim of the Cholame Valley and is used as a working cattle ranch. The project is located 1,700 feet above the Cholame Valley floor in the Cholame Hills, approximately 25 miles northeast of the city of Paso Robles and approximately 7 miles southeast of the unincorporated Monterey County community of Parkfield, California. The project is situated within an approximately 3,000 acres of an existing 72,000-acre ranch. The proposed switching station and related PG&E interconnection facilities would be located on a small portion of the overall project site adjacent to the existing Morro Bay – Gates 230kV transmission line (**Figure 2-1**). The proposed PG&E facilities (e.g., switching station, transmission line work, shoo-fly, minor trenching for fiber line, etc.) would be located on approximately 7.5 acres, as shown on **Figure 2-2**.[1] By comparison, the solar development area would cover approximately 2,120 acres. The entire project site, including the location of the switching station and PG&E interconnection facilities, was historically disked and dryland farmed for hay and small grain production and is actively used as part of an existing cattle operation. The site is bounded in all directions by mostly undeveloped land interspersed with sparse residential settlements and small farms south and east of the site.

2.2 PG&E INTERCONNECTION FACILITIES DESCRIPTION

The proposed project consists of a 280 MW AC solar power facility and related improvements, including a switching station and PG&E interconnection facilities to connect to the Morro Bay-Gates 230 kV transmission line. The Draft EIR includes a detailed discussion of the proposed PG&E interconnection facilities (see Draft EIR pg. 2-15). The following description of the proposed PG&E facilities is based on the description contained in the Draft EIR, as supplemented by additional project refinements provided to the County of Monterey by PG&E.

The proposed switching station would be located near the northern substation and would provide an interconnection to the existing Morro Bay-Gates 230kV transmission line (**Figure 2-2**). This switching station would be constructed by CFS and may be purchased by PG&E upon completion of the switching station to PG&E standards. As described in the Draft EIR, the switching station would include an eight foot chain link fence with barbwire, electrical equipment and control building. The switching station would require a looped transmission line approximately 1,000 feet in length (one way), supported by approximately five to seven steel monopole structures or lattice structures approximately 145 to approximately 150 feet high to connect the transmission line to the switching station.[2] PG&E would also install a temporary shoo-fly to support the Templeton Gates 230 kV transmission line circuit when reconfiguring the PG&E Morro Bay-Gates 230 kV line. This shoo-fly would be approximately 2,000 feet in length and supported by approximately ten wood poles, which would be removed upon securing the interconnection to the switching station (typically 3-6 months). The switching station area would be improved with compacted materials and concrete pads to support electrical equipment and supporting infrastructure. The disturbance area of the switching station would be approximately 6.0 acres. The disturbance area for the transmission line work and shoo-fly would cover approximately 1.5 acres. The construction of PG&E interconnection facilities would take approximately two months. Construction of PG&E facilities would involve approximately 25 round trips consisting of 4 to 6 trucks (e.g., line trucks, equipment delivery trucks, crew trucks, etc.).[3]

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[1] For the purposes of this report the term "project site" refers to the entire 3,000-acre site, which includes the location of the proposed switching station. Where appropriate, the following report uses the term "switching station area" or "location of the switching station" to refer to the 6.0-acre site shown in **Figure 2-2**.

[2] The height of the proposed monopole or lattice structures is consistent with the height of existing transmission line structures on the project site, which range in height between 140 to 145 feet.

[3] Assuming it acquires the switching station as planned, PG&E would be responsible for inspecting and maintaining the switching station and associated transmission line facilities.

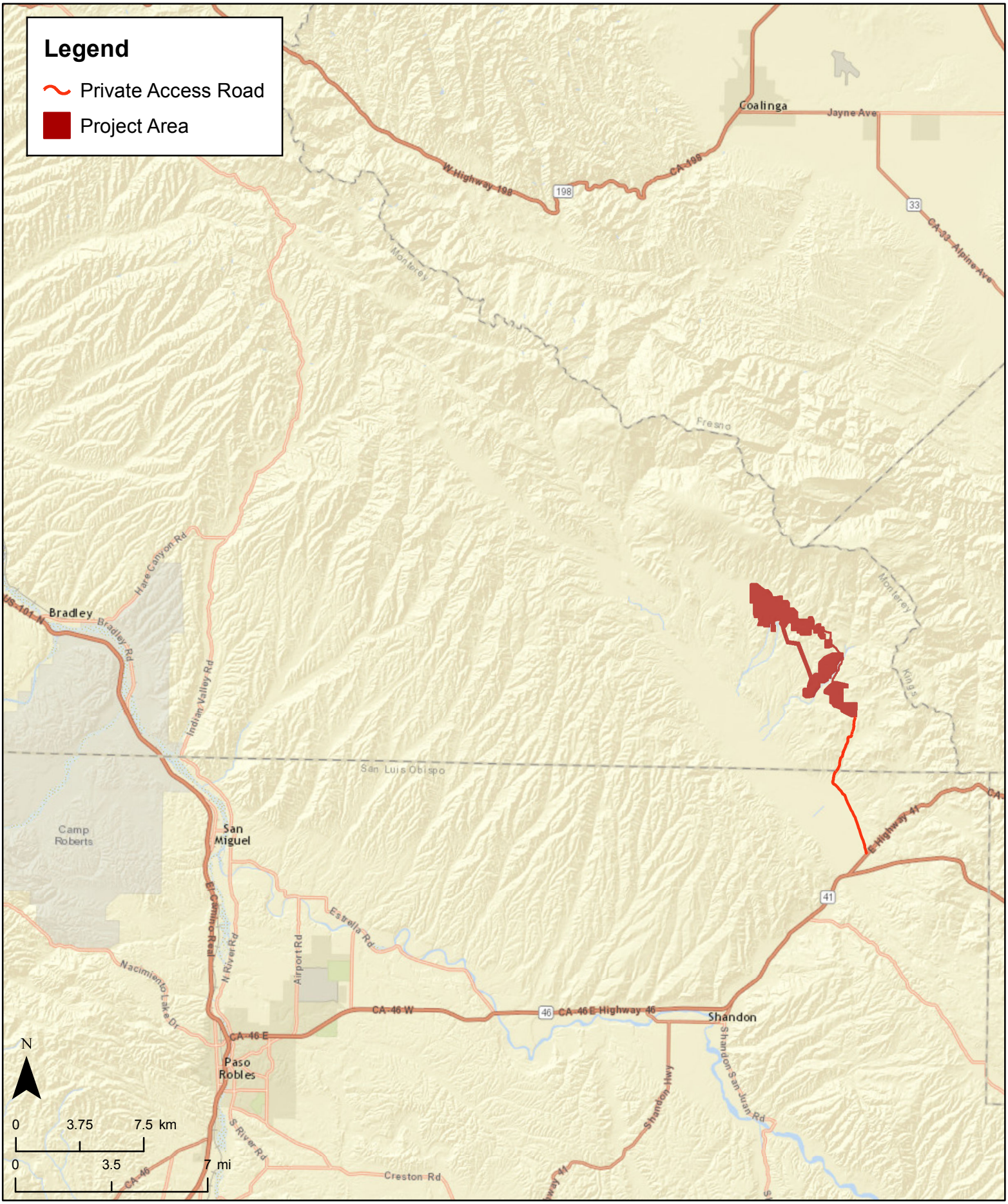
The switching station would include separate communication facilities to connect the switching station to PG&E's Gates substation located in Fresno County, approximately 23 miles from the switching station. Two different types of communication (microwave and fiber) are preferred for redundancy. A microwave site approximately 125 feet by 125 feet would be constructed within the switching station footprint which would include a communications building and microwave tower approximately 75 - 130 feet tall. A relay station would be constructed within an existing disturbed area to provide microwave relay to the Gates substation. In addition, CFS would install two trenched fiber line conduits from the switching station to the PG&E Morro Bay-Gates 230 KV Transmission Line within the project study area in the vicinity of the line, as shown on **Figure 2.2**. PG&E would construct a switching station fiber tap line as well as a fiber tap line located on the PG&E Morro Bay-Gates 230 KV line. The fiber lines are needed for electric system protection.

2.3 PG&E AVOIDANCE AND PROTECTION MEASURES

PG&E implements standard avoidance and protection measures (APMs) as part of the construction and operation of its electrical facilities, including switching stations and transmission lines. Applicable APMs that would be implemented in connection with the construction and operation of the proposed facilities are described within the context of each of the topical CEQA sections evaluated below. These measures are intended to reduce and/or avoid potential adverse environmental effects and are identified for informational purposes to disclose standard Best Management Practices (BMPs) and avoidance measures implemented by PG&E to ensure that impacts are minimized to the greatest extent feasible.

While the County of Monterey does not have siting, design or construction authority over PG&E's electrical facilities or jurisdiction to impose mitigation measures on PG&E's construction, PG&E's interconnection facilities are nevertheless part of the "project" evaluated by the County for purposes of CEQA review. Moreover, PG&E will incorporate APMs and standard construction BMPs (e.g., temporary erosion control, worker educations, staging construction equipment outside of sensitive resource areas, etc.) into the transmission line and shoo-fly construction consistent with the measures established and evaluated in the Draft EIR. These measures would be comparable in nature to the measures described in the Draft EIR to avoid or minimize potential impacts associated with project construction. CFS will implement the mitigation measures identified in the Draft EIR that apply to construction of the switching station. This analysis therefore assumes that the mitigation measures that apply to construction of the switching station will be incorporated and implemented as appropriate by the project proponent, and that APMs or BMPs will be incorporated and implemented as appropriate by PG&E during the construction of the PG&E interconnection facilities.

PG&E's construction of the transmission line and shoo-fly interconnection facilities is under the jurisdiction of the CPUC. The transmission line facilities to be constructed by PG&E are exempt from formal discretionary permitting by the CPUC because the work consists of the minor relocation of existing lines. (See General Order ("GO") 131-D, Section III.A.) However, the CPUC retains full jurisdiction over the project, which is subject to the GO 131-D noticing requirements and complaint procedures. (See GO 131-D, §§ XI and XIV.A.) Moreover, during construction, PG&E will submit regular monitoring reports to the CPUC, with courtesy copies to the County, demonstrating compliance with the APMs and BMPs identified above. With regard to the switching station, as noted above, that facility will be constructed by CFS and will remain subject to County jurisdiction, mitigation measures and associated monitoring requirements unless and until such time that the switching station is transferred to PG&E's ownership and operation, at which time that facility will fall within the jurisdiction of the CPUC and be treated in the same manner as the transmission line and shoo-fly interconnection facilities.



Title: Project Vicinity Map

File: Vicinity Map May2012.mxd

Date: 04-10-13

Scale: 1 inch = 5 miles

Project: 2011-26

Monterey | San Jose
Denise Duffy and Associates, Inc.
Environmental Consultants Resource Planners
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Monterey, CA 93940
(831) 373-4341

First Solar

Figure 2-1

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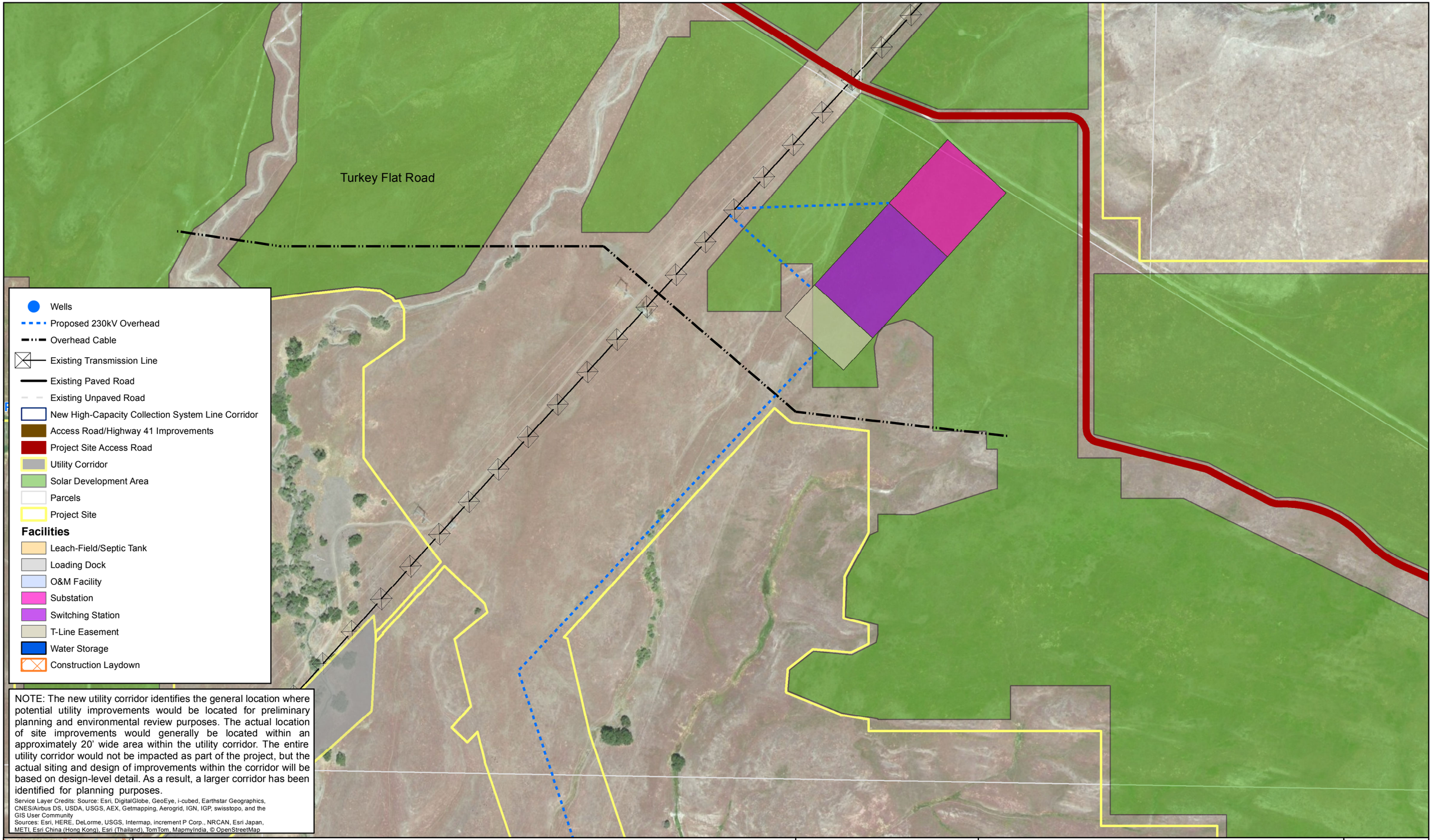
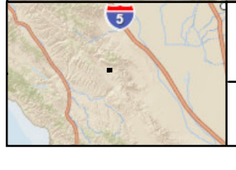


NOTE: The new utility corridor identifies the general location where potential utility improvements would be located for preliminary planning and environmental review purposes. The actual location of site improvements would generally be located within an approximately 20' wide area within the utility corridor. The entire utility corridor would not be impacted as part of the project, but the actual siting and design of improvements within the corridor will be based on design-level detail. As a result, a larger corridor has been identified for planning purposes.



Title: Proposed PG&E Facilities Map

File: C:\GIS\GIS_Projects\2011-26 CA Flats Solar\Final Products\Proposed PGE Facilities Map.mxd

Date: 10/21/2014

Scale: 1 in = 0 miles

Project: 2011-26

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First Solar

Figure 2-2

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CHAPTER 3.0 ENVIRONMENTAL EFFECTS

The following section includes a general description of the existing environmental setting and the interconnection facilities that would be constructed and/or owned by PG&E at project completion, and then summarizes the environmental impact findings as it relates to each individual topical CEQA section. The information presented herein is consistent with the analysis of the proposed project as described and evaluated in the Draft EIR. The information described below summarizes the information contained in the Draft EIR as it pertains to the proposed PG&E facilities, as supplemented by additional information provided to the County of Monterey by PG&E. The following summary of potential environmental effects does not identify an increase in severity of a potential impact beyond what was identified in the Draft EIR. While the Draft EIR identified that the project, as a whole, would result in significant impacts in regards to air quality and traffic, the effects of PG&E interconnection facilities as individual sub-components of the project would be limited. When considered on their own, the impacts associated with the construction of PG&E facilities would be less-than-significant.

3.1 AESTHETICS

The visual character of the project site, including the location of the proposed PG&E facilities, consists primarily of grazing land interspersed with utility and ranch improvements (e.g. Morro Bay – Gates 230kV transmission line, water tanks, fencing, roads, etc.). Isolated trees, primarily non-native species, are located along drainages and areas where ornamental trees were historically planted. Views from the project site consist of surrounding ranchland, rolling terrain, and the Morro Bay – Gates 230 kV transmission line. Views of the project site, due to its remote location and surrounding terrain, are primarily obstructed. The site is only visible from one publicly accessible location – the area where Turkey Flat Road terminates into the northern portion of the site.

As described in the Draft EIR, construction and operation of the proposed project would result in aesthetic related effects (Draft EIR pg. 4.1-22). Accordingly, construction and operation of the proposed switching station and proposed PG&E interconnection facilities, which would be supported by approximately five to seven transmission structures approximately 145 to 150 feet in height to re-route the existing 230 KV transmission line into the new switching station would result in aesthetic related impacts due to the introduction of project infrastructure on previously undeveloped ranch land. As described above, the construction of these transmission structures would be of similar size as existing transmission structures located on site. As a result, these new structures would not substantially alter the existing visual character of the site. The proposed switching station would visually modify a portion of the project site and would alter the existing character of the project site from a rural, ranching landscape, to a developed area. The switching station would also result in potential aesthetic-related effects associated with external safety lighting and permanent lighting fixtures and may also require temporary lighting during construction (Draft EIR pg. 4.1-25). The project is not, however, located within view of a state scenic highway, nor is it located in an area that would constitute a scenic vista under CEQA (Draft EIR pg. 4.1-21). As a result, the proposed switching station and PG&E interconnection facilities would not adversely affect existing views from a scenic highway and/or otherwise adversely affect a scenic vista.

The Draft EIR evaluated potential impacts associated with the construction and operation of the California Flats Solar Project with regard to aesthetic resources, including the proposed switching station and PG&E interconnection facilities in accordance with requirements of CEQA. The Draft EIR identified a number of mitigation measures to reduce the extent of potential aesthetic-related effects associated with the project (e.g., Mitigation Measure AES-3 (Minimize Construction Lighting)). Implementation of the applicable mitigation measure by the project proponent in connection with the construction of the switching station would ensure that the potential impacts associated with the PG&E facilities would be Class II, less than significant with mitigation. In order to ensure that temporary construction-related effects associated with the construction of PG&E facilities would be minimized, PG&E has incorporated a similar APM/BMP for construction of its

interconnection facilities, which would require the minimization of construction lighting, thereby ensuring that potential impacts associated with the construction of PG&E facilities would be less-than-significant. No new or additional environmental effects would occur beyond those identified in the Draft EIR.

3.2 AGRICULTURAL RESOURCES

The project site, which includes the proposed location of the PG&E switching station, has historically been used for ranching and grazing purposes (Draft EIR pg. 4.2-2). According to the California Department of Conservation, the project site is designated as Grazing Land; no Prime Farmland, Unique Farmland or Farmland of Statewide Importance is located on the project site and no portion of the project site is included in a Williamson Act contract (Draft EIR, pg. 4.2-9). The project site is not forest land as defined by PRC §12220(g).

The PG&E facilities are located on approximately 7.5 acres designated as Grazing Land according the Farmland Mapping and Monitoring Program (FMMP); no Prime, Unique, or Farmland of Statewide Importance would be impacted. Development of the PG&E facilities would not result in a permanent conversion of the Farmland as defined in the FMMP to a non-agricultural use (Draft EIR pg. 4.2-9). In addition, the project would not conflict with the site's existing agricultural zoning and would not cause conflicts with Williamson Act properties. No forest land would be affected by the proposed switching station.

The Draft EIR analyzed potential impacts of the proposed project with regard to agricultural resources, including the proposed switching station and PG&E interconnection facilities. The Draft EIR evaluated potential impacts associated with the potential conversion of Prime Farmland and Unique Farmland, consistency with local regulations regarding agricultural uses and Williamson Act contracts, and conversion of adjacent farmland to non-agricultural uses. The potential impacts associated with the switching station and PG&E interconnection facilities would be Class III, less-than-significant. No new or additional environmental effects would occur beyond those identified in the Draft EIR.

3.3 AIR QUALITY

The majority of the project site, which includes the PG&E facilities, is located within the North Central Coast Air Basin (NCCAB). This basin includes Monterey, Santa Cruz, and San Benito Counties. The Monterey Bay Unified Air Pollution Control District (MBUAPCD) is responsible for local control and monitoring of criteria air pollutants throughout the NCCAB. The southern portion of the existing private ranch road and the intersection of this road and SR 41, both of which will be improved as part of the project, are located in the South Central Coast Air Basin (SCCAB), which is under the jurisdiction of the San Luis Obispo County Air Pollution Control District (SLOAPCD). Although the NCCAB is in attainment of all federal air quality standards, it is designated as nonattainment with respect to the more stringent state PM_{10} standard and the State eight-hour ozone standard. The SCCAB is in attainment of all air quality standards, except for the federal 8-hour ozone standard and the state PM_{10} standard and the state ozone standard. Due to the project site's remote setting, monitoring data in the immediate project vicinity is not available, although regional air quality in the NCCAB is not anticipated to exceed applicable ambient air quality standards (Draft EIR pg. 4.3-13 to 3-14). One sensitive receptor, a ranch and associated residence, is located approximately 775 feet north of the site.

As described in the Draft EIR, construction of the proposed project would result in temporary construction-related emissions, including temporary emissions associated with the construction of the proposed PG&E facilities. Construction of these facilities would generate emissions from construction equipment and vehicles, including reactive organic gases (ROG), oxides of nitrogen (NO_X), diesel particulate emissions (DPM), and dust (PM_{10}). Dust emissions could potentially expose sensitive receptors to potential health hazards associated with Coccidioides fungus (Valley Fever) (Draft EIR pg. 4.3-32). During project operation, the proposed switching station could also incrementally increase air quality emissions. As described in the Draft

EIR, potential operational air quality effects associated with the proposed project, including the PG&E switching station would be offset by the long-term beneficial air quality effects associated with the proposed project.

The Draft EIR appropriately evaluated potential direct and indirect air quality effects associated with the proposed project, which included potential impacts associated with the proposed PG&E facilities, in accordance with the requirements of CEQA. The Draft EIR concluded that construction of the proposed project could result in short term emissions of PM_{10} and NO_X in excess of MBUAPCD thresholds with mitigation, resulting in significant and unavoidable impacts. In addition, The Draft EIR concluded that emissions from construction of improvements to the portion of the existing ranch road and the intersection to SR41 in the SCCAB, as well as construction-related mobile source emissions on those road portions, could exceed SLOCAPCD significance thresholds for NO_X, ROG, PM_{10} and DPM with mitigation, resulting in significant and unavoidable impacts. However, given that construction of the PG&E facilities would account for a relatively minor portion of overall project construction-related emissions, the individual air quality effects associated with the construction (and operation) of the PG&E facilities would be limited and would not be expected to exceed MBUAPCD thresholds of significance..

The individual effects of the switching station and PG&E interconnection facilities would be below applicable MBUAPCD screening level thresholds for construction impacts (MBUAPCD, 2008). According to MBUACPD's CEQA Air Quality Guidelines, construction activities that would consist of less than 8.1 acres per day of minimal earthmoving or less than 2.2 acres per day of grading would be below MBUAPCD's PM_{10} threshold of significance. The extent of ground-disturbance associated with PG&E facilities and switching station would be limited to approximately 7.5 acres, of which approximately 1.5 acres is identified for limited interconnection improvements. Construction of PG&E interconnection facilities would occur over a period of several months and any initial site preparation/grading activities would occur over the course of multiple days, if not weeks. As a result, ground disturbance associated with the construction of these facilities would not exceed MBUAPCD's PM_{10} threshold of 82 lb/day. In addition, the switching station, which would be constructed by the project proponent, would be subject to the applicable mitigation measures identified in the Draft EIR intended to reduce the extent of temporary construction NO_X and PM_{10} emissions as well as applicable mitigation measures identified to address construction-related Valley Fever impacts. In order to ensure that the potential air quality effects associated with the proposed PG&E interconnection facilities would be minimized to a less-than-significant level, PG&E has incorporated similar APMs/BMPs (e.g., minimize ground-disturbance, dust suppression, etc.) for construction of its interconnection facilities, thereby ensuring that impacts from the transmission line and other interconnection work will be less than significant. No new or additional environmental effects would occur beyond those identified in the Draft EIR.

3.4 BIOLOGICAL RESOURCES

The Draft EIR includes a detailed discussion of potential biological resources that could be affected in connection with the construction and operation of the proposed project; including related improvements such as the PG&E facilities (see Draft EIR *Section 4.4, Biological Resources*).

As described in the Draft EIR, construction and operation of the proposed project could have a substantial adverse environmental effect, either directly or indirectly through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. The Draft EIR also identified that the project could adversely affect riparian or other sensitive natural communities identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service (Draft EIR page 4.4-84). In addition, the proposed project could also potentially affect wetlands and riparian habitat through direct removal, filing, hydrological interruption, or other means (Draft EIR page 4.4-173). The project could also interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native

wildlife nursery sites and could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The Draft EIR analyzed potential impacts of the proposed project with regard to biological resources and included a detailed description of areas of the project site that could be impacted in connection with the proposed project, including the PG&E facilities The extent of impacts associated with the proposed PG&E facilities would be considerably less than those associated with the entirety of the project, and the Draft EIR appropriately identified impacts, including those associated with these facilities. Construction of the proposed switching station would be subject to the applicable mitigation measures identified in the Draft EIR intended to avoid, minimize or mitigate for impacts to biological resources associated with the switching station. The implementation of mitigation measures contained in the Draft EIR would ensure that all impacts associated with the project, including any associated with the switching station would be reduced to Class II, less than significant with mitigation. In order to ensure that potential impacts associated with the construction of PG&E interconnection facilities are minimized, PG&E has incorporated similar APMs/BMPs (e.g., pre-construction surveys, construction staging, worker education, etc.) for construction of its interconnection facilities, thereby ensuring that potential impacts associated with the construction of PG&E facilities would be less-than-significant. No new or additional effects would occur beyond those identified in the Draft EIR.

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

The proposed project site is located within the interior portion of the South Coast Ranges, in a northeastern extension of the Cholame Valley known as Turkey Flat. Turkey Flat is gently undulating, largely treeless grassland incised by several springs and drainages; it is flanked on the east by the often-steep hills of the Diablo Range. Elevations within the project site range from 1,600-2,100 feet above mean sea level (amsl); the access road descends to 1,175 feet amsl where it meets State Route 41. Turkey Flat Road, the main graded dirt road, divides the property; numerous ranch roads intersect it.

The proposed project, including the proposed PG&E facilities, has the potential to affect National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR) eligible prehistoric or historic resources, cultural resources, previously unidentified human remains and paleontological resources during project construction (Draft EIR pg. 4.5-1). In assessing impacts to cultural resources, the Draft EIR analyzed all areas where the proposed project could affect paleontological resources and properties eligible for the NRHP or the CRHR (Draft EIR pg. 4.5-6). While the Draft EIR evaluated the potential impacts associated with the entirety of the action consistent with the requirements of CEQA, the proposed PG&E facilities are not located in an area where cultural resources were previously identified. Nevertheless, construction of the proposed switching station and proposed PG&E interconnection facilities could potentially affect previously unknown or buried cultural or paleontological resources.

Construction and operation of the proposed switching station would be subject to the applicable mitigation measures identified in the Draft EIR intended to reduce impacts to previously undiscovered cultural or paleontological resources. The implementation of mitigation measures identified in the Draft EIR would ensure that all potential impacts associated with the proposed project, including the switching station would be Class II, less than significant with mitigation. In order to ensure that potential impacts associated with the construction of PG&E interconnection facilities would be minimized, PG&E has incorporated similar APMs/BMPs (e.g., site avoidance, resource awareness program, monitoring, etc.) for construction of its interconnection facilities, thereby ensuring that impacts from the transmission line and other interconnection work would be less-than-significant. No new or additional effects would occur beyond those identified in the Draft EIR.

3.6 GEOLOGY AND SOILS

The project site, including the approximately 6.0-acre switching station area, and the approximately 1.5-acre area for proposed PG&E interconnection facilities consists of generally flat grazing lands situated between rolling hills to the northeast and southwest. There are numerous southwestward seasonally flowing drainages located within the boundaries of the project site and in proximity to the proposed switching station. The project site, including the location of the PG&E facilities, is relatively flat (less than 10 percent) and gently slopes down to the west. Surface drainage flows southwest to the Cholame Valley. The ground surface is densely vegetated with local grasses and forbs. The project is located in a seismically active region and a number of potentially active and active faults are located within proximity to the project (Draft EIR pg. 4.6-4). No active faults are known to transect the location of the proposed switching station or PG&E interconnection facilities. The San Andreas Fault is located approximate two (2) miles from the overall project site and the Gold Hill Thrust Fault, an inactive fault, is located southwest of the project site.

The proposed PG&E facilities are located in an area likely to experience surface rupture and groundshaking activity in the event of seismic activity along the San Andreas Fault (Draft EIR pg. 4.6-14). Construction of the facilities could expose construction workers and operational phase employees to potential seismic-related hazards (Draft EIR pg. 4.6-15). In addition, construction of the switching station could result in temporary erosion related impacts, including the loss of top soil, in connection with ground-disturbing activities. The switching station could also be exposed to potential hazards associated with expansive soils. Potential adverse effects associated with the construction and operation of the proposed switching station would be addressed through compliance with mitigation requiring design-level geotechnical analysis and compliance with applicable building codes and requirements.

While the extent of improvements associated with PG&E facilities is limited to approximately 7.5 acres of the site, the construction and operation of these improvements could result in potential impacts to geology and soils. As described in the Draft EIR, the proposed project, including the proposed switching station and PG&E interconnection facilities, would be required to comply with applicable requirements of the California Building Code, and mitigation measures identified in the Draft EIR that require compliance with the project's SWPPP. These measures are in addition to the applicant proposed measures proposed as part of the project, which would also lessen the extent of potential impacts. The implementation of the measures identified in the Draft EIR would ensure that all potential impacts associated with the proposed project, including the switching station, would be Class II, less than significant with mitigation. Where applicable, PG&E has incorporated similar APMs/BMPs, such as erosion control measures, for construction of its interconnection facilities, thereby ensuring that impacts from the transmission line and other interconnection work would be less-than-significant. No new or additional effects would occur beyond those identified in the Draft EIR.

3.7 GREENHOUSE GAS EMISSIONS/CLIMATE CHANGE

Gases that absorb and re-emit infrared radiation in the atmosphere are galled greenhouse gases (GHGs), which includes carbon dioxide, methane, nitrous oxide, and sulfur hexafluoride (SF_6), among others. The accumulation of greenhouse gases in the atmosphere regulates the Earth's temperature. Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans, as well as other changes in climate (e.g., weather patterns) over an extended period of time. Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. At the local level, however, current scientific modeling tools are unable to predict climate change-related impacts with the same degree of accuracy as at the global and regional levels.

The Draft EIR (Section 4.7) evaluated the potential impacts of constructing and operating the proposed project, including PG&E interconnection facilities with regard to greenhouse gas emissions and climate change. Specifically, the Draft EIR examined whether the proposed project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, or would

conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emission.

Construction and operation of the proposed project, including PG&E facilities, could result in the emissions of greenhouse gases. In particular, the Draft EIR identified specific greenhouse gas impacts associated with operation of the proposed switching station due to SF_6 emissions (Draft EIR pg. 4.7-13). These impacts were identified as less-than-significant. Overall, the Draft EIR determined that the proposed project would result in a net reduction in long-term regional greenhouse gas emissions, which would be a Class IV, beneficial impact. No new or additional effects would occur beyond those identified in the Draft EIR..

3.8 HAZARDS AND HAZARDOUS MATERIALS

The project site, including the location of the proposed switching station, has historically been used for grazing purposes and is not located in an area of known hazardous material contamination (Draft EIR pg. 4.8-4). The project site is not located on a hazardous materials site compiled pursuant to Government Code Section 65962.5. Moreover, the project site, including the location of the PG&E facilities, is not located in an area that was historically used for croplands. As a result, the project site is not located in an area that could result in the exposure of construction and operational personnel to residual hazards associated with agricultural chemicals (Draft EIR pg. 4.8-14). The project site is, however, located in a High Fire Hazard area according to California Department of Forestry and Fire Protection (Cal Fire) (Draft EIR pg. 4-8-18). No airports are located within proximity of the project site. As a result, the project would not result in any potential safety hazards due to potential airport hazards.

Construction and operation of the proposed switching station and proposed PG&E interconnection facilities could result in potential adverse environmental effects due to hazards and hazardous materials. For instance, construction activities would include the use, storage and transport of hazardous materials, such as mineral oil, that could potentially create a safety hazard to the public and environment (Draft EIR pg. 4.8-15). In addition, the project site, including the location of the proposed switching station, is located in a high fire hazard severity zone. As a result, construction and operation of the proposed switching station and PG&E interconnection facilities could result in the exposure of construction and operational personnel to potential risks involving wildland fire hazards, as more thoroughly described in the Draft EIR (Draft EIR pg. 4.8-18 through 4.8-20). Construction and operation of these facilities could also result in the exposure of construction personnel and nearby sensitive receptors to diseases transmitted from cattle grazing operations, including anthrax, coccidiosis, and anaplasmosis (Draft EIR pg. 4.8-18).

The Draft EIR included a detailed evaluation of the potential environmental impacts of the proposed project with regard to hazards and hazardous materials, which includes the proposed PG&E facilities. As described in Section 4.8, *Hazards and Hazardous Materials,* of the Draft EIR, compliance with existing regulatory requirements, implementation of standard construction BMPs, and mitigation measures requiring identification of underground utilities, completion of a Fuel Management Plan, maintaining adequate emergency access, and a recycling or disposal plan for PV modules and support structures would ensure that all potential effects associated with construction of the proposed switching station would be mitigated to Class II, less than significant with mitigation. In order to ensure that potential adverse effects associated with the construction of PG&E interconnection facilities are minimized, PG&E has incorporated similar APMs/BMPs (e.g., locating of underground utilities, fuel management, etc.) for construction of its interconnection facilities, thereby ensuring that impacts from the transmission line and other interconnection work would be less-than-significant. No new or additional effects would occur beyond those identified in the Draft EIR.

3.9 HYDROLOGY AND WATER QUALITY

As described in the Draft EIR, the project site is located in the Central Coast Hydrologic Region (Draft EIR pg. 4.9-3). This region covers approximately 7.22 million square miles and includes all of Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara counties, as well as parts of San Benito, San Mateo, Santa Clara, and Ventura counties. Major geographic features that define the region include the Pajaro, Salinas, Carmel, Santa Maria, Santa Ynez, and Cuyama valleys; the coastal plain of Santa Barbara; and the Coast Range (ibid.). The region is largely defined by the northwest-trending southern Coast Range. Elevations in the Cholame Valley range between 1,100 feet at the southern end and 1,700 feet near the unincorporated area of Parkfield (ibid.). The project site is characterized as consisting of relatively flat, undeveloped, ranch land that is located within the Cholame Creek Watershed.

The proposed project, including the proposed switching station and PG&E facilities would result in potential hydrology and water quality related impacts, as described in the Draft EIR (Draft EIR pg. 4.9-17 through 4.9-22). Construction and operation of the proposed switching station and PG&E facilities could result in potential impacts associated with erosion and sedimentation due to ground-disturbing activities, which could potentially degrade water quality. In addition, the accidental release of hazardous materials during project construction could also adversely affect water quality. The project could also potentially affect groundwater resources due to temporary water use during construction and on-going operational water demand. The extent of potential water use associated with the proposed project, including the proposed switching station and PG&E interconnection facilities, would not, however, substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (Draft EIR pg. 4.9-18). Sufficient water supplies available from existing resources and no new or expanded entitlements would be needed (Draft EIR pg. 4.9-18). The proposed PG&E facilities are not located within a 100-year flood zone or FEMA designated Special Flood Hazard Zone and are not susceptible to seiche, tsunami, or mudflow (Draft EIR pg. 4.9-6 and 4.9-27).

The Draft EIR evaluated potential impacts associated with the degradation of water quality due to erosion and sedimentation, release of hazardous materials, depletion of groundwater resources, and alteration of drainage channels due to the construction and operation of the proposed project, including the proposed PG&E facilities. Compliance with existing regulatory requirements, implementation of standard construction BMPs, and mitigation measures requiring compliance with NPDES program for stormwater discharge, developing a Spill Response Plan and Spill Prevention, Control and Countermeasure Plan, maintenance of vehicles and equipment, and preparation of a design-level drainage analysis would ensure that all potential effects associated with the proposed project, including construction of the switching station, would be mitigated to Class II, less than significant impact with mitigation. Where applicable, PG&E has incorporated similar APMs/BMPs (e.g., spill control, vehicle maintenance, employee training, etc.) for construction of its interconnection facilities, thereby ensuring that impacts from the transmission line and other interconnection work would be less than significant. No new or additional effects would occur beyond those identified in the Draft EIR.

3.10 LAND USE AND PLANNING

The project site, including the location of the proposed switching station, is designated as Farmland according to the 2010 Monterey County General Plan. The project site is zoned Permanent Grazing (PG/160) and Farmland (F/160) (Draft EIR pg. 4.10-2). The location of the proposed PG&E facilities is zoned F/160. Surrounding land uses consist primarily of agricultural/ranching lands, as well as vacant, undeveloped lands. Surrounding properties are designated F/160 and PG/160 (Draft EIR Figure 4.10-2).

As described in the Draft EIR, the proposed project would not physically divide an established community. In addition, the project would not conflict with the requirements of an applicable Habitat Conservation Plan or Natural Community Conservation Plan. The proposed project, including the PG&E facilities would

generally be consistent with applicable policies contained in Monterey County's 2010 General Plan. The Draft EIR evaluated potential impacts associated with the proposed project with regard to land use and planning, including potential impacts associated with the construction and operation of the proposed PG&E facilities. As described previously, the CPUC has exclusive jurisdiction over the siting and design of PG&E's interconnection facilities; therefore, proposed PG&E facilities would not be subject to the requirements of the Monterey County General Plan. As a result, construction of proposed PG&E facilities and switching station would not result in any land use related effect. No new or additional effects would occur beyond those identified in the Draft EIR.

3.11 MINERAL RESOURCES

The State of California, as required pursuant to the Surface Mining and Reclamation Act of 1975, has established a classification system to determine the significance of potential mineral resource deposits to protect mineral resources from urban expansion or other irreversible land uses which would preclude future extraction. Mineral resource zones (MRZ) are used to designate lands that contain mineral deposits. No MRZ are located within the project site, which includes the location of the proposed switching station and PG&E facilities. Moreover, there is no land designated for mineral resource use in the South County Area Plan. As a result, the PG&E facilities are not located on, adjacent to, or near mineral resources or recovery sites. There are no known mineral resources known to exist on or in the vicinity of the project site, hence there would be no impact to mineral resources. As discussed in the Draft EIR, the project would have no impact or result in the loss of availability of known mineral resources.

3.12 NOISE

The main source of existing noise in the vicinity of the project is associated with motor vehicle traffic along SR 41 and 46. The project site, due to its remote location, is not subject to major sources of noise. There are no major noise generating sources located on the project site (including the location of the proposed switching station) (Draft EIR pg. 4.11-3). The Morro Bay - Gates 230kV transmission line generates some levels of noise, although it is generally only perceptible when the lines are directly overhead. A noise sensitive land use (existing residence) is located approximately 775 feet north of the project site (Draft EIR pg. 4.11-3). This residence would be exposed to construction generated noise.

Construction of the proposed PG&E facilities would result in temporary noise-related impacts, as well as potential noise associated with the operation of the switching station. As described in the Draft EIR, construction of the proposed project, including the PG&E facilities, would result in a temporary increase in noise level from operation of heavy equipment and vehicular noise associated with the increase in vehicle trips to and from the project site (Draft EIR pg. 4.11-11). In addition, the proposed project would add sources of long-term operational noise to the project site due to project operation and an incremental increase in noise from traffic on regional highways; however, these impacts are not expected to result in a substantial increase in ambient noise levels. The potential operational noises effects associated with the switching station were included as part of the County of Monterey's evaluation of operational noise impacts described in the Draft EIR.

The Draft EIR analyzed potential impacts of the project on noise levels, including increased noise from project construction and operation of the PG&E facilities. Based on the analysis contained in the Draft EIR, noise-related impacts are not anticipated to exceed a level that would disturb nearby sensitive receptors and, thus, the potential impacts associated with the construction and operation of the proposed switching station and PG&E facilities would be less-than-significant. No new or additional effects would occur beyond those identified in the Draft EIR.

3.13 POPULATION AND HOUSING

The project site is located within the South County Planning area of Monterey County. The nearest population center is the unincorporated community of Parkfield, which is located approximately 7 miles north of the site. Scattered rural residences are located in the general area of the project site, but due to the project site's remote location and surrounding land uses, one existing private residence is the sole residence in direct proximity of the project site. As discussed in the Draft EIR, the PG&E facilities as part of the California Solar Flats Project, would not impact population and housing (Draft EIR pg. 4.14-9). Therefore, the potential impacts associated with the PG&E facilities would be Class III, less-than-significant. No new or additional effects would occur beyond those identified in the Draft EIR.

3.14 PUBLIC SERVICES

The Draft EIR includes a detailed description of existing public service providers that would be responsible for providing services to the proposed project, which includes the proposed switching station and PG&E facilities (Draft EIR pg. 4.12-3 through 4.12-4). Applicable services providers responsible for serving the project site include the Monterey County Sheriff's Department and the California Department of Forestry and Fire Protection. Other applicable service providers include solid waste providers in San Luis Obispo and Monterey County.

As described in the Draft EIR, the proposed project, including the proposed switching station and PG&E facilities, would not generate an increase in population that would generate an increased demand for park facilities, schools, and libraries or other public services (Draft EIR pg. 4.14-10). However, the proposed project, including the proposed PG&E facilities, would potentially affect police and fire protection services through the introduction of new development in a primarily undeveloped area of Monterey County. As described in the Draft EIR, the proposed project would substantially increase activity during project construction and incrementally increase activity during operation. According to the Draft EIR, this could result in an increased demand for fire protection services (Draft EIR pg. 4.12-7). Potential impacts to police protection services were identified as less-than-significant. The Draft EIR identified a series of mitigation measures to ensure that temporary construction-related impacts to fire protection services would be reduced to a less-than-significant level (Draft EIR pg. 4.12-12). The Draft EIR also identified that the construction and operation of the proposed project which includes the proposed PG&E facilities would also potentially affect solid waste disposal. The Draft EIR determined that these effects would be less-than-significant.

The Draft EIR analyzed potential impacts associated with construction and operation of the California Solar Flats Project as a whole consistent with the requirements of CEQA. As a result, the Draft EIR appropriately considered and evaluated the potential impacts to public services in connection with the proposed switching station and PG&E facilities. While the extent of potential impacts associated with the construction and operation of the proposed switching station and PG&E facilities would be limited to 7.5 acres of the approximately 3,000-acre site and would generally be insignificant, the Draft EIR nevertheless recommended mitigation to address the effects of the entirety of the project. Mitigation identified in the Draft EIR would ensure that all potential project impacts, including those associated with construction of the switching station would be reduced to Class II, less than significant with mitigation. In order to ensure that potential impacts associated with PG&E interconnection facilities would be minimized, PG&E has incorporated similar APMs/BMPs (e.g., construction management plan (to be prepared and implemented by CFS), emergency response training, etc.) for construction of its interconnection facilities, thereby ensuring that individual effects associated with PG&E facilities would be less than significant. No new or additional effects would occur beyond those identified in the Draft EIR.

3.15 RECREATION

There are no neighborhood, area, regional, state, or federal parks or recreational areas located within the vicinity of the project site that would be affected by the project. Therefore, the proposed project, including the PG&E facilities, would not create an increase in population or promote activities that would increase the use of existing parks or recreational facilities. Additionally, the proposed project, including the proposed PG&E facilities, would not include any recreational facilities or promote any activities that would require the construction or expansion of recreational facilities. As discussed in the Draft EIR, development of the proposed project would not affect any park/recreational facilities (Draft EIR pg. 4.14-11).

3.16 TRANSPORTATION/TRAFFIC

The project is located in a remote area of Monterey County. Access to the project site, including the location of the switching station and PG&E interconnection facilities, would be provided from an existing private driveway located off of SR 41. Alternative site access may also be provided from Turkey Flat Road, which provides access to Cholame Valley Road and subsequently SR 46. Regional north-south access is provided via Interstate 5 (I-5) located approximately 35 miles to the east of the site and via US 101 located approximately 25 miles to the west of the site. East-west access is provided via SR 46 and SR 41. SR 46 is a major east-west facility that extends from SR 1 through Paso Robles and continues east to I-5 and the Central Valley. In the immediate vicinity of the site, SR 46 contains one lane in each direction. SR 41 is another east-west / north-south facility that also extends from SR 1 to the west and extends northeast towards the I-5, the Central Valley and the Sierras. SR 41 intersects SR 46 immediately east of the Cholame Valley Road/SR 46 intersection.

The Draft EIR evaluated traffic-related impacts associated with the construction and operation of the project based on the results of a traffic impact analysis prepared by Kimley Horn & Associates (KHA, 2013). The Draft EIR conservatively evaluated the traffic-related effects assuming the entire project, including the switching station and PG&E interconnection facilities, would be constructed over the course of a 12-month construction period. While potential traffic trips associated with the construction of the switching station and PG&E facilities would be relatively insignificant in relationship to overall traffic associated with project construction, construction of the proposed project would result in significant and unavoidable impacts associated with the increase in traffic on a segment of SR 46 between SR 41 and Branch Road that currently operates at a LOS E (Draft EIR pg. 4.13-13 and 4.13-17).

The traffic analysis and Draft EIR identified that trips originating west of the project site (e.g., Paso Robles, King City, etc.) traveling eastbound on SR 46 (towards the project site) would incrementally increase traffic on a roadway segment currently operating at an unacceptable LOS. The addition of any traffic trips on a roadway operating at an unacceptable LOS is considered a significant impact according to Caltrans. The Draft EIR also identified that the project would result in additional traffic-related effects during the Friday PM Peak Hour when the intersection of SR 41/SR 46 (i.e., southbound left onto eastbound SR 46) operates at an unacceptable LOS. In order to minimize potential traffic impacts during the Friday PM Peak Hour, the Draft EIR identified that mitigation would be warranted to ensure that impacts were less-than-significant. The Draft EIR also identified potentially significant impacts associated with existing traffic hazards at the intersection of SR 41/SR46. The Draft EIR identified mitigation to lessen the extent of this impact, but no feasible mitigation measures were identified to reduce the impact to a less-than-significant level. The Draft EIR concluded that potential traffic hazards would remain significant until such time that planned Caltrans improvements were constructed. Operation of the proposed project, which would result in an additional 28 trips per day, would also result in potential traffic-related effects, although the extent of operational traffic would be comparable to existing conditions (KHA, 2013). Operational traffic would, however, result in a significant impact until such time that planned Caltrans improvements are constructed (Draft EIR pg. 4.13-21).

The extent of traffic trips associated with the construction and operation of the proposed PG&E facilities would be relatively insignificant compared to overall construction and operational traffic associated with the project. Accordingly, the individual traffic-related impacts associated with the construction and operation of the switching station, interconnecting transmission line and related facilities would be comparably less than the overall traffic impacts associated with the project. According to PG&E, construction of proposed PG&E interconnection facilities would occur over a two month period and associated traffic trips would include an estimated 25 round trips.

Traffic associated with the construction and operation of PG&E interconnection facilities would originate east of the SR 46/41 intersection and would travel to the site via SR 41 and/or SR 46 from I-5. Therefore, traffic trips associated with PG&E interconnection facilities, which would be extremely limited, would not occur on any roadway segment currently operating at an unacceptable LOS.[4] As described above, the intersection of SR 41/46 currently operates at an unacceptable LOS during the Friday Peak Hour. The Draft EIR identified mitigation to require the use of a flagman to prohibit traffic traveling southbound on SR 41 to make a southbound left onto SR 46. All construction traffic associated with the construction of PG&E interconnection facilities would comply with the requirements of these measures as implemented by the project proponent thereby ensuring that potential impacts would be less-than-significant. The Draft EIR also identified a significant impact associated with existing hazards. Specifically, the Draft EIR identified that the existing SR 41/46 intersection has an above average accident rate associated with eastbound SR 46 traffic turning left onto northbound SR 41 being broadsided by westbound SR 46 through traffic (KHA, 2013). As discussed above, no traffic associated with the construction and operation of PG&E interconnection facilities would be traveling eastbound on SR 46 to access the site. All traffic would originate east of the site. Therefore, the construction and operation of PG&E facilities would not result in any significant impacts related to traffic hazards. All impacts would be less-than-significant.

3.17 UTILITY AND SERVICE SYSTEMS

The project site is located in a rural area of southern Monterey County. Existing utilities currently providing services in the project area are limited due to the site's remote location. Existing private wells would be responsible for meeting the projects anticipated water demand. No wastewater providers service the project site; the site would be improved with a septic system/leach field to accommodate operational wastewater generated as part of the O&M facilities. All other utilities would be provided on-site.

The proposed PG&E facilities are not anticipated to significantly affect existing utilities and service systems. Due to the remote nature of the project site, there are no existing public utility providers serving the site. All proposed utility and infrastructure improvements proposed as part of the project would be privately owned and maintained. The switching station would not generate on-site wastewater and would not require the construction of new water or wastewater facilities (Draft EIR pg. 4.14-13). The construction and operation of the proposed PG&E facilities would not affect existing utility and service systems. The switching station's impact on water supplies, landfill capacity and solid waste are discussed, above, in Section 3.8, *Hydrology and Water Quality* and Section 3.13, *Public Services*.

The Draft EIR analyzed potential impacts associated with construction and operation of the California Solar Flats Project, which includes the construction and operation of the proposed PG&E facilities. As a result, the Draft EIR appropriately considered potential impacts associated with the switching station and proposed PG&E interconnection facilities in accordance with the requirements of CEQA. No new or additional effects would occur beyond those identified in the Draft EIR.

[4] The traffic analysis assumed that construction trips, including the majority of construction deliveries, would occur on SR 46 (heading east) and SR 41 (heading south) via I-5.

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CHAPTER 4.0 SUMMARY

As discussed, above, the Draft EIR prepared by the County of Monterey includes a detailed evaluation of potential environmental effects associated with the construction, operation and eventual decommissioning (or powering) of the California Flats Solar Project, which includes the construction and operation of a new switching station, an interconnection line supported by approximately five to seven transmission structures to reroute the existing 230 KV transmission line into the new switching station, and associated minor interconnection facilities. The Draft EIR evaluated the environmental effects of the whole of the action consistent with the requirements of CEQA. This appendix summarizes the findings of the Draft EIR as they pertain to the proposed PG&E facilities to facilitate CPUC review of the interconnection facilities. The individual effects of the proposed PG&E facilities would be considerably less than those associated with the overall project. The Draft EIR appropriately considered potential impacts associated with all elements of the proposed project, including all related improvements, such as the proposed PG&E facilities. No new environmental effects would occur in connection with the PG&E facilities beyond those already described and evaluated within the Draft EIR. All impacts from PG&E's interconnection facilities would be relatively insignificant in comparison to the overall effects of the project. PG&E has incorporated a variety of BMPs/APMs into the construction of proposed interconnection facilities consistent with the mitigation measures described in the Draft EIR to ensure that the individual effects of proposed PG&E facilities would be less-than-significant.

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Appendix O.2

PG&E's Avoidance and Protection Measures for Construction of PG&E Facilities Associated with the California Flats Solar Project

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December 22, 2014

John Ford
Planning Service Manager
Monterey County Resource Planning Department
168 W. Alisal St., 2nd Floor
Salinas, CA 93901
Phone: (831) 755-5198

RE: Update to letter of 12/19/14. PG&E's Avoidance and Protection Measures for Construction of PG&E Facilities Associated with the California Flats Solar Project (PLN120294; SCH#2013041031)

Dear Mr. Ford:

To provide further detail in connection with the PG&E Environmental Summary Appendix (December 2014), PG&E has identified in the table below the mitigation measures set forth in the County's Draft Environmental Impact Report that PG&E will implement, in somewhat modified form, as PG&E Avoidance and Protection Measures (APMs) in connection with its transmission line and loop-in facilities associated with the California Flats Solar Project (Project). As explained in the Environmental Summary Appendix, PG&E's facilities are subject to California Public Utilities Commission jurisdiction, but PG&E will provide the County with courtesy copies of its monitoring reports demonstrating compliance with these APMs.

The following measures will be modified as necessary to specifically address the application of the APMs to PG&E rather than to the Applicant (California Flats Solar, LLC) for purposes of inclusion in PG&E's Mitigation, Monitoring, Compliance, and Reporting Plan, a copy of which will be provided to the County. The modifications will include identifying PG&E as the relevant entity (in place of Applicant), specifying the relevant PG&E facilities (in place of the Project), deleting requirements to prepare and submit plans to the County, deleting requirements that are California Flats Solar's responsibility, and reflecting PG&E's submittal of APM compliance reports to the CPUC with courtesy copies to the County.

PG&E's exclusion of certain measures that do not apply to its facilities is based on the factual circumstances associated with the nature or construction of PG&E's facilities or the relevant geographic location of those facilities, or the fact that California Flats Solar will be implementing measures applicable to the entire Project, including PG&E's facilities. PG&E will be responsible for relocating less than 2000 feet of an existing 230 kV transmission line to loop it into and out of the new switching station; the switching station will be constructed by California Flats Solar. Thus, PG&E's construction project will be extremely minor compared to the overall solar project.

For example, as to the Biology APMs, there are certain species or habitats (e.g., jurisdictional waters of the US) that are not located within the transmission/loop-in area and, therefore, do not require preconstruction surveys or other measures that apply elsewhere in the project area. Similarly, California Flats Solar will be implementing compensatory mitigation for the Project as a whole and, therefore, PG&E will not separately provide compensatory mitigation. PG&E will not need a grading permit for its transmission line construction. The O&M measures for Biology do not apply to PG&E because PG&E's facilities will be unmanned, and any future maintenance projects that involve ground-disturbing activities will be treated as separate projects for which PG&E will secure any necessary resource-agency permits.

MM BIO B-1(s) includes requirements to comply with the guidelines recommended by APLIC. PG&E will implement avian protection measures in accordance with PG&E's Avian Protection Plan (which incorporates portions of the APLIC guidelines and was developed through coordination with USFWS and submitted to CDFW) as well as PG&E's Overhead Transmission Line Design Criteria. PG&E has done extensive work on bird protection issues associated with its electric lines. Bird diverters will not be installed for the PG&E facilities because they are not necessary or appropriate for a 230 kV transmission line in this setting.

Relevant Subject Matter Area	Measures to be Implemented as Avoidance and Protection Measures, as Applicable to PG&E
Aesthetics	AES-3
Agricultural Resources	None identified in Draft EIR
Air Quality	AQ-2(b), AQ-6(b)
Biological Resources	B-1(d), B-1(f), B-1(g), B-1(h), B-1(i), B-1(l), B-1(m), B-1(o), B-1(r), B-1(s), B-1(ee), B-1(ff), B-1(gg) B-1(t), B-1(u), B-1(x), B-1(y)
Cultural and Paleontological Resources	CR-2
Geology and Soils	Not applicable
Greenhouse Gas Emissions/Climate Changes	None identified in Draft EIR
Hazards and Hazardous Materials	HAZ-3, HAZ-4(a), (b),
Hydrology and Water Quality	HYD-2(a), (b)
Land Use and Planning	None identified in Draft EIR
Mineral Resources	None identified in Draft EIR
Noise	None identified in Draft EIR
Population and Housing	Not applicable
Public Services	PS-1(b)
Recreation	None identified in Draft EIR
Transportation/Traffic	T-2
Utility and Service Systems	None identified in Draft EIR

Thank you for your time in this important matter.

Sincerely,

Original signed and mailed by US mail

Greg Parker
Principal Land Planner, Environmental Planning and Permitting

cc. Mjones
Koryn Kendall

Appendix O.3

Peer Review of Pacific Gas & Electric Interconnection Facilities Environmental Summary Appendix

rincon

Rincon Consultants, Inc.

Environmental Scientists Planners Engineers

MEMORANDUM

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December 23, 2014

John Ford, RMA – Services Manager

County of Monterey RMA – Planning Department

Megan Jones, Senior Program Manager

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Richard Daulton, Principal

Peer Review of Pacific Gas & Electric Interconnection Facilities Environmental Summary Appendix

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The purpose of this memorandum is to describe the results of Rincon's peer review of the *California Flats Solar Project Pacific Gas & Electric Interconnection Facilities Environmental Summary Appendix* prepared by Denise Duffy & Associates, Inc. for California Solar Flats, Inc. in December 2014. The key findings of our peer review are summarized below.

1. Overall Findings. The purpose of the *California Flats Solar Project Pacific Gas & Electric Interconnection Facilities Environmental Summary Appendix* (PG&E Appendix) is to specifically identify the effects of the proposed PG&E switching station and related PG&E interconnection facilities separate from the rest of the proposed California Solar Flats Project in order to facilitate California Public Utilities Commission (CPUC) review of these facilities. The PG&E Appendix summarizes the findings of the Draft EIR as they pertain to the proposed interconnection facilities and concludes that no significant new environmental information has been identified and no new environmental effects would occur as a result of the proposed PG&E interconnection facilities. The PG&E Appendix further concludes that all impacts associated with the proposed project, including the switching station and related facilities, are described and evaluated in the Draft EIR. Rincon concurs with these general findings of the PG&E Appendix.

2. PG&E Avoidance and Protection Measures. The PG&E Appendix states that "the County of Monterey does not have siting, design or construction authority over PG&E's electrical facilities or jurisdiction to impose mitigation measures on PG&E's construction" (page 6). The PG&E Appendix further notes that, rather than implement mitigation measures outlined in the EIR, "PG&E will incorporate AMPs [avoidance and protection measures] and standard construction

BMPs [best management practices]…consistent with the measures established and evaluated in the Draft EIR. These measures would be comparable in nature to the measures described in the Draft EIR to avoid or minimize potential impacts associated with project construction" (PG&E Appendix, page 6). The Appendix does not provide a full listing of these APMs.

Per the County's request, PG&E provided a follow up letter dated December 22, 2014 identifying which EIR mitigation measures would be implemented as PG&E APMs. Rincon has reviewed this list of mitigation measures and concurs that the list is comprehensive and appropriate, and that implementation of these measures would adequately mitigate potential impacts associated with the PG&E facilities, as identified in the DEIR.

3. Environmental Effects. Chapter 3.0 of the PG&E Appendix adequately summarizes the analysis in the Draft EIR, and accurately isolates the effects of the proposed switching station and interconnection facilities.

Appendix P

DEIR Comment Letter Supplement

Pacific Gas and Electric Company

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650 "O" Street, Bag 23
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October 28, 2014

Delinda Robinson
Monterey County Resource Management Agency
Planning Department
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Salinas, CA 93901
Phone: (831) 755-5198

RE: Brief Supplement to Comments on the Draft Environmental Impact Report for the Proposed California Flats Solar Project (PLN120294; SCH#2013041031)

Dear Ms. Robinson:

This letter supplements Pacific Gas and Electric Company's comment letter provided to you on September 23, 2014, regarding the Draft Environmental Impact Report (DEIR) for the California Flats Solar Project. In the September letter, we stated that PG&E would need to construct approximately five to seven steel monopole structures or lattice structures approximately 130 feet high to connect the transmission line to the proposed CA Flats Solar switching station.

After additional engineering and design work, we have confirmed that the new structures will need to be approximately 140-150 feet high. Existing tower structures in the area are approximately 140 feet high. We do not anticipate that this minor adjustment to pole heights will alter the environmental analysis; however, we want to ensure that you have the most accurate description of the proposed transmission line/interconnection facilities.

Thank you for the opportunity to provide these additional comments.

Sincerely,

Greg Parker
Principal Land Planner
Pacific Gas and Electric Company

Appendix Q

Wallace Group Supplemental Hydrology Calculations

WALLACE GROUP®

CIVIL AND TRANSPORTATION ENGINEERING
CONSTRUCTION MANAGEMENT
LANDSCAPE ARCHITECTURE
MECHANICAL ENGINEERING
PLANNING
PUBLIC WORKS ADMINISTRATION
SURVEYING / GIS SOLUTIONS
WATER RESOURCES

The following calculations have been prepared to provide an independent analysis of the flow results in the DEIR Preliminary Drainage Report and to provide an analysis of Pier Scour associated with the Hazard Level 2 Designation.

The DEIR Preliminary Drainage Report identifies a flow of 1,850 cfs at concentration point "G"

The attached calculations evaluate this watershed as follows:
Area = 853 acres (matching the total of the DEIR subwatersheds)
Rainfall = 6.6 inches (based on NOAA Atlas)
Time of concentration = 59 minutes (based on TR-55 Lag-Cn method, independent of sheet flow n-value)
Channel flow length = 1,392 feet (based on longest flow path)
Soil CN = 86 (based on weighted average of the DEIR sub-watersheds
Initial Abstraction = 0.33 inches (based on the CN)

Based on these parameters, our determination of the total flow at concentration point G is 1,343 cfs, which is 73 percent of the flow presented in the DEIR Preliminary Drainage Report.

Wallace Group also has independently determine the flow in Cottonwood Creek and found that the flow was 92 percent of the flow presented in the DEIR Preliminary Drainage Report.

Calculations for pier scour were prepared in accordance with FHWA HEC-18 recommendations. Calculations were prepared using the standard pier scour equation and a second pier scour equation specific to cohesive soils, for a range of flow depths and velocities.

Results indicate a maximum expected pier scour depth ranging from 4 inches to 24 inches. The Hazard Level 2 conditions that would initiate pier scour occur with velocities in excess of 6 feet per second. These velocities (and Hazard 2 areas) comprise a small fraction of the project site.

The maximum scour calculated is related to flow depths and velocities associated with the peak of a 100-year storm, which is a rare event. More importantly, the duration of these flow depths and velocities is much less that the time required for the predicted scour to reach the full depth. Therefore actual scour would occur incrementally from multiple runoff events (ref FHWA HEC 18, 5th Edition). The low probability of multiple runoff events of the 100-year magnitude means that expected scour over the life of the project is less than the maximum calculated.

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www.wallacegroup.us

Watershed independently analyzed by Wallace Group 10-10-2014

Page from the DEIR Preliminary Drainage Report, with notation added by Wallace Group 10-10-2014

WA E100
WA G200
WA D100
WA C100
WA D200
WA A100
WA E200
WA G25
WA G50
WA J25
WA J50
WA J200
WA N25
WA N50
WA R370
WA R350
WA R340
WA B100
WA N75
WA D300
WA J100
WA G100
WA K200
WA O100
WA R360
WA R290
WA R260
WA E300
WA F100
WA G300
WA H100
WA O200
WA R380
WA R270
WA S440
WA J300
WA K100
WA N100
WA R390
WA R280
WA R250
WA S430
WA I100
WA K300
WA N200
WA R400
WA R300
WA O300
WA R800
WA R500
WA S50
WA L100
WA M100
WA S450
WA S25
WA N300
WA R600
WA S100
WA P200
WA R700
WA S150
WA S200
WA S250
WA S400
WA R900
WA P300
WA P100
WA S300
WA S750
WA S550
WA Q100
WA S505
WA S225
WA S700
WA S1000
WA S800
WA S600
WA S540
WA S900
WA S650
WA T100
WA U100
WA S530
WA V100
WA X200
WA W100
WA X300
WA X100

Area 1

Area 2

Area 3

Legend

- HMS Watersheds
- FLO-2D Model Boundaries
- Project Area

3/1/2013 JN M:\Mdata\60109865\GIS\MXD\Hydrology_Ex2to12_siteplan.mxd LS

elementpower

Source:

0 0.35 0.7 1.4 Miles

CALIFORNIA FLATS SOLAR

Area 1 HEC-HMS Watersheds

3/1/2013 • Exhibit 3

Watershed independently analyzed by Wallace Group
10-10-2014 Wallace Group Flow = 1,343 cfs

Page from the DEIR Preliminary Drainage Report, with notation added by Wallace Group 10-10-2014

Peak 210 cfs (A)
Peak 220 cfs (B)
Peak 440 cfs (C)
Peak 300 cfs (D)
Peak 920 cfs (E)
Peak 100 cfs (F)
Peak 1850 cfs (G)
Peak 180 cfs (H)
Peak 100 cfs (I)
Peak 2460 cfs (J & K)
Peak 200 cfs (L)
Peak 180 cfs (M)
Peak 1450 cfs (N)
Peak 1250 cfs (O)
Peak 410 cfs (P)

Turkey Flat Rd

Area 1

Area 2

Legend

- Inflow
- FLO-2D Channels
- Flow Paths (USGS)

Flow Depths, x(ft)

- 2.0' < x < 3.0'
- 3.0' < x
- FLO-2D Model Boundaries
- Existing Paved Road
- Existing Unpaved Road
- Existing Private Access Road
- Proposed 230kV Overhead
- Proposed Fence
- Proposed Project Access Road
- Substation
- O&M Facility
- Water Supply/Storage Area
- Solar Panel Development Area
- Project Area

3/1/2013 JN M:\Mdata\60\100865\GIS\MXD\Hydrology_Ex2to12_siteplan.mxd LS

elementpower

0 0.15 0.3 0.6 Miles

Source:

CALIFORNIA FLATS SOLAR

Area 1 FLO-2D Flow Depths

3/1/2013 • Exhibit 8

Runoff = 1,342.79 cfs @ 10.62 hrs, Volume= 348.671 af, Depth> 4.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type I 24-hr 6.6 inches Rainfall=6.60"

	Area (ac)	CN	Description
*	853.060	86	
	853.060		100.00% Pervious Area

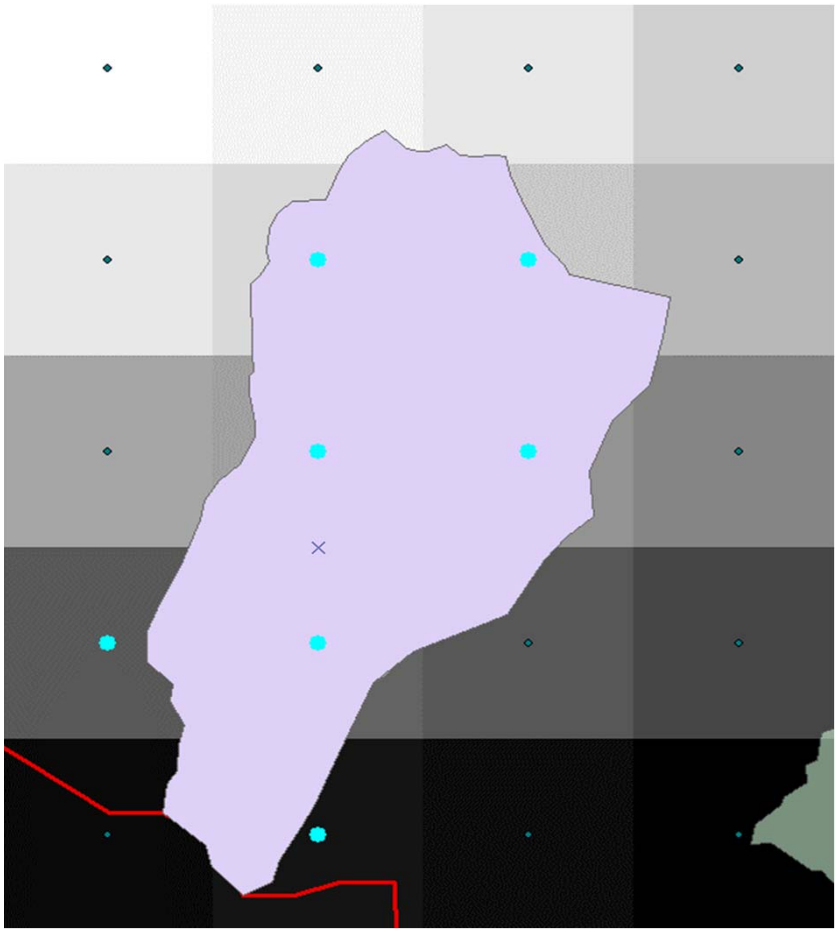
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
59.3	13,921	0.1300	3.91		

				Rainfall		
Watershed	Area	CN	CN x Area	Gage	Depth (inches)	Area x Depth
WA G25	274.91	87	23917	3	6.62	1819.9
WA G50	153.36	89	13649	3	6.62	1015.2
WA G100	57.86	86	4976	2	6	347.2
WA G200	215.45	86	18529	3	6.62	1426.3
WA G300	151.48	81	12270	1	5.63	852.8
Total Area	**853.06**	**Weighted Average CN**	**86**		**Weighted Average**	**6.4**

Slope

Flow length	13921	ft	Contour Interval	20.0
High Point	3360	ft	Length of Contour Lines	242096.0
Low point	1680	ft	Total Area	37159293.6
Elev Diff	1680	ft	Average Slope	0.13
Slope	0.12	ft/ft		

Rainfall 6.6 inches (NOAA average of grid)



y(s)/a = 2*K1*K2*K3*[(y1/a)^.35]*(Fr^.43)	y(s) = 2.2*K1*K2*a^0.65*[(2.6*V - Vcrit)/sqrt(g)]^0.7
	Assume critical velocity = 3.75 fps per Table 3.4 FHWA NHI 01-004

Hazard 2 — Flow depth > 1 foot OR D x V >= 6

Hazard 3 — Flow Depth > 2 feet OR D x V >= 9

	14	1.2	0	0.0	1.00	3.00	3.00	0.33	0.5	1.1	1.3	1.1	0.53
	16	1.3	4	0.3	1.00	4.00	4.00	0.33	0.5	1.1	1.3	1.1	0.70
	18	1.5	13	1.0	1.00	5.00	5.00	0.33	0.5	1.1	1.3	1.1	0.88
	19	1.6	19	1.6	1.00	6.00	6.00	0.33	0.5	1.1	1.3	1.1	1.06
	20	1.7	24	2.0	1.00	7.00	7.00	0.33	0.5	1.1	1.3	1.1	1.23
	21	1.8	30	2.5	1.00	8.00	8.00	0.33	0.5	1.1	1.3	1.1	1.41
	23	1.9	34	2.9	1.00	9.00	9.00	0.33	0.5	1.1	1.3	1.1	1.59
	24	2.0	39	3.2	1.00	10.00	10.00	0.33	0.5	1.1	1.3	1.1	1.76
	15	1.2	0	0.0	1.50	3.00	4.50	0.33	0.5	1.1	1.3	1.1	0.43
	17	1.4	4	0.3	1.50	4.00	6.00	0.33	0.5	1.1	1.3	1.1	0.58
	19	1.5	13	1.0	1.50	5.00	7.50	0.33	0.5	1.1	1.3	1.1	0.72
	20	1.7	19	1.6	1.50	6.00	9.00	0.33	0.5	1.1	1.3	1.1	0.86
	21	1.8	24	2.0	1.50	7.00	10.50	0.33	0.5	1.1	1.3	1.1	1.01
	23	1.9	30	2.5	1.50	8.00	12.00	0.33	0.5	1.1	1.3	1.1	1.15
	15	1.3	0	0.0	2.00	3.00	6.00	0.33	0.5	1.1	1.3	1.1	0.37
	17	1.5	4	0.3	2.00	4.00	8.00	0.33	0.5	1.1	1.3	1.1	0.50
	18	1.5	9	0.7	2.00	4.50	9.00	0.33	0.5	1.1	1.3	1.1	0.56
	19	1.6	13	1.0	2.00	5.00	10.00	0.33	0.5	1.1	1.3	1.1	0.62
	21	1.7	19	1.6	2.00	6.00	12.00	0.33	0.5	1.1	1.3	1.1	0.75