COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331

http://dpw.lacounty.gov

GAIL FARBER, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

ADOPTED

BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

33 April 7, 2015

PATRICK OGAWA
ACTING EXECUTIVE OFFICER

April 07, 2015

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

SET FOR HEARING: APRIL 28, 2015

Dear Supervisors:

RESOLUTION OF INTENTION AND INTRODUCTION OF AN ORDINANCE TO GRANT A PROPRIETARY ELECTRICAL TRANSMISSION FRANCHISE TO SIERRA SOLAR GREENWORKS LLC, IN THE COUNTY OF LOS ANGELES HIGHWAY KNOWN AS110TH STREET WEST FROM AVENUE I TO AVENUE J IN THE UNINCORPORATED COUNTY AREA OF THE ANTELOPE VALLEY (SUPERVISORIAL DISTRICT 5) (3 VOTES)

SUBJECT

This action is to grant an electrical transmission franchise to Sierra Solar Greenworks LLC, a Delaware Limited Liability Company, in the County of Los Angeles highway known as 110th Street West from Avenue I to Avenue J in the unincorporated County area of the Antelope Valley.

IT IS RECOMMENDED THAT THE BOARD:

1. Find that the grant of a proprietary electrical transmission franchise to Sierra Solar Greenworks LLC, a Delaware Limited Liability Company, is within the scope of the Final Environmental Impact Report certified by the Los Angeles County Regional Planning Commission on behalf of the County of Los Angeles.

2. Approve the Resolution of Intention to grant Sierra Solar Greenworks LLC, a Delaware Limited Liability Company, a proprietary electrical transmission franchise, set the matter for a public hearing on April 28, 2015, and instruct the Executive Officer of the Board to publish a Notice of Public Hearing pursuant to California Public Utilities Code Section 6232.

AFTER THE PUBLIC HEARING, IT IS RECOMMENDED THAT THE BOARD:

Adopt the ordinance to grant Sierra Solar Greenworks LLC, a Delaware Limited Liability Company, a proprietary electrical transmission franchise in the County of Los Angeles highway known as 110th Street West from Avenue I to Avenue J in the unincorporated County area of the Antelope Valley.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of the recommended actions is to approve a Resolution of Intention (Enclosure A), schedule a Public Hearing, and publish a Notice of Public Hearing as needed, to adopt an ordinance (Enclosure B) to grant Sierra Solar Greenworks LLC, a Delaware Limited Liability Company, a proprietary electrical transmission franchise. The franchise area is made up of the County of Los Angeles highway known as 110th Street West from Avenue I to Avenue J in the unincorporated County area of the Antelope Valley. The term of the franchise will be from May 28, 2015, to June 11, 2049.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs the provisions of Operational Effectiveness/Fiscal Sustainability (Goal 1) and Integrated Services Delivery (Goal 3). The revenue received from this transaction will help promote fiscal sustainability for the operation and maintenance of County highways. This transaction also allows for the provision of utility services through renewable sources.

FISCAL IMPACT/FINANCING

There will be no impact to the County General Fund.

Sierra Solar Greenworks LLC, a Delaware Limited Liability Company, has paid the County of Los Angeles a one-time granting fee of $5,000 to process the ordinance to grant the franchise and will pay the first year's franchise fee of $16,326, which will be deposited into the County Road Fund. Subsequent franchise fees will be adjusted annually per the Consumer Price Index for All Consumers.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

Project 5 Silver Sun Greenworks is one of six projects cumulatively called Silverado Power West, Los Angeles County Projects 1-6. Project 5 Silver Sun Greenworks consists of the construction, operation, and maintenance of a 20-megawatt, photovoltaic solar electric generating facility located on a 160-acre site in the vicinity of 120th Street West and Avenue I. Sierra Solar Greenworks LLC is the owner and operator of this project. The facilities to be installed consist of one communication cable and three direct burial conductors along and across 110th Street West from Avenue I to Avenue J in the unincorporated County area of the Antelope Valley. The Los Angeles County Regional Planning Commission approved a Conditional Use Permit for the project on June 11, 2014.

The franchise will commence on May 28, 2015, and terminate on June 11, 2049.

Division 3, Title 16, of the County Code authorizes the Board to grant a franchise associated with electrical transmission lines. County Counsel has reviewed the accompanying Resolution of Intention and Franchise Ordinance and approved them as to form.

Pursuant to Section 6232 of the California Public Utilities Code, the Executive Officer of the Board shall arrange for the publishing of a Notice of Public Hearing in a newspaper of general circulation in the County at least once within 15 days after the Board's adoption of the Resolution of Intention.

ENVIRONMENTAL DOCUMENTATION

On June 11, 2014, the Los Angeles County Regional Planning Commission, on behalf of the County, certified the Final Environmental Impact Report (FEIR); adopted the Findings of Fact and Mitigation Monitoring and Reporting Program; and approved the Conditional Use Permit for this project, subject to Conditions of Approval. The recommended action is within the scope of the previously certified FEIR.

Upon the Board's approval of the project, the Department of Public Works will file a Notice of Determination with the office of the Registrar-Recorder/County Clerk of the County (County Clerk) in accordance with Section 21152(a) of the California Public Resources Code and pay the required processing fee with the County Clerk.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

There will be no impact or adverse effect to any current services or future County projects.

CONCLUSION

Please return one adopted copy of this letter, the Resolution of Intention, and the Franchise Ordinance to the Department of Public Works, Survey/Mapping & Property Management Division. Retain the duplicate for your files.

Respectfully submitted,

Gail Farber

GAIL FARBER
Director

GF:SGS:mr

Enclosures

c: Auditor-Controller (Accounting Division-Asset Management)
Chief Executive Office (Rochelle Goff)
County Counsel
Executive Office

RESOLUTION OF INTENTION TO GRANT A PROPRIETARY ELECTRICAL TRANSMISSION FRANCHISE TO SIERRA SOLAR GREENWORKS LLC, A DELAWARE LIMITED LIABILITY COMPANY, BEGINNING ON MAY 28, 2015, AND TERMINATING ON JUNE 11, 2049

BE IT RESOLVED by the Board of Supervisors of the County of Los Angeles, State of California.

A. Sierra Solar Greenworks LLC, (Franchisee), has applied to the Board of Supervisors of the County of Los Angeles, State of California, for a franchise beginning on May 28, 2015, and terminating on June 11, 2049, to construct, operate, maintain, renew, repair, change the size of, and remove or abandon in place, any electrical transmission system, consisting of conduits, manholes, vaults, cables, wires, switches, communication circuits and other equipment, appliances, and appurtenances necessary and appropriate for cable circuit crossings, and for the purpose of conducting and transmitting electricity and electrical energy for light, heat, and power purposes, and for any and all other purposes for which electricity can be used for Franchisee's operations in connection with its solar-photovoltaic power generating facility in the vicinity of 120th Street West and West Avenue I, on, along, upon, in, under, or across those highways as defined in Section 16.36.080 of the Los Angeles County Code dedicated to public use within the unincorporated territory of the County of Los Angeles, State of California, identified as 110th Street West from West Avenue I to the center line of West Avenue J, as more particularly shown on Exhibit A, attached hereto and made a part hereof.

B. It is the intention of the Board of Supervisors of the County of Los Angeles, State of California, to grant the franchise applied for upon the terms and conditions herein mentioned. The Franchisee and its successors and assigns will, during the life of its franchise, comply with the terms of the franchise from the date of the granting of the franchise, and in the event such terms are not fulfilled, the franchise will be forfeited.

C. The franchise described in the Ordinance attached hereto as Exhibit A is a franchise for electric transmission purposes.

D. That on the 28th day of April 2015, at the hour of 9:30 a.m. of said day, a day not less than twenty (20) or more than sixty (60) days after the date of the passage of this Resolution of Intention, in the hearing room of the Board of Supervisors, Room 381, Kenneth Hahn Hall of Administration, 500 West Temple Street, Los Angeles, California 90012, all persons having any objection to the granting of the franchise hereinabove described may appear before the Board of Supervisors and be heard thereon.

E. The Executive Officer, Board of Supervisors, shall cause notice of said hearing to be published at least once within fifteen (15) days after adoption of this Resolution of Intention in a newspaper of general circulation published in the County of Los Angeles, State of California.

The foregoing resolution was on the 7th day of April, 2015, adopted by the Board of Supervisors of the County of Los Angeles, State of California, and ex officio the governing body of all other special assessment and taxing districts, agencies, and authorities for which said Board so acts.

APPROVED AS TO FORM:

MARK J. SALADINO
County Counsel

By _____
Deputy

PATRICK OGAWA
Acting Executive Officer of the
Board of Supervisors of the
County of Los Angeles

By _____
Deputy

OM:mr
P:\MPPUB\ADMIN\MARIA\BOARD LETTER RESOLUTION\SIERRA SOLAR RESOLUTION.DOC

Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

Richard J. Bruckner
Director

June 16, 2014

Attention: Ryan Galeria
Silver Sun Greenworks, LLC
2 Embarcadero Center
Suite 410
San Francisco, CA 94111

REGARDING: **PROJECT NO. R2011-00801 (Project 5)**
CONDITIONAL USE PERMIT NO. 201100072
120TH STREET WEST AND WEST AVENUE I, LANCASTER, CA
APN: 3267-003-001, 3267-003-002, 3267-003-003

The Regional Planning Commission, by its action of **June 11, 2014** has **APPROVED** the above-referenced project. Enclosed are the Commission's Findings and Conditions of Approval. Please carefully review each condition. This approval is not effective until the appeal period has ended and the required documents and applicable fees are submitted to the Regional Planning Department (see enclosed Affidavit of Acceptance Instructions).

The applicant or any other interested persons may appeal the Regional Planning Commission's decision. The appeal period for this project will end at 5:00 p.m. on **June 26, 2014.** Appeals must be delivered in person.

Appeals: **To file an appeal, please contact:**
Executive Office of the Board of Supervisors
Room 383, Kenneth Hahn Hall of Administration
500 West Temple Street, Los Angeles, CA 90012
(213) 974-1426

Upon completion of the appeal period, the notarized Affidavit of Acceptance and any applicable fees must be submitted to the planner assigned to your case. Please make an appointment to ensure that processing will be completed in a timely manner. Failure to submit these documents and applicable fees within 60 days will result in a referral to Zoning Enforcement for further action.

For questions or for additional information, please contact Mr. Kim Szalay of the Special Projects Section at (213) 974-876, or, by email at kszalay@planning.lacounty.gov. Our office hours are Monday through Thursday, 7:30 a.m. to 5:30 p.m. We are closed on Fridays.

Sincerely,
DEPARTMENT OF REGIONAL PLANNING
Richard J. Bruckner

Samuel Z. Dea by Kim K. Szalay

Samuel Z. Dea, Supervising Regional Planner
Special Projects Section

Enclosures: Findings, Conditions of Approval, Affidavit of Acceptance (Permittee's Completion)
c: Board of Supervisors; DPW (Building and Safety); Zoning Enforcement North Area

SZD:KKS

CC.060412

FINDINGS OF THE REGIONAL PLANNING COMMISSION
AND ORDER
COUNTY OF LOS ANGELES
PROJECT NO. R2011-00801-(5)
CONDITIONAL USE PERMIT NO. 201100072

PROJECT 5 SILVER SUN GREENWORKS

1. The Los Angeles County ("County") Regional Planning Commission ("Commission") conducted a duly-noticed public hearing on June 11, 2014, in the matter of Project No. R2011-00801-(5), consisting of Conditional Use Permit No. 2011000072 ("CUP"). The CUP is referred to as the "Project Permit." The Commission previously conducted a duly-noticed hearing on the Project Permit on May 7, 2014.

2. Project 5 Silver Sun Greenworks is one of six projects cumulatively called Silverado Power West, Los Angeles County Projects 1-6 ("Projects 1-6").

3. The County Hearing Examiner conducted a duly-noticed public hearing on February 1, 2014 to take testimony on the Draft Environmental Impact Report ("Draft EIR") for Projects 1-6.

4. The permittee, Silver Sun Greenworks, LLC ("Permittee"), requests the Project Permit to authorize a 20 Megawatt ("MW") solar photovoltaic electricity generation facility and construction of a water tank in the A-2-5 (Heavy Agriculture-five acres minimum required area) zone ("Project") on a property located on 160 acres near the intersection of 120th Street West and West Avenue I in the West Antelope Valley within unincorporated Los Angeles County ("Project Site") pursuant to the Los Angeles County Zoning Ordinance ("County Code") Section 22.24.150.

5. The Project Site is 160 gross acres in size and consists of three legal lots. The Project Site is vacant and rectangular in shape with flat, previously tilled topography.

6. The Project Site is located in the Antelope Valley West Zoned District and is currently zoned A-2-5.

7. The Project Site is located within the N-1 (Non-Urban 1) land use category of the Antelope Valley Areawide General Plan Land Use Policy Map.

8. Surrounding Zoning within a 500-foot radius includes:

   North: A-2-2
   South: A-2-5
   East: A-1-2
   West: A-2-5

9. Surrounding land uses within a 500-foot radius include:

   North: N-1

South: N-1
East: N-1
West: N-1

10. The Project Site is in an undeveloped state and little to no farming or other permitted activities have taken place at the site in recent times.

11. The site plan for the Project depicts a required 20-foot setback from the solar arrays to the subject Project's property line, which setback may also include a vegetative buffer 10 feet in width for locations across from sensitive uses. An additional required 10-foot "slope easement" would be dedicated to the County as part of the public rights-of-way around the project. The Project Site would include a perimeter safety and security fence eight feet in height including three-strand barbed wire at the top to protect the public from high voltage electricity and to protect the facility from intrusion. Construction internal to the site would be comprised of solar panels set in arrays with associated inverters, transformers, and one internal substation, with access through the site by compacted interior dirt roads. All of the subject property, with the exception of above-mentioned buffers, would be used for construction of arrays and appurtenant facilities to generate solar photovoltaic electricity. Interior drainage basins are required to insure that stormwater flows match pre-existing conditions as it flows through the subject site. The electricity generated would be transmitted through underground transmission lines to tie in to the electrical grid using existing transmission lines or through additional lines limited in length, to the nearest point of connection as depicted on the site plan. The Project Site would include the following elements:

- PV modules
- PV module mounting system
- Balance of system and electrical boxes (e.g., combiner boxes, electrical disconnects)
- One substation
- Electrical inverters and transformers including service parking areas
- Electrical AC collection system, including switchgear
- Data monitoring equipment
- Generation tie line
- Access roads and chain link perimeter security fencing
- Mobile sanitation and drinking water facilities
- 10,000 gallon fire-flow water supply tank
- No permanent operations or other buildings are proposed.

12. The Project Site is accessible via West Avenue I and 115th Street West. Primary access to the Project Site will be via both an entrance/exit on West Avenue I and on 115th Street West.

13. The Project does not propose permanent buildings such as operations and maintenance buildings, therefore the Project only requires parking spaces for

operational service vehicles. Construction parking is required to be located at least 1,000 feet from sensitive receptors such as private residences.

14. From 2011 to 2013, prior to the Commission's public hearing on the Project, the permittee performed public outreach and provided documentation to substantiate efforts of working with the community. Meetings included development of dust mitigation strategies with local organizations to mitigate Project-related fugitive dust, and meetings with Town Councils and residents to receive comments and concerns and provide information regarding Project proposals related to their comments.

15. The Department of Public Works provided Project conditions for water supply, drainage and grading, road improvements. The Fire Department provided Project conditions for water storage facilities, access, and special requirements for vegetation management and fire control, electrical equipment, and other specialized fire protection measures. The Department of Public Health provided Project conditions for potable water supply, wastewater disposal, and noise. The Department of Parks and Recreation had no other requirements for this Project 5. All of these conditions from various departments have been included in conditions of approval.

16. The Department of Regional Planning, on behalf of the County as lead agency pursuant to the California Environmental Quality Act (California Public Resources Code section 21000 et seq.) ("CEQA"), conducted an Initial Study for the proposed Project and determined that an environmental impact report ("EIR") was necessary. The Department sent to agencies a Notice of Preparation for the EIR. The Department conducted a Scoping Meeting on February 1, 2014 and received comments from the Antelope Valley West community regarding concerns over air quality, noise, traffic safety, water supply, and visual aesthetics. A Draft EIR was prepared which evaluated the potential project-specific and cumulative environmental impacts of the Project and related projects. The Draft EIR was published for public comment on January 6, 2014 and the comment period closed on February 19, 2014. The mitigation measures necessary to ensure the Project will not have a significant effect on the environment are contained in the Mitigation Monitoring and Reporting Program ("MMRP") and the CEQA Findings of Fact, have been prepared for this project. After the close of the comment period for the Draft EIR, a Final EIR was prepared in accordance with section 15089 and 15132 of the CEQA Guidelines. The Final EIR includes the Draft EIR, corrections to the Draft EIR, an introduction to the applicable CEQA process, responses to all timely public comments on the Draft EIR, the MMRP, CEQA Findings of Fact, and referenced appendices.

17. Pursuant to the provisions of sections 22.60.174 and 22.60.175 of the County Code, the community was appropriately notified of the Project's public hearings by mail, newspaper, and property posting. Additional notification was made available on County's website.

18. Twenty members of the public provided additional written comments regarding Projects 1-6 during the 30-day comment period two weeks prior to the Planning

Commission public hearing, and received up to the time of preparation of this report. All other comments received are forwarded to the Planning Commission up to the day of the hearing.

19. No comments specifically in favor of the Projects were received at the time of preparation of this report.

20. Eighteen comments opposed to the Projects were received at the time of preparation of this report including comments requesting more time to review Project documents, air quality and noise impacts to adjacent residences during construction, health concerns regarding fugitive dust, construction safety, traffic safety related to Project 6 located adjacent to SR 138, amount of mitigation lands, impacts to views, plants, and animals, and requests for the Planning Commission to hold its hearing near the Projects in the Antelope Valley.

21. Two comments neither in favor nor opposed to the Projects were received at the time of preparation of this report including comments about Projects 1-6 public review processes and suggesting alternatives to Project 2 site regarding impacts to flowers.

22. The Commission held a duly-noticed public hearing on the Project Permit on June 11, 2014. The Commission heard a presentation from Regional Planning staff and testimony from representatives of the permittee and members of the public. The permittee testified that the Project will contribute to renewable energy goals of the State and the County, provide construction jobs, and have minimal impact on the local community. Project opponents expressed to the Commission in written correspondence and oral communications regarding the Project's potential negative effects on local residents' health during construction due to fugitive dust, the visual and aesthetically unpleasing aspects of the project, and the potential of the project to create safety and noise concerns during construction.

    After hearing all testimony, the Commission closed the public hearing, adopted the EIR and MMRP, and approved the Project Permit with the change to Condition 25.d requiring deletion of 25.d.v.

23. The Commission finds that the Project is consistent with the County of Los Angeles General Plan ("General Plan") and the Antelope Valley Areawide General Plan ("Areawide Plan") N1 (Non-Urban 1) land use designation applicable to the Project. The Project meets the definition of "utility and communication installations" referenced in the listing of public and semi-public uses in the General Plan (Page LU-15) and non-urban non-residential land uses allowed in remote areas designated Non-Urban 1 in the Areawide Plan (page VI-5).

24. The Commission finds that the Project is consistent with the applicable Policies of each of the Elements of the General Plan as set forth below.

25. The Commission finds that the Project is consistent with the policies of the Conservation and Open Space Element which includes encouraging support for

renewable energy such as solar energy generation, encouraging support for cost-saving incentives for such alternative energy sources, avoiding development in Significant Ecological Areas, and protecting panoramic views through low-profile development. Project 5 is not within an SEA and is a low-profile development.

26. The Commission finds that the Project is consistent with the policies of the Land Use Element requiring planned developments to avoid land use conflicts with neighboring activities. Though development of the Project may have a temporary negative effect on some adjacent residential properties during construction, long term operations of the Project is passive in relationship to neighboring land uses.

27. The Commission finds that the Project is consistent with the policies of Economic Development Element encouraging the location of renewable energy generation projects within the unincorporated areas of the County and helping meet State mandates for renewable energy production.

28. The Commission finds that the Project is consistent with the policies of Circulation, Housing, Noise, Safety, and Public Facilities Elements. The Project makes no significant impacts to traffic, proposes no housing, requires no additional public facilities, and has no significant impacts regarding noise and safety considerations during construction and operation of the Project.

29. The Commission finds that the Project is consistent with the applicable policies of each of the Elements of the Areawide Plan as set forth below.

30. The Commission finds that the Project is consistent with the applicable policies of the Land Use Element, Balance of Development in relationship to existing development surrounding the Project and in relationship to cumulative related projects proposed in the surrounding area within a five-mile radius, as follows. Twenty-two solar projects previously proposed in the unincorporated County have withdrawn applications for conditional use permits. Only a few applications for solar projects remain in process in the County. The Project does not create a situation causing an over-balance of solar development in the Antelope Valley.

31. The Commission finds that the Project is consistent with the applicable policies of the Land Use Element, Hillside Management, as follows. The Project has no hillside slopes in excess of 25 percent.

32. The Commission finds that the Project is consistent with the applicable policies of the Land Use Element, Floodplain Management, as follows. The Project is not located in a Floodplain or Flood Zone.

33. The Commission finds that the Project is consistent with the applicable policies of the Land Use Element, Sensitive Land Uses, as follows. The Project avoids disrupting highly environmentally sensitive lands by using previously disturbed properties and by maintaining natural flow of stormwaters through the Project Site. Groundwater from the adjudicated basin is left untouched as out-of-basin or recycled water supply is proposed for use during construction and operations.

34. The Commission finds that the Project is consistent with the applicable policies of the Land Use Element, Agricultural Lands, as follows. The Project is not currently farmed but is located in an Agricultural Opportunity Area and would not interfere with any adjacent or nearby farm operations.

35. The Commission finds that the Project is consistent with the applicable policies of the Land Use Element, Resource Conservation, as follows. The Project does not impact groundwater, would not produce green house gases during operations, and would generate electrical energy rather than use it.

36. The Commission finds that the Project is consistent with the applicable policies of the Community Revitalization, Community Design, and Human Resources Elements, as follows. The Project is consistent with Community Identity/Aesthetics provisions of the Areawide Plan. The Project would locate all electrical transmission lines underground and connect to existing above ground or undergound facilities adjacent to the Project Site within unincorporated County jurisdiction. Transmission lines located in the City of Lancaster would be located either above ground or underground. The Project will provide additional screening landscaping along certain of the Project's boundaries as depicted in the Project's site plans.

37. The Commission finds that the Project is consistent with the applicable policies of the Community Revitalization, Community Design, and Human Resources Elements, as follows. The Project is consistent with Employment provisions of the Areawide Plan. The Project will provide construction employment opportunities for residences of the Antelope Valley during both construction and operation of the Project.

38. The Commission finds that the Project is consistent with the applicable policies of the Environmental Resource Management Element, Natural Resources, as follows. The Project is consistent with policies regarding resource management as cultural, archaeological, and paleontological resources are protected by Project resource protection requirements. Air quality protections are required for construction of the Project to protect adjacent uses from fugitive dust and other construction emissions.

39. The Commission finds that the Project is consistent with the applicable policies of the Environmental Resource Management Element, Trails, as follows. The Project is not required to provide a public trail easement.

40. The Commission finds that the Project is consistent with the applicable policies of the Noise Abatement Element, Aviation-related Noise and Construction and Operational Noise, as follows. The Project is not located within a sensitive aviation-related noise contour and all construction noise impacts are mitigated to be below County noise standards.

41. The Commission finds that the Project is consistent with the applicable policies of the Seismic and Public Safety Elements, as follows. All arrays, inverters, transformers, substations, transmission lines, and other equipment must meet building and safety standards for earthquake and fire protections. Perimeter security fencing is required for public safety and property protection purposes.

42. The Commission finds that the Project is consistent with the applicable policies of the Housing, Circulation, Public Services and Facilities, Governmental Services, and Energy Conservation Elements, as follows. The Project proposes no housing, makes no significant impacts to traffic, public services, governmental services and energy conservation. As renewable a energy generation Project, the Project would provide a large scale reduction in energy used to produce electricity compared to a traditional fossil fuel energy generation facility of similar output.

43. The Commission finds that the Project is consistent with the Areawide Plan Non-Residential Uses in Non-Urban Areas Location, Access, and Design Guidelines as set forth below.

44. The Commission finds that the Project is consistent with the Location Guidelines of the Areawide Plan as follows. The Project is located on previously disturbed land surrounded by mostly vacant properties with one development located across from the Project Site. Some agricultural uses are in the general vicinity. Proposed daily operations are considered relatively passive similar to existing surrounding uses. Existing primary roadways would be retained for maintaining existing circulation patterns in the area. Existing utilities, other public services, and infrastructure are available to the Project. The Project provides native landscaping and open space buffering along significant adjacent roadways as visual mitigation for public passersby. The relatively flat topography, distance from known active faults, and previously farmed and disturbed property, make the location suitable for the proposed photovoltaic solar electricity generation development.

45. The Commission finds that primary access is consistent with access guidelines of the Areawide Plan as follows. The Project provides primary access from existing adjacent streets having low traffic volumes. Transport of materials during construction of the Project largely avoids existing residential communities.

46. The Commission finds that the design of the Project is consistent with the Design Guidelines of the Areawide Plan as follows. Solar panel arrays are to be of the low-profile fixed tilt or tracking variety which will not block views to the Tehachapi Mountains to the north and other vistas to the south, east or west from the nearby roadways. Additionally, native drought-tolerant shrubs, drought tolerant trees, and other drought-tolerant plantings are proposed to screen the frontages of solar panel development along sensitive frontages on this Project. Using as natural a placement of plantings as possible and temporary drip systems to establish the plantings are proposed. Perimeter chain link fencing is proposed for security and safety purposes. No outdoor advertising is proposed nor permitted. Minimal security lighting shielded downward is proposed which will minimize visual impacts to neighboring properties and wildlife.

47. The Commission finds that the Project is consistent with the applicable zoning designation for the Project Site. The Project complies with Section 22.24.150 of the County Code, Uses Subject to Permits, which lists the following use as permitted provided a Conditional Use Permit is obtained, "Electric distribution substations, electric transmission substations and generating plants, including microwave

facilities used in conjunction with any one thereof." The Project is a photovoltaic solar power electricity generation plant with distribution substation and transmission lines and complies with the applicable regulations of the County Code. The Project meets zoning regulations for yard requirements, fences and walls as modified by the conditional use permit, outside storage, low-impact development, green building, drought-tolerant landscaping, and parking requirements of one parking space per two employees during operations.

48. The Commission finds that the Project is compatible with the surrounding area in which the Project is located, as follows. The Project location uses previously disturbed land, is located near existing infrastructure such as existing transmission lines and/or substation facilities and public rights-of-way, is located away from highly populated areas and is in areas where impacts to threatened or endangered species and/or their habitats is minimized.

49. The Commission finds that in addition to the information required in the permit application, the applicant substantiates the burden of proof for a conditional use permit found in Section 22.56.040 of the Los Angeles County Code subject to compliance with the conditions of approval including all associated mitigation measures in the MMRP.

50. The Commission finds that the requested use at the location proposed will not adversely affect the health, peace, comfort or welfare of persons residing or working in the surrounding area, as follows. The Project is surrounded predominantly by vacant land and several residences or similar developments. The Project is an operationally passive Project that generates minor impacts which can be mitigated with no remaining significant environmental impacts on the surrounding area.

51. The Commission finds that the requested use at the location proposed will not be materially detrimental to the use, enjoyment or valuation of property of other persons located in the vicinity of the site, as follows. The Draft EIR concludes that the Project's mitigation measures would reduce any environmental impacts to a less than significant level, and therefore that the construction and operation of the Project would not limit, hinder or denigrate the use of properties in the vicinity of the Project.

52. The Commission finds that the requested use at the subject location will not jeopardize, endanger or otherwise constitute a menace to the public health, safety or general welfare, as follows. Since areas of concern regarding the Project are mitigated to a level of no significant impact on the environment. Additionally, the Project requires various measures such as a fire-flow water tank for each site, perimeter fencing, buffer areas, and limited night security lighting to minimize the potential of hazardous situations arising from the Project. Additional dust control measures are required in the conditions of approval to further reduce health and visual effects of fugitive dust.

53. The Commission finds that the proposed site is adequate in size and shape to accommodate the yards, walls, fences, parking and loading facilities, landscaping and other development features prescribed in this Title 22, or as is otherwise

required or modified in order to integrate said use with the uses in the surrounding area, as follows. The Project provides sufficient space including proposals to maximize buffering and safety in relationship to surrounding properties.

54. The Commission finds that the proposed site is adequately served by highways or streets of sufficient width and improved as necessary to carry the kind and quantity of traffic such use would generate, as follows. The Project requires minimal long-term use of roads for ongoing operations, therefore the current access and road conditions require minimal improvements to carry on the proposed use. Any damage to existing or improved local roadways caused by project construction and/or operations is required to be repaired at the applicant's expense as required by mitigation measures and conditions of approval.

55. The Commission finds that the proposed site is adequately served by other public or private service facilities as are required, as follows. All required and needed public and private service facilities would be met for the Project.

56. The Commission finds that to ensure continued compatibility between the Project and the surrounding land uses, it is necessary to limit the conditional use permit to 35 years.

57. The Commission finds that pursuant to sections 22.60.174 and 22.60.175 of the County Code, the community was properly notified of the public hearing by mail, newspaper, and property posting. Additionally, the Project was noticed and case materials were available on Regional Planning's website and at libraries located in the vicinity of the Antelope Valley West community. On April 3, 2014, a total of 611 Notices of Public Hearing were mailed to all property owners as identified on the County Assessor's record within a 1,000-foot radius from the Project Site, as well as 70 notices to those on the courtesy mailing list for the Antelope Valley West Zoned District and to any additional interested parties.

58. The Commission finds that the permittee is subject to payment of the California Department of Fish and Wildlife fees related to the Project's effect on wildlife resources pursuant to section 711.4 of the California Fish and Game Code.

59. The Commission finds that the Final EIR for the Project was prepared in accordance with CEQA, the State CEQA Guidelines, and the County's Environmental Document Reporting Procedures and Guidelines. The Commission reviewed and considered the Final EIR, along with its associated MMRP, and Findings of Fact, and finds that they reflect the independent judgment of the Commission. The Findings of Fact are incorporated herein by this reference, as set forth in full.

60. The Commission finds that the MMRP for the Project is consistent with the conclusions and recommendations of the Final EIR and that the MMRP's requirements are incorporated into the conditions of approval for the Project.

61. The Commission finds that the MMRP, prepared in conjunction with the Final EIR, identifies in detail how compliance with its measures will mitigate or avoid potential adverse impacts to the environment from the Project.

62. The location of the documents and other materials constituting the record of proceedings upon which the Commission's decision is based in this matter is at the Los Angeles County Department of Regional Planning, 13th Floor, Hall of Records, 320 West Temple Street, Los Angeles, California 90012. The custodian of such documents and materials shall be the Section Head of the Special Projects Section, Department of Regional Planning.

BASED ON THE FOREGOING, THE REGIONAL PLANNING CONCLUDES THAT:

Regarding the Conditional Use Permit:

A. the proposed use with the attached conditions will be consistent with the adopted General Plan;

B. the proposed use at the site will not adversely affect the health, peace, comfort or welfare of persons residing or working in the surrounding area, will not be materially detrimental to the use, enjoyment or valuation of property of other persons located in the vicinity of the site, and will not jeopardize, endanger or otherwise constitute a menace to the public health, safety or general welfare;

C. the proposed site is adequate in size and shape to accommodate the yards, walls, fences, parking and loading facilities, landscaping and other development features prescribed in this Title 22, or as is otherwise required in order to integrate said use with the uses in the surrounding area; and

D. the proposed site is adequately served by highways or streets of sufficient width and improved as necessary to carry the kind and quantity of traffic such use would generate, and by other public or private service facilities as are required.

THEREFORE, THE REGIONAL PLANNING COMMISSION:

1. Certifies that the Final EIR for the project was completed in compliance with CEQA and the State and County CEQA Guidelines related thereto; certifies that it independently reviewed and considered the information contained in the Final EIR, and that the Final EIR reflects the independent judgment and analysis of the Commission as to the environmental consequences of the Project; adopts the Findings of Fact and the MMRP; and finds that the MMRP is adequately designed to ensure compliance with the mitigation measures during the Project implementation.

2. Approves Conditional Use Permit No. 201100072, subject to the attached conditions.

ACTION DATE: June 11, 2014

VOTE: 4:0:0:1

Concurring: Shell, Louie, Pedersen, Modugno

Dissenting: 0

Abstaining: 0

Absent: Valadez

Attachment: CUP Conditions
c: Each Commissioner, Zoning Enforcement, Building and Safety

SZD:KKS
6/16/14

Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

Richard J. Bruckner
Director

June 16, 2014

TO: Letter to File
Silverado Power, West Los Angeles County Project 5

FROM: Kim K. Szalay
Principal Planner

SUBJECT: PROJECT NO. R2011-00801-(5), CUP NO. 201100072, PROJECT 5 CONDITIONS INTERPRETATION

The following CUP conditions for Project 5 are interpreted as follows:

Condition 34 – The phrase in this condition, "Permittee shall agree to and shall retire any development rights", is interpreted to take effect at that time when Permittee has ownership or other legal control of the subject property in order to use the subject approved permit. If the subject permit is not used within the permitted time frame or withdrawn prior to use of the permit, the subject conditional use permit would not apply to future owners.

Condition 36 – This condition is interpreted to apply to Project 5 water use while the Antelope Valley Water Basin is under the water adjudication process up to the length of the life of the permit. Upon settlement of the adjudication process, water use by Project 5 would be subject to the water rights then in effect.

SZD:KKS

CONDITIONS OF APPROVAL
COUNTY OF LOS ANGELES
PROJECT NO. R2011-00801-(5)
CONDITIONAL USE PERMIT NO. 201100072

PROJECT 5 SILVER SUN GREENWORKS

PROJECT DESCRIPTION

Project 5 is located on a 160-acre site near the intersection of 120th Street West and West Avenue I within unincorporated Antelope Valley in Los Angeles County and would produce 20 Megawatts of electricity. The Project is comprised of an unmanned utility scale photovoltaic electricity generation facility which would employ a series of photovoltaic module arrays to convert sunlight into electrical energy using fixed-tilt or tracker mounting supports, to convert sunlight into electrical energy without the use of heat transfer fluid or cooling water. The facilities would deliver the electrical output to the existing regional transmission system from one on-site substation through an underground generation-tie transmission line except where portions of transmission lines are located within the City of Lancaster which lines may be constructed above ground or underground. A 10,000 gallon fire-flow water supply tank would be located on-site. No permanent operations building or other buildings are proposed on the Project site. Construction would generally take place during normal daylight hours. The Project would be operated for an estimated 35 years. The Project is subject to the following conditions of approval:

GENERAL CONDITIONS

1. Unless otherwise apparent from the context, the term "permittee" shall include the applicant, owner of the property, and any other person, corporation, or other entity making use of this grant.

2. This grant shall not be effective for any purpose until Permittee, and the owner of the subject property if other than Permittee, have filed at the office of the Los Angeles County ("County") Department of Regional Planning ("Regional Planning") their affidavit stating that they are aware of and agree to accept all of the conditions of this grant, and that the conditions of the grant have been recorded as required by **Condition No. 7**, and until all required monies have been paid pursuant to **Condition Nos. 10**, **11**, and **14**. Notwithstanding the foregoing, this **Condition No. 2** and **Condition Nos. 4**, **5**, **9**, and **11** shall be effective immediately upon the date of final approval of this grant by the County.

3. Unless otherwise apparent from the context, the term "date of final approval" shall mean the date the County's action becomes effective pursuant to Section 22.60.260 of the County Code.

4. Permittee shall defend, indemnify, and hold harmless the County, its agents, officers, and employees from any claim, action, or proceeding against the County or its agents, officers, or employees to attack, set aside, void, or annul this permit approval, which action is brought within the applicable time period of Government

Code Section 65009 or any other applicable limitations period. The County shall promptly notify Permittee of any claim, action, or proceeding and the County shall reasonably cooperate in the defense. If the County fails to promptly notify Permittee of any claim, action, or proceeding, or if the County fails to cooperate reasonably in the defense, Permittee shall not thereafter be responsible to defend, indemnify, or hold harmless the County.

5. In the event that any claim, action, or proceeding as described above is filed against the County, Permittee shall within ten days of the filing make an initial deposit with Regional Planning in the amount of up to $5,000.00, from which actual costs and expenses shall be billed and deducted for the purpose of defraying the costs or expenses involved in Regional Planning's cooperation in the defense, including but not limited to, depositions, testimony, and other assistance provided to permittee or permittee's counsel.

   If during the litigation process, actual costs or expenses incurred reach 80 percent of the amount on deposit, Permittee shall deposit additional funds sufficient to bring the balance up to the amount of $5,000.00. There is no limit to the number of supplemental deposits that may be required prior to completion of the litigation.

   At the sole discretion of Permittee, the amount of an initial or any supplemental deposit may exceed the minimum amounts defined herein. Additionally, the cost for collection and duplication of records and other related documents shall be paid by Permittee according to County Code Section 2.170.010.

6. If any material provision of this grant is held or declared to be invalid by a court of competent jurisdiction, the permit shall be void and the privileges granted hereunder shall lapse.

7. Prior to the use of this grant, Permittee, or the owner of the subject property if other than Permittee, shall record the terms and conditions of the grant in the office of the County Registrar-Recorder/County Clerk ("Recorder"). In addition, upon any transfer or lease of the property during the term of this grant, Permittee, or the owner of the subject property if other than Permittee, shall promptly provide a copy of the grant and its conditions to the transferee or lessee of the subject property.

8. This grant shall terminate on June 11, 2049, 35 years from the date of approval. Entitlement to use of the property thereafter shall be subject to the regulations then in effect. If Permittee intends to continue operations after such date, whether or not Permittee proposes any modifications to the use at that time, Permittee shall file a new Conditional Use Permit application with Regional Planning, or shall otherwise comply with the applicable requirements at that time. Such application shall be filed at least six (6) months prior to the expiration date of this grant and shall be accompanied by the required fee. In the event that Permittee seeks to discontinue or otherwise change the use, notice is hereby given that the use of such property may require additional or different permits and would be subject to the then-applicable regulations.

9. This grant shall expire unless used within two (2) years from the date of final approval of the grant. A single one-year time extension may be requested in writing and with the payment of the applicable fee prior to such expiration date.

10. The subject property shall be maintained and operated in full compliance with the conditions of this grant and any law, statute, ordinance, or other regulation applicable to any development or activity on the subject property. Failure of Permittee to cease any development or activity not in full compliance shall be a violation of these conditions. Inspections shall be made to ensure compliance with the conditions of this grant as well as to ensure that any development undertaken on the subject property is in accordance with the approved site plan on file. Within 60 days after final approval of this grant Permittee shall deposit with the County the sum of $3,600.00. The deposit shall be placed in a performance fund, which shall be used exclusively to compensate Regional Planning for all expenses incurred while inspecting the premises to determine Permittee's compliance with the conditions of approval. The fund provides for 18 (first two years plus 16 biennial - every other year) inspections. Inspections shall be unannounced.

    If additional inspections are required to ensure compliance with the conditions of this grant, or if any inspection discloses that the subject property is being used in violation of any one of the conditions of this grant, Permittee shall be financially responsible and shall reimburse Regional Planning for all additional enforcement efforts necessary to bring the subject property into compliance. The amount charged for additional inspections shall be $200.00 per inspection, or the current recovery cost at the time any additional inspections are required, whichever is greater.

11. Within three (3) days of the date of final approval of this grant, Permittee shall remit processing fees payable to the County in connection with the filing and posting of a Notice of Determination ("NOD") for this project and its entitlements in compliance with Section 21152 of the Public Resources Code. Unless a Certificate of Exemption is issued by the California Department of Fish and Wildlife pursuant to Section 711.4 of the California Fish and Game Code, Permittee shall pay the fees in effect at the time of the filing of the NOD, as provided for in Section 711.4 of the Fish and Game Code, currently $3,104.75 ($3,029.75 for an Environmental Impact Report plus $75.00 processing fee.) No land use project subject to this requirement is final, vested or operative until the fee is paid.

12. Permittee shall comply with all mitigation measures identified in the Mitigation Monitoring and Reporting Program ("MMRP"), which are incorporated by this reference as if set forth fully herein.

13. Within thirty (30) days of the date of final approval of the grant by the County, Permittee shall record a covenant and agreement, which attaches the MMRP and agrees to comply with the mitigation measures imposed by the Environmental Impact Report for this project, in the office of the Recorder. Prior to recordation of the covenant, Permittee shall submit a draft copy of the covenant and agreement to Regional Planning for review and approval. As a means of ensuring the

effectiveness of the mitigation measures, Permittee shall submit annual mitigation monitoring reports to Regional Planning for approval or as required. The reports shall describe the status of Permittee's compliance with the required mitigation measures.

14. Permittee shall deposit an initial sum of $6,000.00 with Regional Planning within thirty (30) days of the date of final approval of this grant to defray the cost of reviewing and verifying the information contained in the reports required by the MMRP. Permittee shall replenish the mitigation monitoring account if necessary until all mitigation measures have been implemented and completed.

15. Notice is hereby given that any person violating a provision of this grant is guilty of a misdemeanor. Notice is further given that the Regional Planning Commission ("Commission") or a Hearing Officer may, after conducting a public hearing, revoke or modify this grant, if the Commission or Hearing Officer finds that these conditions have been violated or that this grant has been exercised so as to be detrimental to the public's health or safety or so as to be a nuisance, or as otherwise authorized pursuant to Chapter 22.56, Part 13 of the County Code.

16. All development pursuant to this grant must be kept in full compliance with the County Fire Code to the satisfaction of said department.

17. All development pursuant to this grant shall conform with the requirements of the County Department of Public Works to the satisfaction of said department.

18. All development pursuant to this grant shall comply with the requirements of Title 22 of the County Code and of the specific zoning of the subject property, unless specifically modified by this grant, as set forth in these conditions, including the approved Exhibit "A," or a revised Exhibit "A" approved by the Director of Regional Planning ("Director").

19. Permittee shall maintain the subject property in a neat and orderly fashion. Permittee shall maintain free of litter all areas of the premises over which Permittee has control.

20. All structures, walls and fences open to public view shall remain free of graffiti or other extraneous markings, drawings, or signage that was not approved by Regional Planning. These shall include any of the above that do not directly relate to the business being operated on the premises or that do not provide pertinent information about said premises. The only exceptions shall be seasonal decorations or signage provided under the auspices of a civic or non-profit organization.

    In the event of graffiti or other extraneous markings occurring, Permittee shall remove or cover said markings, drawings, or signage within 24 hours of notification of such occurrence, weather permitting. Paint utilized in covering such markings shall be of a color that matches, as closely as possible, the color of the adjacent surfaces.

21. The subject property shall be developed and maintained in substantial compliance with the plans marked Exhibit "A." If changes to any of the plans marked Exhibit "A" are required as a result of instruction given at the public hearing, three (3) copies of a modified Exhibit "A" shall be submitted to Regional Planning within 60 days of the approval date.

22. In the event that subsequent revisions to the approved Exhibit "A" are submitted, Permittee shall submit three (3) copies of the proposed plans to the Director for review and approval. All revised plans must substantially conform to the originally approved Exhibit "A". All revised plans must be accompanied by the written authorization of the property owner(s) and applicable fee for such revision.

PERMIT SPECIFIC CONDITIONS - CONDITIONAL USE PERMIT

23. Prior to obtaining any grading or building permit, Permittee shall provide to the County a decommissioning plan ("Decommissioning Plan") in connection with any and/or all of the terminating events described in **Condition No. 25**, which Plan shall include, at a minimum, a detailed plan for decommissioning and deconstructing the facility, and for restoration of the site (collectively referred to as "decommissioning"). The Decommissioning Plan shall be developed to the satisfaction of the Director and the Director of Public Works and subject to their review and approval.

    The Decommissioning Plan shall provide for, including, but not be limited to, the following:

    a. Removal of solar panel structures and all appurtenant above-ground equipment;

    b. Removal of on-site overhead poles and above-ground electricity lines;

    c. Removal of permanent above-ground transmission lines and poles located in the public right-of-way if determined not usable by Public Works and/or any other applicable public or private utility. Otherwise such transmission lines and poles shall be allowed to remain;

    d. Removal of the on-site substation, if owned by Permittee. If in the future a public or private utility assumes ownership of the substation, such substation may remain on site to be used as part of the utility service;

    e. Restoration of any disturbed soil and revegetation of the site to its pre-construction condition, with native vegetation similar to the vegetation in the surrounding vicinity;

    f. Restoration or reclamation of project roads to their pre-construction condition unless the then-existing owner of the site elects to retain the improved roads for access throughout the site;

g. Documentation of the pre-construction condition of the project site, including, but not be limited to, a photographic record; and

h. Details of the performance and financial assurance guarantees described in **Condition No. 24**, explaining the amounts and schedule for the provision of such guarantees.

24. Prior to obtaining any building permits, Permittee shall provide to the County, to the satisfaction of the Director and the Director of Public Works, performance and financial assurance guarantees in an amount sufficient to ensure the performance of the approved Decommissioning Plan, as described in **Condition No. 23**. In this connection, Permittee shall be solely responsible for the costs and expenses associated with decommissioning the site after any of the terminating events described in **Condition No. 25**. In the event that the performance and financial assurance guarantees are not sufficient to fully compensate the County for the cost and expense of decommissioning the site, Permittee shall be responsible for compensating the County for any shortfall. In determining the sufficiency of the performance and financial assurance guarantees, the residual value of the solar panels, support structures, and other salvageable equipment (collectively "Salvageable Property") shall be considered.

With respect to the performance and financial assurance guarantees, the following requirements shall apply:

a. Permittee shall ensure that such guarantees are detailed in the approved Decommissioning Plan to the satisfaction of the Director and the Director of Public Works, and that such Decommissioning Plan shall explain the amounts and schedule for the provision of such guarantees;

b. Permittee shall provide a report to the Director every five years after the date of final approval of this grant to confirm that the performance and financial assurance guarantees are sufficient to ensure performance and implementation of the Decommissioning Plan. The report shall be subject to review and approval by the Director and the Director of Public Works particularly as to whether the performance and financial assurance guarantees are adequate to meet existing conditions at the time of the report;

A decommissioning pro forma summarizing the residual value of the Salvageable Property shall be included in the report. The pro forma shall include, at a minimum, the expected revenue from all Salvageable Property, as defined in this **Condition No. 24**, the then-current cost of decommissioning the site, as required by the approved Decommissioning Plan, and the then-current value of any performance and financial assurance guarantees that have been provided as of the date of such report. In the event it is determined that the performance and financial assurance guarantees are insufficient to perform the decommissioning of the site as required by the approved Decommissioning Plan, Permittee shall be required to provide additional performance and

financial assurance guarantees to the satisfaction of the Director and the Director of Public Works;

c. Any funds not used by the County in connection with decommissioning the site shall be returned to Permittee; and

d. The performance and financial assurance guarantees may consist of, including, but not limited to, one or more of the following, to the satisfaction of the Director and the Director of Public Works:

i. An irrevocable letter of credit;

ii. A surety bond;

iii. An appropriate insurance policy;

iv. A trust fund or escrow account established and maintained in accordance with approved financial assurances and practices to guarantee that decommissioning the site will be completed in accordance with the approved Decommissioning Plan; or

25. Upon discontinuance of Permittee's operation as set forth in **Condition No. 26**, abandonment of the project in whole or in part, or termination of this grant as described in **Condition No. 8**, and in the event that a new permit application is not timely filed for a continued similar use or reuse of the site, Permittee shall perform decommissioning in accordance with the approved Decommissioning Plan, or compensate the County for use of a County-contracted consultant to perform such decommissioning. In the alternative, and at the County's sole election, the County shall be entitled to use any performance and/or financial assurance guarantees, as described in **Condition No. 24.d**, to perform the decommissioning itself or to contract for such decommissioning.

26. In the event that any portion of the solar field is not in operational condition for a consecutive period of six months, operations for that portion of the site shall be deemed to have been discontinued and that portion of the facility shall be removed from the site within 90 days from the date that written notice is sent to Permittee from the County. Within this 90-day period, Permittee may provide the Director a written request and justification for an extension of up to 90 additional days to resume operations of that portion of the site, which request shall be subject to the satisfaction and approval of the Director. In no event shall the operations of the solar field or portion of the solar field be discontinued for more than 12 months from the date such operations were first deemed discontinued without being decommissioned pursuant to the approved Decommissioning Plan. Further, in no event shall any extension of the period to resume operations of any portion of the site pursuant to this **Condition No. 26** be deemed to extend the term or expiration date of this grant.

27. Permittee shall construct all transmission lines located within unincorporated Los Angeles County underground to the satisfaction of Public Works, except where above-ground crossings are required by applicable regulations.

28. Temporary structures, outside storage, and staging areas allowed for construction shall be removed from the project site within 120 days of project completion. Any other outside storage needed for the project shall comply with the requirements of Part 7 of section 22.52 of the County Code.

29. **Prior to obtaining any grading or building permit**, Permittee shall submit to the Director for review and approval three copies of a landscape plan, showing at least 10 feet of proposed landscaped area as depicted on the approved Exhibit "A," or as otherwise approved by Caltrans and/or Public Works as applicable, and showing re-vegetation of the array areas. The landscape plan shall depict the size, type, and location of all plants, trees, seeding, and watering facilities on-site to the satisfaction of the Director of Planning, and specifically for the watering facilities to the satisfaction of the Director of the Department of Public Works.

30. Permittee shall maintain all landscaping in a neat, clean, and healthful condition and shall properly prune, weed, remove litter, fertilize, and replace plants when necessary for the life of the Project. Watering facilities shall consist of a temporary water-efficient irrigation system, such as drip irrigation, which shall only be used to establish, or re-establish, and maintain the plantings in all landscaped areas as needed for the life of the Project.

31. Permittee shall establish and comply with a landscape maintenance program that controls the spread of invasive species on the subject property during the life of the grant term. The landscape maintenance program shall be submitted to the Director for review and approval prior to the first energization authorization of the facility.

32. All exterior fencing shall be visually non-intrusive to the satisfaction of the Director not to exceed eight feet in height including use of 3-strand barbed wire at the top, and shall include animal openings the lesser of one foot in height or maximum allowable by the Public Utilities Commission, 50 feet in length, every 200 feet on-center as depicted on the approved Exhibit "A".

33. Night-lighting, limited to only that required by applicable lighting regulations for safety and security, shall be shielded and directed downward to avoid lighting spillover and shall consist of: (a) motion sensor or manual switch lighting for entry-lighting to the on-site equipment structures and electricity substation as applicable; and (b) light-sensor or motion-sensor lighting for the main access gate or gates.

34. Permittee shall, to the satisfaction of the Director, utilize the subject property only for the project as proposed and approved herein. In this regard, Permittee shall agree to and shall retire any development rights, including any rights to undertake irrigated farming on the subject property that require the use of groundwater for the life of this Conditional Use Permit.

35. Nothing in this grant shall prevent Permittee from installing more efficient solar panels in the future or increasing output, provided the footprint and overall disturbance area of the project does not increase. At such time Permittee wishes to install more efficient solar panels or increase output, a Revised Exhibit "A" shall be submitted to the Director for such installation.

36. The project shall be limited to use of trucked recycled water and/or water from sources not subject to the adjudication process currently in effect for the Antelope Valley groundwater basin for construction and operations of the Project.

37. The water tank on the subject property shall be painted an earth-tone color (such as beige, sand, taupe, or similar colors) to blend in with the surroundings, subject to review and approval by the Director.

38. Mobile sanitation facilities and potable drinking water supply shall be made available to workers during construction of the project to the satisfaction of the Department of Public Health.

39. In the event that piped recycled water suitable for use in construction and/or operation of the project becomes available from the public right-of-way adjacent to the project site at fair market value, Permittee shall obtain the necessary permits to connect to the recycled water, construct access, and connect to and purchase the piped recycled water.

40. In the event that piped potable water suitable for use in construction and/or operation of the project becomes available from the public right-of-way adjacent to the project site at fair market value, Permittee shall obtain the necessary permits to connect to the potable water, construct access, and connect to and purchase the piped potable water.

41. Permittee shall provide parking as required by the County Code, calculated at a parking ratio of one parking space for each two persons employed. The unmanned solar photovoltaic electricity generation facility ("solar facility") does not include operations buildings or other buildings and does require occasional servicing which requires one space per two persons servicing the facility.

42. Additional Dust Control Measures:

    a. During site preparation and during operations vegetation shall be retained or mowed in and around array sites to prevent vegetative root loss. Disking, tilling or grading of array sites is prohibited except where specifically authorized by the Department of Public Works. Roads, drainage basins, equipment pads, and any other required earthwork authorized by the Department of Public Works shall be done in compliance with grading regulations;

    b. Maintain dust control using phased earthwork, watering, clean gravel, composted wood chips not to exceed six inches in depth, application of

nontoxic soil stabilizers, revegetation, limited public access on unpaved areas, impose vehicle speed limits on construction sites, and other dust control measures used during construction, operations, and removal and restoration activities;

c. Submit the required fugitive dust control plan including a dust plume response plan for review and approval by the Antelope Valley Air Quality Management District (AVAQMD) prior to any earthwork activities;

d. Permittee shall provide on the Project site weather stations, monitors with wind speed, wind direction, temperature and humidity sensors, and a mechanical dust-monitoring device, placed to the satisfaction of the Antelope Valley Air Quality Management District, to ensure the effectiveness of the Project's dust control treatment on the Project site;

e. Establish required vegetation along certain portions of Project perimeter as depicted on Exhibit "A" as early as feasible following Project approval for both visual screening and limiting the off-site movement of dust. To limit temporary visual impacts during construction, permittee shall install temporary green-screen fencing cover in the areas requiring the above portions of perimeter landscaping;

f. Maintain vegetative ground cover to the greatest extent feasible throughout the array areas for the life of the subject permit;

g. Decommissioning plans shall include restoration of Project site disturbed areas with drought-tolerant vegetation from the County's drought-tolerant plant lists then in effect to the satisfaction of the Regional Planning Biologist at the end of the life of the project;

h. Mitigation monitoring and Conditional Use Permit inspections shall be done during the first two years to ensure compliance with dust and other mitigation measures and other conditions of project approval during construction and initial operations;

i. During construction, Permittee shall pay the cost of an on-site mitigation and conditions compliance monitor, satisfactory to the Director of Regional Planning, to independently monitor and report on project compliance. Said monitor may be the same monitor for each of the six related Silverado Power West, Projects 1-6 sites;

j. Permittee shall use tarps over dirt in trucks to limit off-site movement of dust; and

k. Permittee shall make National Institute of Occupational Safety and Health (NIOSH) approved dust masks available to construction workers and shall provide proper training to construction workers prior to construction to protect against dust exposure and possible harmful effects from such dust exposure during dust-generating activities. Permittee shall maintain a log demonstrating said training, available upon request by the Director.

PROJECT SITE SPECIFIC CONDITIONS

43. This grant shall authorize a solar photovoltaic electricity generation facility and construction of a water tank in the A-2-5 (Heavy Agriculture-5 acres minimum required area) zone.

44. Permittee shall comply with all conditions set forth in the attached County Department of Public Works letter dated April 17, 2014 for Project 5, Fire Department letter dated October 18, 2013 for Projects 5, and Public Health e-mail dated February 20, 2014 and letter dated October 11, 2013 for Project 5.

45. Permittee shall provide on-site notice to the resident of the development located across the western boundary of the Project site at least three days prior to start of construction activities.

46. Permittee shall maintain a current contact name, address, and phone number with the Department of Regional Planning at all times, and provide signage at main entrance location(s) with the phone and e-mail contact information for public reference.

Attachments:
Mitigation Monitoring and Reporting Program
Public Works, Fire Department, and Public Health Letters, as dated in Condition 44 above

SZD:KKS
6/16/14

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

GAIL FARBER, Director

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

April 17, 2014

IN REPLY PLEASE
REFER TO FILE: LD-2

TO: Samuel Dea
Special Projects
Department of Regional Planning

Attention Kim Szalay

FROM: Steve Burger
Land Development Division
Department of Public Works

CONDITIONAL USE PERMIT (CUP) NO. 201100072
PROJECT NO. R2011-00801
SILVER SUN GREENWORKS–PROJECT 5
120TH STREET WEST AND AVENUE I
ASSESSOR'S MAP BOOK NO. 3267, PAGE 3, PARCEL NO. 1
UNINCORPORATED COUNTY AREA OF LANCASTER

☒ Public Works recommends approval of this CUP.

☐ Public Works does **NOT** recommend approval of this CUP.

We reviewed CUP No. 201100072 in the unincorporated County area of Lancaster. The project is for the new construction and operation of a 20-megawatts, solar-photovoltaic, power-generating facility in the vicinity of 120th Street West and Avenue I. The project is proposing to balance the site with 3,100 cubic yards of cut and fill and 32,900 cubic yards of overexcavation. Grading shall be limited to only the access roads, substations, tanks, inverter pad, or basins.

Upon approval of the site plan, we recommend the following conditions:

1. Road

   1.1 Dedicate or offer right of way, 54 feet from centerline, along the property frontage on Avenue I to the satisfaction of Public Works. Four feet of additional right of way is required along Avenue I. A processing fee will be required for the dedication.

1.2 Make an offer of private and future right of way, 32 feet from centerline, along the property frontage on 120th Street West, 115th Street West, and Lancaster Boulevard to the satisfaction of Public Works. A processing fee will be required for the offer to dedicate.

1.3 Dedicate or make an offer to dedicate a property line return radius of 13 feet at all local street intersections to the satisfaction of Public Works. In addition, dedicate additional right of way for corner cut-offs to meet current Americans with Disabilities Act guidelines and to the satisfaction of Public Works. A processing fee will be required for the dedication or offer to dedicate.

1.4 Provide a minimum of 10-foot-wide slope and drainage easements along all street frontages to the satisfaction of Public Works.

1.5 Whenever there is an offer of a future street or a private and future street, provide a drainage statement/letter to the satisfaction of Public Works.

1.6 Construct driveway approaches on Avenue I to the site to the satisfaction of Public Works. Provide a 10-foot-wide clear zone (nothing planted above 3 feet in height) within the vegetative buffer area on each side of the driveway to the satisfaction of Public Works.

1.7 Obtain an encroachment permit from Public Works' Land Development Division, Permit Section, for all proposed work within the road right of way and private and future streets.

1.8 Underground all new facilities to the satisfaction of Public Works. A franchise agreement will be required for distribution/transmission facilities within public right of way.

1.9 Repair any public improvements damaged during construction, along the property frontage, to the satisfaction of Public Works.

1.10 Acquire street plan approval or direct check status before obtaining a grading or drainage permit as applicable.

1.11 Execute an Agreement to Improve for the street improvements prior to the issuance of a building permit as applicable.

2. Grading

2.1 Submit a grading plan for review and approval that complies with the approved hydrology study dated January 31, 2014, or the latest revision. Grading shall be limited to only the access roads, substations, tanks, inverter pad, or basins. Work within the existing vegetation, where the solar panels are proposed, shall be conducted with minimal disturbance, and the operator shall take all necessary precautions to not use vehicles or machineries for grading or alter the existing grade in these areas.

When vehicles or machineries are deemed necessary for solar field installation work, appropriate ground-protection practices (such as construction mats, stabilizers, or established vegetation) shall be utilized for both dust suppression and to ensure that the vehicles or machineries are compatible with continue and future vegetation growth. The project's biologist shall confirm that construction practices are compatible with continued and future vegetation growth. Any grading, disking, and scraping to access roads, walkways, required basins, and berms shall be permanently stabilized with an earth-stabilizing product that is acceptable to Public Works, in cooperation with the Departments of Regional Planning and Public Health, to prevent fugitive dust.

2.2 A maintenance agreement may be required for privately maintained drainage devices.

2.3 Provide soil/geology approval of the grading plan from Public Works' Geotechnical and Materials Engineering Division as applicable.

2.4 Obtain all applicable jurisdictional permits. These agencies may include the State of California Regional Water Quality Control Board; State of California Department of Fish and Wildlife; State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources; and US Army Corps of Engineers.

For questions regarding the road and grading conditions, please contact Ruben Cruz of Land Development Division at (626) 458-4921 or rcruz@dpw.lacounty.gov.

3. Building and Safety

3.1 Submit plans and specifications to meet current applicable codes and standards for structures, grading, mechanical, plumbing, and electrical.

3.2 All electrical installations shall comply with the following criteria:

3.2.1 The portions of the project associated with power generation and transmission shall be designed in accordance with the County of Los Angeles, Electrical Code or in accordance with other standards or regulations acceptable to the building official.

3.2.2 The nonpower generation and transmission portion of the project shall be designed in accordance with the County of Los Angeles, Electrical Code or in accordance with other standards or regulations acceptable to the building official.

3.3 Comply with fire, life safety, structural, and accessibility requirements including Americans with Disabilities Act guidelines.

3.4 Any occupiable building must have a restroom for employees.

3.5 All foundations must be engineered to comply with existing soil conditions.

3.6 Obtain approval from other agencies prior to permit issuance.

For questions regarding the building and safety conditions, please contact Clint Lee of Public Works' Building and Safety Division at (626) 458-3173 or cllee@dpw.lacounty.gov.

4. Drainage

4.1 Comply with the requirements of the Hydrology Study/Water Quality Plan, which was approved on January 31, 2014.

4.2 Prior to grading plan approval, the applicant shall obtain a Jurisdictional Determination letter or equivalent from the US Army Corps of Engineers and written acknowledgement from State Department of Fish and Wildlife that no jurisdictional surface water drainages occur in the grading footprint. Documentation from jurisdictional agencies shall be obtained to the satisfaction of the Public Works.

4.3 Portions of the site contain a 65-feet-wide Flood Plain Management path as shown on the Antelope Valley Master Drainage Plan. The County reserves the right to restrict construction within this flood hazard area. Prior to grading plan approval, obtain and record a covenant dedicating to the County the right to restrict the erection of buildings or other structures in the flood hazard area as shown on the Antelope Valley Master Drainage Plan, to the satisfaction of Public Works.

4.4 Prior to grading plan approval, a permit will be required from Land Development Division's Permits Section for any proposed construction within existing Los Angeles County drainage easements to the satisfaction of Public Works.

For questions regarding the drainage conditions, please contact Ernesto Rivera of Land Development Division at (626) 458-4921 or erivera@dpw.lacounty.gov.

If you have any other questions or require additional information, please contact Ruben Cruz of Land Development Division at (626) 458-4910 or rcruz@dpw.lacounty.gov.

RC:tb
P:\ldpub\SUBPCHECK\Plan\CUP\CUP 201100070-silverado\TCUP 201100070\14-03-25 Submit\Project 5-CUP 201100072\Project R2011-00801.doc

REVISED CONDITIONS
Supersedes Fire Dept. Conditions Dated 09/06/11

COUNTY OF LOS ANGELES FIRE DEPARTMENT

Land Development Unit – Fire Prevention Division
5823 Rickenbacker Road
Commerce, California 90040-3027
Office (323) 890-4243, Fax (323) 890-9783

DATE: October 18, 2013 **Map Date:** 09/05/13

TO: Department of Regional Planning
Zoning Permits – Carolina Blengini

PROJECT #: CUP #2011-00801 (Project 5)

LOCATION: 120th Street West & West Avenue I, Lancaster (County)

FIRE DEPARTMENT SOLAR ARRAY FIELD CONDITIONS

General Comments:

1. The proposed solar array field is ***"Cleared"*** for public hearing. All Fire Department comments have been addressed.

2. As noted on the site plan, the proposed solar array field will require a minimum of one entry/ exit location due to the size of the field. The 2nd entry/ exit gate is not required; however, must meet same requirements if used.

3. As noted on the site plan, provide an interior perimeter road and interior access roads as indicated on the site plan. All interior and off-site (115th Street West) access roads shall meet the Fire Department access road requirements.

4. The Fire Department is requiring the interior and off-site access roads for the solar array fields to have a soil compaction of 90%, OR the apparatus access road shall be excavated and re-compacted to 90%.

5. As noted on the site plan, provide one 10,000 gallon water tank near the address side entry/ exit gates.

6. All fire Protection facilities; including access and water, must be provided prior to and during construction, and for the duration of the project. Please contact FPEA Wally Collins at (323) 890-4243 if there are any questions.

On-site & Off-Site Fire Apparatus Access Road Requirements:

1. The fire apparatus access roads shall be installed and maintained in a drivable condition for the duration of the solar project.

2. The fire apparatus access roads shall be installed prior to occupancy or operation of the facility.

3. Provide a minimum roadway width of 20 feet, clear-to-the sky, for all fire apparatus access roads with a minimum centerline turning radius width of 32 feet each tum throughout the development. The inner radius shall be 22 feet and the out radius shall be 42 feet.

4. The fire apparatus access roads shall have a soil compaction of 90%, OR the apparatus access road shall be excavated and re-compacted to 90%.

5. Provide a Fire Department access road around the entire perimeter of the solar project, which shall comply with the above noted requirements.

On-Site Ingress/ Egress Gates:

1. The onsite ingress/ egress gate shall be located on the address side of the property.

2. The onsite ingress/ egress gate width shall be a minimum 20 feet, clear-to-he sky, with all gate hardware clear of the roadway width.

3. The gates shall be a minimum distance of 40 from the street.

4. Provide an approved "Fire Department Knox Lock" for each ingress/ egress gate.

5. The onsite ingress/ egress gates shall be in compliance with LACoFD Fire Prevention Regulation #5.

6. The facility emergency contact information shall be provided with each limited access device, per LACoFD Regulation 5, and shall be clearly indicated with an appropriate placard at each ingress location. The minimum size of the placard shall be 12 inches X 12 inches.

Water & Water Tank Requirements:

1. This development requires the installation of one water tank with a minimum tank size of 10,000 gallons for "Fire Department" use only.

2. The water tanks shall be clearly identified for "Fire Department Use Only".

3. The water tanks shall be located adjacent to the ingress/egress gate located on the address side of the property.

4. The water tanks shall be in compliance with LACoFD Regulation 19, which provide guidance in the installation of a water tank.

5. The water tank shall have a-low level water local alarm which shall be in compliance with all applicable codes and regulations. The low level water local alarm can be battery operated.

6. The water tank shall have a Fire Department supply outlet of 2 1/2 inches in diameter with National Standard threads. The supply outlet is to be located 14-24 inches above the finished grade, and is required to be protected by approved barricades.

7. If the outlet is not provided directly off of the tank, provide a 6 inch underground pipe to a 4 inch upright pipe with an outlet of 2 ½ inches with National Standard threads, which is required to be protected by barricades.

Vegetation Management:

1. The clearance of vegetation shall be in compliance with the brush clearance regulation as defined by the Fire Code or as directed by the Fire Official.

2. The vegetation shall be trimmed to a maximum height of 6 inches within the boundaries of the solar array.

3. All electrical transformer vaults or structures shall have all vegetation cleared to mineral soil for a distance of 50 feet.

Electrical Equipment:

1. All electrical disconnect locations shall be clearly identified.

2. All electrical shall be in compliance with all applicable state and local codes.

Kim Szalay Project (5)

From: Vicente Banada
Sent: Thursday, February 20, 2014 3:19 PM
To: Kim Szalay
Cc: Eric Edwards
Subject: RE: Project Nos. R2011-00833-(5), R2011-00798-(5), R2011-00799-(5), R2011-00807-(5), R2011-00801-(5), R2011-00805-(5) Permit Consultation - Due March 11, 2014 or earliest date prior as feasible

Hi Kim,

The Department of Public Health-Environmental Health Division has reviewed the information provided for the project identified above and the comments have been met by the revised site plans. Environmental Health recommends the approval of this CUP.

Thanks,

Vicente Banada
Environmental Health Specialist IV
Land Use Program
5050 Commerce Drive
Baldwin Park, CA 91706
(626)430-5381 Tel
(626)813-3016 Fax

From: Kim Szalay
Sent: Tuesday, February 18, 2014 3:34 PM
To: Vicente Banada
Cc: Eric Edwards
Subject: FW: Project Nos. R2011-00833-(5), R2011-00798-(5), R2011-00799-(5), R2011-00807-(5), R2011-00801-(5), R2011-00805-(5) Permit Consultation - Due March 11, 2014 or earliest date prior as feasible

Mr. Banada, as CUP Coordinator for Public Health while Michelle is out of the office, attached PH comments and link below are a re-send of what was sent to Michelle. The required mobile sanitation plan will be provided for PH review and approval prior to construction, as a required condition of the CUP. The mobile sanitation facilities and potable water (bottled) locations are depicted on the site plans per the link below. Please send your response as soon as possible this week.

Thank You,

Kim Szalay

The CUP consultation package for this project is available at the website below. Please review and provide comments by the date specified above or earliest date prior as feasible.
Employee ID & unique password are required to enter the site. If you have any technical issues please contact webadmin@planning.lacounty.gov.

Project link: http://10.2.8.130/content/silverado-power-west-0

Thank you,

Kim Szalay

Mr. Kim K. Szalay, MPL, AICP
Principal Planner
Special Projects Section
Department of Regional Planning
320 W. Temple Street, Room 1362
Los Angeles, CA 90012
(213) 974-4876 Direct
(213) 626-0434 Fax
kszalay@planning.lacounty.gov

COUNTY OF LOS ANGELES
Public Health

JONATHAN E. FIELDING, M.D., M.P.H.
Director and Health Officer

CYNTHIA A. HARDING, M.P.H.
Acting Chief Deputy Director

ANGELO J. BELLOMO, REHS
Director of Environmental Health

JACQUELINE TAYLOR, REHS
Director of Environmental Protection Bureau

PATRICK NEJADIAN, REHS
Chief EHS, Land Use Program

MICHELLE TSIEBOS, REHS
Environmental Health Specialist IV
Land Use Program
5050 Commerce Drive
Baldwin Park, California 91706
TEL (626) 430-5382 • FAX (626) 813-3016

October 11, 2013

TO: Carolina Blengini
Regional Planning Assistant II
Department of Regional Planning

FROM: Michelle Tsiebos, MPA, REHS (M.T)
Environmental Health Division
Department of Public Health

SUBJECT: CUP Consultation
PROJECT NO. R2011-00798/ R2011-00799/ R2011-00801/ R2011-00805/ R2011-00807/R2011-00833
Silverado Solar Project
LOCATION: 110TH Street West & West Avenue B, Lancaster

See Followup Email

( ) Environmental Health recommends approval of this CUP.
(X) Environmental Health does NOT recommend approval of this CUP.

The Department of Public Health – Environmental Health Division has reviewed the information provided for the project identified above. The project is proposing the construction and operation of six solar electric generating facilities for the provision of 172 MW of electricity into the local grid.

Prior to the Department clearing this project for public hearing, the requirements listed on the attached reports need to be satisfactorily fulfilled.

For questions regarding the attached reports, please contact the individual listed on the bottom of the report. For all other questions, please contact me at (626) 430-5382.

Potable Water Supply

Hauled water is not an approved source of potable water for this project.

1. An adequate supply of potable water from an approved source shall be provided to serve the sanitary and drinking water needs of the project.

A. If permanent drinking and hand washing facilities are proposed, an on-site well meeting the requirements of Public Health and other applicable laws and regulations shall be required. The applicant shall secure a Well Production Permit and Water Supply Approval from the Drinking Water Program for the installation of the well. A well yield test to establish groundwater sustainability and water quality analysis from an approved laboratory will be required as part of the approval process.

Note: If the well provides potable water to 25 or more persons for more than 60 days per year, the California Safe Drinking Water Act requires that a public water system be established meeting all the requirements of the California Health and Safety Code and the California Code of Regulations.

B. If proposing to use an existing private well, the following information shall be submitted to the Drinking Water Program for review:

1) Copy of Well Driller's Report.
2) If applicable, provide copy of bond density log to confirm presence and depth of sanitary seal per California Well Standards.
3) Copy of a Well Production Permit and Water Supply Approval from the Drinking Water Program for the construction of the water well.
4) Documentation of well yield test in conformance with Public Health requirements. Well yield test results are valid for three (3) years from the date of approval.
5) Laboratory test results indicating the well water meets the drinking water standards established by the U.S. Environmental Protection Agency and the California Department of Public Health.

C. If Mobile Sanitation Facilities are proposed, the applicant shall include in the Mobile Sanitation Plan a description of how potable drinking water will be provided in a manner as to be readily accessible to employees. The plan shall identify the potable water source and method of dispensing. The plan shall also describe how drinking water containers are maintained, including methods to prevent contamination of drinking water. Please see the guidelines attached at the end of this document.

2. Revise the site plan or submit a separate plan to show the location of the existing or proposed well and setback distances from potential sources of contamination within 200 feet, including but not limited to, septic systems, animal stables, etc.

For questions regarding the potable water requirements, please contact Richard Lavin at (626) 430-5420.

Sewage Disposal

1. Sanitary toilet facilities shall be provided to meet Public Health requirements.

A. If permanent toilet facilities are proposed, the applicant shall submit the following information to the Land Use Program for review and approval:

(1) A feasibility report in compliance with Public Health's "A Professional Guide to Requirements and Procedures for Onsite Wastewater Treatment Systems (OWTS)." The guideline is available on-line at www.lapublichealth.org/eh. The design and installation of OWTS shall conform to the requirements of Public Health and other

applicable regulatory agencies. The feasibility report shall include a professionally drawn scaled plot plan to illustrate the following:

a) Location and sizing of proposed OWTS (septic tank and dispersal system}, including 100% future expansion dispersal area.

b) Location of all other structures and amenities, including buildings, walls, fences, retaining walls, storage facilities, guard shacks, etc.

c) Location of any existing and proposed water wells and their related components on the project site as well as on neighboring properties within 200 feet of the proposed OWTS.

d) Location of any surface water {e.g. streams, floodways, drainage courses, subdrains, culverts, swales, etc.).

Note: If a public sewer connection is available within 200 feet any part of the proposed building or exterior drainage, all future drainage and piping shall be connected to such public sewer.

(2) Floor plan of the toilet facility showing the location of all plumbing fixtures (i.e. toilets, urinals, hand wash sinks, etc.).

(3) Proof that application for a Waste Discharge Permit (WDR) has been filed with the Los Angeles Regional Water Quality Control Board

B. If mobile sanitation facilities are proposed, the applicant shall submit for review and approval a Mobile Sanitation Facility Plan consistent with Public Health's guideline, "Sanitation Facilities at Remote Worksite Locations." Please see the guidelines attached at the end of this document.

2. Provide a detailed description of the panel cleaning process. Include the chemicals to be used during the cleaning process. Describe how the wastewater generated by cleaning/washing of panels when utilizing a solution other than plain water, will be collected to prevent discharge onto the ground surfaces and how will it be disposed of.

For questions regarding wastewater disposal requirements, please contact Patrick Nejadian at (626) 430-5390.

Noise

The Toxics Epidemiology Program recommends approval of the project upon the following conditions:

Noise mitigation measures "Noise 5.11 (N-1 to N-9)" and Air Quality mitigation measures "AQ 5.3 (AQ-1 to AQ-8)" from the Monitoring Mitigation Reporting Program (MMRP) must be implemented. This includes mitigation measure TT-4.

For questions regarding the above comments, please contact Evenor Masis or Robert Vasquez at (213) 738-3220.

Sanitation Facilities at Remote Worksite Locations

1.0 Background and Purpose

Typically, permanently installed restroom and potable water facilities are required to be provided at worksite locations. In situations where permanent restrooms and potable water facilities are not feasible, the County Department of Public Health (Department) may approve the use of *"mobile sanitation facilities"* consistent with standards specified in Los Angeles County Code, Title 11 and the California Code of Regulations, Title 8.

The purpose of this document is to outline the procedure for obtaining Departmental approval for the use of *"mobile sanitation facilities"* by mobile crews at unattended commercial worksites located in remote areas of the County where conventional restroom facilities are unavailable and/or impractical due to the lack of a potable water supply.

2.0 Definition

A *"mobile sanitation facility"* is a portable restroom facility that is self-contained, and equipped with potable water, a toilet, a hand washing facility, and a waste water storage tank. *[Note: A portable chemical toilet, commonly referred to as a "porta-potty", is not considered a mobile sanitation facility.]*

3.0 Regulatory Requirements

The following requirements are based on provisions of Los Angeles County Code, Title 11 - Health & Safety, and Cal-OSHA sanitation standards in Section 3360, Title 8, California Code of Regulations.

3.1 Mobile Sanitation Facility Plan

An applicant seeking to use a "mobile sanitation facility" in conjunction with a conditional use permit to develop and operate a remote commercial work site shall submit to the Department for review and approval a *mobile sanitation facility plan* to include the following:

3.1.1 The projected number of employees that will use the proposed mobile sanitation facility.

3.1.2 A Site Plan showing the proposed location(s) of the facility.

3.1.3 A service and maintenance schedule for the facility.

3.1.4 Description of how potable drinking water will be provided in a manner as to be readily accessible to employees. Identification of potable water source and method of dispensing (container and single-use cups or bottled water). Description of how drinking water containers are maintained, including methods to prevent contamination of drinking water.

3.1.5 Copy of a service agreement with a permitted toilet rental agency to provide a mobile sanitation facility approved by the Department. If the applicant proposes to design and construct the mobile sanitation facility, design drawings and specifications shall be included.

3.2 Permitting, Maintenance and Storage Requirements

Upon approval of the plan referenced in 3.1 above, the Department will issue an annual operating permit to the applicant. The operating permit will include the following conditions:

3.2.1 The mobile sanitation facility shall be maintained in a safe and sanitary condition so as not to constitute a public health hazard or nuisance.

3.2.2 The mobile sanitation facility must be removed from the work site at the end of each work day, and be returned to an approved storage site.

For questions regarding these requirements, please contact the Department's Land Use Program at (626) 430-5380.

COUNTY OF LOS ANGELES
DEPARTMENT OF PARKS AND RECREATION
"Parks Make Life Better!"

Russ Guiney, Director — John Wicker, Chief Deputy Director

March 12, 2014 — Sent via e-mail:kslalay@planning.lacounty.gov

TO: Kim Szalay
Department of Regional Planning

FROM: Lorrie Bradley, Park Planner
Research and Trail Planning Section

SUBJECT: **PROJECT CONSULTATION**
SILVERADO SOLAR
COUNTY PROJECT NOs.
(1) R2011-00833-(5) (CUP201100079);
(2) R2011-00798-(5) (CUP201100070);
(3) R2011-00799-(5) (CUP201100071;
(4) R2011-00807-(5) (CUP201100076);
(5) R2011-00801-(5) (CUP201100072);
(6) R2011-00805-(5) (CUP201100074); RZC2011000005)

The Department of Parks and Recreation has completed the review of the six conditional use permits (CUPs) and site plans dated 2/11/2014 for the proposed photovoltaic generation facilities mentioned above to allow for the construction and operation of the solar generating facilities and their associated generation tie lines. The Department of Parks and Recreation requests that the Department of Regional Planning condition the above mentioned project with the following conditions as part of the conditional use permit:

R2011-00833 Project 1: North Lancaster Ranch

In concept, the location of the twelve (12) foot wide trail easement dedication for the "Little Buttes Trail", an adopted proposed County trail that runs parallel to the project site (APN 3262-001-006) along West Avenue B, as shown on the site plan dated 2/11/2014 is acceptable.

The Department of Parks and Recreation requires a twelve (12) foot wide multi-use (hiking, mountain biking, and equestrian) trail easement dedication and trail construction, contiguous to West Avenue B, though outside of the road right-of-way, for the purposes of the "Little Buttes Trail".

Trail Easement Recordation Conditions

1. Prior to use and reliance of this conditional use permit, and prior to issuance of a grading permit, building permit or improvement plans, the Applicant shall:

    a. Dedicate by separate document to the County of Los Angeles, a twelve (12) foot wide multi-use (hiking, mountain biking and equestrian) trail easement for purposes of the Little Buttes Trail as shown on the site plan dated 2/11/2014. Trail easement must be outside of the road right-of-way and slope easement. The trail easement shall be recorded as a separate document and the plat map and legal description shall be attached and submitted to the Department of Parks and Recreation for review.

    b. The following language (in exact form) must be shown for multi-use trail dedications on the site plan and in the easement document:

    Title Page: We hereby dedicate to the County of Los Angeles a twelve (12) foot wide multi-use (hiking, mountain biking and equestrian) trail easement for the purposes of the "Little Buttes Trail". Full multi-use (hiking, mountain biking, and equestrian) public access shall be provided for the trail easement.

2. Per Department of Public Works (DPW) requirement, all trail easements must be outside of the road right-of-way and slope easement.

Trail Construction Conditions

1. Prior to grading approval or building permit issuance, or whichever comes first, the applicant shall:

    a. Design and construct all required multi-use trails, shown on the site plans, in a manner consistent with the County of Los Angeles Trails Manual (Trails Manual), as Natural Trail 1 (refer to page 4-13, Table 4.3.1-1, Trail Classification Guidelines.) Any significant deviation from the guidelines within the Trails Manual must be approved in writing by the Department of Parks and Recreation.

2. Applicant shall obtain approval from DPW for the trail crossing location (intersection of West Avenue B and 105th Street West (Future)), and design, including proper signage, suitable for safe trail crossing.

3. The applicant shall provide the submittal of the rough grading plans, which shall include detailed grading information for the segment of trails for dedication to the County of Los Angeles, Department of Parks and Recreation. The detailed grading information for the trail construction, shall include all pertinent information required,

in a manner consistent with the Trails Manual trail construction guidelines, and all applicable codes, but not limited, to the following:

a. Cross slope trail gradients not to exceed four percent (4%) with two (2%) preferred, and longitudinal (running) slope gradients not to exceed twelve percent (12%) for more than fifty feet (50'). The Department of Parks and Recreation will review and may allow slopes greater than twelve percent (12%) on a case by case basis.

b. Bush hammer (or equivalent) porous finish or surface is required on all paved surfaces at minimum width of eight (8) feet wide for driveway trail crossings, and minimum twelve (12) feet width for painted roadway trail crossings.

c. The applicant is required to purchase and install appropriate lodge pole fencing to delineate "Little Buttes Trail" from the trail tread, for user safety, and property security, as approved by the Department of Parks and Recreation.

   i. Trail fencing shall be installed within one (1) foot wide section of the dedicated multi-use trail easement contiguous to the West Avenue B.
   ii. Trail fencing locations and materials shall be approved in writing by the Department of Parks and Recreation.

R2011-00798 Project 2: Western Antelope Blue Sky Ranch

In concept, the location of the twelve (12) foot wide multi-use trail easement dedication the "California Poppy Trail", an adopted proposed County trail located on the west side of 110th Street West, as shown on the site plan dated 2/11/2014 is acceptable.

The Department of Parks and Recreation requires a twelve (12) foot wide multi-use (hiking, mountain biking, and equestrian) trail easement dedication and trail construction on the east side of the project site (APN 3267-015-001) contiguous to, though outside of the 110th Street West road right-of-way, for purposes of the "California Poppy Trail".

Trail Easement Recordation Conditions

1. Prior to use and reliance of this conditional use permit, and prior to issuance of a grading permit, building permit or improvement plans, the Applicant shall:

   a. Dedicate by separate document to the County of Los Angeles, a twelve (12) foot wide multi-use (hiking, mountain biking and equestrian) trail easement for purposes of the California Poppy Trail as shown on the site plan dated 2/11/2014. Trail easement must be outside of the road right-of-way and slope easement. The trail easement shall be recorded as a separate

document and the plat map and legal description shall be attached and submitted to the Department of Parks and Recreation for review.

b. The following language (in exact form) must be shown for multi-use trail dedications on the site plan and in the easement document:

Title Page: We hereby dedicate to the County of Los Angeles a twelve (12) foot wide multi-use (hiking, mountain biking and equestrian) trail easement for the purposes of the "California Poppy Trail". Full multi-use (hiking, mountain biking, and equestrian) public access shall be provided for the trail easement.

2. Per Department of Public Works (DPW) requirement, all trail easements must be outside of the road right-of-way and slope easement.

Trail Construction Conditions

1. Prior to grading approval or building permit issuance, or whichever comes first, the applicant shall:

b. Design and construct all required multi-use trails, shown on the site plans, in a manner consistent with the County of Los Angeles Trails Manual (Trails Manual), as Natural Trail 1 (refer to page 4-13, Table 4.3.1-1, Trail Classification Guidelines.) Any significant deviation from the guidelines within the Trails Manual must be approved in writing by the Department of Parks and Recreation.

2. Applicant shall obtain approval from DPW for the trail crossing location and design, including proper signage, suitable for safe trail crossing.

3. The applicant shall provide the submittal of the rough grading plans, which shall include detailed grading information for the segment of trails for dedication to the County of Los Angeles, Department of Parks and Recreation. The detailed grading information for the trail construction, shall include all pertinent information required, in a manner consistent with the Trails Manual trail construction guidelines, and all applicable codes, but not limited, to the following:

a. Cross slope trail gradients not to exceed four percent (4%) with two (2%) preferred, and longitudinal (running) slope gradients not to exceed twelve percent (12%) for more than fifty feet (50'). The Department of Parks and Recreation will review and may allow slopes greater than twelve percent (12%) on a case by case basis.

b. Bush hammer (or equivalent) porous finish or surface is required on all paved surfaces at minimum width of eight (8) feet wide for driveway trail

crossings, and minimum twelve (12) feet width for painted roadway trail crossings.

c. The applicant is required to purchase and install appropriate lodge pole fencing to delineate "California Poppy Trail" from the trail tread, for user safety, and property security, as approved by the Department of Parks and Recreation.

   i. Trail fencing shall be installed within one (1) foot wide section of the dedicated multi-use trail easement contiguous to the 110th Street West.
   ii. Trail fencing locations and materials shall be approved in writing by the Department of Parks and Recreation.

Trail Construction Conditions for R2011-00833 and R2011-00798

1. Prior to initiation of trail construction, the Applicant shall:

   a. Submit a preliminary construction schedule showing milestones for completing the trail, including installation of lodge-pole fencing. The Applicant's representative shall provide updated trail construction schedules to the Department of Parks and Recreation on a monthly basis. Schedule submittals shall include a "Two Week Look-Ahead" schedule, to reflect any modifications to the original schedule.

   b. Stake the centerline of the trail. The Applicant's representative shall then schedule a site meeting with the Department of Parks and Recreation's representative within the Trails Section for trail alignment inspection and approval.

   c. The Applicant shall notify the Department of Parks and Recreation for a Final Inspection "Trail Walk" within five (5) business days of completion of trail construction, including installation of all required amenities. Any portions of the constructed trail not approved shall be corrected and brought into compliance with the Department of Parks and Recreation's Trails Manual within thirty (30) calendar days. Upon completion of the punch list, the Applicant shall contact the Department of Parks and Recreation to schedule another site inspection.

2. Prior to the Department of Parks and Recreation's final acceptance of the constructed trail, the Applicant shall:

   a. Submit electronic copies on CD or DVD (AutoCAD 2005 or newer version) of the As-Built Trail, grading and construction drawings to the Department of Parks and Recreation, Trails Section.

b. Submit a letter to the Department requesting acceptance of the dedicated constructed trail. The Department will issue a trail acceptance letter only after receiving a written request for final trail approval and as-built trail drawings.

Thank you for including this Department in the review of this notice. For any trail related questions, please contact Ms. Olga Ruano at (213) 738-2014 or oruano@parks.lacounty.gov.

c: Regional Planning (K. Szalay)
Parks and Recreation (N. E. Garcia, K. King, J. Rupert, F. Moreno, J. Yom, O. Ruano)

V. MITIGATION MONITORING AND REPORTING PROGRAM

CEQA requires a Mitigation Monitoring and Reporting Program (MMRP) for projects where mitigation measures are a condition of project approval and development. The Draft EIR prepared for the Silverado Power West, Los Angeles County Projects identified mitigation measures, where appropriate, to avoid or substantially reduce the environmental impacts associated with the Project. This MMRP is designed to monitor the implementation of those mitigation measures. Accordingly, this MMRP has been prepared in compliance with the requirements of CEQA Section 21081.6 and CEQA Guidelines Section 15097.

This section lists each of the proposed Project Design Features (PDFs) and required Mitigation Measures (MMs) and identifies the corresponding action required for proof of compliance, the mitigation timing, the party responsible for implementation, and the monitoring agency or party responsible for ensuring each measure is adequately implemented.

Mitigation Monitoring and Reporting Program
Silverado Power West, Los Angeles County Projects
Project Nos. R2011-00833, 00798, 00799, 00807, 00801, 00805

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
5.1 AESTHETICS				
A-1 A Fugitive Dust Control Plan to minimize dust (visual pollution) shall be prepared and implemented.	A. Submit Plan to AVAQMD for review and approval	Prior to any ground disturbance activities	Applicant/Construction Manager	LACDRP AVAQMD
	B. Maintain log demonstrating compliance. Site inspection as needed	During construction	Applicant/Construction Manager	AVAQMD
A-2 The Project site shall be maintained free of debris, trash, and waste during construction.	Site inspection	During construction	Applicant	LACDRP
A-3 The Project site shall be visually screened or partially screened during construction by fencing.	A. Submit Site Plans for review and approval	Prior to issuance of applicable building permit	Applicant	LACDRP
	B. Site inspection as needed	During construction	Applicant	LACDRP
A-4 A landscape plan shall be developed for each Project prior to Project construction that shows the detail of a 10-foot wide screening vegetation buffer intended to screen or partially screen the Project visually from area residents or travelers on nearby roadways.	A. Submit landscape plan for review and approval. The landscape plan must be approved prior to grading or building permit.	Prior to 1st grading or building permit whichever comes first for each project.	Applicant	LACDRP/LACFD – support/referral Approval of landscape plan
	B. Implement approved landscape plan	Prior to first energization approval by LADPW B & S	Applicant	LACDRP/LACFD – support/referral Approval of landscape plan
A-5 All lighting shall comply with applicable provisions of the Los Angeles County Outdoor Lighting District Ordinance. Lights shall be limited to types allowed by the ordinance, installed below maximum allowed heights, pointed downwards and shielded to minimize light trespass, and mounted on essential infrastructure rather than on separate light poles except where poles are required by regulation or by governing agency. Lighting will comply with the hours of operation requirements in the ordinance, and utilize automatic control devices to comply with time limits except where permitted by Los Angeles County. Lighting will be maintained in good repair at all times.	Submit final lighting plan for review and approval	Prior to issuance of building permit(s)	Applicant	LACDRP
5.2 AGRICULTURE AND FORESTRY				
No mitigation measures are required for Agriculture and Forestry.	N/A	N/A	N/A	N/A

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
5.3 AIR QUALITY				
AQ-1 Water active sites at least twice daily (locations where soil disturbance is to occur would be thoroughly watered before earthmoving) during construction.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	AVQMD
AQ-2 All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard in accordance with the requirements of CVC Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).	Site inspection as needed	During construction	Applicant/Construction Manager	LACDRP
AQ-3 All off-road diesel powered construction equipment less than 50 hp shall meet or exceed Tier 2 off-road emission standards. Off-road diesel-powered construction equipment greater than or equal to 50 hp shall meet or exceed Tier 3 off-road emission standards. The construction equipment requirement shall be increased to Tier 4 off-road emission standards by January 1, 2015. Post-January 1, 2015, all off-road diesel-powered construction equipment greater than 50 hp shall meet or exceed Tier 4 off-road emission standards, where available. Verification documentation such as an ongoing log shall be provided to the County of Los Angeles Department of Regional Planning upon request within five business days.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	AVAQMD LACDRP
AQ-4 During construction, the off-road equipment, vehicles, and trucks shall not be idle more than five minutes in any one hour.	Site inspection as needed	During construction	Applicant/Construction Manager	LACDRP
AQ-5 The off-road construction equipment drivers shall have documented training in operating the equipment efficiently, taking into account ways to reduce the hours of operation of the equipment and/or operate the equipment at a lower load factor.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	AVAQMD LACDRP
AQ-6 Traffic speeds on all unpaved roads shall be maintained at 15 mph or less.	Site inspection as needed	During construction	Applicant/Construction Manager	AVAQMD LACDRP
AQ-7 During construction, there shall be documented carpools, vanpools, and/or shuttles provided for construction employees.	Submit Transportation Demand Management program for review and approval	Prior to issuance of building permits	Applicant/Construction Manager	LACDRP LACDPW support and referral for trip reduction determination
AQ-8 During array area preparation, mowing shall be used instead of grading and/or disking, and shall be limited to no more than 3.5 acres per day per site to further reduce dust emissions during construction.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	AVAQMD LACDRP
AQ-9 All interior roads shall use long-lasting non-toxic chemical soil stabilizers designed for long-term dust stabilization on dirt roads.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	AVAQMD LACDRP

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
AQ-10 Interior array areas shall have re-established pre-existing vegetation or be established with drought tolerant, native, or native compatible vegetation, to the greatest extent feasible, approved by the County biologist and compliant with Fire Department requirements, within two years of energization authorization of an array area by the Department of Public Works, Building and Safety Division, to provide long-term dust stabilization under the arrays.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager/Biologist	LACFD LACDRP
AQ-11 Earth disturbing activities shall be suspended and/or additional water shall be applied to meet Rule 403 criteria if wind gusts exceed 25 miles per hour.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP AVAQMD
AQ-12 Construction activity shall utilize electricity from power poles on or adjacent to the Project sites rather than use of temporary diesel power generators and/or gasoline power generators when electricity with adequate circuit capacity is available from power poles in proximity to construction areas.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP
AQ-13 In the event temporary night lighting is necessary for construction or maintenance purposes, lighting not requiring the use of diesel or gasoline driven generators shall be used.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP
5.4 BIOLOGICAL RESOURCES				
B-1 Prior to the issuance of a grading permit, a qualified biologist shall be retained by the Applicant as the lead biological monitor subject to the approval of the LACDRP and CDFW. That person shall ensure that impacts to all biological resources are minimized or avoided, and shall conduct (or supervise) pre-grading field surveys for species that may be avoided, affected, or eliminated as a result of grading or any other site preparation activities. The lead biological monitor shall ensure that all surveys are conducted by qualified personnel (e.g. avian biologists for bird surveys, herpetologists for reptile surveys, etc.) and that they possess all necessary permits and memoranda of understanding with the appropriate agencies for the handling of potentially-occurring special-status species. The lead biological monitor shall also ensure that daily monitoring reports (e.g., survey results, protective actions, results of protective actions, adaptive measures, etc.) are prepared, and shall make these monitoring reports available to DRP and CDFW at their request.	A. Retain qualified Biologist(s)	Prior to issuance of Grading Permit	Applicant/Construction Monitor	LACDRP CDFW
	B. Field Surveys	Prior to grading permit	Applicant	LACDRP CDFW
	C. Maintain daily monitoring reports	During Construction	Applicant/Construction Monitor	LACDRP CDFW

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
B-2 Pre-Construction surveys will be conducted prior to ground disturbance at each project site. These surveys will include all special-status species identified as having the potential to be present on the project site; including, but not limited to, badger, kit fox, southern grasshopper mouse, and the species listed below. • Pre-survey information gathering will include reviewing of all available agency nest data and mapping. • A focused pre-construction Swainson's hawk survey shall be conducted to locate any nesting sites within 5 miles of Projects 1 – 6. If Swainson's hawks or their active nests are located within 500 feet of the project sites, all construction-related work shall be postponed and CDFW will be consulted. • Project-related activities likely to have the potential of disturbing suitable bird nesting habitat, which includes ground nesting birds, shall be prohibited from February 1 through August 31, unless a qualified monitoring biologist conducts nesting bird surveys prior to any construction-related disturbance to confirm the absence of active bird nests or bird nesting habitat. Disturbance shall be defined as any activity that physically removes or damages vegetation or habitat or any action that may cause disruption of nesting behavior such as loud noise from equipment or artificial night lighting. Surveys shall be conducted weekly, beginning no later than 30 days and ending no earlier than 3 days prior to the commencement of disturbance. If an active bird nest is discovered, disturbance within 500 feet for raptors shall be postponed until the nest is vacated, offspring are independent of the nest area and there is no evidence of further attempts at nesting. Limits of avoidance shall be marked with high-visibility flagging or fencing. The Applicant shall record the results of the recommended protective measures and submit the records to LACDRP and CDFW to document compliance with applicable state and federal laws pertaining to the protection of native birds. • A pre-construction burrowing owl survey shall be conducted on each site prior to grading. Pre-construction surveys for burrowing owl shall be conducted weekly, beginning no later than 30 days and ending no earlier than 3 days prior to the commencement of disturbance. The surveys shall follow the protocols set forth by the California Burrowing Owl Consortium (1993 and 2012). If burrowing owls are found during the pre-construction survey, then replacement burrows and habitat must be provided prior to the commencement of construction. The Applicant shall be prepared to provide artificial replacement burrows in the event that owls are	Pre-construction surveys for special-status species that have been identified as having potential to occur on site	Prior to grading or as specified per species	Applicant	LACDRP CDFW

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
detected, either as wintering or breeding individuals. Wintering individuals may be evicted with the use of exclusion devices followed by a period of seven days to ensure that animals have left their burrows. When it can be assured that owls are no longer using the burrows, the burrows can be hand excavated and collapsed under the supervision of the avian biologist. Breeding owls must not be disturbed and must be allowed to complete the raising of young until the fledglings can forage independently of adults and it can be confirmed that further attempts at nesting shall not be undertaken. When this has been confirmed, the owls can be evicted as described above for wintering animals. • Pre-construction surveys shall be conducted for special-status ground-dwelling reptiles, including but not limited to coast horned lizard and northern California legless lizard. Surveys shall be conducted by placing coverboards on the ground 4 to 6 weeks in advance of the survey effort, checking weekly for such species. Any special-status reptiles or other species determined important by the qualified biological monitor (i.e., biologist must be appropriately permitted for collection and relocation activities) occurring within the work area prior to the start of work shall be collected and relocated to areas outside of the designated work zones.				
B-3 During grading, earthmoving activities, and other construction activities the biological monitor shall be present to inspect and enforce all mitigation requirements and to relocate any species that may come into harm's way to an appropriate offsite location of similar habitat. The biological monitor shall be authorized to stop specific grading or construction activities if violations of mitigation measures or any local, state, or federal laws are suspected. The biological monitor shall file a report of the monitoring activities with LACDRP and CDFW. If ongoing biological monitoring of construction activities reveals the presence of any special-status reptiles within an active work area, then work shall be temporarily halted until the animals can be collected and relocated to areas outside of the designated work zones. Work areas shall be surveyed for special-status reptile species, such as the coast horned lizard and northern California legless lizard, during construction activities. During the construction, surveys shall be conducted by placing coverboards on the ground in appropriate work areas and checking them weekly for such species. Any special-status reptiles occurring within the work area shall be collected and relocated to areas outside of the designated work zones.	Biological Monitoring	During construction	Applicant	LACDRP CDFW

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
B-4 Mitigation lands shall be acquired for Swainson's hawk, burrowing owl, special-status migratory and wintering birds, and alkali mariposa lily. Swainson's hawk: Impacts due to development of the projects shall be mitigated by the acquisition of good quality Swainson's hawk habitat targeted within the Antelope Valley. Land shall be purchased or placed in a conservation easement or other suitable deed restriction and managed to maintain suitable habitat in perpetuity. The proposed development is not expected to result in the "take" of Swainson's hawk; however, the Applicant shall be required to consult CDFW in the event of take, which may result in additional mitigation prescribed by CDFW. Although the Projects are not expected to result in "take" of Swainson's hawk, mitigation will still be required to alleviate the effects of cumulative impacts on raptor, migratory bird, and burrowing owl habitats: Replacement land will be provided based on the quality of the mitigation land relative to the impacted habitat. The ratio of such replacement shall be determined as follows: • A ratio of one acre of replacement land for each 3 acres of development if the replacement land is superior nesting and foraging habitat contiguous to occupied nesting and foraging habitat, and is within a designated or proposed Significant Ecological Area (SEA). • A ratio of one acre of replacement land for each 2 acres of development if the replacement land is unoccupied irrigated land, contiguous to occupied habitat and providing superior quality foraging habitat with trees or other such nesting habitat; • A ratio of 1 acre of replacement land for each acre of development if the replacement land provides similar foraging and nesting habitat. Burrowing Owl: Mitigation for any occupied burrowing owl burrows found during pre-construction surveys will include a comprehensive tiered approach: • Pre-construction and construction monitoring surveys conducted by a qualified biologist to detect potential new owl activity onsite; • Disturbance avoidance of occupied burrows during nesting period February 1 – August 31; • Impact avoidance of occupied burrows; • Burrow exclusion and closure and offsite relocation (>100 m), as described previously in in B-2, will be conducted for unavoidable impacts to occupied burrows (after consultation with CDFW). • Minimizing impacts by protecting in-place any owls, their burrows,	A. Acquire mitigation lands for Swainson's Hawk	Prior to 1st either grading or building permits	Applicant	LACDRP CDFW
	B. Acquire mitigation lands for Burrowing Owl	Prior to 1st either grading or building permits	Applicant	LACDRP CDFW
	C. Pre-construction survey for Alkali Mariposa Lilies	Prior to 1st either grading or building permits	Applicant	LACDRP CDFW
	D. If necessary Acquire Alkali Mariposa Mitigation land	Prior to 1st either grading or building permits	Applicant	LACDRP CDFW

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
and their immediate habitat by establishing setback zones and visual screens for burrows adjacent to construction activity; by placing visible markers, and by conducting construction worker awareness training. Setback widths will be applied as appropriate to the level of existing disturbance and owl stage of activity (e.g., for low to moderate construction-related disturbance activity outside the nesting season near burrows in currently high-traffic or disturbance areas, it is assumed owls are adapted to human disturbance and will not need a large setback). • Mitigating unavoidable impacts to habitat: restore temporary impacts to pre-existing conditions; replace nesting/occupied and satellite burrows lost with the same number of suitable burrows on the mitigation site. Mitigation acreage for foraging habitat provided for Swainson's hawk will be sufficient to replace lost burrowing owl habitat because the hawk's replacement habitat will be in-kind or better (i.e., the Project habitat is low quality overall and mitigation habitat will be at least the same quality as the lost habitat OR will have higher quality habitat features overall, such as increased vegetative structure, higher numbers of prey species, less disturbance, and less potential for predation by domestic animals, etc.). Specific habitat considerations as provided in the CDFW 2012 burrowing owl guidance will be considered in selecting the overall habitat replacement acres for the project. Alkali Mariposa Lily: Alkali mariposa lily will be avoided to the greatest extent possible. If pre-construction surveys reveal individuals that cannot be avoided, mitigation of lost alkali mariposa lily shall be provided at a minimum 1:1 ratio. This acreage will be calculated with input from LACDRP and CDFW. Additionally, because alkali mariposa Lilies have locally available seed sources, plantings of the lilies on appropriate soil types on Projects shall be implemented in selected areas. The lilies may also be transplanted from areas planned for disturbance to more suitable locations in the Project area. Transplantation locations must be situated within adequately buffered areas to be found suitable. For all species the mitigation acreage may be located within the Project sites, but outside of the area of development, subject to LACDRP and CDFW approval, if acreage of sufficient quantity and quality exists.				

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
B-5 Review and Approval of Habitat Management Lands Prior to Acquisition: The Applicant shall provide a mitigation land acquisition proposal to LACDRP and CDFW for their approval before acquiring the property. The proposal shall discuss the suitability of the property by comparing it to the selection criteria. As a part of the preparation of the land acquisition proposal, acreage quantification by habitat category will be developed with LACDRP and CDFW based on the following criteria: Habitat Management Land Selection Criteria: The Applicant must identify the region within which lands shall be acquired, and the type and quality of habitat to be acquired. Detailed criteria and acreage for each habitat category will be developed with Los Angeles County and CDFW. Foraging habitat shall be assessed as moderate to good with a capacity to improve in quality and value to Swainson's hawks, and must be within the Antelope Valley Swainson's hawk breeding range. Foraging habitat with suitable nest trees is preferred. Habitat Management Lands Acquisition: Prior to initiating ground-disturbing activities, the Applicant shall provide a proposal to LACDRP and CDFW for off-site mitigation land to be restored, enhanced, or maintained according to the requirements of the biological mitigation measures in this EIR. The proposal will require that mitigation lands identified shall be preserved as open space in perpetuity. Within 45 days of acquiring the mitigation land(s), the Applicant shall record a permanent deed restriction on the mitigation land(s) to be preserved as open space. The deed restriction or conservation easement language shall be submitted to LACDRP and CDFW for review and approval prior to recordation. Alternatively, should a conservation easement on the mitigation land be offered, the permanent conservation easement shall be recorded to the satisfaction of LACDRP and CDFW. The Applicant shall establish a fund sufficient for the restoration, enhancement, and maintenance of the mitigation land(s) until such time when the mitigation land(s) become self-sustaining and until such time as the mitigation land(s) meet the requirements of this mitigation measure. The fund shall be established within 90 days of mitigation land(s) acquisition in an amount acceptable to the LACDRP and CDFW.	A. Obtain approval of habitat management lands	Prior to Acquisition	Applicant	LACDRP CDFW
	B. Record a permanent deed restriction or conservation easement on mitigation land(s)	Within 45 days of acquiring land(s)	Applicant	LACDRP CDFW
	C. Establish fund in the amount acceptable to LACDRP and CDFW for restoration, enhancement, and maintenance of the mitigation lands	Within 90-days of mitigation land(s) acquisition	Applicant	LACDRP CDFW

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
Land Acquisition Schedule and Financial Assurances: The Applicant shall complete acquisition, or execute an irrevocable option to purchase, of proposed Habitat Management lands and shall provide financial assurances for dedicating adequate funding for impact avoidance, minimization, and compensation measures, if necessary, prior to the issuance of building permits. If an irrevocable option to purchase is utilized, the applicant shall provide a proposed date of purchase which coincides with construction of the facility.				
B-6 Prior to alteration of any streambeds, the Applicant shall enter into an agreement with the CDFW, pursuant to Sections 1601 through 1603 of the State Fish and Game Code.	Enter into an agreement with CDFW pursuant to sections 1601 through 1603	Prior to alteration of Streambed	Applicant	CDFW
B-7 Within all interior portions of the site within and adjacent to the proposed solar arrays, re-vegetation shall be accomplished (excluding interior roads as follows: Vegetation seeded in these areas shall comprise locally-sourced, native species if available, or, native compatible as approved by the County biologist if sufficient locally-sourced native seed stock not available, approximating low-growing communities such as native perennial or annual grasslands (i.e., wildflower fields). Shrub species shall not be used due to these species inability to survive continued vegetation trimming. Vegetation shall be maintained in accordance with Los Angeles County Fire Department regulations.	Revegetation of interior site, excluding interior roads	After construction	Applicant	LACDRP
5.5 CULTURAL RESOURCES				
CUL-1 In the event cultural resources are encountered during construction of the Projects, all ground-disturbing activities within the vicinity of the find shall cease and a qualified archaeologist and Native American Monitor shall be notified of the find. The archaeologist, in consultation with the Native American Monirot shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to recordation and excavation of the finds and evaluation and processing of the finds in accordance with § 15064.5 of the CEQA Guidelines. Potentially significant cultural resources consist of, but are not limited to, stone, bone, fossils, wood or shell artifacts or features, including hearths, structural remains, or historic dumpsites. If the resources are determined to be unique historic resources as defined under § 15064.5 of the CEQA Guidelines, Mitigation Measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate Mitigation Measures for significant resources could include but not be limited to avoidance or capping,	A. Archaeological monitoring and Native American monitor when there is a find	During earthmoving activities	Applicant/Construction Manager/Qualified Archaeologist	LACDRP NAHC
	B. Maintain log demonstrating compliance	During earthmoving activities	Applicant/Construction Manager/Qualified Archaeologist	LACDRP
	C. Site inspection as needed	During earthmoving activities	Applicant/Construction Manager/Qualified Archaeologist	LACDRP

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further earthwork shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any archaeological artifacts recovered because of mitigation will be donated to a qualified scientific institution approved by the Lead Agency where they would be afforded long-term preservation to allow future scientific study. This Mitigation Measure shall apply to all Projects.				
CUL-2 In the event of an accidental discovery or recognition of any human remains, California State Health and Safety Code § 7050.5 dictates that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to CEQA regulations and PRC § 5097.98. This Mitigation Measure shall apply to all Projects.	A. Archaeological and Native American monitoring	During construction	Applicant/Construction Manager/Qualified Archaeologist/NAHC representative	LACDRP NAHC
	B. Maintain documentation demonstrating compliance	During construction	Applicant/Construction Manager/Qualified Archaeologist	LACDRP
	C. Site inspection as needed	During construction	Applicant/Construction Manager/Qualified Archaeologist	LACDRP
CUL-3 Project 4 construction of gen-tie lines shall maintain the right of way buffer zones prescribed by SCE for this historic electric transmission line resource, which is an active transmission line. This Mitigation Measure shall apply to Project 4 only.	Site inspection as needed	During construction	Applicant/Construction Manager/Qualified Archaeologist	LACDRP
CUL-4 Project construction for Project 4 shall maintain a one acre undisturbed area surrounding the Del Sur Cemetery site. This Mitigation Measure shall apply to Project 4 only.	A. Submit pre-construction surveys	Prior to construction	Applicant/Qualified Archaeologist	LACDRP
	B. Construction monitoring by qualified Archaeologist	During construction	Applicant/Qualified Archaeologist	LACDRP
	C. Submit construction monitoring documentation	Applicant/Qualified Archaeologist	Applicant/Qualified Archaeologist	LACDRP
	D. Site inspection as needed	Applicant/Qualified Archaeologist	Applicant/Qualified Archaeologist	LACDRP
CUL-5 A County approved archaeologist will be retained to initiate and supervise cultural resource monitoring during Project related earthwork in areas of the Project that are within 50 feet from certain significant cultural resources, specifically from the defined perimeter of site CA-LAN-1579H (Project 4). If resources are identified, the procedures outlined in CUL-1 will be followed and/or CUL-2 (as necessary). This Mitigation Measure shall apply to Project 4 only.	A. Archaeological monitoring	During Project related earthmoving activities	Applicant/Construction Manager/Qualified Archaeologist	LACDRP
	B. Maintain log demonstrating compliance	During Project related earthmoving activities	Applicant/Construction Manager/Qualified Archaeologist	LACDRP

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
PALEO-1: A qualified paleontologist shall be retained by the Applicant prior to excavations reaching 10 feet in depth or greater. A The paleontologist shall develop and execute a Paleontological Resource Mitigation and Monitoring Program and supervise a paleontological monitor whom shall monitor all ground-disturbing activities associated with such excavations. The Program will outline the procedures to follow in regards to paleontological resources (e.g. monitoring protocols, curation, data recovery of fossils, reporting). If fossils are found during such excavation, the paleontological monitor shall be authorized to halt ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment according to the Program.	Paleontological Monitoring	During Project related earthmoving activities	Applicant/Construction Manager/Qualified Paleontologist	LACDRP LAC Natural History Museum support/referral
5.6 GEOLOGY AND SOILS				
No mitigation measures are required for Geology and Soils.	N/A	N/A	N/A	N/A
5.7 GREENHOUSE GAS EMISSIONS				
GHG-1 All off-road diesel powered construction equipment less than 50 hp shall meet or exceed Tier 2 off-road emission standards. Off-road diesel-powered construction equipment greater than or equal to 50 hp shall meet or exceed Tier 3 off-road emission standards. The construction equipment requirement shall be increased to Tier 4 off-road emission standards by January 1, 2015. Post-January 1, 2015, all off-road diesel-powered construction equipment greater than 50 hp shall meet or exceed Tier 4 off-road emission standards, where available. Verification documentation such as an ongoing log shall be provided to the County of Los Angeles Department of Regional Planning upon request within five business days.	A. Submit operating permit(s) as required	Prior to commencement of construction	Applicant	AVAQMD LACDRP
	B. Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	AVAQMD LACDRP
GHG-2 During construction, the off-road equipment, vehicles, and trucks shall not be idle more than five minutes in any one hour.	Site inspection as needed	During construction	Applicant/Construction Manager	AVAQMD LACDRP
GHG-3 The off-road construction equipment drivers shall have proper training in operating the equipment efficiently, taking into account ways to reduce the hours of operations of the equipment and/or operate the equipment at a lower load factor.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	AVAQMD LACDRP
GHG-4 Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.	Site inspection as needed	During construction and grading	Applicant/Construction Manager	AVAQMD LACDRP
GHG-5 During construction, there shall be documented carpools, vanpools, and/or shuttles provided for construction employees.	Maintain log demonstrating compliance	Prior to Building Permit	Applicant/Construction Manager	AVAQMD LACDRP

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
5.8 HAZARDS/HAZARDOUS WASTES				
HH-1 Prior to the start of construction activities, a Hazardous Materials Management Plan shall be implemented for each project.	Submit Hazardous Materials Management Plan	Prior to start of construction	Applicant	DTSC
HH-2 Prior to the start of construction activities, a Hazardous Waste Management Plan shall be implemented for each project.	Submit Hazardous Waste Management Plan for each Project	Prior to start of construction	Applicant	DTSC
HH-3 Prior to the start of construction activities on the parcel containing the historic UST at the location of Project 1, a Phase I ESA will be completed. This mitigation measure only applies to Project 1.	Phase I ESA	Prior to issuance of grading permit(s)	Applicant	LACDRP
HH-4 Prior to the start of construction activities, a closure permit for the UST will be verified or obtained from the Los Angeles County Fire Department, Health Hazardous Materials Division. This mitigation measure only applies to Project 1.	Closure permit or verification for UST – Project 1 site	Prior to issuance of grading permit(s)	Applicant	LACFD
HH-5 Construction activities shall be halted if previously unidentified soil contamination is observed or indicated by testing during any earthwork activities. Construction will be halted or redirected until such soil contamination is evaluated and disposed of and/or treated	Testing of soil contamination	Prior to start of construction	Applicant	DTSC LACDRP
5.9 HYDROLOGY/WATER QUALITY				
Construction				
HYDRO-1 Education and training for Property Owners, Tenants, Occupants and Employees. Appropriate educational materials and training for preventing stormwater pollution and additional BMP Fact Sheets from the California Stormwater Best Management Practice Handbooks can be found at www.cabmphandbooks.com. Practical information material will be provided to employees on general good housekeeping practices. These materials will describe, but are not limited to, spill prevention and control and the use of chemicals, petroleum products, pesticides and fertilizers that should be limited to the property, with no discharge of wastes directly or indirectly to gutters, catch basins or the storm drain system. Information will be distributed directly to the employees as well as being posted in public areas. This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities. The required materials shall be available at each project site and a log kept to show education has occurred prior to the start of construction.	Maintain log demonstrating compliance of Educational materials and training for Property Owners, Tenants, Occupants, and Employee	During Construction	Applicant	LACDRP

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
HYDRO-2 A spill contingency plan will be prepared by the owner/building operator. As a minimum the Spill Contingency Plan will "mandate the stockpiling of cleanup materials, notification of responsible agencies, disposal of cleanup materials and documentation." This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities.	Submit spill contingency plan	Prior to grading permit	Applicant	LACDRP
HYDRO-3 No hazardous materials are anticipated to be stored on-site. If deemed otherwise, a designated representative of the owner shall provide information to the Fire Authority in accordance with requirements of the Health & Safety Code. This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities.	Maintain log demonstrating compliance	During construction and operations	Applicant/Construction Manager	LACFD
HYDRO-4 A designated representative of the owner shall provide information to the Fire Authority in compliance of the current requirements of the County of Los Angeles Fire Code. This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities.	Submit all applicable information	Prior to grading permit	Applicant	LACFD
Operation				
HYDRO-5 Site waste receptacles shall be emptied on a weekly basis or more often if containers approach overflowing. Upon inspection any debris or rubbish will be picked up and the site cleaned. The trash area/room is NOT to be cleaned by hosing down. The type of materials used to clean the area and storage of said materials will be determined by the Contractor. Signage will be posted that lids shall be kept closed at all times. This Mitigation Measure shall be implemented at Projects 1 – 6 at all times during facility operations.	A. Include waste collection and disposal methods in construction contract specifications	During operation	Applicant	LACSD LACDRP
	B. Maintain log demonstrating compliance	During operation	Applicant	LACSD LACDRP
5.10 LAND USE AND PLANNING				
No mitigation measures are required for Land Use and Planning	N/A	N/A	N/A	N/A
5.11 NOISE				
N-1 Construction operations would not occur between 7:00 p.m. and 7:00 a.m. on weekdays or Saturday, or at any time on Sunday with the exception of limited low-noise generating potential night work with Los Angeles County Department of Regional Planning and Public Works approval.	Maintain log of construction equipment arrivals and exit times demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP
N-2 Construction site and access road maximum speed limit of 15 miles per hour shall be established and enforced during the construction period.	Site inspection as needed	During construction	Applicant/Construction Manager	LACDRP

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
N-3 Electrically-powered equipment shall be used instead of pneumatic or internal combustion powered equipment, except for devices like trucks, loaders, dozers, and other heavy equipment.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP
N-4 Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable, and no closer than 1,000 feet, from noise-sensitive receptors.	A. Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP
	B. Inclusion of requirement for a Noise Control Plan	During construction	Applicant/Construction Manager	LACDRP LACDPH – Health Officer for referral
N-5 The use of noise-producing signals, including horns, whistles, alarms, and bells are prohibited except where required by OSHA or for safety or emergency warning purposes required by other regulatory agencies.	Site inspection as needed	During construction	Applicant/Construction Manager	LACDRP
N-6 Project-related public address or music systems used on-site shall not be audible at any adjacent receptor.	Site inspection as needed	During construction	Applicant/Construction Manager	LACDRP LACDPH – Health Officer for referral
N-7 All noise-producing construction equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications which are in compliance with any applicable legally required equipment noise standards. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and/or other noise control features that are readily available for that type of equipment. Mobile sound barriers with a sound transmission class of 19 or greater will be used for pile driving on Projects where received sound levels at the nearest NSR are predicted to be above the County construction noise limit of 60 dBA during the day.	A. Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP LACDPH – Health Officer for referral
	B. Site inspection as needed	During Construction	Applicant/Construction Manager	LACDRP
With respect to mitigation during operation, potential impacts associated with on-site substations are considered. Depending on the Project's acoustic design goals, final substation design may incorporate appropriate mitigation measures, including: **N-8** Siting substations to achieve NEMA sound ratings at sensitive receptors as described in Section 4.11.5.2 not to be closer to the property line of sensitive receptors than the following distances for each individual project: • Project 1 – 325 feet with a NEMA sound rating of 74 dBA • Project 2 – 1,511 feet with a NEMA sound rating of 81 dBA • Project 3 – 650 feet with a NEMA sound rating of 74 dBA	A. Submit acoustical report demonstrating substation design compliance with applicable noise standards	Prior to issuance of relevant building permit(s)	Applicant	LACDRP LACDPH Health Officer
	B. Construct structures in compliance with noise limit requirements of applicable County codes.	During construction	Applicant/Construction Manager	LACDRP LACDPH
	C. Submit post-construction noise measurements verifying compliance upon request	Prior to issuance of certificate of occupancy	Applicant	LACDRP LACDPH Health Officer – for support/referral

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
• Project 4 (two transformers) – 1,000 feet with a NEMA sound rating of 77 dBA • Project 5 – 748 feet with a NEMA sound rating of 82 dBA				
With respect to mitigation during operation, potential impacts associated with on-site substations are considered. Depending on the Project's acoustic design goals, final substation design may incorporate appropriate mitigation measures, including: **N-9** The Applicant shall choose to use NEMA low noise rated transformer equipment which will achieve 10 dBA or greater noise reduction as compared to standard NEMA-rated transformers of a similar size and rated capacity to ensure that Project noise impacts would be less than significant.	A. Submit acoustical report demonstrating substation design compliance with applicable noise standards	Prior to issuance of relevant building permit(s)	Applicant	LACDRP LACDPH Health Officer
	B. Construct structures in compliance with noise limit requirements of applicable County codes.	During construction	Applicant/Construction Manager	LACDRP LACDPH
	C. Submit post-construction noise measurements verifying compliance upon request	Prior to issuance of certificate of occupancy	Applicant	LACDRP LACDPH Health Officer – for support/referral
5.12 PUBLIC SERVICES				
No mitigation measures are required for Public Services	N/A	N/A	N/A	N/A
5.13 TRANSPORTATION/TRAFFIC				
TT-1 Prior to issuance of first grading or building permit, Applicant shall document and submit all required information and/or material pertaining to the pavement conditions of construction routes for the Projects, including the formula for calculation of the Projects' fair share of any repair or reconstruction of construction routes to the satisfaction of LACDPW. Applicant shall reimburse the County of Los Angeles for the cost of any repairs and/or reconstruction of construction routes attributable to the Projects as agreed to by LACDPW. The timing of any necessary repairs and/or reconstruction of construction routes and the required payment by the Applicant shall be determined by LACDPW.	Submit Projects' road survey	Prior to issuance of first grading or building permit	Applicant	LACDPW
TT-2 The County, including LACFD Fire Stations 78 (for R2011-00801) and 130 (for R2011-00798, 00799, 00805,00807, & 00833) shall be notified at least three days in advance of any street closures that may affect fire and/or paramedic responses in the area. The Applicant shall provide alternate route (detour) plans to the County, including three sets to LACFD, with a tentative schedule of planned closures, prior to the beginning of construction.	Provide street closure notifications	Three days prior to any street closures impacting fire and/or paramedics	Applicant/Construction Manager	LACFD

Project Design Feature/Mitigation Measure	Action Required	Mitigation Timing	Responsible Party	Monitoring Agency or Party
TT-3 Stagger construction work shifts before or after peak traffic hours.	A. Maintain log demonstrating compliance	During construction	Applicant	LACDRP LACDPH Health Officer – for support referral Caltrans
	B. Site inspection as needed	During construction	Applicant	LACDRP LACDPH Health Officer – for support referral Caltrans
TT-4 Schedule truck deliveries during off peak hours.	Maintain log of truck arrivals and exit times demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP
TT-5 Limit water truck deliveries during the AM peak hour to 30 percent of the daily water truck trips.	Maintain log of truck arrivals and exit times demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP
TT-6 Encourage carpooling between construction works.	Maintain log demonstrating compliance	During construction	Applicant/Construction Manager	LACDRP
5.14 UTILITIES				
No mitigation measures are required for Utilities.	N/A	N/A	N/A	N/A
List of Acronyms: B & S – building and safety BMP – Best Management Practice CEQA – California Environmental Quality Act CASQA – California Association of Stormwater Quality Agencies CBC – California Building Code CDFW – California Department of Fish and Wildlife CUP – Conditional Use Permit CVC – California Vehicle Code dBA – decibels (acoustics) DPR – Department of Parks and Recreation ESA – Environmental Site Assessment hp – Horsepower LACDPW – Los Angeles County Department of Public Works LACFD – Los Angeles County Fire Department mph – miles per hour NEMA – National Electrical Manufacturers Association OSHA – Occupational Safety and Health Administration PRC – Public Resources Code ROW – Right of Way				

SCE – Southern California Edison SWPPP – Stormwater Pollution Prevention Plan UFC – Uniform Fire Code UST – Underground Storage Tank WATCH – Work Area Traffic Control Handbook LACDPH – Los Angeles County Department of Public Health LACSD – Los Angeles County Sanitation District				

Please complete and return to:
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, California 90012

AFFIDAVIT OF ACCEPTANCE

STATE OF CALIFORNIA }ss
COUNTY OF LOS ANGELES

REGARDING: PROJECT NO. R2011-00801 (Project 5)
CONDITIONAL USE PERMIT NO. 201100072
120th Street West and West Avenue I, Lancaster, CA
APN(S): 3267-003-001, 3267-003-002, 3267-003-003

I/We the undersigned state:

I am/We are the permittee/owner of the real property described above. I am/We are aware of, and accept, all the stated Findings and Conditions of Approval for the above-mentioned permit(s).

I/We have enclosed a check in the amount of **$3,600.00** payable to the County of Los Angeles as required by the Conditions of Approval for regular inspections for compliance. I/We also acknowledge that I/We and my/our successors in interest may be required to reimburse the Department of Regional Planning for any additional enforcement efforts necessary to bring the subject property into compliance.

Executed this _____ day of _____ ,20 _____

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

Complete both Applicant and Owner sections, even if the same.

Signatures must be acknowledged by a Notary Public. Affix seal or appropriate acknowledgements.

Applicant's Name: _____
Address: _____
City, State, Zip: _____
Signature: _____

Owner's Name: _____
Address: _____
City, State, Zip: _____
Signature: _____

Affidavit of Acceptance Instructions

STEP 1: **NOTARY PUBLIC:** In the presence of a Notary Public, sign the Affidavit of Acceptance form. Complete and sign both applicant and owner sections, even if the applicant is the same as the owner.

STEP 2: **COUNTY REGISTRAR-RECORDER:** Go to the Registrar-Recorder's office to record the original Affidavit of Acceptance and Conditions of Approval.

Registrar-Recorder Headquarters: 12400 East Imperial Highway, Norwalk, CA 90650. The following branch offices can also assist you: LAX Courthouse, Lancaster District Office, Van Nuys District Office. For more information call (562) 462-2125 or visit http://www.lavote.net/Recorder/Document_Recording.cfm.

a. Submit the original Affidavit of Acceptance form (wet signature) and Conditions of Approval to the County Registrar-Recorder for recording.

b. Request one certified copy of the recorded documents for the Department of Regional Planning.

STEP 3: **REGIONAL PLANNING:** Schedule an appointment with the case planner to submit the following items in person:

a. One certified copy of the recorded documents. The certified copy will have an official document number and a purple recordation stamp from the Registrar-Recorder.

b. Three full-sized copies of the final plans, or as requested by the planner. Plans must be bound and folded to fit into an 8 ½" x 14" folder.

c. One check payable to "County of Los Angeles" for zoning inspection fees (see Conditions of Approval). Write project number on checks.

d. One check payable to the "County of Los Angeles" for State Fish and Game CEQA fees (http://www.dfg.ca.gov/habcon/ceqa/ceqa_changes.html), as applicable below:

☐ Not Required (Categorically Exempt)

☐ $2,256.25 for the issued Negative Declaration or Mitigated Negative Declaration
Includes $75.00 Registrar-Recorder processing fee

☒ $3,104.75 for the Environmental Impact Report
Includes $75.00 Registrar-Recorder processing fee

Section 21089 (b) of the Public Resources Code provides that no project approval is operative, vested, or final until applicable California Department of Fish and Game CEQA fees are paid. The Registrar-Recorder will not accept a Notice of Determination (NOD) or Exemption unless applicable Fish and Game fees are paid. Regional Planning will file the NOD or Exemption, as applicable. (Fees rates effective 1/1/14 to 12/31/14)

STEP 4: At your final appointment, you will receive a copy of the approved site plan, and approved plans will be routed to the Department of Public Works, Building and Safety, as applicable.

For questions or for additional information, please contact the planner assigned to your case. Our office hours are Monday through Thursday, 7:30 a.m. to 5:30 p.m. We are closed on Fridays.

Please complete and return to:
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, California 90012

AFFIDAVIT OF ACCEPTANCE

STATE OF CALIFORNIA }ss
COUNTY OF LOS ANGELES

REGARDING: PROJECT NO. R2011-00801 (Project 5)
CONDITIONAL USE PERMIT NO. 201100072
120th Street West and West Avenue I, Lancaster, CA
APN(S): 3267-003-001, 3267-003-002, 3267-003-003

I/We the undersigned state:

I am/We are the permittee/owner of the real property described above. I am/We are aware of, and accept, all the stated Findings and Conditions of Approval for the above-mentioned permit(s).

I/We have enclosed a check in the amount of **$3,600.00** payable to the County of Los Angeles as required by the Conditions of Approval for regular inspections for compliance. I/We also acknowledge that I/We and my/our successors in interest may be required to reimburse the Department of Regional Planning for any additional enforcement efforts necessary to bring the subject property into compliance.

Executed this _____ day of _____ ,20 _____

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

Complete both Applicant and Owner sections, even if the same.

Signatures must be acknowledged by a Notary Public. Affix seal or appropriate acknowledgements.

Applicant's Name: _____
Address: _____
City, State, Zip: _____
Signature: _____

Owner's Name: _____
Address: _____
City, State, Zip: _____
Signature: _____

Draft Environmental Impact Report
Silverado Power West Los Angeles

Volume I — Chapters 1 through 9

COUNTY OF LOS ANGELES
Department of Regional Planning
320 West Temple Street, Room 1362
Los Angeles, California 90012

December 2013

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ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AB	Assembly Bill
AC	alternating current
ac*ft	acre-foot (feet)
ADT	Average Daily Traffic
AFY	acre-feet per year
ALUC	Airport Land Use Commission
amsl	above mean sea level
APE	Areas of Potential Effect
APN	Assessor's Parcel Number
Applicant	Silverado Power, LLC
AQMP	Air Quality Management Plan
asl	above sea level
ATSF	Atchison, Topeka & Santa Fe Railroad
AVAQMD	Antelope Valley Air Quality Management District
AVEK	Antelope Valley-East Kern Water Agency
BACT	Best Available Control Technology
Basin	Antelope Valley Groundwater Basin
BAU	business as usual
bgs	below ground surface
BLM	Bureau of Land Management
BMP	Best Management Practices
BTR	Biological Technical Report
C	Celsius
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
Cal/OSHA	California Division of Occupational Safety and Health
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASQA	California Association of Stormwater Quality Agencies
CAT	Climate Action Team

CBC	California Building Code
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CCR	California Code of Regulations
Cd	cadmium
CDFG	California Department of Fish and Game
CdTe	cadmium telluride
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFF	Call Firefighters
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH_4	methane
CHP	California Highway Patrol
CHSC	California Health and Safety Code
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPSEI	California Native Plant Society's Electronic Inventory
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of Los Angeles
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CSC	California Species of Concern
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CWA	Clean Water Act
dB	decibels
dBA	decibels (acoustic)
DC	direct current
DEIR	Draft Environmental Impact Report

DOC	Department of Conservation
DOGGR	Division of Oil, Gas, and Geothermal Resources
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substance Control
EDR	Environmental Data Review
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
EPS	Emissions Performance Standard
ERRP	Emergency Release Response Plan
ESA	Endangered Species Act
FAR	Fourth Assessment Report
FED	Functional Equivalent Document
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FSC	Federal Species of Concern
ft	feet
ft-lb	foot-pound
gen-tie	generation tie-line
GHG	greenhouse gases
GIS	Geographic Information Systems
GRP	General Reporting Protocol
GSU	generator step-up transformer
GWP	global warming potential
HFC	hydrofluorocarbon
HHMD	Health and Hazardous Materials Division
HI	Hazard Index
HIa	acute hazard index
HIc	chronic hazard index
HMBP	Hazardous Materials Business Plan
hp	horsepower
HRA	hazardous resource assessment

Hz	Hertz
I-5	Interstate 5
iADAM	interactive Aerometric Data Analysis and Management
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
IRWMP	Integrated Regional Water Management Plan
IS	Initial Study
km	kilometer
kV	kilovolt
L/kg-day	liters per kilogram-day
LACDPW	Los Angeles County Department of Public Works
LACDRP	Los Angeles County Department of Regional Planning
LACFD	Los Angeles County Fire Department
LACSD	Los Angeles County Sheriff's Department
LACWWD	Los Angeles County Waterworks District
lbs/day	pounds per day
LID	Low Impact Development
LORS	Laws, Ordinances, Regulations, and Standards
LRWQCB	Lahontan Regional Water Quality Control Board
LSE	load serving entities
M	meter
m^2	square meter
MDAB	Mojave Desert Air Basin
MEA	Master Environmental Assessment
mg/kg-day	milligrams per kilogram-day
MM	Mitigation Measures
MMT	million metric tons
mph	miles per hour
MVA	megavolt ampere
MW	megawatt
MW/hr	megawatt hour
MW-AC	megawatts alternating current
MY	million years
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

NDIR	non-dispersive infrared photometry
NEMA	National Electrical Manufacturers Association
NFIP	National Flood Insurance Program
NMA	Noise Management Areas
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
O&M	operations and maintenance
O_3	ozone
OAL	Office of Administrative Law
OEHHA	Office of Environmental Health and Hazard Assessment
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Pb	lead
PFC	perfluorocarbon
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
POU	publicly-owned utility
PPA	Power Purchase Agreement
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTO	Permit to Operate
PV	photovoltaic
RAWS	Remote Automated Weather Station
RCP	Regional Comprehensive Plan
RCRA	Resource Conservation and Recovery Act

REC	Recognized Environmental Conditions
REL	reference exposure level
RFI	radio frequency interference
rms	root mean square
ROG	reactive organic gases
ROW	right-of-way
rpm	revolutions per minute
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAFZ	San Andreas Fault Zone
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAB	South Coast Air Basin
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Coast Central Information Center
SCE	Southern California Edison
SEA	Significant Ecological Area
SERA	Sensitive Environmental Resource Area
SF_6	sulfur hexafluoride
SFHA	Special Flood Hazard Area
SGF	solar generating facility
SHPO	State Historic Preservation Officer
Silverado Power	Silverado Power, LLC
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_4	sulfate
SO_X	oxides of sulfur
SP	Southern Pacific Railroad
SR	State Route
SUSMP	Standard Urban Stormwater Mitigation Plan
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board

TAC	toxic air contaminants
Te	tellurium
TIS	Transportation Impact Study
TMDL	Total Maximum Daily Load
Torr	Torricelli (unit of pressure equal to 1/760 atmosphere)
TSDF	treatment, storage, and disposal facility
TSP	total suspended particulate
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
VMT	vehicle miles traveled
VOC	volatile organic compound
WDR	Waste Discharge Requirements
Williamson Act	California Land Conservation Act
WRP	water reclamation plant

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1.0 EXECUTIVE SUMMARY

1.1 INDIVIDUAL PROJECTS PROPOSED

The Applicant proposes to develop six photovoltaic (PV) Projects in the northern portion of unincorporated Los Angeles County. The gen-tie lines would traverse through the County of Los Angeles; a portion of the generation tie (gen-tie) lines would traverse through the City of Lancaster jurisdiction. These six facilities would collectively cover 987.1 acres of fallow and mostly disturbed agricultural land, and would generate 172 megawatts (MW) of electricity from solar photovoltaic modules. For the purpose of this Environmental Impact Report (EIR), the terms Projects, solar generating facilities (SGFs) and Projects 1 – 6 refer to Projects 1, 2, 3, 4, 5, and 6 and their associated gen-tie lines. Extensive details of each of the Projects are given in the Project Description in Section 3.0. The sites are located on United States Geological Survey quadrangles Little Buttes, Del Sur, and Rosamond. It should be noted that the amount of MW per site varies and is attributed to the individual facility layout and the MW filed with CAISO for interconnection at each site. The following information is given below for the Projects: sizes in acres, street locations, parcel numbers, and megawatts of solar energy which would be produced are given below.

1.1.1 Project 1

Project 1 is approximately 240 acres and located at 110th Street West and West Avenue B, Lancaster, California. The Assessor's Parcel Numbers (APN) for Project 1 are 3262-001-006 and 3262-001-005, and would produce 20 MW when complete.

1.1.2 Project 2

Project 2 is approximately 157 acres and located at 110th Street West and West Avenue K, Lancaster, California. The APN for Project 2 is 3267-015-001 and would produce 40 MW when complete.

1.1.3 Project 3

Project 3 is approximately 135.6 acres and is located at 70th Street West and West Avenue G, Lancaster, California. The APNs for Project 3 are 3268-018-035, 3268-018-002, and 3268-018-036, and would produce 35 MW when complete.

1.1.4 Project 4

Project 4 is approximately 256 acres and located at 97th Street West and West Avenue I, Lancaster, California. The APNs for Project 4 are 3218-002-018, 3218-002-023, 3203-002-015, 3203-002-017, 3218-001-002, 3218-001-003, 3218-001-004, 3203-002-011, 3203-002-012, 3203-002-013, 3203-002-014, and 3219-019-011, and would produce 52 MW when complete.

1.1.5 Project 5

Project 5 is approximately 160 acres and located at 120th Street West and West Avenue I, Lancaster, California. The APNs for Project 5 are 3267-003-001, 3267-003-002, and 3267-003-003, and would produce 20 MW when complete.

1.1.6 Project 6

Project 6 is approximately 38.5 acres and located at 35th Street West and West Avenue D, Lancaster, California. The APN for Project 6 is 3115-010-004, and would produce 5 MW when complete.

1.2 PROJECTS IN TOTAL

The Projects would consist of construction and operation of the Projects and their associated gen-tie lines. The Projects would be constructed in phases and each project would be operated for an estimated 35 years. The Projects would be designed and built in the same or similar method and would have similar project characteristics. The Projects would utilize PV technology on fixed-tilt or tracker mounting supports. The SGF design includes a dedicated 10,000-gallon fire water storage tank to be installed and maintained at each of the Projects in compliance with Los Angeles County Fire Department Regulation 19 and other applicable Fire Department water tank specifications.

The Applicant is requesting a Conditional Use Permit (CUP) for each of the Projects to allow for the construction and operation of the SGFs. Additionally, the Applicant is requesting a zone change from Zone Light Agriculture (A-1) to Heavy Agriculture (A-2) on Project 1 to allow for the construction and operation of the SGF, pursuant to the issuance of a CUP.

The Projects are located in an area of the Western Antelope Valley that had primarily been used for farming in previous years. However, diminished water supplies from extended ground water pumping have caused many farms to cease operation. The majority of the land for the Projects was utilized for farming although all of the lands are now considered disturbed or unproductive agricultural land.

A key objective of the Applicant was to locate the Projects in an area with the following characteristics: (1) adequate solar radiation; (2) close proximity to interconnection locations for each solar site; (3) project sites with landowners who are willing to sell large enough parcels of land for solar generation at market price; (4) lack of threatened and/or endangered biological species on the site; (5) lack of nearby sensitive receptors or land uses to minimize potential conflicts with development (6) relatively flat sites that have previously been disturbed to minimize disturbance to native habitat and to minimize the need for site grading; (7) existing access to accommodate construction workforce needs; and (8) access to nearby workforce to minimize traffic and socioeconomic impacts.

The purpose of the proposed Projects is to generate 172 MW of clean, renewable electrical power utilizing solar PV technology to deliver the electric output on a wholesale basis to utility providers, and to integrate the electrical output of Projects into the electrical grid. The Projects would contribute to meeting the existing and future demand for electricity generated from clean,

renewable technology. The electricity produced by the proposed Projects would be sold via Power Purchase Agreements (PPAs) that would provide a set and secure rate of financial return for the Projects.

The multiple benefits associated with developing this resource have been recognized repeatedly by both federal and state policy makers. Development of solar resources reduces reliance on foreign sources of fuel, diversifies energy portfolios, contributes to the reduction of greenhouse gas (GHG) emissions, and generates "green" jobs. The Projects would contribute much needed on-peak power to the electrical grid in California.

In addition, the Projects would help California meet its statutory and regulatory goal of increasing renewable power generation. Senate Bill 14 established Renewable Portfolio Standards (RPS) targets for California, stating, "All retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." State government agencies have been directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines. The six Project sites qualify as eligible renewable energy resources as defined by the California Public Resources Code and would help the state meet the objective of increasing renewable energy generation.

1.3 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Section 15123 of the California Environmental Quality Act (CEQA) Guidelines requires that an EIR provide a brief summary of areas of controversy known to the lead agency, including issues raised by agencies or the public that have arisen during the EIR process, and identify ways in which these issues have been or are being resolved. Issues raised in the Public Scoping meeting in Lancaster on July 14, 2012 are included in the list below. Issues that fall into this category are also given below.

Visual impacts to the aesthetics in Antelope Valley are a concern to the public. The visual effects of the Projects are shown in Section 4.1 of this Draft EIR. Inclusion of a 10-foot wide screening vegetation buffer intended to screen or partially screen some of the Projects has been proposed as a Mitigation Measure and would minimize the visual impacts of the Projects. Also, all gen-tie lines located within the County of Los Angeles would be placed underground unless other applicable regulations require above-ground installation to reduce the visual impact. Assuring that dark skies at night in the Antelope Valley are protected from light pollution is also a concern to the public. Using only minimal lighting on each site and using only down facing lighting on each site at night would minimize this impact and maintain the dark skies presently found in the valley at night.

Dust control during construction of the SGFs is a major concern for any project construction in the Antelope Valley and specifically for the proposed Projects. A Fugitive Dust Control Plan would be prepared and control measures such as minimal grading through use of mowing for array site preparation, stopping construction during high wind periods, watering the soils, using dust control soil binder mixtures on internal dirt roadways and soils, and phasing of construction to minimize the amount of disturbed land at any one time, would be defined.

Decommissioning of the sites was raised as an issue from the public. Decommissioning would be addressed in a detailed Decommissioning Plan that would address equipment removal and recycling, land recontouring, land revegetation, the total cost of decommissioning the Projects, and site closure and reclamation.

The California Department of Fish and Wildlife (CDFW) and the public raised concern over the protection of wildlife and provision of mitigation lands. Prior to grading, additional site surveys would assure all wildlife on the sites would be removed and/or protected. Abiological monitor would be onsite during all grading, earthmoving activities, mowing, and other construction activities. Mitigation lands would be acquired to mitigate impacts on Swainson's hawk, Burrowing Owl, special-status migratory and wintering birds, and Alkali Mariposa Lily. The Projects sites would be revegetated within all interior portions of the site within and adjacent to the proposed solar arrays. Prior to alteration of any streambeds, the Applicant shall enter into an agreement with the CDFW, pursuant to Sections 1601 through 1603 of the State Fish and Game Code.

The amount of water and the extraction of water pumped from wells on the Projects is a concern for residents living in the area. Calculations and analyses were performed to determine the amount of water required for construction and operation. Water estimates are provided in Table 4.14-2 of Section 4.14. The impacts from water usage during construction and operation of the Projects would be less than significant since the Projects are proposing to use out of basin water for construction and operations.

Control of surface water regarding water flow onto and off of the Projects is a concern to Los Angeles County Public Works and to the local public. Technical hydrology studies are provided giving the designs for storm water control on the project sites (see Appendix B-7), which would meet Los Angeles County design standards.

There is a public concern for the potential for hazardous constituents, particularly cadmium, to leach from solar modules into the local soils or ground water. Solar panels which use cadmium-telluride composition would be covered with glass. Prior to the start of construction activities, a Hazardous Materials Management and Hazardous Waste Management Plan and a Stormwater Pollution Prevention Plan (SWPPP) shall be implemented for each project. The public stated their concern that local law enforcement and fire services are not adequate in the area and may be impacted by the Project. This issue is addressed in this Draft EIR in Section 4.12; the analysis found the impact of the Projects would be less than significant.

Details of the Mitigation Measures are monitored and enforced by Los Angeles County. Specific mechanisms are in place in Los Angeles County to assure all Mitigation Measures included in and approved in this Draft EIR are implemented and that the provisions are enforceable. A Mitigation Monitoring and Reporting Program is being prepared and includes all mitigation measures and implementation details.

As stated above, the Areas of Controversy/Issues to be Resolved have been raised and that are known at the time of the Draft EIR preparation. Additional work on project designs and Mitigation Measures during the completion of the Draft and Final EIR would focus on alleviating or resolving the concerns of the public to the extent possible.

1.4 ALTERNATIVES TO BE ANALYZED IN THIS EIR

Section 15123 (b) (3) of the CEQA Guidelines requires the choice among alternatives must be presented and that the reasons for choosing a specific alternative are documented. In accordance with CEQA Guidelines Section 15126.6, this Draft EIR assesses a range of reasonable alternatives to the proposed Projects, which could feasibly attain most of the basic objectives of the proposed Projects and avoid or substantially lessen any of the significant effects of the proposed Projects. The alternatives considered include the following:

1.4.1 Alternative 1: No Projects

The proposed Projects 1 – 6 would not be approved or implemented under the No Project Alternative. The potential environmental impacts and benefits of the proposed Projects would not occur as a direct consequence of implementation under the No Project Alternative. The No Project Alternative would involve taking no action to generate 172 MW of clean, renewable electrical power utilizing solar PV technology and to integrate the electrical output of the Projects into the electrical grid. This alternative would not allow the primary purpose of increasing the output of renewable energy in support of the RPS, such that the State of California may meet its current and planned goals for increasing renewable generation at reasonable market rates.

In summary, the No Project Alternative does not constitute a reasonable alternative for the proposed Projects 1 – 6 because it is incapable of meeting the stated goals and objectives, or contributing to the state's ability to meet its near- and long-term renewable energy generation goals and objectives. The No Project Alternative assumes that the sites will remain as they currently exist (primarily fallow agricultural land) and no environmental impacts would result.

In summary, the No Projects Alternative does not constitute a reasonable alternative to the proposed Projects because it would not meet the Projects' goals and objectives, or contribute to the state's near- and long-term renewable energy generation goals and objectives. If the proposed Projects are not approved and implemented, the sites would likely be developed for other purposes (e.g., residential) with commensurate environmental impacts. Therefore, it is not reasonable to assume that the No Projects Alternative would result in no impacts or fewer impacts than the proposed Projects.

1.4.2 Alternative 2: Lower Intensity Projects

An alternative to the proposed Projects is to develop less than six of the Projects and to generate less than 172 MWs of electricity. This lower intensity alternative is technically and environmentally feasible but partially fails to accomplish the goals of the Projects, which are to provide 172 MWs clean, renewable, electric energy using solar PV technology, and to deliver the electric output, on a wholesale basis, to utility providers. The Projects are designed to meet the increasing demand for clean, renewable electrical power. Any reduction in the size of this solar development effort would result in a similar reduction in the reliance on foreign sources of fuel, of the diversification of energy portfolios, of the contribution to the reduction of greenhouse gas emissions, and to the generation of "green" jobs. It would also reduce the contribution to the much needed on-peak power to the electrical grid in California.

The opportunity to develop solar power in Los Angeles County has a limited timeframe because the utility companies, which purchase the power, would purchase power from another entity if the proposed Projects are not completed in a timely manner. If Los Angeles County does not approve the six viable SGFs proposed, the opportunity to contribute to the competitive solar generation business in the County will be further lost to other counties and other projects. The proposed Projects are well positioned to compete in the industry, are comparatively environmentally superior to other locations, and have good positions for PPAs and interconnection agreements. Additionally, any reduction of the megawatts produced from these Projects would only make the County's contribution to State renewable energy goals substantially less. These 5 to 52 MW Projects are viable today, meet the utility industry needs for small projects, and any reduction of the intensity for the respective Project site developments would jeopardize the success of the Projects.

1.4.3 Alternative 3: Select Other Project Sites

Other properties could potentially be used for the six Project sites. The Applicant's proprietary selection process utilizes a 20-point decision tree and 50 screening steps to determine the most suitable project sites. Project sites with identified material risks are not pursued, and therefore regular re-evaluations occur. One key objective for the Applicant was to locate the Projects in an area with the following characteristics: (1) adequate solar radiation; (2) close proximity to interconnection locations for each solar site; (3) project sites with landowners who are willing to sell large enough parcels of land for solar generation at market price; (4) lack of threatened and/or endangered biological species on the site; (5) lack of nearby sensitive receptors or land uses to minimize potential conflicts with development (6) relatively flat sites that have previously been disturbed to minimize disturbance to native habitat and to minimize the need for site grading; (7) existing access to accommodate construction workforce needs; and (8) access to nearby workforce to minimize traffic and socioeconomic impacts. The six Project sites selected and proposed by the applicant are the most viable sites to develop solar electricity generation with minimal impacts. These sites were also chosen for development based on interconnection capacity and requirements placed on the Applicant by the utility providers. Selection of other alternative sites would have the same or greater impacts to the environment since the present Projects are the result of a long and intense effort by the Applicant to find and acquire the most suitable sites according to the seven criteria given above.

1.4.4 Alternative 4: Rooftop Solar Generation

For rooftop solar to be a viable alternative to the proposed Projects it would need to provide 172 MW of electricity into the local grid. Assuming one house can produce 25 kilowatts of electricity, a total of 6,880 houses would be needed to produce 172 MW of electricity. The Applicant does not have the ability to install solar panels on private rooftops; therefore this alternative is infeasible for the Applicant.

1.4.5 Alternative 5: Wind Energy Generation

For wind energy generation to be a viable alternative to the proposed Projects and meet the purpose and need of the proposed Projects, it would need to provide 172 MW of electricity into the local grid; and to be sited on previously disturbed land that utilizes existing electrical

distribution facilities, right-of-ways (ROWs), roads, and other existing infrastructure where feasible to minimize the need for new electrical support facilities. The area required for construction and operation of a 172 MW wind farm would require substantially more acreage than the Projects proposed; a contiguous project area this size is not readily available within the area of analysis for the proposed Projects. For these reasons, this alternative is infeasible.

1.4.6 Environmentally Superior Alternative

The environmentally superior alternative is considered to be Alternative 3, Alternative SGF sites, since the power generation goals could be met if alternative superior sites could be found. There are potential alternative sites available that would have impacts similar to the proposed Projects 1 – 6. Alternative sites would likely have equal or greater environmental impacts since the lands presently selected are previously disturbed and generally have less environmental value compared to several other properties in the area. Additionally, other alternative sites would not meet project objectives as pre-arranged PPAs and interconnection agreements for the potential Project sites are already in place. The Applicant has performed its due diligence in selecting Project sites. As stated in CEQA Section 15126.6, an “EIR need not consider every conceivable alternative to a project.” and an EIR “is not required to consider alternatives which are infeasible.” However, the project proponent has considered a range of potentially feasible alternatives as shown in Figure 6-1.

1.5 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND RESULTING LEVELS OF SIGNIFICANCE

A summary of various environmental impacts by resource topic and the Mitigation Measures proposed for Projects 1 – 6 are summarized below. .Mitigation Measures apply to each individual Project unless otherwise noted. Section 5: Mitigation Measures contains more detailed information for the mitigation measures.

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
A. AESTHETICS		
Any visible dust produced during construction. Adverse visual effects from construction would be temporary and last only during the construction time period.	**A-1** A Fugitive Dust Control Plan to minimize dust (visual pollution) shall be prepared and implemented.	Less than significant with mitigation
Adverse visual effects from construction would be temporary and would last only during the construction time period. Any trash, debris, and waste would be removed from the Project site during construction and the site screened or partially screened by fencing	**A-2** The Project site shall be maintained free of debris, trash, and waste during construction.	Less than significant with mitigation
Adverse visual effects from construction would be temporary and last only during the construction time period, and would be less than significant with mitigation. Any trash, debris, and waste would be removed from the Project site during construction and the site screened or partially screened by fencing.	**A-3** The Project site shall be visually screened or partially screened during construction by fencing.	Less than significant with mitigation
The Projects' SGFs would be located adjacent to trails. A 10-foot vegetative buffer is proposed for screening along the southern and western project boundaries (Mitigation Measure A-4) to mitigate views from any adjacent trails.	**A-4** A landscape plan shall be developed for each Project prior to Project construction that shows the detail of a 10-foot wide screening vegetation buffer intended to screen or partially screen the Project visually from area residents or travelers on nearby roadways. The landscaping and vegetation buffer is shown for each respective Projects in Appendix B-14.	Less than significant with mitigation
Project components would introduce minimal amounts of glare to the existing landscape. The PV modules are designed to absorb sunlight, and the glass modules that protect the PV surface are typically formulated glass designed to allow sunlight to pass with minimal reflection. Impacts from new sources of light or glare are expected to be less than significant with Mitigation Measure A-5	**A-5** All lighting shall comply with applicable provisions of the Los Angeles County Outdoor Lighting District Ordinance. Lights shall be limited to types allowed by the ordinance, installed below maximum allowed heights, pointed downwards and shielded to minimize light trespass, and mounted on essential infrastructure rather than on separate light poles except where poles are required by regulation or by governing agency. Lighting will comply with the hours of operation requirements in the ordinance, and utilize automatic control devices to comply with time limits except where permitted by Los Angeles County. Lighting will be maintained in good repair at all times.	Less than significant with mitigation
B. AGRICULTURE AND FORESTRY	No mitigation measures are required.	N/A
C. AIR QUALITY		
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from fuel combustion in vehicles used for	**AQ-1** Water active sites at least twice daily (locations where soil disturbance is to occur would be thoroughly watered before earthmoving) during construction, or, in locations where water alone does not suffice to suppress dust adequately apply nontoxic chemical soil stabilizers, according to manufacturers' specifications. Temporarily stockpiled soil shall be secured with tarps or plastic sheeting or sprayed with non-toxic soil stabilizers.	Less than significant with mitigation.

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
worker commute, material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions.		
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), **dusts from paved and unpaved roads,** constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, **material hauling**, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions.	**AQ-2** All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard in accordance with the requirements of CVC Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).	Less than significant with mitigation
Since construction of Projects 1-6 would occur consecutively over the course of two years, construction of the six Projects could overlap. This would cause a peak in the Projects' daily construction emissions. These emission forecasts reflect a specific set of assumptions in which the six Projects would be built out over the course of two years, using equipment subject only to current, less stringent emission standards than those applicable in future years. The analysis assumed that all construction activities would comply with AVAQMD Rule 403 regarding the control of fugitive dust. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less intensive build-out schedule (i.e., lower daily emissions occurring over a longer time interval). A summary of unmitigated daily overlapping construction phases for the Projects is presented in Table 4.3-11; and mitigated daily overlapping construction phases for the Projects is presented in Table 4.3-12. As shown in Table 4.3-11, unmitigated peak daily concurrent construction emissions would exceed PM_{10} thresholds in July, August, and September of 2014. However, as the project has committed to the mitigation measures listed in Section 4.3.7, Mitigation Measures, PM_{10} and $PM_{2.5}$ emissions will be reduced to below the significance thresholds.	**AQ-3** All off-road diesel powered construction equipment less than 50 hp shall meet or exceed Tier 2 off-road emission standards. Off-road diesel-powered construction equipment greater than or equal to 50 hp shall meet or exceed Tier 3 off-road emission standards. The construction equipment requirement shall be increased to Tier 4 off-road emission standards by January 1, 2015. Post-January 1, 2015, all off-road diesel-powered construction equipment greater than 50 hp shall meet or exceed Tier 4 off-road emission standards, where available. Verification documentation such as an ongoing log shall be provided to the County of Los Angeles Department of Regional Planning upon request within five business days.	Less than significant with mitigation
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all	**AQ-4** During construction, the off-road equipment, vehicles, and trucks shall not be idle more than five minutes in any one hour.	Less than significant with mitigation

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
construction phases of the Projects to further reduce emissions.		
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) **emissions of air pollutants from fuel combustion in vehicles used for worker commute, material hauling, and construction debris disposal**. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions.	**AQ-5** The off-road construction equipment drivers shall have documented training in operating the equipment efficiently, taking into account ways to reduce the hours of operation of the equipment and/or operate the equipment at a lower load factor.	Less than significant with mitigation
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions.	**AQ-6** Traffic speeds on all unpaved roads shall be maintained at 15 mph or less.	Less than significant with mitigation
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) **emissions of air pollutants from fuel combustion in vehicles used for worker commute,** material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions.	**AQ-7** During construction, there shall be documented carpools, vanpools, and/or shuttles provided for construction employees.	Less than significant with mitigation
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions.	**AQ-8** During array area preparation, mowing shall be used instead of grading and/or disking, and shall be limited to no more than 3.5 acres per day per site to further reduce dust emissions during construction.	Less than significant with mitigation

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), **dusts from paved and unpaved roads,** constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions.	**AQ-9** All interior roads shall use long-lasting non-toxic chemical soil stabilizers designed for long-term dust stabilization on dirt roads.	Less than significant with mitigation
The analysis assumed that all construction activities would comply with AVAQMD Rule 403 regarding the control of fugitive dust. However, as the project has committed to the mitigation measures listed in Section 4.3.7, Mitigation Measures, PM10 and PM2.5 emissions will be reduced to below the significance thresholds. Project operations would involve limited vehicle travel within the solar PV array field to periodically wash the PV panels, **to control vegetation** and maintain fuel breaks, and to maintain and inspect Project facilities. **These operational-phase activities can cause fugitive dust emissions.** The owner, or its contractors, would be required to follow the fugitive dust control strategy outlined in the Dust Control Plan that would be prepared for the Projects (refer to Section 5.6.5).	**AQ-10** Interior array areas shall have re-established pre-existing vegetation or be established with drought tolerant, native, or native compatible vegetation approved by the County biologist and compliant with Fire Department requirements, within two years of energization authorization of an array area by the Department of Public Works, Building and Safety Division, to provide long-term dust stabilization under the arrays.	Less than significant with mitigation
Each construction phase potentially can generate the following: (1) **fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading)**, dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions.	**AQ-11** Earth disturbing activities shall be suspended and/or additional water shall be applied to meet Rule 403 criteria if wind gusts exceed 25 miles per hour.	Less than significant with mitigation
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) **emissions of air pollutants from fuel combustion in construction equipment**; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section	**AQ-12** Construction activity shall utilize electricity from power poles on or adjacent to the Project sites rather than use of temporary diesel power generators and/or gasoline power generators when electricity with adequate circuit capacity is available from power poles in proximity to construction areas.	Less than significant with mitigation

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
4.7.6 during all construction phases of the Projects to further reduce emissions.		
Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) **emissions of air pollutants from fuel combustion in construction equipment**; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions.	**AQ-13** In the event temporary night lighting is necessary for construction or maintenance purposes, lighting not requiring the use of diesel or gasoline driven generators shall be used.	Less than significant with mitigation
D. Biological Resources		
Construction of the Projects and gen-tie lines could result in potential impacts to biological resources.	**B-1** Prior to the issuance of a grading permit, a qualified biologist shall be retained by the Applicant as the lead biological monitor subject to the approval of the LACDRP and CDFW. That person shall ensure that impacts to all biological resources are minimized or avoided, and shall conduct (or supervise) pre-grading field surveys for species that may be avoided, affected, or eliminated as a result of grading or any other site preparation activities. The lead biological monitor shall ensure that all surveys are conducted by qualified personnel (e.g. avian biologists for bird surveys, herpetologists for reptile surveys, etc.) and that they possess all necessary permits and memoranda of understanding with the appropriate agencies for the handling of potentially-occurring special-status species. The lead biological monitor shall also ensure that daily monitoring reports (e.g., survey results, protective actions, results of protective actions, adaptive measures, etc.) are prepared, and shall make these monitoring reports available to DRP and CDFW at their request. **B-3:** During grading, earthmoving activities, and other construction activities the biological monitor shall be present to inspect and enforce all mitigation requirements and to relocate any species that may come into harm's way to an appropriate offsite location of similar habitat. The biological monitor shall be authorized to stop specific grading or construction activities if violations of mitigation measures or any local, state, or federal laws are suspected. The biological monitor shall file a report of the monitoring activities with LACDRP and CDFW. If ongoing biological monitoring of construction activities reveals the presence of any special-status reptiles within an active work area, then work shall be temporarily halted until the animals can be collected and relocated to areas outside of the designated work zones. Work areas shall be surveyed for special-status reptile species, such as the coast horned lizard and northern California legless lizard, during construction activities. During the construction, surveys shall	Less than significant with mitigation

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
	be conducted by placing coverboards on the ground in appropriate work areas and checking them weekly for such species. Any special-status reptiles occurring within the work area shall be collected and relocated to areas outside of the designated work zones.	
Construction of the Projects and gen-tie lines could result in potential impacts to biological resources. Project 1: Burrowing owls were not observed onsite during 2013 targeted surveys but potential burrows were observed. Project 2: There is relatively high potential for burrowing owl to occur on site (burrowing owl was observed adjacent to the Project study area during 2013 targeted surveys). Project 3: There is low potential for burrowing owl to occur on site as no individuals or potential burrows were observed during 2013 targeted species. Project 4: Burrowing owl has low potential to occur on all five of the Project 4 APNs; however no individual owls or potential burrows were observed within the Project study area during 2013 targeted burrowing owl surveys. Project 5: There is low potential for the burrowing owl to occur onsite as no individuals or suitable burrows were observed during 2013 targeted burrowing owl surveys. Project 6: There is moderate potential for the burrowing owl to occur on site.	**B-2:** Pre-Construction surveys will be conducted prior to ground disturbance at each project site. These surveys will include all special-status species identified as having the potential to be present on the project site; including, but not limited to, badger, kit fox, southern grasshopper mouse, and the species listed below. • Pre-survey information gathering will include reviewing of all available agency nest data and mapping. • A focused pre-construction Swainson's hawk survey shall be conducted to locate any nesting sites within 5 miles of Projects 1 – 6. If Swainson's hawks or their active nests are located within 500 feet of the project sites, all construction-related work shall be postponed and CDFW will be consulted. • Project-related activities likely to have the potential of disturbing suitable bird nesting habitat, which includes ground nesting birds, shall be prohibited from February 1 through August 31, unless a qualified monitoring biologist conducts nesting bird surveys prior to any construction-related disturbance to confirm the absence of active bird nests or bird nesting habitat. Disturbance shall be defined as any activity that physically removes or damages vegetation or habitat or any action that may cause disruption of nesting behavior such as loud noise from equipment or artificial night lighting. Surveys shall be conducted weekly, beginning no later than 30 days and ending no earlier than 3 days prior to the commencement of disturbance. If an active bird nest is discovered, disturbance within 500 feet for raptors shall be postponed until the nest is vacated, offspring are independent of the nest area and there is no evidence of further attempts at nesting. Limits of avoidance shall be marked with high-visibility flagging or fencing. The Applicant shall record the results of the recommended protective measures and submit the records to LACDRP and CDFW to document compliance with applicable state and federal laws pertaining to the protection of native birds. • A pre-construction burrowing owl survey shall be conducted on each site prior to grading. Pre-construction surveys for burrowing owl shall be conducted weekly, beginning no later than 30 days and ending no earlier than 3 days prior to the commencement of disturbance. The surveys shall follow the protocols set forth by the California Burrowing Owl Consortium (1993 and 2012). If burrowing owls are found during the pre-construction survey, then	Less than significant with mitigation

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
	replacement burrows and habitat must be provided prior to the commencement of construction. The Applicant shall be prepared to provide artificial replacement burrows in the event that owls are detected, either as wintering or breeding individuals. Wintering individuals may be evicted with the use of exclusion devices followed by a period of seven days to ensure that animals have left their burrows. When it can be assured that owls are no longer using the burrows, the burrows can be hand excavated and collapsed under the supervision of the avian biologist. Breeding owls must not be disturbed and must be allowed to complete the raising of young until the fledglings can forage independently of adults and it can be confirmed that further attempts at nesting shall not be undertaken. When this has been confirmed, the owls can be evicted as described above for wintering animals. • Pre-construction surveys shall be conducted for special-status ground-dwelling reptiles, including but not limited to coast horned lizard and northern California legless lizard. Surveys shall be conducted by placing coverboards on the ground 4 to 6 weeks in advance of the survey effort, checking weekly for such species. Any special-status reptiles or other species determined important by the qualified biological monitor (i.e., biologist must be appropriately permitted for collection and relocation activities) occurring within the work area prior to the start of work shall be collected and relocated to areas outside of the designated work zones. **B-6:** Prior to alteration of any streambeds, the Applicant shall enter into an agreement with the CDFW, pursuant to Sections 1601 through 1603 of the State Fish and Game Code.	
Loss of foraging habitat could occur as a result of construction of Projects 1 – 6.	**B-4:** Mitigation lands shall be acquired for Swainson's hawk, burrowing owl, special-status migratory and wintering birds, and alkali mariposa lily. **Swainson's hawk:** Impacts due to development of the projects shall be mitigated by the acquisition of good quality Swainson's hawk habitat targeted within the Antelope Valley. Land shall be purchased or placed in a conservation easement or other suitable deed restriction and managed to maintain suitable habitat in perpetuity. The proposed development is not expected to result in the "take" of Swainson's hawk; however, the Applicant shall be required to consult CDFW in the event of take, which may result in additional mitigation prescribed by CDFW. Although the Projects are not expected to result in "take" of Swainson's hawk, mitigation will	Less than significant with mitigation

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
	still be required to alleviate the effects of cumulative impacts on raptor, migratory bird, and burrowing owl habitats: Replacement land will be provided based on the quality of the mitigation land relative to the impacted habitat. The ratio of such replacement shall be determined as follows: • A ratio of one acre of replacement land for each 3 acres of development if the replacement land is superior nesting and foraging habitat contiguous to occupied nesting and foraging habitat, and is within a designated or proposed Significant Ecological Area (SEA). • A ratio of one acre of replacement land for each 2 acres of development if the replacement land is unoccupied irrigated land, contiguous to occupied habitat and providing superior quality foraging habitat with trees or other such nesting habitat; • A ratio of 1 acre of replacement land for each acre of development if the replacement land provides similar foraging and nesting habitat. **Burrowing Owl:** Mitigation for any occupied burrowing owl burrows found during pre-construction surveys will include a comprehensive tiered approach: • Pre-construction and construction monitoring surveys conducted by a qualified biologist to detect potential new owl activity onsite; • Disturbance avoidance of occupied burrows during nesting period February 1 – August 31; • Impact avoidance of occupied burrows; • Burrow exclusion and closure and offsite relocation (>100 m), as described previously in in B-2, will be conducted for impacts to occupied burrows (after consultation with CDFW). • Minimizing impacts by protecting in-place any owls, their burrows, and their immediate habitat by establishing setback zones and visual screens for burrows adjacent to construction activity; by placing visible markers, and by conducting construction worker awareness training. Setback widths will be applied as appropriate to the level of existing disturbance and owl stage of activity (e.g., for low to moderate construction-related disturbance activity outside the nesting season near burrows in currently high-traffic or disturbance areas, it is assumed owls are adapted to human disturbance and will not need a large setback).	

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
	• Mitigating impacts to habitat: restore temporary impacts to pre-existing conditions; replace nesting/occupied and satellite burrows lost with the same number of suitable burrows on the mitigation site. Mitigation acreage for foraging habitat provided for Swainson's hawk will be sufficient to replace lost burrowing owl habitat because the hawk's replacement habitat will be in-kind or better (i.e., the Project habitat is low quality overall and mitigation habitat will be at least the same quality as the lost habitat OR will have higher quality habitat features overall, such as increased vegetative structure, higher numbers of prey species, less disturbance, and less potential for predation by domestic animals, etc.). Specific habitat considerations as provided in the CDFW 2012 burrowing owl guidance will be considered in selecting the overall habitat replacement acres for the project. **Alkali Mariposa Lily:** Alkali mariposa lily will be avoided to the greatest extent possible. If pre-construction surveys reveal individuals that cannot be avoided, mitigation of lost alkali mariposa lily shall be provided at a minimum 1:1 ratio. This acreage will be calculated with input from LACDRP and CDFW. Additionally, because alkali mariposa Lilies have locally available seed sources, plantings of the lilies on appropriate soil types on Projects shall be implemented in selected areas. The lilies may also be transplanted from areas planned for disturbance to more suitable locations in the Project area. Transplantation locations must be situated within adequately buffered areas to be found suitable. For all species the mitigation acreage may be located within the Project sites, but outside of the area of development, subject to LACDRP and CDFW approval, if acreage of sufficient quantity and quality exists. **B-5: Review and Approval of Habitat Management Lands Prior to Acquisition:** The Applicant shall provide a mitigation land acquisition proposal to LACDRP and CDFW for their approval before acquiring the property. The proposal shall discuss the suitability of the property by comparing it to the selection criteria. As a part of the preparation of the land acquisition proposal, acreage quantification by habitat category will be developed with LACDRP and CDFW based on the following criteria: **Habitat Management Land Selection Criteria**: The Applicant must identify the region within which lands shall be acquired, and the type and quality of habitat to be acquired. Detailed criteria and acreage for each habitat category will be developed with Los Angeles County and CDFW. Foraging habitat shall be assessed as moderate to good with a capacity to improve in quality and value to Swainson's hawks, and must be within the Antelope Valley Swainson's hawk breeding range.	

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
	Foraging habitat with suitable nest trees is preferred. **Habitat Management Lands Acquisition:** Prior to initiating ground-disturbing activities, the Applicant shall provide a proposal to LACDRP and CDFW for off-site mitigation land to be restored, enhanced, or maintained according to the requirements of the biological mitigation measures in this EIR. The proposal will require that mitigation lands identified shall be preserved as open space in perpetuity. Within 45 days of acquiring the mitigation land(s), the Applicant shall record a permanent deed restriction on the mitigation land(s) to be preserved as open space. The deed restriction or conservation easement language shall be submitted to LACDRP and CDFW for review and approval prior to recordation. Alternatively, should a conservation easement on the mitigation land be offered, the permanent conservation easement shall be recorded to the satisfaction of LACDRP and CDFW. The Applicant shall establish a fund sufficient for the restoration, enhancement, and maintenance of the mitigation land(s) until such time when the mitigation land(s) become self-sustaining and until such time as the mitigation land(s) meet the requirements of this mitigation measure. The fund shall be established within 90 days of mitigation land(s) acquisition in an amount acceptable to the LACDRP and CDFW. **Land Acquisition Schedule and Financial Assurances**: The Applicant shall complete acquisition, or execute an irrevocable option to purchase, of proposed Habitat Management lands and shall provide financial assurances for dedicating adequate funding for impact avoidance, minimization, and compensation measures, if necessary, prior to the issuance of building permits. If an irrevocable option to purchase is utilized, the applicant shall provide a proposed date of purchase which coincides with construction of the facility.	
The potential loss of native species and vegetation could occur due to the construction of Projects 1 – 6.	**B-7:** Within all interior portions of the site within and adjacent to the proposed solar arrays, re-vegetation shall be accomplished (excluding interior roads) as follows: • Vegetation seeded in these areas shall comprise locally-sourced, native species if available, approximating low-growing communities such as native perennial or annual grasslands (i.e., wildflower fields). Shrub species shall not be used due to these species inability to survive continued vegetation trimming. Vegetation shall be maintained in accordance with Los Angeles County Fire Department regulations.	Less than significant with mitigation
E. Cultural Resources		

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Projects. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant.	**CUL-1:** In the event cultural resources are encountered during construction of the Projects, all ground-disturbing activities within the vicinity of the find shall cease and a qualified archaeologist and Native American Monitor shall be notified of the find. The archaeologist in consultation with the Native American Monitor shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to recordation and excavation of the finds and evaluation and processing of the finds in accordance with § 15064.5 of the CEQA Guidelines. Potentially significant cultural resources consist of, but are not limited to, stone, bone, fossils, wood or shell artifacts or features, including hearths, structural remains, or historic dumpsites. If the resources are determined to be unique historic resources as defined under § 15064.5 of the CEQA Guidelines, Mitigation Measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate Mitigation Measures for significant resources could include but not be limited to avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further earthwork shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any archaeological artifacts recovered because of mitigation will be donated to a qualified scientific institution approved by the Lead Agency where they would be afforded long-term preservation to allow future scientific study. This Mitigation Measure shall apply to all Projects.	Less than significant
There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Projects. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level. In addition, the possibility that other previously undiscovered remains could be found within the boundary of the Projects during construction will be addressed by implementation of Mitigation Measure CUL-2.	**CUL-2:** In the event of an accidental discovery or recognition of any human remains, California State Health and Safety Code § 7050.5 dictates that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to CEQA regulations and PRC § 5097.98. This Mitigation Measure shall apply to all Projects.	Less than significant
Two previously recorded resources were revealed in the file search for Project 4. P19-189425 is an historic electric transmission line that has not been evaluated for California Register of Historical Resources (CRHR) eligibility.	**CUL-3:** Project 4 construction of gen-tie lines shall maintain the right of way buffer zones prescribed by SCE for this historic electric transmission line resource, which is an active transmission line. This Mitigation Measure shall apply to Project 4 only.	Less than significant

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
The historic Del Sur Cemetery, is located within the boundary of Project 4. This cemetery has not been evaluated for CRHR eligibility, but a survey conducted by the Institute for Canine Forensics established that there are still human remains interred at that location (Morris and Pence 2012. The report produced by the Institute for Canine Forensics is confidential and is not included in Appendix B-4.2.	**CUL-4:** Project construction for Project 4 shall maintain a one acre undisturbed area surrounding the Del Sur Cemetery site. This Mitigation Measure shall apply to Project 4 only.	Less than significant
There is a possibility that human remains, historical, and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 4 near the boundary of CA-LAN-1579H. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-5, archaeological monitoring of the defined perimeter of the site is required.	**CUL-5:** A County approved archaeologist will be retained to initiate and supervise cultural resource monitoring during Project related earthwork in areas of the Project that are within 50 feet from certain significant cultural resources, specifically from the defined perimeter of site CA-LAN-1579H (Project 4). If resources are identified, the procedures outlined in CUL-1 will be followed and/or CUL-2 (as necessary). This Mitigation Measure shall apply to Project 4 only.	Less than significant
F. Geology and Soils	No mitigation measures are required.	
G. Greenhouse Gas and Climate Change		
Each construction phase has the potential to generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading); (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from vehicles fuel combustion used for worker commute, material hauling, and construction debris disposal. The principal sources of pollutants during construction would be earth-moving activities, construction equipment, trucks bringing materials to the site, and construction crew commuting vehicles. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions. Technical Reports in Volume 2 – Appendix B-2, show construction schedules and construction equipment.	**GHG-1** All off-road diesel powered construction equipment less than 50 horsepower (hp) shall meet or exceed Tier 2 off-road emission standards. Off-road diesel-powered construction equipment greater than or equal to 50 hp shall meet or exceed Tier 3 off-road emission standards. The construction equipment requirement shall be increased to Tier 4 off-road emission standards by January 1, 2015. Post-January 1, 2015, all off-road diesel-powered construction equipment greater than 50 hp shall meet or exceed Tier 4 off-road emission standards, where available. Verification documentation such as an ongoing log shall be provided to the County of Los Angeles Department of Regional Planning upon request within five business days.	Less than significant with mitigation
Each construction phase has the potential to generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading); (2) **emissions of air pollutants from fuel combustion in construction equipment**; and (3) emissions of air pollutants from vehicles fuel combustion used for worker commute, material hauling, and construction debris disposal. The principal sources of pollutants during construction would be earth-moving activities, construction equipment, trucks bringing materials to the site, and construction crew commuting vehicles. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions. Technical Reports in Volume 2 – Appendix B-2, show construction schedules and	**GHG-2** During construction, the off-road equipment, vehicles, and trucks shall not be idle more than five minutes in any one hour.	Less than significant with mitigation

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
construction equipment.		
Each construction phase has the potential to generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading); (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) **emissions of air pollutants from vehicles fuel combustion used for worker commute, material hauling, and construction debris disposal**. The principal sources of pollutants during construction would be earth-moving activities, construction equipment, trucks bringing materials to the site, and construction crew commuting vehicles. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions. Technical Reports in Volume 2 – Appendix B-2, show construction schedules and construction equipment.	**GHG-3** The off-road construction equipment drivers shall have documented training in operating the equipment efficiently, taking into account ways to reduce the hours of operations of the equipment and/or operate the equipment at a lower load factor.	Less than significant with mitigation
Each construction phase has the potential to generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading); (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) **emissions of air pollutants from vehicles fuel combustion used for worker commute, material hauling, and construction debris disposal**. The principal sources of pollutants during construction would be earth-moving activities, construction equipment, trucks bringing materials to the site, and construction crew commuting vehicles. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions. Technical Reports in Volume 2 – Appendix B-2, show construction schedules and construction equipment.	**GHG-4** Traffic speeds on all unpaved roads shall be maintained at 15 mph or less.	Less than significant with mitigation
Construction of the Projects have the potential to create global climate change impacts through the use of heavy-duty construction equipment, earth-moving activities, and **through vehicle trips generated from construction workers traveling to and from the Projects sites**.	**GHG-5** During construction, there shall be documented carpools, vanpools, and/or shuttles provided for construction employees.	Less than significant with mitigation
H. Hazards and Hazardous Materials		
Hazardous materials used during construction activities may include gasoline, diesel fuel, oils, lubricants, solvents, detergents, degreasers, paints, and other supplies. All hazardous materials would be transported, stored, and properly disposed of in compliance with all applicable laws and regulations. The accidental release of hazardous materials or wastes during construction activities is possible.	**HH-1** Prior to the start of construction activities, a Hazardous Materials Management Plan shall be implemented for each project. **HH-2** Prior to the start of construction activities, a Hazardous Waste Management Plan shall be implemented for each project.	Less than significant.

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
At the location of Project 1, the Environmental Data Review (EDR) records indicated the presence of a historic underground storage tank (UST). The records indicate that the UST is a 500 gallon fuel tank. The UST is not reported to have leaked.	**HH-3** Prior to the start of construction activities on the parcel containing the historic UST at the location of Project 1, a Phase I ESA will be completed. This mitigation measure only applies to Project 1. **HH-4** Prior to the start of construction activities, a closure permit for the UST will be verified or obtained from the Los Angeles County Fire Department, Health Hazardous Materials Division. This mitigation measure only applies to Project 1.	Less than significant
Based on the EDR, the location of Project 1 and the Project 1 gen-tie line is included on a list of hazardous materials sites complied pursuant to Government Code § 65962.5. The location of Project 1 was indicated to contain a 500 gallon UST.	**HH-5** Construction activities shall be halted if previously unidentified soil contamination is observed or indicated by testing during any earthwork activities. Construction will be halted or redirected until such soil contamination is evaluated and disposed of and/or treated	Less than significant
I. Hydrology and Water Quality		
Mechanical equipment on the solar farm would either be made of pollutant free materials or fitted with special containment units to house any possible drips or spills of lubricants, oils, or other chemicals. Maintenance activities, including solar array washing, would be performed with clean water and allowed to evaporate or drip to the ground. Maintenance and operations personnel would be required to maintain all necessary spill prevention, control, and countermeasures on hand during site visits.	**HYDRO-1** Education and training for Property Owners, Tenants, Occupants and Employees. Appropriate educational materials for preventing stormwater pollution and additional BMP Fact Sheets from the California Stormwater Best Management Practice Handbooks can be found at www.cabmphandbooks.com. Practical information material will be provided to employees on general good housekeeping practices. These materials will describe, but are not limited to, spill prevention and control and the use of chemicals, petroleum products, pesticides and fertilizers that should be limited to the property, with no discharge of wastes directly or indirectly to gutters, catch basins or the storm drain system. Information will be distributed directly to the employees as well as being posted in public areas. This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities. The required materials shall be available at each project site and a log kept to show education has occurred prior to the start of construction.	Less than significant
Mechanical equipment on the solar farm would either be made of pollutant free materials or fitted with special containment units to house any possible drips or spills of lubricants, oils, or other chemicals. Maintenance activities, including solar array washing, would be performed with clean water and allowed to evaporate or drip to the ground. Maintenance and operations personnel would be required to maintain all necessary spill prevention, control, and countermeasures on hand during site visits.	**HYDRO-2** A spill contingency plan will be prepared by the owner/building operator. As a minimum the Spill Contingency Plan will "mandate the stockpiling of cleanup materials, notification of responsible agencies, disposal of cleanup materials and documentation." This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities.	Less than significant
No hazardous materials are anticipated to be stored on-site. If hazardous materials are required to be stored on-site, Hydro-3 shall be implemented.	**HYDRO-3** No hazardous materials are anticipated to be stored on-site. If hazardous materials are required to be stored on-site, a designated representative of the owner shall provide information to the Fire Authority in accordance with requirements of the Health & Safety Code and store the materials according to	Less than significant

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
	applicable regulations. This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities.	
According to County Code Chapter 12.80: • Discharge may not enter the storm drain system unless the discharge: – Is made of pure stormwater – Is made of a non-stormwater that has been granted a NPDES permit by the SWRCB or the LRWQCB – Is involved with an emergency fire situation	**HYDRO-4** A designated representative of the owner shall provide information to the Fire Authority in compliance of the current requirements of the County of Los Angeles Fire Code. This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities.	Less than significant
During operations of the SGFs, site waste receptacles shall be maintained to prevent overflowing.	**HYDRO-5** Site waste receptacles shall be emptied on a weekly basis or more often to prevent containers from overflowing. Upon inspection any debris or rubbish will be picked up and the site cleaned. The trash area is NOT to be cleaned by hosing down. The type of materials used to clean the area and storage of said materials will be determined by the Contractor. Signage will be posted that lids shall be kept closed at all times. This Mitigation Measure shall be implemented at Projects 1 – 6 at all times during facility operations.	Less than significant
J. Land Use and Planning	No mitigation measures are required.	
K. Noise		
Construction noise is a temporary noise source that would only occur during daytime hours. Sound levels from construction are expected to be comparable to sound produced by farm machinery, such as equipment used in nearby agricultural fields. Worst case construction noise levels for the nearest residence would last no more than a few weeks,	**N-1** Construction operations would not occur between 7:00 p.m. and 7:00 a.m. on weekdays or Saturday, or at any time on Sunday with the exception of limited low-noise generating potential night work with Los Angeles County Department of Regional Planning and Public Works approval; **N-3** Electrically-powered equipment shall be used instead of pneumatic or internal combustion powered equipment, except for devices like trucks, loaders, dozers, and other heavy equipment. **N-5** The use of noise-producing signals, including horns, whistles, alarms, and bells are prohibited except where required by OSHA or for safety or emergency warning purposes required by other regulatory agencies. **N-6** Project-related public address or music systems used on-site shall not be audible at any adjacent receptor. **N-7** All noise-producing construction equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications which	Less than significant

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
	are in compliance with any applicable legally required equipment noise standards. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and/or other noise control features that are readily available for that type of equipment. Mobile sound barriers with a sound transmission class of 19 or greater will be used for pile driving on Projects where received sound levels at the nearest NSR are predicted to be above the County construction noise limit of 60 dBA during the day. With respect to mitigation during operation, potential impacts associated with on-site substations are considered. Depending on the Project's acoustic design goals, final substation design may need to incorporate appropriate mitigation measures, including:	
Traffic noise generated during construction of the Projects on and offsite would also temporarily add to overall sound levels. The Applicant would make reasonable efforts to minimize noise resulting from construction activities as described in the mitigation measures listed in Section 4.11.6.	**N-2** Construction site and access road maximum speed limit of 15 miles per hour shall be established and enforced during the construction period	Less than significant
A wide range of noise settings may occur within the study area for each Project, which consists of all areas that could be potentially affected by construction or operational noise resulting from the proposed SGF. The closest residences (receptors) to each of the Projects are summarized in Table 4.11-2 and shown on Figures 4.11-1 through 4.11-6.	**N-1** Construction operations would not occur between 7:00 p.m. and 7:00 a.m. on weekdays or Saturday, or at any time on Sunday with the exception of limited low-noise generating potential night work with Los Angeles County Department of Regional Planning and Public Works approval; **N-3** Electrically-powered equipment shall be used instead of pneumatic or internal combustion powered equipment, except for devices like trucks, loaders, dozers, and other heavy equipment. **N-4** Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable, and no closer than 1,000 feet, from noise-sensitive receptors; **N-6** Project-related public address or music systems used on-site shall not be audible at any adjacent receptor. **N-7** All noise-producing construction equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications which are in compliance with any applicable legally required equipment noise standards. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and/or other noise control features that are readily available for that type of equipment. Mobile sound barriers with a sound transmission class of 19 or greater will be used for pile driving on Projects where	Less than significant

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
	received sound levels at the nearest NSR are predicted to be above the County construction noise limit of 60 dBA during the day. With respect to mitigation during operation, potential impacts associated with on-site substations are considered. Depending on the Project's acoustic design goals, final substation design may need to incorporate appropriate mitigation measures, including: **N-8** Siting substations to achieve NEMA sound ratings at sensitive receptors as described in Section 4.11.5.2 not to be closer to the property line of sensitive receptors than the following distances for each individual project: Project 1 – 325 feet with a NEMA sound rating of 74 dBA Project 2 – 1511 feet with a NEMA sound rating of 81 dBA Project 3 – 650 feet with a NEMA sound rating of 74 dBA Project 4 (two transformers) – 1000 feet with a NEMA sound rating of 77 dBA Project 5 – 748 feet with a NEMA sound rating of 82 dBA **N-9** The Applicant shall use NEMA low noise rated transformer equipment which will achieve 10 dBA or greater noise reduction as compared to standard NEMA-rated transformers of a similar size and rated capacity to ensure that Project noise impacts would be less than significant.	
K. Public Services	No mitigation measures are required.	
L. Transportation and Traffic		
Construction Impacts Traffic generated during the construction phase would include construction worker commuter trips and delivery truck trips. During the AM peak hour, the local roads would experience an increase in traffic volume. This is mainly due to the existing low volume and low peak traffic conditions for these roads, which are located in a rural area and operates well below the existing capacity.	**TT-1** Prior to issuance of a grading permit, Applicant shall document and submit all required information and/or material pertaining to the pavement conditions of construction routes for the Projects, including the formula for calculation of the Projects' fair share of any repair or reconstruction of construction routes to the satisfaction of LACDPW. Applicant shall reimburse the County of Los Angeles for the cost of any repairs and/or reconstruction of construction routes attributable to the Projects as agreed to by LACDPW. The timing of any necessary repairs and/or reconstruction of construction routes and the required payment by the Applicant shall be determined by LACDPW.	Less than significant
During construction of gen-tie lines associated with the Project, it is anticipated that temporary road closures would be necessary.	**TT-2** Prior to any construction activities and/or issuance of required encroachment permits from Los Angeles County, the Applicant shall prepare worksite traffic control plans for review and approval from LACDPW and other affected agencies for any closures, partial closures of public streets, or work within or adjacent to the road right-of-way that impacts the movement of traffic. The	Less than significant

Environmental Impact Summary	Mitigation Measures	Resulting Level of Significance
	Plans shall be prepared in accordance with the California Manual on Uniform Traffic Control Devices (2012).	
	TT-3 Additionally, the County, including LACFD Fire Stations 78(forR2011-00801) and 130 (for R2011-000798, 00799, 00805,00807, & 00833) shall be notified at least three days in advance of any street closures that may affect fire and/or paramedic responses in the area. The Applicant shall provide alternate route (detour) plans to the County, including three sets to LACFD, with a tentative schedule of planned closures, prior to the beginning of construction.	Less than significant
Traffic generated during the construction phase of the Projects and gen-tie lines would include construction worker commuter trips, water truck trips, and delivery truck trips. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours. Water trucks would arrive to the Project site during the AM peak hour. During the AM peak hour the local roads would experience an increase in traffic volume. This is mainly due to the existing low volume and low peak traffic conditions for these roads, which are located in rural areas and operate well below the existing capacity.	**TT-4** Stagger construction work shifts before or after peak traffic hours. **TT-5** Schedule truck deliveries during off peak hours. **TT-6** Limit water truck deliveries during the AM peak hour to 30 percent of the daily water truck trips. All other trips shall be at off peak hours. **TT-7** Prior to start of construction activities Applicant shall provide worker education encouraging carpooling and vanpooling by workers and shall provide assistance for organizing vanpools and carpools. A log will be developed to show compliance.	Less than significant.
M. Utilities and Service Systems	No mitigation measures are required.	

Aesthetics

During construction and operations, the Projects would be visible from the surrounding areas. Even though the SGF components are out-of-character with directly adjacent land (which is primarily rural residential and fallow agriculture), the SGFs are not out-of-character when considering the context of the surrounding landscape. Because other structures including PV solar facilities are common in the Project area, and because the Projects sites are not characterized by highly imposing visual quality, the visual impact of the sites on the existing visual character of the proposed site and its surroundings would be less than significant. The Projects would have a less than significant impact with mitigation measures listed in Section 4.1.6

Because of the low profile of the solar modules, no significant shadows would be cast upon nearby sensitive land uses. Impacts from new sources of light or glare are expected to be less than significant. The SGFs would not create a significant source of light. Light sources associated with the SGFs would be minimal and would be restricted to that required for nighttime safety and security according to County requirements. Lighting would be installed and directed downward and shielded to avoid light trespass. The amount of light generated by the security lights would be consistent with existing sources produced by man-made structures adjacent to the Project sites, including residences, roadway lights, and the water treatment facility.

SGF components would introduce minimal amounts of glare to the existing landscape. The PV modules are designed to absorb sunlight, and the glass modules that protect the PV surface are typically formulated glass designed to allow sunlight to pass with minimal reflection. Therefore, the impacts to aesthetics would be less than significant with mitigation.

Agriculture and Forestry

Projects 1, 2, 3, 5 and 6 would not cause the conversion of Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural use. Although Project 4 has a property with Prime Farmland designation, it has not been farmed for more than 10 years and thus use for solar development would not actually impact any farming activity. The Department of Conservation (DOC) has reviewed the Project 4 site and, in a letter dated December 31, 2012, determined that the properties “will be reclassified to Grazing Land on the 2012 edition of the Important Farmland Map for Los Angeles County.” The DOC letter is attached in Appendix B-11. Based upon the DOC review of the Project 4 site, once the designations have been updated the property will not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, impacts will be less than significant.

Following the termination of power generating activities at the six locations, all facilities and equipment would be removed and the land would be restored as close to its pre-development condition as possible if not reused in a similar capacity. Decommissioning and reclamation plans detailing land restoration activities would be provided, as required by Los Angeles County as part of the CUP. Additionally, the Applicant would be required to provide a decommissioning bond equal to the amount of money estimated to be required to decommission the Project and restore the land to its pre-development condition. None of the Projects would affect any land

use outside the development site's limits. Therefore, for all of the Projects, including Project 4, the impacts of changing former farmland to non-agricultural use would be less than significant.

Similarly, the Projects are not located on forest land, and would not convert any forest land used for forest uses to a non-forest use.

Therefore, the Projects impacts to agricultural and forestry resources would be less than significant.

Air Quality

Construction would involve activities which can result in emissions of air pollutants. Compliance with applicable rules, ordinances, plans, and policies would minimize air pollutant emissions during construction. Short-term emissions during the construction of Phase 1 and Phase 2 would not exceed Antelope Valley Air Quality Management District (AVAQMD) significance thresholds. Projects would comply with AVAQMD rules and Los Angeles County ordinances and are designed to be consistent with applicable County policies and the Attainment Plan. Therefore, Projects would not conflict with implementation of the applicable air quality plan. Construction of the Projects would be completed over two years. Analysis using AVAQMD's approved model shows that construction activities occurring simultaneously for the Projects would not exceed the AVAQMD annual significance thresholds for both years 2013 and 2014. Construction air quality impacts would be less than significant with mitigation.

Because the Mojave Desert Air Basin is currently in nonattainment for ozone and particulate matter less than 10 microns in diameter (PM_{10}), emissions from these Projects could contribute to an existing or projected air quality standard exceedance. However, analyses shows that simultaneous construction would not result in emissions of ozone precursors or PM_{10} in excess of thresholds established by the AVAQMD. Projects would not contribute to a cumulatively considerable net increase in nonattainment pollutants. Ozone impacts would be less than significant with mitigation.

Short-term concentration levels during construction do not expose sensitive receptors to substantial pollutant concentrations. Analysis shows that the short-term construction emissions do not result in risks exceeding the AVAQMD established threshold. These risk thresholds are: (1) cancer risk greater than or equal to 10 in a million, (2) chronic hazard index greater than 1, and (3) acute hazard index greater than 1. As such, Project-related toxic emission impacts during construction would be less than significant. Operational emissions from the Projects do not have the potential to impact local air pollutant levels at nearby receptors. The primary source of emissions during operation is mainly the vehicles used by facility maintenance staff to and from the sites. Maintenance is expected occur no more than five times per year. The Projects would not result in new long-term stationary sources, nor would they result in a significant number of net new vehicular trips. Carbon monoxide impacts from operation would be less than significant and further analysis is not necessary. As such, Projects would not exceed thresholds or result in a violation of air quality standards or contribute substantially to an existing or projected air quality violation. The impacts to air quality would be less than significant with mitigation.

Biological Resources

Biological surveys have been conducted on all the Projects sites. The Project sites are previously disturbed farmland, and are now fallow lands, existing as grassland or rabbitbrush scrub land. Biological surveys document that some biological communities are present on the sites. The lands have some limited value as foraging habitat for Swainson's hawk and other raptors, have some habitat for burrowing owl, support some small mammal and reptile species and support some needle grass on Project sites 2 and 5 and Alkali Mariposa Lilies on the Project 6 site.

A qualified monitoring biologist shall ensure that impacts to all biological resources are minimized or avoided, and shall conduct pre-grading field surveys for species that may be avoided, affected, or eliminated as a result of grading or any other site preparation activities.

Pre-construction surveys of Swainson's hawk, burrowing owls, breeding birds, and reptiles would be conducted. During construction a qualified biologist would be on site to ensure all wildlife is protected from construction impacts. Breeding birds, burrowing owls, reptiles, and any other wildlife observed would be avoided and/or captured and safely moved to an appropriate habitat.

Vegetation seeded in the Project areas shall comprise low-growing communities such as native perennial or annual grasslands (i.e., wildflower fields). Invasive species will not be planted and best management practices for the avoiding the spreading of invasive and exotic species will be employed.

Mitigation lands would be purchased and provided to Los Angeles County and the California Department of Fish and Wildlife which would replace and enhance habitats for Swainson's hawk, Burrowing Owl, special-status migratory and wintering birds, and Alkali Mariposa Lily. Therefore, impacts to biological resources would be partially mitigated by the provision of these mitigation lands. The mitigation lands would provide excellent habitat for Swainson's hawk, burrowing owls, needlegrass, Alkali Mariposa Lily, as well as other plant and animal species common to the Antelope Valley. Impacts would be reduced to less than significant with implementation of mitigation.

Cultural and Paleontological Resources

An extensive historical summary of the Antelope Valley is presented in Section 4.5. Cultural and paleontological inventories of all sites were conducted and are provided in the Cultural Resources Technical Report in Appendix B-4. Very few cultural resources were identified on the properties. There are a few historic era farm complexes on the sites; however, those resources have been evaluated and are not eligible for inclusion on the California Register of Historical Resources and construction of the Projects can cause no change in the level of their significance. A historic electric transmission line and the Del Sur cemetery were identified in the Project 4 site, and both would be entirely avoided. Therefore, there would be no impact.

No paleontological resources were detected on the Project sites. It is unlikely that any intact significant paleontological resources are or will be located on the Projects.

Mitigation Measures are provided which require protection of any cultural resources or human remains or paleontological resources found during construction. The impacts to cultural and paleontological resources would be less than significant with mitigation.

Geology and Soils

The Projects would not expose people or structures to adverse effects related to geologic hazards including strong seismic shaking, seismic related ground failure, and landslides with the implementation of mitigation measures. The Projects impacts to soil erosion, on-site or off-site landslides, lateral spreading, subsidence, liquefaction or collapse, and expansive soil would be less than significant with the implementation of mitigation measures. The Projects would have no impact to wastewater treatment or regarding compliance with the Hillside Management Area Ordinance. Overall the Projects impacts to geology and soils would be less than significant with mitigation.

Greenhouse Gas Emissions and Climate Change

Maximum construction levels are not expected to result in annual GHG emissions which exceed the threshold proposed by the AVAQMD. As such, the Projects would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The annual emissions during long-term operation do not exceed AVAQMD significant thresholds. Therefore, due to the nature of the Projects, the changes in operational GHG emissions are expected to be minimal and impacts would be less than significant. Because construction-related emissions would be temporary and are below those GHG emission levels being considered and/or discussed by other government agencies and associations, and consistent with the Assembly Bill 32 Scoping Plan, the Project's construction-related GHG emissions would not cause an individual or cumulatively considerable contribution to climate change and, therefore, would be less than significant. The Projects are supportive of the state's goals to reduce GHG emissions, and is consistent with Los Angeles County's goals. The Projects would not conflict with any applicable plan, policy, or regulation to reduce GHG emissions. Overall the Projects' impacts would be less than significant.

Hazards and Hazardous Materials

The Projects impacts due to hazardous materials transport, storage, production, use, disposal, and accidental release would be less than significant with the implementation of mitigation measures. The Projects are not located on a list of hazardous materials sites and thus the impacts would be less than significant. The Projects impacts due to being located near a public use airport or private airstrip would be less than significant. The assessment indicated that the Projects would not pose a significant risk of loss, injury, or death involving fires due to being located in an area with inadequate water and pressure. The assessment indicated that the Projects are not located in a high fire hazard area, in proximity to land uses that have the potential for dangerous fire hazards, or constitute a potentially dangerous fire hazard. Therefore, the impacts are considered less than significant with mitigation.

Hydrology and Water Quality

All on-site hydrologic areas corresponding to each proposed Project site are part of larger surrounding watersheds. Drainage flow paths would be maintained on-site. Installation of roadways, solar panels, and gen-tie lines would result in minor alteration to on-site flood depths and velocities but flows would be normalized to pre-development conditions at the property boundaries and therefore, impacts would be less than significant. By implementing the BMPs and mitigation measures, any potentially significant construction and operations impacts related to flood hazards would be reduced to less than significant. Through the implementation of construction control measures per California Association of Stormwater Quality Agencies (CASQA) standards such as silt fencing, fiber rolls, and sandbag barriers and implementation of mitigation measures, the Projects would have less than significant impacts on erosion and debris deposition during construction. Drainage basins would be added to and sized for every site per the details provided in the Hydrology Study/Drainage Concept/Standard Urban Stormwater Mitigation Plan/Low Impact Development Reports. These basins would capture all extra runoff flows and volumes created by the addition of the Projects and hold the runoff on-site to allow it to infiltrate to the ground. Through the use of these basins, the runoff not only would lose erosion capabilities by being slowed down, but it would lose a portion of the sediment and other debris within it. The Projects would have less than significant impacts with mitigation on erosion and debris deposition during operations. Drainage flows caused by storm intervals of lower intensity would also be mitigated by the infiltration basins, resulting in reduced runoff up to the 25-year storm event. These impacts would not, however, significantly alter the drainage patterns.

Land Use and Planning

The Projects are allowed within the land use and zoning designations with discretionary review and approval, with the exception of Project 1 which would require a zone change. There are no established communities that would be divided as a result of Projects. Projects would be consistent with applicable land use plans and policies, and in compliance with applicable regulations. Therefore, the Projects would result in less than significant impacts to land use.

Noise

Construction noise and vibration impacts would be temporary and localized to sensitive receptors such as residences located in close proximity to the Projects sites. Construction noise levels are predicted to range from 50 decibels (acoustic) (dBA) Leq to 71 dBA Leq at the nearest sensitive receptor. Vibration from pile driving is predicted to range from 0.01 to 0.02 peak particle velocity at the nearest sensitive receptor. Noise and vibration from construction of the Projects are expected to happen for only 4 to 8 weeks per Project site. Mitigation measures are provided for construction noise and vibration for each Project.

The substations for each Project would be designed to meet the National Electrical Manufacturers Association (NEMA) sound ratings (dBA) that would mitigate the impacts to less than significant per local laws, ordinances, regulations and standards which are as follows:

- Project 1 – 325 feet with a NEMA sound rating of 74 dBA

- Project 2 – 1511 feet with a NEMA sound rating of 81 dBA
- Project 3 – 650 feet with a NEMA sound rating of 74 dBA
- Project 4 (two transformers) – 1920 feet with a NEMA sound rating of 83 dBA
- Project 5 – 748 feet with a NEMA sound rating of 82 dBA
- Project 6 – No Substation Transformer

Other noise sources associated with the Projects such as inverters and transformers at the PV modules would have low levels of noise and would not cause noise impacts at nearby sensitive receptors. Therefore the Projects would result in less than significant impacts with mitigation.

Public Services

The Projects' impacts to capacity or service level, or that result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times or other performance objectives for fire protection and sheriff protection would be less than significant. The Projects would have no impact on park, school, library, or public building capacities, service levels or performance objectives. Therefore, impacts from the Projects to public services would be less than significant, and no mitigation measures would be necessary.

Transportation and Traffic

Based on the transportation analysis, the impacts of the Projects on the existing transportation and traffic system in the areas surrounding the Projects is determined to be less than significant with mitigation. During construction of the individual Projects, an increase in traffic volume on the roadways would occur due to the commuting construction workers, Project equipment deliveries to the sites, and the movement of watering trucks to and from the sites. However, all of the Projects are located in a rural area of Los Angeles County with roads characterized by low traffic volume and these roads would continue to operate well under the maximum traffic capacity. The roads near the Projects have enough capacity to handle the increase in traffic during the construction phase of the Projects. Each Project anticipates being fully operational within a month of finishing construction. Increases in traffic which would occur during the construction phase would cease to exist and would have no further effect on the transportation and traffic conditions when construction ends.

During operations, each facility would be primarily managed, monitored, and controlled remotely. The amount of workers that would go to the sites periodically as needed for security, repairs, and inspections would have no effect on traffic in the area. An increase in operational workers would occur during routine cleaning of the PV modules. Cleaning would occur approximately twice a year for two weeks at each Project site, and the increase in traffic from these workers is still considered negligible. Once Project construction is completed, there would be no effect on existing transportation and traffic from operational workers. Therefore, the impacts to traffic and transportation from the Projects would be less than significant with mitigation.

Utilities and Services

The impacts of the Projects to water capacity and reliable water supplies available to serve the project demands from existing entitlements and resources would be less than significant. Additionally, the impacts of the Projects to drainage facilities, energy utilities, and landfills would be less than significant. Therefore, the Projects impacts to utilities would be less than significant.

1.6 REFERENCES

California Burrowing Owl Consortium. 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. April 1993.

Caltrans. 2005, 2006, 2007, 2008, 2009, 2010. Traffic Volumes on California State Highways. Riverside Country, 2010.

California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation March 7, 2012. Available at: http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf

2.0 INTRODUCTION

2.1 INTENT OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

The overall intent of the California Environmental Quality Act (CEQA) is to:

- Identify the significant effects to the environment of a project, identify alternatives, and indicate the manner in which those significant effects can be avoided or mitigated;
- Provide for full disclosure of the project's environmental effects to the public, the agency decision-makers who would approve or deny the project, and responsible and trustee agencies charged with managing resources (e.g., wildlife, air quality) that may be affected by the project; and
- Provide a forum for public participation in the decision-making process with respect to environmental effects.

This Draft Environmental Impact Report (EIR) is intended to provide the environmental information necessary for the County of Los Angeles (County) to make a final decision on the requested entitlements for the development of six solar generating facilities (SGFs) proposed for the Antelope Valley. This Draft EIR is also intended to support discretionary reviews and decisions by other agencies. Section 15120 provides the required contents of an EIR under the State CEQA Guidelines. The six SGFs and the generation tie (gen-tie) lines required to connect them into the electrical power grid will be referred to as the Projects in this Draft EIR. Section 15161 states that an EIR should focus primarily on changes in the environment that would result from the development of the Projects. This Draft EIR was prepared in accordance with Section 15151 of the CEQA Guidelines, which states that:

> *"An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure."*

As such, the EIR is an important document that is intended to be used by decision makers when considering whether or not to approve, deny, or modify the proposed Projects. In accordance with Section 15121(a) of the CEQA Guidelines, this Draft EIR is an informational document which would inform public agency decision makers and the public generally of: (1) the significant environmental effect of the Projects; (2) identify possible ways to minimize the significant effects; and (3) describe reasonable alternatives to the Projects.

2.2 ENVIRONMENTAL REVIEW PROCESS OVERVIEW

CEQA has detailed requirements for the environmental review process for an EIR, which are described in this section. Those actions which have been completed as part of the

environmental review process are described below, including those actions which would be implemented during the completion of the CEQA process.

A Notice of Preparation (NOP) and Notice of Scoping Meeting were issued on June 13, 2012. These were circulated to the California State Clearinghouse and to other public agencies. The review period for the NOP was from June 20, 2012 to July 20, 2012. A Scoping Meeting was held on Saturday, July 14, 2012 from 9:00 a.m. to 1:00 p.m. at the Lancaster Library, 601 West Lancaster Blvd., Lancaster, California 93534.

The Scoping Meeting facilitated public review and comment on the NOP. The comments received by the County and during the Scoping Meeting are contained in Appendix A-5 of this Draft EIR. The NOP and Initial Study (IS) are included in Appendix A-1 and A-2 of this document, respectively.

This Draft EIR will be subjected to the 45-day public review and comment period as mandated by CEQA (Section 15105). Interested parties will be given adequate time to prepare and submit written comments on the Draft EIR, which will be considered and incorporated into the Final EIR.

The Los Angeles County Department of Regional Planning (LACDRP) will hold a “Hearing Examiner” public hearing in the Antelope Valley. The purpose of the hearing is to provide additional opportunity to take public testimony on the Draft EIR.

Responses will be prepared for all oral comments received during the Hearing Examiner public hearing as well as for all written comments received during the public comment period. These written responses will be included as part of the Final EIR. As required by CEQA, responses to comments submitted by responsible public agencies will be distributed to those agencies for review prior to consideration of the Final EIR by the Regional Planning Commission.

The Regional Planning Commission will schedule a public hearing once the Final EIR, environmental findings, and Mitigation Monitoring and Reporting Programs are complete and have been submitted to the Commission. Each of the Conditional Use Permit (CUP) applications for each individual solar project will be voted on separately by the Regional Planning Commission at a public hearing. The commission will decide whether or not to adopt findings relative to the environmental effects of each project, will decide on the required implementation of mitigation measures, and will then take action to recommend approval, conditional approval, or denial of each solar project individually. Thus if one of the solar projects is not approved or is delayed, it will not impact the action on the other solar Projects. One project, Project 1, will include an entitlement recommendation rather than an approval by the Commission to the Board of Supervisors who will take final action on this Project for adoption of a Plan Amendment.

As a single action for the Final EIR, the Regional Planning Commission will consider its adequacy, consider the environmental findings, and consider all of the mitigation measures as reflected in the Mitigation Monitoring and Reporting Programs. The Commission will vote whether or not to certify the EIR. For Project 1 requiring a Plan Amendment, the Board of

Supervisors will be calling for review of the EIR and all related entitlements for the subject Project in addition to consideration of the Plan Amendment requested.

2.3 PURPOSE AND AUTHORITY OF THE EIR

In accordance with the CEQA California Public Resources Code (PRC) Section 21080, the proposed Projects are subject to environmental review. CEQA Section 21002.1 states that the purpose of an EIR is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant impacts can be mitigated or avoided. A detailed description of the Projects is provided in Section 3.0, Description of Projects, of this Draft EIR. The Silverado Power West Los Angeles County EIR addresses the Projects which are comprised of six solar projects and the gen-tie lines required to connect them into the electrical power grid in west Los Angeles County. The Projects would generate 172 megawatts (MW) of solar energy on 987.1 acres of fallow and mostly disturbed agricultural land.

The County, administered through the Department of Regional Planning, is identified as the Lead Agency for the proposed Projects in accordance with CEQA. Thus, the County has the responsibility and authority to implement and enforce the requirements of CEQA. The Projects would require approval of discretionary actions by the County and other government agencies. For required entitlements and discretionary actions see Section 3.6.

2.4 SCOPE OF THE EIR

The scope of the EIR was initially defined during the preparation of an IS. The Los Angeles County Department of Regional Planning (LACDRP) oversaw the preparation and distribution of the NOP and IS in compliance with CEQA Guidelines 15082, which was circulated on June 13, 2012 to the California State Clearinghouse, other agencies, and the public for the required 30-day review and comment period.

The IS was prepared in accordance with the requirements of CEQA Section 15063, and identified potential environmental issues and areas requiring analysis in the EIR. Based on the conclusions of the IS, this Draft EIR analyzes the following environmental issues:

- 4.1 Aesthetics
- 4.2 Agriculture and Forestry Resources
- 4.3 Air Quality
- 4.4 Biological Resources
- 4.5 Cultural Resources
- 4.6 Geology and Soils
- 4.7 Greenhouse Gas Emissions and Climate Change
- 4.8 Hazards and Hazardous Materials
- 4.9 Hydrology and Water Quality
- 4.10 Land Use and Planning

- 4.11 Noise
- 4.12 Public Services
- 4.13 Transportation and Traffic
- 4.14 Utilities and Service Systems

2.4.1 Environmental Issues Determined Not to be Significant

The following CEQA topics were determined not to be significant and are not addressed in this EIR: Mineral Resources, Employment, Population, Housing, and Recreation.

Mineral Resources have not been previously found or developed on any of the proposed project sites and the proposed action would have no effect on any mineral resources.

The Projects would provide significant short-term employment for construction workers during the two year construction period. The duration of construction for the Projects would be less than two years; and construction personnel would commute to the Projects from Lancaster, the Los Angeles areas, and Kern County. However, jobs would be temporary and would be for the two year construction period. Construction workers would not establish new households and are not anticipated to permanently relocate to the area. Additionally, adequate construction personnel presently living in Los Angeles and Kern County would fill all of the jobs that will be available. Area population, housing demands and the need for educational facilities and libraries would not be affected significantly because jobs that would be created are short term in nature; therefore, they would not be impacted by the Projects.

Employment, Population, and Housing would not be impacted because the Projects do not require a significant number of personnel to operate them once they are built and producing electricity, and they do not have growth inducing impacts to the local community. Requirements for operations and maintenance are not significant and would be conducted by a few specialized contracted third-party personnel who will cover the Projects. There is no operations and maintenance building on any of the Projects 1-6. There are no significant CEQA impacts in these subject areas and these subjects are not addressed further in this Draft EIR.

The Projects would have no impact on recreation opportunities in the area. There are adequate recreation opportunities in the area and the availability of these would not change.

2.5 ORGANIZATION OF THE EIR

The Draft EIR is organized as follows:

Section 1.0 – Executive Summary: This section includes a summary of the proposed Projects, identifies Areas of Controversy/Issues to be Resolved, presents the Alternatives Analyzed in this Draft EIR, and provides a Summary of Environmental Impacts and Mitigation Measures.

Section 2.0 – Introduction: The Introduction provides the intent of CEQA, defines the environmental review process, provides the purpose and authority of the EIR, defines the scope of the EIR, and provides a list of the issues determined not to be significant under CEQA. It then provides a summary of the organization of the EIR, define documents incorporated by

reference, defines documents prepared for the project, and gives the Lead Agency, the Applicant, the EIR consultant, and the Trustee and other agencies involved.

Section 3.0 – Description of Projects: This section provides a detailed description of the six Projects. The Projects' background, characteristics, and objectives are included. The Intended Uses of this Draft EIR are given and this section also contains the Cumulative Projects list.

Section 4.0 – Environmental Impact Analysis: This section provides a detailed environmental impact analysis for each CEQA Required Discipline and each CEQA Threshold, with the exception of those issues determined not to be significant and not addressed in this EIR: Mineral Resources, Employment, Population, Housing, and Recreation.

Section 5.0 – Alternatives to the Proposed Project: This section describes potential alternatives to the Projects, and provides a summary of the impact analysis of the alternatives considered relative to the Projects.

Section 6.0 – Consequences of Project Implementation: Section 7.0 contains discussions on Change of Character, Impacts Found to be Less Than Significant, Impacts Found to be Less Than Significant with Mitigation, Impacts Found to be Significant and Unavoidable, Irreversible Impacts, Significant Cumulative Effects, and Growth Inducement.

Section 7.0 – Mandatory Findings of Significance: This section addresses the issues identified for the Projects by the Lead Agency that are considered significant or potentially significant from the development and operation of the Projects.

Section 8.0 – Persons and Organizations Consulted: Section 9.0 lists the people, regulatory agencies and organizations, in addition to the County of Los Angeles departments, that were consulted during preparation of this document.

Section 9.0 – List of Preparers: This section identifies individuals that were directly involved in the preparation and/or review of this document.

Appendices

Appendix A – A-1 Notice of Preparation
A-2 Initial Study
A-3 Mailing List
A-4 Comments Received
A-5 Transcript of Scoping Meeting

Appendix B – Technical Studies
B-1 Aesthetics
B-2 Air Quality; Greenhouse Gases and Climate Change
B-3 Biological Resources
B-4 Cultural Resources
B-5 Geology and Soils
B-6 Hazards and Hazardous Materials
B-7 Hydrology and Water Quality
B-8 Noise

B-9 Transportation and Traffic
B-10 LACDPW Document
B-11 Agriculture and Forestry Resources
B-12 Land Use
B-13 Utilities and Service Systems
B-14 Site Plans

Two Volumes of the Draft EIR

Sections 1.0 through 9.0 are presented in Volume I of this Draft EIR. The Appendices are included in Volume II of the Draft EIR.

2.6 DOCUMENTS INCORPORATED BY REFERENCE

No documents are incorporated by reference.

2.7 DOCUMENTS PREPARED FOR THE PROJECT

Technical studies have been prepared for the Projects during 2010 through 2012. These technical studies and reports are provided in Appendix B in Volume II of this Draft EIR.

2.8 LEAD AGENCY, APPLICANT, AND EIR CONSULTANT

Los Angeles County is the Lead Agency and LACDRP has prepared this Draft EIR for the solar generating facilities and their gen-tie lines which are herein referred to as the Projects.

Silverado Power, LLC, located at 44 Montgomery Street, San Francisco, California 94104, is the applicant (Applicant) for the Projects. Silverado Power has acquired rights to the real properties and filed CUP applications with the County of Los Angeles for each of the six Projects and one Plan Amendment for Project 1. Environmental studies, the Projects' siting and planning activities, and interconnection agreements with Southern California Edison (SCE) have been ongoing since 2010. Silverado Power has held several meetings in the Antelope Valley area to inform the public about all aspects of these Projects. The Projects would begin delivering power to the SCE electrical grid in 2014. Each of the Projects would be designed and built in a very similar manner. The Projects would employ a series of photovoltaic (PV) module arrays to convert sunlight into electrical energy without the use of heat transfer fluid or cooling water. The facilities would deliver the electrical output to the existing regional transmission system.

The lead consultant for the Technical Studies and for preparation of the EIR is Tetra Tech, Inc. Tetra Tech has an agreement with LACDRP defining the preparation of this EIR. Tetra Tech also manages subcontractors who have prepared specific technical tasks for the EIR. The address of the Tetra Tech office leading this effort is 17885 Von Karman, Suite 500, Irvine, California 92614.

2.9 TRUSTEE AND OTHER AGENCIES

Federal and State Trustee Agencies and other regional and local agencies participating in the development of this EIR are listed below:

Federal Agencies

- State Historic Preservation Office
- U.S. Fish and Wildlife Service, Southern California Field Station
- U.S. Department of the Army, Los Angeles District, Corps of Engineers
- U.S. Environmental Protection Agency
- Federal Aviation Administration
- Edwards Air Force Base, AFFTC/XPX and AFFTC/XPT
- Angeles National Forest, Environmental Review

State Agencies

- California Department of Conservation
- California Department of Fish and Wildlife
- California Department of Transportation
- California Regional Water Quality Control Board, Lahontan Regional Water Quality Control Board
- State Department of Parks and Recreation (including Antelope Valley California Poppy Reserve and Arthur B. Ripley Desert Woodland State Park)
- California Energy Commission, Climate Change and California
- South Coast Air Quality Management District, Environmental Review
- Antelope Valley Air Pollution Control District
- Office of Planning and Research, Environmental Review
- California Resources Agency, Environmental Review
- California Air Resources Board, Environmental Review
- California EPA, Environmental Review
- California Climate Action Registry, Environmental Review
- Climate Action Team, Climate Change Activities, California Environmental Protection Agency
- California Public Utility Commission, Environmental Review
- Department of Conservation, Division of Oil, Gas & Geothermal Resources
- Native American Heritage Commission, Environmental Review
- Department of Toxic Substance Control, Environmental Review
- Department of Parks and Recreation, Angels District
- California Regional Water Quality Control Board, Lahontan Region, Environmental Review
- Caltrans District 7 Planning Division/CEQA MS16
- Department of Transportation, Division of Aeronautics, Environmental Review

- Antelope Valley Indian Museum State Historic Park
- State Water Resources Control Board, Environmental Review
- California Highway Patrol
- Department of Water Resources, Division of Land & Right of Way, Environmental Review
- State Department of Health Services, Drinking Water Program District Offices
- State Clearinghouse, Environmental Review
- Southern California Association of Governments, Environmental Review

Major Cities

- City of Lancaster Planning and Development Services
- City of Palmdale Planning Department

3.0 DESCRIPTION OF PROJECTS

3.1 LOCATION AND SETTING

Silverado Power is a utility scale solar photovoltaic (PV) developer proposing the development of six solar PV Projects in the western portion of Antelope Valley, located in the northern portion of unincorporated Los Angeles County. Each of the six solar PV Projects is planned for separate properties, is being developed separately, and would be analyzed individually and cumulatively in this DEIR for all phases of each project including planning, construction, and operation according to the requirements of CEQA in Section 15161.

The Projects to be developed are shown below in Table 3-1 by project number, name, acres, and megawatts (MW):

Table 3-1 Project Information for the Six Solar Projects

Project Number	Project Name	Assessor's Parcel Number (APN)	Acres	Megawatts (MW)
1	North Lancaster Ranch	3262-001-006; 3262-001-006	240	20
2	Western Antelope Blue Sky Ranch	3267-015-001	157	40
3	American Solar Greenworks	3268-018-035; 3268-018-002; 3268-018-036	135.6	35
4	Antelope Solar Greenworks	3218-002-018; 3218-002-023; 3203-002-015; 3203-002-017; 3218-001-002; 3218-001-003; 3218-001-004; 3203-002-011; 3203-002-012; 3203-002-013; 3203-002-014; 3219-019-011	256	52
5	Silver Sun Greenworks	3267-003-001; 3267-003-002; 3267-003-003	160	20
6	Lancaster WAD	3115-010-004	38.5	5

The Projects are not dependent upon each other for success. Each Project can succeed as a stand-alone project if other projects are not approved by Los Angeles County or if technical or financial problems delay or block the completion of a Project. CEQA allows for a group of projects to be analyzed as a single EIR; each project must also receive approval of its CUP application and other entitlements on the merits of the individual project and individual site.

These six Project sites together would cover approximately 987 acres and would produce 172 MW of solar power in total. The Projects are located on primarily unproductive farmland that is no longer used for farming. The land use, natural resources, and physical characteristics of the region are summarized below for all of the six project sites. This is a general description of the Antelope Valley area lands to be utilized for the six projects. Detailed descriptions of the existing conditions for all of the issue areas such as land use, natural resources, and physical characteristics are provided in Chapter 4 along with the detailed analyses of the impacts of each Project on each resource area.

3.1.1 Overview of the Region

The Projects are located in the Antelope Valley in unincorporated Los Angeles County and are west of the Antelope Valley Freeway (State Route 14). All six Project sites are between 30th

Street West and 120th Street West. On the north-south axis, the sites are between Avenue K to the south and Avenue A to the north. The Projects range from 38.49 acres to 256 acres in size and from 5 MW to 52 MW in solar generation capacity (see Figure 3-1 for a map of the Projects).

3.1.2 Land Description and Uses

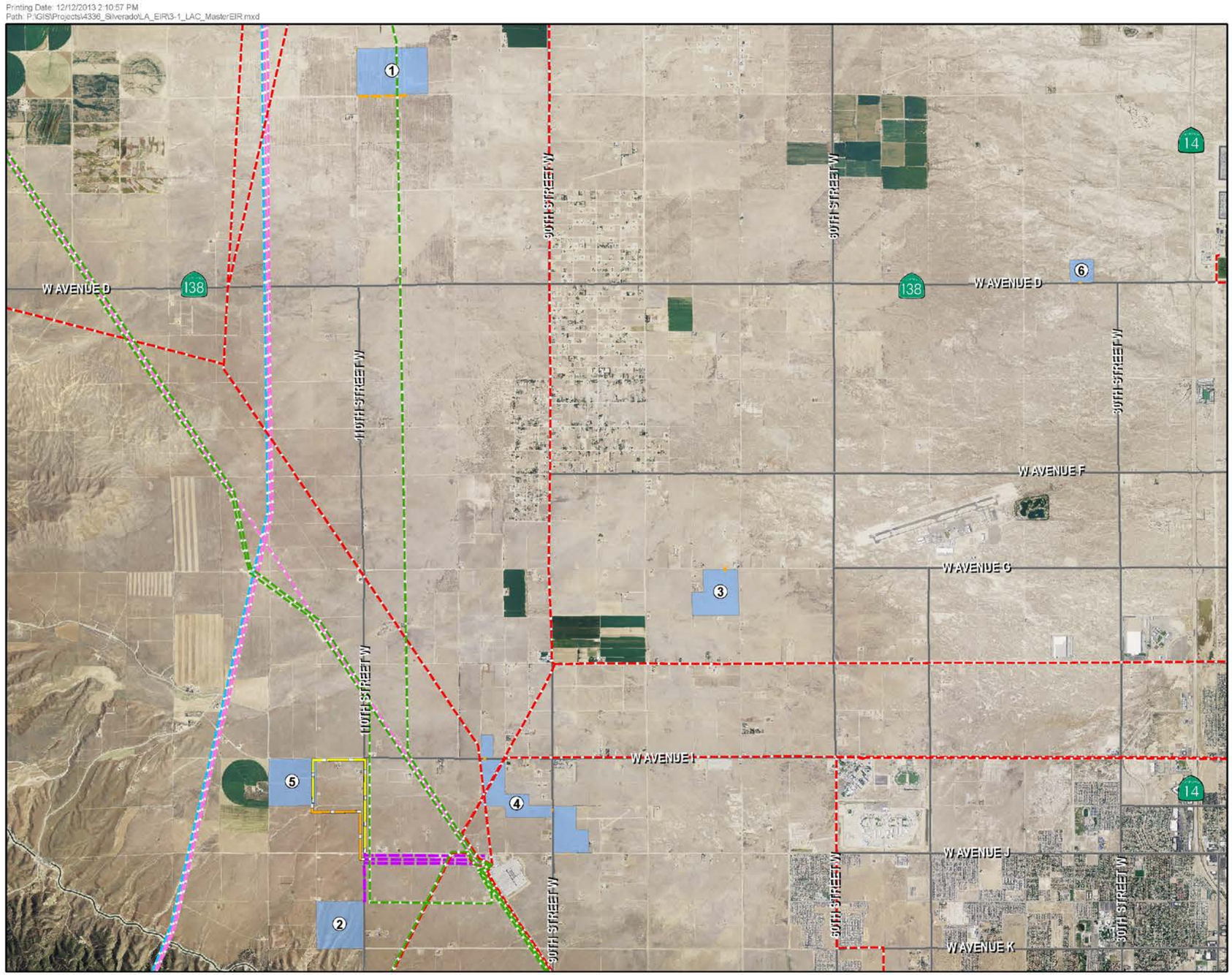
The Antelope Valley consists of high desert terrain bounded by the San Gabriel Mountains to the south, portions of Kern County to the north, Ventura County to the west, and San Bernardino County to the east. The Antelope Valley is characterized by relatively flat land, punctuated by occasional buttes. In general, the Antelope Valley floor is bowl-like, with the low point located near the center of the playas or dry lakes to the northeast, and consists primarily of alluvium soils. Generally, the area alluvium is composed of unconsolidated to moderately consolidated, poorly sorted cobble, gravel, sand, silt, and clay. Elevation within the Antelope Valley ranges from 2,300 to 3,500 feet above mean sea level (msl).

The Antelope Valley is located in a very arid part of California and as such usually receives less than 10 inches of precipitation per year, mostly in the form of rainfall; infrequent snowfall events are also known to occur within the Antelope Valley. Temperatures within the Antelope Valley range from below freezing in the winter to over 100 degrees Fahrenheit (°F) in the summer. Winter temperatures are typically above freezing.

The Projects vicinity, as shown in the aerial photograph provided in Figure 3-1, includes a variety of land uses, although a majority of the surrounding lands are unoccupied agricultural and grazing lands. The nearest residential communities are Antelope Acres, the Fairmont community, the City of Lancaster, and the City of Palmdale. Land uses surrounding the Projects consist of mainly open space areas, light agricultural land, low density single family housing, open space areas, and undeveloped grazing lands. Historically, agriculture has been a primary land use in the Antelope Valley. Some properties in the area are still utilized for agriculture; however, because of the declining groundwater levels in the Antelope Valley region and the water adjudication process, the majority of properties have limited supply of water to irrigate crops. Many of these properties have ceased farming activity over the last two decades and remain as unproductive fallow land. South of the Antelope Valley in the San Gabriel Mountains is the Angeles National Forest.

3.2 PROPOSED PROJECTS – BACKGROUND

The Applicant has acquired rights to the real properties and filed applications with the County of Los Angeles to develop and operate Projects 1 – 6. The completion of environmental studies, the siting and planning, and the development of interconnection agreements with Southern California Edison (SCE) have been ongoing since 2010. The lead agency for this document is Los Angeles County (County). The County held an environmental scoping meeting on July 14, 2012, and the Applicant has held several meetings in the Antelope Valley area to inform the public about aspects of these Projects. The Projects propose to deliver power to the SCE electrical grid in 2014 and 2015 if approved.



SILVERADO power

SILVERADO POWER WEST
LOS ANGELES COUNTY

Legend

- Existing 69 kV Transmission Line
- Existing 230 kV Transmission Line
- Existing 500 kV Transmission Line
- Existing DC Line
- Proposed Underground Lines
- Proposed Above or Below Ground Lines
- Silver Sun Below Ground Option 1 B
- Silver Sun Below Ground Option 2 A

NOTE:
(a) State Plane, Zone V (NAD83), US Survey Feet.
(b) Source Data: ESRI, TTEC.

FIGURE 3-1
PROJECT LOCATIONS

0 0.5 1 2
Miles

TETRA TECH

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The Projects are not dependent on each other for success. Each Project can succeed as a stand-alone project if other Projects are not approved by the County or if technical or financial problems delay or block the completion of the Project. The California Environmental Quality Act (CEQA) allows for a group of projects to be analyzed in a single EIR but each project must also receive approval of its entitlement application(s).Each of the six PV Projects would be designed and built in a very similar manner. Each of the six sites would employ a series of PV module arrays to convert sunlight into electrical energy without the use of heat transfer fluid or cooling water. The facilities would deliver the electrical output to the existing regional transmission system.

The PV modules convert sunlight into low-voltage direct current (DC) power, which is subsequently transformed into alternating current (AC) power through an inverter. The PV modules are made of a semiconductor material through which electrons flow to convert light (photons) into electricity (voltage). This process is known as the PV effect.

The details regarding the Projects' objectives, physical components, construction methods, and operations are described in more detail below.

3.3 PROPOSED PROJECTS 1 – 6 OBJECTIVES

Proposed Projects 1 – 6 would meet the existing and future demand for electricity generated from clean, renewable technology by generating 172 MW of electrical energy from the sun. Recent legislation enacted in California recognizes the multiple benefits associated with the development of renewable energy resources. These benefits include a reduced reliance on fossil fuel, diversification of energy portfolios, reductions in greenhouse gas (GHG) emissions, and the creation of "green" jobs within the state of California.

Additionally, the Projects would assist California in meeting the newly established Renewable Energy Portfolio Standards (RPS). Senate Bill 14 established RPS targets for California, stating, "All retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." State government agencies have been directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines. The six proposed PV Project sites qualify as eligible renewable energy resources as defined by the California Public Resources Code and would help the state meet the objective of increasing renewable energy generation. In addition, the Projects would contribute much-needed competitive energy during peak power periods to the electrical grid in California.

As another key objective, the Projects have been sited to minimize impacts to the environment and the local community as follows:

- Using disturbed land or land that has been previously degraded from prior use
- Using existing electrical distribution facilities, rights-of-way (ROWs), roads, and other existing infrastructure where feasible to minimize the need for new electrical support facilities

- Minimizing impacts to threatened or endangered species or their habitats, wetlands and waters of the United States, cultural resources, and sensitive land uses

3.4 CHARACTERISTICS OF PROPOSED PROJECTS 1 – 6

All six of the Projects would be designed and built using the same or similar methods and would have similar Project characteristics. The Projects would utilize PV technology on fixed-tilt or tracker mounting supports. The Projects would first consist of construction and then operation of the six facilities. The proposed PV Projects would be constructed in phases and then operated for an estimated 35 years. Construction would generally take place during normal daylight hours and would conform to County construction requirements.

Each Project would consist of the following elements:

- Temporary meteorological station (on two sites – Project 4 Antelope Solar Greenworks, and Project 6 Lancaster WAD)
- PV modules
- PV module mounting system
- Balance of system and electrical boxes (e.g., combiner boxes, electrical disconnects)
- Substation (Projects 1 – 5)
- Electrical inverters and transformers
- Electrical AC collection system, including switchgear
- Data monitoring equipment
- Generation tie line
- Access roads and chain link perimeter security fencing

The other major components of the proposed Projects are described in more detail below.

3.4.1 Solar PV Generating Facilities

Prior to construction, proposed Projects 4 and 6 would require the installation of temporary meteorological stations mounted on tripods. Necessary ministerial permits would be obtained prior to their installation. These stations do not require any ground disturbance to install, and would be removed prior to initiation of construction. The stations would have several weather sensors mounted on the tripod: a pyranometer for measuring solar irradiance, a thermometer to measure air temperature, a barometric pressure sensor, and two wind sensors to measure speed and direction.

The Solar Generating Facilities (SGFs) are designed for optimum performance and ease of maintenance. The Projects would consist of a series of PV module arrays mounted on racking systems, which are typically supported by a pile-driven foundation design. The foundation design would be determined based on the full geotechnical survey. The module mounting system, or racking system, would have a fixed-tilt or tracker PV array configuration and would be oriented south to maximize the amount of incident solar radiation absorbed over the course of the year. The type and number of piles used to support the racking system will be similar if either the fixed-tilt or tracking PV array configuration is used and the worst case scenario has been analyzed.

Electricity from a series of PV arrays would be funneled and combined at combiner boxes located throughout the SGF. The electrical current would then be further collected and combined prior to feeding the inverters. The SGF would be laid out in a PV block design to allow adequate area for maintenance in the way of clearances or access roads.

Inverters would be consolidated in areas to minimize cable routing and trenching and ensure minimal electrical losses. The AC out from the inverters would be routed through an AC collection system and consolidated within system switchgear. The final output from the SGF would be processed through a transformer to match the interconnection voltage. Electrical safety and protection systems would be provided to meet utility, International Organization for Standardization, and regulatory codes and standards. The energy would be delivered to the regional electrical distribution network.

A security perimeter fence with appropriate signage for public protection would be installed. Points of ingress/egress would be accessed by locked gates for facility services and maintenance.

Additional information for the specific elements of the SGFs is provided in the following sections.

3.4.2 Photovoltaic Modules

The SGFs would require installation of PV modules. The total number of PV modules required would depend on the technology selected, optimization evaluation, and detailed design. The market conditions, economic considerations, and the environmental factors would be taken into account during the detail design process. The following PV module technologies or equivalent are being considered for incorporation into the Projects:

- PV thin-film technology
- PV crystalline silicon technology
- Fixed-tilt configuration
- Tracking design configuration

The modules configured with a fixed tilt would be oriented toward the south and angled at a degree that would optimize solar resource efficiency. For the tracking configuration, the modules would rotate from east to west over the course of the day. Modules would be non-reflective and highly absorptive.

3.4.3 Standard Installation, Array Assembly, and Racking

There are a variety of module mounting systems and manufacturers of PV panels available in the solar industry, the majority of which can be mounted on a variety of foundations. Fixed-tilt, single-axis trackers, and dual-axis trackers, all of which provide various levels of energy efficiency, are under consideration for the PV Projects. The final racking system would be determined by optimization evaluations and economic assessments and incorporated into the detailed design.

The module mounting system provides the structure that supports the PV module arrays regardless of the technology selected (fixed-tilt or tracking). The foundation for the mounting system is typically steel pipe/pile, which would be driven into the soil using pneumatic techniques, similar to hydraulic pile driving. For either the fixed-tilt or tracking configurations, minimal site preparation is necessary as the pile system can be designed to accommodate variations in site topography. The final foundation design would be determined based on the geotechnical survey for each of the PV Project locations. Once the foundation has been installed, the module mounting system would be installed on it. For a tracking configuration, motors would be installed to drive the tracking mechanism. The PV modules would be delivered to each site during construction to support the installation schedule.

The module mounting system would be oriented in rows within a PV design block, presenting a standard and uniform appearance across the facility. The panel configuration would be uniform in height and width.

3.4.4 Collection, Inverters, AC Collection, and Transformers

Modules would be electrically connected into strings. Each string would be funneled by electrical conduit (typically underground) wiring to combiner boxes located throughout the solar field power blocks. The output power cables from the combiner boxes would be again consolidated and feed the DC electricity to inverters, which convert the DC to AC.

Underground electrical cables would be installed using ordinary trenching techniques, which include excavation of trenches to accommodate conduits. Wire depth and trench backfill would be in accordance with local, state, and federal codes.

The AC energy would be stepped up to the appropriate interconnection voltage by system transformers to match the voltage at the grid interconnection. As required, switchgear cabinetry would be provided where necessary for circuit control.

All electrical inverters, transformers, and gear would be placed on concrete foundation structures.

Commissioning of equipment would include testing, calibration of equipment, and troubleshooting. All electrical equipment, inverters, collector system, and PV array systems would be tested prior to commencement of commercial operations.

3.4.5 Proposed Project Substations

For Projects 1, 2, 3, 4, and 5, which require substations, the area would be appropriately graded and excavated to accommodate transformer equipment, the control building foundation, and oil containment area. Foundations for equipment within each approximately 1-acre substation would be constructed with reinforced concrete.

Structural components in the Project substation area would include:

- Transformers, switchgear, and safety systems
- Footings and oil containment system for transformers

3.4.6 Proposed Projects 1 – 6 Interconnection Descriptions

Each inverter would be fully enclosed and pad mounted and would be approximately 90 inches in height. The AC output of two inverters would be fed via underground cable into the low-voltage side of the inverter step-up transformer, generally within 20 feet of the inverters. Each transformer would be mounted on a concrete pad and enclosed together with switchgear and a junction box. Transformers are typically 87 inches in height. The high-voltage output of the transformer would be combined in series via underground collector cables to the junction box of the nearest transformer, ranging from as little as 60 feet to as much as 700 feet. The collector system cables would be tied throughout the SGF at underground junction boxes to the main underground collector cables, which would be composed of a larger wire gauge, to the location of the generator step-up transformer (GSU), as applicable at each project location. The main collector cables would rise into the low-voltage busbar and protection equipment that would be enclosed together with the GSU. The primary switchgear includes the main circuit breaker and utility metering equipment, and it would be enclosed separately but pad-mounted together with the GSU. Both the GSU and the primary switchgear would stand approximately 87 inches in height.

The output of the switchgear would be the start of the Project generation tie line (gen-tie line). The connections from the SGFs to the regional transmission lines are made through the construction of gen-tie lines. Los Angeles County requires that all gen-tie lines be underground to the extent practicable, and Projects 1 – 6 are designed in this manner. Each gen-tie line would consist of three phases of either underground or overhead conductor and a disconnect switch. The overhead conductor would be mounted on either wooden or tubular steel poles of varying heights ranging from 55 to 85 feet. Pole height would be determined by the span between poles as defined in the final design for each Project. Figure 3-2, Underground Buried Cabling Details, shows the general manner in which the underground buried cables would be built.

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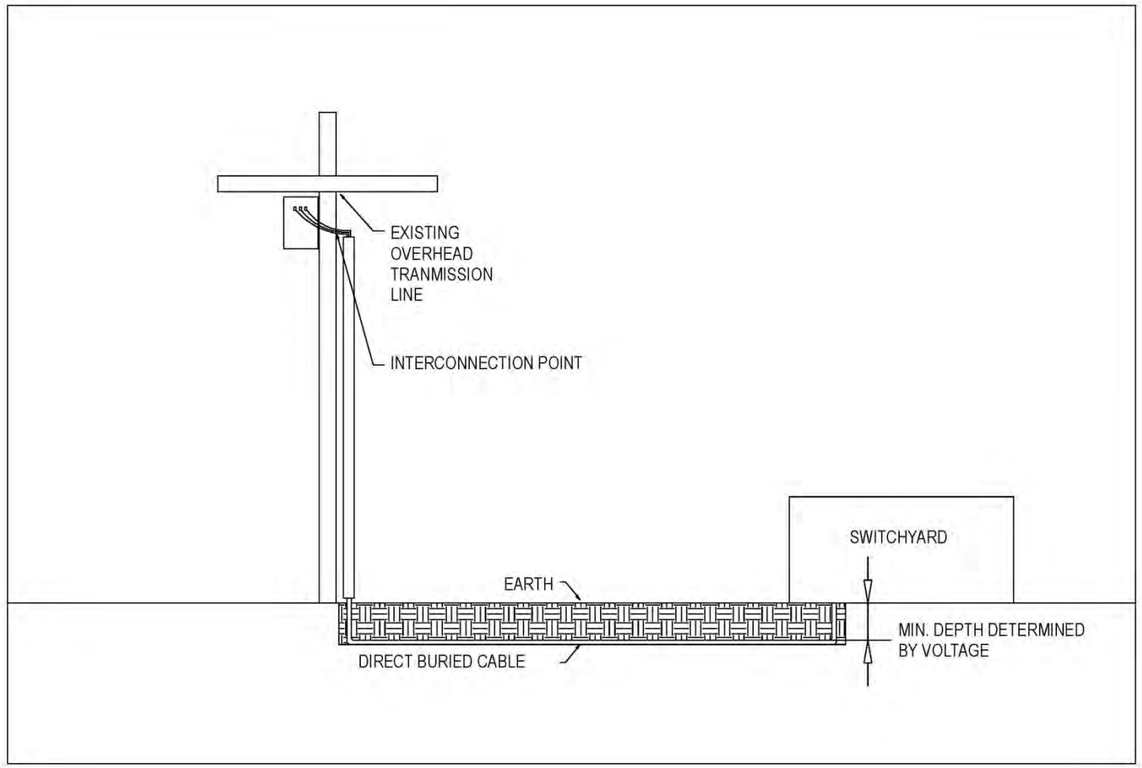

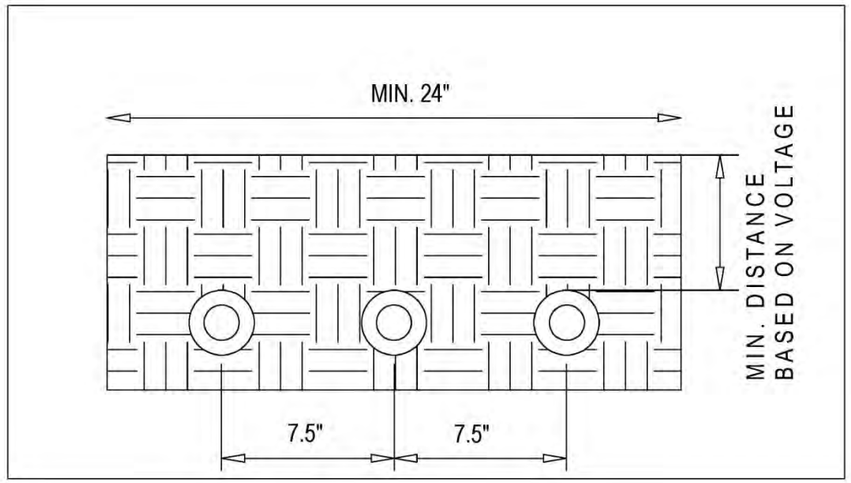

BURIED CABLE DEPTHS

CIRCUIT VOLTAGE	MINIMUM COVER REQUIREMENTS
OVER 600 V TO 22 kV	30"
OVER 22 kV TO 40 kV	36"
OVER 40 kV	42"

FROM TABLE 300.50 IN 2011 NEC CODE

SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

FIGURE 3-2
UNDERGROUND BURIED CABLING DETAILS

TETRA TECH

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Table 3-2 provides a description of the interconnection for each Project, the length and width of the interconnection ROW, and the acres of land that would be disturbed during construction of the gen-tie line. All gen-ties in Los Angeles County would be located underground while gen-tie lines located in the City of Lancaster could be above or below ground.

Table 3-2 Description of Interconnection per Project Site

Project Number	Interconnection Description	Length in miles	ROW Width in Feet	Acres Used	Cubic Yards	Other Comments
1	Phase 1: Gen-tie crosses 110th St W underground to SCE 66 kV transmission line running north-south on west side of road. Phase 2: Gen-tie runs west along south side of W Ave B underground for 0.54 miles and connects to SCE 66 kV transmission line running north-south on west side of road at SW corner of W Ave B and 110th St W.	Phase 1: 0.02 Phase 2: 0.54	30	2.04	876	Phase 1 and 2: On public ROW, underground and under existing road, minor soil disturbance
2	Gen-tie leaves Project substation at NE corner of Project undergrounded. Runs 1.9 miles north along east side of 110th St Wand east along south side of W Ave J to the SCE Antelope Substation above or below ground.	1.9	30	6.91	2,972	On public ROW or private land, partially underground, minor soil disturbance
3	Gen-tie connects directly from Project substation to existing SCE 66 kV transmission line located adjacent to northern property line on south side of W Ave G, at NE corner of Project.	Less than 0.01	0	0	16	Pole to pole or pole to riser above ground. No new disturbance
4	POI 1: Gen-tie crosses W Ave J underground to SCE 66 kV transmission line running east-west on south side of road. POI 2: Gen-tie crosses 90th St W underground to SCE 12.47 kV distribution line running north-south on east side of road. POI 3: Gen-tie connects to existing SCE 66 kV transmission line located on-site near NE corner of 97th St W and Lancaster Blvd. POI 4: Project would tie into existing SCE 12.47 kV distribution line located adjacent to the Project site on the north side of W Ave I.	POI 1: 0.02 POI 2: 0.02 POI 3: 0.02 POI 4: Less than 0.01	30	0.22	110	On public ROW, would be under existing roads, minor soil disturbance
5	Gen-tie leaves Project substation at SE corner of Project underground. Runs 2.4 miles east along private property, south along east side of 110th Street West above or below ground, and east along south side West Avenue J to the SCE Antelope Substation above or below ground.	2.4	30	8.72	3,755	On public ROW or private land, partially underground, minor soil disturbance
6	Gen-tie crosses W Ave D underground to SCE 12.47 kV distribution line running east-west on south side of road.	0.02	30	0.07	31	On public ROW, would be under existing roads, minor soil disturbance

Phase 2 of Project 1 and Projects 2 and 5 would have gen-tie lines of some length and Phase 1 of Project 1 and Projects 3, 4 and 6 would connect to the transmission system that is directly adjacent to the sites via very short gen-tie lines (see Figure 3-3).

The three gen-tie lines that traverse distances of more than 100 feet would primarily be on existing ROWs that have been previously disturbed. The Applicant has incorporated this design feature as a means of minimizing environmental impacts associated with these gen-tie lines. The gen-tie lines would require a 30-foot wide ROW for construction and operation. The installation of the gen-tie lines would require trenching where the line would be undergrounded. The gen-tie conduit and wiring would be installed in the trench, the trench would be backfilled, and the area would be revegetated according to the landscaping plan approved by the applicable jurisdiction.

3.4.7 Data Collection Systems

Each Project would be designed with a comprehensive Supervisory Control and Data Acquisition (SCADA) system for remote monitoring of facility operation and/or remote control of critical components. Within the site, the fiber optic or other cabling required for the monitoring system, would be installed with the gathering line system throughout the solar field leading to a centrally located (or series of appropriately located) SCADA system cabinets. The external telecommunications connections to the SCADA system cabinets may be through either wireless or hard-wired telecommunications to a centralized data collection center.

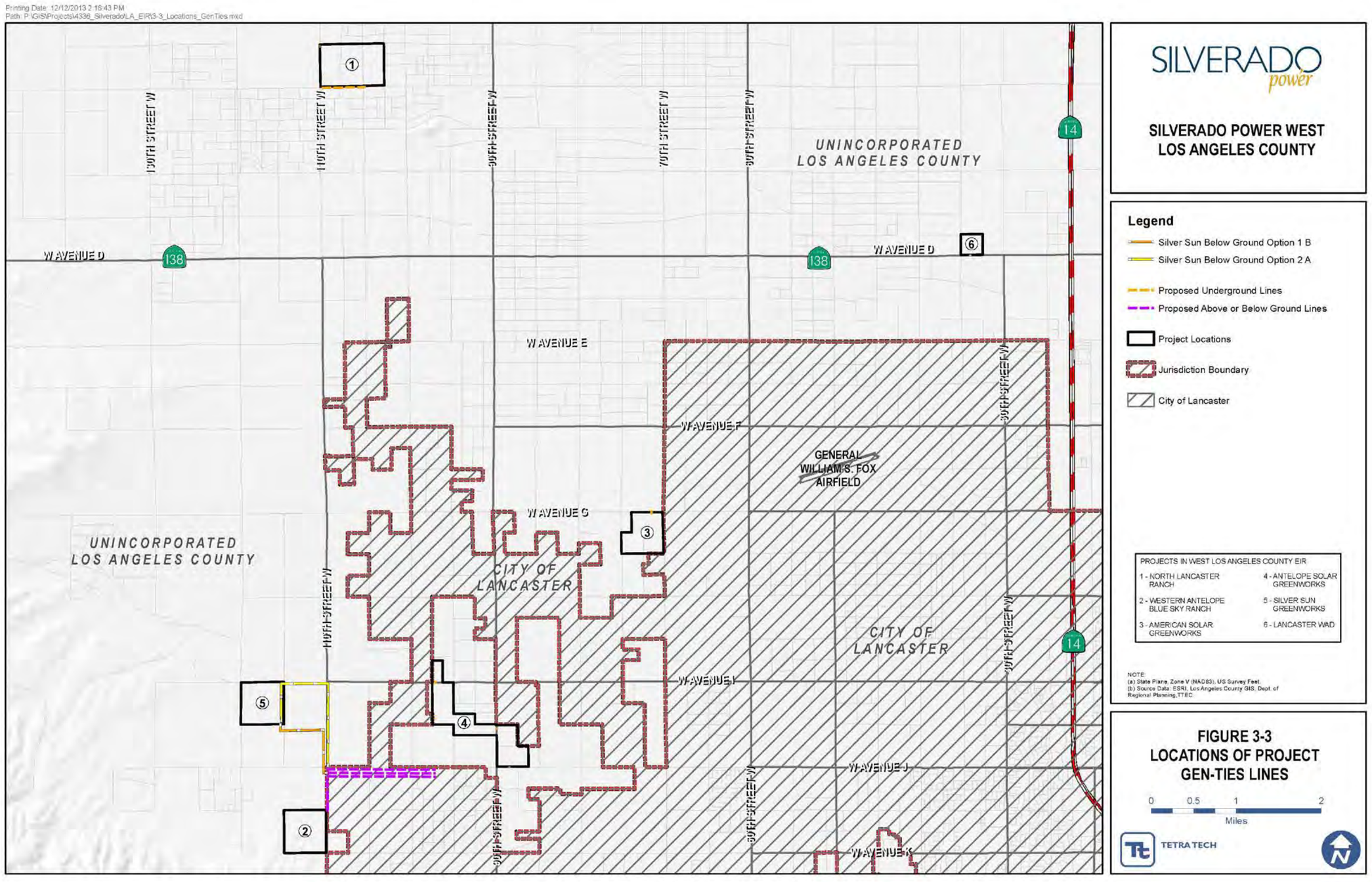
The system would also include a permanent meteorological data collection system. The station would have several weather sensors: a pyranometer for measuring solar irradiance, a thermometer to measure air temperature, a barometric pressure sensor, and two wind sensors to measure speed and direction. These sensors would be connected to a data logger, which would compile the data for transmission to the data collection center.

3.4.8 Proposed Project Construction

Construction for each of the six Project facilities consists of three major phases: (1) site preparation, (2) PV system installation testing and startup, and (3) site cleanup/restoration. BMPs would be required during all construction phases of the Projects. A Storm Water Pollution Prevention Plan incorporating BMPs for erosion control would be prepared and approved before the start of construction. The Projects would also comply with applicable post-construction water quality standards adopted by the Regional Water Quality Control Board (RWQCB).

3.4.9 Site Preparation

Construction of each PV facility would begin with initial mowing and fine grading for the substation areas. The substation areas will initially be utilized as the project staging areas. Subsequent areas to be graded would include internal Project roads and equipment pad locations. As shown in Table 3-3, the grading acreages, inclusive of staging areas, roads and equipment pad locations would be as follows: Project 1 would be 20.5 acres; Project 2 would be 12.9 acres; Project 3 would be 13.4 acres; Project 4 would be 26.4 acres; Project 5 would be 15.8 acres; and Project 6 would be 5.6 acres. To comply with Rule 403 grading will not exceed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110TH STREET W
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LANCASTER
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UNINCORPORATED
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SILVERADO power
SILVERADO POWER WEST
LOS ANGELES COUNTY
Legend
Silver Sun Below Ground Option 1 B
Silver Sun Below Ground Option 2 A
Proposed Underground Lines
Proposed Above or Below Ground Lines
Project Locations
Jurisdiction Boundary
City of Lancaster
PROJECTS IN WEST LOS ANGELES COUNTY EIR
1 - NORTH LANCASTER RANCH
2 - WESTERN ANTELOPE BLUE SKY RANCH
3 - AMERICAN SOLAR GREENWORKS
4 - ANTELOPE SOLAR GREENWORKS
5 - SILVER SUN GREENWORKS
6 - LANCASTER WAD
NOTE:
(a) State Plane, Zone V (NAD83), US Survey Feet.
(b) Source Data: ESRI, Los Angeles County GIS, Dept. of Regional Planning, TTEC.
FIGURE 3-3
LOCATIONS OF PROJECT
GEN-TIES LINES
0 0.5 1 2
Miles
TETRA TECH

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3.5 acres per day. Access to the sites from public roads would be improved to appropriate standards for the construction period. The staging areas typically include construction offices, a first aid station and other temporary buildings, worker parking, truck loading and unloading facilities, and an area for system assembly. The staging areas for all but Project 6 would ultimately be the locations for each Project's onsite substation. Road corridors would then be surveyed, cleared, and graded to bring equipment, materials, and workers to the areas under construction. Road-grade palliatives such as calcium chloride or comparable would be applied to control dust on graded roads as well as staging areas. Buried electrical lines, PV array locations, and the locations of other facilities may be flagged and staked in order to guide construction activities. Each site would be enclosed by a security fence. The fenced area would include at least two gates. A secured controlled main access gate would be located at the entrance. BMPs for erosion control and sedimentation controls would be employed during site preparation.

Table 3-3 Project Areas of Grading

Project Site Number	Areas of Grading	Cubic Yards of Grading(Balanced)	
		Cut	Fill
Project 1	20.5 acres	5,400	5,400
Project 2	12.9 acres	18,500	18,500
Project 3	13.4 acres	1,000	1,000
Project 4	26.4 acres	4,200	4,200
Project 5	15.8 acres	3,100	3,100
Project 6	5.6 acres	1,600	1,600

The mow technique would be used for the ungraded array locations to preserve below grade vegetation root systems.

3.4.9.1 Construction and Operations Water Requirements

The Applicant has estimated the maximum construction water use for the proposed Projects 1 – 6 with the assistance of multiple solar facility construction contractors currently operating in the area. The estimates of these contractors are site-specific, and based on best management practices currently utilized in the region. These estimates were created using a conservative approach equivalent to water requirements for mass site grading as opposed to the mowing technique proposed which would require less water for dust control.. These estimates were based on site-specific assumptions, and local climatic conditions. The Applicant then added a factor of safety of two to account for unforeseen weather events and soil conditions that may necessitate additional watering. The Applicant believes this estimate is very conservative, and is confident that actual water use will be much less than is contemplated here. These estimates are presented below in Table 3-4.

Water requirements could be met through several sources including purchase of banked water from an authorized Water Bank Authority, purchase of recycled waste water from an available source, acquire transferable groundwater rights from a landowner and/or public water supplier, purchase out-of-basin water for delivery via the AVEK or Water District 40 Infrastructure, use of the adjudicated allocation of each Project site via on-site wells once the adjudication process is finalized, or lastly, pay an assessment to the Waterrmaster to pump groundwater from the Basin via on-site wells, which would be offset by importing water for injection into the Basin. The water

supply analysis that describes these options in more detail may be found in Section 4.14.4.1 of this EIR.

Table 3-4 Silverado Power Water Estimates for Projects 1 – 6

Project	Project #	Location	Area (acres)	Maximum Construction Water Use (ac*ft)			Maximum Operational Water Use (acre feet/year)
				2014	2015	Total	
North Lancaster Ranch	1	W Ave B & 105th St W	240	50	50	100	2.9
Western Antelope Blue Sky Ranch	2	W Ave K & 110th St W	157	94	0	94	5.8
American Solar Greenworks	3	W Ave G & 70th St W	135.61	82	0	82	5.1
Antelope Solar Greenworks	4	W Ave J & 90th St W	256	155	0	155	7.6
Silver Sun Greenworks	5	W Ave I & 120th St W	160	97	0	97	2.9
Lancaster WAD	6	W Ave D & 35th St W	38.49	24	0	24	1.0
Totals			**987.1**	**502**	**50**	**552**	**25.3**

3.4.10 PV System Installation

PV system installation includes earthwork, grading, and erosion control, as well as construction of the plant substation and erection of the PV modules, supports, and associated electrical equipment. System installation would begin with teams installing the steel/concrete piers support structures. The exact design would be finalized pending evaluation of soil conditions. The proposed method of installation would be the use of vibration-driven pile foundations. This step would be followed by panel installation and electrical work.

A very limited volume of concrete would be required for the substation footings, foundations, pads for the transformers, and other substation equipment. The Applicant does not propose to use excavated and poured footings or foundations for the PV arrays. Concrete would be produced at an off-site location by a local provider and transported to the Project sites by truck. The enclosures housing the inverters have a pre-cast concrete base. Final concrete specifications would be determined during detailed design engineering consistent with applicable building codes.

The primary site preparation method for the PV modules would be mowing because the majority of the six sites are very flat with little change in topography. However, there may be a few instances where limited earthwork, including ponding area leveling of less than one foot in depth, and erosion control cultivation may be required to accommodate the placement of PV arrays. These features are shown on each site plan and are discussed in Section 4.9 Hydrology and Water Quality, in this EIR. Other than required grading for roads, pads, and drainage features, and standard trenching and installation work, no other earthwork would be performed within the array areas. Erosion control techniques used during construction may include the use of silt fencing, straw bales, temporary catch basins, inlet filters, and truck tire muck shakers. Construction of the PV arrays includes the installation of support beams, module rail assemblies, PV modules, inverters, transformers, and buried electrical cables.

Wastes generated during construction may include the following: cardboard, wood pallets, copper wire, scrap steel, common trash, and wood wire spools. The Applicant does not expect to generate hazardous waste during construction. However, field equipment used during

construction would contain various hazardous materials such as hydraulic oil, diesel fuel, grease, lubricants, solvents, adhesives, paints, and other petroleum-based products contained in construction vehicles.

3.4.11 Operations and Maintenance of Projects 1 – 6

Upon commissioning, the Projects would enter the operational phase. For the duration of the operational phase, the Projects would be operated and monitored remotely by a third party contractor, with an assumed two on-site visits for security, maintenance, and system monitoring per quarter (total of eight trips per year) by two third party employees in one light duty truck, and two on-site visits by four third party employees for biannual panel washing that includes one light duty truck and one water truck. Therefore the trips would be no more than 10 trips annually for security, maintenance, system monitoring and panel washing. There would be no personnel stationed on-site full time during operations. The PV arrays would produce electricity passively with minimal moving parts; therefore, maintenance requirements would be limited. Any required planned maintenance would be scheduled to avoid peak-load periods, and unplanned maintenance would typically be responded to as needed depending on the event. These assumptions were incorporated into the air quality and transportation analyses presented in this EIR.

Other operational details are summarized in the following sections.

3.4.11.1 Operations

The Applicant would ensure consistent and effective facility operations by:

- Responding to automated alarms based on monitored data, including actual versus expected tolerances for system output and other key performance metrics
- Communicating with customers, transmission system operators, and other entities involved in facility operations

3.4.11.2 Maintenance

Project maintenance performed on the sites would consist of equipment inspection and replacement. Maintenance would occur during daylight hours when possible. However, maintenance activities on the PV modules and DC systems may be performed at night. Maintenance program elements include:

- Managing a group of prequalified maintenance and repair contractors who can meet operation and maintenance needs of the facility throughout its life
- Creating a responsive, optimized cleaning schedule
- Responding to plant emergencies and failures in a timely manner
- Maintaining an inventory of spare parts to ensure timely repairs and consistent plant output
- Systematically maintaining a log to effectively record and track all maintenance problems
- Performing maintenance of the site as required to clear obstructive ground cover

3.4.12 Security

To ensure the safety of the public and the facilities, the sites would be fenced and signs would be posted. Security measures would be installed as necessary to mitigate and/or deter unauthorized access. Access to the sites would be controlled and gates would be installed at the roads entering the property.

3.4.13 Decommissioning Plan

A Decommissioning Plan for each of the Projects would be prepared and submitted for approval to Los Angeles County prior to obtaining the grading permit. The plan would assure the land is protected during operations and returned as closely as possible to its original state upon termination of the use of the land as a SGF.

It is unknown at this time if solar energy electricity production would continue to be utilized on this land in excess of 35 years, and thus the future long-term use of the site beyond 35 years is unknown.

3.4.13.1 Timeline for Decommissioning Plan

The life of each facility is presently proposed to be 35 years. The Decommissioning Plan would be implemented in the early summer of the year or year following the time of facility closure thus allowing the site reclamation to be completed outside of the rainy season and before winter begins. In the event the Project should cease operations prior to completion of the 35-year estimated life of the Project, applicable provisions of the Decommissioning Plan would commence.

3.5 DESCRIPTIONS OF PROPOSED PROJECTS 1 – 6

Table 3-5 provides data on the proposed Projects for workforce levels, construction activities, facility design, electrical design, road design, security and fire control features, and related site development activities. Each of the Projects 1 – 6 are described in detail below and detailed preliminary site plans for Projects 1 – 6 are included in Appendix B-14.

3.5.1 Project 1

The Applicant plans to develop the proposed North Lancaster Ranch SGF as described below. The proposed site would have a generating capacity of 20 MW-AC and would be located on approximately 240 acres of primarily unproductive agricultural land in Los Angeles County. The facility would operate year-round, producing electric power during daytime hours.

3.5.1.1 Site and Interconnect Location

Project 1 (North Lancaster Ranch) is located in unincorporated northern Los Angeles County. The site is approximately 12 miles northwest of downtown Lancaster. It is bounded on the west by 110th Street West, on the south by West Avenue B, on the east by 102nd Street West (future), and on the north by West Avenue A-8 (future) (Figure 3-4 Project 1 SGF Design). The power generated by the Project would be connected to the existing SCE 66 kV transmission line with the voltage transformation equipment and system safety equipment constructed on the site. For

Table 3-5 Project Data for Projects 1 – 6

Project Data	Project 1 – North Lancaster Ranch	Project 2 – Western Antelope Blue Sky Ranch	Project 3 – American Solar Greenworks	Project 4 – Antelope Solar Greenworks	Project 5 – Silver Sun Greenworks	Project 6 – Lancaster WAD
Megawatts	**20**	**40**	**35**	**52**	**20**	**5**
Acres	**240**	**157**	**136**	**256**	**160**	**39**
Maximum workforce during construction	100	140	130	160	100	40
Maximum workforce during operation	2	2	2	3f	2	1
Staging area for construction	To be determined by construction contractor. Onsite staging area will be contained within project site and limited to the minimum amount of space necessary. It would be available during the duration of construction, with a portion used for the Project substation. Substation would be permanent – remainder would be temporary.	To be determined by construction contractor. Onsite staging area will be contained within project site and limited to the minimum amount of space necessary. It would be available during the duration of construction, with a portion used for the Project substation. Substation would be permanent – remainder would be temporary.	To be determined by construction contractor. Onsite staging area will be contained within project site and limited to the minimum amount of space necessary. It would be available during the duration of construction, with a portion used for the Project substation. Substation would be permanent – remainder would be temporary.	To be determined by construction contractor. Onsite staging area will be contained within project site and limited to the minimum amount of space necessary. It would be available during the duration of construction, with a portion used for the Project substation. Substation would be permanent – remainder would be temporary.	To be determined by construction contractor. Onsite staging area will be contained within project site and limited to the minimum amount of space necessary. It would be available during the duration of construction, with a portion used for the Project substation. Substation would be permanent – remainder would be temporary.	To be determined by construction contractor. Onsite staging area will be contained within project site and limited to the minimum amount of space necessary.It would be available during the duration of construction. This staging area would be temporary.
Temporary facilities during construction	Mobile sanitation facility	Mobile sanitation facility	Mobile sanitation facility	Mobile sanitation facility	Mobile sanitation facility	Mobile sanitation facility
Grading requirements	The project will utilize "mow " site preparation practices to minimize soil disturbance. Grading will be required for staging area, access roads, equipment pads, and retention basins. Limited grading would be 20.5 acres.	The project will utilize "mow " site preparation practices to minimize soil disturbance. Grading will be required for staging area, access roads, equipment pads, and retention basins. Limited grading would be 12.9 acres.	The project will utilize "mow" site preparation practices to minimize soil disturbance. Grading will be required for staging area, access roads, equipment pads, and retention basins. Limited grading would be 13.4 acres.	The project will utilize "mow " site preparation practices to minimize soil disturbance. Grading will be required for staging area, access roads, equipment pads, and retention basins. Limited grading would be 26.4 acres.	The project will utilize "mow " site preparation practices to minimize soil disturbance. Grading will be required for staging area, access roads, equipment pads, and retention basins. Limited grading would be 15.8 acres.	The project will utilize "mow " site preparation practices to minimize soil disturbance. Grading will be required for staging area, access roads, equipment pads, and retention basins.. Limited grading would be 5.6 acres.
Offsite movement of soils	The site will utilize balanced cut and fill, no on-site or offsite transport of soils will be necessary.	The site will utilize balanced cut and fill, no on-site or offsite transport of soils will be necessary.	The site will utilize balanced cut and fill, no on-site or offsite transport of soils will be necessary.	The site will utilize balanced cut and fill, no on-site or offsite transport of soils will be necessary.	The site will utilize balanced cut and fill, no on-site or offsite transport of soils will be necessary.	The site will utilize balanced cut and fill, no on-site or offsite transport of soils will be necessary.
Dust control measures	As specified in Fugitive Dust Mitigation Plan, which includes application of water and non-toxic soil binder, limited grading and vegetation removal, and re-vegetation activities.	As specified in Fugitive Dust Mitigation Plan, which includes application of water and non-toxic soil binder, limited grading and vegetation removal, and re-vegetation activities.	As specified in Fugitive Dust Mitigation Plan, which includes application of water and non-toxic soil binder, limited grading and vegetation removal, and re-vegetation activities.	As specified in Fugitive Dust Mitigation Plan, which includes application of water and non-toxic soil binder, limited grading and vegetation removal, and re-vegetation activities.	As specified in Fugitive Dust Mitigation Plan, which includes application of water and non-toxic soil binder, limited grading and vegetation removal, and re-vegetation activities.	As specified in Fugitive Dust Mitigation Plan, which includes application of water and non-toxic soil binder, limited grading and vegetation removal, and re-vegetation activities.
Quantities of major equipment	Based on current system design, approximately (40) 500kW Inverters, (4) High-Voltage Circuit Breakers, (17) Transformers, & other misc. Substation equipment	Based on current system design, approximately (20) 500kW Inverters, (1) High-Voltage Circuit Breaker, (6) Transformers, & other misc. Substation equipment	Based on current system design, approximately (30) 500kW Inverters, (4) High-Voltage Circuit Breakers, (9) Transformers, & other misc. Substation equipment	Based on current system design, approximately (53) 500kW Inverters, (4) High-Voltage Circuit Breakers, (15) Transformers, & other misc. Substation equipment	Based on current system design, approximately (40) 500kW Inverters, (1) High-Voltage Circuit Breakers, (11) Transformers, & other misc. Substation equipment	Based on current system design, approximately (10) 500kW Inverters, (3) Transformers, & other misc. equipment
Number of PV modules on each site	Approximately 150,100 Modules	Approximately 50,050 Modules	Approximately 75,250 Modules	Approximately 133,000 Modules	Approximately 100,100 Modules	Approximately 20,700 Modules
Number of rows of PV modules	Approximately 23 Rows/Block 552 Rows Total	Approximately 23 Rows/Block 230 Rows Total	Approximately 23 Rows/Block 322 Rows Total	Approximately 23 Rows/Block 644 Rows Total	Approximately 23 Rows/Block 414 Rows Total	Approximately 23 Rows/Block 138 Rows Total
Number of blocks of PV modules	Approximately 24, not all blocks have equal dimensions	Approximately 10, not all blocks have equal dimensions	Approximately 14, not all blocks have equal dimensions	Approximately 28, not all blocks have equal dimensions	Approximately 18, not all blocks have equal dimensions	Approximately 6, not all blocks have equal dimensions
Number of pad mounted transformers with dimensions	Based on current system design, approximately (15) 2MVA Transformers (H,W,D: 73",72",87"), (1) 10MVA Transformer (H,W,D: 178",164",155"), (1) 20MVA Transformer (H,W,D: 178", 164",155")	Based on current system design, approximately (5) 2MVA Transformers (H,W,D: 73",72",87"), (1) 20MVA Transformer (H,W,D: 178",164",155")	Based on current system design, approximately (7) 2MVA Transformers (H,W,D: 73",72",87"), (1) 1MVA Transformer (H,W,D: 64",89",59"), (1) 15MVA Transformer (H,W,D: 178",164",155")	Based on current system design, approximately (12) 2MVA Transformers (H,W,D: 73",72",87"), (1) 1.5MVA Transformer (H,W,D: 73",89",86"), (1) 1MVA Transformer (H,W,D: 64",89",59"), (1) 20MVA Transformer (H,W,D: 178", 164", 155")	Based on current system design, approximately (10) 2MVA Transformers (H,W,D: 73",72",87"), (1) 20MVA Transformer (H,W,D: 178",164", 155")	Based on current system design, approximately (2) 2MVA Transformers (H,W,D: 73",72"87"), (1) 1MVA Transformer (H,W,D: 64",89",59")
Onsite electrical systems	Utility supplied electrical connection for night lighting, security systems, meteorological monitoring, and facility monitoring systems.	Utility supplied electrical connection for night lighting, security systems, meteorological monitoring, and facility monitoring systems.	Utility supplied electrical connection for night lighting, security systems, meteorological monitoring, and facility monitoring systems.	Utility supplied electrical connection for night lighting, security systems, meteorological monitoring, and facility monitoring systems.	Utility supplied electrical connection for night lighting, security systems, meteorological monitoring, and facility monitoring systems.	Utility supplied electrical connection for night lighting, security systems, meteorological monitoring, and facility monitoring systems.

Project Data	Project 1 – North Lancaster Ranch	Project 2 – Western Antelope Blue Sky Ranch	Project 3 – American Solar Greenworks	Project 4 – Antelope Solar Greenworks	Project 5 – Silver Sun Greenworks	Project 6 – Lancaster WAD
Electrical supply source for construction	Temporary electrical service will be provided by the utility during construction activities.	Temporary electrical service will be provided by the utility during construction activities.	Temporary electrical service will be provided by the utility during construction activities.	Temporary electrical service will be provided by the utility during construction activities.	Temporary electrical service will be provided by the utility during construction activities.	Temporary electrical service will be provided by the utility during construction activities.
Electrical supply source during operation	Electrical connection provided by utility. Additionally, the project will be equipped with a back-up generator for emergency use.	Electrical connection provided by utility. Additionally, the project will be equipped with a back-up generator for emergency use.	Electrical connection provided by utility. Additionally, the project will be equipped with a back-up generator for emergency use.	Electrical connection provided by utility. Additionally, the project will be equipped with a back-up generator for emergency use.	Electrical connection provided by utility. Additionally, the project will be equipped with a back-up generator for emergency use.	Electrical connection provided by utility. Additionally, the project will be equipped with a back-up generator for emergency use.
Electrical rating system for electrical construction	1,000V UL Rated	1,000V UL Rated	1,000V UL Rated	1,000V UL Rated	1,000V UL Rated	1,000V UL Rated
On site substations and major equipment in substations	2 onsite substations	1 onsite substation	1 onsite substation	2 onsite substations	1 onsite substation	No substation
On site electrical distribution system	66kV	66kV	66kV	12.47kV and 66kV	66kV	12.47kV
Combined oil volumes in electrical equipment	Approximately 15,000 gallons of non-hazardous Envirotemp FR3 Fluid	Approximately 7,000 gallons of non-hazardous Envirotemp FR3 Fluid	Approximately 8,000 gallons of non-hazardous Envirotemp FR3 Fluid	Approximately 13,000 gallons of non-hazardous Envirotemp FR3	Approximately 10,000 gallons of non-hazardous Envirotemp FR3 Fluid	Approximately 2,500 gallons of non-hazardous Envirotemp FR3 Fluid
Spill control design for oils	Built-in secondary containment.	Built-in secondary containment.	Built-in secondary containment.	Built-in secondary containment.	Built-in secondary containment.	Built-in secondary containment.
Major roads adjacent to the facility	110th Street West, West Avenue B	110th Street West, West Avenue K	70th Street West, West Avenue G	90th Street West, West Avenue I, West Avenue J	120th Street West, West Avenue I	West Avenue D (State Route 138)
Public road crossings within the project site	105th Street West, 107th Street West	None	75th Street West	95th Street West, Lancaster Blvd, 88th Street West, West Avenue I-12.	None	None
Fencing descriptions	8' chainlink fence including 3-strand barbed wire. Fencing will be constructed to maintain wildlife permeability by raising at regular intervals above ground level to allow for the passage of wildlife to the lesser of either: one foot above grade or to the maximum height allowed by the PUC.	8' chainlink fence including 3-strand barbed wire. Fencing will be constructed to maintain wildlife permeability by raising at regular intervals above ground level to allow for the passage of wildlife to the lesser of either: one foot above grade or to the maximum height allowed by the PUC.	8' chainlink fence including 3-strand barbed wire. Fencing will be constructed to maintain wildlife permeability by raising at regular intervals above ground level to allow for the passage of wildlife to the lesser of either: one foot above grade or to the maximum height allowed by the PUC.	8' chainlink fence including 3-strand barbed wire. Fencing will be constructed to maintain wildlife permeability by raising at regular intervals above ground level to allow for the passage of wildlife to the lesser of either: one foot above grade or to the maximum height allowed by the PUC.	8' chainlink fence including 3-strand barbed wire. Fencing will be constructed to maintain wildlife permeability by raising at regular intervals above ground level to allow for the passage of wildlife to the lesser of either: one foot above grade or to the maximum height allowed by the PUC.	8' chainlink fence including 3-strand barbed wire. Fencing will be constructed to maintain wildlife permeability by raising at regular intervals above ground level to allow for the passage of wildlife to the lesser of either: one foot above grade or to the maximum height allowed by the PUC.
Security features	8' chainlink security fence including 3-strand barbed wire, secured controlled main access gate; security measures will be installed as necessary to mitigate and/or deter unauthorized access	8' chainlink security fence including 3-strand barbed wire, secured controlled main access gate; security measures will be installed as necessary to mitigate and/or deter unauthorized access	8' chainlink security fence including 3-strand barbed wire, secured controlled main access gate; security measures will be installed as necessary to mitigate and/or deter unauthorized access	8' chainlink security fence including 3-strand barbed wire, secured controlled main access gate; security measures will be installed as necessary to mitigate and/or deter unauthorized access	8' chainlink security fence including 3-strand barbed wire, secured controlled main access gate; security measures will be installed as necessary to mitigate and/or deter unauthorized access	8' chainlink security fence including 3-strand barbed wire, secured controlled main access gate; security measures will be installed as necessary to mitigate and/or deter unauthorized access
Fire protection features	10,000 gallon water tank, interior perimeter and access roads, soil compaction of 90% for interior access roads or apparatus access road shall be excavated and re-compacted to 90%	10,000 gallon water tank, interior perimeter and access roads, soil compaction of 90% for interior access roads or apparatus access road shall be excavated and re-compacted to 90%	10,000 gallon water tank, interior perimeter and access roads, soil compaction of 90% for interior access roads or apparatus access road shall be excavated and re-compacted to 90%	10,000 gallon water tank, interior perimeter and access roads, soil compaction of 90% for interior access roads or apparatus access road shall be excavated and re-compacted to 90%	10,000 gallon water tank, interior perimeter and access roads, soil compaction of 90% for interior access roads or apparatus access road shall be excavated and re-compacted to 90%	10,000 gallon water tank, interior perimeter and access roads, soil compaction of 90% for interior access roads or apparatus access road shall be excavated and re-compacted to 90%
Lighting features	Lighting will be restricted to that required for nighttime safety and security according to County requirements. Lighting will be directed downward and fully shielded.	Lighting will be restricted to that required for nighttime safety and security according to County requirements. Lighting will be directed downward and fully shielded.	Lighting will be restricted to that required for nighttime safety and security according to County requirements. Lighting will be directed downward and fully shielded.	Lighting will be restricted to that required for nighttime safety and security according to County requirements. Lighting will be directed downward and fully shielded.	Lighting will be restricted to that required for nighttime safety and security according to County requirements. Lighting will be directed downward and fully shielded.	Lighting will be restricted to that required for nighttime safety and security according to County requirements. Lighting will be directed downward and fully shielded.
Meteorological equipment	At least one MET station, twelve feet in height	At least one MET station, twelve feet in height	At least one MET station, twelve feet in height	At least one MET station, twelve feet in height	At least one MET station, twelve feet in height	At least one MET station, twelve feet in height

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SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

FIGURE 3-4
PROJECT 1 SGF DESIGN

TETRA TECH

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KINGBIRD AVENUE
KINGBIRD AVENUE
110TH STREET W
100TH STREET W
W AVENUE A
W AVENUE A
105TH STREET W
102ND STREET W
AVENUE A8
W AVENUE B
W AVENUE B
110TH STREET W
100TH STREET W
AVENUE B8
Unincorporated
Los Angeles County
W AVENUE C
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project 1
Proposed Gen-Tie
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 1 - NORTH LANCASTER RANCH
FIGURE 3-5
VICINITY AERIAL MAP
0 500 1,000 2,000
Feet
TETRA TECH

Phases 1 and 2 of the Project, electricity would be delivered to the existing SCE 66 kV transmission line running north-south along the west side of 110th Street West. Phase 1 of the Project would interconnect via an undergrounded 0.02 mile gen-tie line across 110th Street West originating at the DC collection system within the Project site. Phase 2 of the Project would interconnect via an undergrounded 0.54-mile gen-tie line originating at the DC collection system within the Project site. From the southwest corner of APN 3262-001-006, the gen-tie route would be as follows: 0.02 miles underground across West Avenue B, 0.5 miles underground in the public ROW along the south side of West Avenue B, and 0.02 miles underground across 110th Street West. Alternatively, the gen-tie may be placed 0.5 miles underground in the public ROW along the north side of West Avenue B, and 0.02 miles underground across 110th Street West.

3.5.1.2 Telecommunication Lines

The primary telecommunication method is expected to be direct fiber optic cables placed overhead or underground along the path of the gen-tie line within the public ROW or located on private land from the Project site to existing or proposed telecommunication infrastructure. A dedicated broadband connection from a local provider will be secured at the site.

3.5.1.3 Construction

Project 1 would be constructed in two phases. The proposed schedule for Phase 1 is to begin site preparation and construction in the third quarter of 2014 and complete construction within approximately five months. The proposed schedule for Phase 2 is to begin site preparation, including any necessary demolition, and construction in the first quarter of 2015, and complete construction within approximately five months, being commercially operational by the end of the second quarter of 2015.

As noted in Section 3.4.8.1 above, the expected construction water use for the site would be a maximum of 50 acre feet of water in 2014 and 50 acre feet of water in 2015, from out of Basin or other authorized water that would be obtained from an off-site provider. Depending upon climatic conditions during construction, the estimated water use could be much lower. Construction water needs would be limited to soil conditioning and dust suppression. Potable water would be brought in to the Project 1 site for drinking and domestic needs.

Construction of the site, beginning with site preparation through equipment setup and commencement of commercial operation, is expected to last approximately six months for each phase. The on-site workforce would consist of laborers, electricians, supervisory personnel, support personnel, and construction management personnel. Construction would generally occur during daylight hours, Monday through Friday. Construction activities would be conducted consistent with Los Angeles County regulations regarding hours of construction. The Project is expected to create 100 new jobs at peak crew size during the construction phase.

3.5.1.4 Operations

No personnel would be stationed at the facility and no occupied structures would be built on the site. Full and part-time positions over the life of the Project would be required for periodic operation and maintenance activities and would be performed by a third party contractor. The operations water requirements would be 2.9 AFY.

3.5.2 Project 2

The Applicant plans to develop Project 2 (Western Antelope Blue Sky Ranch) as described below. The proposed site would have a generating capacity of 40 MW-AC and be located on 157 acres of mostly disturbed land in Los Angeles County. Of the 157 acres, approximately 118 acres would be developed for the purpose of solar power generation. The remaining 39 acres will not be disturbed and is comprised of established vegetation and vacant land and will not be developed. The facility would operate year-round, producing electric power during daytime hours.

3.5.2.1 Site and Interconnect Location

Project 2 is located in unincorporated northern Los Angeles County. The site is approximately 11 miles west of downtown Lancaster. The Project site is bounded on the west by 115th Street west (future), on the south by West Avenue K (future), to the east by 110th Street West, and to the north by West Avenue J-8 (future) (Figure 3-6 Project 2 SGF Design). The power generated by the SGF would be connected to the existing SCE transmission network with the voltage transformation equipment and system safety equipment constructed on the site. See Table 3-2 for details for the interconnection design. Electricity would be delivered to the existing SCE Antelope Substation located near the intersection of 95th Street West and West Avenue J, via a 1.9-mile long gen-tie line originating at the DC collection system within the Project site.

From the northeast corner of Project 2 site, the gen-tie line route Option 1A would be as follows: 0.02 miles underground across 110th Street West, 0.5 miles either underground or overhead along the east side of 110th Street West, either in the Lancaster public ROW or on private land, and 1.38 miles either underground or overhead along the south side of West Avenue J, either within the Lancaster public ROW or located on private land.

An alternative interconnection route, Option 1B, would be a 1-mile long gen-tie line to the proposed private Antelope-Plainview collector substation at W Avenue J and 105th Street West, which was previously approved by the City of Lancaster (City of Lancaster 2013). The gen-tie line path would be as follows: 0.02 miles underground across 110th Street West, 0.5 miles either underground or overhead along the east side of 110th Street West, either in the Lancaster public ROW or on private land, and 0.48 miles either underground or overhead along the south side of West Avenue J, either within the Lancaster public ROW or on private land.

The Antelope-Plainview collector substation would serve as a point to aggregate the generation output of multiple proposed projects in the area onto one set of conductors. Physically located at the collector substation would be steel structures to land the individual project 66 kV gen-tie lines, and combine them onto one higher capacity set of conductors. The collector substation would include the electrical system protection equipment (circuit breaker, disconnect switches, instrumentation transformers, protective relays) necessary to identify and isolate electrical faults and safely disconnect the generators from the SCE transmission system. The collector substation would also house utility revenue metering equipment, and monitoring and telecommunications equipment housed in a small control building. The monitoring equipment would aggregate key system data (MW produced, MVAR produced, status of protective devices, voltage level) from the PV system for delivery to the SCE system via the diverse telecommunication circuits.

A separate, previously approved gen-tie line would connect the Antelope-Plainview collector substation (City of Lancaster 2013) to the SCE Antelope Substation. Electricity from multiple projects would be delivered to the existing SCE Antelope Substation via a 0.9 mile gen-tie line originating at the collector substation. The gen-tie line would be located along the south side of West Avenue J, either within the public ROW or located on private land. The gen-tie line would be overhead or underground from the collector substation to an area near the high voltage transmission lines approximately 700 feet east of 100th St. West. From this location, the gen-tie line would be located underground where it would ultimately interconnect into the SCE Antelope Substation. The overhead portion of the gen-tie line would consist of multiple conductors mounted on either tubular steel or wooden poles, which would be approximately 55 to 85 feet in height. The proposed and permitted Antelope-Plainview collector substation and 0.9 mile gen-tie to the existing Antelope substation have undergone CEQA review in the City of Lancaster (City of Lancaster 2013) and are not further analyzed in this EIR.

The gen-tie line route for Project 2 would traverse land use designation N-1 in the County of Los Angeles. Within the City of Lancaster, the gen-tie line route would traverse land use designations Non-Urban Residential (NU) and Urban Residential (UR). In July 2013, the City approved a General Plan Amendment for the UR designation to NU designation for another Applicant's solar project that the gen-tie line would traverse to connect to the Antelope Substation. An agreement with the City of Lancaster will be obtained by the Applicant for the gen-tie line that would traverse through this jurisdiction. This agreement will grant right-of-way privileges for the proposed gen-tie line.

3.5.2.2 Telecommunications

Fiber optic cable will run along the gen-tie line from the Project site to the SCE Antelope Substation. If the alternative interconnection plan is selected, two fiber optic cables between the proposed Antelope-Plainview collector substation (City of Lancaster 2013) and the Antelope Substation would be constructed to provide protective relay circuits, SCADA circuits, data, and telephone services. A dedicated broadband connection from a local provider will be secured at the site.

3.5.2.3 Construction

The expected construction water use for Project 2 is 94 acre feet, which would be trucked to this site from a private provider of out of Basin or other authorized water. Construction water needs would be limited to soil conditioning and dust suppression. Potable water would be brought to the Project 2 site for drinking and domestic needs.

Construction of the site, beginning with site preparation through equipment setup and commencement of commercial operation, is expected to last approximately eight months. The on-site workforce would consist of laborers, electricians, supervisory personnel, support personnel, and construction management personnel. Construction would generally occur during daylight hours, Monday through Friday. Construction activities would be conducted consistent with Los Angeles County regulations regarding hours of construction.

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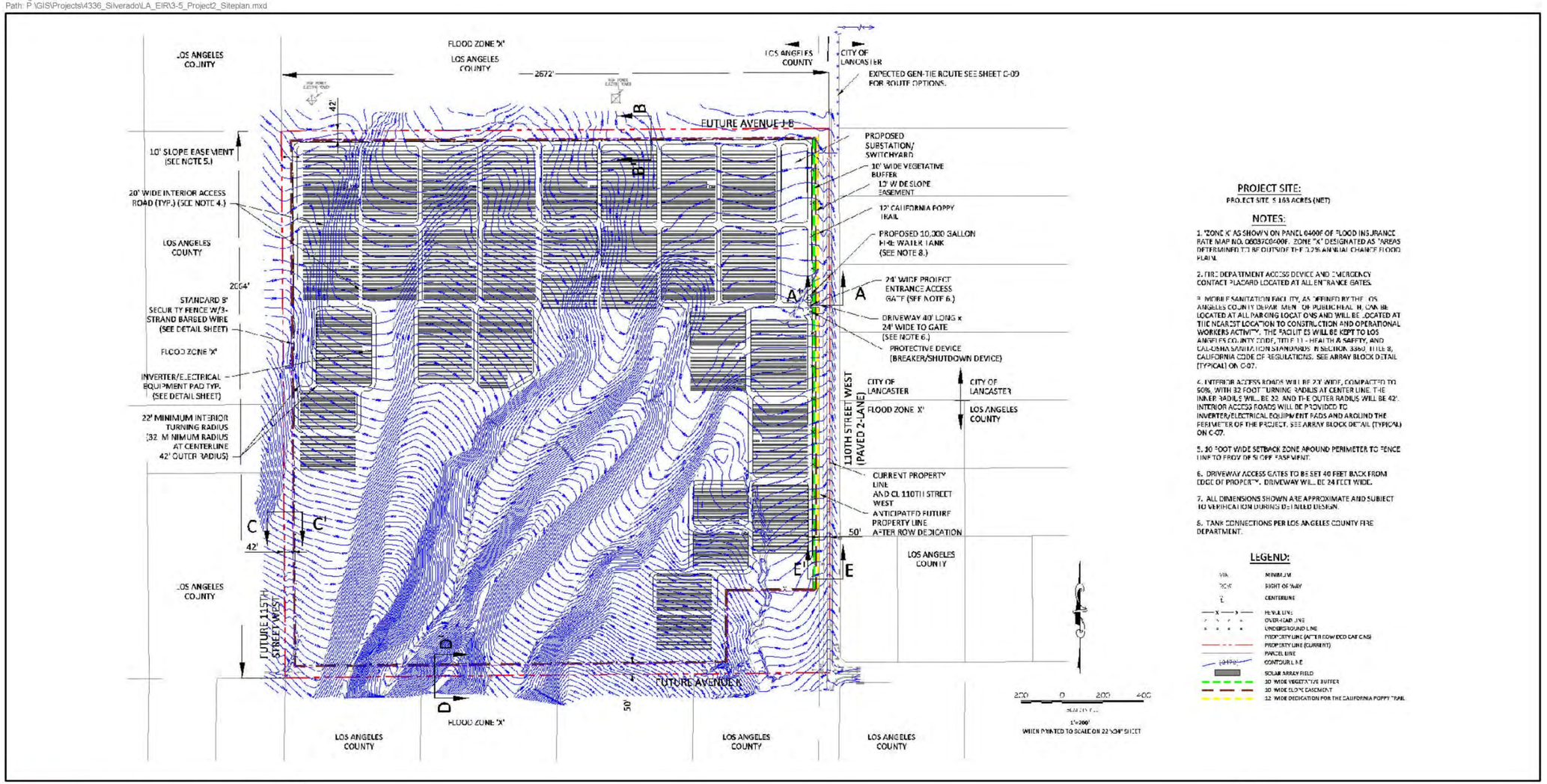

SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

FIGURE 3-6
PROJECT 2 SGF DESIGN

TETRA TECH

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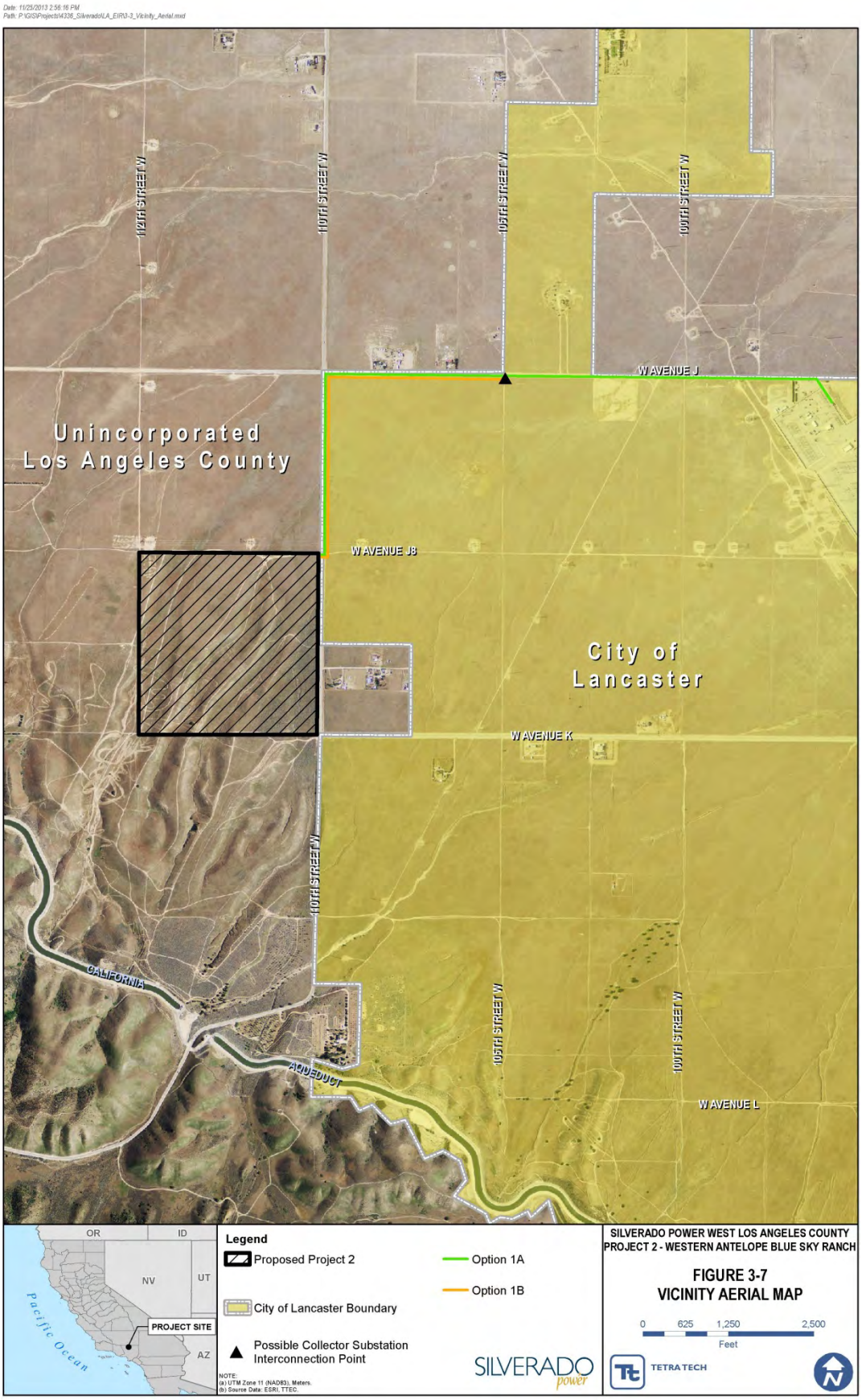
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112TH STREET W
110TH STREET W
105TH STREET W
100TH STREET W
W AVENUE J
Unincorporated
Los Angeles County
W AVENUE J8
City of
Lancaster
W AVENUE K
110TH STREET W
CALIFORNIA
AQUEDUCT
105TH STREET W
100TH STREET W
W AVENUE L
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project 2
City of Lancaster Boundary
Possible Collector Substation
Interconnection Point
Option 1A
Option 1B
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 2 - WESTERN ANTELOPE BLUE SKY RANCH
FIGURE 3-7
VICINITY AERIAL MAP
0 625 1,250 2,500
Feet
TETRA TECH

The proposed schedule for Project 2 is to begin site preparation and construction in the first quarter of 2014, complete construction within approximately eight months, and be commercially operational by the third quarter of 2014.

3.5.2.4 Operations

No personnel would be stationed at the facility and no occupied structures would be built on the site. Full and part-time positions over the life of the Project would be required for periodic operation and maintenance activities and would be performed by a third party contractor. Operations water requirements would be 5.8 AFY.

3.5.3 Project 3

The Applicant plans to develop the proposed American Solar Greenworks SGF (Project 3) as described below. The proposed site would have a generating capacity of 35 MW-AC and be located on 135.61 acres of primarily unproductive agricultural land in Los Angeles County. The facility would operate year-round, producing electric power during daytime hours.

3.5.3.1 Site and Interconnect Location

Project 3 is located in unincorporated northern Los Angeles County. The site is approximately seven miles northwest of downtown Lancaster. The Project is bounded on the West by 75th Street West, on the south by West Avenue G-8 (future), on the east by 70th Street West, and on the north by West Avenue G (Figure 3-8 Project 3 SGF Design). The power generated by the proposed Project would be connected to the existing SCE 66 kV transmission line with the voltage transformation equipment and system safety equipment constructed on the site. See Table 3-2 for details for the interconnection design. The Project would interconnect from the Project substation in the northeast corner of the Project site, due north to the existing 66 kV transmission line that runs east-west on the south side of the road, near the intersection of West Avenue G and 70th Street West.

3.5.3.2 Telecommunication

The primary telecommunication method is expected to be direct fiber optic cables placed overhead or underground along the path of the gen-tie line within the public ROW or located on private land from the Project site to existing or proposed telecommunication infrastructure. A dedicated broadband connection from a local provider will be secured at the site.

3.5.3.3 Construction

The proposed schedule is to begin site preparation and construction in the second quarter of 2014, complete construction within approximately seven months, and be commercially operational by the fourth quarter of 2014.

The expected construction water use for the site is 82 acre feet, which would be trucked to this site from a private provider of out of Basin or other authorized water. Construction water needs would be limited to soil conditioning and dust suppression. Potable water would be brought to the Project 3 site for drinking and domestic needs.

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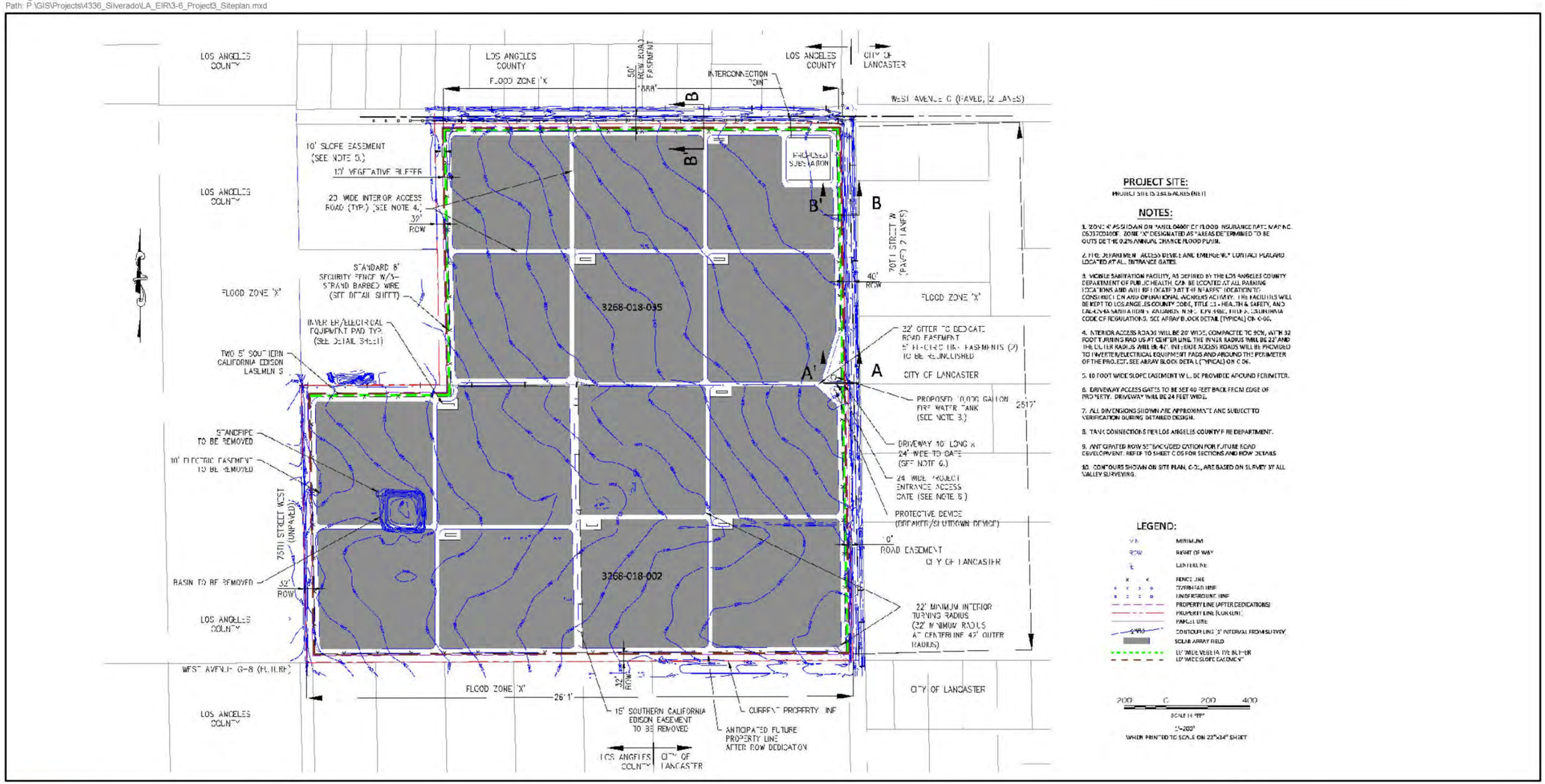

SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

FIGURE 3-8
PROJECT 3 SGF DESIGN

TETRA TECH

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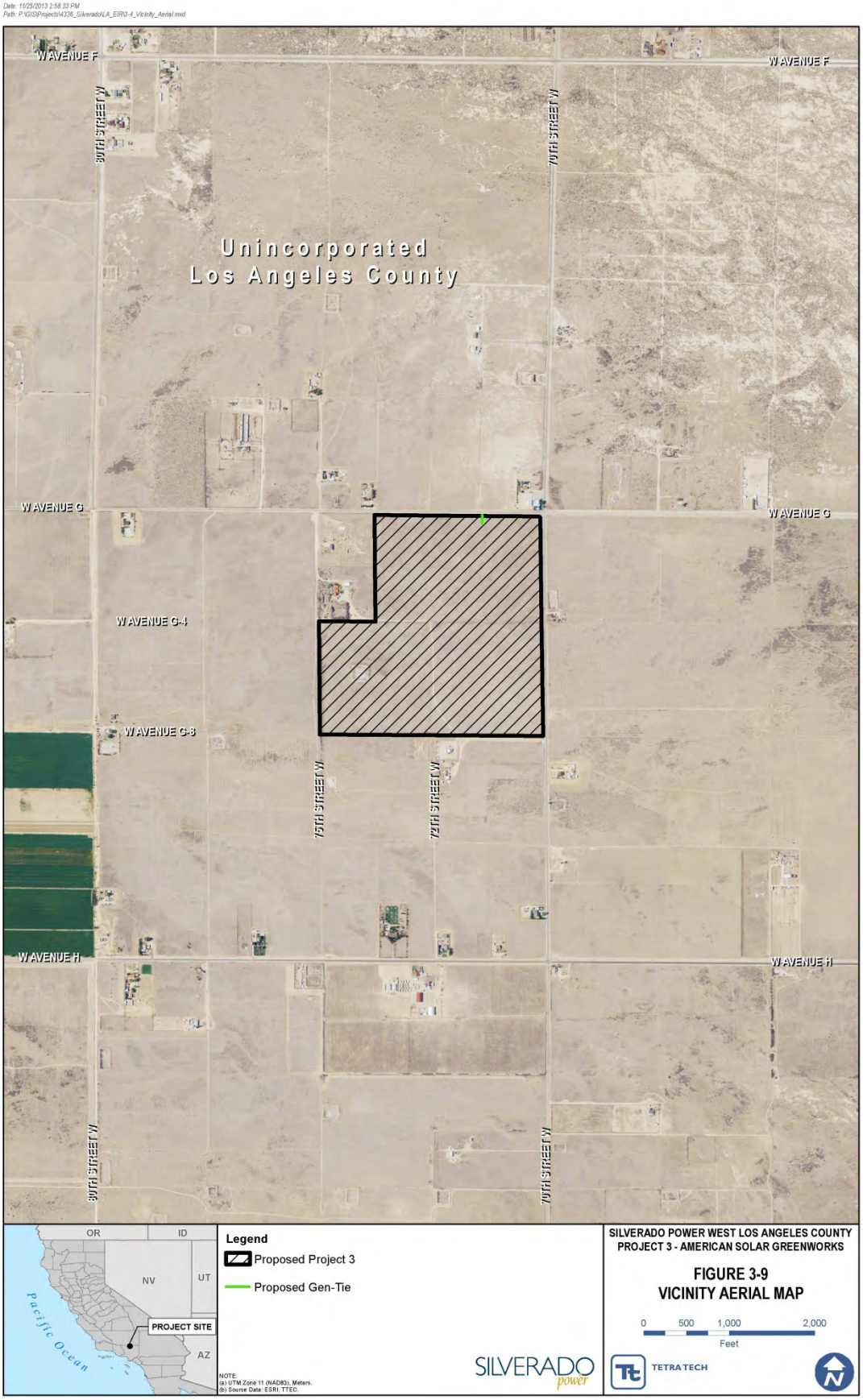
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W AVENUE F
W AVENUE F
70TH STREET W
70TH STREET W
Unincorporated
Los Angeles County
W AVENUE G
W AVENUE G
W AVENUE G-4
W AVENUE G-8
75TH STREET W
75TH STREET W
W AVENUE H
W AVENUE H
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project 3
Proposed Gen-Tie
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC
SILVERADO power
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 3 - AMERICAN SOLAR GREENWORKS
FIGURE 3-9
VICINITY AERIAL MAP
0 500 1,000 2,000
Feet
TETRA TECH

Construction of the site, beginning with site preparation and grading through equipment setup and commencement of commercial operation, is expected to last approximately seven months. The on-site workforce would consist of laborers, electricians, supervisory personnel, support personnel, and construction management personnel. Construction would generally occur during daylight hours, Monday through Friday. Construction activities would be conducted consistent with Los Angeles County regulations regarding hours of construction. The SGF is expected to create 130 new jobs at peak crew size during the construction phase.

3.5.3.4 Operations

No personnel would be stationed at the facility and no occupied structures would be built on the site. Full and part-time positions over the life of the Project would be required for periodic operation and maintenance activities and would be performed by a third party contractor. Operations water requirements would be 5.1 AFY.

3.5.4 Project 4

The Applicant plans to develop the proposed Antelope Solar Greenworks SGF as described herein. The proposed site would have a generating capacity of 52 MW-AC and be located on 256 acres of primarily unproductive agricultural land in Los Angeles County. The facility would operate year-round, producing electric power during daytime hours.

3.5.4.1 Site and Interconnect Location

The proposed Project 4 is located in unincorporated northern Los Angeles County. The site is approximately eight miles northwest of downtown Lancaster. The Project site is generally bounded on the west by 97th Street West, on the south by West Avenue J, on the east by 87th Street West, and on the north by West Avenue H-4 (Figures 3-10a and 3-10b Project 4 SGF Design). The power generated by the site would interconnect to the existing SCE transmission and distribution lines with the voltage transformation equipment and system safety equipment constructed on the site. See Table 3-2 for details for the interconnection design. The proposed Project would have four separate points of interconnection (POI). For POI 1 the gen-tie line would cross West Avenue J underground to the SCE 66 kV transmission line running east-west on the south side of the road. The second POI would be reached by the gen-tie line crossing 90th Street West underground to the SCE 12.47 kV distribution line running north-south on the east side of the road. The third POI gen-tie line would connect to the existing SCE 66 kV transmission line located on-site near the NE corner of 97th Street West and Lancaster Boulevard. The fourth POI for the Project would tie into the existing SCE 12.47 kV distribution line located adjacent to the Project site on the north side of West Avenue I,

3.5.4.2 Telecommunication

The primary telecommunication method is expected to be direct fiber optic cables placed overhead or underground along the path of the gen-tie line within the public ROW or located on private land from the Project site to existing or proposed telecommunication infrastructure. A dedicated broadband connection from a local provider will be secured at the site.

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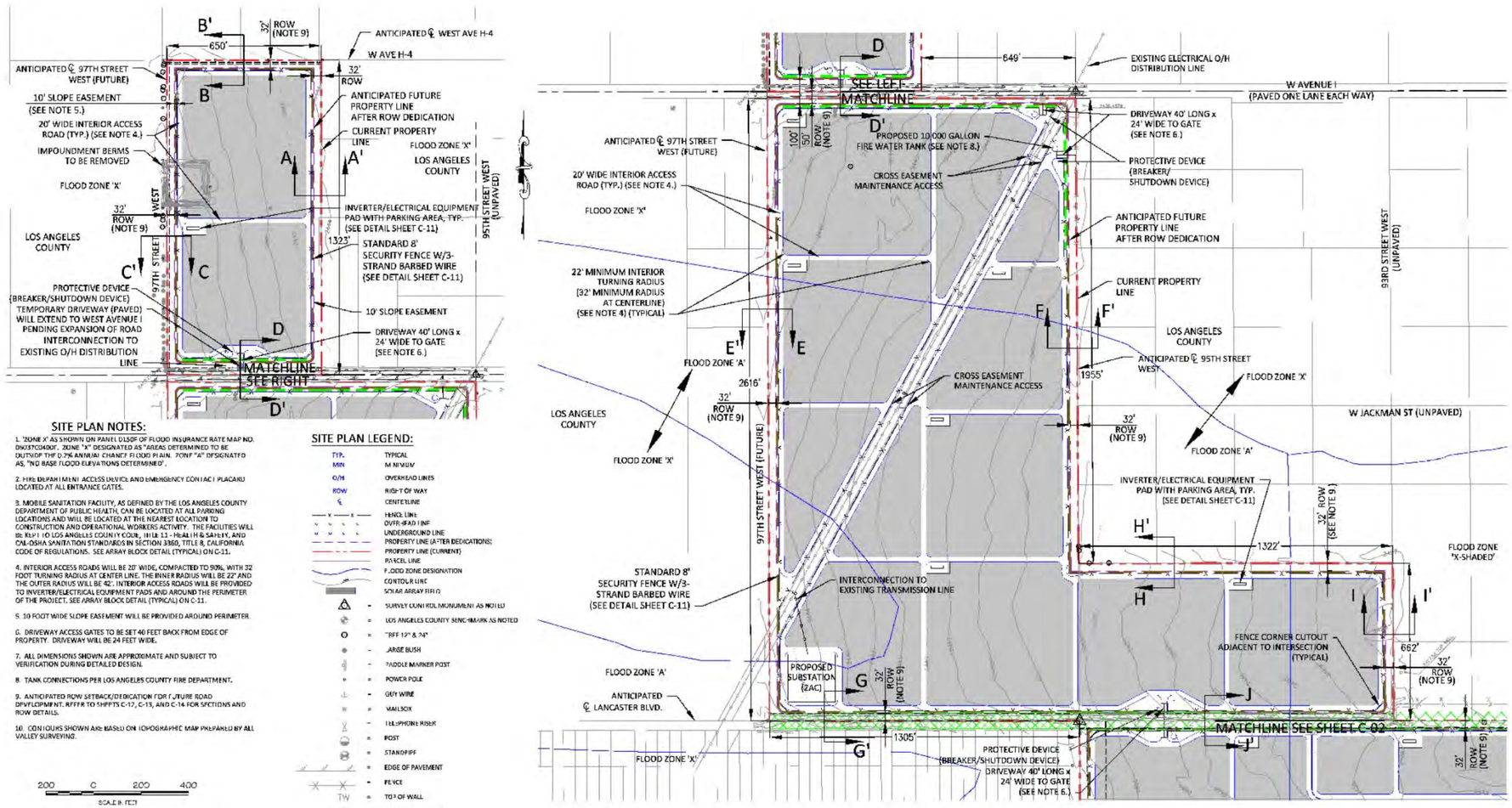

SITE PLAN NOTES:

1. 'ZONE X' AS SHOWN ON PANEL 0150F OF FLOOD INSURANCE RATE MAP NO. 06037C0400F. ZONE "X" DESIGNATED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN. ZONE "A" DESIGNATED AS, "NO BASE FLOOD ELEVATIONS DETERMINED".
2. FIRE DEPARTMENT ACCESS DEVICE AND EMERGENCY CONTACT PLACARD LOCATED AT ALL ENTRANCE GATES.
3. MOBILE SANITATION FACILITY, AS DEFINED BY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, CAN BE LOCATED AT ALL PARKING LOCATIONS AND WILL BE LOCATED AT THE NEAREST LOCATION TO CONSTRUCTION AND OPERATIONAL WORKERS ACTIVITY. THE FACILITIES WILL BE KEPT TO LOS ANGELES COUNTY CODE, TITLE 11 - HEALTH & SAFETY, AND CAL-OSHA SANITATION STANDARDS IN SECTION 3365, TITLE 8, CALIFORNIA CODE OF REGULATIONS. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-11.
4. INTERIOR ACCESS ROADS WILL BE 20' WIDE, COMPACTED TO 90%, WITH 32 FOOT TURNING RADIUS AT CENTER LINE. THE INNER RADIUS WILL BE 22' AND THE OUTER RADIUS WILL BE 42'. INTERIOR ACCESS ROADS WILL BE PROVIDED TO INVERTER/ELECTRICAL EQUIPMENT PADS AND AROUND THE PERIMETER OF THE PROJECT. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-11.
5. 10 FOOT WIDE SLOPE EASEMENT WILL BE PROVIDED AROUND PERIMETER.
6. DRIVEWAY ACCESS GATES TO BE SET 40 FEET BACK FROM EDGE OF PROPERTY. DRIVEWAY WILL BE 24 FEET WIDE.
7. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO VERIFICATION DURING DETAILED DESIGN.
8. TANK CONNECTIONS PER LOS ANGELES COUNTY FIRE DEPARTMENT.
9. ANTICIPATED ROW SETBACK/DEDICATION FOR FUTURE ROAD DEVELOPMENT. REFER TO SHEETS C-12, C-13, AND C-14 FOR SECTIONS AND ROW DETAILS.
10. CONTOURS SHOWN ARE BASED ON TOPOGRAPHIC MAP PREPARED BY ALL VALLEY SURVEYING.

200 0 200 400
SCALE IN FEET
1"=200'
WHEN PRINTED TO SCALE ON 22"x34" SHEET

SITE PLAN LEGEND:

TYP.	TYPICAL
MIN	MINIMUM
O/H	OVERHEAD LINES
ROW	RIGHT OF WAY
℄	CENTERLINE
x x	FENCE LINE
	OVERHEAD LINE
	UNDERGROUND LINE
	PROPERTY LINE (AFTER DEDICATIONS)
	PROPERTY LINE (CURRENT)
	PARCEL LINE
	FLOOD ZONE DESIGNATION
	CONTOUR LINE
	SOLAR ARRAY FIELD
△	= SURVEY CONTROL MONUMENT AS NOTED
⊕	= LOS ANGELES COUNTY BENCHMARK AS NOTED
O	= "REF 12" & 24"
✱	= LARGE BUSH
	= PADDLE MARKER POST
	= POWER POLE
	= GUY WIRE
	= MAILBOX
	= TELEPHONE RISER
	= POST
	= STANDPIPE
	= EDGE OF PAVEMENT
	= FENCE
TW	= TOP OF WALL
EP	= EDGE OF PAVEMENT
(3)	= EASEMENT IDENTIFIER

SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

FIGURE 3-10A
PROJECT 4 SGF DESIGN

TETRA TECH

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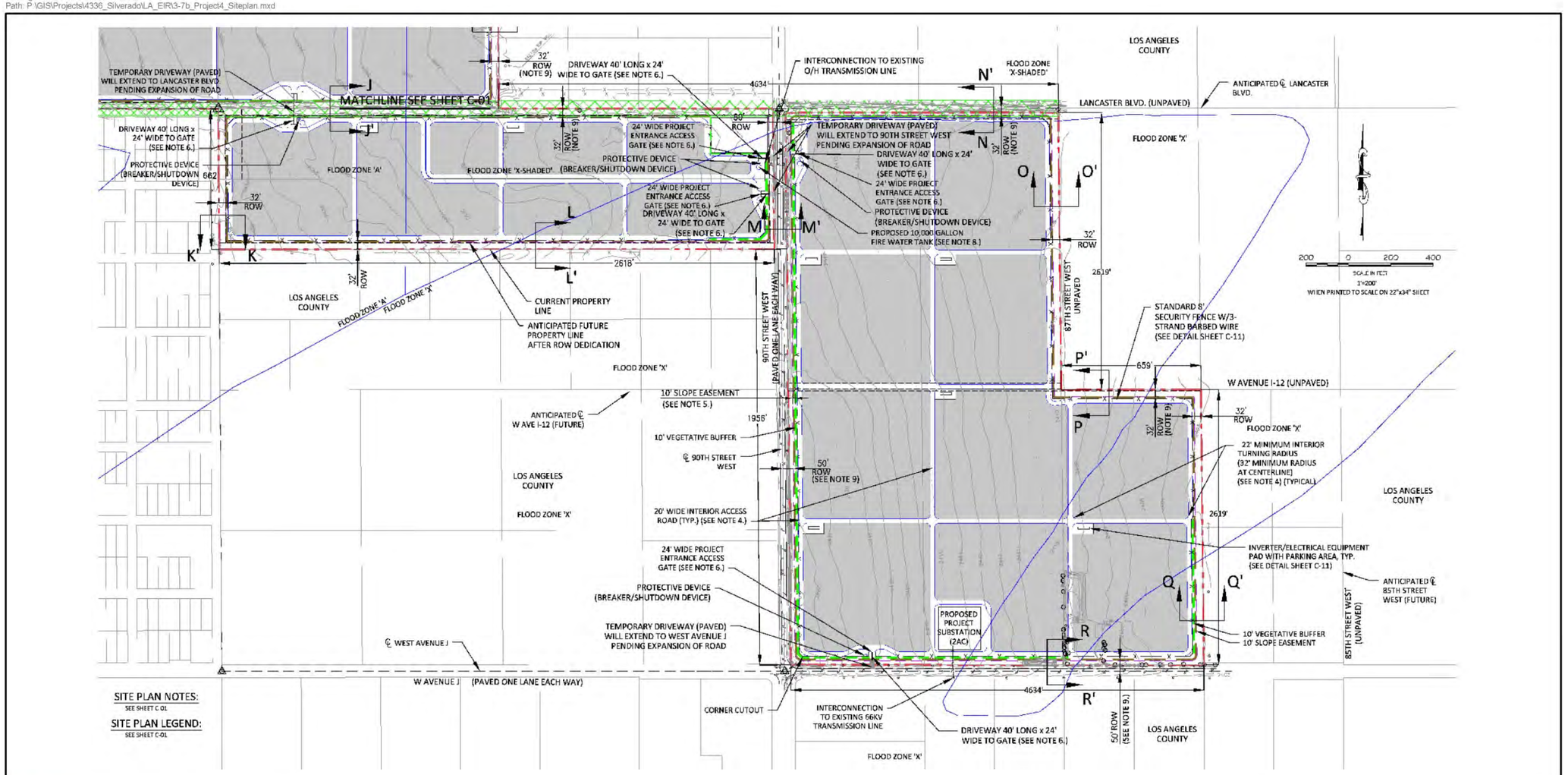

SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

FIGURE 3-10B
PROJECT 4 SGF DESIGN

TETRA TECH

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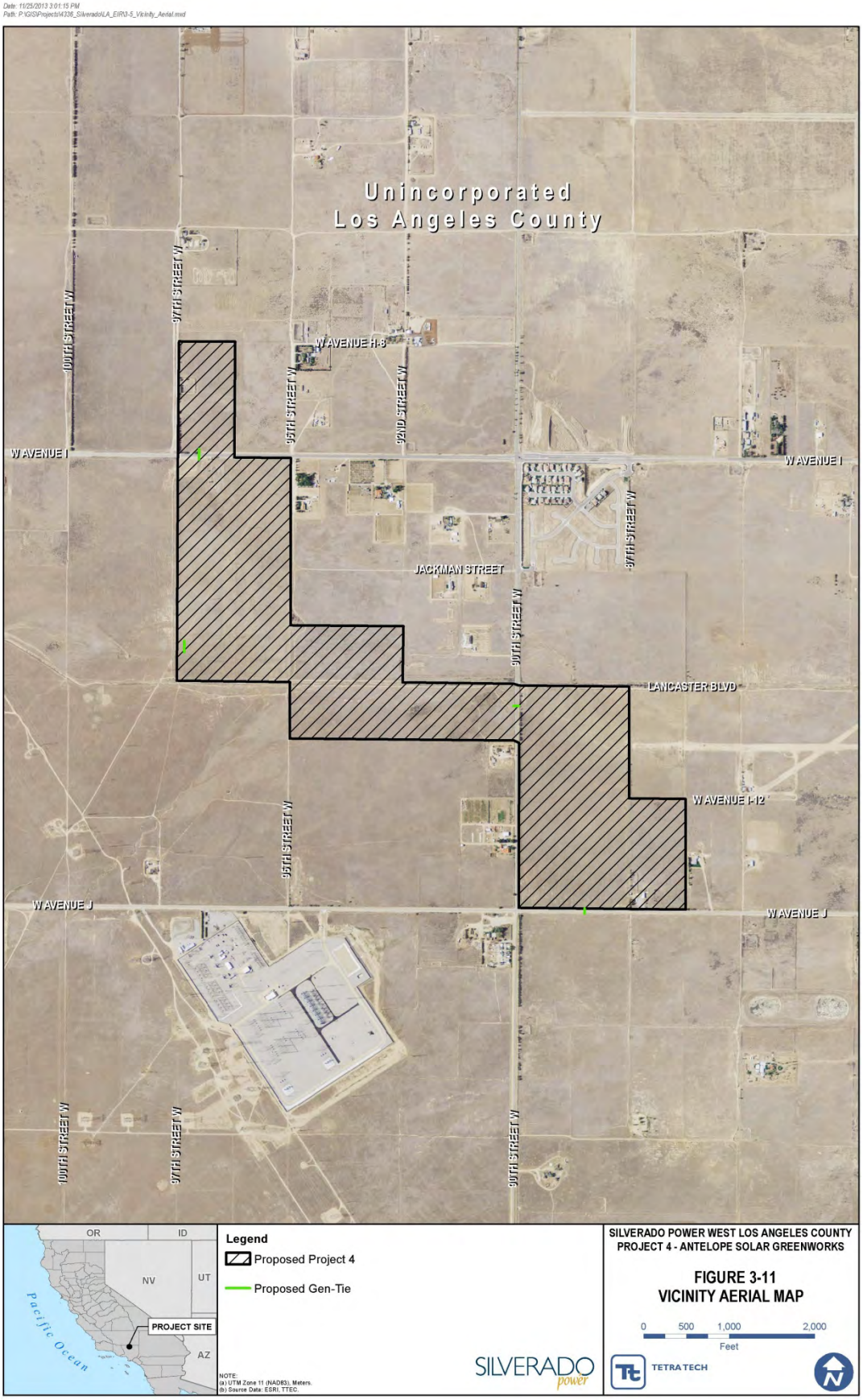
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Unincorporated
Los Angeles County
100TH STREET W
97TH STREET W
95TH STREET W
92ND STREET W
90TH STREET W
W AVENUE H-8
W AVENUE I
JACKMAN STREET
LANCASTER BLVD
W AVENUE I-12
W AVENUE J
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project 4
Proposed Gen-Tie
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 4 - ANTELOPE SOLAR GREENWORKS
FIGURE 3-11
VICINITY AERIAL MAP
0 500 1,000 2,000
Feet
TETRA TECH

3.5.4.3 Construction

Project 4 would be constructed in two phases. The proposed schedule for Phase 1 is to begin site preparation and construction in the first quarter of 2014 and complete construction within approximately four months. The proposed schedule for Phase 2 is to begin site preparation, including any necessary demolition, and construction in the second quarter of 2014, and complete construction within approximately nine months, being commercially operational by the end of the fourth quarter of 2014.

The expected construction water use for the Project is 155 acre feet, which would be trucked to this site from a private provider of out of Basin or other authorized water. Construction water needs would be limited to soil conditioning and dust suppression. Potable water would be brought to the Project 4 site for drinking and domestic needs.

Construction of the site, beginning with site preparation and grading through equipment setup and commencement of commercial operation, is expected to last approximately four months for Phase 1 and nine months for Phase 2. The on-site workforce would consist of laborers, electricians, supervisory personnel, support personnel, and construction management personnel. Construction would generally occur during daylight hours, Monday through Friday. Construction activities would be conducted consistent with Los Angeles County regulations regarding hours of construction. The SGF is expected to create 160 new jobs at peak crew size during the construction phase.

3.5.4.4 Operations

No personnel would be stationed at the facility and no occupied structures would be built on the site. Full and part-time positions over the life of the Project would be required for periodic operation and maintenance activities and would be performed by a third party contractor. Operations water requirements would be 7.6 AFY.

3.5.5 Project 5

The Applicant plans to develop the proposed Project 5 (Silver Sun Greenworks) as described below. The proposed site would have a generating capacity of 20 MW-AC and be located on 160 acres of primarily unproductive agricultural land in Los Angeles County. The facility would operate year-round, producing electric power during daytime hours.

3.5.5.1 Site and Interconnect Location

Project 5 is located in unincorporated northern Los Angeles County. The site is approximately 11 miles west of downtown Lancaster. The Project is bounded on the west by 120th Street West, on the south by Lancaster Boulevard, on the east by 115th Street West, and on the north by West Avenue I (Figure 3-12 Project 5 SGF Design). The power generated by the SGF would be connected to SCE's existing transmission network with the voltage transformation equipment and system safety equipment constructed on the site. See Table 3-2 for details for the interconnection design. Electricity would be delivered to the existing SCE Antelope Substation, near the intersection of 95th Street West and West Avenue J, via a 2.4-mile gen-tie originating at

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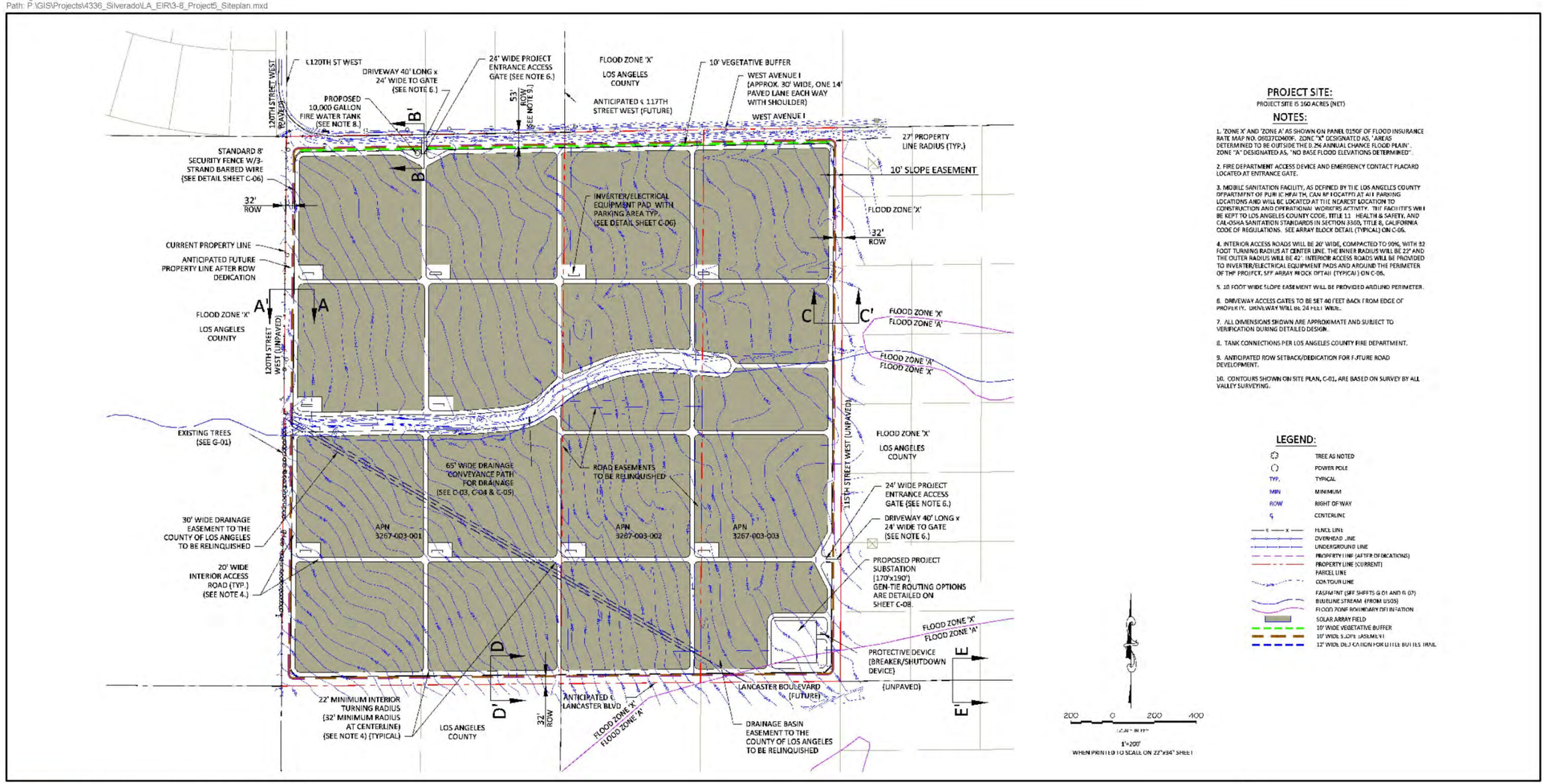


PROJECT SITE:

PROJECT SITE IS 160 ACRES (NET)

NOTES:

1. 'ZONE X' AND 'ZONE A' AS SHOWN ON PANEL 0150F OF FLOOD INSURANCE RATE MAP NO. 06037C0490F. ZONE "X" DESIGNATED AS, 'AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN'. ZONE "A" DESIGNATED AS, 'NO BASE FLOOD ELEVATIONS DETERMINED".

2. FIRE DEPARTMENT ACCESS DEVICE AND EMERGENCY CONTACT PLACARD LOCATED AT ENTRANCE GATE.

3. MOBILE SANITATION FACILITY, AS DEFINED BY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, CAN BE LOCATED AT ALL PARKING LOCATIONS AND WILL BE LOCATED AT THE NEAREST LOCATION TO CONSTRUCTION AND OPERATIONAL WORKERS ACTIVITY. THE FACILITIES WILL BE KEPT TO LOS ANGELES COUNTY CODE, TITLE 11 HEALTH & SAFETY, AND CAL-OSHA SANITATION STANDARDS IN SECTION 3360, TITLE 8, CALIFORNIA CODE OF REGULATIONS. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-06.

4. INTERIOR ACCESS ROADS WILL BE 20' WIDE, COMPACTED TO 90%, WITH 32 FOOT TURNING RADIUS AT CENTER LINE. THE INNER RADIUS WILL BE 22' AND THE OUTER RADIUS WILL BE 42'. INTERIOR ACCESS ROADS WILL BE PROVIDED TO INVERTER/ELECTRICAL EQUIPMENT PADS AND AROUND THE PERIMETER OF THE PROJECT. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-06.

5. 10 FOOT WIDE SLOPE EASEMENT WILL BE PROVIDED AROUND PERIMETER.

6. DRIVEWAY ACCESS GATES TO BE SET 40 FEET BACK FROM EDGE OF PROPERTY. DRIVEWAY WILL BE 24 FEET WIDE.

7. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO VERIFICATION DURING DETAILED DESIGN.

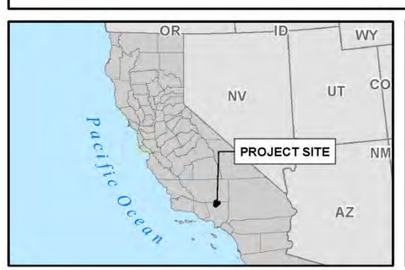
8. TANK CONNECTIONS PER LOS ANGELES COUNTY FIRE DEPARTMENT.

9. ANTICIPATED ROW SETBACK/DEDICATION FOR FUTURE ROAD DEVELOPMENT.

10. CONTOURS SHOWN ON SITE PLAN, C-01, ARE BASED ON SURVEY BY ALL VALLEY SURVEYING.

LEGEND:

- TREE AS NOTED
- POWER POLE
- TYP. TYPICAL
- MIN MINIMUM
- ROW RIGHT OF WAY
- ℄ CENTERLINE
- FENCE LINE
- OVERHEAD LINE
- UNDERGROUND LINE
- PROPERTY LINE (AFTER DEDICATIONS)
- PROPERTY LINE (CURRENT)
- PARCEL LINE
- CONTOUR LINE
- EASEMENT (SEE SHEETS G-01 AND G-07)
- BLUELINE STREAM (FROM USGS)
- FLOOD ZONE BOUNDARY DEFINITION
- SOLAR ARRAY FIELD
- 10' WIDE VEGETATIVE BUFFER
- 10' WIDE SLOPE EASEMENT
- 12' WIDE DESIGNATION FOR LITTLE BUTTES TRAIL



SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

FIGURE 3-12
PROJECT 5 SGF DESIGN

TETRA TECH

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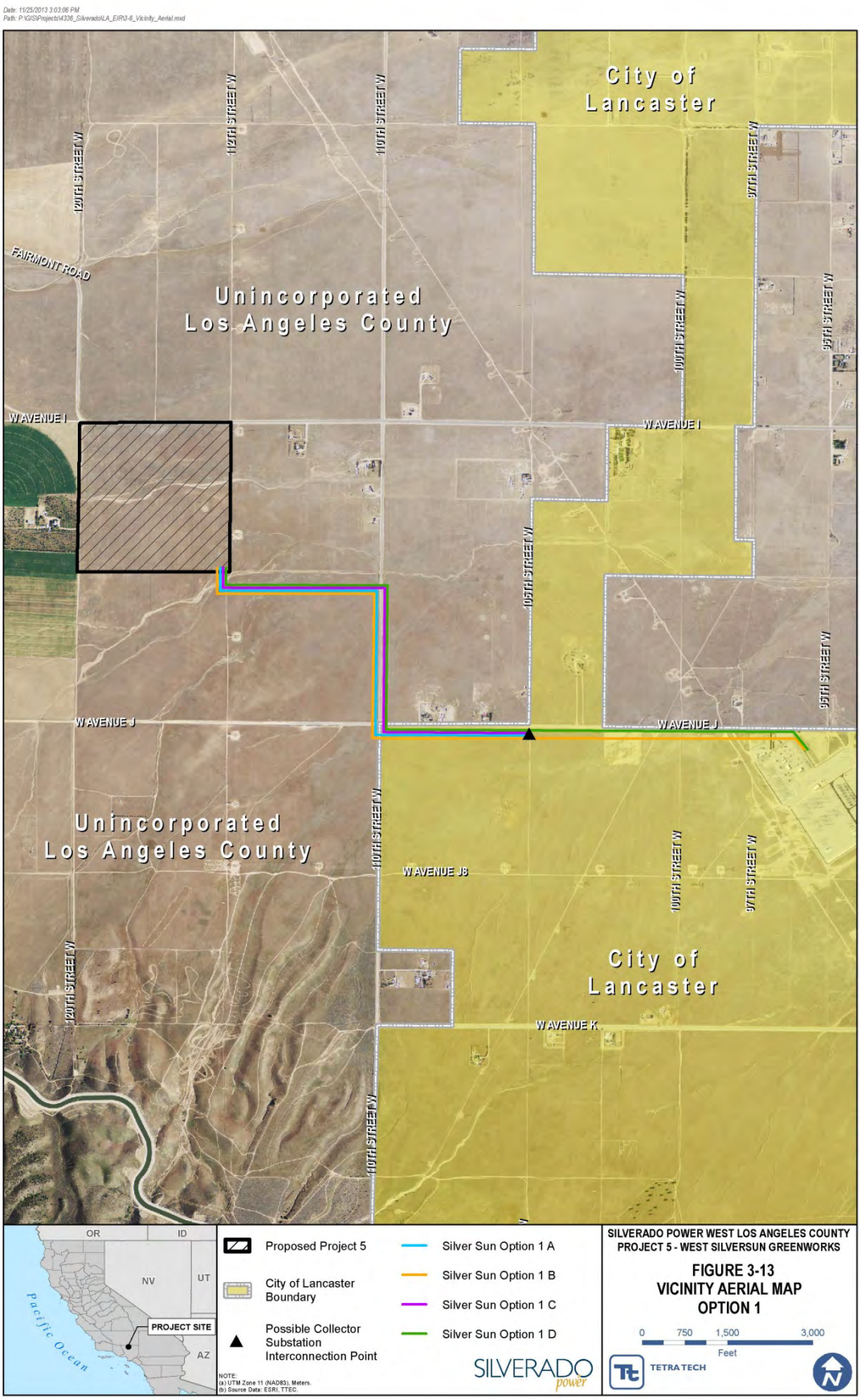
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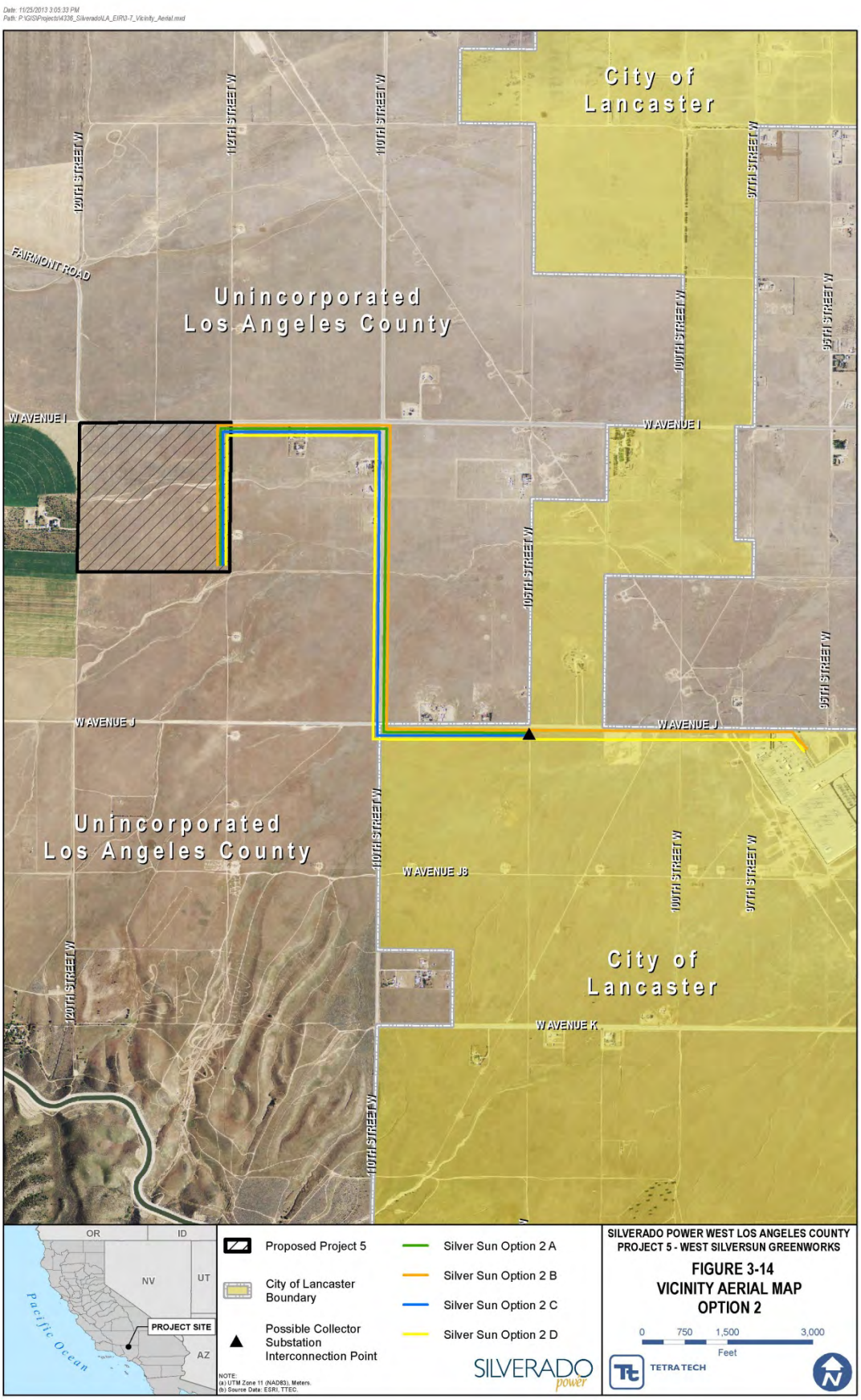
City of Lancaster
Unincorporated Los Angeles County
Unincorporated Los Angeles County
City of Lancaster
FAIRMONT ROAD
W AVENUE I
W AVENUE I
W AVENUE J
W AVENUE J
W AVENUE J8
W AVENUE K
120TH STREET W
112TH STREET W
110TH STREET W
105TH STREET W
100TH STREET W
97TH STREET W
95TH STREET W
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Proposed Project 5
City of Lancaster Boundary
Possible Collector Substation Interconnection Point
Silver Sun Option 1 A
Silver Sun Option 1 B
Silver Sun Option 1 C
Silver Sun Option 1 D
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 5 - WEST SILVERSUN GREENWORKS
FIGURE 3-13
VICINITY AERIAL MAP
OPTION 1
0 750 1,500 3,000
Feet
TETRA TECH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City of Lancaster
Unincorporated Los Angeles County
Unincorporated Los Angeles County
City of Lancaster
FAIRMONT ROAD
W AVENUE I
W AVENUE I
W AVENUE J
W AVENUE J
W AVENUE J8
W AVENUE K
120TH STREET W
115TH STREET W
110TH STREET W
105TH STREET W
100TH STREET W
97TH STREET W
95TH STREET W
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Proposed Project 5
City of Lancaster Boundary
Possible Collector Substation Interconnection Point
Silver Sun Option 2 A
Silver Sun Option 2 B
Silver Sun Option 2 C
Silver Sun Option 2 D
SILVERADO power
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 5 - WEST SILVERSUN GREENWORKS
FIGURE 3-14
VICINITY AERIAL MAP
OPTION 2
0 750 1,500 3,000
Feet
TETRA TECH

the DC collection system within the SGF. From the southeast corner of the Project site, the gen-tie path is as follows: 0.56 miles underground in Los Angeles County across private land to the east, 0.02 miles underground across 110th Street West, 0.44 miles either overhead or underground to the south along the east side of 110th Street West, either within the County public ROW or on private land, and 1.38 miles to the east either underground or overhead along the south side of West Avenue J, either within the Lancaster public ROW or on private land. Alternatively, the gen-tie may be placed 0.44 miles underground along the west side of 110th Street West in the County, and 0.02 miles underground across 110th Street West. An easement would be obtained for this route.

An alternative interconnection plan would be a 1.5-mile gen-tie line to a proposed Antelope-Plainview collector substation at West Avenue J and 105th Street West. The gen-tie line path would be as follows: 0.56 miles underground in the County across private land to the east, 0.02 miles underground across 110th Street West, 0.44 miles to the south either overhead or underground along the east side of 110th Street West, either within the County public ROW or on private land, and 0.5 miles either underground or overhead along the south side of West Avenue J to the east, either within the Lancaster public ROW or on private land. Alternatively, the gen-tie line may be placed 0.44 miles underground to the south along the west side of 110th Street West, either within the County public ROW or on private land, 0.02 miles underground across 110th Street West, and 0.5 miles either underground or overhead along the south side of West Avenue J to the east, either within the Lancaster public ROW or on private land. An easement would be needed for this route. The proposed, previously approved private Antelope-Plainview collector substation would serve as a point to aggregate the generation output of multiple proposed projects in the area onto one set of conductors. Physically located at the collector substation would be steel structures to land the individual project 66 kV gen-tie lines and combine them onto one higher capacity set of conductors. The collector substation would include the electrical system protection equipment (circuit breaker, disconnect switches, instrumentation transformers, protective relays) necessary to identify and isolate electrical faults and safely disconnect the generators from the SCE transmission system. The collector substation would also house revenue metering equipment, and monitoring and telecommunications equipment housed in a small control building. The monitoring equipment aggregates key system data (MW produced, MVAR produced, status of protective devices, voltage level) from the PV system for delivery to the SCE system via the diverse telecommunication circuits.

A separate, previously approved gen-tie line would connect the Antelope-Plainview collector substation to the SCE Antelope Substation. Electricity from multiple projects would be delivered to the existing SCE Antelope Substation via this 0.9 mile gen-tie line originating at the collector substation. The gen-tie line would be located along the south side of West Avenue J, either within the Lancaster public ROW or on private land. The gen-tie line would be overhead or underground from the Antelope-Plainview collector substation to an area near the high voltage transmission lines approximately 700 feet east of 100th St. West in Lancaster. From this location, the gen-tie line would be located underground where it would ultimately interconnect into the SCE Antelope Substation. The overhead portion of the gen-tie line would consist of multiple conductors mounted on either tubular steel or wooden poles, which would be approximately 55 to 85 feet in height. The proposed Antelope-Plainview collector substation and

0.9 mile gen-tie to the existing Antelope substation have undergone CEQA review in the City of Lancaster, and are not further analyzed in this EIR.

The gen-tie line route for Project 5 would traverse land use designation N-1 in the County of Los Angeles per a Franchise Agreement. Within the City of Lancaster, the gen-tie line route would traverse land use designations NU and UR. In July 2013, the City approved a General Plan Amendment for the UR designation to NU designation for another Applicant's solar project that the gen-tie line would traverse to connect to the Antelope Substation. An agreement will be obtained by the Applicant with the City of Lancaster for the gen-tie line that will traverse through this jurisdiction. This agreement will grant ROW privileges for the proposed gen-tie line.

3.5.5.2 Telecommunication

The primary telecommunication method is expected to be direct fiber optic cables placed overhead or underground along the path of the gen-tie line within the public ROW or located on private land from the Project site to the SCE Antelope Substation. A dedicated broadband connection from a local provider will be secured at the site.

3.5.5.3 Construction

The proposed schedule is to begin site preparation and construction in the third quarter of 2014, complete construction within approximately five months, and be commercially operational by the fourth quarter of 2014.

The maximum estimated water use for Project 5 is expected to be 97 acre feet, which would be trucked to this site from a private provider of out of Basin or other authorized water. Construction water needs would be limited to soil conditioning and dust suppression. Potable water would be brought to the Project 5 site for drinking and domestic needs.

Construction of the site, beginning with site preparation and grading through equipment setup and commencement of commercial operation, is expected to last approximately eight months. The on-site workforce would consist of laborers, electricians, supervisory personnel, support personnel, and construction management personnel. Construction would generally occur during daylight hours, Monday through Friday. Construction activities would be conducted consistent with Los Angeles County regulations regarding hours of construction. The SGF is expected to create 100 new jobs at peak crew size during the construction phase.

3.5.5.4 Operations

No personnel would be stationed at the facility and no occupied structures would be built on the site. Full and part-time positions over the life of the Project would be required for periodic operation and maintenance activities and would be performed by a third party contractor. Operations water requirements would be 2.9 AFY..

3.5.6 Project 6

Silverado Power plans to develop the proposed Project 6 as described below. The proposed site would have a generating capacity of 5 MW-AC and would be located on 38.49 acres of

primarily unproductive agricultural land in Los Angeles County. The facility would operate year-round, producing electric power during daytime hours.

3.5.6.1 Site and Interconnect Location

The proposed Project 6 (Lancaster WAD) is located in unincorporated northern Los Angeles County. The site is approximately six miles north of downtown Lancaster. The site is bounded on the west by 35th Street West, on the south by West Avenue D, on the east by 32nd Street West, and on the north by Avenue C-12 (future) (Figure 3-15 Project 6 SGF Design). The power generated by the SGF would be connected to SCE's existing 12.47 kV distribution line running east-west along the south side of West Avenue D, with the voltage transformation equipment and system safety equipment constructed on the site. See Table 3-2 for details for the interconnection design. The Project would interconnect via an undergrounded 0.02-mile gen-tie line across West Avenue D originating at the DC collection system within the Project.

3.5.6.2 Telecommunication

The primary telecommunication method is expected to be direct fiber optic cables placed overhead or underground along the path of the gen-tie line within the public ROW or located on private land from the Project site to existing or proposed telecommunication infrastructure. A dedicated broadband connection from a local provider will be secured at the site.

3.5.6.3 Construction

The proposed schedule is to begin site preparation and construction in the first quarter of 2014, complete construction within approximately three months, and be commercially operational by the second quarter of 2014.

The expected construction water use for the site is 24 acre feet, which would be trucked to this site from a private provider of out of Basin or other authorized water. Construction water needs would be limited to soil conditioning and dust suppression. Potable water would be brought to the Project 6 site for drinking and domestic needs.

Construction of the site, beginning with site preparation and grading through equipment setup and commencement of commercial operation, is expected to last approximately five months. The on-site workforce would consist of laborers, electricians, supervisory personnel, support personnel, and construction management personnel. Construction would generally occur during daylight hours, Monday through Friday. Construction activities would be conducted consistent with Los Angeles County regulations regarding hours of construction. The SGF is expected to create 40 new jobs at peak crew size during the construction phase.

3.5.6.4 Operations

No personnel would be stationed at the facility and no occupied structures would be built on the site. Full and part-time positions over the life of the Project would be required for periodic operation and maintenance activities and would be performed by a third party contractor. Operations water requirements would be 1.0 AFY.

3.6 DISCRETIONARY ENTITLEMENTS

Each of the Projects would require the approval of a conditional use permit (CUP) by the County of Los Angeles Regional Planning Commission. All six CUP requests include construction, operation and maintenance of PV solar electric generation and distribution facilities and addition of a water tank requiring a CUP

Project 1

Conditional Use Permit: To authorize the construction and operation of a solar photovoltaic electricity generating plant on 240 acres and installation of a water tank in the A-2 Zone. The project meets the definition of "electric generating plant" in the Los Angeles County Zoning Code. Pursuant to Section 22.24.150, electric generating plants are a use subject to a conditional use permit in the A-2 Zone.

Zone Change: To authorize a Zone Change from the A-1-2 (Light Agricultural) zone, to A-2 (Heavy Agricultural) zone.

Project 2

Conditional Use Permit: To authorize the construction and operation of a solar photovoltaic electricity generating plant on 157 acres and installation of a water tank in the A-2-5 Zone. The project meets the definition of "electric generating plant" in the Los Angeles County Zoning Code. Pursuant to Section 22.24.150, electric generating plants are a use subject to a conditional use permit in the A-2 Zone.

Project 3

Conditional Use Permit: To authorize the construction and operation of a solar photovoltaic electricity generating plant on 136 acres and installation of a water tank in the A-2-2 Zone. The project meets the definition of "electric generating plant" in the Los Angeles County Zoning Code. Pursuant to Section 22.24.150, electric generating plants are a use subject to a conditional use permit in the A-2 Zone.

Project 4

Conditional Use Permit: To authorize the construction and operation of a solar photovoltaic electricity generating plant on 256 acres and installation of a water tank in the A-2-2 Zone. The project meets the definition of "electric generating plant" in the Los Angeles County Zoning Code. Pursuant to Section 22.24.150, electric generating plants are a use subject to a conditional use permit in the A-2 Zone.

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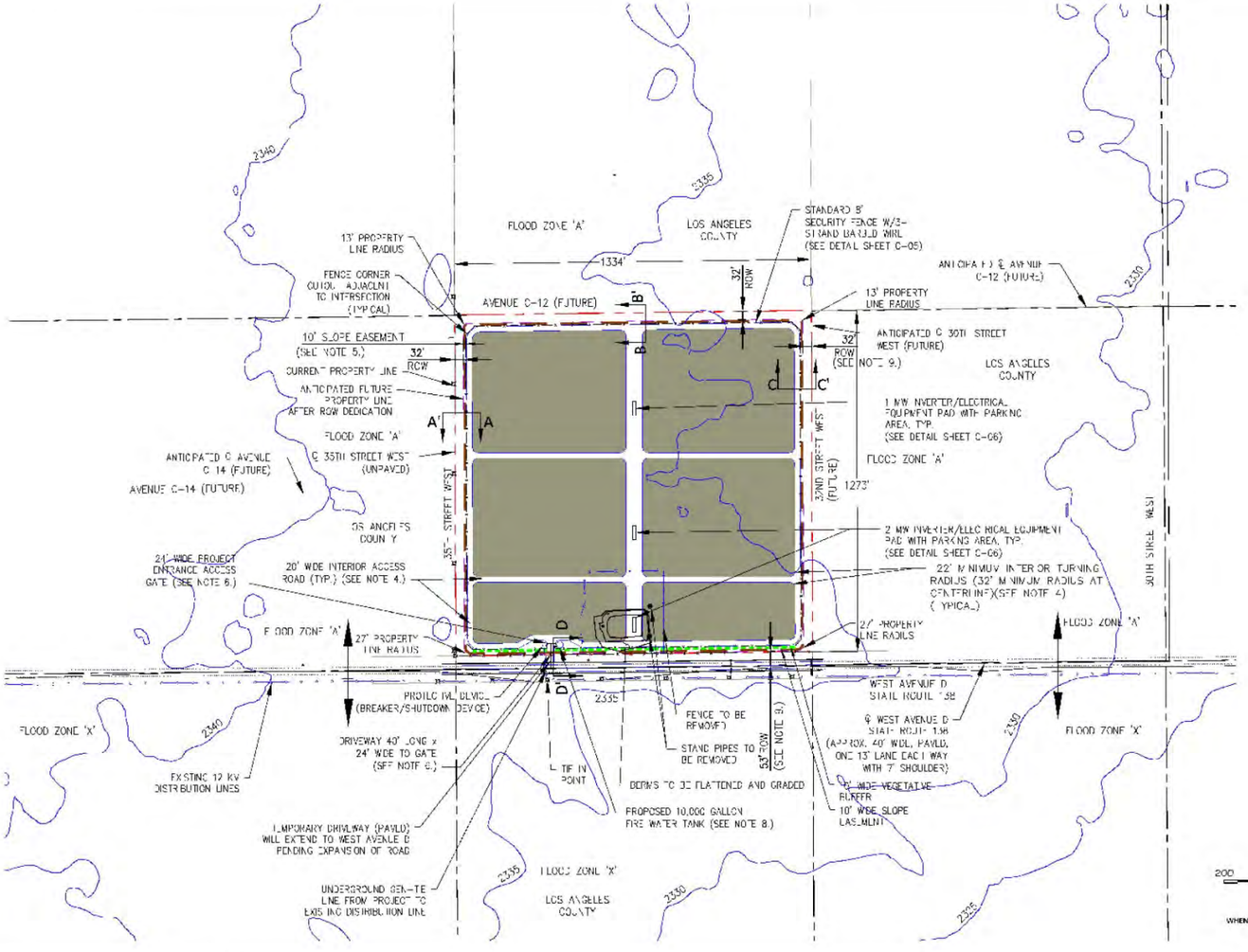


VICINITY MAP
NO SCALE

PROJECT SITE:
PROJECT SITE IS 39 ACRES (NET)

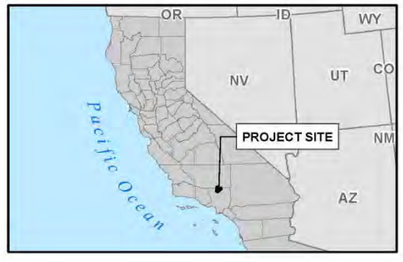
NOTES:

1. "ZONE X" AS SHOWN ON PANEL 0160F OF FLOOD INSURANCE RATE MAP NO. 06037C0175F. ZONE "X" DESIGNATED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN. ZONE "A" DESIGNATED AS "NO BASE FLOOD ELEVATIONS DETERMINED."
2. FIRE DEPARTMENT ACCESS DEVICE AND EMERGENCY CONTACT PLACARD LOCATED AT ALL ENTRANCE GATES.
3. MOBILE SANITATION FACILITY, AS DEFINED BY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, CAN BE LOCATED AT ALL PARKING LOCATIONS AND WILL BE LOCATED AT THE CLOSEST LOCATION TO CONSTRUCTION AND OPERATIONAL WORKERS ACTIVITY. THE FACILITIES WILL BE KEPT TO LOS ANGELES COUNTY CODE, TITLE 11 – HEALTH & SAFETY, AND CAL-OSHA SANITATION STANDARDS IN SECTION 3366, TITLE 8, CALIFORNIA CODE OF REGULATIONS. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-05.
4. INTERIOR ACCESS ROADS WILL BE 20' WIDE, COMPACTED TO 90% WITH 32 FOOT TURNING RADIUS AT CENTER LINE. THE INNER RADIUS WILL BE 22' AND THE OUTER RADIUS WILL BE 42'. INTERIOR ACCESS ROADS WILL BE PROVIDED TO INCLUDE ALL ALLOWED LOOP ROAD PADS AND AROUND THE PERIMETER OF THE PROJECT. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-05.
5. 10 FOOT WIDE SLOPE EASEMENT WILL BE PROVIDED AROUND PERIMETER.
6. DRIVEWAY ACCESS GATES TO BE SET 40 FEET BACK FROM EDGE OF PROPERTY. DRIVEWAY WILL BE 24 FEET WIDE.
7. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO VERIFICATION DURING DETAILED DESIGN.
8. TANK CONNECTIONS PER LOS ANGELES COUNTY FIRE DEPARTMENT.
9. ANTICIPATED ROW SETBACK/DEDICATION FOR FUTURE ROAD DEVELOPMENT. REFER TO SHEET C-06 FOR SECTIONS AND ROW DETAILS.
10. CONTOURS SHOWN ON SITE PLAN, C-01, ARE BASED ON USGS MAP CONTOURS.

LEGEND:

MIN. MINIMUM
ROW RIGHT-OF-WAY
℄ CENTERLINE
POWER POLE
FENCE LINE
OVERHEAD LINE
UNDERGROUND LINE
PROPERTY LINE (AFTER DEDICATIONS)
PROPERTY LINE (CURRENT)
PARCEL LINE
2335 CONTOUR LINE (5' INTERVAL FROM USGS)
SOLAR ARRAY FIELD
10' WIDE VEGETATIVE BUFFER
10' WIDE SLOPE EASEMENT

200 0 200 400
SCALE IN FEET
1"=200'
WHEN PRINTED TO SCALE ON 22"x34" SHEET



SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

FIGURE 3-15
PROJECT 6 SGF DESIGN

TETRA TECH

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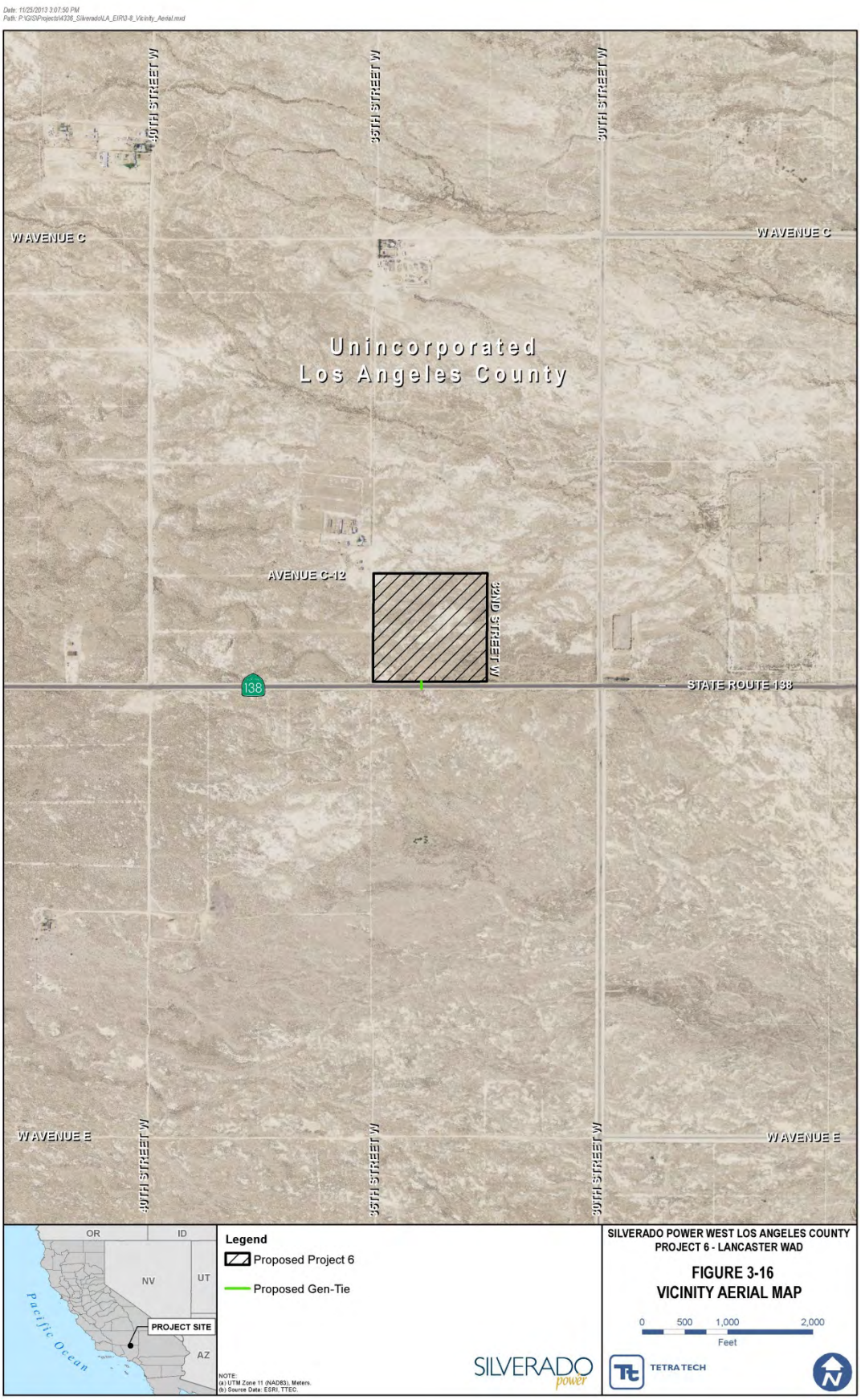
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40TH STREET W
35TH STREET W
30TH STREET W
W AVENUE C
W AVENUE C
Unincorporated
Los Angeles County
AVENUE C-12
22ND STREET W
138
STATE ROUTE 138
W AVENUE E
W AVENUE E
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project 6
Proposed Gen-Tie
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 6 - LANCASTER WAD
FIGURE 3-16
VICINITY AERIAL MAP
0 500 1,000 2,000
Feet
TETRA TECH

Project 5

Conditional Use Permit: To authorize the construction and operation of a solar photovoltaic electricity generating plant on 160 acres and installation of a water tank in the A-2-5 Zone. The project meets the definition of "electric generating plant" in the Los Angeles County Zoning Code. Pursuant to Section 22.24.150, electric generating plants are a use subject to a conditional use permit in the A-2 Zone.

Project 6

Conditional Use Permit: To authorize the construction and operation of a solar photovoltaic electricity generating plant on 39 acres and installation of a water tank in the D-2-2 Zone. The project meets the definition of "electric generating plant" in the Los Angeles County Zoning Code. Pursuant to Section 22.32.090, electric generating plants are a use subject to a conditional use permit in the D-2 Zone.

Projects 3 and 6 are located within the Airport Land Use Plan (ALUP) planning areas for the General William J. Fox Airfield Airport Influence Area. The General William J. Fox Airfield Airport Land Use Compatibility Plan was reviewed by the Airport Land Use Commission (ALUC) for consistency with the Los Angeles County General Plan and its components, which included the Antelope Valley Area Plan (2004), and was deemed to be consistent. The proposed Projects 3 and 6 are part of the Antelope Valley Area Plan (2004). Therefore, pursuant to Policy 2.2.2, ALUC review is not required. The consistency determination and documentation from the ALUC is provided in Appendix B-12.

Table 3-6 Entitlements Requested

Project Site	County Project Number	Conditional Use Permit No.	Zone Change No.
Project 1	R2011-00833	201100079	201100005
Project 2	R2011-00798	201100070	N/A
Project 3	R2011-00799	201100071	N/A
Project 4	R2011-00807	201100076	N/A
Project 5	R2011-00801	201100072	N/A
Project 6	R2011-00805	201100074	N/A

Approval for placement of electrical transmission lines into County road ROWs by the execution of a Franchise Agreement from the County Department of Public Works would be required for all of the Projects. Encroachment Permit(s) for accessing County roads and road utility crossings would be required after the certification of the EIR and approval of all entitlements and license or franchise agreements.

Within the City of Lancaster, the two gen-tie line routes for Projects 2 and 5 would traverse land use designations NU and UR. In July 2013, the City approved a General Plan Amendment for the UR designation to NU designation for another Applicant's solar project that the gen-tie line would traverse to connect to the Antelope Substation. The City's NU designation allows solar facilities within this designation. An agreement will be obtained by the Applicant with the City of Lancaster for the gen-tie line that will traverse through this jurisdiction. This agreement will grant ROW privileges for the proposed gen-tie line.

No permits from the California Energy Commission (CEC) are needed for these projects because CEC does not have authority over private PV projects.

3.7 INTENDED USES OF THIS EIR

The County of Los Angeles is the lead agency for the proposed Projects, pursuant to CEQA. The intended uses of this DEIR include compliance with CEQA and to provide information needed by the Los Angeles County Regional Planning Commission, Board of Supervisors, and other County departments to make decisions regarding Projects approvals and conditions. The County of Los Angeles and other agencies may utilize this DEIR in its decision-making process for other actions.

The DEIR is also intended to support federal, state, and regional and/or local government discretionary approvals that may be required to develop the proposed Projects. The agencies and an initial list of their respective approval authorities are given below.

- **Antelope Valley Air Quality Management District –** Compliance with Rule 403 and other air pollution regulations
- **California Department of Fish and Wildlife –** Streambed Alteration Agreement; State Endangered Species Consultation: Incidental Take Permit/Authorization
- **California Department of Transportation –** Encroachment of Right-of-Way
- **County of Los Angeles –** CEQA Review; Conditional Use Permits; Zone Change; Airport Land Use Commission determinations; Grading Permits; Building Permits; Franchise Agreements or Licenses; Road Encroachment Permits
- **Regional Water Quality Control Board –** Clean Water Act; National Pollutant Discharge Elimination System Permit; Water Quality Certification; Discharges to Surface Water: Regional General Permits; Report of Waste Discharge/Waste Discharge Requirements: Porter Cologne Water Quality Act
- **State Water Resources Control Board –** Statewide General Permit: Water Quality Order 99- 08-DWQ: General Permit for Storm Water Discharges Associated with Construction Activity

Additional agencies and permits or approvals may be required as the Projects move through the regulatory process.

3.8 CUMULATIVE PROJECTS

In accordance with CEQA Guidelines (Title 14 California Code of Regulations [CCR] §15130 et seq.), the EIR would present an analysis of cumulative impacts that may result from construction and operation of the proposed Projects. As defined in §15355, cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

The cumulative impact analysis in this DEIR considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The analysis of each resource is based on the nature of the geography surrounding the proposed Projects and the characteristics of each resource. In addition, each Project has its

own implementation schedule, which may or may not coincide or overlap with other proposed Projects. Specific Project schedules are given in the description of each project.

3.8.1 Methodology

A geographic boundary was established to include a review of applicable projects within a distance of 5 miles on all sides of each of the proposed six Projects. Figure 3-1 shows a map of proposed Projects 1 – 6 and their physical relationship to some of the 28 cumulative projects located within the 5-mile radius area. This area covers 165,348.6 acres. The cumulative projects list (Table 3-7) was developed through a review of active project lists from the LACDRP and the City of Lancaster Planning Department. The cumulative impact basis analyzed considered known projects within the 5-mile radius. The 5-mile radius area includes lands within the jurisdictions of Los Angeles County and the City of Lancaster.

CEQA Guidelines (§15130[b][1][B] recommend the use of "a summary of projects contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact."

3.8.2 Cumulative Development

Refer to Table 3-7 for a tabular listing of projects and Figure 3-17 that depicts the projects that are considered in the cumulative impact analysis. The DEIR will analyze cumulative impacts for Projects 1 – 6 and the other projects within a 5-mile radius. Table 3-7 provides the acreage of each Project, the acreage of all the cumulative projects in the 5-mile radius area, and the percentages of acreage occupied by each Project.

For the County of Los Angeles, housing and other real estate development projects are shown along with the proposed Projects 1 – 6, other solar energy projects, and two wind energy projects. The table includes housing infill projects in the City of Lancaster, and other significant real estate development projects in the City of Lancaster. See Chapter 7.0 Consequences of Project Implementation for a discussion of Cumulative Impacts.

3.9 REFERENCES

City of Lancaster. 2013. Conditional Use Permit No. 13-06.

Table 3-7. Cummulative Projects

Project Name/Type	Project ID	Megawatts (MW)	Acreage	% of Solar Acreage	% 5 Mile Radius Acreage[1]	% Solar MW	LOCATION DESCRIPTION	SCOPE
Solar - County of Los Angeles County								
Antelope Solar 2	R2009-00979	10	80	1.0%	0.0%	1.0%	130 ST W , ANTELOPE ACRES	Solar Facility - 10 megawatt on 80 acres
Antelope Solar 1	R2010-00911	10	111	1.4%	0.1%	1.0%	FAIRMONT RD/VIC 125 , DEL SUR	Solar Facility - 10 megawatt on 111 acres
Antelope Solar Farm	R2011-00977	20	320	4.0%	0.2%	1.9%	NORTHWEST CORNER OF THE INTERSECTION OF 110TH STREET WEST AND WEST AVENUE I	Solar Facility - 20 megawatt on 320 acres
Antelope Valley Solar	R2010-00908	660	5,400	66.78%	3.27%	62.09%	AVE B/VIC 160 STW , FAIRMONT	5,400 acres (1,311 in LA Co and 4,089 in Kern Co.)
High Desert Complex Solar Farm	R2011-01474	2.00	11.00	0.14%	0.01%	0.19%	45100 60TH ST W , LANCASTER	Solar facility to existing Mira Loma Detention facility & Challenger Memorial Youth Center/Probation Camp
West Antelope Solar Project	R2012-01589	20.00	263.00	3.25%	0.16%	1.91%	110th Street West and West Avenue J, Lancaster	Solar Facility - 20 megawatt on 263 acres
SP LA EIR Projects	R2011-00933, R2011-00798, 42011-00799, R2011-00807, R2011-00801, 42011-00805	172.00	997.10	12.21%	0.60%	16.43%	6 SITES WITHIN THE ANTELOPE VALLEY	Solar Facility
	SUBTOTAL	**884.00**	**7,172.10**	**88.70%**	**4.34%**	**84.44%**		
Solar - City of Lancaster								
High Desert LLC	CUP 10-03	20.00	216.00	2.67%	0.13%	1.91%	216 acres bounded by 100th St W, 97th St W, Ave H, Lancaster Blvd	20 megawatt solar facility
Beautiful Earth Group	CUP 10-22	38.00	180.00	2.23%	0.11%	3.63%	180 acres bounded by Ave H, Avenue H-4/H-8, 80th St W, 90th St W	38 megawatt solar facility
Absolutely Solar	CUP 11-02	3.40	17.74	0.22%	0.01%	0.32%	17.74 acres, east side of 90th ST W between Ave K-8 and Ave K-12	3.4 megawatt solar facility
Lancaster Dry Farm Ranch	CUP 11-03	10.00	67.00	0.83%	0.04%	0.96%	67 acres, southwest corner of Ave H & 90th ST W	10 megawatt solar facility
Antelope Big Sky Ranch	CUP 11-05	20.00	80.00	0.99%	0.05%	1.91%	80 acres, east side of 80th St W, 1/4 mile south of Ave J	20 megawatt solar facility
Western Antelope Dry Ranch	CUP 11-07	10.00	40.00	0.49%	0.02%	0.96%	40 acres, southeast corner of Ave J & 110th St W	10 megawatt solar facility
Summer Solar	CUP 12-06	20.00	135.00	1.67%	0.08%	1.91%	135 acres, bounded by Ave H, Ave G, 90th St W, approx 350 west of 93rd St W	20 megawatt solar facility
Springtime Solar	CUP 12-09	40.00	158.00	1.95%	0.10%	3.82%	158 acres, bounded by Ave H, Ave H-8, 100th ST W, 105th St W	40 megawatt solar facility
Sunlight Partners	CUP 12-11	1.50	20.00	0.25%	0.01%	0.14%	20 acres, northwest corner of 80th St W & Ave H-12	1.5 megawatt solar facility
	SUBTOTAL	**162.90**	**913.74**	**11.30%**	**0.55%**	**15.56%**		
	SOLAR TOTAL	1,046.90	8,085.84	100%	4.89%	100%		
Project Name/Type	**Project ID**	**Megawatts (MW)**	**Acreage**	**% of Wind Acreage**	**% 5 Mile Radius Acreage[1]**	**% Wind MW**	**LOCATION DESCRIPTION**	**SCOPE**
Wind - Los Angeles County								
Blue Sky Wind Energy	R2011-00408	225	7,500	67%	4.54%	42.86%	3224032008, 3224032001, 3235002016, 3235003023, 3240010	Wind Facility - 225 megawatt on 7,500 acres - Project on hold
Wildflower Green Energy Farm	R2010-00258	300	3,708	33%	2.2%	57.1%	AVE F/VIC 162 STW , FAIRMONT	300 megawatt on 3,708 acres (within SEA) - Project on hold.
	WIND TOTAL	525	11,208	100%	6.78%	100%		

[1] Approximately 165,349 acres of projects are located within 5 miles of the proposed Project

Page 1 of 2

Table 3-7. Cummulative Projects

Project Name/Type	Project ID	Megawatts (MW)	Acreage	% of Other Real Estate Development Acreage	% 5 Mile Radius Acreage[1]	% Other Real Estate Develop-ment MW	LOCATION DESCRIPTION	SCOPE
Other Real Estate Development - Los Angeles County								
Lake Elizabeth Properties, LLC	02-311	N/A	5	0.3%	0.003%	N/A	42505 RANCH CLUB ROAD	498 Space recreational vehicle resort with existing golf course
All Nations International	R2005-02587	N/A	12.6	0.8%	0.01%	N/A	44505 90TH W ST, LANCASTER	Monastery/Private retreat center with residential facilities
	SUBTOTAL	**N/A**	**17.60**	**1.09%**	**0.01%**			
Other Real Estate Development - City of Lancaster								
Shopping Center	CUP 06-08	N/A	40.26	2.5%	0.02%	N/A	40.26 acres on southeast corner of 60 St W & Ave L	395,365 sf shopping center (includes a Target)
Shopping Center	CUP 06-09	N/A	40	2.5%	0.02%	N/A	40 acres at northwest corner of 60th St W & Ave L	344,752 sq ft shoping center (includes a 196,028 sf Walmart)
Single Family Lots	TTM 53229	N/A	483	29.9%	0.29%	N/A	483 acres bounded by Ave K, Ave L, 62nd ST W, and 70th St W	1,594 single family residential lots
Single Family Lots	TTM 60057	N/A	120	7.4%	0.07%	N/A	120 acres at the southeast corner of Ave L-8 & 80th St w	302 single family residential lots
Single Family Lots	TTM 61636	N/A	57.6	3.6%	0.03%	N/A	57.6 acres, southeast corner of 45th St W & Ave J	240 single family residential lots
Single Family Lots	TTM 62120	N/A	80	5.0%	0.05%	N/A	80 acres, southeast corner of 40th ST W & Lancaster Blvd	316 single family residential lots
Single Family Lots	TTM 62403	N/A	64.22	4.0%	0.04%	N/A	64.22 acres, southeast corner of future 60th ST W & Ave L	204 single family residential lots
Single Family Lots	TTM 66241	N/A	640	39.6%	0.39%	N/A	640 acres, bounded by Ave G, Ave H, 92nd St W, and 105th ST W	1,925 single family residential lots
Single Family Lots	TTM 66680	N/A	72.9	4.5%	0.04%	N/A	72.9 acres, southwest corner of 52nd St W & Ave K-8	238 single family residential lots
	SUBTOTAL		**1,597.98**	**98.91%**	**0.97%**			
	OTHER REAL EST. PROJECTS TOTAL		1,615.58	100%	0.98%			
	GRAND TOTAL PROJECTS		20,909		12.65%			

*This project was added to the cumulative list even though it was submitted after Projects 1-6 NOP date because of its proximity to Projects 2, permitting could also be completed prior to Projects 1-6. In addition this project could use some of the same public right of way space and infrastruture for its gen-tie

Proposed SP Project	172.00	987.1
PROJECTS WITHIN 5 MILE RADIUS	0	165,349

[1] Approximately 165,349 acres of projects are located within 5 miles of the proposed Project

Page 2 of 2

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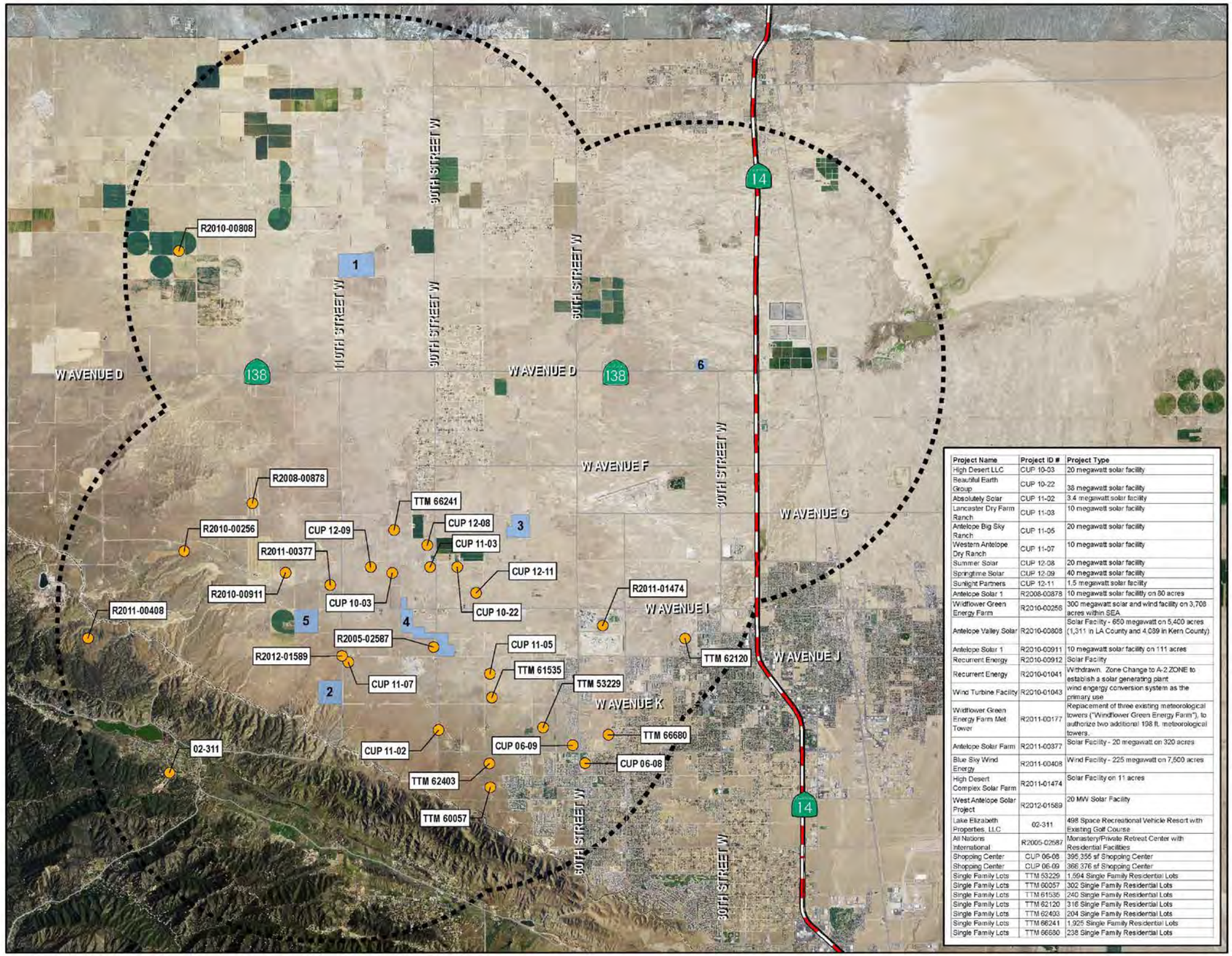

Project Name	Project ID #	Project Type
High Desert LLC	CUP 10-03	20 megawatt solar facility
Beautiful Earth Group	CUP 10-22	38 megawatt solar facility
Absolutely Solar	CUP 11-02	3.4 megawatt solar facility
Lancaster Dry Farm Ranch	CUP 11-03	10 megawatt solar facility
Antelope Big Sky Ranch	CUP 11-05	20 megawatt solar facility
Western Antelope Dry Ranch	CUP 11-07	10 megawatt solar facility
Summer Solar	CUP 12-08	20 megawatt solar facility
Springtime Solar	CUP 12-09	40 megawatt solar facility
Sunlight Partners	CUP 12-11	1.5 megawatt solar facility
Antelope Solar 1	R2008-00878	10 megawatt solar facility on 80 acres
Wildflower Green Energy Farm	R2010-00256	300 megawatt solar and wind facility on 3,708 acres within SEA
Antelope Valley Solar	R2010-00808	Solar Facility - 650 megawatt on 5,400 acres (1,311 in LA County and 4,089 in Kern County)
Antelope Solar 1	R2010-00911	10 megawatt solar facility on 111 acres
Recurrent Energy	R2010-00912	Solar Facility
Recurrent Energy	R2010-01041	Withdrawn. Zone Change to A-2 ZONE to establish a solar generating plant
Wind Turbine Facility	R2010-01043	wind engergy conversion system as the primary use
Wildflower Green Energy Farm Met Tower	R2011-00177	Replacement of three existing meteorological towers ("Windflower Green Energy Farm"), to authorize two additional 198 ft. meteorological towers.
Antelope Solar Farm	R2011-00377	Solar Facility - 20 megawatt on 320 acres
Blue Sky Wind Energy	R2011-00408	Wind Facility - 225 megawatt on 7,500 acres
High Desert Complex Solar Farm	R2011-01474	Solar Facility on 11 acres
West Antelope Solar Project	R2012-01589	20 MW Solar Facility
Lake Elizabeth Properties, LLC	02-311	498 Space Recreational Vehicle Resort with Existing Golf Course
All Nations International	R2005-02587	Monastery/Private Retreat Center with Residential Facilities
Shopping Center	CUP 06-08	395,355 sf Shopping Center
Shopping Center	CUP 06-09	366,376 sf Shopping Center
Single Family Lots	TTM 53229	1,594 Single Family Residential Lots
Single Family Lots	TTM 60057	302 Single Family Residential Lots
Single Family Lots	TTM 61535	240 Single Family Residential Lots
Single Family Lots	TTM 62120	316 Single Family Residential Lots
Single Family Lots	TTM 62403	204 Single Family Residential Lots
Single Family Lots	TTM 66241	1,925 Single Family Residential Lots
Single Family Lots	TTM 66680	238 Single Family Residential Lots

SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

LEGEND

1 - NORTH LANCASTER RANCH
2 - WESTERN ANTELOPE BLUE SKY RANCH
3 - AMERICAN SOLAR GREENWORKS
4 - ANTELOPE SOLAR GREENWORKS
5 - SILVER SUN GREENWORKS
6 - LANCASTER WAD
CUMULATIVE PROJECTS
5 MILE BUFFER FROM PROJECTS (165,348.6 acres)

NOTE:
(a) State Plane, Zone V (NAD83), US Survey Feet.
(b) Source Data: ESRI, Silverado Power, TTEC.

FIGURE 3-17
SILVERADO POWER WEST LOS ANGELES COUNTY CUMULATIVE PROJECTS

0 1 2 4
Miles

TETRA TECH

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4.0 ENVIRONMENTAL INFORMATION

This chapter contains 14 individual sections. The sections represent the 14 environmental, public health and safety, and local impact assessment disciplines for which CEQA requires information in an EIR. The sections have a generally standardized format under the following headings:

- Introduction
- Environmental Setting
- Regulatory Setting
- Significance Criteria
- Methods
- Impacts Analysis
- Mitigation Measures
- Impacts after Mitigation
- Cumulative Impacts

The Introduction briefly describes the subject matter and organization of each section. Environmental Setting provides relevant background information about the proposed Projects' existing environmental and social conditions. The Regulatory Setting discusses and lists the federal, state, and local laws, ordinances, and regulations that pertain to the proposed Project for a given discipline, and includes a demonstration that the proposed Project would comply with them. Significance Criteria presents the standards used to determine whether environmental effects of the project qualify as significant adverse environmental impacts. The Methods section describes how impacts are analyzed, and the Impacts Analysis presents the analysis of the potential environmental consequences of the construction and operation of the proposed Projects. Mitigation Measures describes any means that may be necessary to reduce potential impacts below the level of significance. Cumulative Impacts discusses potential effects of the Project that are not significant adverse impacts, but that could reach significance cumulatively in combination with other projects.

The Section 4.0 subsections are listed below and presented in the following order:

4.1 Aesthetics
4.2 Agriculture and Forest
4.3 Air Quality
4.4 Biological Resources
4.5 Cultural Resources
4.6 Geology and Soils
4.7 Greenhouse Gases and Climate Change
4.8 Hazards and Hazardous Materials
4.9 Hydrology
4.10 Land Use
4.11 Noise
4.12 Public Services
4.13 Traffic and Transportation
4.14 Utilities and Service Systems

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4.1 AESTHETICS

4.1.1 Introduction

This section discusses the potential for the construction, operation, and maintenance of the Projects to cause impacts to aesthetic values. This section includes an inventory of existing visual conditions and resources within the Project sites and an assessment of potential aesthetic effects of the Projects on the existing landscape, focusing on the compatibility of the Projects with existing conditions and their potential effects on visual resources.

Separate technical reports regarding visual resources were developed for each Project and are included in Appendix B-1. These analyses were conducted in conformance with CEQA documentation requirements and information provided in the Los Angeles County Environmental Checklist. The analyses consider potential impacts associated with scenic areas, scenic corridors, and other scenic resources from modification of the landscape. The assessments were based on field observations of each Project site and its surroundings, in addition to a review of maps, technical specifications of the proposed Project, aerial and ground-level photographs, and visual simulations of the Project.

Using the technical reports provided for each Project site in Appendix B-1, this section of the EIR summarizes the environmental setting and potential impacts associated with each individual site, and identifies the cumulative impacts of the Projects. The site plans for proposed Projects 1 – 6 are included in Section 3.0.

4.1.2 Environmental Setting

4.1.2.1 Regional Setting

The proposed Project sites are located in the west/central portion of the Antelope Valley, which is part of the Mojave Desert basin. The Antelope Valley is broad and relatively flat, with little variation in topography. The valley is shaped like a sideways letter "V," sloping northward toward the Tehachapi Mountains and southward toward the San Gabriel Mountains. The western portion of the valley slopes upward toward the point where these two mountain ranges come together at the junction of the San Andreas and the Garlock faults. These mountain ranges are characterized by many complex and well-eroded hills rising approximately 2,000 to 7,000 feet above the valley floor. Many small valleys and drainage complexes are visible in the foothills that border the valley.

Surface water is rarely observed in the Antelope Valley. There are many washes that meander across the valley; however, these streams are dry for the majority of the year and only fill with water during the spring snow melt originating from the nearby mountains and after major rain events. Concrete-lined aqueducts, which include the California Aqueduct and the Los Angeles Aqueduct, parallel the natural contours of the foothills of the San Gabriel and Tehachapi Mountains. Recreational trails line the California Aqueduct, located at the foot of the San Gabriel Mountains foothills along the southern border of the Antelope Valley.

Desert woodland vegetation native to the Mojave Desert includes tall, irregular Joshua trees and round juniper shrubs ranging from 4 to 10 feet tall (City of Lancaster 2009a). In most of the

Project areas, the native woodland vegetation has been cleared for agricultural use. Irrigated agricultural areas appear as square, rectangular, or circular green shapes on the brown-toned desert landscape. Root vegetables and fruit trees, as well as alfalfa, hay, and grapes are grown in the valley. In portions of the Project areas where agriculture has yet to be developed or has been abandoned, a mixture of short grasses, wildflowers, and low desert scrub bushes are common. During the spring bloom, wildflowers cover the valley in brilliant displays of orange, yellow, and purple wildflowers (City of Lancaster 2009a). On the slopes of the foothills to the north and south, low woody vegetation is common, and includes scrub oak, sagebrush, creosote, and juniper bushes. During the spring and early summer, this vegetation appears in varying shades of dark and light green. During the fall and winter, patches of dark brown and grayish red hues are visible.

There are several well-developed cities in the Project areas. Rosamond is a developed community of over 10,000 people located in the central Antelope Valley approximately 2.5 miles north of the Los Angeles County/Kern County boundary. Rosamond serves as the entrance to Edwards Air Force Base, and has a population of more than 10,000. Both Lancaster and Palmdale, located in the southern portion of the Antelope Valley, together have a population of more than 300,000.

The major north/south thoroughfare in the area is State Route 14 (Antelope Valley Freeway), which links the Lancaster/Palmdale area with Rosamond and areas further north. The portion of the Antelope Valley where the Project sites are located is crossed by a grid-like road system with paved roads and dirt roads.

Energy facilities and infrastructure are common in the western Antelope Valley. Several high-voltage transmission lines (constructed as both single pole structures and lattice structures) cross the area and converge at the Antelope Substation, located at the intersection of West Avenue J and 90th Street West. A large wind energy facility is situated at the foothills of the Tehachapi Mountains. Solar energy facilities in the Antelope Valley include PV solar fields and the Sierra SunTower “power tower” facility, located adjacent to the Antelope Valley Freeway in Lancaster. PV solar fields in the vicinity of the Project sites include the Antelope Valley Solar Ranch One (approximately 5.5 miles west of Project 1), and smaller PV solar fields under development by Tuusso Energy (adjacent to Project 4, and approximately 1.8 miles south of Project 4). Several other solar energy facilities are proposed in the valley.

Development in the western Antelope Valley around the Project sites is rural in nature. Residences are mostly widely-spaced rural ranch-type of residences, with some active farms. Clusters of more dense residential developments such as Westview Estates at West Avenue I/90th Street West, and the Antelope Acres community situated around 80th Street West and West Avenue D, occur but are widely spaced.

4.1.2.1.1 Project 1

A detailed description of existing conditions for Project 1 is provided in the North Lancaster Ranch Aesthetics Impacts Report (Appendix B-1.1). This report also provides photographs of existing conditions. Existing conditions at the site are summarized below.

The proposed Project site is located in the west/central portion of the Antelope Valley in a predominantly flat landscape. The Little Buttes area, just west of 90th Street West approximately 1 mile southeast of the Project site, provides some isolated topographic variation. Rural development and public infrastructure in the landscape surrounding the site include scattered rural residences, agricultural fields, high-voltage electric transmission lines, electrical distribution lines, roadways, and communications towers. The San Gabriel Mountains foothills are visible in far-off views to the south from the site. The Tehachapi Mountains are visible in far-off views to the northwest. Both mountain ranges appear hazy from the site due to distance, and topographic details other than the ridgelines are indistinct. The Pacific Crest Trail crosses the Tehachapi Mountains at the base of the foothills, and is located approximately eight miles northwest of the site at its closest point. Wind energy facilities, substations, PV solar facilities, and transmission lines are located between the site and the Pacific Crest Trail.

The area within 5 miles of the Project site is largely rural. Irrigated agricultural fields are common to the north and northwest. Clusters of residential development are located approximately two miles southeast (known as Antelope Acres) and 2.5 miles to the northeast. The Project site is visually screened from Antelope Acres by Little Buttes, an isolated hill surrounded by flat desert, which is considered a scenic area by the City of Lancaster (City of Lancaster 2009a). Little Buttes has hiking trails, but they are largely unmarked social trails and no formal scenic overlook or parking areas have been established by signage. There are 13 rural residences that appear to be occupied within 1 mile of the site boundaries. These residences typically have several outbuildings, and some have planted trees around the residence. The combination of structures and vegetation provides some degree of visual screening.

The site is fallow agricultural land that was previously used for irrigation farming in the 1960s (alfalfa production), and is comprised predominantly of non-native vegetation species. Vegetation types on the Project site are described in detail in Appendix B-1.1.

There is one house that is currently vacant, located on the Project site near 105th Street West, approximately 0.1 mile north of West Avenue B. This house and associated outbuildings would be demolished as part of the Project. No drainage features were identified on the site. A dirt track runs east-west across the Project site approximately 0.1 mile north of West Avenue B, connecting the residence area with 100th Street West. A high-voltage electric transmission line runs north/south approximately 220 feet west of 110th Street West. An electric distribution line is located along the southern boundary of the site, along the westbound lane of West Avenue B.

There are no designated scenic highways in the vicinity of the Project site. It is highly unlikely that the Project site would be visible from the Foothills Area or Quartz Hill, which are both located over 9 miles from the site. Even though these areas are at higher elevations than the site, from this distance the proposed Project site would fade into the flat landscape.

The Project site may be visible from elevated locations along the Pacific Crest Trail, from certain locations in the California Poppy Reserve, and would be visible from portions of the Little Buttes area. The nearest trails identified are associated with Little Buttes, approximately 0.7 miles southeast of the site. The SGF would be visible from trails in the Little Buttes area when not screened or partially screened by topography. The California Poppy Reserve is located

approximately 4.7 miles southwest of the site and approximately 8.5 miles from the Pacific Crest Trail. The California Poppy Reserve and sections of the Pacific Crest Trail are located at higher elevations than the Project site. While most views towards the Project site from the Poppy Reserve and the Pacific Crest Trail would be screened by terrain, it is possible that the Project site would be visible from some locations including trails. Even if visible, Project site 1 would be barely discernible from the Poppy Reserve and the Pacific Crest Trail due to distance, and largely fade into the flat landscape. If it is discernible, it would appear as a rectangular form similar to an agricultural field in shape and size. The Little Buttes Trail, an adopted proposed multiple-use County trail, runs parallel to the Project site along West Avenue B. The Project site would be dominant in views when trail users are located adjacent to the site. There are no County-designated bikeways within 4 miles of the Project site (Figure 4.1-1).

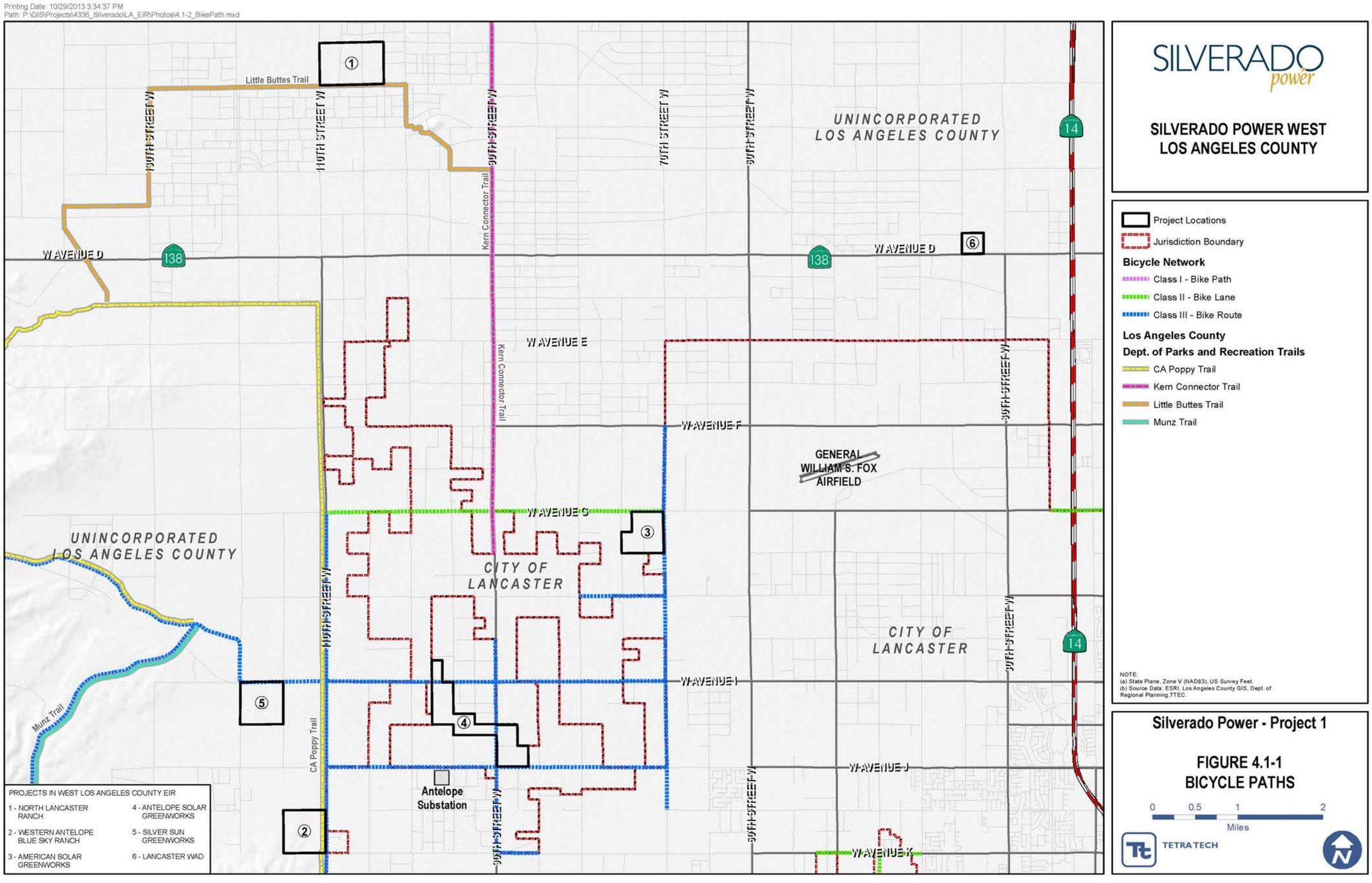
Figure 4.1-2 is a Photo Location Map for Project 1. Photos 1, 2, 3, 4, 7, 8, and 9 (Figures 4.1-3, 4.1-4, 4.1-6, and 4.1-7) show views towards the Project site from various roadways around the site. The Project site is bordered by West Avenue B to the south and 110th Street West to the west. Both West Avenue B and 110th Street West are visible in Figure 4.1-3, and are paved roads with medium/light gray pavement and a dashed yellow centerline with dirt shoulders. West Avenue B and 110th Street west are not main thoroughfares, and appear to serve mostly local traffic. 105th Street West is a tan-colored dirt road that crosses the Project site, and appears to serve only farm and local residential traffic.

90th Street West, located approximately 1.3 miles east of the Project site, is considered a potential scenic route by the City of Lancaster's MEA (City of Lancaster 2009a). 90th Street West is located at a slightly lower elevation than the proposed SGF. As shown in Figure 4.1-6, the landscape between 90th Street West north of West Avenue B and the site is very flat. South of 90th Street west, the proposed Project site would be screened by terrain associated with the Little Buttes area. Because of the low profile of the solar modules and the level to lower elevation of 90th Street West compared to the site, where visible the SGF would likely fade into the flat landscape and not dominate the view.

4.1.2.1.2 Project 2

A detailed description of existing conditions for Project 2 is provided in the Western Antelope Blue Sky Ranch Aesthetics Impacts Report (Appendix B-1.2). This report also provides photographs of existing conditions. See Figure 4.1-8 for a Photo Location Map for Project 2. Existing conditions at the site are summarized below.

The site consists of 157 acres of previously disturbed, grazing land at the foot of the San Gabriel foothills. Site topography is gently rolling, as shown by topographic contours on the site plan (Figure 3.4.1). Slopes in the area proposed for construction measure less than 10 percent. The steepest slopes, which run diagonally from the southwest corner of the site towards the northeast, are avoided and the area proposed for development is concentrated in the northern portion and along the eastern boundary of the site. As shown in Photos 1, 3, and 5 (Figures 4.1-9, 4.1-10, and 4.1-11), there are no trees onsite and vegetation consists of grasses and shrubs.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Little Buttes Trail
Kern Connector Trail
Munz Trail
CA Poppy Trail
W AVENUE D
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W AVENUE F
W AVENUE G
W AVENUE I
W AVENUE J
W AVENUE K
UNINCORPORATED LOS ANGELES COUNTY
CITY OF LANCASTER
GENERAL WILLIAM S. FOX AIRFIELD
Antelope Substation
PROJECTS IN WEST LOS ANGELES COUNTY EIR
1 - NORTH LANCASTER RANCH
2 - WESTERN ANTELOPE BLUE SKY RANCH
3 - AMERICAN SOLAR GREENWORKS
4 - ANTELOPE SOLAR GREENWORKS
5 - SILVER SUN GREENWORKS
6 - LANCASTER WAD
SILVERADO power
SILVERADO POWER WEST
LOS ANGELES COUNTY
Project Locations
Jurisdiction Boundary
Bicycle Network
Class I - Bike Path
Class II - Bike Lane
Class III - Bike Route
Los Angeles County
Dept. of Parks and Recreation Trails
CA Poppy Trail
Kern Connector Trail
Little Buttes Trail
Munz Trail
NOTE:
(a) State Plane, Zone V (NAD83), US Survey Feet.
(b) Source Data: ESRI, Los Angeles County GIS, Dept. of Regional Planning,TTEC.
Silverado Power - Project 1
FIGURE 4.1-1
BICYCLE PATHS
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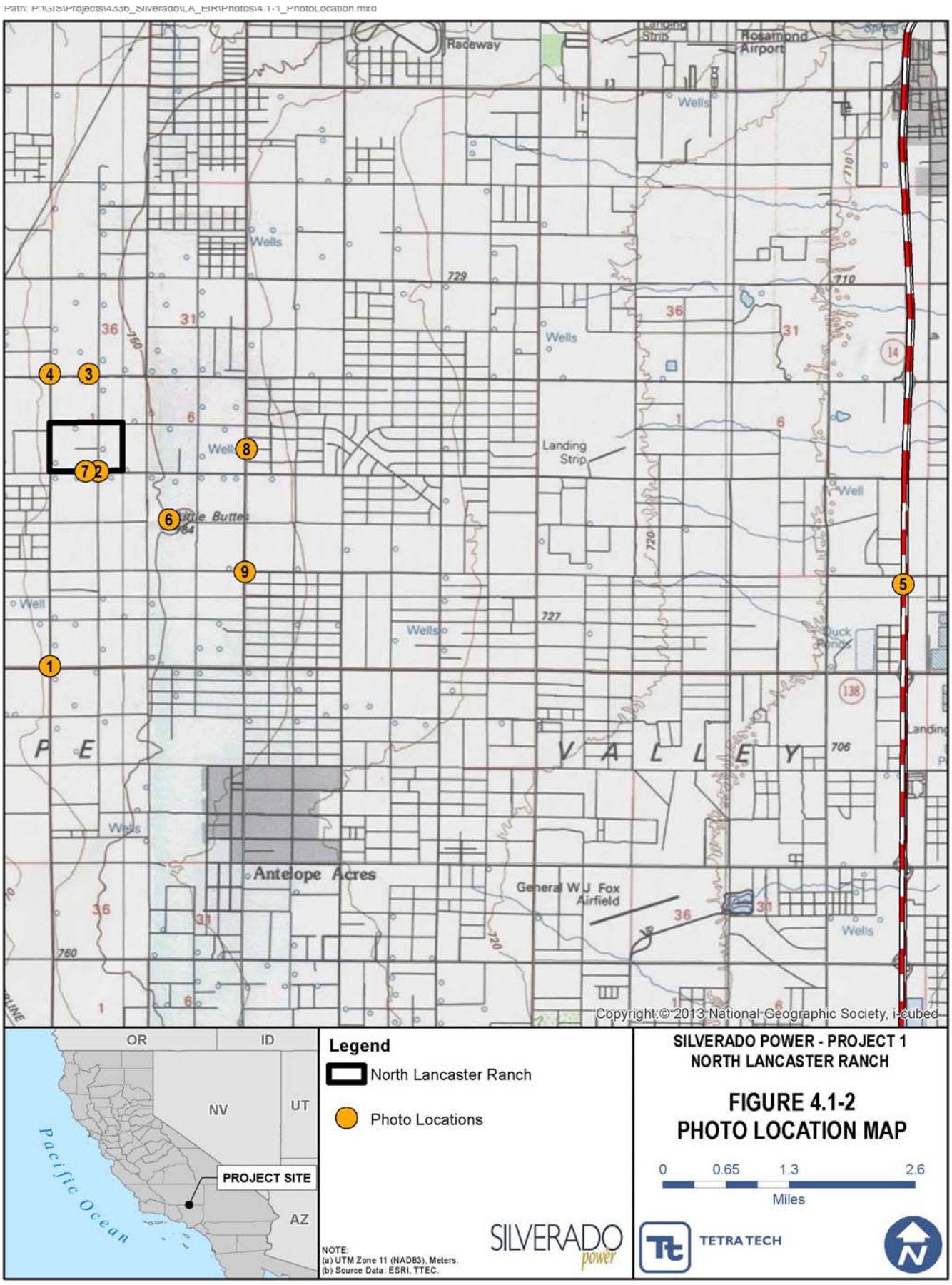
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Raceway
Rosamond Airport
Landing Strip
Wells
Little Buttes
Antelope Acres
General WJ Fox Airfield
P E
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Duck Ponds
Copyright © 2013 National Geographic Society, i-cubed
OR
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Pacific Ocean
PROJECT SITE
Legend
North Lancaster Ranch
Photo Locations
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 1
NORTH LANCASTER RANCH
FIGURE 4.1-2
PHOTO LOCATION MAP
0 0.65 1.3 2.6
Miles
TETRA TECH

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Photo 1. Taken from northbound 110th Street West, approximately 2 miles south/southwest of the Project site, looking north to east.

Photo 2. Taken from southern border of Project site at intersection of West Avenue B and 105th Street West, looking north.

Silverado Power – Project 1

Figure 4.1-3 Project 1 Photos 1 and 2

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Photo 3. Taken along 110th Street West approximately 0.5 mile south of West Avenue K and the Project site, looking north.

Photo 4. Taken from Quartz Hill, looking west to northwest, approximately 7 miles southeast of the Project site, looking northwest.

Silverado Power – Project 1

Figure 4.1-4 Project 1 Photos 3 and 4

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Photo 5. Representative view from the southbound lanes of the Antelope Valley Freeway, approximately 8.2 miles east/southeast of the Project site, looking southwest.

Photo 6. Taken from top of Little Buttes trail, approximately 0.6 miles southeast of the Project site, looking northwest.

Silverado Power – Project 1

Figure 4.1-5 Project 1 Photos 5 and 6

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Photo 7. Taken from eastbound lane of West Avenue B adjacent to the Project site, looking northeast to east.

Photo 8. Taken from 90th Street West looking towards the Project site approximately 1.3 miles east of the Project site.

Silverado Power – Project 1

Figure 4.1-6 Project 1 Photos 7 and 8

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Photo 9. Taken from 90th Street West approximately 1.8 miles southeast of the Project site, looking towards the Project site.

Silverado Power – Project 1

Figure 4.1-7 Project 1 Photo 9

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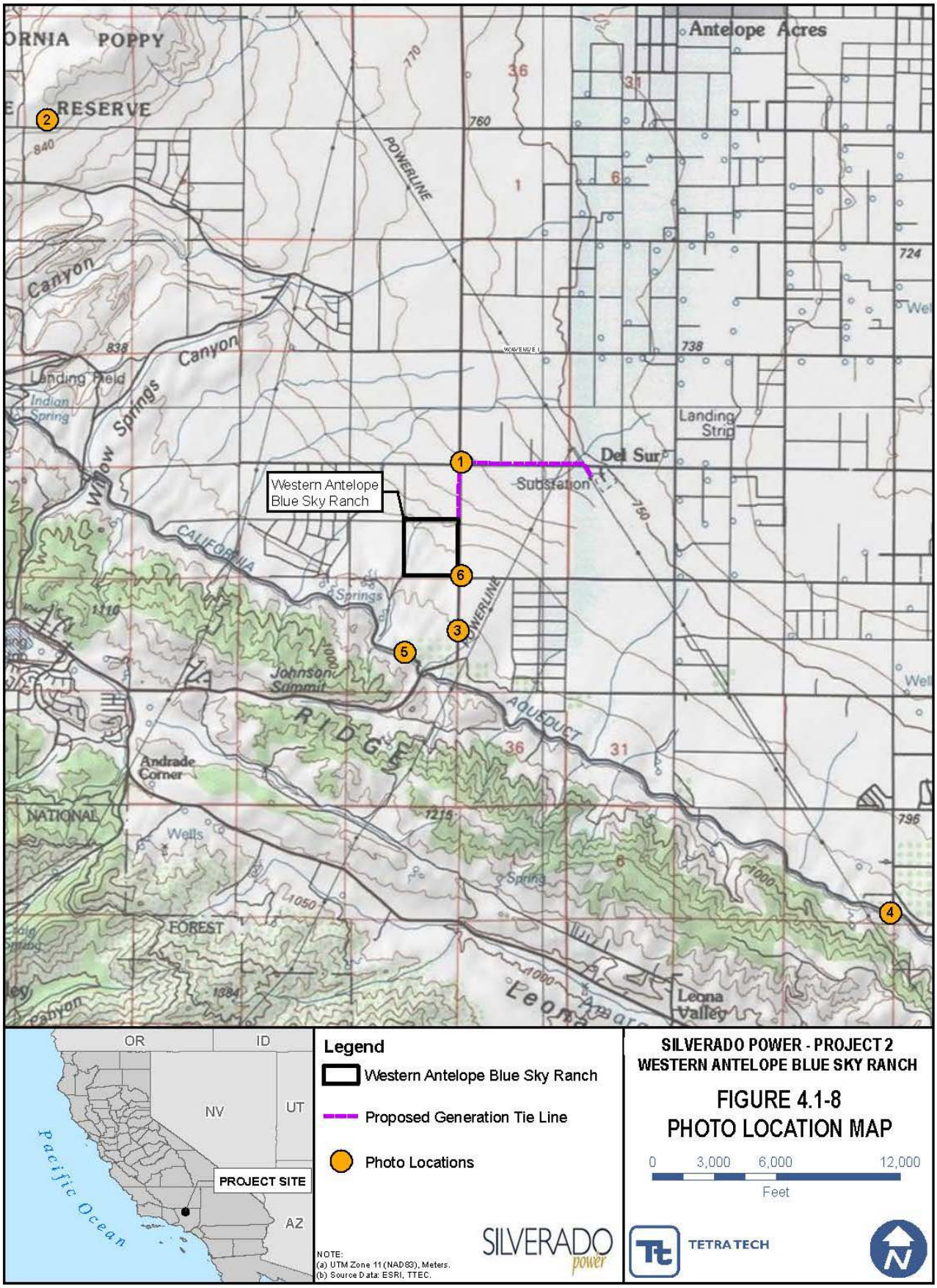

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Photo 1. Taken from northeast corner of 110th Street West and West Avenue J, approximately 0.5 mile north of the Project site, looking south to east.

Photo 2. From the top of the Valley Vista Trail in the Antelope Valley California Poppy Reserve, approximately 5 miles west of the Project site.

Silverado Power – Project 2

Figure 4.1-9 Project 2 Photos 1 and 2

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Photo 3. Taken along 110th Street West approximately 0.5 mile south of West Avenue K and the Project site, looking north.

Photo 4. Taken from Quartz Hill, looking west to northwest, approximately 7 miles southeast of the Project site, looking northwest.

Silverado Power – Project 2

Figure 4.1-10 Project 2 Photos 3 and 4

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Photo 5. Taken from the California Aqueduct Trail, approximately 0.6 mile south of the Project site, looking north/northeast.

Photo 6. Taken from the northeast corner of 110th Street West and West Avenue K, adjacent to the Project site, looking east to north.

Silverado Power – Project 2

Figure 4.1-11 Project 2 Photos 5 and 6

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As shown in Figure 4.1-9, Portal Ridge dominates views to the south from the site. Portal Ridge is part of the San Gabriel Mountains foothills, and is characterized by a horizontal line formed by coarse hills and complex drainages rising approximately 1,000 feet above the proposed Project site. As shown in Figure 4.1-10, views to the north reveal a predominantly flat landscape with very little topographic variation. The jagged ridgeline of the Tehachapi Mountains is visible in the far distance in views to the north from the proposed site.

Photo 1, 3, and 6 (Figures 4.1-9, 4.1-10, and 4.1-11) show various views towards the Project site from local roads surrounding the area. A number of pathways/two-tracks that appear similar to dirt trails occur onsite. Electric distribution lines are located along the southern boundary of the site, and along 110th Street West on the east side of the road. A high-voltage electric transmission line is located along the northern boundary of the site. The site is located within a half-mile of the Antelope Substation, an approximately 90-acre substation located at West Avenue J and 95th Street West. The Antelope Substation is a major substation, and several high-voltage transmission lines and electric distribution lines connected to the Antelope Substation are located in the vicinity of the site. Existing PV solar fields are located approximately 2.5 miles southeast and 1.6 miles northeast of Project 2.

There are no designated scenic highways in the vicinity of the Project site. The California Poppy Trail, an adopted proposed multiple-use County trail, runs parallel to the Project site along 110th Street W. A County-designated Class III bikeway is also located along 110th Street West. The bikeway is located adjacent to the eastern boundary of Project 2 for approximately 0.5 mile (Figure 4.1-1). West Avenue K, which was identified in the City of Lancaster's MEA as a potential scenic route, is located southeast of the Project site. West Avenue K has no official designation as a scenic route at this time.

It is highly unlikely that the SGF would be discernible from Little Buttes or Quartz Hill, which are both located over six miles from the site. Even though viewpoints from Little Buttes and Quartz Hill are at higher elevations than the Project site, from this distance the proposed Project would fade into the flat landscape. The SGF would be visible from certain locations in the Foothills Area, including portions of the California Aqueduct trails, and may be visible from the California Poppy Reserve. A representative photograph of the Foothills Area looking towards the site is provided in Photo 4 (Figure 4.1-10). The California Poppy Reserve is located approximately 3.5 miles northwest of the proposed site. Photo 5 (Figure 4.1-11) was taken from the top of the Valley Vista Trail, in the center of the reserve.

4.1.2.1.3 Project 3

A detailed description of existing conditions for Project 3 is provided in the American Solar Greenworks Aesthetics Impacts Report (Appendix B-1.3). This report also provides photographs of existing conditions. See Figure 4.1-12 for a Photo Location Map for Project 3. Existing conditions at the site are summarized below.

The Project site is located in the west/central portion of the Antelope Valley on disturbed, vacant land that consists of fallow agricultural fields with predominantly non-native vegetation. Portal Ridge, which is part of the San Gabriel Mountains foothills, is visible in views to the south from the site. This ridge is characterized by a jagged, horizontal line of coarse hills and complex drainages rising approximately 1,200 feet above the proposed Project site. Views to the north

and east reveal a predominantly flat landscape, and very little topographic variation is visible. Figure 4.1-12 shows a map of the photo locations for Project 3. The jagged ridgeline of the Tehachapi Mountains is visible in far-off views to the north from the proposed Project site. Photos 4 through 8 (Figures 4.1-14, 4.1-15, and 4.1-16) show various views towards the Project site from local roads surrounding the area. The Project site slopes slightly downwards from southwest to northeast with an elevation change of less than 20 feet, and appears very flat. Parcels that compose the overall site are fallow agricultural land, and vacant. Man-made features on the Project site include two-track and dirt roads, and a distribution line that roughly follows 75th Street West. A SCE 66 kV transmission line, constructed on single-pole wood structures, is adjacent to the northern border of the site.

Disturbance is evident on the site as well as in lands surrounding the site. The site and surrounding land is primarily unproductive agricultural land dominated by non-native vegetation species. Rural Development and public infrastructure in the landscape around the site include farms, rural residences, agricultural fields, high-voltage power lines, electrical distribution lines, and roadways. Development proximate to the Project site is mostly rural in nature. There are several rural ranch residences located directly adjacent to, or within 1 mile of the Project site. Several of the ranch residences have trees planted around them that would provide some degree of vegetative screening from the SGF. Antelope Acres, a residential community consisting of rural ranch-style homes, is located approximately 1.2 miles northwest of the Project site. A restaurant (Foxy's Southwest Steakhouse) is located along 60th Street West, approximately 1 mile east of the Project site. A view from the restaurant is shown in Photo 2, Figure 4.1-13. An airport (General William J. Fox Airfield) and a small park (Apollo Community Regional Park) are located approximately 2.3 miles east/northeast of the Project site. Photo 3 in Figure 4.1-14 shows a view towards the Project site from the southwest corner of Apollo Community Regional Park and the southeast side of the airport. The Project site would not be visible from Apollo Regional Park, which is surrounded by trees. The Project site is located approximately 3.2 miles northeast of the Antelope Substation, an approximately 90-acre substation located at West Avenue J and 95th Street West. The Antelope Substation is a major substation, and several high-voltage transmission lines and electric distribution lines connected to the Antelope Substation are located in the area. Existing PV solar fields are located less than 5 miles south of the Project site.

Figure 4.1-14 shows the location of scenic resources in relation to the proposed site. It is highly unlikely that the Project site would be discernible from Little Buttes, Quartz Hill, the Foothills Area, or the California Poppy Reserve which are all located over 5 miles from the site. Even though viewpoints at these scenic resources are at higher elevations than the site, from this distance the proposed Project site would fade into the flat landscape. Photo 1 in Figure 4.1-13 shows a view from Quartz Hill in the direction of the Project site. As is seen from the photo, which was taken from an elevated location, areas beyond the residential developments in Lancaster are not visible.

Paved roads that serve as primary travel routes in the area adjacent to the site include West Avenue G and 70th Street West. Traffic on these roads likely consists of mostly local residents and business traffic. West Avenue G and 70th Street West are two-lane paved roadways, characterized by light grey concrete/asphalt. Other minor roads adjacent to the site are light tan/gray dirt/gravel roads that primarily serve local residents.

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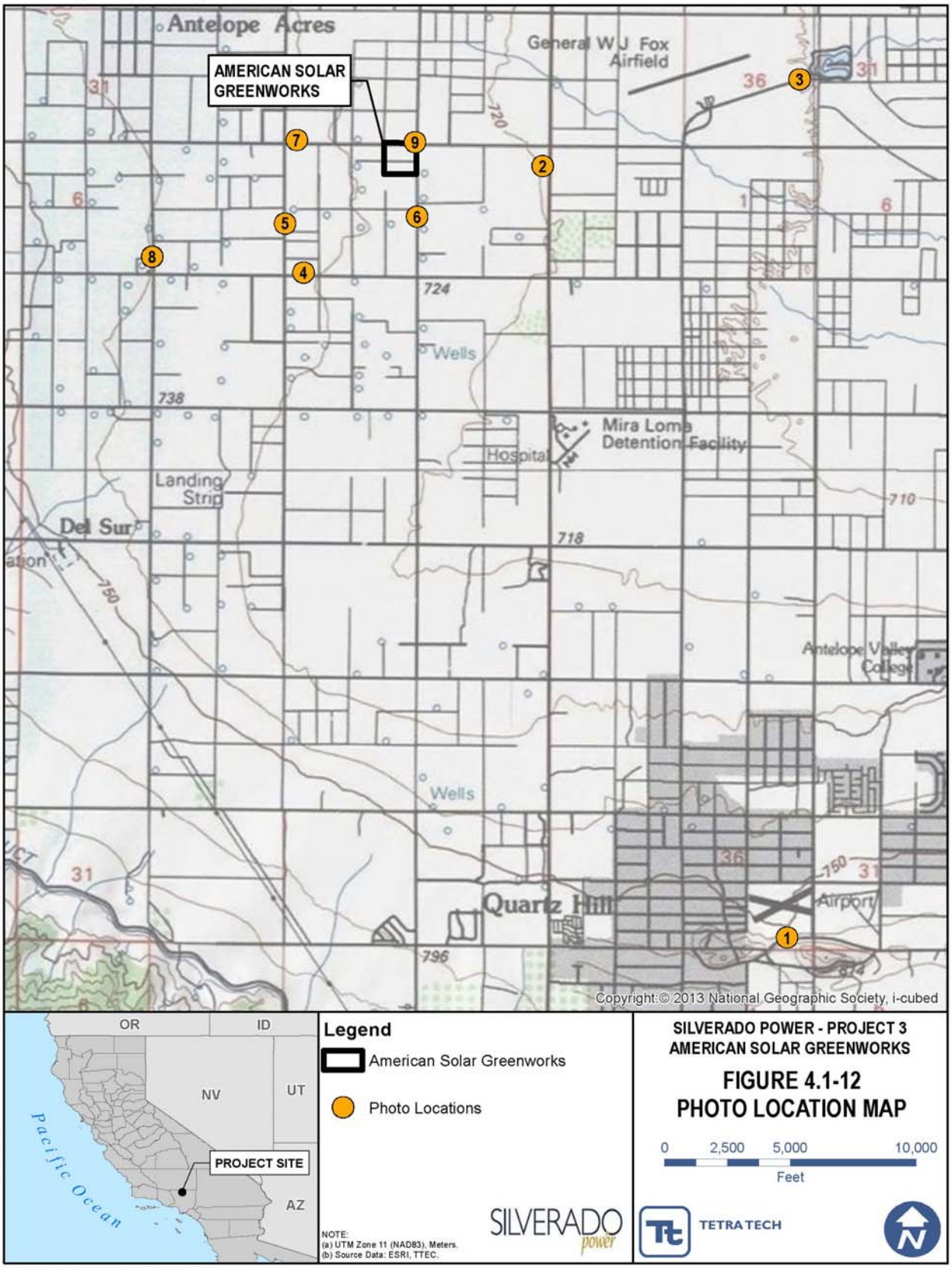

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Photo 1. Taken from Quartz Hill, looking west to northwest, approximately 6.3 miles southeast of the Project site, looking northwest.

Photo 2. PP002new – Taken from Foxy's Southwest Steak House on the west side of 60th Street West, looking east, approximately 1 mile east of the Project site.

Silverado Power – Project 3

Figure 4.1-13 Project 3 Photos 1 and 2

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Photo 3. PP001new – Taken from the southwest corner of Apollo Regional Community Park adjacent to General William J. Fox Field, looking southeast, approximately 3.0 miles east/northeast of the Project site.

Photo 4. Taken from the east side of a residence located approximately 0.1 mile east of the intersection of 80th Street West and West Avenue H, looking northeast, approximately 0.6 mile southwest of the Project site.

Silverado Power – Project 3

Figure 4.1-14 Project 3 Photos 3 and 4

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Photo 5. PP005new – Taken from the northbound lane of 80th Street west, approximately 0.5 mile west/southwest of the Project site, looking north to east.

Photo 6. PP10 – Taken from 70th Street West, less than 0.1 mile south of the Project site, looking north to east.

Silverado Power – Project 3

Figure 4.1-15 Project 3 Photos 5 and 6

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Photo 7. PP007 – Taken from West Avenue G just north of a residence, approximately 0.5 mile west of the Project site, looking east to southeast.

Photo 8. PP08 – Taken from 90th Street West approximately 1.5 miles west/southwest of the Project site, looking northeast.

Silverado Power – Project 3

Figure 4.1-16 Project 3 Photos 7 and 8

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There are no designated scenic highways in the vicinity of the Project site. The City of Lancaster's MEA (City of Lancaster 2009a) identifies 90th Street West, located approximately 1.5 miles west of the site, as a potential scenic route. This roadway has no official designation as a scenic route at this time.

No existing riding or hiking trails were identified within 5 miles of the site. The Project site is not likely to be discernible from riding and hiking in the Foothills Area (including the California Aqueduct Trail), California Poppy Reserve, Quartz Hill, or Little Buttes. A Class III bikeway is located along 70th Street West for 0.5 mile along the eastern Project boundary, and a Class II bike lane is located along West Avenue G for 0.4 mile along the northern Project boundary.

4.1.2.1.4 Project 4

A detailed description of existing conditions for Project 4 is provided in the Antelope Solar Greenworks Aesthetics Impacts Report (Appendix B-1.4). This report also provides photographs of existing conditions. See Figure 4.1-17 for a Photo Location Map for Project 4. Existing conditions at the site are summarized below.

The site is located in the west/central portion of the Antelope Valley approximately 8 miles west of Lancaster on 256 acres previously used for agricultural production. Trees are limited to field lines and roadways and the vegetation that exists on site consists of mostly non-native species. The site slopes slightly southeast with an elevation change of approximately 45 feet, but appears very flat. A ranch home compound is located at the corner of West Avenue J and 87th Street West. Man-made features on the Project site include two-track and dirt roads. Portal Ridge, which is part of the San Gabriel Mountains foothills, is prominent in views to the south from the site. This ridge is characterized by a jagged, horizontal line of coarse hills and complex drainages rising approximately 1,200 feet above the proposed site. Views to the north and east reveal a predominantly flat landscape, and very little topographic variation is visible. The jagged ridgeline of the Tehachapi Mountains is visible in the distance in views to the north from the proposed site. Views of the San Gabriel Mountains foothills, which are located approximately 3.5 miles south of the site, dominate the view to the south.

Rural development and public infrastructure in the landscape include farms, rural residences, agricultural fields, high-voltage power lines, PV solar fields, electrical distribution lines, roadways, and the Antelope Substation. The site is bounded roughly by 97th Street West to the west, West Avenue H-8 to the north, 85th Street West to the East, and West Avenue J to the south. Photos 2 through 5 (Figures 4.1-18, 4.1-19, and 4.1-20) show various views towards the site from local roads surrounding the area. Disturbance is evident. A PV solar field is located adjacent to the western project boundary, on both sides of West Avenue I. A second PV solar field is located approximately 1.6 miles south of the southern boundary of the Project site. The site is located within 0.5 mile of the Antelope Substation, an approximately 90-acre substation located at West Avenue J and 95th Street West. The Antelope Substation is a major substation, and several high-voltage transmission lines and electric distribution lines connected to the Antelope Substation are located in the vicinity of the Project site. A 66 kV transmission line crosses APN 3218-001-003 northeast to southwest. The transmission line is constructed from a mixture of H-frame and lattice towers approximately 75 feet in height. Electric distribution lines

are located along West Avenue I, Lancaster Blvd, 95th Street West, West Avenue J, and 90th Street West.

Development proximate to the site is mostly rural in nature. There are several rural ranch residences located directly adjacent to, or within 1 mile of the site. Several of the ranch residences have trees planted around them that would provide some degree of vegetative screening from the proposed SGF. A 35-acre subdivision is located approximately 0.25 miles north and 0.5 mile east of the site, and is surrounded by a brick wall approximately 6 feet in height.

It is highly unlikely that the SGF would be discernible from Little Buttes or Quartz Hill, which are both located over 6 miles from the Project site. Even though viewpoints from Little Buttes and Quartz Hill are at higher elevations than the site, from this distance the SGF would fade into the flat landscape. Photo 6 (Figure 4.1-20) shows a view from Quartz Hill in the direction of the Project site. As shown from the photo, features beyond the residential developments in Lancaster are not discernible. The SGF is not likely to be discernible from the California Poppy Reserve, located approximately 6 miles west/northwest of the site. Photo 8 (Figure 4.1-21) shows a view towards the site from the top of the Valley Vista Trail in the Poppy Reserve. The Antelope Substation, an approximately 90-acre facility just south of the site, is not discernible from this location, therefore it is highly unlikely that the SGF would be discernible from this distance. The SGF would be visible from certain locations in the Foothills Area, including portions of the California Aqueduct trails. Photo 7 (Figure 4.1-21) provides a view from a picnic shelter located along the California Aqueduct, adjacent to Johnson Road.

There are no designated scenic highways in the vicinity of the Project site. The City of Lancaster's MEA (City of Lancaster 2009a) identifies 90th Street West and West Avenue K (between 90th Street West and 110th Street West) as potential scenic routes. These roadways have no official designation as scenic routes at this time. 90th Street West is located adjacent to the site, and West Avenue K is located approximately 1 mile south of the site.

Riding and hiking trails in the vicinity of the site include trails in the Foothills Area (including the California Aqueduct Trail) and trails in the California Poppy Reserve. Class III bikeways are located along West Avenue I, West Avenue J, and 90th Street West that would border the Project site for 0.1 mile along West Avenue I, 0.4 mile along West Avenue J, and 0.5 mile along 90th Street West. For approximately 0.1 mile along the bikeways following West Avenue I and 90th Street West, the solar modules would be located on both sides of the road.

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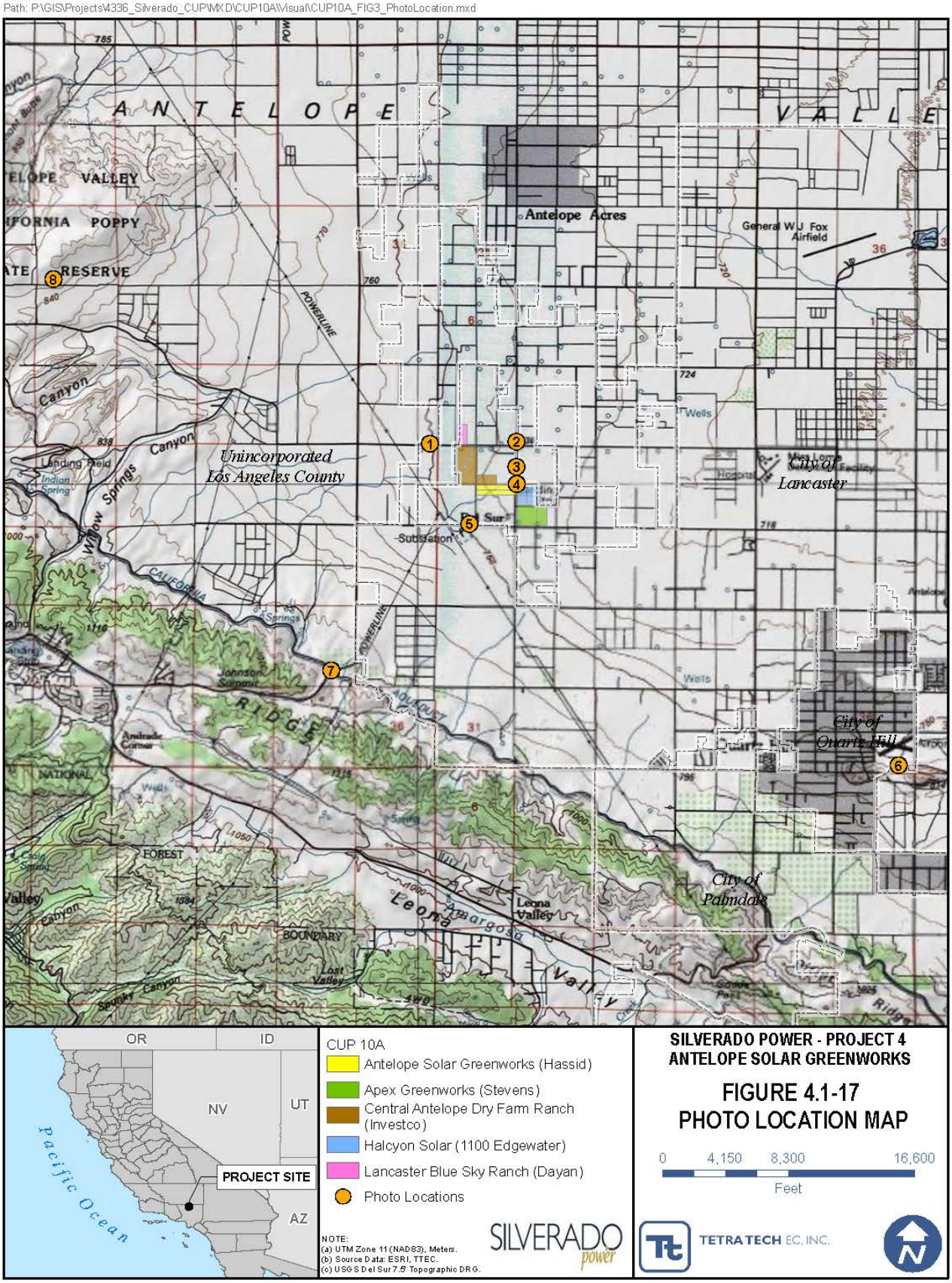

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Photo 1. PP24 – Taken from eastbound lane of West Avenue I, approximately 400 feet west of 100th Street West and 0.3 miles east of the Project site, looking east to southeast.

Photo 2. PP28 – Taken from northwest side of 90th Street West/West Avenue I Intersection approximately 0.5 miles north and 0.5 miles east of the Project site, looking south to southwest.

Silverado Power – Project 4

Figure 4.1-18 Project 4 Photos 1 and 2

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Photo 3. PP19 – Taken from southbound lane of 90th Street West approximately 0.1 mile north of the Project site, looking south to southwest.

Photo 4. PP30 – Taken from the intersection of 90th Street West and Lancaster Blvd., immediately adjacent to the Project site, looking south to southwest.

Silverado Power – Project 4

Figure 4.1-19 Project 4 Photos 3 and 4

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Photo 5. PP23 – Taken from eastbound West Avenue J, across the street from the Antelope Substation, approximately 0.4 miles south and 0.6 miles west of the Project Site.

Photo 6. PP02 – Taken from Quartz Hill, looking west to northwest, approximately 5.5 miles southeast of the Project site, looking northwest

Silverado Power – Project 4

Figure 4.1-20 Project 4 Photos 5 and 6

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Photo 7. PP04 – Taken from Picnic Site at the California Aqueduct adjacent to Johnson Road (110th Street W) approximately 3 miles southwest of the Project site, looking northeast.

Photo 8. PP16 – Taken from the top of the Valley Vista Trail in the Antelope Valley California Poppy Reserve, approximately 5.8 miles northwest of the Project site.

Silverado Power – Project 4

Figure 4.1-21 Project 4 Photos 7 and 8

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4.1.2.1.5 Project 5

A detailed description of existing conditions for Project 5 is provided in the Silver Sun Greenworks Aesthetics Impacts Report (Appendix B-1.5). This report also provides photographs of existing conditions. See Figure 4.1-22 for a Photo Location Map for Project 5. Existing conditions at the site are summarized below.

The Project site is located in the west/central portion of the Antelope Valley, and it is flat, sloping gradually downwards from southwest to northeast. The site is fallow agricultural land, and is currently vacant. The existing site is currently open land in a rural area, and is typical of the surrounding landscape. The visual quality of the site is low. The site itself does not have unique or rare features, or hold special significance. The topography is uniform and flat. Vegetation is uniform and consists of non-native grasses and short shrubs. Two man-made drainage features were observed. A wash runs east/west down the center of the site. Two-track marks are visible on aerial photographs on the site. An electric distribution line is located across the street from the site, on the north side of West Avenue I. A high-voltage transmission line with lattice towers is located adjacent to the Project site's eastern boundary. Portal Ridge, which is part of the San Gabriel Mountains foothills, is prominent in views to the south from the site. This ridge is characterized by a jagged, horizontal line of coarse hills and complex drainages rising approximately 1,200 feet above the proposed site. Views to the east and west are of a predominantly flat landscape, and very little topographic variation is visible. The jagged ridgeline of the Tehachapi Mountains is visible in the distance in views to the north from the proposed site.

Rural development and public infrastructure in the landscape include farms, rural residences, agricultural fields, high-voltage power lines, PV solar fields, electrical distribution lines, roadways, and a large substation (the Antelope Substation). Existing PV solar fields are located approximately 1.8 miles east and 3.9 miles southeast of the Project 5 site. Development proximate to the site is rural in nature. The closest residence is associated with a farm located approximately 380 feet to the west of the site along 120th Street West. The residence building is surrounded by tall trees, and symmetrical rows of planted trees occur between the residence and 120th Street West. There are several other rural residences located within 1 mile of the site along local roads. Most residences have a restricted view of the site because of surrounding vegetation. Other residences, including some east of the site along 110th Street West, would not have full vegetative screening.

Photos 1 through 3 (Figures 4.1-23 and 4.1-24) show various views towards the site from local roads surrounding the area. The site is bordered by West Avenue I to the north, and 120th Street West to the west. Both West Avenue I and 120th Street West are visible in Photo 1 (Figure 4.1-23). 120th Street West is a tan/buff colored dirt road, and West Avenue I is a two-lane light to medium gray roadway. 120th Street West and other dirt roads in the area of the Project site are lightly travelled by area residents. West Avenue I provides access from the Lancaster area to the California Poppy Reserve and the western edge of the Antelope Valley. Travelers on West Avenue I represent the majority of potential viewers of the proposed SGF. Travelers along West Avenue I may include local residents, tourists, recreational travelers, business travelers, and commercial drivers.

It is highly unlikely that the SGF would be discernible from Little Buttes or Quartz Hill, which are both located over eight miles from the site. Even though viewpoints from Little Buttes and Quartz Hill are at higher elevations than the Project site, from this distance the proposed Project would fade into the flat landscape. Photo 6 (Figure 4.1-25) shows a view from Quartz Hill in the direction of the site. As is seen from the photo, individual features and patterns beyond the residential developments in Lancaster are not discernible.

The SGF would be visible from certain locations in the Foothills Area, including portions of the California Aqueduct trails, and may be visible from the California Poppy Reserve. A representative photograph of the Foothills Area looking towards the site is provided in Photo 4 (Figure 4.1-24). The California Poppy Reserve is located approximately 2.6 miles northwest of the proposed site. Photo 5 (Figure 4.1-25) was taken from the top of the Valley Vista Trail, in the center of the reserve.

There are no designated scenic highways in the vicinity of the Project site. The SGF may be visible from 90th Street West and Avenue K between 90th Street West and 110th Street West, which are identified as potential scenic routes in the City of Lancaster's MEA. 90th Street West is located 2.5 miles east of the site at approximately the same elevation. West Avenue K is situated at a slightly higher elevation (approximately 130 feet) than the site, and approximately 1.6 miles southeast.

Riding and hiking trails in the vicinity of the site include trails in the Foothills Area (including the California Aqueduct Trail) and trails in the California Poppy Reserve. As shown in Photos 4 and 5 (Figures 4.1-24 and 4.1-25), the Project site would be visible from some portions of these trails, but topography would screen the Project site from view in other locations. A Class III bikeway is located along West Avenue I, adjacent to the northern border of the Project site for approximately 0.5 mile.

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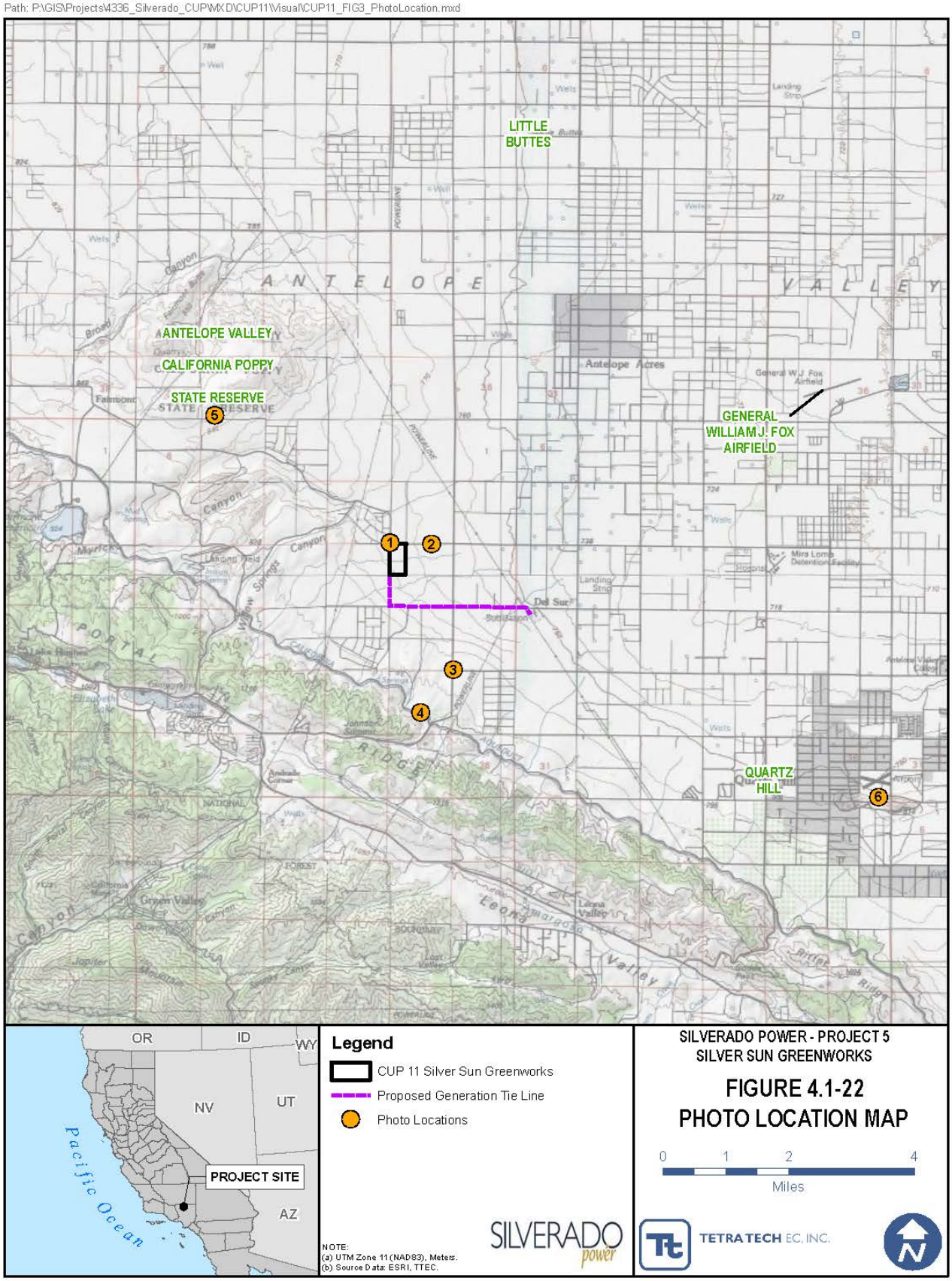

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Photo 1. Taken from northwest side of 120th Street W/West Avenue I intersection, looking southeast across the Project site.

Photo 2. Taken from the south side of West Avenue I, approximately 0.2 mile east of the Project site, looking west/southwest.

Silverado Power – Project 5

Figure 4.1-23 Project 5 Photos 1 and 2

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Photo 3. Taken from the northeast side of the West Avenue K/110th Street West intersection, looking west to northeast, approximately 1.6 miles south/southeast of the Project site.

Photo 4. View from the Foothills Area looking towards the Project site. Photo taken from the trail along the north side of the California Aqueduct, approximately 2.3 miles south of the Project site, looking west to east.

Silverado Power – Project 5

Figure 4.1-24 Project 5 Photos 3 and 4

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Photo 5. View from the top of the Valley Vista Trail, in the center of the California Poppy Reserve, 3.9 miles south/southeast of the Project site, looking northeast to southwest.

Photo 6. View from Quartz Hill in the direction of the Project (west to northeast), from approximately 8.0 miles southeast of the Project site.

Silverado Power – Project 5

Figure 4.1-25 Project 5 Photos 5 and 6

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4.1.2.1.6 Project 6

A detailed description of existing conditions for Project 6 is provided in the Lancaster WAD Aesthetics Impacts Report (Appendix B-1.6). This report also provides photographs of existing conditions. See Figure 4.1-26 for a Photo Location Map for Project 6. Existing conditions at the site are summarized below.

The site for Project 6 is located in the west/central portion of the Antelope Valley, and it is flat with very little variation in topography. The site was previously used for agricultural operations, and is now fallow. Two-track marks are visible from aerial photographs where vehicles have been used onsite. A small man-made irrigation ditch runs east/west through the center of the site. Desert playa features were identified throughout the Project site, with cracked clay soils and evidence of pooling (dehydrated algal mats/cryptobiotic crusts/salt deposits). Man-made alterations to the landscape within the boundary of the Project site include the two-track marks on the site, the man-made irrigation ditch, and an old agricultural basin in the southern portion of the site. Views of the landscape immediately around the Project 6 site reveal a predominantly flat landscape, and very little topographic variation is visible. The foothills of the San Gabriel Mountains are visible in the distance to the far south of the site. The jagged ridgeline of the higher-elevation Tehachapi Mountains is prominent in views to the north/northwest from the proposed site. The mountain ridges to the north and south are characterized by a jagged, horizontal line of coarse hills and complex drainages.

Photos 1 through 5 (Figure 4.1-27 through Figure 4.1-29) show various views towards the site from local roads surrounding the area. The closest residences are located northwest of the site along 35th Street West. From aerial photographs it appears that three other residences are located within 1 mile of the site along 35th Street West, West Avenue D, and West Avenue D-8. In the absence of tall landforms and topographic features, visibility of the surrounding landscapes from these locations is limited by vegetation and distance. Photo 1 (Figure 4.1-27) shows a view of the site from the southwest side of the West Avenue D and 35th Street West intersection, and most closely approximates the view of the Project site from the closest residences. Photo 2 (Figure 4.1-27) shows the site from approximately 0.25 miles away from the southeast intersection of West Avenue D and 30th Street West. Photo 3 (Figure 4.1-28) shows the area from the southeast side of West Avenue D/40th Street West (0.5 mile away).

There are several larger-scale facilities or developments within 5 miles of the site. The Lancaster Water Reclamation Plant, a large water treatment plant, and a railroad are located on the northeast side of California State Highway 14/West Avenue D interchange. A mobile home community is located adjacent to the northbound lanes of the Antelope Valley Freeway approximately 1.5 miles southeast of the site (on the opposite side of the highway). An airport (General William J. Fox Airfield) and a small park (Apollo Community Regional Park) are located approximately 2.3 miles south/southwest of the site. The SGF would not be visible from the interior of Apollo Community Regional Park due to vegetative screening. Clusters of rural “ranchette” style developments are located 4 to 5 miles west and northwest of the site, and developed areas associated with the City of Rosamond are located approximately 5 miles north of the site.

Additional modifications to the landscape are prominent in the area immediately surrounding the proposed Project site. A communication tower is located north of the residences located on the west side of 35th Street West. A 12.47 kV distribution line is adjacent to the southern border of the site on the south side of West Avenue D, and additional distribution lines are located along 35th Street West (leading to the residences northwest of the site). The poles from this distribution line are visible in Photos 1 and 2 (Figure 4.1-27).

The Antelope Valley Freeway is a four-lane, divided highway that runs north/south approximately 1 mile east of the site. West Avenue D borders the site to the south, and is a two-lane blacktop road. Several large trucks (semis) were observed travelling on West Avenue D during the field visit.

The proposed SGF would not likely be visible from any of the scenic resource locations identified by the City of Lancaster. The Antelope Valley is extremely flat, which limits the visibility of the Project unless the viewer is located in a superior position (at an elevation higher from the object/location being viewed). Photos 6 through 8 (Figures 4.1-29 and 4.1-30) show representative views of the Antelope Valley from elevated locations in the Little Buttes area, Foothills Area, and California Poppy Reserve. These photographs demonstrate how visibility is limited from elevated viewpoints by distance and the flat landscape. Even from a superior viewing position at Little Buttes, a viewer is not likely to be able to distinguish the site from a 6-mile distance. If the SGF was discernible from that distance, it would not appear dissimilar to an agricultural field in shape, and would largely fade into the flat landscape.

There are no designated scenic highways in the vicinity of the Project site. The site is located approximately 1 mile east of the intersection of West Avenue D with the Antelope Valley Freeway. Although the Antelope Valley Freeway is not officially designated as a scenic route, it is mentioned in the MEA as a potential scenic route for its long-range views of the surrounding mountains and close-in views of open desert lands (City of Lancaster 2009a). Photos 4 and 5 (Figures 4.1-28 and 4.1-29) show views from the Antelope Valley Freeway looking towards the site. Travelers on the Antelope Valley Freeway and West Avenue D (California State Highway 138) represent the majority of potential viewers of the proposed SGF. These travelers include local residents, tourists, recreational travelers, business travelers, and commercial drivers. The SGF would be less noticeable on the Antelope Valley Freeway than it would be from West Avenue D, because the site is located 1 mile west of the freeway separated by an expanse of open desert. Each route provides motorists with expansive views of the Antelope Valley and surrounding mountains because there is little to no topographic enclosure in the valley to limit visibility.

No riding or hiking trails were identified adjacent to the site. The SGF is not likely to be discernible from hiking trails on Little Buttes, located approximately 6 miles north/northwest of the SGF site.

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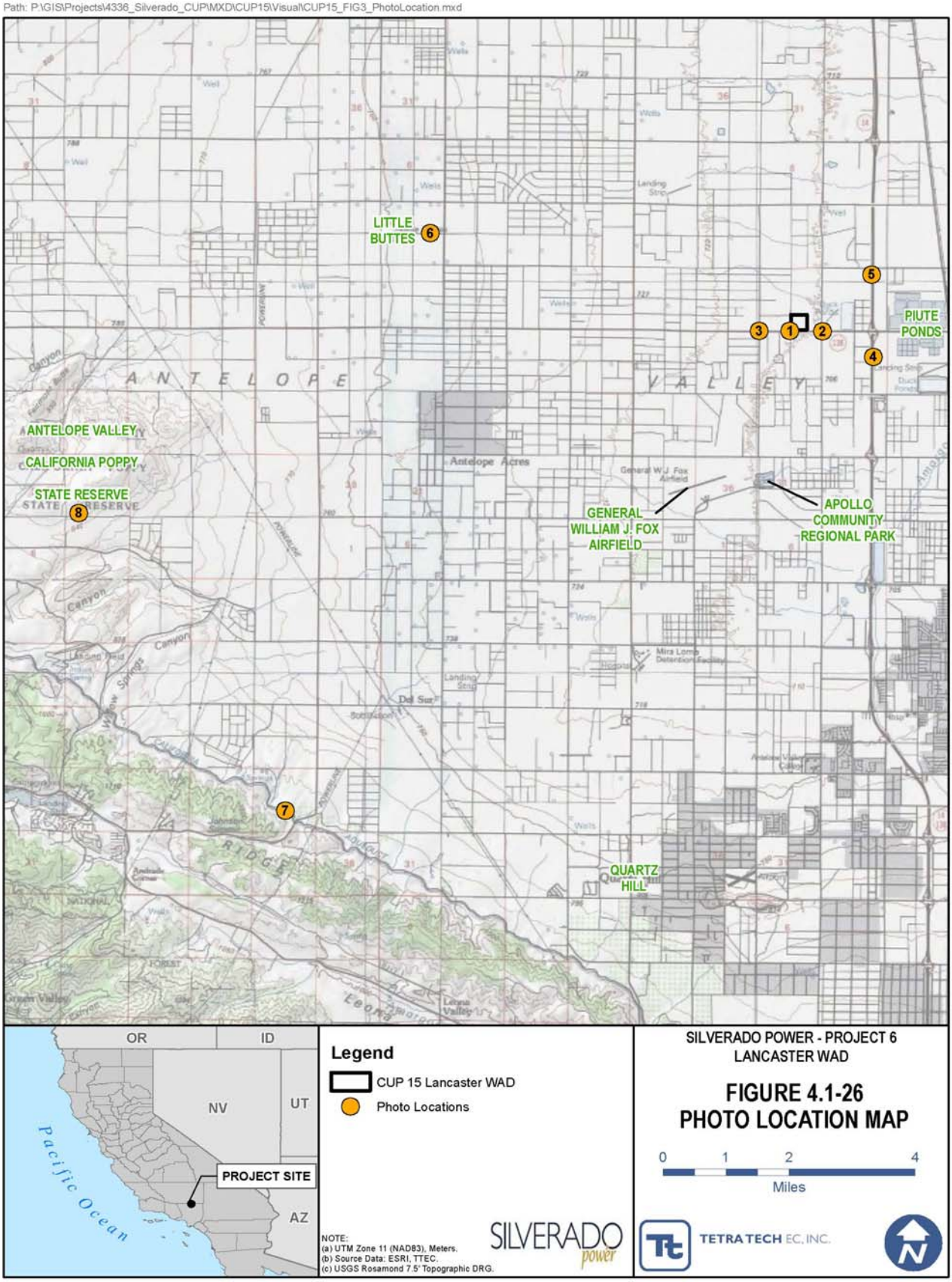

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Photo 1. View of the Project area from the southwest side of the West Avenue D and 35th Street West intersection, and most closely approximates the view of the Project area from the closest residences northwest towards the project.

Photo 2. View of the Project site from approximately a quarter-mile away from the southeast intersection of West Avenue D and 30th Street West northwest towards the project.

Silverado Power – Project 6

Figure 4.1-27 Project 6 Photos 1 and 2

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Photo 3. View of the Project area from the southeast side of West Avenue D/40th Street West (0.5 miles away).

Photo 4. View from the Antelope Valley Freeway, looking towards the Project site.

Silverado Power – Project 6

Figure 4.1-28 Project 6 Photos 3 and 4

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Photo 5. View from the Antelope Valley Freeway, looking towards the Project site.

Photo 6. Representative view of the Antelope Valley from the Little Buttes area, Foothills Area, and California Poppy Reserve.

Silverado Power – Project 6

Figure 4.1-29 Project 6 Photos 5 and 6

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Photo 7. Representative view of the Antelope Valley from the Little Buttes area, Foothills Area, and California Poppy Reserve.

Photo 8. Representative view of the Antelope Valley from the Little Buttes area, Foothills Area, and California Poppy Reserve.

Silverado Power – Project 6

Figure 4.1-30 Project 6 Photos 7 and 8

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4.1.3 Regulatory Setting

4.1.3.1 Federal

There are no federal regulatory requirements pertaining to aesthetics that would apply to these six projects.

4.1.3.2 State

There are no state regulatory requirements pertaining to aesthetics that would apply to these six projects.

4.1.3.3 Local

4.1.3.3.1 County Land Use Plans and Guidance

Development in the Project areas is guided by County and local land use plans. Land use plans reviewed for relevant guidelines and policies include the Los Angeles County General Plan, the Antelope Valley Area Plan, and the City of Lancaster General Plan.

4.1.3.3.2 Los Angeles County General Plan

The Los Angeles County General Plan (Los Angeles County 1980) included the following goal and policy relevant to visual resources:

- General Goals and Policies, Goal 15: Protect areas that have significant natural resources and scenic values, including significant ecological areas, the coastal zone, and prime agricultural lands.
- Conservation and Open Space Goals and Policies, Policy 15: Protect the visual quality of scenic areas including ridgelines and scenic views from public roads, trails, and key vantage points.

The Los Angeles County General Plan also identifies officially designated scenic highways, and divides proposed scenic highways into first- and second-priority proposed scenic highways. First priority routes recommended for further study include the Antelope Valley Freeway, located approximately 1 mile east of the closest Project site, Project 6. There are no second-priority routes in the vicinity of the proposed Projects.

4.1.3.3.3 Antelope Valley Area Plan

The Project sites are located within the boundaries of the planning area for the Antelope Valley Areawide General Plan (Los Angeles County 1986). The areawide plan contains the following policy relevant to visual resources:

- Policy 22: Minimize environmental degradation by enforcing controls on sources of pollutants (including visual pollution) and noise.

Visual pollution is not defined by the general plan, but typically includes dust, smog, trash, or visual clutter.

4.1.3.3.4 Los Angeles County Rural Outdoor Lighting District Ordinance

The Project sites are located within the Los Angeles County Rural Outdoor Lighting District, and must comply with the requirements of the Los Angeles County Rural Outdoor Lighting District Ordinance. The lighting ordinance mandates prohibition on certain types of lighting within the Rural Outdoor Lighting District, and sets guidelines and standards for outdoor lights. Regulations and guidelines applicable to the SGF projects include:

- Section 22.44.530 prohibits the use of drop-down lenses, mercury vapor lights, ultraviolet lights, searchlights, laser lights, or other outdoor lighting that flashes, blinks, alternates, or moves;
- Section 22.44.450 provides general development standards, including:
  - Limits on lights installed above 15 feet in height in residential, agricultural, open space, and watershed zone districts to a manufacturer's maximum output rating of no greater than 400 lumens;
  - Outdoor lighting shall cause no unacceptable light trespass;
  - Outdoor lighting shall be fully shielded;
  - Maximum height of outdoor light fixtures as measured from the finished grade to the top of the fixtures are 20 feet for property located in agricultural zones and 35 feet for property located in an industrial zone unless a height is otherwise permitted by the Director of Regional Planning through site plan review (if the applicant demonstrates that a higher light fixture would reduce the total number of light fixtures needed at the involved site and/or would reduce the light trespass of the outdoor lighting; and
  - Outdoor lighting shall be maintained in good repair and function as designed with shielding securely attached to the outdoor lighting.

Note that Projects 1, 2, 3, 4, and 5 are located in agricultural zones. Project 6 is located in the Desert Mountain (D-2) zone, which is considered an industrial zone according to Los Angeles County Code of Ordinances Section 22.32.

- Section 22.44.550 provides additional standards for industrial uses that are applicable to the proposed projects:
  - Outdoor lighting must be turned off between 10:00PM and sunrise every day unless access is needed. Security or safety lighting is allowed after hours only if:
    - Fully-shielded motion sensors are used to turn the outdoor lighting on after 10:00 p.m., and these sensors turn the outdoor lighting off automatically no more than 10 minutes after the involved area has been vacated; or
    - Where the use is commercial or industrial, at least 50% of the total lumen levels for the outdoor lighting are reduced, or 50 percent of the total number of outdoor light fixtures are turned off between 10:00 p.m. and sunrise;

Outdoor lighting shall use automatic control devices or systems to turn the outdoor lighting off so as to comply with the applicable hours of operation requirements. These systems shall have backup capabilities so that, if power is interrupted, the schedule programmed into the device or system is maintained for at least seven days.

4.1.4 Significance Criteria

The following significance criteria are interpreted from the Los Angeles County Environmental Checklist Form and correspondence with Los Angeles County included in Appendix B-1.1. These criteria form the basis for the analysis of each Project's potential impacts.

a) Would the project have a substantial adverse effect on a scenic vista?

b) Would the project be visible from or obstruct views from a regional riding or hiking trail?

c) Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

d) Would the project substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features?

e) Would the project create a new source of substantial light or glare which will adversely affect day or nighttime views in the area?

4.1.5 Impact Analysis Methods

Using the technical reports provided for each Project site in Appendix B-1, this section of the EIR summarizes the environmental settings and potential impacts associated with each individual site, and identifies the cumulative impacts of the Projects.

The methodology for the visual resource analyses conducted for each Project site consisted of the following steps:

- Desktop study to identify potential scenic areas
- Field visit
- Photographic simulations and contrast ratings
- Analysis of Los Angeles County Environmental Checklist Questions

The text below provides an overview of each step in the methodology. A full description is provided in the technical reports for each Project site, included in Appendix B-1.

4.1.5.1 Identification of Potential Scenic Areas

Potential scenic areas were identified prior to the field visit so they could be evaluated and photographed. Potential scenic areas were identified from a review of maps, local land use plans, county land use plans, and relevant laws and regulations.

Los Angeles County provided the Los Angeles County Environmental Checklist Form (included in Appendix B-1 along with correspondence from Los Angeles County) for use in the aesthetic impact analysis. The form identifies aesthetic considerations and categories of scenic resources that must be addressed in a CEQA analysis, including scenic highways; scenic highways or resources designated by local land use plans; scenic highways or corridors designated by cities adjacent to or near the Project site; significant ridgelines; Hillside Management Areas (as defined by Los Angeles County Code Title 22, Section 22.56.215); riding and hiking trails; trees, rock outcroppings, and historic buildings within a state scenic highway; and undisturbed land on the Project sites or in the vicinity of the site. No Hillside Management Areas or significant

ridgelines occur on any of the Project sites, and these resources are not addressed in this section of the EIR.

Guidance contained in question (a) in the Aesthetics Section of the Environmental Checklist requires consideration of scenic resources designated by local land use plans or by cities adjacent to or near the project site. The City of Lancaster's Master Environmental Assessment (MEA) (City of Lancaster 2009a) and the City of Lancaster's General Plan (City of Lancaster 2009b) were used to identify specific scenic resources in the area. Although the Projects are located in unincorporated Los Angeles County outside municipal boundaries, they are inside the "Sphere of Influence" identified in the MEA. Scenic resources are defined by the MEA as "those unique visual features that provide attractive views either into or from the study area" (City of Lancaster 2009a). The individual SGFs may be visible from three of the five scenic areas identified in the MEA: the Foothills Area, Little Buttes, and Quartz Hill.

- The Foothills Area is the northern edge of the San Gabriel Mountains. The area between the Angeles National Forest and the Antelope Valley provides many trails for hiking and biking. Trails along the California Aqueduct provide access for hiking, biking, and fishing. These trails provide visitors with expansive views of the surrounding mountains and Antelope Valley. The MEA identifies a visual buffer area extending from the Foothills Area into the valley, but does not provide specific direction for management of the visual buffer area.
- Little Buttes is located approximately 7.5 miles west of the Antelope Valley Freeway, and 1.5 miles north of West Avenue D. Little Buttes is a butte (hill) rising from the flat desert landscape, and is crossed by a number of hiking trails that are not formally marked.
- Quartz Hill is a hill surrounded by residential development within the unincorporated community of Quartz Hill, immediately south of the City of Lancaster. Quartz Hill rises over 200 feet above the surrounding community and is located approximately 2.7 miles west of the Antelope Valley Freeway along West Avenue M/Columbia Way.

The proposed SGFs would not be visible from Piute Ponds and Little Rock Wash, the other two scenic resources identified in the MEA, which are not addressed further in this EIR. The Piute Ponds are located on Edwards Air Force Base east of the Antelope Valley Freeway. Access is restricted, and special permission is required to enter the area. The Piute Ponds are a low-lying area consisting of several shallow amorphous ponds on the southern edge of Rosamond Dry Lake (University of California, Santa Barbara 2009). SGFs will not be visible from Piute Ponds due to distance and screening by terrain, infrastructure (including a waste water treatment plant, railroad, and the Antelope Valley Freeway) and vegetation. The proposed SGFs would also not be visible from Little Rock Wash, located approximately 7.3 miles east of the Antelope Valley Freeway, and east of the City of Lancaster due to distance and screening by vegetation and infrastructure. Little Rock Wash is one of the larger washes in the Antelope Valley, and is considered a Significant Ecological Area (City of Lancaster 2009a).

The MEA also mentions the scenic value of the Antelope Valley California Poppy Reserve, a state natural reserve located west of the Sphere of Influence. The Poppy Reserve receives the majority of its visitors during the spring and early summer months when the poppy flowers that are common to the area are in bloom.

The MEA mentions the Joshua tree as the most well-known desert plant in the Antelope Valley, with desert and desert woodland plant communities being of significant local and regional value. The Lancaster General Plan identifies local views of the surrounding buttes, Quartz Hill, and long distance panoramas of the San Gabriel Mountains and desert expanses as visual/scenic resources.

The MEA also identifies several roadways that could potentially serve as scenic routes in the future, but currently have no formal designation. These include the following:

- Antelope Valley Freeway, for long-range views of the San Gabriel Mountains to the southwest, south, and southeast, and far-off views of the San Bernardino Mountains to the southeast and the Tehachapi Mountains to the northwest. To the north this route provides close-in views of open desert lands.
- Avenue K between 110th Street West and 90th Street West, for views of the San Gabriel Mountains to the south and of the Portal Ridge foothills to the southwest.
- Avenue M between the Antelope Valley Freeway and 60th Street West, for views of the San Gabriel Mountains to the south and Quartz Hill.
- 60th Street West between Avenues K and M, for views of Portal Ridge to the west and the San Gabriel foothills to the south.
- 90th Street West, for long-range views of the San Gabriel Mountains to the south and southwest, close-in views of the open desert in the northern portion of the valley and of the Tehachapi Mountains to the northwest.

The City of Lancaster's Master Plan of Trails and Bikeways (City of Lancaster 2012), GoogleEarth, and various other online resources were consulted to identify bikeways and trails.

4.1.5.2 Field Visit

To properly assess the existing visual character of the landscapes areas surrounding the proposed SGFs, a 2-day visit to the proposed Project sites and the surrounding area was conducted. Photos were taken at and around each of the sites, in potential scenic or sensitive viewing areas identified during the desktop study, and in locations around the Antelope Valley to record representative landscapes. During the field visit, the visual resource specialist visited the area around Piute Ponds and Little Rock Wash to verify that the Projects would not be visible from these locations.

4.1.5.3 Photographic Simulations and Contrast Ratings

When assessing the potential visual impacts of a proposed project, it is important to compare the visual characteristics of existing landscapes in the project's viewshed with the visual characteristics of specific project components that would be visible in those landscapes. The Bureau of Land Management (BLM) visual contrast rating process (Handbook 8431-1 Visual Resource Contrast Rating) was used as the basis for reviewing potential impacts to visual resources. Because the proposed SGFs are on private land and not subject to BLM regulations, a form adapted from the BLM's Visual Contrast Rating Worksheet (BLM Form 8400-4) was used to assess the degree of contrast the proposed Projects would introduce to the existing landscape.

The visual contrast rating worksheet uses landscape character elements and distance zones to describe the landforms (including water), vegetation, and man-made features that currently exist in the landscape using the basic landscape character elements of form, line, color, and texture:

- Form—The shape and mass of landforms or structures
- Line—The edge of shapes or masses, silhouettes, or bands
- Color—The property of reflecting light of a particular intensity of wavelength that the eye can see
- Texture—The nature of the surface of landforms, vegetation, or structures

When the visual resources in an area are described, the distance between objects or landforms and any potential viewer has a direct influence on that description. Objects or features that are closer to a viewer's location would appear more detailed and more dominant than those that are further away. The following distance zones are used in landscape descriptions:

- Foreground/Middleground—Areas immediately in front of to 5 miles away from an observer
- Background—Areas from 5 to 15 miles away from an observer
- Seldom Seen—Beyond background or can't see

Descriptions of the existing landscape and of the landscape after a proposed project is implemented are compared to identify the level of contrast a project's components may introduce. Photographic simulations are often created to help visualize the impacts to the existing landscape and to aid in the description of the proposed Project components. These simulations are created using a combination of Geographic Information Systems (GIS) and current 3D software to ensure accuracy in the locations of the proposed Project components. Photographic simulations are included as Figures 4.1-31 through 4.1-38.

4.1.6 Impacts Analysis

As described in Section 4.0 of this EIR, the following sections discuss potential impacts from construction and operation of each of the six Project sites on a criterion by criterion basis for each aesthetics criterion described above in Section 4.1.3.2.

4.1.6.1 Project Impacts – Criterion A: Would the project have a substantial adverse effect on a scenic vista?

4.1.6.1.1 Project 1 and Gen-tie Line

The proposed Project site would be visible from trails and vistas associated with Little Buttes and the Little Buttes Trail, and may be visible from other scenic resources including the California Poppy Reserve, the Pacific Crest Trail, and 90th Street West, which is designated a potential scenic route by the City of Lancaster. The proposed Project 1 gen-tie lines would be undergrounded from the proposed Project site, under the adjacent road, to a riser next to an existing pole (see additional description in Section 3.4.1).

Simulation.

Existing.

Silverado Power – Project 1

Figure 4.1-31 Project 1 Photo Simulation – From Little Buttes

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Simulation.

Existing.

Silverado Power – Project 2

Figure 4.1-32 Project 2 Photo Simulation

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Simulation.

Existing.

Silverado Power – Project 3

Figure 4.1-33 Project 3 Photo Simulation

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Simulation. Post-construction photographic simulation from picnic shelter along the California Aqueduct Trail in the Foothills Area.

Existing. Existing conditions from picnic shelter along the California Aqueduct Trail in the Foothills Area.

Silverado Power – Project 4

Figure 4.1-34 Project 4 Photo Simulation

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Simulation. Post-construction photographic simulation from the southbound lane of 90th Street West.

Existing. Existing conditions from the southbound lane of 90th Street West.

Silverado Power – Project 4

Figure 4.1-35 Project 4 Photo Simulation

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Simulation.

Existing.

Silverado Power – Project 5

Figure 4.1-36 Project 5 Photo Simulation

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Simulation. From West Avenue D (Highway 138) and 30th Street West looking west at project.

Existing. From West Avenue D (Highway 138) and 30th Street West looking west at project.

Silverado Power – Project 6

Figure 4.1-37 Project 6 Photo Simulation

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Construction Impacts

Construction activities and equipment would be noticeable from vistas on top of and around Little Buttes because of to the close proximity of the SGF. During construction of the SGF, disturbance areas would appear as large patches of fine, buff-colored rock and soil. Construction activities may produce dust visible from Little Buttes and 90th Street West, but impacts would be mitigated to less than significant with implementation of the fugitive dust plan (Mitigation Measure A-1). Any trash, debris, and waste would be removed from the Project site during construction and the site screened or partially screened by fencing. Adverse visual effects from construction would be temporary and last only during the construction time period, and would be less than significant with mitigation (Mitigation Measures A-1, A-2 and A-3).

Operations

After construction, the proposed SGF would be visible from Little Buttes, and may be visible from higher elevations in the California Poppy Reserve where views are not blocked by terrain. From a superior viewing position along the Pacific Crest Trail, a viewer is not likely to be able to distinguish the SGF at a distance of 8 miles away from the Project site. If the SGF was visible from that distance, it would not appear dissimilar to an agricultural field in shape and size after construction.

A post-construction visual simulation (Figure 4.1-31) was developed from a viewpoint on top of Little Buttes at approximately 0.7 mile southeast and 100 feet higher in elevation than the southeast corner of the site. A contrast rating (provided in Appendix B-1.1) was conducted to evaluate the degree of contrast that would be introduced to the landscape at this viewpoint by the proposed SGF. The overall contrast introduced to the landscape at this viewpoint was evaluated to be moderate. No changes are anticipated to landforms. The visual effects of vegetation removal would be screened or mostly screened by the solar modules, and this change would not be visible from this perspective. The installation of the solar modules would create a weak contrast in terms of form, and a moderate contrast in terms of line, color, and texture. The rectangular shape of the solar field mimics the shape of an agricultural field, but the lines of the solar field are stronger and more distinct than the lines along the edges of agricultural fields. The color of the solar field is darker than the surrounding fallow agricultural fields. The texture of the solar field is smoother and more evenly spaced than the randomly stippled vegetation that exists on the landscape, but the difference is not pronounced. The lines created by the edges of the solar field are more distinct than the lines created by field edges, and create a moderate contrast on the landscape. In addition, other electric infrastructure, including the high-voltage transmission lines and a large wind farm, are also visible from the site. Because this existing electrical infrastructure is also visible from scenic vistas from the Pacific Crest Trail and Little Buttes, and other PV solar fields may be visible from the same scenic vistas (Antelope Valley Solar Phase I) the SGF would not significantly degrade views from nearby scenic vistas.

The SGF would be located immediately adjacent to the Little Buttes Trail, which is located along West Avenue B. A 10-foot vegetative buffer is proposed for screening along the southern and western project boundaries (Mitigation Measure A-4) to mitigate views from the Little Buttes

Trail. Impacts to views along the Little Buttes Trail are considered less than significant with mitigation.

90th Street West is considered a potential scenic route by the City of Lancaster, and is located approximately 1.3 miles east of the site at a slightly lower elevation. Because of the low profile of the solar modules and the level to lower elevation of 90th Street West compared to the site, where visible the SGF would likely fade into the flat landscape once it is constructed and not dominate the view.

Even where visible, the Project would not be a dominant element in the landscape unless the viewer is situated directly adjacent to the facility. At eight feet tall, the PV modules are relatively short, and given their design, which is to absorb sunlight instead of reflecting it, the modules would not be highly reflective.

Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.1.2 Project 2 and Gen-tie Line

The proposed Project would be visible from the California Poppy Trail, the Foothills Area, and West Avenue K, which is considered a potential scenic route by the City of Lancaster. The proposed Project would also be prominent from the Class III bikeway located along 110th Street West when cyclists are adjacent to the Project site. The Project 2 gen-tie line is planned to be undergrounded to the extent practicable, but there may be aboveground components and poles up to 60 feet tall in areas where there are existing transmission facilities (see additional description in Section 3.4.1). New overhead or underground gen-tie lines are proposed within the City of Lancaster. These lines are located on the east side of 110th Street W and the south side of W Avenue J. Aboveground gen-tie lines are not prohibited within the City's jurisdiction.

Construction Impacts

Construction activities and equipment would be noticeable from vistas in the Foothills area and West Avenue K where not screened by topography and/or vegetation. During construction of the SGF, disturbance areas would appear as large patches of fine, buff-colored rock and soil. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan or Mitigation Measure A-1. Any trash, debris, and waste would be removed from the Project site during construction and the site screened or partially screened by fencing (Mitigation Measures A-2 and A-3). Adverse visual effects from construction would be temporary and last only during the construction time period, and would be less than significant with mitigation (Mitigation Measures A-1, A-2, and A-3).

Operations Impacts

A post-construction photographic simulation was completed from a viewpoint in the Foothills Area, and is provided in Figure 4.1-32. The photograph was taken from the California Aqueduct Trail, approximately 0.6 miles south of the Project site. A contrast rating was conducted from the viewpoint shown in Figure 4.1-32 to assess the level of contrast that would be introduced by the proposed Project from this vantage point. The contrast rating form is provided in

Appendix B.1-2. The overall level of contrast introduced by the proposed Project was evaluated as low from this viewpoint. The Project is screened by terrain from many viewpoints. No noticeable modifications to landforms are anticipated. Vegetation removal would be screened by the installation of solar modules. The introduction of solar modules would create a low contrast in form, line, color, and texture from existing conditions. The horizontal lines and colors of the solar field mimic those found in the existing environment. The Project, including the gen-tie line, would not dominate views from the trail given the degree of modification that has already been introduced to the landscape, including roads, electrical infrastructure (existing PV solar fields, transmission lines, substations, and distribution lines, and because the Project would be largely screened by rolling terrain that exists between the trail and the Project. The Project may be more noticeable from higher elevations in the Foothills area where not screened by terrain. Overall impacts to this viewpoint are less than significant.

A second post-construction photographic simulation was completed from a viewpoint at the intersection of 110th Street West and West Avenue K, and is provided in Figure 4.1-33. The photo simulation provided in Figure 4.1-33 was taken adjacent to the Project site on the opposite side of 110th Street West. A contrast rating was conducted from the viewpoint shown to assess the level of contrast that would be introduced by the proposed Project. The contrast rating form is provided in Appendix B.1-2. The overall level of contrast introduced by the proposed Project was evaluated as moderate from this viewpoint. The SGF would not obstruct views to or from any scenic resources because of the low profile of the solar modules. The rows of modules mimic the horizontal lines of the flat landscape, and repeat colors that already exist in the existing environment. Contrast is rated at moderate due to the prominence of the solar panels in the immediate foreground.

A 10-foot vegetative buffer is proposed along 110th Street West to mitigate views from West Avenue K (Mitigation Measure A-4), the California Poppy Trail, and the Class III bikeway. Impacts to views to these resources are considered less than significant with mitigation listed in Section 4.1.7.

4.1.6.1.3 Project 3 and Gen-tie Line

The proposed Project may be visible from 90th Street West, a potential scenic route identified by the City of Lancaster, where not screened by topography, vegetation, or buildings. The proposed Project would also be visible from a Class III bikeway located along 70th Street West and a Class II bike lane located along West Avenue G. The proposed Project 3 gen-tie line would be undergrounded from the proposed Project site to a riser next to an existing pole (see additional description in Section 3.4.1).

Construction Impacts

The proposed SGF components would be located approximately 1.5 miles east of 90th Street West. Construction activities are not likely to be noticeable from 90th Street West due to distance. Any visible dust produced during construction would be mitigated to less than significant with implementation of the fugitive dust plan (Mitigation Measure A-1). Any trash, debris, and waste would be removed from the Project site during construction and the site screened or partially screened by fencing (Mitigation Measures A-2 and A-3.). The constructed

SGF would not be dominant in motorists' views unless directly adjacent to the site. A simulation was developed from less than 0.1 mile south of the site boundary along 70th Street West (Figure 4.1-34). From this distance, the SGF is visible but does not dominate the view due to the low-profile of the solar panels. From a 1.5 mile distance, the SGF would be much less noticeable and would largely fade into the flat landscape. Adverse visual effects from construction would be temporary and last only during the construction time period, and would be less than significant with mitigation (Mitigation Measures A-1, A-2, and A-3).

Operations Impacts

After construction, it is highly unlikely that the SGF would be discernible from Little Buttes, Quartz Hill, the Foothills Area, or the California Poppy Reserve, all of which are located over 5 miles from the site. Even from a superior viewing position at these locations, a viewer is not likely to be able to distinguish the SGF from over 5 miles away from the site. If it was visible, at such a distance the constructed SGF would not appear dissimilar to an agricultural field in shape and size.

The proposed Project would be dominant in the view from the Class III bikeway located along 70th Street West and the Class II bike lane along West Avenue G. A 10-foot vegetative buffer is proposed along 70th Street West, West Avenue G, and the north and east-facing Project site boundaries closest to West Avenue G, to mitigate the views from the bikeway (Mitigation Measure A-4). Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

Project 4 and Gen-tie Line

The proposed Project 4 would be visible from trails and vistas associated with the Foothills Area, and may be visible from other scenic resources including 90th Street West, which was identified by the City of Lancaster as a potential scenic route, and Class III bikeways located along West Avenue I, 90th Street West, and West Avenue J. Other scenic resources identified by the City of Lancaster are located a sufficient distance away such that the Project would fade into the horizon line and not be discernible. The proposed Project 4 gen-tie lines would be undergrounded from the proposed Project site, under the adjacent roads, to a riser next to an existing pole (see additional description in Section 3.4.1).

Construction Impacts

Construction activities and equipment would be noticeable from vistas on top of and around Foothills Area due to the close proximity of the SGF, from 90th Avenue West, and from the Class III bikeways. During construction of the SGF, disturbance areas would appear as large patches of fine, buff-colored rock and soil. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Any trash, debris, and waste would be removed from the Project site during construction and the site screened or partially screened by fencing. Adverse visual effects from construction would be temporary and last only during the construction time period, and less than significant with mitigation (Mitigation Measures A-1 through A-3).

Operations Impacts

After construction, the SGF would be visible from the Foothills Area. Even from a superior viewing position at Quartz Hill or the California Poppy Reserve, a viewer is not likely to be able to distinguish the Project site from eight miles away from the Project site. If the SGF was visible from that distance, it would not appear dissimilar to adjacent existing PV solar fields, an agricultural field or the Antelope Substation in size, shape, and color.

A post-construction photographic simulation was completed from a viewpoint in the Foothills Area, and is provided in Figure 4.1-35. The photograph was taken from a picnic area along the California Aqueduct Trail, east of Johnson Road and approximately 2.8 miles southwest of the site. A contrast rating was conducted from the viewpoint shown in Figure 4.1-35 to assess the level of contrast that would be introduced by the proposed SGF from the scenic area. The contrast rating form is provided in Appendix B-1.4. The overall level of contrast introduced by the proposed Project was evaluated as low from this viewpoint. No noticeable modifications to landforms are anticipated. The removal of vegetation (the shrubs on the south side of the road) would introduce a weak level of contrast compared with existing conditions. The solar modules would create a low contrast in form, line, color, and texture from existing conditions. The SGF would appear similar to the existing PV solar fields located adjacent to the proposed SGF. Compared to agricultural areas, the SGF would appear slightly darker in color, but the form of the solar field and the lines created by the edges of the solar field mimic the appearance of an agricultural field from this distance and vantage point. The SGF, including the gen-tie line, would not dominate views from the Foothills Area given the degree of modifications that have already been introduced to the landscape, including roads, electrical infrastructure (PV solar fields, transmission lines, substations, and distribution lines), and agricultural fields.

The SGF would be located directly adjacent to 90th Street West (a potential scenic route and a Class III bikeway), and the Class III bikeway associated with West Avenue J, but would not be dominant in views unless directly adjacent to the site. The post-construction photo simulation provided in Figure 4.1-36 was taken approximately 0.5 mile north of the site, from the southbound lane of 90th Street West just north of the 90th Street West/West Avenue I intersection. A contrast rating was conducted from the viewpoint shown in Figure 4.1-36 to assess the level of contrast that would be introduced by the SGF. The contrast rating form is provided in Appendix B-1.4. The overall level of contrast introduced by the proposed SGF was evaluated as low from this viewpoint. From this distance and viewpoint, the solar modules are barely visible as thin lines on the horizon, and are mostly blocked by residential buildings and vegetation. The lines and colors created by the solar modules at this distance are not dissimilar to other lines and colors that exist in the landscape.

A 10-foot vegetative buffer is proposed to mitigate views along Project site boundaries facing West Avenue I, a portion of 95th Street West, 90th Street West, and West Avenue J (see Site Plan in Section 3.4.1). This vegetative buffer is also Mitigation Measure A-4. Landscaping is only proposed for the sections of the potential scenic route and bikeways located immediately adjacent to the proposed Project. The SGF would likely be visible from eastbound West Avenue K between 90th Street and 110th Street. West Avenue K is valued for its views to the south of the San Gabriel Mountains and Portal Ridge foothills. Because the SGF is located at least 1 mile north of West Avenue K, it would not impede views to the south of Portal Ridge.

Also, the Antelope Substation, high-voltage transmission lines, and existing PV solar fields are situated in between West Avenue K and the proposed SGF. Impacts to views along West Avenue K are therefore not significant. Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.1.4 Project 5 and Gen-tie Line

The proposed Project would be visible from the trails and vistas associated with the Foothills Area, and may be visible from higher elevations in the California Poppy Reserve where views are not blocked by terrain. If the SGF was visible from that distance, it would not appear dissimilar to an agricultural field or the Antelope Substation in size and shape after construction. Other scenic resources identified by the City of Lancaster are located a sufficient distance away such that after construction the SGF would fade into the horizon line and not be visible The SGF may be visible from sections of West Avenue K and 90th Street West during and after construction. These roads were identified by the City of Lancaster as potential scenic routes. A Class III bikeway is located along West Avenue I adjacent to the northern boundary of the proposed Project. The Project 5 gen-tie line is planned to be undergrounded to the extent practicable, but there may be aboveground components and poles up 60 feet tall in areas where there are existing transmission facilities (see additional description in Section 3.4.1). New overhead or underground gen-tie lines are proposed within the City of Lancaster, located on the east side of 110th Street W and south side of W Avenue J. Aboveground components are not prohibited within the City of Lancaster jurisdiction.

Construction Impacts

Construction activities and equipment may be noticeable from vistas on top of and around the Foothills Area. During construction of the SGF, disturbance areas would appear as large patches of fine, buff-colored rock and soil. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Any trash, debris, and waste would be removed from the Project site during construction and the site screened or partially screened by fencing (Mitigation Measures A-2 and A-3). Adverse visual effects from construction would be temporary and last only during the construction time period, and less than significant with mitigation (Mitigation Measures A-1, A-2, and A-3).

Operations Impacts

The SGF would not impact any designated scenic routes. The SGF may be visible during and after construction from sections of 90th Street West and West Avenue K, which are identified by the City of Lancaster as potential scenic routes. Existing vegetation and infrastructure (including high-voltage transmission lines, PV solar fields, residences/farms, and the Antelope Substation) are located in between the site and 90th Street West and would provide some degree of visual screening during and after construction. Views from 90th Street West to the mountains would not be impeded. West Avenue K is considered a potential scenic route for views to the south of the San Gabriel Mountains and Portal Ridge foothills, and the SGF would not impede these views. High-voltage transmission lines and ranches/farms are located in between Avenue K and the site and would provide some degree of visual screening. Because of the distance, even if the SGF is visible from this section of Avenue K, it would not be prominent in the landscape.

After construction, the SGF would be visible from the Foothills Area but would not be a dominant element in the landscape unless the viewer was directly adjacent to the facility, as shown in Figure 4.1-37. At 8 feet tall, the PV modules are relatively short, and given their design, which absorbs sunlight instead of reflecting it, the modules would not be highly reflective. From viewing points not directly adjacent to the site and at approximately the same elevation as the SGF, it would fade into the flat landscape and not dominate the view after construction. In addition, other electric infrastructure, including the Antelope Substation and several high-voltage transmission lines, are also located within two miles of the site. Because this existing electrical infrastructure is also visible from scenic vistas such as the Foothills Area, the proposed Project and gen-tie line would not significantly degrade views from nearby scenic vistas. The SGF would be prominent in views along the Class III bikeway located along West Avenue I. However, a 10-foot vegetative buffer would be located along the northern boundary of the Project site for 0.5 mile where it is adjacent to the Class III bikeway to screen the view from the bikeway. This vegetative buffer is also Mitigation Measure A-4. Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.1.5 Project 6 and Gen-tie Line

The Proposed Project may be visible from the Antelope Valley Freeway, which was identified by the City of Lancaster as a potential scenic route. The proposed SGF would not likely be discernible from any of the scenic areas identified. Even from a superior viewing position at Little Buttes, a viewer is not likely to be able to distinguish the SGF from six miles away. If the SGF was visible from that distance after construction, it would not appear dissimilar to an agricultural field in size, shape, and color. The proposed Project 6 gen-tie line would be undergrounded from the proposed Project site, under the adjacent road, to a riser next to an existing pole (see additional description in Section 3.4.1).

Construction Impacts

Construction activities at the SGF are not likely to be discernible from scenic resources because of the intervening distance. Construction activities are not likely to be noticeable from the Antelope Valley Freeway due to distance. Any visible dust produced during construction would be mitigated to less than significant with implementation of the fugitive dust plan. Any trash, debris, and waste would be removed from the Project site during construction and the site screened or partially screened by fencing (Mitigation Measures A-2 and A-3). Construction of the proposed Project and gen-tie line would not significantly degrade views from nearby scenic vistas.

Operations Impacts

The proposed SGF components may be visible from the Antelope Valley Freeway, particularly from the southbound lanes north of the West Avenue D intersection, approximately 1 mile east of the site. The Antelope Valley Freeway is identified as a potential scenic route by the City of Lancaster's MEA (City of Lancaster 2009a) for its far-off views of surrounding mountain ranges and close-in views of open desert lands. Because of its low profile, the SGF would not obstruct far-off view of surrounding mountain ranges. Because the site is separated from the freeway by 1 mile of open desert lands, it also would not interrupt the close-in views of the desert.

Even where visible, the proposed SGF and gen-tie line would not be a dominant element in views from the Antelope Valley Freeway during or after construction, and from most locations along West Avenue D. As seen in the post-construction visual simulation in Figure 4.1-38, from 0.25 miles away, the solar modules would form a thin line that mimics the natural horizontal lines of the flat landscape, and would not be a dominant landscape feature. Drivers along the Antelope Valley Freeway would be moving at a high rate of speed, and mostly watching the road. Passengers on the Antelope Valley Freeway would be more likely to notice the SGF, but it would not be in view for longer than a few seconds because of the speed. The SGF would be more prominent to drivers and passengers along West Avenue D because observers would be adjacent to the solar field. Drivers and passengers along West Avenue D would be adjacent to the SGF for 0.25 mile for less than 30 seconds if driving at the 55 mile per hour speed limit. Because the flat landscape limits far-off views of the SGF and gen-tie line, the facility would not be dominant in the landscape unless the vehicle is directly adjacent to the SGF during or after construction. A 10-foot vegetative buffer is proposed to mitigate views along the southern Project boundary for 0.25 mile where it is adjacent to West Avenue D. This vegetative buffer is also Mitigation Measure A-4. Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.2 Project Impacts – Criterion B: Would the project be visible from or obstruct views from a regional riding or hiking trail?

4.1.6.2.1 Project 1 and Gen-tie Line

No trails are located on the site, therefore construction or operation of the SGF and gen-tie line would not cause the vacation of any portion of any trail nor would it obstruct expansive views from any trails. The proposed Project would be visible from the Little Buttes Trail along its southern boundary, trails associated with the Little Buttes Area, and may be visible from trails inside the California Poppy Reserve and from the Pacific Crest Trail. As shown in Figure 4.1-31, the solar field would create a weak contrast in the existing landscape from the Little Buttes trails located approximately 0.7 miles southeast of the site. The Poppy Reserve and Pacific Crest Trail are located 4.7 miles and eight miles away from the site, respectively. If visible at these distances, the SGF would not be a dominant element in the landscape and would appear as a rectangular pattern on the flat landscape, not dissimilar in form to other rectangular shaped land uses such as agricultural fields and the Antelope Substation.

Construction Impacts

Construction activities at the SGF would be noticeable from the Little Buttes trails, but are not likely to be discernible from other scenic resources because of distance. Construction activities may produce visible dust that is visible in the distance, but impacts would be mitigated to less than significant with implementation of the fugitive dust plan. Construction impacts are anticipated to be less than significant due to their temporary nature.

Operations Impacts

The SGF would be located immediately adjacent to the Little Buttes Trail, which is located along West Avenue B. A 10-foot vegetative buffer is proposed for screening along the southern and western project boundaries to mitigate views from the Little Buttes Trail.

Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.2.2 Project 2 and Gen-tie Line

No designated trails are located on the Project site; therefore the Project and gen-tie line would not cause the vacation of any portion of any trail. Because the solar modules are low-profile, the Project would not obstruct expansive views. The proposed Project would also be prominent from the Class III bikeway located along 110th Street West when cyclists are adjacent to the Project site.

The proposed Project and gen-tie line may be visible from elevated portions of riding or hiking trails that are not screened by terrain, including portions of the California Aqueduct trails, and from other trails in the Foothills Area. A photographic simulation and contrast rating were conducted from a view point in the Foothills Area (see Figure 4.1-32, and Contrast Rating evaluation in Appendix B-1.2). As discussed in question (a), the level of contrast that would be introduced by the proposed Project from the scenic area is low. The Project is largely screened by terrain. No noticeable modifications to landforms are anticipated. Vegetation removal would be screened by the installation of solar modules. The introduction of solar modules would create a low contrast in form, line, color, and texture from existing conditions. The horizontal lines and colors of the solar field mimic those found in the existing environment. The Project and gen-tie line would not dominate views from the trail given the degree of modifications that have already been introduced to the landscape, including roads, electrical infrastructure (transmission lines, substations, and distribution lines, and because the Project would be largely screened by rolling terrain that exists between the trail and the Project. The Project may be more noticeable from higher elevations in the Foothills area where not screened by terrain.

Construction Impacts

Construction activities may produce visible dust that is visible in the distance, but impacts would be mitigated to less than significant with implementation of the fugitive dust plan. Construction activities and equipment would be noticeable to trail users in the foothills area where the Project site and associated gen-tie line are not screened by terrain. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan. Adverse visual effects from construction would be temporary and last only during the construction time period, and less than significant due to their temporary nature.

Operations Impacts

A 10-foot vegetative buffer is proposed along 110th Street West to mitigate views from West Avenue K, the California Poppy Trail, and the Class III bikeway. Impacts to views to these resources are considered less than significant with implementation of Mitigation Measure A-4. Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.2.3 Project 3 and Gen-tie Line

No trails are located on the site, therefore the SGF would not cause the vacation of any portion of any trail nor would it obstruct expansive views from any trails. The proposed Project would also be visible from a Class III bikeway located along 70th Street West and a Class II bike lane located along West Avenue G. The SGF is not likely to be discernible from riding and hiking trails in the Foothills Area (including the California Aqueduct Trail), California Poppy Reserve, Quartz Hill, or Little Buttes. Construction activities may produce visible dust that is visible in the distance.

The Project and gen-tie line would be visible from proposed Class III bikeways located along 70th Street West and West Avenue G. The SGF would not be dominant in bicyclists' views unless directly adjacent to the site. A post-construction simulation was developed from less than 0.1 mile south of the site boundary along 70th Street West (Figure 4.1-34). From this distance, the SGF is visible but does not dominate the view due to the low-profile of the solar panels. When a bicyclist is adjacent to the SGF, the views towards the west may be partially obscured for a short time while the rider passes the Project site, but views towards the east would not be obscured.

Construction Impacts

Construction activities and equipment would be noticeable to bicyclists. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Adverse visual effects from construction would be temporary and last only during the construction time period and less than significant due to their temporary nature, but impacts would be mitigated to less than significant with implementation of the fugitive dust plan.

Operations Impacts

The constructed SGF and gen-tie line would not degrade the scenic character around the bikeway. The SGF is not out-of-character when considering the context of the surrounding landscape. Rural development and public infrastructure are common in the landscape around the site and include rural residences, an airport, agricultural fields, residential developments, and electrical infrastructure such as electric distribution lines and high-voltage transmission lines. In the larger area, electrical infrastructure such as PV solar fields, transmission lines, and substations are common. Because the views would only be temporarily obstructed while the biker is passing the site (approximately 0.5 mile), and because vegetative screening is proposed along 70th Street West and West Avenue G, impacts would be less than significant with mitigation (Mitigation Measure A-4).

Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.2.4 Project 4 and Gen-tie Line

No trails are located on the site, therefore the SGF would not cause the vacation of any portion of any trail nor would it obstruct expansive views from any trails. The proposed Project would be visible from trails and vistas associated with the Foothills Area, and may be visible from other

scenic resources including 90th Street West which was identified by the City of Lancaster as a potential scenic route, and Class III bikeways located along West Avenue I, 90th Street West, and West Avenue J.

Construction Impacts

Any visible dust produced during construction would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. During and after construction, the SGF and gen-tie line may be visible from elevated portions of riding or hiking trails that are not screened by terrain, including portions of the California Aqueduct trails, and from other trails in the Foothills Area. A photographic simulation and contrast rating were conducted from a view point in the Foothills Area (see Figure 4.1-35, and Contrast Rating evaluation in Appendix B-1.4). As discussed in Question a), the level of contrast that would be introduced by the SGF from the scenic area is low. The solar modules would appear similar to the existing solar field located adjacent from to the Project site. The introduction of solar modules would create a low level of contrast in form, line, color, and texture from existing conditions. The SGF would appear slightly darker than the surrounding landscape, but the form of the solar field and the lines created by the edges of the solar field mimic the appearance of the existing solar field or an agricultural field from this distance and vantage point. Construction activities at the SGF would be noticeable by bicyclists when they are adjacent to the site. Construction activities may produce dust that is visible in the distance, but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. The SGF and gen-tie line would not dominate views from the Foothills Area given the degree of modification that has already been introduced to the landscape, including roads, electrical infrastructure, and agricultural fields. Impacts associated with the construction of Project 4 and its gen-tie line would be mitigated to less than significant levels.

Operations Impacts

The Project and gen-tie line would be visible from the proposed Class III bikeways located along West Avenue I, 90th Street West, and West Avenue J (Figure 4.1-36). The SGF would not be dominant in bicyclists' views unless directly adjacent to the site. When a bicyclist is adjacent to the constructed SGF, the views may be partially obscured for a short time while the rider passes the Project site. Because the views would only be temporarily obstructed while the biker is passing the site, and because a 10-foot vegetative is proposed on Project boundaries facing the bikeways (see Site Plan in Section 3.4.1), construction impacts are anticipated to be less than significant with mitigation due to their temporary nature (Mitigation Measure A-4).

The SGF and gen-tie line would not degrade the scenic character around the bikeways because it is not out-of-character when considering the context of the surrounding landscape. Rural Development and public infrastructure are common in the landscape around the site and include rural residences, agricultural fields, residential developments, and electrical infrastructure such as existing PV solar fields, electric distribution lines, and high-voltage transmission lines. Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.2.5 Project 5 and Gen-tie Line

No trails are located on the site. Therefore, the SGF would not cause the vacation of any portion of any trail. The SGF would be visible from the Class III bikeway is located along West Avenue I adjacent to the northern boundary of the proposed Project.

Construction activities and the constructed SGF and above ground gen-tie line components may be visible from elevated portions of trails that are not screened by terrain, including portions of the California Aqueduct trails, other trails in the Foothills Area, and the California Poppy Reserve (Figure 4.1-37). Even where visible, the Project would not be a dominant element in the landscape unless the viewer is directly adjacent to the facility. No regional hiking or riding trails were identified directly adjacent to the proposed facility. As the viewing distance increases, the facility would become less prominent and eventually fade in the flat landscape. From elevated viewpoints, the site would appear as an outline or shape on the flat landscape horizon. Although the constructed SGF may be visible from regional trails, from these distances it would appear as a rectangular pattern on the landscape, not dissimilar in form and size to other rectangular shaped land uses such as agricultural fields and the Antelope Substation. The proposed SGF would not obstruct views from trails because of the low profile of the solar modules. Because the landscape around the site has already experienced extensive rural development, the proposed SGF would not significantly degrade the scenic character around trails, even if it is visible from those trails.

Construction Impacts

Construction activities at the SGF would be noticeable from the Foothills Area, but are not likely to be discernible from most locations because of distance and topographic screening. Construction activities may produce visible dust that is visible in the distance, but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Construction impacts are anticipated to be less than significant with mitigation due to their temporary nature.

Operations Impacts

The SGF and above ground gen-tie line components would be prominent in views along the Class III bikeway located along West Avenue I. A 10-foot vegetative buffer, or Mitigation Measure A-4, is proposed to be located along the northern boundary of the Project site for 0.5 mile where it is adjacent to the Class III bikeway. Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.6.

4.1.6.2.6 Project 6 and Gen-tie Line

No trails are located on the site. Therefore, the SGF would not cause the vacation of any portion of any trail. No riding or hiking trails were identified within 5 miles of the site. The SGF would not obstruct expansive views from any trails, and is not anticipated to be discernible from regional riding or hiking trails in the area (Figure 4.1-38).

Construction

Construction activities may produce visible dust that is visible in the distance, but impacts would be mitigated to less than significant with implementation of the fugitive dust plan (Mitigation Measure A-1).

Operations

If the constructed SGF was visible from regional trails in the distance (more than 5 miles away), it would not appear dissimilar to an agricultural field in size, shape, and color. Overall, the Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.3 Project Impacts – Criterion C: Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

4.1.6.3.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

For Projects 1 – 6 and their associated gen-tie lines, as described in Criterion A above, the proposed SGFs would be not located along or in proximity to a state scenic highway. The proposed SGFs would not substantially damage or impact scenic resources such as trees (including Joshua trees) or rock outcroppings, and there are no historic buildings located in the proposed site. Proposed Projects 1 – 6 would have no impact.

4.1.6.4 Project Impacts – Criterion D: Would the proposed project substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features?

4.1.6.4.1 Project 1 and Gen-tie Line

The proposed Project 1 site is currently a fallow agricultural field, and is typical of the surrounding landscape. The visual quality of the site is low. The site itself does not have unique or rare features, or hold special significance. The topography is uniform and flat. Vegetation is uniform and consists of grasses and short shrubs. No permanent water features occur on the site, and there are no features or characteristics that set the site apart from the surrounding landscape.

Construction Impacts

Construction activities and equipment would be noticeable around the site during construction of the SGF and gen-tie line. During construction, disturbance areas would appear as large patches of fine, buff-colored rock and soil. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Adverse visual effects from construction would be temporary and last only during the construction time period, and would be less than significant due with mitigation measures listed in Section 4.1.7.

Operations Impacts

From elevated locations, the proposed Project and gen-tie line would not dominate the view as shown in Figure 4.1-31. A second simulation for Project 1 was completed from a point along West Avenue B adjacent to the Project site. The simulation is shown in Figure 4.1-32. A contrast rating was conducted from this viewpoint and is included in Appendix D in Appendix B-1.1 to assess the level of contrast that would be introduced by the proposed Project at this viewpoint. According to the contrast rating, the Project can be expected to introduce a strong level of contrast to the landscape from that viewpoint. . Construction of the solar field creates a strong contrast due to the prominent addition of the solar modules adjacent to roadway.

Although a strong contrast is created when the viewer is adjacent to the proposed Project site, the SGF and gen-tie line integrates with the surrounding landscape because of its low, flat profile which mimics the lines of the flat landscape. From distances greater than 0.25 miles, the proposed SGF would largely fade into the flat landscape. The SGF would not be prominent unless the observer is situated directly adjacent to the solar field. Man-made elements are common in the landscape around the site. Electrical infrastructure within the viewshed of the site includes high-voltage transmission lines and distribution lines and a large wind farm in the foothills of the Tehachapi Mountains. Other man-made elements in the landscape include farms and residences. Vegetation and the flat terrain would serve to screen or partially screen the SGF from surrounding residences.

Because other man-made structures including PV solar facilities are common in the vicinity of the site and in the larger Project area, and because the site itself is not characterized by high visual quality, the impact of the SGF and gen-tie line on the existing visual character of the proposed site and its surroundings would be less than significant with mitigation measures listed in Section 4.1.7.

4.1.6.4.2 Project 2 and Gen-tie Line

The proposed Project 2 site is vacant land in a rural area, and is typical of the surrounding landscape. The visual quality of the Project site is low. The Project site itself does not have unique or rare features, or hold special significance. The topography is rolling to flat, sloping upwards towards the foothills of the San Gabriel Mountains. Vegetation is uniform and consists of grasses and short shrubs. No permanent water features occur on the site, and there are no features or characteristics that set the Project site apart from the surrounding landscape.

Construction Impacts

Construction activities and equipment would be noticeable around the site during construction of the SGF. During construction, disturbance areas would appear as large patches of fine, buff-colored rock and soil. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Adverse visual effects from construction would be temporary and last only during the construction time period, and would be less than significant due with mitigation measures listed in Section 4.1.7.

Operations Impacts

Viewers such as nearby residents and travelers would still experience views of the open desert lands and the foothills of the San Gabriel Mountains around the Project site after the solar facility is constructed (Figure 4.1-33).

Even where visible, the proposed Project components would not be a dominant element in the landscape unless the viewer was directly adjacent to the facility. From viewing points further than approximately 0.25 mile from the solar field, at approximately the same elevation, the solar facility would fade into the flat landscape and not dominate the view.

The Project is not out-of-character when considering the context of the surrounding landscape. Rural development and public infrastructure are common in the landscape around the site, which is situated approximately 1.5 miles north/northeast of the Antelope Substation and within two miles of existing PV solar facilities. Several distribution lines and high-voltage transmission lines converge at the Antelope Substation. Other modifications to the landscape include farms and residences.

Because other structures and PV facilities are common in the vicinity of the Project site and in the larger Project area, and because the Project site itself is not characterized by high visual quality, the visual impact of the Project on the existing visual character of the proposed Project site and its surroundings would be less than significant with mitigation measures listed in Section 4.1.7.

4.1.6.4.3 Project 3 and Gen-tie Line

The existing site is vacant land in a rural area, and is typical of the surrounding landscape. The visual quality of the site is low. The site itself does not have unique or rare features, or hold special significance. The topography is uniform and flat. Vegetation is uniform and consists of grasses and short shrubs. No permanent water features occur on the site, and there are no features or characteristics that set the site apart from the surrounding desert landscape.

Construction Impacts

Construction activities and equipment would be noticeable around the site during construction of the SGF. During construction, disturbance areas would appear as large patches of fine, buff-colored rock and soil. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Adverse visual effects from construction would be temporary and last only during the construction time period, and would be less than significant due with mitigation measures listed in Section 4.1.7.

Operations Impacts

Viewers such as nearby residents and travelers on nearby roads would still experience views of the open desert lands around the site after the solar facility is constructed. Even where visible, the proposed components would not be a dominant element in the landscape unless the viewer was situated directly adjacent to the facility. A visual simulation was developed from a point less than 0.1 mile south (approximately 300 feet south) of the site boundary along 70th Street West,

looking north towards the proposed SGF at the same elevation. Existing conditions and the simulation are provided in Figure 4.1-34. A contrast rating form was completed from this viewpoint and is provided in Appendix B-1.2 and Appendix B-1.3.

The overall contrast of the proposed SGF was rated as “weak” from this viewpoint. Although vegetation would be removed under the solar panels, this change would not be visible. The solar panels would form a horizontal line on the landscape that mimics the flat lines of the landscape, and therefore creates only a weak contrast from this perspective. Because of the low profile of the solar panels, views of the Tehachapi Mountains would not be blocked. The grey color and smooth texture of the solar panels does already exist in the landscape, creating a weak contrast. Because the contrast introduced to the landscape from less than 0.1 mile away is considered weak, it is reasonable to assume that the solar facility would largely fade into the flat landscape and not dominate the view from viewpoints further than approximately 0.25 miles away from the site.

Even though the SGF components are out-of-character with the directly adjacent land (which is primarily rural residential), the SGF is not out-of-character when considering the context of the surrounding landscape. Rural developments and public infrastructure are common in the landscape around the site and include rural residences, an airport, agricultural fields, residential developments, and electrical infrastructure such as PV solar fields, electric distribution lines and high-voltage transmission lines. The Project site is located less than 3 miles from other PV solar fields similar in appearance and size.

Because other structures are common in the vicinity of the site and in the larger area, and because the site itself is not characterized by high visual quality, the visual impact of the SGF on the existing visual character of the proposed site and its surroundings would be less than significant. As shown by the simulation in Figure 4.1-34, the SGF would not dominate the landscape from most viewpoints unless the viewer is located directly adjacent to the proposed SGF. Because of the low profile of the solar panels, the SGF would largely fade into the flat landscape. The Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.4.4 Project 4 and Gen-tie Line

The existing site is mostly open land in a rural area, and is typical of the surrounding landscape. The visual quality of the Project site is low. The Project site itself does not have unique or rare features, or hold special significance. The topography is uniform and flat. Vegetation is uniform and consists of grasses and short shrubs. No permanent water features occur on the site, and there are no features or characteristics that set the Project site apart from the surrounding desert landscape.

Construction Impacts

Viewers such as nearby residents and travelers on the West Avenue I will still experience views of the open desert lands around the Project site after the solar facility is constructed (Figure 4.1-35).

Even where visible, the proposed Project components will not be a dominant element in the landscape unless the viewer was directly adjacent to the facility. The solar facility will not significantly impact views from residences in the Westview Estates Subdivision because of screening provided by adjacent homes and the privacy wall surrounding the subdivision. From viewing points further than approximately 0.25 miles from the solar field, at approximately the same elevation, the solar facility will fade into the flat landscape and not dominate the view. A PV solar field is located directly adjacent to the western boundary of the Project site. Other electric infrastructure, including the Antelope Substation and several high-voltage transmission lines, are also located within 0.5 miles of the Project site.

Even though the Project components are not out-of-character with the directly adjacent land, because there is an existing solar field located along the Project site's western boundary (which is primarily rural residential), the Project is not out-of-character when considering the context of the surrounding landscape. Other rural development and public infrastructure are common in the landscape around the site, which is situated approximately 0.4 miles north/northeast of the Antelope Substation. The electrical infrastructure associated with this substation is more complex with varying heights and shapes of equipment, while the proposed Project will appear very uniform throughout the Project site. Several distribution lines and high-voltage transmission lines converge at the Antelope Substation. Other cultural modifications to the landscape include farms and residences. In the larger Project area, electrical infrastructure such as PV solar fields, transmission lines, and substations are common.

Because other cultural modifications structures including an existing PV solar field are common in the vicinity of the Project site and in the larger Project area, and because the Project site itself is not characterized by high visual quality, the visual impact of the Project on the existing visual character of the proposed Project site and its surroundings will be less than significant. The Project would have a less than significant impact with mitigation measures listed in Section 4.1.6.

Construction activities and equipment would be noticeable around the site during construction of the SGF. During construction, disturbance areas would appear as large patches of fine, buff-colored rock and soil. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Adverse visual effects from construction would be temporary and last only during the construction time period, and less than significant due with mitigation measures listed in Section 4.1.7.

Operations Impacts

Viewers such as nearby residents and travelers on the West Avenue I would still experience views of the open desert lands around the Project site after the solar facility is constructed (Figure 4.1-35).

Even where visible, the proposed Project components would not be a dominant element in the landscape unless the viewer was directly adjacent to the facility. The solar facility would not significantly impact views from residences in the Westview Estates Subdivision because of screening provided by adjacent homes and the privacy wall surrounding the subdivision. From

viewing points further than approximately 0.25 miles from the solar field, at approximately the same elevation, the solar facility would fade into the flat landscape and not dominate the view. A PV solar field is located directly adjacent to the western boundary of the Project site. Other electric infrastructure, including the Antelope Substation and several high-voltage transmission lines, are also located within 0.5 mile of the Project site.

The Project components are not out-of-character with the directly adjacent land, because there is an existing solar field located along the Project site's western boundary. Other rural development and public infrastructure are common in the landscape around the site, which is situated approximately 0.4 miles north/northeast of the Antelope Substation. The electrical infrastructure associated with this substation is more complex with varying heights and shapes of equipment, while the proposed Project would appear very uniform throughout the Project site. Several distribution lines and high-voltage transmission lines converge at the Antelope Substation. Other modifications to the landscape include farms and residences.

Because other structures including an existing PV solar field are common in the vicinity of the Project site and in the larger Project area, and because the Project site itself is not characterized by high visual quality, the visual impact of the Project on the existing visual character of the proposed Project site and its surroundings would be less than significant. The Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.4.5 Project 5 and Gen-tie Line

A photographic simulation was created to help visualize the potential impacts to the existing landscape. Figure 4.1-36 shows photographs of the existing conditions and post-construction photographic simulation from a photo point approximately 200 feet northwest of the site, at the intersection of Lancaster Road/West Avenue I, and Fairmont/Neenach Road. This location was selected because most viewers of the proposed Project would be travelers along West Avenue I.

A contrast rating was conducted from the viewpoint shown in Figure 4.1-36 to assess the level of contrast that would be introduced by the proposed Project to landform, vegetation, or structures in terms of major landform characteristics (form, line, color, and texture). The height, bulk, pattern, and scale of the SGF are considerations in the contrast rating process. The contrast rating form is provided in Appendix B-1.5. From this viewpoint, the overall level of contrast introduced by the SGF was evaluated as moderate. No noticeable modifications to landforms are anticipated. The removal of vegetation (the shrubs on the south side of the road) would introduce a weak level of contrast compared with existing conditions. The introduction of solar modules would create a moderate level of contrast compared with existing conditions. Although the solar modules would introduce a new infrastructure element to the landscape, the colors of the modules already exist in the environment, and the horizontal lines created by the rows of solar modules mimic the naturally flat lines of the foreground landscape.

Construction Impacts

Construction activities and equipment would be noticeable around the site during construction of the SGF. During construction, disturbance areas would appear as large patches of fine, buff-

colored rock and soil. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Adverse visual effects from construction would be temporary and last only during the construction time period, and less than significant due with mitigation measures listed in Section 4.1.7.

Operations Impacts

Viewers such as nearby residents and travelers on the West Avenue I would still experience views of the open desert lands around the site after the solar facility is constructed. The residence located closest to the solar facility (along 120th Street West) is separated from the site by rows of planted trees. The solar facility would not significantly impact views from this residence because of screening or partial screening provided by the vegetation.

The SGF is not out-of-character with the surrounding landscape when considering the context of the larger Project area. Rural development and public infrastructure are common in the landscape around the site. The site is located within 2 miles of an existing PV solar field, and approximately 1.9 miles west of the Antelope Substation, which has a footprint that is a similar size and shape compared to the proposed site. The electrical infrastructure on the Antelope Substation is much more complex with varying heights and shapes of equipment, while the SGF would appear very uniform throughout the site. Several distribution lines and high-voltage transmission lines converge at the Antelope Substation. Other modifications in the landscape include farms and residences.

Because other structures including PV solar facilities are common in the vicinity of the site and in the larger Project area, and because the site itself is not characterized by high visual quality, the visual impact of the site on the existing visual character of the proposed site and its surroundings would be less than significant. The Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.4.6 Project 6 and Gen-tie Line

The existing site is currently open land in a rural area, and is typical of the surrounding landscape on the west side of the Antelope Valley Freeway. The visual quality of the site is low. The site itself does not have unique or rare features, or hold special significance. The topography is uniform and flat. Vegetation is uniform and consists of desert scrub. No permanent water features occur on the site, and there are no features or characteristics that set the site apart from the surrounding of the desert landscape.

Construction Impacts

Construction activities and equipment would be noticeable around the site during construction of the SGF. During construction, disturbance areas would appear as large patches of fine, buff-colored rock and soil. Construction activities may produce visible dust but impacts would be mitigated to less than significant with implementation of the fugitive dust plan, or Mitigation Measure A-1. Adverse visual effects from construction would be temporary and last only during the construction time period, and less than significant due with mitigation measures listed in Section 4.1.7.

Operations Impacts

Viewers such as nearby residents and travelers on local roads would still experience views of the open desert lands around the Project site after the solar facility is constructed.

Even where visible, the proposed SGF components would not be a dominant element in the landscape unless the viewer was directly adjacent to the facility. A contrast rating was conducted from the viewpoint shown in Figure 4.1-38 (approximately 0.25 miles east of the site) to assess the level of contrast that would be introduced by the proposed Project to landform, vegetation, or structures in terms of major landform characteristics (form, line, color, and texture). The height, bulk, pattern, and scale of the proposed Project features are considerations in the contrast rating process. According to the contrast rating (provided in Appendix B-1.6), the SGF can be expected to introduce a low level of contrast to the landscape from that viewpoint. No changes to landforms or vegetation would be visible. The SGF would introduce new structures to the area, but the solar panel structures would be low-profile and the lines created would mimic the naturally flat lines of the foreground landscape. The color of the solar modules, which is dark gray at this distance and perspective, already exists in the landscape. From viewing points further than approximately 0.25 miles from the solar field, at approximately the same elevation, the solar facility would largely fade into the flat landscape and not dominate the view.

Even though the SGF components are out-of-character with directly adjacent land (which is primarily rural residential and fallow agriculture), the SGF is not out-of-character when considering the context of the surrounding landscape. Rural development and public infrastructure are common in the landscape around the SGF site, and include an 800-acre water treatment plant, roadways, the Antelope Valley Freeway, communication towers, and rural residences. Wind turbines located at the foot of the Tehachapi Mountains are visible from the site as well. Viewers such as nearby residents and travelers on the Antelope Valley Freeway and West Avenue D would still experience views of the open desert lands around the SGF after the facility is constructed (Figure 4.1-38). A 10-foot vegetative buffer is proposed to mitigate views directly along the southern Project boundary for 0.25 mile where it is adjacent to West Avenue D.

Because other structures including PV solar facilities are common in the vicinity of the site and in the larger Project area, and because the site itself is not characterized by high visual quality, the visual impact of the site on the existing visual character of the proposed site and its surroundings would be less than significant. The Project would have a less than significant impact with mitigation measures listed in Section 4.1.7.

4.1.6.5 Project Impacts – Criterion E: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

4.1.6.5.1 Projects 1, 2, 3, 4, 5 and 6 and Gen-tie Lines

Construction Impacts

Because construction activities would be limited to daylight hours, impacts from nighttime lighting would not occur. Lighting will comply with the Los Angeles County Rural Outdoor

Lighting District Ordinance. Therefore, the impacts would be less than significant with implementation of MM A-5 (see Section 4.1.7).

Operations Impacts

Because of the low height of the solar modules, no significant shadows would be cast upon nearby sensitive land uses. The SGF would not create a significant source of light. Light sources associated with the SGF would be minimal, and would be restricted to that required for nighttime safety and security according to County requirements and would comply with all requirements of the Los Angeles County Rural Outdoor Lighting District Ordinance. Only permitted types of lights would be used and specified height limits employed. Lighting would be installed and directed downward and shielded to avoid light trespass. The amount of light generated by the security lights would be consistent with the provisions of the new Los Angeles County Rural Outdoor Lighting District Ordinance, and would allow less light trespass than existing sources of light produced by man-made structures adjacent to the proposed site, including residences, roadway lights, and other existing nearby facilities. Motion sensors and time limits would be employed per the lighting ordinance.

Project components would introduce minimal amounts of glare to the existing landscape. The PV modules are designed to absorb sunlight, and the glass modules that protect the PV surface are typically formulated glass designed to allow sunlight to pass with minimal reflection. Impacts from new sources of light or glare are expected to be less than significant with Mitigation Measure A-5 (See Section 4.1.7).

4.1.7 Mitigation Measures

Implementation of the following proposed mitigation measures would assure that impacts associated with aesthetics would be reduced to less than significant:

A-1 A Fugitive Dust Control Plan to minimize dust (visual pollution) shall be prepared and implemented.

A-2 The Project site shall be maintained free of debris, trash, and waste during construction.

A-3 The Project site shall be visually screened or partially screened during construction by fencing.

A-4 A landscape plan shall be developed for each Project prior to Project construction that shows the detail of a 10-foot wide screening vegetation buffer intended to screen or partially screen the Project visually from area residents or travelers on nearby roadways. The landscaping and vegetation buffer is shown for each respective Projects in Appendix B-14.

A-5 All lighting shall comply with applicable provisions of the Los Angeles County Outdoor Lighting District Ordinance. Lights shall be limited to types allowed by the ordinance, installed below maximum allowed heights, pointed downwards and shielded to minimize light trespass, and mounted on essential infrastructure rather than on separate light poles except where poles are required by regulation or by governing agency. Lighting will comply with the

hours of operation requirements in the ordinance, and utilize automatic control devices to comply with time limits except where permitted by Los Angeles County. Lighting will be maintained in good repair at all times.

4.1.7.1 Level of Significance After Mitigation

After incorporation of the mitigation measures described above, implementation of the proposed Projects 1 – 6 are expected to have a less than significant impact on scenic resources and aesthetic values.

4.1.8 Cumulative Impacts

As described in Section 4.1.4, individually the six proposed SGF Projects with mitigation can each be expected to have a less than significant impact on aesthetic resources. Other land development projects proposed or under construction in the area, in combination with the six proposed SGF Projects, have the potential to result in cumulative impacts to aesthetics.

The Applicant's Project sites comprise 987.1 acres or 0.6 percent of the total area within the 5 mile radius. Within the 5-mile radius area, there are 20,909 acres of development listed by individual projects in Table 3-7. These development projects, including the Applicant's Projects, comprise 12.6 percent of the area identified in Figure 3-5 and include solar projects, commercial projects, and residential projects.

From elevated viewpoints, the western Antelope Valley appears as a mosaic of agricultural lands, suburban developments, and open land. From a distance, the proposed SGFs would not appear dissimilar to agricultural fields or existing PV facilities in shape and size. The other solar and real estate developments proposed for the western Antelope Valley would not appear dissimilar to existing land use patterns. From level viewpoints, such as those along local roads, solar or residential/commercial developments would not be prominent unless the observer is directly adjacent to the facility. Because of the flat nature of the Antelope Valley landscape, developments would quickly become less prominent as the viewer travels away from them. In addition, the scenic character on the valley floor is generally low. Existing commercial, residential, and energy developments (including substations, high-voltage transmission lines, distribution lines, and generation facilities) are scattered throughout the valley.

A 12.6 percent level of increase in development within 5 miles of each of the Project sites is not anticipated to be significant from elevated or level viewpoints because the proposed developments would appear similar to existing developments in the Antelope Valley, and cover only a very small portion of the land within 5 miles of each proposed Project site. Views of open desert lands would still exist, and the flatness of the landscape would limit the prominence of new developments with increasing distance.

The proposed Projects and other proposed projects within the cumulative impacts study area would be individually required to comply with the Los Angeles County General Plan goals and policies, and the Antelope Valley Area Plan policies, as well as applicable ordinances such as the Los Angeles County Rural Outdoor Lighting District Ordinance, as they are applicable to aesthetic resources, as identified in Section 4.1.3 of this EIR. Any cumulative aesthetic impacts

would be reduced to a level that is less than significant with mitigation by application of these regulations, and mitigation measures listed in Section 4.1.7.

4.1.9 References

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4.2 AGRICULTURE AND FORESTRY RESOURCES

4.2.1 Introduction

The following section provides a discussion of potential impacts of the Projects with regard to agricultural and forestry resources. As part of this discussion, a description of existing agricultural resources and the respective state and county farmland classifications for the development areas are provided. This section focuses on applicable state, regional, and local policies regarding agricultural resources and the conversion of farmland to non-agricultural uses, as well as issues related to the conversion of forest lands to non-forest uses.

4.2.2 Environmental Setting

4.2.2.1 Regional Setting

The proposed Projects and associated transmission lines, where applicable, are located in unincorporated Los Angeles County within the Antelope Valley, which is characterized by a high desert climate environment on the western edge of the Mojave Desert. The Projects are located within the Antelope Valley Planning Area. The Antelope Valley Planning Area is comprised of about 62,772 acres (approximately 40 percent) for agricultural uses (URS 2010) (LA; however, agricultural productivity in the Planning Area has been historically, and is currently, limited by water availability and climatic conditions. Much of the western Antelope Valley has been designated as an Agricultural Opportunity Area (AOA), including the area proposed for development of Projects 1 – 5. However, Project 6 is not located within an AOA. The Projects each have differing historic agricultural uses and current designations.

4.2.2.1.1 Project 1

The Project 1 site was used for irrigated agricultural purposes dating back to at least 1947 and was last irrigated in 1972 (Wildermuth 2011). Based on communications with the current property owner, alfalfa was grown in the early 1960s; however, the property has been vacant with no agricultural production in recent years (Hartshorn 2012). According to the most recent DOC FMMP data, which represents farmland assessments from 2010, all 160 acres of the property were classified as Grazing Land (DOC 2010). Project 1 will interconnect to an existing electrical grid via an approximately 0.5 mile underground gen-tie line, following an existing public ROW, running west from the southwest corner of the property. The gen-tie line will cross through only Grazing Land (DOC 2010). The property is zoned A-1, which does not contain provisions for renewable energy development; however, a zone change application has been submitted to the County of Los Angeles. The property is not under a Williamson Act contract; however, the Project 1 site is located within a designated AOA.

4.2.2.1.2 Project 2

The Project 2 site has no recorded history of irrigated agricultural use according to records dating back to 1947 (Wildermuth 2011). Based on discussions with the current landowner, the property has not been farmed or irrigated for the past 20 years (Chen 2012). Limited sheep grazing has been allowed on the property in recent years (Chen 2012). According to the most recent DOC FMMP data, which represents farmland assessments from 2010, all 157 acres of

the property were classified as Grazing Land (DOC 2010). Project 2 will interconnect to the Antelope Substation via an approximately 1.9 mile gen-tie line, following existing public ROWs. The gen-tie line will cross through only Grazing Land (DOC 2010). The property is zoned A-2 which identifies renewable development as a conditionally permitted use. The property is not under a Williamson Act contract. Project 2 is located within a designated AOA.

4.2.2.1.3 Project 3

The Project 3 site was used for irrigated agricultural purposes dating back to at least 1947 and was last irrigated in 1972 (Wildermuth 2012). Based on communications with the current property owner the land has not been used for agricultural uses, irrigated, or otherwise, in recent years (Demirdjian 2012). According to the most recent DOC FMMP data, which represents farmland assessments from 2010, all 136 acres of the property were classified as Other Land (DOC 2010). The property is zoned A-2 which identifies renewable development as a conditionally permitted use. The property is not under a Williamson Act. Project 3 is located within a designated AOA.

4.2.2.1.4 Project 4

The Project 4 site is divided among 12 parcels totaling approximately 256 acres. Seven of the 12 parcels were used for irrigated agricultural purposes dating back to at least 1947; four of the parcels were used for irrigated agricultural purposes dating back to 1950; and the remaining parcel has no recorded history of irrigated agricultural use (Wildermuth 2011). Contacted current owners revealed little knowledge of past agricultural histories, but no recent agricultural activities have occurred on the land (Stevens 2012, Thompson 2012, Danpour 2012, Dyan 2012). According to the most recent DOC FMMP data, which represents farmland assessments from 2010, approximately 19.6 acres were classified as Grazing Land, 43.4 acres were classified as Farmland of Statewide Importance, 79.5 acres were classified as Other Land, and 113.7 acres were classified as Prime Farmland (DOC 2010).There are four gen-ties for Project 4 that all occupy only public rights-of-way (PROW) once they leave the Project site and all will be undergrounded once they leave the Project site. The first gen-tie leaves the most northern section of the Project that is bound by West Avenue I and 97th Street West and enters in the PROW of West Avenue I, it does not cross the road but connects to at an existing transmission line. The second gen-tie originates from the substation at the southwest corner of future Lancaster Blvd and 97th Street West and connects to the existing Southern California Edison transmission line that intersects the Project. The third gen-tie line orginates from the corner of Lancaster Blvd and 90th Street West and crosses 90th Street West going east approximately 65 feet to connect to an existing transmission line. The fourth gen-tie orginates from the substation along West Avenue J and traverses the PROW across West Avenue J approximately 55 feet to an existing transmission line. The property is zoned A-2 which identifies renewable development as a conditionally permitted use. The property is not under a Williamson Act contract. Project 4 is located within a designated AOA.

4.2.2.1.5 Project 5

The Project 5 site was first recorded as being used for irrigated agricultural purposes in 1972, then once again in 1989 (Wildermuth 2011). There are no signs of recent agricultural production. According to the most recent DOC FMMP data, which represents farmland

assessments from 2010, all 240 acres of the property were classified as Grazing Land (DOC 2010). Project 5 will interconnect to the Antelope Substation via an approximately 2.9 mile gen-tie line, following existing public ROWs. The gen-tie line will cross through only Grazing Land (DOC 2010). The property is zoned A-2 which identifies renewable development as a conditionally permitted use. The property is not under a Williamson Act contract. Project 5 is located within a designated AOA.

4.2.2.1.6 Project 6

The Project 6 site was first recorded as being used for irrigated agricultural purposes in 1947, then once again in 1961 (Wildermuth 2011). There are no signs of recent agricultural production. According to the most recent DOC FMMP data, which represents farmland assessments from 2010, all 39 acres of the property were classified as Other Land (DOC 2010). The property is zoned D-2 which identifies electricity generation development as a conditionally permitted use. The property is not under a Williamson Act contract and does not fall within an Agricultural Opportunity Area.

4.2.3 Regulatory Setting

4.2.3.1 Federal

No applicable regulatory statutes.

4.2.3.2 State

4.2.3.2.1 California Department of Conservation Farmland Mapping and Monitoring Program

The California Department of Conservation (DOC) is a state agency that administers a variety of programs to balance orderly growth and the preservation of agricultural resources in the state. One program is the Farmland Mapping and Monitoring Program (FMMP), which was established in 1982 to provide data for use in planning the present and future of California's agricultural land resources and applies National Resources Conservation Services (NRCS) soil classifications to identify agricultural lands and designations. The DOC also administers the California Land Conservation Act (Williamson Act) Program, discussed below (DOC 2007).

The list below provides a comprehensive description of all categories mapped by the DOC as portrayed in the Los Angeles County Important Farmland 2010 map (DOC 2010).

- *Prime Farmland* has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- *Farmland of Statewide Importance* is similar to Prime Farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- *Unique Farmland* consists of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-

irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.

- *Farmland of Local Importance* is producing lands that would meet the standard criteria for Prime or Statewide, but are not irrigated.
- *Grazing Land* is land on which the existing vegetation is suited to the grazing of livestock.
- *Urban and Built-Up Land* is occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.
- *Other Land* is land not included in any other mapping category. Common examples include low density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing, confined livestock, poultry or aquaculture facilities, strip mines, borrow pits, and water bodies smaller than 40 acres. Vacant and nonagricultural lands surrounded on all sides by urban development and greater than 40 acres is mapped as other land.

4.2.3.2.2 Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, was adopted in 1965 to enable local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural/open space uses. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open space uses as opposed to full market value. The landowner commits the parcel to a 10-year period wherein no conversion out of agricultural use is permitted. Eligibility for entrance into a Williamson Act contract depends on the local jurisdiction's rules as well as the actual language contained in the Williamson Act legislation. A large part of eligibility for particular lands is soil type. Not all jurisdictions participate in the Williamson Act program. Los Angeles County does not participate in the Williamson Act program in the area where the Projects are located.

4.2.3.2.3 Agricultural Conservation Easements

Agricultural Conservation Easements are granted by the California Farmland Conservancy Program to preserve important agricultural land resources. The program grants Agricultural Conservation Easements to local governments and qualified nonprofits such as land trusts. Los Angeles County does not presently participate in the California Farmland Conservancy Program.

4.2.3.3 Local

The Los Angeles County General Plan contains no applicable agricultural policies, goals, or implementation measures that are pertinent to the Projects (LACDRP 2012). However, the Antelope Valley Areawide General Plan contains certain policies concerning agricultural resources.

4.2.3.3.1 Antelope Valley Areawide General Plan

- Policy Statement 28. Within designated "Agricultural Opportunity Areas," carefully evaluate extension of urban and suburban uses (outside the urban and the rural communities) for its impact on adjacent agricultural operations.
- Policy Statement 142. Encourage the continued production of existing agricultural lands within the Antelope Valley.

4.2.4 Significance Criteria

The evaluation of potential impacts on agricultural resources is based on review of the DOC's Important Farmland Maps, historical use records, and field review of the development area. The potential for the Projects to result in impacts associated with agricultural and forestry resources is based on the following CEQA significance thresholds specified by the LACDRP. The significance criteria are as follows:

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b) Would the project conflict with existing zoning for agricultural use, with a designated Agricultural Opportunity Area, or with a Williamson Act contract?

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code § 12220 (g)), timberland (as defined in Public Resources Code § 4526), or timberland zoned Timberland Production (as defined in Government Code § 51104(g))?

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

4.2.5 Impact Analysis

The impact analyses in this section were performed by applying the significance criteria from the LACDRP Initial Study Environmental Checklist to applicable baseline data and the Project 1 – 6 descriptions.

4.2.5.1 Project Impacts: Criterion A – Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

4.2.5.1.1 Projects 1, 2, 3, 5 and 6 and Gen-tie Lines

Construction and Operations Impacts

As currently mapped under 2010 data from the DOC FMMP, Projects 1, 2, 3, 5 and 6 sites (and gen-tie lines) contain no Prime Farmland, Unique Farmland, or Farmland of Statewide

Importance (DOC 2010). Therefore, Projects 1, 2, 3, 5 and 6 will have no impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

4.2.5.1.2 Project 4 and Gen-tie Line

Construction and Operations Impacts

As currently mapped under 2010 data from the DOC FMMP, the 256-acre property contains 113.7 acres of Prime Farmland and 43.4 acres of Farmland of Statewide Importance (DOC 2010). The DOC states that Prime Farmland and Farmland of Statewide Importance "must have been used for irrigated agricultural production at some time during the four years prior to the mapping date." Of the 113.7 acres that were classified as Prime Farmland, 61.1 acres were last irrigated in 1972 and 52.6 acres were last irrigated in 1961 (Wildermuth 2011) and current landowners have confirmed no agricultural production in the past four years (Stevens 2012; Thompson 2012). Of the 43.4 acres considered Farmland of Statewide Importance according to the DOC FMMP 2010 data, 5.7 acres were briefly irrigated in 2003, previously non-irrigated since 1961, and the remaining 38.7 acres were last irrigated in 1972 (Stevens 2012; Wildermuth 2011). The Project 4 gen-tie line would traverse in PROW underground and through land designated as Prime Farmland and Farmland of Statewide Importance (DOC 2010). None of the designated acreage has been utilized for agricultural production or irrigated for well over the four-year limit. Therefore, the Applicant is seeking to remove the farmland designations on the Project 4 site.

The DOC has reviewed the site and, in a letter dated December 31, 2012, determined that the properties "will be reclassified to Grazing Land on the 2012 edition of the Important Farmland Map for Los Angeles County." The DOC letter is attached in Appendix B.11. Based upon the DOC review of the project site, once the designations have been updated the property will not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, impacts will be less than significant.

4.2.5.2 Project Impacts: Criterion B – Would the project conflict with existing zoning for agricultural use, with a designated Agricultural Opportunity Area, or with a Williamson Act contract?

4.2.5.2.1 Project 1 and Gen-tie Line

Construction and Operations Impacts

Project 1 is located within the Los Angeles County Zoning Ordinance designation A-1 (Light Agriculture), which does not contain provisions for renewable energy development. However, a zone change application has been submitted. The future zoning of the property is A-2 (Heavy Agriculture). According to LACDRP, a solar electricity generating facility is allowed in Zone A-2 with the issuance of a CUP (Chapter 22.23.150[A]). Furthermore, Project 1 will not preclude future agricultural uses.

Project 1 and the gen-tie line are located within a LACDRP Agricultural Opportunity Area. The Antelope Valley Areawide General Plan Policy states that these areas should be protected from incompatible uses. The Antelope Valley Area Plan states that applications for non-agricultural

uses in the LACDRP Agricultural Opportunity Area (AOA) areas will be evaluated for their impact upon adjacent agricultural operations.

Project 1 would generate electrical power through renewable solar PV technology which is an allowable use on the site with a CUP and zone change. Project 1 would involve conversion of land that was formerly used for agricultural production to renewable energy production. Construction and operation of Project 1 would not involve other restrictions, obstructions, or resources that could result in conversion of Farmland to non-agricultural use. Additionally, Project 1 was last irrigated in 1972 and surrounding projects are mostly undeveloped and fallow agricultural land. Project 1 would produce power in a passive manner and would result in minimal air emissions, traffic, and noise, and would not affect adjacent agricultural operations.

Additionally, the proposed property is not designated under a Williamson Act contract. As a result, construction and operation of Project 1 would not conflict with existing or proposed future zoning for agricultural use or a Williamson Act contract. Therefore, Project 1 impacts to existing agricultural use zoning, designated Agricultural Opportunity Areas, and Williamson Act contracts will be less than significant.

4.2.5.2.2 Projects 2, 3, 4, and 5 and Gen-tie Lines

Construction and Operations Impacts

Projects 2, 3, 4, and 5 are located within the Los Angeles County Zoning Ordinance designation A-2, Heavy Agriculture. According to LACDRP, a solar electricity energy generating facility is allowed in Zone A-2 with the issuance of a CUP (Chapter 22.24.150[A]). Furthermore, Projects 2, 3, 4, and 5 will not preclude future agricultural uses. Projects 2, 3, 4, and 5, and the gen-tie lines, are located within a LACDRP AOA. The Antelope Valley Areawide General Plan Policy states that these areas should be protected from incompatible uses. The Antelope Valley Area Plan states that applications for non-agricultural uses in the AOA areas will be evaluated for their impact upon adjacent agricultural operations.

These Projects would involve conversion of land that was formerly used for agricultural production to renewable electricity energy production. Construction and operation of these Projects would not involve other restrictions, obstructions, or resources that could result in conversion of Farmland to non-agricultural use. As previously stated, Projects 3 and 5 have not been irrigated since 1972. Project 2 has no recorded history of irrigated agricultural land. Portions of Project 4 have no recorded history of irrigated agricultural land while several parcels were last irrigated in 1947 and the 1950. The Projects would produce power in a passive manner and would result in minimal air emissions, traffic, and noise, and would not affect adjacent agricultural operations.

Projects 2, 3, 4, and 5 and associated gen-tie lines are located in an AOA, but are not currently utilized for agricultural purposes. Additionally, the proposed properties are not designated under a Williamson Act contract. As a result, construction and operation of Projects 2, 3, 4, and 5 would not conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, impacts to existing agricultural use zoning, designated Agricultural Opportunity Areas, and Williamson Act contracts will be less than significant.

4.2.5.2.3 Project 6 and Gen-tie Line

Construction and Operations Impacts

Project 6 is located within the Los Angeles County Zoning Ordinance designation D-2, Desert-Mountain. According to LACDRP, permitted uses of Zone D-2 are identical to permitted uses of Zone A-2 (Chapter 22.32.090). A solar energy generating facility is allowed in Zone A-2 with the issuance of a CUP (Chapter 22.23.150[A]). Project 6 and the Project 6 gen-tie line are not located in an AOA and are not currently utilized for agricultural purposes. Additionally, the proposed property is not under a Williamson Act contract. As a result, construction and operation of Project 6 would not conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, Project 6 impacts to existing agricultural use zoning, designated Agricultural Opportunity Areas, and Williamson Act contracts will be less than significant.

4.2.5.3 Project Impacts: Criterion C – Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code § 12220 (g)), timberland (as defined in Public Resources Code § 4526), or timberland zoned Timberland Production (as defined in Government Code § 51104(g))?

4.2.5.3.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

The location of Projects 1 – 6 and associated gen-tie lines do not include forest land, timberland, or timberland zoned timberland Production. Therefore, there will be no impact to forest land, timberland, or timberland zoned Timberland Production.

4.2.5.4 Project Impacts: Criterion D – Would the project result in the loss of forest land or conversion of forest land to non-forest use?

4.2.5.4.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

The location of Projects 1 – 6 and associated gen-tie lines do not include forest land. Therefore, there will be no impact to forest land.

4.2.5.5 Project Impacts: Criterion E – Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

4.2.5.5.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and associated gen-tie lines will temporarily preclude future agricultural use at the Project locations. Following the termination of power generating activities at the Projects' location, all facilities and equipment would be removed and the land would be restored as near to its pre-development condition as possible in the event a new similar land use is not contemplated at that time by then current owners. A decommissioning and reclamation plan detailing land restoration activities will be provided, as required by Los Angeles County as part

of the CUP. Additionally, the Applicant will be required to provide a decommissioning bond, or other suitable financial guranatee acceptable to the County, equal to the amount of money estimated to be required to decommission the Projects, including any additional environmental review which might become necessary, and restore the land to as near its pre-development condition as possible. The Projects will not impact any land use outside the development site's limits. Impacts regarding the conversion of Farmland to non-agricultural use will be less than significant.

4.2.6 Mitigation Measures

No mitigation measures are required for Agriculture and Forestry Services.

4.2.6.1 Level of Significance After Mitigation

No potentially significant project-related construction, operations, or cumulative impacts to Agriculture and Forestry Services would occur.

4.2.7 Cumulative Impacts

There are 29 cumulative projects within a 5-mile radius of the Projects, amounting to 20,909 acres of development including Projects 1 – 6 (see Table 3-7). For the purposes of this cumulative analysis, the worst case scenario is assumed, i.e., all cumulative projects would be constructed at the same time. It is also assumed that all cumulative projects would comply with all applicable law ordinances regulations and standards.

Projects 1 – 6 are located in a region with significant agricultural uses. However, the Antelope Valley has been historically and is currently limited by water costs and climate conditions. Cumulatively, the Projects would not develop land classified as Prime Farmland or Farmland of Statewide Importance. Project 4 is the only site that currently contains land designated as Prime Farmland and of Statewide Importance. As mentioned above, the DOC is in process of reclassifying Project 4 land currently mapped as Prime Farmland and Farmland of Statewide Importance to Grazing Land on the 2012 edition of the Important Farmland Map for Los Angeles County. The Projects would not be expected to contribute to the overall trend of conversion of agricultural lands to other uses in the Antelope Valley when considered together with other potential cumulative projects in the area. That said, it is contemplated that at the end of the anticipated 35-year life of Projects 1-6, the associated properties could be returned to agricultural use. The Projects' incremental contribution to cumulative agricultural impacts is considered less than significant.

4.2.8 References

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4.3 AIR QUALITY

4.3.1 Introduction

This section addresses air emissions generated by construction and operation of the proposed projects, which encompasses the Applicant's Projects 1-6. The analysis also determines the potential impacts of the six solar generating facilities (SGFs) and the consistency of the proposed Projects with the air quality policies set forth within the Los Angeles County General Plan and the Antelope Valley Air Quality Management District (AVAQMD) Air Quality Management Plan (AQMP). The analysis of Projects-generated air emissions focuses on whether the proposed Projects would exceed an ambient air quality standard or maintain an appropriate significance threshold.[1] Air quality technical data used in this section is included as Appendix B-2 of this EIR.

The six Projects are located in the northern portion of unincorporated Los Angeles County, in the western portion of Antelope Valleyon rural land west of State Route 14.

Air quality impacts associated with the proposed Projects are the emissions that would occur during construction and subsequent operation of the proposed Projects. The principal sources of pollutants during construction would be demolition activities, earth-moving activities, construction equipment, trucks bringing materials to the site, and construction crew commuting vehicles. The sources of pollutants during the Projects' operations would be limited to the vehicles and equipment used by the operations and maintenance staff. Numerous air quality modeling tools are available to assess air quality impacts of the Projects. Emissions during construction and operation were estimated based on the air emission modeling software package, California Air Resources Board's (CARB's) URBEMIS 2007 (CARB 2012a).

4.3.2 Environmental Setting

The Projects are located in the northern portion of unincorporated Los Angeles County, in the western portion of Antelope Valley. The Applicant proposes to develop six sites, which together cover 987.1 acres and would produce 172 MW of solar power. A majority of the Projects are located on former farmlands that are no longer used for farming. Environmental settings of these Projects are discussed further below.

4.3.2.1 Regional Setting

4.3.2.1.1 Air Pollutants

Certain air pollutants have been recognized to cause notable health problems and damage to the environment, either directly or in reaction to other pollutants, due to their elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in the prevalent air quality.

[1] Emissions estimation worksheets are provided in Appendix B-2 of this EIR.

The following pollutants are regulated by the EPA and, therefore, are subject to emission reduction measures adopted by federal, state, and other regulatory agencies.

Ozone (O_3): Ozone is a secondary pollutant formed by the chemical reaction of volatile organic compounds (VOCs) and NO_X under favorable meteorological conditions, such as high temperature and stagnation episodes. An elevated level of ozone irritates the lungs and breathing passages, and can cause coughing and pain in the chest and throat, which increases susceptibility to respiratory infections and reduces the ability to exercise. Effects are more severe in people with asthma and other respiratory ailments. Long-term exposure may lead to scarring of lung tissue and a decrease in lung efficiency.

Carbon Monoxide (CO): Carbon monoxide is primarily emitted from combustion processes and motor vehicles because of incomplete combustion of fuel. Elevated concentrations of CO weaken the heart's contractions and lower the amount of oxygen carried by the blood. It is especially dangerous for people with chronic heart disease. Inhalation of moderate levels of carbon monoxide can cause nausea, dizziness, and headaches and can be fatal at high concentrations.

Nitrogen Oxides (NO_X): Major sources of NO_X include power plants, large industrial facilities, and motor vehicles. Nitrogen oxides are emitted from combustion processes and can irritate the nose and throat. NO_x can lead to an increased susceptibility to respiratory infections, especially in people with asthma. NO_X also is a precursor to ozone formation.

Sulfur Dioxide (SO_2): Major sources of SO_2 include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of sulfur dioxide can aggravate lung diseases, especially bronchitis. Sulfur dioxide can also cause constricted breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. Sulfur dioxide potentially causes wheezing, shortness of breath, and coughing. High levels of particulates appear to worsen the effect of SO_2, and long-term exposure to both pollutants leads to higher rates of respiratory illness.

Lead (Pb): Major sources of lead are emitted from industrial facilities and from the sanding or removal of old lead-based paint. Smelting or processing metal is the primary source of lead emissions, which is primarily a regional pollutant. Lead affects the brain and other parts of the body's nervous system. Exposure to lead in young children can impair the development of the nervous system, kidneys, and blood forming processes in the body.

Particulate Matter (PM_{10} and $PM_{2.5}$): The human body naturally prevents the entry of larger particles into the body. Nevertheless, PM_{10} and even smaller particles with an aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5}$) can be trapped in the nose, throat, and upper respiratory tract. These small particulates enter the body and could potentially aggravate existing heart and lung diseases, change the body's defenses against inhaled materials, and damage lung tissue. The elderly, children, and those with chronic lung or heart disease are most sensitive to PM_{10} and $PM_{2.5}$. Lung impairment can persist for 2 to 3 weeks after exposure to high levels of particulate matter. Some types of particulates could become toxic after inhalation due to the presence of certain chemicals in the body and their reaction with internal body fluids.

"Fugitive dust" is atmospheric dust resulting from natural and anthropogenic disturbance of soil and other granular material. Fugitive dust particles are comprised mainly of soil minerals (e.g., oxides of silicon, aluminum, calcium, and iron) but also can consist of sea salt, pollen, spores, etc.

The most common regulated forms of particulate matter are PM_{10} and $PM_{2.5}$. PM_{10} is predominantly comprised of windblown dust or other operations involving solid particulate materials. $PM_{2.5}$ is more likely the result of fuel combustion and photochemical reactions. $PM_{2.5}$ is directly emitted and formed via chemical reactions in the atmosphere from precursor pollutants, such as NO_X, oxides of sulfur (SO_X), and ammonia. Most fugitive dust particles, however, are larger than PM_{10} and would therefore not comprise either PM_{10} or $PM_{2.5}$.

PM_{10} may accumulate in the lungs and irritate the respiratory tract and also may lead to eye irritation, but fine particles ($PM_{2.5}$) are more likely to contribute to health effects. CARB and the EPA have recognized adverse health effects that may be associated with exposure to PM including the following:

- Increased respiratory symptoms, such as the irritation of the airways, coughing, or difficulty breathing;
- Decreased lung function, particularly in children;
- Aggravated asthma;
- Development of chronic bronchitis;
- Irregular heartbeat;
- Increased respiratory and cardiovascular hospitalizations; and
- Premature death in people with heart or lung disease.

Based on reviews of the latest scientific literature, CARB staff has concluded that exposure to $PM_{2.5}$ has potential health impacts. Recognizing this, EPA and CARB have established National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for PM_{10} and $PM_{2.5}$ emissions. The NAAQS and CAAQS have been set at levels considered safe to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.

Short-term exposure to fugitive dust during construction typically would not result in any considerable health effects. Health risk methodologies for operational impacts typically assume a conservative continuous exposure of 24-hours per day, for a 70-year lifetime, outdoors at the same location. In contrast, exposure during construction is substantially reduced because of the temporary nature of construction and because construction activities primarily occur during normal working hours. As a result of the limited exposure, health effects from fugitive dust during construction are minimized. Air quality standards and AVAQMD thresholds are developed for the purpose of protecting the health of sensitive populations.

4.3.2.1.2 Meteorology

Air quality in the planning area is not only affected by various emission sources (mobile, industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature, rainfall, etc. Local and regional meteorological conditions and topography affect

transport and dispersion of airborne pollutants and determine the locations impacted by pollutant emissions from specific sources.

The Mojave Desert Air Basin (MDAB) is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. The subject district covers a western portion of the MDAB. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 ft. above the valley floor. Prevailing winds in the MDAB are from the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north. Air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California Valley regions by mountains (highest elevation approximately 10,000 ft.), whose passes form the main channels for these air masses. The Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevada Mountains in the north by the Tehachapi Pass (3,800 ft. elevation). The Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 ft.).

During the summer the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The MDAB averages between 3 to 7 inches of precipitation per year (from 16 to 30 days with at least 0.01 inches of precipitation). The MDAB is classified as a dry-hot desert climate (BWh), with portions classified as dry-very hot desert (BWhh), to indicate that at least three months have maximum average temperatures over 100.4°F (AVAQMD 2011b.).

The frequent presence of a thermal low pressure area above the Mojave Desert promotes atmospheric transport from the Los Angeles Basin. The most significant large-scale phenomena affecting air quality in the Projects area are the transport winds from the northwest and southwest. These winds are responsible for bringing ozone and other pollutants through the mountain passes from the Los Angeles Basin (Cajon and Soledad Passes) and the San Joaquin Valley (Tehachapi Pass). Pollutant transport into the MDAB is the primary reason for the periods of federal and California ozone standard violations.

Air quality is monitored by the AVAQMD at numerous locations throughout the MDAB. Currently, there are 10 monitoring sites in the MDAB. The monitoring station most representative of the Projects area is the Lancaster Monitoring Station located on 43301 Division Street. The most recent data at the time of the NOP, measured in 2011 from this station, show that the monthly average ambient temperature is 63^{o}F, hourly average wind speed is 4.7 mph, and monthly average humidity is 41 percent.

4.3.2.1.3 Existing Air Quality

In the AVAQMD, ozone is designated as non-attainment at the state and federal level and PM_{10} also is in non-attainment under state standards. All other emissions are in attainment or unclassifiable, where data may have been incomplete and do not support a designation of

attainment or nonattainment, as further discussed in Section 4.3.3, Regulatory Setting and shown in Table 4.3-2.

CARB has provided an online air quality statistics database for the state called interactive Aerometric Data Analysis and Management (iADAM). The most recent iADAM data available from the Lancaster Monitoring Station located on 43301 Division Street encompass the years 2010 to 2012. The data shown in Table 4.3-1 from representative monitoring stations indicate the following pollutant trends:

Table 4.3-1 Pollutant Standards and Ambient Air Quality Data from Representative Monitoring Stations

Pollutant/Standard	2010	2011	2012
Ozone			
O_3 (1-hour)			
Maximum Concentration (ppm)	0.107	0.115	0.112
Days > CAAQS (0.09 ppm)	11	19	13
Days > NAAQS (0.12 ppm)	0	0	0
O_3 (8-hour)			
Maximum Concentration (ppm)	0.096	0.100	0.095
4^{th} High 8-hour Concentration (ppm)	0.085	0.094	0.096
Days > CAAQS (0.07 ppm)	78	76	72
Days > NAAQS (0.08 ppm)	45	53	39
Particulate Matter (PM_{10})			
PM_{10} (24-hour)			
State Maximum Concentration ($\mu g/m^3$)	43.6	81.9	47.0
Days > CAAQS (50 $\mu g/m^3$)	0	1	0
Days > NAAQS (150 $\mu g/m^3$)	0	0	0
PM_{10} (Annual Average)			
Annual Arithmetic Mean (20 $\mu g/m^3$)	--	--	18.5
Particulate Matter ($PM_{2.5}$)			
$PM_{2.5}$ (24-hour)			
Maximum Concentration ($\mu g/m3$)	15	50	14
Days > NAAQS (65 $\mu g/m3$) a	0	1	0
Days > NAAQS (35 $\mu g/m^3$) a	N/A	N/A	N/A
$PM_{2.5}$ (Annual)			
Annual Arithmetic Mean (15 $\mu g/m^3$)	--	--	--
Carbon Monoxide			
CO (8-hour)			
Maximum Concentration (ppm)	1.23	1.33	1.00
Days > CAAQS (9 ppm)	0	0	0
Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide			
NO_2 (1-hour)			
Maximum Concentration (ppm)	0.056	.058	0.049
Days > CAAQS (0.18 ppm)	0	0	0
NO_2 (Annual)			
Annual Arithmetic Mean (0.03 ppm)	0.012	0.012	0.009

Pollutant/Standard	2010	2011	2012
Sulfur Dioxide			
SO_2 (1-hour)	--	--	--
Maximum Concentration (ppm)	--	--	--
Days > CAAQS (0.25 ppm)			
SO_2 (24-hour)			
Maximum Concentration (ppm)	0.007	--	--
Days > CAAQS (0.04 ppm)	0	0	0
Days > NAAQS (0.14 ppm)	0	0	0
SO_2 (Annual)			
Annual Arithmetic Mean (0.03 ppm)	0.000	0.001	--
Lead [b]			
Maximum 30-day average ($\mu g/m^3$)	--	--	--
Maximum calendar quarter ($\mu g/m^3$)	--	--	--

Source: CARB, iADAM: Air Quality Data Statistics Select 8 Summary, 2009-2011. Available at: http://www.arb.ca.gov/adam/select8/sc8start.php. Last accessed August 2013.

[a] In September 2006, the 24-hr $PM_{2.5}$ standard was changed from 65 $\mu g/m^3$ to 35 $\mu g/m^3$. The data representing days above standard for 2002-2005 applies to the old standard. The data representing days above standard for 2006 applies to the new standard.

[b] Ambient data for airborne lead is not included in this table since the Basin is currently in compliance with state and national standards for lead.

-- = Data not available/Insufficient data to determine the value

$\mu g/m^3$= micrograms per cubic meter

N/A = not applicable

ppm = parts per million

Ozone

Ozone is a problematic air contaminant in the MDAB because a significant portion of the ozone (and ozone precursors) in the basin is transported from the heavily populated South Coast Air Basin (SCAB). As a result, the AVAQMD adopted a 2008 Ozone Early Progress Plan, 2007 Antelope Valley 8-Hour Ozone Plan and the 2004 Antelope Valley 1-Hour Ozone Plan. The AVAQMD 2004 Ozone Attainment Plan was met in 2007. Maximum ozone concentrations in the SCAB and in the MDAB are typically recorded during summer months.

The 2010 to 2012 measured data at the Lancaster monitoring station show that the maximum state air quality standard of 1-hour ozone exceeded thresholds on 19 days in 2011, with an annual maximum concentration of 0.115 ppm recorded. The 8-hour ozone exceeded state air quality standards on 78 days in 2010, with a maximum concentration of 0.96 ppm recorded. The federal air quality standard for 8-hour ozone was exceeded on 53 days in 2011, with a maximum concentration of 0.100 ppm.

Fine Particulates (PM_{10}, $PM_{2.5}$)

Particulate matter in the air is composed of windblown fugitive dust; particles emitted from combustion sources (usually carbon particles); and the formation of organic, sulfate, and nitrate aerosols from emitted hydrocarbons, sulfur oxides, and oxides of nitrogen. In 1984, CARB adopted standards for PM_{10}, and phased out the total suspended particulate (TSP) standards used up to that time because PM_{10} corresponds to the size range of inhalable particulate related to human health. In 1987, the EPA also replaced national TSP standards with PM_{10} standards. In July 1997, the EPA adopted new standards for $PM_{2.5}$.

Particulates are a public health and welfare concern for multiple reasons. Particulates may be intrinsically toxic because of inherent chemical and/or physical characteristics. Particulate matter may interfere with one or more of the mechanisms that normally clear the respiratory tract. Fine particulates, which are easily carried deep into the lungs, may also act as carriers of absorbed toxic substances. Thus, elevated particulate concentrations may exacerbate pre-existing respiratory diseases such as bronchitis. Particulate matter, especially fine particulate, also interferes with visibility. The MDAB is a non-attainment area of the state's PM_{10} standards. The 24-hour PM_{10} 2011 measured data at the Lancaster monitoring station show a state maximum concentration of 81.9 micrograms per cubic meter ($\mu g/m^3$) and shows an exceedance of one day above the 24-hour PM_{10} state standards in 2011. The highest annual average recorded within 2010 to 2012 was 18.5 $\mu g/m^3$ in 2012.

For $PM_{2.5,}$ the 24-hour measured data at the Lancaster monitoring station shows a maximum concentration of 50 micrograms per cubic meter ($\mu g/m^3$) and shows an exceedance of one day above the 24-hour $PM_{2.5}$ state standards in 2011. The highest annual average for $PM_{2.5}$ was not recorded from 2010 to 2012.

Carbon Monoxide

Carbon monoxide is a product of inefficient combustion, primarily from automobiles and other mobile sources of pollution. In many areas of California, CO emissions from sources such as wood-burning stoves and fireplaces also can be measurable contributors during cold-weather months. Industrial sources of pollution generally contribute less than 10 percent of ambient CO levels. Peak CO levels occur typically during winter months because of a combination of seasonal contributions from home heating devices and stagnant weather conditions. CO reduces the oxygen-carrying capacity of the blood and, in high concentrations, can cause death. At lower concentrations, people may experience dizziness and headaches.

The highest 1-hour CO concentration recorded for years 2010 to 2012 was a maximum of 0.122 ppm, recorded in 2010. The measured data at the Lancaster monitoring station show that the state standard was exceeded 22 times in 2010. The federal standard for 1-hour CO was not exceeded during that time period. The highest 8-hour CO concentration recorded between 2009 and 2011 was a maximum of 1.33 ppm recorded in 2011. The measured data at the Lancaster monitoring station show that the state and federal 8-hour CO standard was not exceeded in that time period. The MDAB is an attainment area for CO for purposes of state and federal air quality planning.

Nitrogen Dioxide

The highest 1-hour NO_2 concentration recorded between 2010 and 2012 was a f 0.58 ppm recorded in 2011. The monitoring data show that the annual average NO_2 concentration in the MDAB has been within the federal standards for the last three years. The highest annual arithmetic mean of 0.012 ppm was recorded in 2010 and 2011. The 2011 measured data at the Lancaster monitoring station show that the state standard for NO_2 is not exceeded in the year. The MDAB is in attainment status under state and federal standards.

Sulfur Dioxide

SO_2 is produced when any sulfur-containing fuel is burned. Chemical plants that treat or refine sulfur or sulfur-containing chemicals also emit SO_2. Because of the complexity of the chemical reactions that convert SO_2 to other compounds (such as sulfates), peak concentrations of SO_2 occur at different times of the year in different parts of the state, depending on local fuel characteristics, weather, and topography. SO_2 can cause bronchial constriction and may aggravate respiratory diseases. In moist environments, SO_2 may combine with water to form sulfuric acid, a component of acid deposition.

The highest 24-hour SO_2 concentration recorded between 2010 and 2012 was a maximum of 0.007 ppm recorded in 2010. The data from 2010 to 2012 at the Lancaster monitoring station show that the state and federal standard was not exceeded. The MDAB is an attainment area of the state and federal SO_2 standards.

Lead

Lead is found in old paints and coatings, plumbing, and various other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The MDAB is an attainment area for the federal and state AAQS for lead.

Valley Fever

Valley Fever, or coccidioidomycosis, is caused by the microscopic fungus coccidioides immitis (*C. immitis*), which grows in arid soil in parts of Los Angeles County and other parts of the U.S. Infection occurs when the spores of the fungus become airborne and are inhaled. The fungal spores become airborne when contaminated soil is disturbed by human activities, such as construction and agricultural activities, and natural phenomena, such as wind storms, dust storms, and earthquakes.

About 60 percent of infected persons have no symptoms. Those that do, may exhibit flu-like symptoms that can last for a month and tiredness that may last for longer than a few weeks. A small percentage of infected persons (<1 percent) can develop disseminated disease that spreads outside the lungs to the brain, bone, and skin. Without proper treatment, Valley Fever can lead to severe pneumonia, meningitis, and even death. Symptoms may appear between one to four weeks after exposure (LACDPH 2004).

Diagnosis of Valley Fever is conducted through a sample of blood, other body fluids, or biopsy of affected tissue. Valley Fever is treatable with anti-fungal medicines and is not contagious. Once recovered from the disease, the individual is protected against further infection. Persons at highest risk of infection from exposure are those with compromised immune systems, such as those with human immunodeficiency virus (HIV), and those with chronic pulmonary disease. Farmers, construction workers, and others who engage in activities (such as archaeologists) that disturb the soil are at highest risk for Valley Fever. Infants, pregnant women, diabetics, people of African, Asian, Latino, or Filipino descent, and the elderly may be at increased risk for disseminated disease.

Valley Fever cases may be caused by soils containing fungal spores that become disturbed by wind erosion, vehicular transportation, construction, or farming. Even natural phenomena, such as earthquakes or wildfires, may disturb soils containing the fungi. High winds, such as the Santa Ana's, may disperse the small infectious particles miles from their place of origin (Cavenaugh 2004).

It is thought that during drought years, the number of organisms competing with *C. immitis* decreases, and the *C. immitis* remains alive, but dormant. When rain finally occurs, the arthrocondia germinate and multiply more than usual because of fewer competing organisms. Later, the soil dries out in the summer and fall, and the fungi can become airborne and potentially infectious (Kirkland et al. 1996).

Persons at risk should avoid exposure to dust and dry soil in areas where Valley Fever is common. Areas with high Valley Fever rates are called hyper-endemic. Approximately 10 to 50 percent of people living in endemic disease regions are seropositive and considered immune. In any given year, about 3 percent of people who live in an area where coccidioidomycosis is common would develop an infection (LACDPH 2004).

According to the Kern County Center of Disease Control, Morbidity and Mortality Weekly Report (KCCDC 2009), Valley Fever incidences have increased in California, with the incidence tripling between the 2000 and 2006. Most cases of Valley Fever occur within the San Joaquin Valley and in Kern County (KCCDC 2009). Northern parts of Los Angeles County, including the Projects area, also are within the Valley Fever endemic area (Pappagianis and Van Kekerix 2002). Matlof et al. states that certain areas of Los Angeles County are endemic foci for *C. immitis*. These areas include the San Fernando Valley and the sparsely populated northern and western regions of Los Angeles County (Matlof et al. 1970).

Areas such as the Antelope Valley have low annual precipitation, with a short rainy, mild season occurring during the winter and long, hot, and dry summers. These are climate conditions that exist in all suspected endemic Valley Fever areas of the U.S.. Coastal and central areas of Los Angeles County generally have summer temperatures that are 5–15°F cooler than northern parts of the county and also often have a prevailing marine layer and higher relative humidity (Matlof et al. 1970). The Antelope Valley area has large, open fields, agricultural and mining activity, less urbanization, lower humidity, and higher temperatures compared to the rest of the Los Angeles County area, making the area more susceptible to windblown dust and Valley Fever.

Hospitalizations for coccidioidomycosis are common in endemic areas of California. From 1997 to 2002, the frequency of hospitalization for coccidioidomycosis in California was 3.7 per 100,000 residents per year. Kern, Los Angeles, and San Diego counties had the highest number of hospitalizations and together accounted for 47 percent of all hospitalizations due to coccidioidomycosis in the state of California during this time period. There were 417 deaths from 1997 to 2002, resulting in a mortality rate of 2.1 per 1 million California residents annually. Deaths from coccidioidomycosis average about 70 per year statewide (Flaherman et al. 2007).

In 2008, Valley Fever incidences were 14.2 per 100,000 persons in the Antelope Valley, compared to the rest of Los Angeles County, where Valley Fever incidences were 2.33 per 100,000 persons (Antelope Valley Partners for Health 2009).

Adjacent to the proposed Projects area, much of the land is zoned for agricultural use. The Project sites are not currently active agricultural land, but agricultural activities are ongoing in nearby areas. Dust from tilled agricultural land and off-road vehicles contribute to the current level of background dust near the site. The majority of dust in the region is generated from agricultural and off-road activities and wind storms. High wind episodes, defined as when wind speed is greater than 25 miles per hour (mph), occur approximately 5 percent of the time at the Poppy Park Remote Automated Weather Station (RAWS) located just east of the Project sites. The region is non-attainment for particulate matter, with the majority of these emissions occurring in the form of dust. At present, the local population is exposed to significant levels of dust, and the dust in the region is believed to potentially carry the *C. immitis* fungi (i.e., Valley Fever).

4.3.2.1.4 Existing Air Pollutant Emissions

The existing emissions in the AVAQMD have been published for air quality planning and future regulatory action. The emissions inventory quantified for 2009 provides the delineation of area, mobile, and stationary sources, which includes industrial processes, and fuel combustion. Area-wide sources are stationary sources of pollution (e.g., water heaters, gas furnaces, fireplaces, and residential wood stoves) that are typically associated with homes and non-industrial sources. A stationary source is a non-mobile structure, building, facility, equipment installation, or operation. Examples include oil production facilities, industrial coating operations, rock crushing facilities, and factories that use large amounts of solvents. A mobile source is a fossil fueled source of air pollution such as automobiles, motorcycles, trucks, buses, off-road vehicles, boats, and airplanes.

Mobile sources contribute the majority of district-wide emissions totals of VOC and NO_X, both of which are ozone precursors. Mineral processes, unpaved roads, and construction/demolition activities contribute the largest fraction to the PM_{10} and $PM_{2.5}$ emissions in the district. Electric utilities contribute an insignificant fraction of the emissions for all pollutants. There are currently no large point emission sources in the vicinity of the Projects sites. Edwards Air Force Base is a large spatial collection of emissions sources north of Lancaster that has several permitted sources in AVAQMD. Within AVAQMD, mobile sources emissions make up more than 70 percent of the total district-wide emissions inventory of ozone precursors and 90 percent of the total CO emissions. Non-stationary sources (e.g., farming, construction, fires, and road dust) make up the majority of particulate matter emissions in the AVAQMD. The area source emissions within the AVAQMD are approximately 30 percent of the total anthropogenic emissions of VOC in the AVAQMD (AVAQMD 2009).

4.3.2.1.5 Sensitive Receptors and Locations

The California EPA and CARB consider some population groups to be sensitive to air pollution than others. These include children, the elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases), collectively referred to as sensitive receptors. Sensitive land uses are those most frequently used by sensitive receptors, including homes, schools, hospitals, and care facilities.

The Projects sites are distributed throughout the West Antelope Valley area of Los Angeles County. On a programmatic level, sensitive land uses exist in the general vicinity of each Project site. Implementation of the Projects is expected to result in potential short-term or long-term increases in emissions at several specific locations. The nearest sensitive populations to those sites are listed below:

Project 1**:** The closest sensitive receptor to Project 1 is a single family residence located on 110th Street West, approximately 180 feet northwest of the Project site.

Project 2**:** The closest sensitive receptor to Project 2 is a single family residence located on 110th Street West, approximately 89 feet east of the Project site.

Project 3**:** The closest sensitive receptors to Project 3 are a single family residence located on West Avenue G, approximately 69 feet north of the Project site, and a single family residence located 98 feet to the east on 70th Street West.

Project 4**:** The nearest sensitive receptors to Site 4 are six single family residences adjacent to the east and west of the Project site, located as close as 20 feet to Project 4.

Project 5**:** The closest sensitive receptor to Project 5 is a single family residence located on 120th Street West, approximately 328 feet west of the Project site.

Project 6: The closest sensitive receptor to Project 6 is a single family residence located on 35th Street West, approximately 131 feet northwest of the Project site.

4.3.3 Regulatory Setting

Many statutes, regulations, plans, and policies have been adopted that address air quality issues. The proposed Projects are subject to air quality regulations developed and implemented at the federal, state, and local levels. At the federal level, the United States Environmental Protection Agency (EPA) is responsible for implementing the Federal Clean Air Act (CAA). Portions of the CAA (e.g., certain mobile source and other requirements) are implemented directly by the EPA while the remaining portions (e.g., stationary source requirements) are implemented by state and local agencies.

4.3.3.1 Federal

4.3.3.1.1 Federal Clean Air Act

The CAA was first enacted in 1955 and has been amended numerous times in subsequent years, with the most recent major amendments enacted in 1990. The CAA requires setting of national air quality standards, known as National Ambient Air Quality Standards (NAAQS) (see Table 4.3-2), and specifies dates for achieving compliance with the standards.

Table 4.3-2 Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})[8]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter ($PM_{2.5}$)[8]	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)[9]	Annual Arithmetic Mean	0.03 ppm (56 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		100 ppb	None	
Sulfur Dioxide (SO_2)[10]	24 Hour	0.04 ppm (105 µg/m^3)	Ultraviolet Fluorescence	0.14 ppm (365 µg/m^3)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		0.075 ppm (196 µg/m^3)	—	
	Annual Arithmetic Mean	0.075 ppm (196 µg/m^3)		0.03 ppm	—	
Lead (Pb)[11,12]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[13]	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates (SO_4)	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Vinyl Chloride[11]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
9. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
10. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
11. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
12. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
13. In 1989, C ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: California Air Resources Board (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, updated 06/04/13), and U.S. Environmental Protection Agency (http://www.epa.gov/air/criteria.html and http://www.epa.gov/air/lead/pdfs/20081015_ pb_naaqs_final.pdf [see "FR Notices" at http://www.epa.gov/ttn/naaqs/standards/pb/s_pb_index.html], accessed September 2013]

Title II of the CAA pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms the EPA uses to regulate mobile air emission sources. The provisions of Title II have resulted in tailpipe emission standards for vehicles, which have strengthened in recent years, to improve air quality. For example, the standards for nitrogen oxide (NO_x) emissions have been lowered substantially and the specification requirements for cleaner burning gasoline are more stringent.

As the proposed Projects would generate air emissions during construction and operation of proposed uses, the CAA is applicable to the proposed Projects.

4.3.3.2 State

4.3.3.2.1 California Clean Air Act

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest

practical date. Table 4.3-2, shows the CAAQS currently in effect for each of the criteria pollutants, as well as the other pollutants recognized by the state. As shown in Table 4.3-2, the CAAQS includes more stringent standards than the NAAQS for most of the criteria air pollutants. In general, the California standards are more health protective than the corresponding NAAQS. In addition, CARB has established standards for other pollutants recognized by the state, such as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. As the proposed Projects would generate air emissions during construction and operation of proposed uses, the CCAA is applicable to the proposed Projects.

Table 4.3-3 below provides a summary of the Mojave Desert Air Basin (MDAB) Attainment Status with respect to federal and state standards. The MDAB is designated as in attainment of state standards for all pollutants except ozone (O_3) and particulate matter 10 micrometers or less in diameter (PM_{10}) (24-hour) and attainment of all federal standards except 24-hour PM_{10}.

Table 4.3-3 Mojave Desert Air Basin Attainment Status

Air Pollutants	State	Federal
O_3 (1-Hour)	Non-attainment; classified Extreme	–
O_3 (8-Hour)	Non-attainment; classified Extreme	Non-attainment; classified Moderate
$PM_{2.5}$	Unclassified	Unclassified/attainment
PM_{10}	Non-attainment	Unclassified
NO_2	Attainment/unclassified	Attainment/unclassified
CO	Attainment	Attainment
SO_2	Attainment/unclassified	Attainment/unclassified
Lead	Attainment	Attainment
Particulate Sulfate	Unclassified	–
Hydrogen Sulfide	Unclassified	–
Visibility Reducing Particles	Unclassified	–

Source: AVAQMD 2011a.

4.3.3.2.2 California Air Resources Board Air Quality and Land Use Handbook

CARB published a final version of the Air Quality and Land Use Handbook on April, 2005, to serve as a general guide for considering impacts to sensitive receptors from facilities that emit toxic air contaminants (TAC). The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Examples of CARB's recommendations include: (1) avoid siting sensitive receptors within 500 feet (ft.) of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 300 ft. of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater), or within 50 ft. of a typical gas dispensing facility; (3) avoid siting sensitive receptors within 1,000 ft. of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); and (4) avoid siting sensitive receptors within 300 ft. of any dry cleaning operation using perchloroethylene and 500 ft. for operations with two or more machines. Since the Projects do not involve siting new sensitive land uses, the guidelines are not applicable.

4.3.3.2.3 California Air Resources Board Emission Control Measures

In 2004, CARB adopted a control measure to limit commercial heavy duty diesel motor vehicle idling to reduce public exposure to diesel particular matter (DPM) and other air contaminants. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. In general, it prohibits idling for more than 5 minutes at any location.

In addition to limiting exhaust from idling trucks, CARB promulgated emission standards for off-road diesel construction equipment such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. A CARB regulation that aims to reduce emissions by installing diesel soot filters and encouraging the replacement of older, dirtier engines with newer emission-controlled models became effective on June 15, 2008. A prohibition against acquiring certain vehicles began on March 1, 2009, and a reporting requirement started on April 1, 2009.[2] Implementation of some provisions is staggered based on fleet size, with the largest operators beginning compliance in 2010. By 2020, CARB estimates that DPM would be reduced by 74 percent and smog forming nitrogen oxides (NO_x) (another important pollutant emitted from diesel engines) by 32 percent, compared to emissions levels that would exist without the regulation. In January 2010, the Associated General Contractors of America filed a petition requesting CARB to adopt an emergency amendment to delay the fleet average target dates of this regulation for two years, which was granted. CARB would "not take any enforcement action for noncompliance with the regulation's March 1, 2010 emission standards or other emission related requirements prior to receiving authorization from EPA."

The proposed Projects would be subject to the control measures adopted by CARB, as the Projects would involve heavy diesel vehicle use during construction.

4.3.3.3 Local

The local air districts are responsible for planning, implementing attainment strategies, and enforcing federal and state ambient standards within their jurisdictions. The regulations of these agencies are focused on stationary sources and, therefore, are generally not relevant to these Projects, which have limited stationary sources.

4.3.3.3.1 County of Los Angeles

The County of Los Angeles has proposed draft regulations under the 2013 Draft 2035 Los Angeles County General Plan, which includes goals, objectives, policies, and implementation measures applicable to air quality. The Draft Air Quality Element addresses the General Plan's Guiding Principles by promoting the following Smart Growth policies: promote land use patterns that reduce the number and length of motor vehicle trips, implement best management practices to reduce emissions associated with construction, implement that new development areas and associated community-wide facilities be linked and oriented to existing developed areas of the community through open space systems and bicycle and pedestrian systems, and establish a

[2] CARB's Off-Road Diesel Vehicle Regulation, http://www.arb.ca.gov/msprog/ordiesel/knowcenter.htm.

comprehensive and safe system of bicycle routes and pedestrian trails for short-range commuting, shopping trips, and for recreational use.

4.3.3.3.2 The Los Angeles County Code (Chapter 12.32.010) requires permits for activities on areas of 2.5 acres or more that may generate harmful dust levels within a defined area of the Antelope Valley (Los Angeles County 1991). Antelope Valley Air Quality Management District

The proposed Projects sites are situated in the jurisdiction of the AVAQMD. Based on the current PM_{10} and O_3 non-attainment status for the areas overseen by the AVAQMD, AQMPs and Air Quality Attainment Plans (AQAPs) have been developed. The AVAQMD developed a 2004 and 2008 O_3 Attainment Plan (state and federal attainment) for attainment of the federal and state standards. The 2004 O_3 Attainment Plan was aimed at the state 1-hour standard, while the 2008 Plan is directed at the federal 8-hour standard. The control measures identified in the attainment plan are consistent with the former South Coast Air Quality Management District (SCAQMD) 1997 AQMP, which included the Antelope Valley prior to splitting into a separate jurisdiction in 1997. Of the control measures presented in the 1997 AQMP, the only measure that is relevant to the proposed Projects is the federally implemented measure that focuses on internal combustion engine exhaust. This measure, based on EPA rulemaking, focused on a strategy to regulate emissions from non-road internal combustion engines greater than or equal to 50 horsepower (hp). These non-road emissions are now regulated under the State Implementation Plan (SIP) as CARB-implemented programs for gas and diesel engines (including construction equipment). Therefore, the proposed Projects would be consistent with the O_3 Attainment Plan for the Antelope Valley. The AVAQMD also has prepared a list of measures to reduce particulate matter (PM) emissions to meet state planning requirements under the California Health and Safety Code (H&SC) Section 40923.

The construction and operation of the facility would be subject to the prohibitory rules governing dust generation. The applicable rules for these Projects would be (AVAQMD 2009):

- AVAQMD Rule 201 – Permit to Construct

  Any person building, altering, or replacing any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, must first obtain authorization for such construction from the AVAQMD. A Permit to Construct (PTC) shall remain in effect until the Permit to Operate (PTO) for the equipment for which the application was filed is granted, denied, or cancelled. The PTC application is evaluated based on the requirements of Regulations XIII, as identified in Rule 1303, to assess if best available control technology, offsets, and/or modeling are required.

- AVAQMD Rule 203 – Permit to Operate (PTO)

  A person shall not operate or use any equipment, the use of which may cause the issuance of air contaminants, or the use of which may reduce or control the issuance of air contaminants, without first obtaining a written PTO from AVAQMD, or except as provided in Rule 202. The equipment shall not be operated contrary to the conditions

specified in the PTO. The Projects would comply with this rule by obtaining a permit from the AVAQMD in a timely manner and complying with the stated conditions.

- AVAQMD Rule 401 – Visible Emissions

  A person shall not discharge into the atmosphere, from any single source of emissions whatsoever, any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour which is as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke which is as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart. The Projects emission sources would be equipped with Best Available Control Technology (BACT) and combust clean fuels and, consequently, compliance with this rule is expected.

- AVAQMD Rule 402 – Nuisance

  A person shall not discharge from any source whatsoever such quantities of air contaminants or other material 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. Due to the application of BACT on each emission source and the distance from the emission sources to any potential receptors, compliance with this rule is expected.

- AVAQMD Rule 403 – Fugitive Dust

  The purpose of this rule is to reduce the amount of PM_{10} emitted from significant manmade fugitive dust sources and in an amount sufficient to maintain the NAAQS. The provisions of this rule apply to specified bulk storage, earthmoving, construction and demolition, and man-made conditions resulting in wind erosion.

  The Projects' construction would involve short-term bulk storage of soils, earthmoving, construction and demolition, and man-made conditions that can cause fugitive dust emissions. The Projects' operator, or its contractors, would follow the fugitive dust control strategy outlined in a Dust Control Plan that would be prepared for the Projects.

  Project operations would involve limited vehicle travel within the solar PV array field to periodically wash the PV panels, to control vegetation and maintain fuel breaks, and to maintain and inspect Project facilities. These operational-phase activities can cause fugitive dust emissions. The owner, or its contractors, would be required to follow the fugitive dust control strategy outlined in the Dust Control Plan that would be prepared for the Projects (refer to Section 5.6.5).

- AVAQMD Rule 404 – Particulate Matter – Concentration

  Rule 404 applies to any person who discharges PM emissions into the atmosphere from any single-source operation. The rule limits PM emissions based upon the exhaust flow rate. The fire water pump/emergency generator engines would be subject to and comply with this rule by using only ultra-low sulfur diesel fuel.

- AVAQMD Rule 405 – Particulate Matter – Emission Rate

  A person shall not discharge into the atmosphere from any source operation, particulate matter in excess of the limits shown in the rule. This rule is generally applied to processes that handle bulk dry materials, and is not generally applied to combustion processes, as there is not "process weight" on which to base the emissions limit.

- AVAQMD Rule 442 – Usage of Solvents

  The rule is a general prohibitory rule that would govern proper usage of solvents and paints. Other source specific rules governing cleaning, painting, and stripping may apply if the construction or operational-phase activities include these actions. The AVAQMD prepared a list of measures to reduce PM_{10} emissions in 2005 (AVAQMD 2005) in response to a legislative mandate. Within the published list, the only applicable measures for these Projects are fugitive dust control measures, which would be integrated into a fugitive dust control plan for construction and operation of the Projects.

4.3.3.3.3 Southern California Association of Governments

As a regional planning agency, the Southern California Association of Governments (SCAG) serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. It reviews projects to analyze their impacts and consistency with SCAG's regional planning efforts. Although it is not an air quality management agency, it is responsible for assisting in several air quality and regional transportation planning issues. Pursuant to Section 176(c) of the 1990 amendments to the Clean Air Act (CAA), it is responsible for providing current population, employment, travel, and congestion projections for regional air quality planning efforts. The Cites of Lancaster and Palmdale and the County of Los Angeles are representative members of SCAG.

4.3.4 Significance Criteria

The Los Angeles County Planning Department's Environmental Checklist for the proposed Projects indicates a project may have a significant impact on air quality if it would exceed the significance thresholds included in Section III, Air Quality, in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The proposed Projects would result in significant impact to air quality if any of the following significance criteria are met:

a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

b) Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c) Would the Project cumulatively produce a considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

d) Would the Project expose sensitive receptors to substantial pollutant concentrations?

e) Would the Project create objectionable odors affecting a substantial number of people?

In addition, the AVAQMD has separate significance criteria for assessing air quality impacts. AVAQMD's significance criteria are very similar to the CEQA and Los Angeles County criteria.

Based on these criteria, a project has significant air quality impact, if the following occurs:

a) Generates total emissions exceeding the AVAQMD significant thresholds shown in Table 4.3-4; and/or

b) Generates a violation of any ambient air quality standard when added to the local air quality background; and/or

c) Does not conform with the applicable attainment or maintenance plan(s); and/or

d) Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.

A project with significant impacts must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation measures.

Table 4.3-4 AVAQMD Significance Thresholds

Criteria Pollutant	Annual Threshold (tons)	Daily Threshold (pounds)
Carbon Monoxide (CO)	100	548
Oxides of Nitrogen (NO_x)	25	137
Reactive Organic Gases (ROG)	25	137
Oxides of Sulfur (SO_x)	25	137
Particulate Matter (PM_{10})	15	82
Particulate Matter ($PM_{2.5}$)	15	82
Hydrogen Sulfide (H_2S)	10	54
Lead	0.6	3
Greenhouse Gases (CO_2e)	100,000	548,000

Source: AVAQMD 2013.

4.3.5 Impact Analysis Methods

4.3.5.1 Construction

As a conservative analysis, construction on the Projects would occur continuously over the course of two years, starting in the first quarter of 2014 and ending in second quarter of 2015. As shown in Figure 4.3-1, construction would be conducted in phases, staggered to reduce short-term emissions. The URBEMIS 2007 model issued by CARB was used to determine the emissions for these Projects. The model contains data specific to each California basin and divides the construction processes into phases, including demolition, mow (site preparation), fencing/infrastructure construction (trenching, paving, generation-tie line construction), and photovoltaic (PV) installation. The construction timeframe is important since construction emissions are directly related to the intensity of construction activities. The construction emissions increase as the overall amount of activity increases. When construction activity proceeds at a less intensive pace, the emissions would be lower.

For Projects 1 and 4, the following construction phases are assumed:

Phase 1: Demolition

Phase 2: Mow

Phase 3: Fencing/Infrastructure Construction

Phase 4: PV Installation

For Projects 2, 3, 5 and 6, the following construction phases are assumed:

Phase 1: Mow

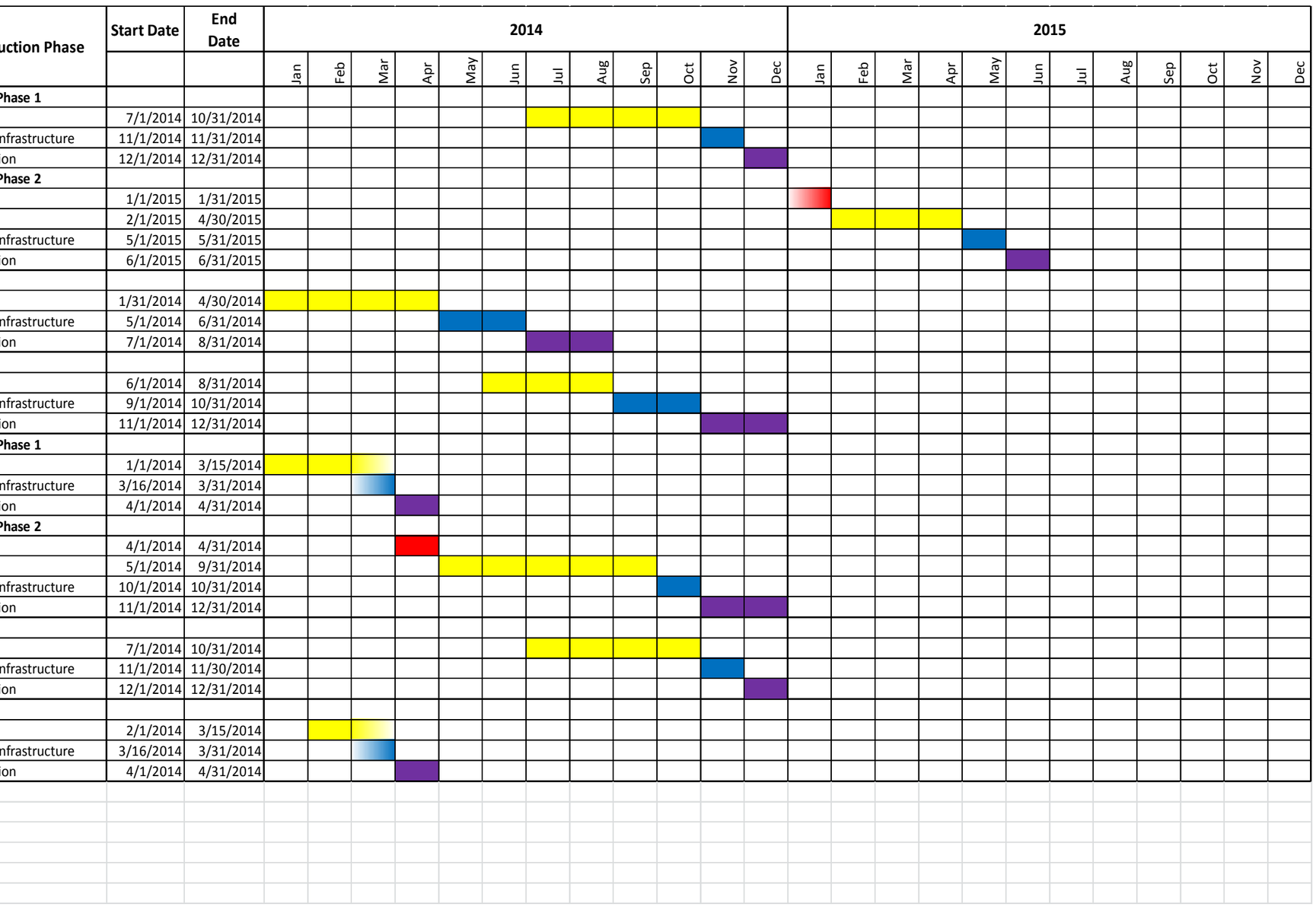
Phase 2: Fencing/Infrastructure Construction

Phase 3: PV Installation

Each construction phase potentially can generate the following: (1) fugitive dust emissions resulting from mowing the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading), dusts from paved and unpaved roads, constructing drainage features if required and trenching; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, material hauling, and construction debris disposal. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions. The quantifiable mitigation measures in the URBEMIS model are: AQ-1, water exposed surfaces two times daily; AQ-3, off-road diesel powered construction equipment less than 175 hp shall meet or exceed Tier 2 off-road emission standards. Off-road diesel-powered construction equipment greater than 175 hp shall meet or exceed Tier 3 off-road emissions standards; and AQ-8, mowers shall be used during the site preparation phase. Since the model can only quantify those measures, actual construction emissions would be lower than emissions after mitigation. Technical Reports in Appendix B-2 show the SGF site-specific construction schedules and construction equipment for each Project.

Figure 4.3-1 Construction Schedule of Projects

Project #	Project Name	MW	Total Acres	Construction Phase	Start Date	End Date
1	North Lancaster Ranch	20	P1: 158	Phase 1		
(CUP 6)				Mow	7/1/2014	10/31/2014
				Trenching/Infrastructure	11/1/2014	11/31/2014
				PV Installation	12/1/2014	12/31/2014
			P2: 80	Phase 2		
				Demolition	1/1/2015	1/31/2015
				Mow	2/1/2015	4/30/2015
				Trenching/Infrastructure	5/1/2015	5/31/2015
				PV Installation	6/1/2015	6/31/2015
2	Western Antelope Blue Sky Ranch	40	157			
(CUP 7)				Mow	1/31/2014	4/30/2014
				Trenching/Infrastructure	5/1/2014	6/31/2014
				PV Installation	7/1/2014	8/31/2014
3	American Solar Greenworks	35	135.61			
(CUP 9)				Mow	6/1/2014	8/31/2014
				Trenching/Infrastructure	9/1/2014	10/31/2014
				PV Installation	11/1/2014	12/31/2014
4	Antelope Solar Greenworks	52	256	Phase 1		
(CUP 10a)				Mow	1/1/2014	3/15/2014
				Trenching/Infrastructure	3/16/2014	3/31/2014
				PV Installation	4/1/2014	4/31/2014
				Phase 2		
				Demolition	4/1/2014	4/31/2014
				Mow	5/1/2014	9/31/2014
				Trenching/Infrastructure	10/1/2014	10/31/2014
				PV Installation	11/1/2014	12/31/2014
5	Silver Sun Greenworks	20	160			
(CUP 11)				Mow	7/1/2014	10/31/2014
	2.4 mile gen-tie			Trenching/Infrastructure	11/1/2014	11/30/2014
				PV Installation	12/1/2014	12/31/2014
6	Lancaster WAD	5	38.49			
(CUP 15)				Mow	2/1/2014	3/15/2014
				Trenching/Infrastructure	3/16/2014	3/31/2014
				PV Installation	4/1/2014	4/31/2014



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During construction, the proposed Projects would be subject to AVAQMD Rule 403 (Fugitive Dust), which requires reduction of man-made fugitive dust. Rule 403 requires implementation of control measures to prevent, reduce, or mitigate fugitive dust emissions and includes a performance standard that prohibits visible emissions from crossing any property line (AVAQMD 2010). Dust control measures, such as water application or chemical stabilizers on dry soil, and reducing vehicle travel on unpaved roads, are standard mitigation techniques. The Projects' construction would be required to comply with Rule 403. Implementing the dust suppression techniques specified in Rule 403 can reduce the fugitive dust generation (and thus the PM_{10} component) by 50 percent or more. Estimates of fugitive dust emissions during construction of the Projects are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression. In addition, mowing of the site shall be limited to no more than 3.5 acres per day at each of the six Project sites to further reduce dust emissions during construction.

4.3.5.2 Operations

During operation, the Projects would not require equipment that emits a large amount of air pollutants. The sources of pollutants would be limited to the vehicles used by the operations and maintenance staff.

The URBEMIS 2007 software was used to compile the vehicle emissions during long-term Projects' operations. In calculating mobile source emissions, the URBEMIS 2007 assumptions were applied to determine the annual vehicle miles traveled (VMT).

The proposed Projects would be subject to AVAQMD's Regulation II (Permits) and Regulation XIII (New Source Review) (AVAQMD 2012). These regulations ensure that all equipment with the potential to emit air pollutants (including air toxics and hazardous air pollutants) at the Projects sites would be subject to the AVAQMD's review and approval before installation.

4.3.5.3 Health Risk

The methodology used to determine the health impact from the emissions of hazardous air pollutants due to implementation of the Projects are outlined as follows:

4.3.5.3.1 Hazard Identification

Hazard identification refers to identifying substances as carcinogens, reproductive toxins, chronic toxins, acute toxins, or a type of exposure as hazardous. The TACs used in the Health Risk Assessment (HRA) includes DPM and acrolein. DPM and acrolein are byproducts of diesel fuel combustion. Studies have shown that diesel combustion produces acrolein in an amount equal to 0.013 times that of DPM (Southwest Research Institute 2003). Other TACs from diesel combustion besides DPM and acrolein exist; however, DPM is considered to be a surrogate for speciated compounds from diesel exhaust and can account for combined health effects of diesel exhaust constituents.

4.3.5.3.2 Exposure Assessment

Exposure assessment identifies and quantifies all routes of human exposure to substances of concern. The SCREEN3 model issued by EPA was used for estimating offsite concentrations of

TACs. Based on the land use surrounding the proposed Projects and EPA guidelines, a rural profile was assumed. Construction activities were modeled as area sources placed over the area of the Projects sites. Appendix B-2 provides the SCREEN3 model run.

4.3.5.3.3 Risk Characterization

Risk characterization is the final step of the HRA. It quantifies the human health risk based on the exposure assessment and dose-response relationships (cancer potency factors and reference exposure levels). In this assessment, three types of human health effects were considered: (1) cancer, (2) chronic effects, and (3) acute effects. Health risks are calculated based on the Office of Environmental Health and Hazard Assessment (OEHHA) guidelines.

A summary of the OEHHA method used to determine the cancer, chronic, and acute health risk is as follows:

Cancer Risk

The cancer risks were calculated as the individual excess lifetime cancer risk (i.e., the probability that an individual may develop cancer from a lifetime exposure to the chemicals of concern). There are different pathways that a toxicant can enter a human body. Gaseous toxicants can enter a human body through the inhalation pathway of through ingestion or dermal pathways from gaseous toxicants deposited on soil, surface water, or plants. Semi-volatile and metal toxicants can enter the body through inhalation, ingestion, and dermal pathways.

For inhalation pathway, the cancer risk is computed using the following equation:

$$CRinh = (GLC \times CP \times BR \times EF \times ED \times 10^{-6}) / AT \qquad \text{Eq. 1}$$

Where:

CRinh = Cancer Risk through inhalation
GLC = Annual Average Ground-level concentration (from air dispersion model)
CP = Cancer Potency Factor
BR = Daily Breathing Rate
EF = Exposure Frequency
ED = Exposure Duration
AT = Average Time Period

Chronic Risk

The potential for long-term chronic health effects is quantified by comparing the predicted level of exposure to a reference exposure level (REL). This ratio of predicted exposure to reference exposure is referred to as a chronic hazard index (HIc). HIc is calculated by summing the ratios of each toxic substance over its REL. The equation for estimating HIc is as follows:

$$HIc = \sum Ci / \text{chronic RELi}$$

Where:

Ci = Ground-level concentration of substance i (annual average concentration)
RELi = Chronic Reference Exposure Level for substance i

Acute Risk

In the same manner as quantifying chronic health effects, the potential for short-term acute health effects was quantified using a hazard index. The acute hazard index (HIa) is calculated by dividing the maximum estimated hourly concentration of each toxic air pollutant by its reference short-term exposure levels. The equation for estimating HIa is as follows:

$$HIa = \sum Ci / Acute\ RELi$$

Where:

Ci = Maximum hourly ground-level concentration of substance i
RELi = Acute Reference Exposure Level for substance i.

4.3.6 Impacts Analysis

4.3.6.1 Project Impacts: Criterion A – Would the Project conflict with or obstruct implementation of the applicable air quality plan?

4.3.6.1.1 Projects 1 – 6 and Gen-tie Lines

Pursuant to the CAA, the AVAQMD is required to reduce project emissions of criteria pollutants for which the MDAB is in non-attainment. The Projects 1 – 6 are located within a non-attainment area causing certain Projects-related activities to potentially be subject to emission control strategies contained within the AVAQMD Federal 8-Hour Ozone Attainment Plan.

Construction Impacts

Construction would involve activities that can result in emissions of particulate matter. Construction of PV panels and the generation-tie line would not require intense earthmoving activities, only the low-impact method of mowing the surface. Compliance with applicable rules, ordinances, plans, and policies would minimize PM emissions during construction. As shown below, in response to Question “b”, construction emissions would not exceed emission thresholds and would be less than significant.

Operations Impacts

During operation of the Projects, the Projects would undergo maintenance and security activities no more than 10 times annually (as needed), and would not create a daily increase in population or visitors. The assumption of 10 trips annually includes truck trips associated with panel washing. The Projects would comply with AVAQMD rules and Los Angeles County ordinances and are designed to be consistent with applicable county policies and the Attainment Plan. Therefore, the Projects would not conflict with implementing the applicable air quality plan and be less than significant.

4.3.6.2 Project Impacts: Criterion B – Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction Impacts

Construction of the Projects can create air quality impacts resulting from the use of heavy-duty construction equipment, earth-moving activities, and from vehicle trips generated from construction workers traveling to and from the Project sites. In addition, fugitive dust emissions would result from construction activities. Mobile source emissions, primarily PM and NO_X, would result from using construction equipment such as bulldozers, loaders, and cranes. Construction emissions can vary daily depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

A detailed schedule of the Projects' different site initiation and completion was used to quantitatively evaluate the potential impacts. Each of the Project sites was analyzed based on the individual Project's surface area, construction schedule, and equipment mix. In addition, each SGF would consist of the following components:

- PV modules
- PV module mounting system
- Electrical boxes (e.g., combiner boxes, electrical disconnects)
- Electrical inverters and transformers including cooling oils
- Electrical AC collection system, including switchgear
- Data monitoring equipment
- Generation-tie line
- Access roads and chain link perimeter security fencing

Emissions during construction were forecast using each site's applicable construction schedule and applying the mobile-source and fugitive dust emissions factors derived from URBEMIS 2007. The URBEMIS 2007 model uses default fugitive dust emissions factors based on the Los Angeles County's local area conditions. A complete listing of the construction equipment by phase and construction phase duration assumptions used in this analysis is included within the URBEMIS 2007 printout sheets provided in Technical Reports in Volume 2 – Appendix B-2. Each timeframe is of particular importance as construction emissions are directly related to the intensity of construction activities (emissions increase as the overall amount of construction activity increases). Actual construction may proceed at a less intensive pace, which would result in lower daily emissions. Construction conducted for this project-level component could generate substantial amounts of fugitive dust. Dust emissions would vary daily, depending on the level and type of activity, silt content of the soil, and the prevailing weather. Primary sources of fugitive dust during construction would include excavation, earth movement, and wind erosion from exposed surfaces. In addition, mitigation measures are provided in Section 4.3.6 to further reduce fugitive dust emissions from episodic winds in the Antelope Valley.

4.3.6.2.1 Project 1 and Gen-tie Line

Table 4.3-5 below summarizes emissions during construction of Project 1. Emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression, watering exposed surfaces two times daily. As shown, the short-term emissions during the construction of Phase 1 and Phase 2 would not exceed AVAQMD significant thresholds. As such, the Project would not exceed thresholds, result in violating air quality standards, or contribute substantially to an existing or projected air quality violation. Therefore the construction impacts of Project 1 are less than significant with mitigation measures listed in Section 4.3.7.

Table 4.3-5 Project 1 – Construction Emissions[a] (lbs/day)

North Lancaster Ranch	ROG	NOx	CO	SO_2	PM_{10}[b]	$PM_{2.5}$
	(lbs/day)					
Phase 1						
Phase 1 – Mow	2	16	10	<1	17	1
Phase 2 - Fencing/Trenching/Infrastructure	1	8	4	<1	<1	<1
Phase 3 - PV Installation	3	27	25	<1	< 1	1
Phase 2						
Phase 1 – Demolition	4	30	17	<1	<1	1
Phase 2 – Mow	6	42	28	<1	17	1
Phase 3 – Fencing/Trenching/Infrastructure	1	7	4	<1	<1	<1
Phase 4 – PV Installation	3	23	24	<1	<1	1
Maximum Daily Emissions	6	42	28	<1	17	1
AVAQMD Regional Emissions Threshold	**137**	**137**	**548**	**137**	**82**	**82**
Over / (Under)	(131)	(95)	(520)	(137)	(65)	(81)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

* Values may not exactly add up due to rounding.

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

[b] PM_{10} emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression.

4.3.6.2.2 Project 2 and Gen-tie Line

Table 4.3-6 below summarizes emissions during construction of Project 2. As shown, the short-term emissions during the construction phase would not exceed AVAQMD significant thresholds. As such, the Project would not exceed thresholds, violate air quality standards, or contribute substantially to an existing or projected air quality violation. Therefore the construction impacts of Project 2 are less than significant with mitigation measures listed in Section 4.3.7.

Table 4.3-6 Project 2 – Construction Emissions[a] (lbs/day)

Western Antelope Blue Sky Ranch	ROG	NO_x	CO	SO_2	PM_{10}[b]	$PM_{2.5}$
	(lbs/day)					
Phase 1 – Mow	6	46	29	<1	13	4
Phase 2 – Fencing/Trenching/Infrastructure	1	8	4	<1	<1	<1
Phase 3 – PV Installation	3	22	17	<1	1	1
Maximum Daily Emissions	6	46	29	<1	13	4

Western Antelope Blue Sky Ranch	ROG	NO_x	CO	SO_2	PM_{10}[b]	$PM_{2.5}$
	(lbs/day)					
AVAQMD Regional Emissions Threshold	**137**	**137**	**548**	**137**	**82**	**82**
Over / (Under)	(131)	(91)	(519)	(137)	(69)	(78)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

** Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

[b] PM_{10} emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression.

4.3.6.2.3 Project 3 and Gen-tie Line

Table 4.3-7 below summarizes emissions during construction of Project 3. As shown, the short-term emissions during the construction phase would not exceed AVAQMD significant thresholds. As such, the Project would not exceed thresholds, result in violating air quality standards, or contribute substantially to an existing or projected air quality violation. Therefore the construction impacts of Project 3 are less than significant with mitigation measures listed in Section 4.3.7.

Table 4.3-7 Project 3 – Construction Emissions[a] (lbs/day)

American Solar Greenworks	ROG	NO_x	CO	SO_2	PM_{10}[b]	$PM_{2.5}$
	(lbs/day)					
Phase 1 – Mow	4	29	18	<1	21	5
Phase 2 – Fencing/Trenching/Infrastructure	1	8	4	<1	<1	<1
Phase 3 – PV Installation	3	22	18	<1	1	1
Maximum Daily Emissions	4	29	18	<1	21	5
AVAQMD Regional Emissions Threshold	**137**	**137**	**548**	**137**	**82**	**82**
Over / (Under)	(133)	(108)	(530)	(137)	(61)	(77)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

** Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

[b] PM_{10} emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression.

4.3.6.2.4 Project 4 and Gen-tie Line

Table 4.3-8 below summarizes emissions during construction of Project 4. As shown, the short-term emissions during the construction phase would not exceed AVAQMD significant thresholds. As such, the Project would not exceed thresholds, violate air quality standards, or contribute substantially to an existing or projected air quality violation. Therefore the construction impacts of Project 4 are less than significant with mitigation measures listed in Section 4.3.7.

Table 4.3-8 Project 4 – Construction Emissions[a] (lbs/day)

Antelope Solar Greenworks	ROG	NO_x	CO	SO_2	PM_{10}[b]	$PM_{2.5}$
	(lbs/day)					
Phase 1						
Phase 1 – Mow	5	38	25	<1	13	4
Phase 2 – Fencing/Trenching/Infrastructure	1	10	6	<1	<1	<1
Phase 3 – PV Installation	3	27	26	<1	1	1
Phase 2						
Phase 1 – Demolition	4	33	18	<1	3	1

Antelope Solar Greenworks	ROG	NO_x	CO	SO_2	PM_{10} [b]	$PM_{2.5}$
	(lbs/day)					
Phase 2 – Mow	5	38	25	<1	13	4
Phase 3 – Fencing/Trenching/Infrastructure	1	10	6	<1	<1	<1
Phase 4 – PV Installation	3	27	26	<1	1	1
Concurrent Daily Emissions (Phase 3- PV Installation and Phase 1- Demolition)	7	60	44	<1	4	2
Maximum Daily Emissions	7	60	44	<1	13	4
AVAQMD Regional Emissions Threshold	**137**	**137**	**548**	**137**	**82**	**82**
Over / (Under)	(130)	(77)	(504)	(137)	(69)	(78)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

** Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

[b] PM_{10} emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression.

4.3.6.2.5 Project 5 and Gen-tie Line

Table 4.3-9 below summarizes emissions during construction of Project 5. As shown, the short-term emissions during the construction phase would not exceed AVAQMD significant thresholds. As such, the project would not exceed thresholds, violate air quality standards, or contribute substantially to an existing or projected air quality violation. Therefore the construction impacts of Project 5 are less than significant with mitigation measures listed in Section 4.3.7.

Table 4.3-9 Project 5 – Construction Emissions[a] (lbs/day)

Silver Sun Greenworks	ROG	NO_x	CO	SO_2	PM_{10} [b]	$PM_{2.5}$
	(lbs/day)					
Phase 1 – Mow	4	30	19	<1	15	4
Phase 2 – Fencing/Trenching/Infrastructure	1	10	6	<1	<1	<1
Phase 3 – PV Installation	2	20	17	<1	1	1
Maximum Daily Emissions	4	30	19	<1	15	4
AVAQMD Regional Emissions Threshold	**137**	**137**	**548**	**137**	**82**	**82**
Over / (Under)	(133)	(107)	(529)	(137)	(67)	(78)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

**Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

[b] PM_{10} emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression.

4.3.6.2.6 Project 6 and Gen-tie Line

Table 4.3-10 below summarizes emissions during construction of Project 6. As shown, the short-term emissions during the construction phase would not exceed AVAQMD significant thresholds. As such, the Project would not exceed thresholds, result in violating air quality standards, or contribute substantially to an existing or projected air quality violation. Therefore the construction impacts of Project 6 are less than significant with mitigation measures listed in Section 4.3.7.

Table 4.3-10 Project 6 – Construction Emissions[a] (lbs/day)

Lancaster WAD	ROG	NO_x	CO	SO_2	PM_{10} [b]	$PM_{2.5}$
	(lbs./day)					
Phase 1 – Mow	3	23	15	<1	12	3
Phase 2 – Fencing/Trenching/Infrastructure	1	10	6	<1	<1	<1
Phase 3 – PV Installation	2	18	10	<1	1	<1
Maximum Daily Emissions	3	23	15	<1	12	3
AVAQMD Regional Emissions Threshold	**137**	**137**	**548**	**137**	**82**	**82**
Over / (Under)	(134)	(114)	(533)	(137)	(70)	(79)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

**Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

[b] PM_{10} emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression.

4.3.6.2.7 Projects – Concurrent Construction Air Quality Impacts

Since construction of Projects 1-6 would occur consecutively over the course of two years, construction of the six Projects could overlap. This would cause a peak in the Projects' daily construction emissions. These emission forecasts reflect a specific set of assumptions in which the six Projects would be built out over the course of two years, using equipment subject only to current, less stringent emission standards than those applicable in future years. The analysis assumed that all construction activities would comply with AVAQMD Rule 403 regarding the control of fugitive dust. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less intensive build-out schedule (i.e., lower daily emissions occurring over a longer time interval). A summary of unmitigated daily overlapping construction phases for the Projects is presented in Table 4.3-11; and mitigated daily overlapping construction phases for the Projects is presented in Table 4.3-12. As shown in Table 4.3-11, unmitigated peak daily concurrent construction emissions would exceed PM_{10} thresholds in July, August, and September of 2014. However, as the project has committed to the mitigation measures listed in Section 4.3.7, Mitigation Measures, PM_{10} and $PM_{2.5}$ emissions will be reduced to below the significance thresholds. The quantifiable mitigation measures in the URBEMIS model are: AQ-1, water exposed surfaces two times daily; AQ-3, off-road diesel powered construction equipment less than 175 hp shall meet or exceed Tier 2 off-road emission standards. Off-road diesel-powered construction equipment greater than 175 hp shall meet or exceed Tier 3 off-road emissions standards; and AQ-8, mowers shall be used during the site preparation phase. Since the model can only quantify those measures, actual construction emissions would be lower than mitigated emissions shown in Table 4.3-12. Peak annual construction emissions are reflected in Table 4.3-13.

Table 4.3-11 Unmitigated Peak Daily Concurrent Construction Emissions[a] (lbs/day)

Project #	Project Name	Phase	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
AVAQMD Daily Significance Threshold			**137**	**137**	**548**	**137**	**82**	**82**
Year - 2014								
January 1 to January 31								
4	Antelope Solar Greenworks-Phase 1	Mow	5	38	25	0	22	6
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	23	6
Overlapping Emissions			11	84	54	0	45	13
Above Daily Threshold?			No	No	No	No	No	No
February 1 to February 28								
4	Antelope Solar Greenworks-Phase 1	Mow	5	38	25	0	22	6
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	23	6
6	Lancaster WAD	Mow	3	23	15	0	21	5
Overlapping Emissions			14	107	68	0	66	18
Above Daily Threshold?			No	No	No	No	No	No
March 1 to March 15								
4	Antelope Solar Greenworks-Phase 1	Mow	5	38	25	0	22	6
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	23	6
6	Lancaster WAD	Mow	3	23	15	0	21	5
Overlapping Emissions			14	107	68	0	66	18
Above Daily Threshold?			No	No	No	No	No	No
March 16 to March 31								
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	23	6
4	Antelope Solar Greenworks-Phase 1	Trenching/Infrastructure	1	10	6	0	1	1
6	Lancaster WAD	Trenching/Infrastructure	1	10	6	0	1	1
Overlapping Emissions			9	66	41	0	24	8
Above Daily Threshold?			No	No	No	No	No	No
April 1 to April 30								
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	23	6
4	Antelope Solar Greenworks-Phase 1	PV Installation	3	27	26	0	1	1
4	Antelope Solar Greenworks-Phase 2	Demolition	4	33	18	0	3	2
6	Lancaster WAD	PV Installation	2	18	11	0	1	1
Overlapping Emissions			16	123	84	0	28	10
Above Daily Threshold?			No	No	No	No	No	No
May 1 to May 31								
2	Western Antelope Blue Sky Ranch	Trenching/Infrastructure	1	8	4	0	0	0
4	Antelope Solar Greenworks-Phase 2	Mow	5	38	25	0	22	6
Overlapping Emissions			6	46	29	0	23	7
Above Daily Threshold?			No	No	No	No	No	No
June 1 to June 30								
2	Western Antelope Blue Sky	Trenching/Infrastructure	1	8	4	0	0	0

Project #	Project Name	Phase	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
AVAQMD Daily Significance Threshold			**137**	**137**	**548**	**137**	**82**	**82**
	Ranch							
4	Antelope Solar Greenworks-Phase 2	Mow	5	38	25	0	22	6
3	American Solar Greenworks	Mow	4	29	18	0	37	9
Overlapping Emissions			10	74	47	0	59	15
Above Daily Threshold?			No	No	No	No	No	No
July 1 to July 31								
4	Antelope Solar Greenworks-Phase 2	Mow	5	38	25	0	22	6
3	American Solar Greenworks	Mow	4	29	18	0	37	9
1	North Lancaster Ranch-Phase 1	Mow	2	16	10	0	31	7
2	Western Antelope Blue Sky Ranch	PV Installation	3	22	17	0	1	1
5	Silver Sun Greenworks	Mow	4	30	19	0	32	8
Overlapping Emissions			18	135	89	0	122	31
Above Daily Threshold?			No	No	No	No	Yes	No
August 1 to August 31								
4	Antelope Solar Greenworks-Phase 2	Mow	5	38	25	0	22	6
3	American Solar Greenworks	Mow	4	29	18	0	37	9
1	North Lancaster Ranch-Phase 1	Mow	2	16	10	0	31	7
2	Western Antelope Blue Sky Ranch	PV Installation	3	22	17	0	1	1
5	Silver Sun Greenworks	Mow	4	30	19	0	32	8
Overlapping Emissions			18	135	89	0	122	31
Above Daily Threshold?			No	No	No	No	Yes	No
September 1 to September 30								
4	Antelope Solar Greenworks-Phase 2	Mow	5	38	25	0	22	6
1	North Lancaster Ranch-Phase 1	Mow	2	16	10	0	31	7
5	Silver Sun Greenworks	Mow	4	30	19	0	32	8
3	American Solar Greenworks	Trenching/Infrastructure	1	8	4	0	0	0
Overlapping Emissions			12	92	58	0	85	21
Above Daily Threshold?			No	No	No	No	Yes	No
October 1 to October 31								
1	North Lancaster Ranch-Phase 1	Mow	2	16	10	0	31	7
5	Silver Sun Greenworks	Mow	4	30	19	0	32	8
3	American Solar Greenworks	Trenching/Infrastructure	1	8	4	0	0	0
4	Antelope Solar Greenworks-Phase 2	Trenching/Infrastructure	1	10	6	0	1	1
Overlapping Emissions			9	64	39	0	64	16
Above Daily Threshold?			No	No	No	No	No	No
November 1 to November 30								
1	North Lancaster Ranch-Phase 1	Trenching/Infrastructure	1	8	4	0	0	0
3	American Solar Greenworks	PV Installation	3	22	18	0	1	1
4	Antelope Solar Greenworks-Phase 2	PV Installation	3	27	26	0	1	1
5	Silver Sun Greenworks	Trenching/Infrastructure	1	10	6	0	1	1

Project #	Project Name	Phase	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
AVAQMD Daily Significance Threshold			**137**	**137**	**548**	**137**	**82**	**82**
Overlapping Emissions			9	67	54	0	3	3
Above Daily Threshold?			No	No	No	No	No	No
December 1 to December 31								
3	American Solar Greenworks	PV Installation	3	22	18	0	1	1
4	Antelope Solar Greenworks-Phase 2	PV Installation	3	27	26	0	1	1
1	North Lancaster Ranch-Phase 1	PV Installation	3	27	25	0	1	1
5	Silver Sun Greenworks	PV Installation	2	20	17	0	1	1
Overlapping Emissions			12	96	86	0	4	4
Above Daily Threshold?			No	No	No	No	No	No
Year - 2015								
January 15 to January 31								
1	North Lancaster Ranch-Phase 2	Demolition	4	30	17	0	2	1
Above Daily Threshold?			No	No	No	No	No	No
February 1 to February 28								
1	North Lancaster Ranch-Phase 2	Mow	6	42	28	0	32	8
Above Daily Threshold?			No	No	No	No	No	No
March 1 to March 31								
1	North Lancaster Ranch-Phase 2	Mow	6	42	28	0	32	8
Above Daily Threshold?			No	No	No	No	No	No
April 1 to April 30								
1	North Lancaster Ranch-Phase 2	Mow	6	42	28	0	32	8
Above Daily Threshold?			No	No	No	No	No	No
May 1 to May 31								
1	North Lancaster Ranch-Phase 2	Trenching/Infrastructure	1	7	4	0	0	0
Above Daily Threshold?			No	No	No	No	No	No
June 1 to June 30								
1	North Lancaster Ranch-Phase 2	PV Installation	3	23	24	0	1	1
Above Daily Threshold?			No	No	No	No	No	No

Source: Tetra Tech 2013

*Values may not exactly add up due to rounding.

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

[b] PM_{10} emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression.

[c] Dates above reflect the highest daily emissions projected to occur on any one day, during the Projects' 2 year construction period.

Table 4.3-12 Mitigated Peak Daily Concurrent Construction Emissions[a] (lbs/day)

Project #	Project Name	Phase	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
AVAQMD Daily Significance Threshold			**137**	**137**	**548**	**137**	**82**	**82**
Year - 2014								
January 1 to January 31								
4	Antelope Solar Greenworks- Phase 1	Mow	5	38	25	0	13	4
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	13	4
Overlapping Emissions			11	84	54	0	26	7
Above Daily Threshold?			No	No	No	No	No	No
February 1 to February 28								
4	Antelope Solar Greenworks- Phase 1	Mow	5	38	25	0	13	4
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	13	4
6	Lancaster WAD	Mow	3	23	15	0	12	3
Overlapping Emissions			14	107	68	0	38	10
Above Daily Threshold?			No	No	No	No	No	No
March 1 to March 15								
4	Antelope Solar Greenworks- Phase 1	Mow	5	38	25	0	13	4
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	13	4
6	Lancaster WAD	Mow	3	23	15	0	12	3
Overlapping Emissions			14	107	68	0	38	10
Above Daily Threshold?			No	No	No	No	No	No
March 16 to March 31								
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	13	4
4	Antelope Solar Greenworks- Phase 1	Trenching/Infrastructure	1	10	6	0	0	0
6	Lancaster WAD	Trenching/Infrastructure	1	10	6	0	0	0
Overlapping Emissions			9	66	41	0	14	4
Above Daily Threshold?			No	No	No	No	No	No
April 1 to April 30								
2	Western Antelope Blue Sky Ranch	Mow	6	46	29	0	13	4
4	Antelope Solar Greenworks- Phase 1	PV Installation	3	27	26	0	1	1
4	Antelope Solar Greenworks- Phase 2	Demolition	4	33	18	0	3	1
6	Lancaster WAD	PV Installation	2	18	11	0	1	0
Overlapping Emissions			16	123	84	0	17	6
Above Daily Threshold?			No	No	No	No	No	No
May 1 to May 31								
2	Western Antelope Blue Sky Ranch	Trenching/Infrastructure	1	8	4	0	0	0
4	Antelope Solar Greenworks- Phase 2	Mow	5	38	25	0	13	4
Overlapping Emissions			6	46	29	0	13	4
Above Daily Threshold?			No	No	No	No	No	No
June 1 to June 30								
2	Western Antelope Blue Sky Ranch	Trenching/Infrastructure	1	8	4	0	0	0

Project #	Project Name	Phase	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
AVAQMD Daily Significance Threshold			**137**	**137**	**548**	**137**	**82**	**82**
4	Antelope Solar Greenworks- Phase 2	Mow	5	38	25	0	13	4
3	American Solar Greenworks	Mow	4	29	18	0	21	5
Overlapping Emissions			10	74	47	0	34	9
Above Daily Threshold?			No	No	No	No	No	No
July 1 to July 31								
4	Antelope Solar Greenworks- Phase 2	Mow	5	38	25	0	13	4
3	American Solar Greenworks	Mow	4	29	18	0	21	5
1	North Lancaster Ranch-Phase 1	Mow	2	16	10	0	17	1
2	Western Antelope Blue Sky Ranch	PV Installation	3	22	17	0	1	1
5	Silver Sun Greenworks	Mow	4	30	19	0	15	4
Overlapping Emissions			18	135	89	0	66	14
Above Daily Threshold?			No	No	No	No	No	No
August 1 to August 31								
4	Antelope Solar Greenworks- Phase 2	Mow	5	38	25	0	13	4
3	American Solar Greenworks	Mow	4	29	18	0	21	5
1	North Lancaster Ranch-Phase 1	Mow	2	16	10	0	17	1
2	Western Antelope Blue Sky Ranch	PV Installation	3	22	17	0	1	1
5	Silver Sun Greenworks	Mow	4	30	19	0	15	4
Overlapping Emissions			18	135	89	0	66	14
Above Daily Threshold?			No	No	No	No	No	No
September 1 to September 30								
4	Antelope Solar Greenworks- Phase 2	Mow	5	38	25	0	13	4
1	North Lancaster Ranch-Phase 1	Mow	2	16	10	0	17	1
5	Silver Sun Greenworks	Mow	4	30	19	0	15	4
3	American Solar Greenworks	Trenching/Infrastructure	1	8	4	0	0	0
Overlapping Emissions			12	92	58	0	45	9
Above Daily Threshold?			No	No	No	No	No	No
October 1 to October 31								
1	North Lancaster Ranch-Phase 1	Mow	2	16	10	0	17	1
5	Silver Sun Greenworks	Mow	4	30	19	0	15	4
3	American Solar Greenworks	Trenching/Infrastructure	1	8	4	0	0	0
4	Antelope Solar Greenworks- Phase 2	Trenching/Infrastructure	1	10	6	0	0	0
Overlapping Emissions			9	64	39	0	33	5
Above Daily Threshold?			No	No	No	No	No	No
November 1 to November 30								
1	North Lancaster Ranch-Phase 1	Trenching/Infrastructure	1	8	4	0	0	0
3	American Solar	PV Installation	3	22	18	0	1	1

Project #	Project Name	Phase	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
AVAQMD Daily Significance Threshold			**137**	**137**	**548**	**137**	**82**	**82**
	Greenworks							
4	Antelope Solar Greenworks- Phase 2	PV Installation	3	27	26	0	1	1
5	Silver Sun Greenworks	Trenching/Infrastructure	1	10	6	0	0	0
Overlapping Emissions			9	67	54	0	2	2
Above Daily Threshold?			No	No	No	No	No	No
December 1 to December 31								
3	American Solar Greenworks	PV Installation	3	22	18	0	1	1
4	Antelope Solar Greenworks- Phase 2	PV Installation	3	27	26	0	1	1
1	North Lancaster Ranch-Phase 1	PV Installation	3	27	25	0	0	1
5	Silver Sun Greenworks	PV Installation	2	20	17	0	1	1
Overlapping Emissions			12	96	86	0	3	3
Above Daily Threshold?			No	No	No	No	No	No
Year - 2015								
January 15 to January 31								
1	North Lancaster Ranch-Phase 2	Demolition	4	30	17	0	0	1
Above Daily Threshold?			No	No	No	No	No	No
February 1 to February 28								
1	North Lancaster Ranch-Phase 2	Mow	6	42	28	0	17	1
Above Daily Threshold?			No	No	No	No	No	No
March 1 to March 31								
1	North Lancaster Ranch-Phase 2	Mow	6	42	28	0	17	1
Above Daily Threshold?			No	No	No	No	No	No
April 1 to April 30								
1	North Lancaster Ranch-Phase 2	Mow	6	42	28	0	17	1
Above Daily Threshold?			No	No	No	No	No	No
May 1 to May 31								
1	North Lancaster Ranch-Phase 2	Trenching/Infrastructure	1	7	4	0	0	0
Above Daily Threshold?			No	No	No	No	No	No
June 1 to June 30								
1	North Lancaster Ranch-Phase 2	PV Installation	3	23	24	0	0	1
Above Daily Threshold?			No	No	No	No	No	No

Source: Tetra Tech 2013

*Values may not exactly add up due to rounding.

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

[b] PM_{10} emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression.

[c] Dates above reflect the highest daily emissions projected to occur on any one day, during the Projects' 2 year construction period.

Table 4.3-13 Peak Annual Construction Emissions[a] (tons/year)

		VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
2014							
Project 1	North Lancaster Ranch	0.14	1.11	0.76	0.00	1.39	0.33
Project 2	Western Antelope Blue Sky Ranch	0.35	2.61	1.71	0.00	0.58	0.18
Project 3	American Solar Greenworks	0.12	0.94	0.59	0.00	1.19	0.29
Project 4	Antelope Solar Greenworks	0.60	4.48	3.16	0.00	1.88	0.56
Project 5	Silver Sun Greenworks	0.22	1.67	1.11	0.00	1.43	0.37
Project 6	Lancaster WAD	0.08	0.60	0.38	0.00	0.33	0.09
TOTAL		**2**	**11**	**8**	**0.00**	**7**	**2**
AVAQMD Annual Significance Threshold		**25**	**25**	**100**	**25**	**15**	**15**
Above/(Below)		**(23)**	**(24)**	**(92)**	**(25)**	**(8)**	**(13)**
Above Annual Threshold?		**No**	**No**	**No**	**No**	**No**	**No**
2015							
Project 1	North Lancaster Ranch	0.27	1.99	1.37	0.00	1.07	0.30
TOTAL		**0.00**	**2**	**1**	**0.00**	**1**	**0.00**
AVAQMD Annual Significance Threshold		**25**	**25**	**100**	**25**	**15**	**15**
Above/(Below)		**(24)**	**(19)**	**(96)**	**(25)**	**(9)**	**(14)**
Above Annual Threshold?		**No**	**No**	**No**	**No**	**No**	**No**

Source: Tetra Tech 2013

*Values may not exactly add up due to rounding.

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

[b] PM_{10} emissions estimates are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression.

Peak annual construction emissions for Projects would be completed over the course of two years. Actual construction may proceed at a less intensive pace, which would result in lower daily emissions. It should also be noted that some SGF sites, for example Project 3 – American Solar Greenworks, would need far less ground disturbance and/or heavy duty diesel equipment because the site has already been pre-developed. Thus, implementing mitigation would further reduce the maximum daily construction emissions resulting from the Projects. Conversely, Table 4.3-13 shows that multiple construction crews operating at maximum intensity simultaneously for the Projects would not exceed AVAQMD annual significance thresholds for years 2014 and 2015. Maximum daily and annual construction emissions would not exceed the appropriate AVAQMD significant thresholds for all pollutants, even with the overlap in construction schedules. Thus, regional construction emissions would result in a less than significant air quality impact for the Projects.

4.3.6.2.8 Operations Impacts

The primary source of emissions for each Project site during operation is the vehicles used by facility maintenance staff traveling to and from the site. For a worst-case analysis, maintenance activities would include one water truck and one light duty truck estimating 10 trips per year for maintenance purposes. The URBEMIS model runs, which estimate the operation emissions for operational year and vehicle fleet, trip characteristics, temperature data, and road dust are presented in Appendix B-2. Trips were estimated for each Project with a daily trip rate per acre. Below is a summary of each site's operation emissions. The impact would be less than significant for all the Projects.

Project 1

Table 4.3-14 summarizes the operation emission calculation for Project 1 compared with the annual threshold, since operation is long-term. The primary sources of emissions during operation are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of security, equipment maintenance, and biannual panel washing with one water truck and one light duty truck assumed to occur with a maximum of 10 visits per year. As shown in Table 4.3-14, emissions during the long-term operation do not exceed AVAQMD significant thresholds. Therefore the operation impacts of Project 1 are less than significant.

Table 4.3-14 Project 1 – Operation Emissions (tons/yr.)

	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
	(tons/year)					
Area[a]	0.00	0.00	0.00	0.00	0.00	0.00
Energy[b]	0.00	0.00	0.00	0.00	0.00	0.00
Mobile[c]	0.23	0.00	0.04	0.00	0.01	0.00
Water[d]	0.00	0.00	0.00	0.00	0.00	0.00
Operation Phase	0.23	0.00	0.04	0.00	0.01	0.00
Energy Reduction[b]	0.00	0.00	0.00	0.00	0.00	0.00
Net Annual Emissions	0.23	0.00	0.04	0.00	0.01	0.00
AVAQMD Regional Emissions Threshold	**25**	**25**	**100**	**25**	**15**	**15**
Over / (Under)	(25)	(25)	(100)	(25)	(15)	(15)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

*All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.

[a] Area sources related to the Project include minimal consumer products.

[b] Project would generate solar energy only and would not use electricity or natural gas. Emissions were calculated outside of URBEMIS. Solar energy would reduce greenhouse gas emissions and is further detailed in Section 4.7, Global Climate Change.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 visits per year to the site for maintenance and security was assumed. The Project Trip Rate is 0.01.

[d] Panel washing is estimated to use one acre foot of water per year.

Project 2

Table 4.3-15 summarizes emissions during operation of Project 2. The operation emission calculation is compared with the annual threshold, since operation is long-term. The primary sources of emissions during operation are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of security, equipment maintenance, and biannual panel washing with one water truck and one light duty truck assumed to occur with a maximum of 10 visits per year. As shown in Table 4.3-15, emissions during the long-term operation do not exceed AVAQMD significant thresholds. Therefore the operation impacts of Project 2 are less than significant.

Table 4.3-15 Project 2 – Operation Emissions (tons/yr.)

	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
	(tons/year)					
Area[a]	0.00	0.00	0.00	0.00	0.00	0.00
Energy[b]	0.00	0.00	0.00	0.00	0.00	0.00
Mobile[c]	0.11	0.00	0.02	0.00	0.00	0.00

	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
	(tons/year)					
Water[d]	0.00	0.00	0.00	0.00	0.00	0.00
Operation Phase	0.11	0.00	0.02	0.00	0.00	0.00
Energy Reduction[b]	0.00	0.00	0.00	0.00	0.00	0.00
Net Annual Emissions	0.11	0.00	0.02	0.00	0.00	0.00
AVAQMD Regional Emissions Threshold	**25**	**25**	**100**	**25**	**15**	**15**
Over / (Under)	(25)	(25)	(100)	(25)	(15)	(15)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

* Values may not exactly add up due to rounding. Compiled using the URBEMIS emissions inventory model. All values were calculated using URBEMIS, unless otherwise stated.

[a] Area sources related to the Project include minimal consumer products.

[b] Project would generate solar energy only and would not use electricity or natural gas. Emissions were calculated outside of URBEMIS. Solar energy would reduce greenhouse gas emissions and is further detailed in Section 4.7, Global Climate Change.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 visits per year was assumed for maintenance and security. The Project Trip Rate is 0.01.

[d] Panel washing is estimated to use 1.90 acre feet of water per year.

Project 3

Table 4.3-16 summarizes emissions during operation of Project 3. The operation emission calculation is compared with the annual threshold, since operation is long-term. The primary sources of emissions during operation are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of security, equipment maintenance, and biannual panel washing with one water truck and one light duty truck assumed to occur with a maximum of 10 visits per year. As shown in Table 4.3-16, emissions during the long-term operation do not exceed AVAQMD significant thresholds. Therefore the operation impacts of Project 3 are less than significant.

Table 4.3-16 Project 3 – Operation Emissions (tons/yr.)

	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
	(tons/year)					
Area[a]	0.02	0.00	0.28	0.00	0.00	0.00
Energy[b]	0.00	0.00	0.00	0.00	0.00	0.00
Mobile[c]	0.13	0.00	0.02	0.00	0.00	0.00
Water[d]	0.00	0.00	0.00	0.00	0.00	0.00
Operation Phase	0.15	0.00	0.30	0.00	0.00	0.00
Energy Reduction[b]	0.00	0.00	0.00	0.00	0.00	0.00
Net Annual Emissions	0.15	0.00	0.30	0.00	0.00	0.00
AVAQMD Regional Emissions Threshold	**25**	**25**	**100**	**25**	**15**	**15**
Over / (Under)	(24)	(25)	(100)	(25)	(15)	(15)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

*All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.

[a] Area sources related to the Project include minimal consumer products.

[b] Project would generate solar energy only and would not use electricity or natural gas. Emissions were calculated outside of URBEMIS. Solar energy would reduce greenhouse gas emissions and is further detailed in Section 4.7, Global Climate Change.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 visits per year was assumed for maintenance and security. The Project Trip Rate is 0.01.

[d] Panel washing is estimated to use 1.70 acre feet of water per year.

Project 4

Table 4.3-17 summarizes emissions during operation of Project 4. The operation emission calculation is compared with the annual threshold, since operation is long-term. The primary sources of emissions during operation are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of security, equipment maintenance, and biannual panel washing with one water truck and one light duty truck assumed to occur with a maximum of 10 visits per year. As shown in Table 4.3-17, emissions during the long-term operation do not exceed AVAQMD significant thresholds. Therefore the operation impacts of Project 4 are less than significant.

Table 4.3-17 Project 4 – Operation Emissions (tons/yr.)

	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
	(tons/year)					
Area[a]	0.02	0.00	0.28	0.00	0.00	0.00
Energy[b]	0.00	0.00	0.00	0.00	0.00	0.00
Mobile[c]	0.28	0.01	0.04	0.00	0.01	0.00
Water[d]	0.00	0.00	0.00	0.00	0.00	0.00
Operation Phase	0.00	0.00	0.29	0.00	0.00	0.00
Energy Reduction[b]	0.00	0.00	0.00	0.00	0.00	0.00
Net Annual Emissions	**0.30**	**0.01**	**0.32**	**0.00**	**0.01**	**0.01**
AVAQMD Regional Emissions Threshold	25	25	100	25	15	15
Over / (Under)	(25)	(25)	(100)	(25)	(15)	(15)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

*All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.

[a] Area sources related to the Project include minimal consumer products.

[b] Project would generate solar energy only and would not use electricity or natural gas. Emissions were calculated outside of the model. Solar energy would reduce greenhouse gas emissions and is further detailed in Section 4.7, Global Climate Change.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 visits per year to the site for maintenance and security was assumed. The Project Trip Rate is 0.01.

[d] Panel washing is estimated to use 2.50 acre feet of water per year.

Project 5

Table 4.3-18 summarizes the operation emission calculation for Project 5, compared with the annual threshold since operation is long-term. The primary sources of emissions during operation are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of security, equipment maintenance, and biannual panel washing with one water truck and one light duty truck assumed to occur with a maximum of 10 visits per year. As shown in Table 4.3-18, emissions during the long-term operation do not exceed AVAQMD significant thresholds. Therefore the operation impacts of Project 5 are less than significant.

Table 4.3-18 Project 5 – Operation Emissions (tons/yr.)

	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
	(tons/year)					
Area[a]	0.02	0.00	0.28	0.00	0.00	0.00
Energy[b]	0.00	0.00	0.00	0.00	0.00	0.00
Mobile[c]	0.08	0.00	0.01	0.00	0.00	0.00
Water[d]	0.00	0.00	0.00	0.00	0.00	0.00

	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
	(tons/year)					
Waste[e]	0.00	0.00	0.00	0.00	0.00	0.00
Operation Phase	0.10	0.00	0.29	0.00	0.00	0.00
Solar Energy Reduction	0.00	0.00	0.00	0.00	0.00	0.00
Annual Net Emissions	0.10	0.00	0.29	0.00	0.00	0.00
AVAQMD Regional Emissions Threshold	**25**	**25**	**100**	**25**	**15**	**15**
Over / (Under)	(25)	(25)	(100)	(25)	(15)	(15)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

*All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.

[a] Area sources related to the Project include minimal consumer products.

[b] Project would generate solar energy only and would not use electricity or natural gas. Emissions were calculated outside of the model. Solar energy would reduce greenhouse gas emissions and is further detailed in Section 4.7, Global Climate Change.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 visits per year to the site for maintenance and security was assumed. The Project Trip Rate is 0.01.

[d] Panel washing is estimated to use one acre foot of water per year.

[e] No waste would be generated.

Project 6

Table 4.3-19 summarizes the operation emission calculation for Project 6, compared with the annual threshold, since operation is long-term. The primary sources of emissions during operation are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of security, equipment maintenance, and biannual panel washing with one water truck and one light duty truck assumed to occur with a maximum of 10 visits per year. As shown in Table 4.3-19, emissions during the long-term operation do not exceed AVAQMD significant thresholds. Therefore the operation impacts of Project 6 are less than significant.

Table 4.3-19 Project 6 – Operation Emissions (tons/yr.)

	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
	(tons/year)					
Area[a]	0.02	0.00	0.28	0.00	0.00	0.00
Energy[b]	0.00	0.00	0.00	0.00	0.00	0.00
Mobile[c]	0.04	0.00	0.01	0.00	0.00	0.00
Water[d]	0.00	0.00	0.00	0.00	0.00	0.00
Waste[e]	0.00	0.00	0.00	0.00	0.00	0.00
Operation Phase	0.06	0.00	0.29	0.00	0.00	0.00
Solar Energy Reduction	0	0	0	0	0	0
Annual Net Emissions	0.06	0.00	0.29	0.00	0.00	0.00
AVAQMD Regional Emissions Threshold	**25**	**25**	**100**	**25**	**15**	**15**
Over / (Under)	(25)	(25)	(100)	(25)	(15)	(15)
Exceed Threshold?	No	No	No	No	No	No

Source: Tetra Tech 2013

*All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.

[a] Area sources related to the Project include minimal consumer products.

[b] Project would generate solar energy only and would not use electricity or natural gas. Emissions were calculated outside of the model. Solar energy would reduce greenhouse gas emissions and is further detailed in Section 4.7, Global Climate Change.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 visits per year to the site for maintenance and security was assumed. Project Trip Rate is 0.01.

[d] Panel washing is estimated to use 0.20 acre feet of water per year.

[e] No waste would be generated.

4.3.6.2.9 Projects – Concurrent Operations Air Quality Impacts

Table 4.3-20 summarizes the operation emission calculations compared with the annual threshold, since operation is long-term. As shown in Table 4.3-20 emissions during the long-term operation do not exceed AVAQMD significance thresholds.

Table 4.3-20 Peak Annual Concurrent Operation Emissions (tons/year)

Project	Project Name	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
		(tons/year)					
Project 1	North Lancaster Ranch	0.23	0.00	0.04	0.00	0.01	0.00
Project 2	Western Antelope Blue Sky Ranch	0.11	0.00	0.02	0.00	0.00	0.00
Project 3	American Solar Greenworks	0.15	0.00	0.30	0.00	0.00	0.00
Project 4	Antelope Solar Greenworks	0.30	0.01	0.32	0.00	0.01	0.01
Project 5	Silver Sun Greenworks	0.10	0.00	0.29	0.00	0.00	0.00
Project 6	Lancaster WAD	0.06	0.00	0.29	0.00	0.00	0.00
Total Annual Emissions (30 year lifetime)		**0.95**	**0.01**	**1.26**	**0.00**	**0.02**	**0.01**
AVAQMD Annual Significance Threshold (tons/year)		**25**	**25**	**100**	**25**	**15**	**15**
Above/(Below)		**(24)**	**(25)**	**(99)**	**(25)**	**(15)**	**(15)**
Above Annual Threshold?		**No**	**No**	**No**	**No**	**No**	**No**

Source: Tetra Tech 2013

*All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.

Overall, the proposed Projects are not expected to result in an increase in VMT and would generate a minimal amount of net new vehicle trips during operation. Access would be limited to maintenance and emergency services vehicles. Increases in emissions from SGF maintenance and improvement activities, if any, are expected to be negligible.

The proposed Projects are not expected to cause intersection and roadway conditions to exceed adopted standards, and quantitative analyses are not warranted. Thus, the Projects would not result in new long-term operational sources, nor would they result in a net increase in VMT. As such, operation of all six Projects would not exceed annual thresholds, violate air quality standards, or contribute substantially to an existing or projected air quality violation, and is therefore less than significant.

4.3.6.2.10 Decommissioning

Decommissioning of the Projects would require removal of the PV modules, PV module mounting system, electrical boxes, electrical inverters and transformers, electrical alternating current (AC) collection system, switchgear, data monitoring equipment, chain link perimeter security fencing, concrete ballasts, underground vaults, other concrete pads, and transporting all components off site. Air quality emissions from decommissioning would be generated from the pieces of equipment used and any fugitive dust from site preparation activities. Equipment used for decommissioning and removal of concrete ballasts, underground vaults, concrete pads, etc. generally would be similar to that used for construction, except that no mowing or clearing would be required. Since decommissioning does not involve mowing or clearing activities, the level of fugitive dust emissions would be less than emissions created during construction. After removal of equipment and facilities, the site would need to be re-vegetated. Decommissioning would occur after at least 25 years of operation; therefore, equipment engine technology is likely to be more advanced and fuels to be cleaner. Criteria pollutant emissions during

decommissioning would be equal to or, more likely, less than those estimated from construction for the Projects and also be less than significant with mitigation.

Similar to criteria pollutant emissions, hazardous air pollutant emissions during decommissioning would be less than during construction due to advanced equipment engine technology and cleaner fuel and would therefore be less than significant.

Exhaust from off-road equipment and on-road vehicles used during decommissioning and construction truck trips would not be expected to create objectionable odors and would therefore be less than significant.

4.3.6.3 Project Impacts: Criterion C – Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

4.3.6.3.1 Projects 1 – 6 and Gen-tie Lines

Construction Impacts

A significant impact would occur if the Projects would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. The MDAB is currently nonattainment for federal and state ozone standards and nonattainment for state PM_{10}standards, which may cause emissions from the Projects to contribute to an existing or projected air quality standard exceedance.

Implementing any of the six Projects would increase short-term emissions related to construction and a negligible increase in long-term emissions related to SGF operation and maintenance. Construction is expected to be staggered and may extend over two years. Nevertheless, as discussed in the responses to Criterion b, due to the nature and size of each site, simultaneous construction would not result in emissions of ozone precursors or PM_{10} that exceed daily thresholds. As shown in Table 4.3-12, Mitigated Peak Daily Concurrent Construction Emissions, and Table 4.3-13, Peak Annual Concurrent Construction Emissions, the impacts would be less than significant prior to mitigation. Implementing control strategies to reduce PM_{10} further minimizes air emissions. As such, construction of Projects 1-6 would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Operations Impacts

During the operation phase, the combined SGF operations have no major emissions sources. Facility operating equipment that emits regulated air pollutants or requires AVAQMD permits is not planned at the SGF sites. As shown in Table 4.3-20, Peak Annual Concurrent Operation Emissions, the impacts would be less than significant. As such, operation of Projects 1-6 would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Therefore, none of the Projects, during separate or concurrent construction and operation emissions, would contribute to a cumulatively considerable net increase in nonattainment pollutants.

4.3.6.4 Project Impacts: Criterion D – Would the project expose sensitive receptors to substantial pollutant concentrations?

4.3.6.4.1 Projects 1 – 6 and Gen-Tie Lines

Construction Impacts

Projects 1 – 6 were analyzed for air impacts to nearby sensitive receptors; however, sensitive receptors would only be exposed during construction activities. Sensitive receptors are located as close as 20 feet, adjacent to some of the SGF sites. PM_{10} and $PM_{2.5}$ concentrations are expected to occur primarily from fugitive dust emissions during mowing, excavation activities and, to a lesser degree, during PV installation and paving. Rule 401 requires that airborne particles remain on the site from which they originate under normal wind conditions. Proper mitigation techniques must be implemented to ensure that fugitive dust is contained. Emissions for each site are not expected to expose even the closest sensitive receptors to substantial pollutant concentrations, and, due to the distance between Projects sites, simultaneous construction at two sites could not impact significantly on the same sensitive receptors. Each Project was therefore analyzed for construction health risk impacts on a Project-basis as well as on a concurrent-basis (all projects together), as further discussed below.

Operations Impacts

Operational emissions from Projects lack the potential to impact local air pollutant levels at nearby receptors. As mentioned above, sensitive receptors would only be exposed, if at all, during construction activities. The primary source of project emissions during operation is the vehicles used by facility maintenance staff traveling to and from the site. Maintenance is expected to occur no more than 10 times per year. Overall, the proposed Projects are not expected to result in an increase in VMT over the course of one summer or winter day. Thus, the Projects would not result in new long-term stationary sources, nor would they result in a significant number of net new vehicular trips. CO impacts from operation of the Projects to the sensitive receptors would be less than significant; and further analysis is not necessary.

4.3.6.4.2 Health Risk Impacts: Projects 1 – 6

Table 4.3-21 summarizes the health risk assessments for Projects 1 – 6 construction activities. Each of the Project sites would involve similar construction activities to build the proposed SGF. In addition to criteria and precursor pollutants, TAC emissions also are created by the combustion of fossil fuels. DPM has been recognized by the State of California as a human carcinogen for more than 10 years and is the TAC of greatest potential concern from heavy-duty diesel powered equipment expected to be used during mowing and excavation activities. OEHHA has developed a methodology for estimating health risk from TAC pollutants, such as diesel exhaust, recognizing the potential for carcinogenic and non-carcinogenic long-term effects in humans from exposure to DPM. No acute non-cancer (short-term) effects have been recognized for DPM.

As shown in Table 4.3-21, short-term concentration levels during the construction phase do not expose sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1. The EPA SCREEN3 model uses conservative assumptions for screening purposes; therefore, actual concentration levels are expected to be less than what was analyzed in this report. Health risk impacts from construction would have a less than significant impact with mitigation.

Table 4.3-21 Projects 1 – 6 – Health Risk Assessments

Project Construction Activities (Health Risk)	Construction Activities					
	Project 1	**Project 2**	**Project 3**	**Project 4**	**Project 5**	**Project 6**
Diesel Particulate Matter Run (Cancer Risk)						
DPM Emission Sources Modeled as Area Source, m^2	976,535	640,000	148,634	3,400,336	320,000	154,000
Emission Rate, g/s	0.0216	0.02	0.0143	0.0204	0.0147	0.0119
Emission Rate, g/s-m^2	2.21E-08	3.69E-08	9.62E-08	5.99E-09	4.58E-08	7.72E-08
Maximum One-Hour Ground-Level Concentration, µg/m^3	1.1800	1.5060	1.8540	0.4854	1.7220	1.6210
Annual Average Ground-Level Concentration, µg/m^3	0.1180	0.1506	0.1854	0.0485	0.1722	0.1621
DPM Cancer Potency Factor (mg/kg-day)$^{-1}$	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Breathing Rate (L/kg-day)	302	302	302	302	302	302
Exposure Frequency (days/year)	365	365	365	365	365	365
Exposure Duration (years)	1	1	1	1	1	1
Average Time Period (days)	25,550	25,550	25,550	25,550	25,550	25,550
Acrolein (Acute and Chronic Risk)						
Emission Rate, g/s-m^2	2.87E-10	4.80E-10	1.25099E-09	7.79E-11	5.96E-10	1.00E-09
Maximum One-Hour Ground-Level Concentration, µg/m^3	1.53E-02	1.96E-02	2.41E-02	6.31E-03	2.24E-02	2.11E-02
Acrolein Acute Inhalation REL (Eyes; Respiratory System), µg/m^3	2.5	2.5	2.5	2.5	2.5	2.5
Acrolein Chronic Inhalation REL (Respiratory System), µg/m^3	3.50E-01	3.50E-01	3.50E-01	3.50E-01	3.50E-01	3.50E-01
Cancer Risk from Exposure to DPM (Chance in a million)	**0.56**	**0.71**	**0.88**	**0.23**	**0.82**	**0.77**
Cancer risk greater than or equal to 10 in a million?	No	No	No	No	No	No
Acute Risk from Exposure to Acrolein	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**
Hazard Index (HI) (non-cancerous) greater than or equal to 1?	No	No	No	No	No	No
Chronic Risk from Exposure to Acrolein	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**
Hazard Index (HI) (non-cancerous) greater than or equal to 1?	No	No	No	No	No	No

Source: Tetra Tech 2013

4.3.6.4.3 Health Risk Impacts: Concurrent Projects

OEHHA cancer risk factors assume a continuous exposure over a 70-year time frame. The construction of the Projects, however, would be spread out over the course of two years or longer. Neither OEHHA nor the AVAQMD have developed guidance to accurately and scientifically estimate the incremental increase in cancer risk for a short-term exposure duration. Due to continuous construction of each site over the course of two years, long-term cancer impacts from construction activities to the nearest sensitive receptors were evaluated

cumulatively; even though evaluating long-term cancer impacts from construction activities over a short duration is not meaningful (as it should be analyzed over a 70-year timeframe). The cumulative health risk assessment below shows the contribution of the six construction site sources combined.

Results in Table 4.3-22 summarize the cumulative HRA from all construction activities to the closest sensitive receptors. For the Projects, the maximum exposed sensitive receptor is Receptor 2. With the cumulative contribution of health risk impacts from all proposed Projects, the cumulative cancer risk to the identified sensitive receptors are still below the cancer risk exposure level. The maximum estimated cancer risk from construction activities of the six proposed Projects to Receptor 2 is estimated to be 2.38 in a million and the chronic HI is estimated to be 0.02. The maximum acute HI is estimated to be 0.03 at Receptor 2.

Table 4.3-22 Concurrent Health Risk Assessment

Concurrent Construction Activities (Health Risk)	**Receptor 1**	**Receptor 2**	**Receptor 3**	**Receptor 4**	**Receptor 5**	**Receptor 6**
Diesel Particulate Matter Run (Cancer Risk)						
DPM Emission Sources Modeled as Area Source, m^2	976,535	640,000	148,634	3,400,336	320,000	154,000
Emission Rate, g/s	0.0216	0.0236	0.0143	0.0204	0.0147	0.0119
Emission Rate, g/s-m^2	2.21E-08	3.69E-08	9.62E-08	5.99E-09	4.58E-08	7.72E-08
Maximum One-Hour Ground-Level Concentration, µg/m^3	2.8198	5.0084	4.2335	1.9422	4.8442	2.7583
Annual Average Ground-Level Concentration, µg/m^3	0.2820	0.5008	0.4234	0.1942	0.4844	0.2758
DPM Cancer Potency Factor (mg/kg-day)$^{-1}$	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Breathing Rate (L/kg-day)	302	302	302	302	302	302
Exposure Frequency (days/year)	365	365	365	365	365	365
Exposure Duration (years)	1	1	1	1	1	1
Average Time Period (days)	25,550	25,550	25,550	25,550	25,550	25,550
Acrolein (Acute and Chronic Risk)						
Emission Rate, g/s-m^2	2.87E-10	4.80E-10	1.25E-09	7.79E-11	5.96E-10	1.00E-09
Maximum One-Hour Ground-Level Concentration, µg/m^3	3.67E-02	6.51E-02	5.50E-02	2.52E-02	6.30E-02	3.59E-02
Acrolein Acute Inhalation REL (Eyes; Respiratory System), µg/m^3	2.5	2.5	2.5	2.5	2.5	2.5
Acrolein Chronic Inhalation REL (Respiratory System), µg/m^3	3.50E-01	3.50E-01	3.50E-01	3.50E-01	3.50E-01	3.50E-01
Health Risk Impacts						
Cancer Risk from Exposure to DPM (Chance in a million)	**1.34**	**2.38**	**2.01**	**0.92**	**2.30**	**1.31**
Cancer risk greater than or equal to 10 in a million?	No	No	No	No	No	No
Acute Risk from Exposure to Acrolein	**0.01**	**0.03**	**0.02**	**0.01**	**0.03**	**0.01**
HI (non-cancerous) greater than or equal to 1?	No	No	No	No	No	No
Chronic Risk from Exposure to Acrolein	**0.01**	**0.02**	**0.02**	**0.01**	**0.02**	**0.01**
HI (non-cancerous) greater than or equal to 1?	No	No	No	No	No	No

Source: Tetra Tech 2013

As shown in Table 4.3-22 short-term concentration levels during site construction neither expose sensitive receptors to substantial pollutant concentrations nor exceed the cancer risk

levels greater than or equal to 10 in a million and/or a HI (non-cancerous) greater than or equal to 1. As such, cumulative risk impacts from proposed Projects during construction would be less than significant with mitigation.

4.3.7 Mitigation Measures

Projects 1-6 would be required to comply with regional rules that assist in reducing air pollutant emissions. AVAQMD Rule 403 requires that fugitive dust be controlled with best available control measures to keep dust from remaining visible in the atmosphere beyond the property line of the emission source. In addition, AVAQMD Rule 402 requires implementing dust suppression techniques to prevent fugitive dust from creating a nuisance off site. With the episodic, desert winds in the Antelope Valley, implementing these dust suppression techniques would reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors. Projects 1-6 will implement the following dust suppression techniques:

AQ-1 Water active sites at least twice daily (locations where soil disturbance is to occur would be thoroughly watered before earthmoving) during construction, or, in locations where water alone does not suffice to suppress dust adequately apply nontoxic chemical soil stabilizers, according to manufacturers' specifications. Temporarily stockpiled soil shall be secured with tarps or plastic sheeting or sprayed with non-toxic soil stabilizers.

AQ-2 All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard in accordance with the requirements of CVC Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).

AQ-3 All off-road diesel powered construction equipment less than 50 hp shall meet or exceed Tier 2 off-road emission standards. Off-road diesel-powered construction equipment greater than or equal to 50 hp shall meet or exceed Tier 3 off-road emission standards. The construction equipment requirement shall be increased to Tier 4 off-road emission standards by January 1, 2015. Post-January 1, 2015, all off-road diesel-powered construction equipment greater than 50 hp shall meet or exceed Tier 4 off-road emission standards, where available. Verification documentation such as an ongoing log shall be provided to the County of Los Angeles Department of Regional Planning upon request within five business days.

AQ-4 During construction, the off-road equipment, vehicles, and trucks shall not be idle more than five minutes in any one hour.

AQ-5 The off-road construction equipment drivers shall have documented training in operating the equipment efficiently, taking into account ways to reduce the hours of operation of the equipment and/or operate the equipment at a lower load factor.

AQ-6 Traffic speeds on all unpaved roads shall be maintained at 15 mph or less.

AQ-7 During construction, there shall be documented carpools, vanpools, and/or shuttles provided for construction employees.

AQ-8 During array area preparation, mowing shall be used instead of grading and/or disking, and shall be limited to no more than 3.5 acres per day per site to further reduce dust emissions during construction.

AQ-9 All interior roads shall use long-lasting non-toxic chemical soil stabilizers designed for long-term dust stabilization on dirt roads.

AQ-10 Interior array areas shall have re-established pre-existing vegetation or be established with drought tolerant, native, or native compatible vegetation approved by the County biologist and compliant with Fire Department requirements, within two years of energization authorization of an array area by the Department of Public Works, Building and Safety Division, to provide long-term dust stabilization under the arrays.

AQ-11 Earth disturbing activities shall be suspended and/or additional water shall be applied to meet Rule 403 criteria if wind gusts exceed 25 miles per hour.

AQ-12 Construction activity shall utilize electricity from power poles on or adjacent to the Project sites rather than use of temporary diesel power generators and/or gasoline power generators when electricity with adequate circuit capacity is available from power poles in proximity to construction areas.

AQ-13 In the event temporary night lighting is necessary for construction or maintenance purposes, lighting not requiring the use of diesel or gasoline driven generators shall be used.

4.3.7.1 Level of Significance After Mitigation

Incorporation of the mitigation measures provided above would ensure that the Projects would not conflict with or obstruct implementation of the AQMP. Implementing these mitigation measures would reduce emissions below AVAQMD requirements. Air quality impacts would therefore be less than significant after mitigation, as shown in Table 4.3-12, Mitigated Peak Daily Concurrent Construction Emissions.

4.3.8 Cumulative Impacts

Cumulative impacts are the collective impacts from all six Project sites, together with any concurrent projects within a 5-mile radius.

Tetra Tech met with AVAQMD officials and technical staff at the AVAQMD's office on May 29, 2012 and discussed the proper cumulative analysis methodology pursuant to CEQA compliance. During the meeting, project design and mitigation measures for fugitive dust were discussed in regards to cumulative impacts. It was decided that cumulative impacts from the Applicant's six Projects were to be cumulatively quantified based on project size, project construction equipment per phase, and construction phase duration. All other concurrent projects would be qualitatively discussed. The cumulative analysis was performed based on the meeting discussion results and included the analysis of concurrent construction and operation emissions sources on any one maximum construction day, air dispersion modeling method, and risk assessment method.

Twenty-eight related projects have been identified within the proposed Projects' vicinity; locations are listed in Figure 4.3-2, Cumulative Projects in the Region. Of these 29 related projects, there are a number of related projects that have not yet been built or are currently under construction. Since the Applicant has no control over the timing or sequencing of the related projects, any quantitative analysis to ascertain daily construction emissions that assumes multiple and concurrent construction projects would be entirely speculative. For this reason, the AVAQMD was consulted to assess the cumulative impact from the Applicant's six Projects. As previously discussed in the analyses above (Table 4.3-13, *Peak Annual Construction Emissions;* Table 4.3-20, *Peak Annual Operation Emissions;* and Table 4.3-22, *Concurrent Health Risk Assessment),* emissions would not exceed the AVAQMD thresholds on any maximum day or year during construction or operations.

With respect to the project's construction-period air quality emissions and cumulative Basin-wide conditions, the AVAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to CAA mandates. As such, the proposed project would comply with AVAQMD Rule 403 requirements, and implement all feasible mitigation measures. In addition, the proposed project would comply with adopted AQMP emissions control measures. Per AVAQMD rules and mandates and the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects Basin-wide, which would include each of the related projects mentioned below.

Figure 4.3-2 Cumulative Projects in the Region

Project Name/Type	Project ID	Megawatts (MW)	Acreage	% of Solar Acreage	% 5 Mile Radius Acreage[1]	% Solar MW	LOCATION DESCRIPTION	SCOPE
Solar - County of Los Angeles County								
Antelope Solar 2	R2009-00870	10	80	1.0%	0.0%	1.0%	130 ST W , ANTELOPE ACRES	Solar Facility - 10 megawatt on 80 acres
Antelope Solar 1	R2010-00911	10	111	1.4%	0.1%	1.0%	FAIRMONT RD/VIC 125 , DEL SUR	Solar Facility - 10 megawatt on 111 acres
Antelope Solar Farm	R2011-00377	20	320	4.0%	0.2%	1.9%	NORTHWEST CORNER OF THE INTERSECTION OF 110TH STREET WEST AND WEST AVENUE I	Solar Facility - 20 megawatt on 320 acres
Antelope Valley Solar	R2010-00808	650	5,400	66.78%	3.27%	62.09%	AVE B/VIC 160 STW , FAIRMONT	5,400 acres (1,311 in LA Co. and 4,089 in Kern Co.)
High Desert Complex Solar Farm	R2011-01474	2.00	11.00	0.14%	0.01%	0.19%	45100 60TH ST W , LANCASTER	Solar facility to existing Mira Loma Detention facility & Challenger Memorial Youth Center/Probation Camp
West Antelope Solar Project*	R2012-01589	20.00	263.00	3.25%	0.16%	1.91%	110th Street West and West Avenue J, Lancaster	Solar Facility - 20 megawatt on 263 acres
SP LA EIR Projects	R2011-00833, R2011-00798, 42011-00799, R2011-00807, R2011-00801, 42011-00805	172.00	987.10	12.21%	0.60%	16.43%	8 SITES WITHIN THE ANTELOPE VALLEY	Solar Facility
	SUBTOTAL	**884.00**	**7,172.10**	**88.70%**	**4.34%**	**84.44%**		
Solar - City of Lancaster								
High Desert LLC	CUP 10-03	20.00	216.00	2.67%	0.13%	1.91%	216 acres bounded by 100th St W, 97th St W, Ave H, Lancaster Blvd	20 megawatt solar facility
Beautiful Earth Group	CUP 10-22	36.00	180.00	2.23%	0.11%	3.63%	180 acres bounded by Ave H, Avenue H-4/H-8, 60th St W, 90th St W	36 megawatt solar facility
Absolutely Solar	CUP 11-02	3.40	17.74	0.22%	0.01%	0.32%	17.74 acres, east side of 90th ST W between Ave K-8 and Ave K-12	3.4 megawatt solar facility
Lancaster Dry Farm Ranch	CUP 11-03	10.00	67.00	0.83%	0.04%	0.96%	67 acres, southwest corner of Ave H & 90th ST W	10 megawatt solar facility
Antelope Big Sky Ranch	CUP 11-05	20.00	80.00	0.99%	0.05%	1.91%	80 acres, east side of 80th St W, 1/4 mile south of Ave J	20 megawatt solar facility
Western Antelope Dry Ranch	CUP 11-07	10.00	40.00	0.49%	0.02%	0.96%	40 acres, southeast corner of Ave J & 110th St W	10 megawatt solar facility
Summer Solar	CUP 12-08	20.00	135.00	1.67%	0.08%	1.91%	135 acres, bounded by Ave H, Ave G, 90th St W, approx. 350 west of 93rd St W	20 megawatt solar facility
Springtime Solar	CUP 12-09	40.00	160.00	1.95%	0.10%	3.82%	160 acres, bounded by Ave H, Ave H-8, 100th ST W, 105th St W	40 megawatt solar facility
Sunlight Partners	CUP 12-11	1.50	20.00	0.25%	0.01%	0.14%	20 acres, northwest corner of 80th St W & Ave H-12	1.5 megawatt solar facility
	SUBTOTAL	**162.90**	**913.74**	**11.30%**	**0.55%**	**15.56%**		
	SOLAR TOTAL	1,046.90	8,085.84	100%	4.89%	100%		
Project Name/Type	**Project ID**	**Megawatts (MW)**	**Acreage**	**% of Wind Acreage**	**% 5 Mile Radius Acreage[1]**	**% Wind MW**	**LOCATION DESCRIPTION**	**SCOPE**
Wind - Los Angeles County								
Blue Sky Wind Energy	R2011-00409	225	7,500	67%	4.54%	42.86%	3224032009, 3224032001, 3235002016, 3235003023, 3240010	Wind Facility - 225 megawatt on 7,500 acres - Project on hold
Wildflower Green Energy Farm	R2010-00258	300	3,708	33%	2.2%	57.1%	AVE F/VIC 162 STW , FAIRMONT	300 megawatt on 3,708 acres (within SEA) - Project on hold.
	WIND TOTAL	525	11,208	100%	6.78%	100%		

[1] Approximately 165,349 acres of projects are located within 5 miles of the proposed Project.

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Project Name/Type	Project ID	Megawatts (MW)	Acreage	% of Other Real Estate Development Acreage	% 5 Mile Radius Acreage[1]	% Other Real Estate Develop-ment MW	LOCATION DESCRIPTION	SCOPE
Other Real Estate Development - Los Angeles County								
Lake Elizabeth Properties, LLC	02-311	N/A	5	0.3%	0.003%	N/A	42505 RANCH CLUB ROAD	498 Space recreational vehicle resort with existing golf course
All Nations International	R2005-02587	N/A	12.6	0.8%	0.01%	N/A	44505 90TH W ST, LANCASTER	Monastery/Private retreat center with residential facilities
	SUBTOTAL	**N/A**	**17.60**	**1.09%**	**0.01%**			
Other Real Estate Development - City of Lancaster								
Shopping Center	CUP 06-08	N/A	40.26	2.5%	0.02%	N/A	40.26 acres on southeast corner of 60 St W & Ave L	395,355 sf shopping center (includes a Target)
Shopping Center	CUP 06-09	N/A	40	2.5%	0.02%	N/A	40 acres at northwest corner of 60th St W & Ave L	344,752 sq ft shoping center (includes a196,026 sf Walmart)
Single Family Lots	TTM 63229	N/A	469	29.0%	0.29%	N/A	469 acres bounded by Ave K, Ave L, 62nd ST W, and 70th St W	1,694 single family residential lots
Single Family Lots	TTM 60057	N/A	120	7.4%	0.07%	N/A	120 acres at the southeast corner of Ave L-8 & 60th St W	302 single family residential lots
Single Family Lots	TTM 61635	N/A	57.6	3.6%	0.03%	N/A	57.6 acres, southeast corner of 45th St W & Ave J	240 single family residential lots
Single Family Lots	TTM 62120	N/A	80	5.0%	0.05%	N/A	80 acres, southeast corner of 40th ST W & Lancaster Blvd	318 single family residential lots
Single Family Lots	TTM 62403	N/A	64.22	4.0%	0.04%	N/A	64.22 acres, southeast corner of future 80th ST W & Ave L	204 single family residential lots
Single Family Lots	TTM 66241	N/A	640	39.0%	0.39%	N/A	640 acres, bounded by Ave G, Ave H, 92nd St W, and 105th ST W	1,925 single family residential lots
Single Family Lots	TTM 66690	N/A	72.9	4.5%	0.04%	N/A	72.9 acres, southwest corner of 52nd St W & Ave K-8	230 single family residential lots
	SUBTOTAL		**1,597.98**	**98.91%**	**0.97%**			
	OTHER REAL EST. PROJECTS TOTAL		1,615.58	100%	0.98%			
	GRAND TOTAL PROJECTS		20,909		12.6%			

*This project was added to the cumulative list even though it was submitted after Projects 1-8 NOP date because of its proximity to Projects 2. Permitting could be completed prior to Projects 1-6. In addition, this project could potentially use some of the same public right-of way space and infrastruture for the construction of its gen tie line(s).

[1] Approximately 165,349 acres of projects are located within 5 miles of the proposed Project.

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By applying AVAQMD's cumulative air quality impact methodology, implementation of Projects 1 – 6 would not result in an addition of pollutants, such that considerable cumulative impacts in conjunction with related projects in the region would occur. Therefore, the emissions of non-attainment pollutants and precursors generated cumulatively by Projects 1 – 6 would be less than significant.

Projects are deemed inconsistent with air quality plans when they result in population and/or employment growth that exceeds growth estimates in the applicable air quality plan. The SGF sites would not conflict with or obstruct implementation of the applicable air quality plan, which in this case is the Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area). The Ozone Attainment Plan relies upon future year emission inventories consistent with CARB and the adopted General Plan growth projections. As the proposed Projects are not part of an ongoing regulatory program, the AVAQMD recommends Projects-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality. As discussed above, peak daily emissions of operation-related pollutants would not exceed AVAQMD significance thresholds.

The combined Projects' emission estimates state that while Projects 1 – 6 would generate air emissions during construction and a minimal amount of GHG emissions during operations, the Projects' incremental contribution, with mitigation, to cumulative air quality impacts do not exceed any air quality significance thresholds and would comply with the applicable AVAQMD AQMP. It should be noted that solar energy provided by the Projects is a much cleaner source of energy than traditional sources used for the generation of electricity, such as the burning of coal, fuel oil, or natural gas. Furthermore, since the percentage of GHG emissions generated by Projects 1 – 6 is so small; Projects 1 – 6 would provide a *de minimis* contribution to significant cumulative impacts caused by other projects in the region (as further discussed in EIR Section 4.7, Climate Change and Greenhouse Gas). The Projects' emissions of non-attainment pollutants and precursors generated during operations with mitigation would not exceed the AVAQMD Project-level thresholds and are less than significant. As a result, Project-level emissions would not result in a cumulatively considerable contribution, such that results in an increase in air pollutant emissions above those assumed in the regional AQMP.

4.3.9 References

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4.4 BIOLOGICAL RESOURCES

4.4.1 Introduction

This section describes the existing conditions found within the region where the proposed Project sites 1 – 6 are located, the regulatory requirements for protection of biological resources, and the significance criteria by which impacts are measured. This section also presents the methods used to evaluate potential impacts to biological resources and the results of the investigation carried out for all six sites. The analysis of potential impacts to biological resources by significance criterion is provided, along with proposed mitigation for offsetting any potentially significant impacts that could occur as a result of the proposed Projects.

4.4.2 Environmental Setting

This section describes the regional setting for all six Projects. It also includes a discussion of the biological reconnaissance survey conducted for each Project, and a discussion of current vegetation type, special status plants, special status wildlife, and jurisdictional waters for each of the six Project sites. A summary table of biological resources associated with each of the six proposed Projects is presented in Section 4.4-7.

4.4.2.1 Regional Setting

The Antelope Valley is north of the San Gabriel Mountains, which separate the Los Angeles metropolitan area from this high desert valley. Temperatures in the valley exceed 100°F regularly in the summer and are commonly below freezing in the winter months. It snows in the valley in winter. The area is known for high winds, especially in the spring, and winds up to 70 mph occur. There is little surface water in the valley, and that which occurs comes from runoff in ephemeral flow channels out of the San Gabriel Mountains flowing north onto the valley floor. Runoff from spring rains also moves in the ephemeral channels or ponds in swales on the valley floor. There is no drainage leaving the valley floor, in the wettest years, runoff ponds in the Rosamond area in large alkali flats which evaporate gradually over the summer months. Elevations across the Projects sites range from 2,900 feet above mean sea level (amsl) along the foothills to 2,360 feet at Highway 138.

Projects 1 – 6 are located on the west side of the Antelope Valley in habitats ranging from native grassland on the west side to disturbed saltbrush on the northern and eastern side of the area. Precipitation is greater along the foothills of the San Gabriel Mountains, and grasslands along the south side of the valley change gradually into dryer saltbrush habitats to the north and east. Wildlife in the valley consists of small mammals, several types of reptiles, a wide range of bird species, and most notably a variety of raptors including Swainson's hawk (winter forager) and ferruginous hawk (winter resident in the region). Burrowing owls are common on many previously farmed fields along canals and ditches.

The Project sites contain very few or no special status plants. The project-specific descriptions below provide detailed information on plants found on each of the Project 1 – 6 sites. Trees are absent, including Joshua trees, on all of the proposed Project sites. For detailed information on species lists, property vegetation maps, percent of vegetation types on a property, or other

detailed biological information, the Biological Technical Reports (BTRs) in Appendix B-3 should be consulted.

4.4.2.2 Biological Investigation Methods

Descriptions of the methods used to collect biological information to describe the existing conditions on each of the six Projects included a literature review, reconnaissance level biological survey, and burrowing owl survey on each of the six sites. In addition, surveys of the proposed gen-tie line routes were conducted for Projects 2 and 5. These methods are descried below. A BTR was prepared for each Project, and are provided in Volume 2, Biological Appendices (Appendix B-3) of this draft EIR. Projects 1, 2, 5, and 6 are proposed on single properties and a single BTR was therefore prepared for each property. Project 3 is proposed on 3 properties, and 3 BTRs were completed. Project 4 is proposed on 5 properties and 5 BTRs were completed. For any detailed information on species lists, property vegetation maps, percent of vegetation types on a property, or other detailed biological information, the BTRs in Appendix B-3 should be consulted.

4.4.2.2.1 Literature Review

Existing literature documentation relevant to the project locations was reviewed for each BTR. The most recent records of the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB) (CNDDB 2013), the California Native Plant Society's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California (CNPS 2013), and Audubon List of Sensitive Bird Species (Audubon 2009), were reviewed for the quadrangles containing each of the six Projects. The database contains records of reported occurrences of federal- or state-listed as Endangered or Threatened species, proposed Endangered or Threatened species, former Federal Species of Concern (FSC), California Species of Special Concern (CSC), or otherwise sensitive species or habitats that may occur within or in the vicinity of the Projects.

In addition to the CNDDB and CNPSEI listed species (see individual Projects for species lists), 25 species on the Audubon List of Sensitive Bird Species (Audubon 2009) that could potentially occur on the site are listed in Table 4.4-1, below. These include 22 species that received a score of 4 or higher (from a scoring between -3 to 10) as well as three Watchlist species (receiving a score of 3) with potential for occurrence. Potential for occurrence is based on the potential for the Antelope Valley study area to provide habitat specific to the species and records of the species occurring within the vicinity. Potential for occurrence is ranked by flyover potential, low potential to occur on-site, moderate potential to occur on-site, with these categories applied to all six sites.

Table 4.4-1 L.A. County Audubon Sensitive Species with Potential to Occur: Project Sites 1 – 6

Common Name[1]	Scientific Name	Potential to Occur on Site			Habitat Association[2]
		Flyover Only	Low	Moderate	
Bank swallow	*Riparia riparia*	X			a
Black swift	*Cypseloides niger*	X			b
Black-headed grosbeak*	*Pheucticus melanocephalus*				a
Brant	*Branta bernicla*		X		c

Common Name[1]	Scientific Name	Potential to Occur on Site			Habitat Association[2]
		Flyover Only	Low	Moderate	
Cactus wren	*Campylorhynchus brunneicapillus*			X	d
California condor	*Gymnogyps californianus*			X	e
California gnatcatcher	*Polioptila californica*		X		i
California least tern	*Sterna antillarum browni*		X		g
Clapper rail	*Rallus longirostris*		X		c
Fulvous whistling-duck	*Dendrocygna bicolor*		X		h
Golden eagle	*Aquila chrysaetos*			X	e
Grasshopper sparrow	*Ammodramus savannarum*			X	f
Gray vireo	*Vireo vicinior*			X	g
Indigo bunting*	*Passerina cyanea*				a
Marsh wren	*Cistothorus palustris*	X			h
Northern harrier	*Circus cyaneus*			X	h,f
Redhead	*Aythya americana*		X		h
Savannah sparrow*	*Passerculus sandwichensis*				c
Scott's oriole	*Icterus parisorum*			X	d
Summer tanager	*Piranga rubra*		X		h
White-tailed kite	*Elanus leucurus*			X	f
Willow flycatcher	*Empidonax traillii*	X			a
Wilson's warbler	*Wilsonia pusilla*	X			a
Yellow-billed cuckoo	*Coccyzus americanus*			X	a
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	X			h

[1] * = Audubon (2009) Watchlist, all others are considered sensitive.

[2] Habitat associations adopted by Audubon (2009); a = riparian (including montane riparian and montane meadow); b = desert woodland and scrub; c = estuarine; d = desert woodland and scrub; e = remote cliffs or trees with prey base nearby; f = agricultural field and grassland; g = Pinyon juniper woodland; h = freshwater marsh; i = xeric woodland and scrub.

Note that San Fernando spineflower (*Chorizanthe parryi* var. *fernandina*) occurs on the CNPSE list and desert tortoise occurs (*Gopherus agassizii*) on the CNDDB list. However, these species are not addressed in this EIR as they do not occur in the western Antelope Valley. In addition to the sensitive species on the CNDDB and CNPSEI list and Audubon List of Sensitive Species, pre-construction surveys as required by mitigation measure B-1, and construction monitoring as required by mitigation measure B-2, would include American badger (*Taxidea taxus*), kit fox (*Vulpes macrotis*) and mountain bluebird (*Sialia currucoides*), which is a winter resident in the region, as requested by the CFDW.

4.4.2.2.2 Biological Reconnaissance Level Surveys

A biological reconnaissance survey was conducted on each of the Project sites 1 – 6 in 2011 in order to identify the potential for occurrence of sensitive species, or vegetation or habitat to support special status wildlife species, and to identify any potential jurisdictional waters of the United States (waters of the U.S.). Survey methods are described in the Biological Resources Technical Reports (BTR; Appendix B-3). Dates and weather conditions for each Project are included in this section of the EIR. Results of each survey are described by Project in sections 4.4.3.1 through 4.4.3.6. Plant communities for the six Projects were determined in accordance with the categories set forth in Holland (1986) or Gray and Bramlet (1992). Plant nomenclature follows that of *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012).

During the survey the biologists walked the site, documenting the native vegetation, and taking notes regarding the potential for special status species and jurisdictional waters to occur on-site. Photographs of the site were also taken to document existing conditions.

Vegetation

All plant species and soil types observed onsite were noted. Plant communities on the sites were identified, qualitatively described, and mapped onto an aerial photograph. Plant communities were determined in accordance with the categories set forth in Holland (1986) or Gray and Bramlet (1992). Plant nomenclature follows that of *The Jepson Manual: Higher Plants of California* (Hickman 1993) as it was current during the 2011 surveys. Plant names were later updated to plant nomenclature in *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012).

Wildlife

All wildlife and wildlife sign observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded. Additional survey time was spent in those habitats most likely to be utilized by wildlife (undisturbed native habitat, wildlife trails, etc.) or in habitats with the potential to support state- and/or federal-listed or proposed listed species. Photographs of the Projects sites were taken to document existing conditions and are provided with each BTR in Volume 2, Biological Appendices (Appendix B-3).

Waters and Wetlands

No perennial streams, lakes, or wetlands were identified on any of the Project 1 – 6 sites. A few dry stream drainages, irrigation ditches, and a few swales where water may accumulate after heavy rainfall were identified. The overall area is extremely dry as it is in the western tip of the Mojave Desert, and there is only surface water present during major rain events, usually in the spring. Because none of the waterways within the six Project sites are tributary to navigable waters, none of the drainages, irrigation ditches, and swales or playas within the proposed Project sites are likely waters of the U.S. However, all waterways, including dry stream drainages, irrigation ditches, and swales can possess unique ecological functions and values and may fall under the jurisdiction of CDFW. See Section 4.4.4.2 for discussion of state jurisdiction of waters.

Gen-tie Routes

Proposed Projects 1 – 6 would connect to the SCE grid to deliver the power generated from the solar modules. Project 4 has existing power lines already within the property boundary that would be directly interconnected. Projects 1, 3 and 6 would interconnect to power lines located immediately adjacent to the sites. Gen-tie lines or connections to existing power lines for Projects 1, 3, 4, and 6 were included within the study areas of the BTRs for those projects as were portions of the gen-tie lines for Projects 2 and 5.

Additional surveys were conducted in April through July 2013 and a BTR prepared for gent-tie lines leading from Project 5 (Chambers 2011d). See Table 4.4-2 for a description of each gen-tie line specific to each Project.

A 0.5 mile section of gen-tie line along 110th St W from Project 2 to W Ave J was included in the burrowing owl surveys for Project 2 (NOREAS 2013a) and will be included in preconstruction surveys under mitigation measure B-2. Sensitive resources are not generally expected to be observed along this segment of gen-tie line due to the disturbed and sparse habitat along the road ROW.

4.4.2.2.3 Burrowing Owl Surveys

Field surveys for burrowing owls were conducted by NOREAS Inc. (NOREAS) biologists for proposed Projects 1 – 6 in 2013 in order to identify any potential for occurrence of the species and presence of suitable burrowing owl habitat. Survey methods were derived from generally accepted professional standards and are described in the individual 2013 Burrowing Owl Survey reports (NOREAS 2013a) (Appendix B-3). Results for each Project are included in Section 4.4.3 of this EIR.

4.4.2.2.4 Swainson's Hawk Survey

A literature review and field survey were conducted by NOREAS biologists for proposed Projects 1 – 6 during September and October 2013 to determine if suitable Swainson's hawk (*Buteo swainsonii*) nesting and foraging habitat occurs within the Project sites, and to evaluate the potential for impacts to known nesting sites in the vicinity. Results for each Project are presented in Section 4.4.3 of this EIR, and the memo report (NOREAS 2013b) is included in Appendix B-3.

4.4.2.3 Surveys by Project

The following describes when the surveys for proposed Projects 1 – 6 were carried out and by whom. The conditions on the ground during the surveys are also described.

4.4.2.3.1 Project 1

Chambers Group biologists Nichole Cervin and Kun Liu conducted the general reconnaissance survey and focused plant survey for Project 1 on May 18, 2011 (Chambers 2012). Weather conditions during the survey included temperatures averaging approximately 65°F with 15 percent cloud cover and no precipitation. This survey included the area for the proposed short gen-tie line from the Project to the adjacent 66 kV transmission line.

NOREAS biologists conducted the burrowing owl surveys on April 13, May 8, June 7, and July 2, 2013 (NOREAS 2013a). Weather conditions during the survey included temperatures ranging from 50°F to 85°F with clear skies and 0 to 20 mile per hour (mph) winds.

NOREAS biologists conducted the Swainson's hawk surveys during September and October 2013 (NOREAS 2013b). Weather conditions during the field surveys included clear skies and the ambient temperature averaged 73°F, with winds from 0-15 mph.

4.4.2.3.2 Project 2

Chambers Group biologists Nichole Cervin and Kun Liu conducted the general reconnaissance survey for Project 2 on March 19, 2011 (Chambers 2011a). Weather conditions during the

survey included temperatures averaging approximately 60°F with 5 percent cloud cover and no precipitation.

NOREAS biologists conducted the burrowing owl surveys on April 14, May 8, June 6, and July 1, 2013 (NOREAS 2013c). Weather conditions during the survey included temperatures ranging from 50°F to 87°F with clear skies and 0 to 15 mph winds.

NOREAS biologists conducted the Swainson's hawk surveys during September and October 2013 (NOREAS 2013b). Weather conditions during the field surveys included clear skies and the ambient temperature averaged 73°F, with winds from 0-15 mph.

4.4.2.3.3 Project 3

Chambers Group biologists Heather Clayton and Tracey Valentovich conducted the general reconnaissance survey on May 18, 2011 (Chambers 2011b). Weather conditions during the survey included temperatures averaging approximately 71°F with 20 percent cloud cover and no precipitation. This survey included the area for the proposed short gen-tie line from the Project to the adjacent 66 kV transmission line.

A burrowing owl survey for Project 3 will be conducted as part of the preconstruction surveys for the Project overall.

4.4.2.3.4 Project 4

Chambers Group biologists Heather Clayton and Tracey Valentovich conducted the general reconnaissance survey on May 17, 2011 for APNs 3218-002-018 and 3218-002-023 (Chambers 2011c). Weather conditions during the survey included temperatures averaging approximately 64°F with 80 percent cloud cover and no precipitation.

Chambers Group biologists Nicole Cervin and Kun Liu conducted the general reconnaissance survey on May 23, 2011 for APNs 3203-002-015 and 3203-002-017 (Chambers 2011c). Weather conditions during the survey included temperatures ranging from approximately 62°F to 68°F with 20 percent cloud cover and no precipitation.

Chambers Group biologists Rebecca Alvidrez and Ana Hernandez conducted the general reconnaissance survey on May 17, 2011 for APNs 3218-001-002, 3218-001-003 and 3218-001-004 (Chambers 2011c). Weather conditions during the survey included temperatures averaging approximately 58°F with 80 percent cloud cover and no precipitation.

Chambers Group biologists Linette Lina and Maya Mazon conducted the general reconnaissance survey on May 17, 2011 for APNs 3203-002-011, 3203-002-012, 3203-002-013 and 3203-002-014 (Chambers 2011c). Weather conditions during the survey included temperatures ranging from approximately 54°F to 61°F with 70 percent cloud cover and no precipitation.

Chambers Group biologists Nicole Cervin and Kun Liu conducted the general reconnaissance survey on May 17, 2011 for APN 3219-019-011 (Chambers 2011c). Weather conditions during

the survey included temperatures averaging approximately 57°F with 90 percent cloud cover and no precipitation.

These surveys included the area for the proposed short gen-tie line from the Project to the adjacent 66 kV transmission line.

NOREAS biologists conducted the burrowing owl surveys on April 13, May 7, June 6, and July 1, 2013 (NOREAS 2013d). Weather conditions during the survey included temperatures ranging from 60°F to 84°F with clear skies and 0 to 15 mph winds.

NOREAS biologists conducted the Swainson's hawk surveys during September and October 2013 (NOREAS 2013b). Weather conditions during the field surveys included clear skies and the ambient temperature averaged 73°F, with winds from 0-15 mph.

4.4.2.3.5 Project 5

Chambers Group biologists Heather Clayton and Tracey Valentovich conducted the general reconnaissance survey on May 19, 2011 (Chambers 2011d). Weather conditions during the survey included temperatures averaging approximately 75°F with no cloud cover and no precipitation.

Surveys were also conducted in April through July 2013 for the proposed gen-tie lines for Project 5, with a separate BTR being prepared for them.

NOREAS biologists conducted the burrowing owl surveys on April 11, May 8, June 6, and July 1, 2013 (NOREAS 2013e). Weather conditions during the survey included temperatures ranging from 51°F to 87°F with clear skies and 0 to 15 mph winds.

NOREAS biologists conducted the Swainson's hawk surveys during September and October 2013 (NOREAS 2013c). Weather conditions during the field surveys included clear skies and the ambient temperature averaged 73°F, with winds from 0-15 mph.

4.4.2.3.6 Project 6

Chambers Group biologists Nicole Cervin and Sean Vogt conducted the general reconnaissance survey on September 13, 2011, between 1030 and 1230 hours (Chambers 2011e). Weather conditions during the survey included temperatures ranging from approximately 83°F to 92°F, with 60 percent cloud cover, a calm breeze (less than 1 mph), and no precipitation.

NOREAS biologists conducted the burrowing owl surveys on April 12, May 8, June 7, and July 1, 2013 (NOREAS 2013f). Weather conditions during the survey included temperatures ranging from 46°F to 85°F with clear skies and 0 to 15 mph winds**.**

NOREAS biologists conducted the Swainson's hawk surveys during September and October 2013 (NOREAS 2013c). Weather conditions during the field surveys included clear skies and the ambient temperature averaged 73°F, with winds from 0-15 mph.

4.4.3 Biological Resources Investigation Results

The results of the body of work conducted to identify potential sensitive species that have the potential to occur within the proposed Project sites 1 – 6 are summarized below. These results inform the impact assessments for each site presented by significance criterion in Section 4.4.5. The details of species with the potential to occur on each project site may be found in the BTRs provided in Appendix B-3 of this EIR.

4.4.3.1 Project 1

Project 1 includes one property for which a BTR was prepared. The Project is approximately 239 acres in size and would generate 20 MW.

4.4.3.1.1 Vegetation Type

The land on Project 1 is vegetated with Disturbed area, Disturbed Ruderal and Saltbush scrub, and Developed areas (Figure 4.4-1). Project 1 is surrounded by unirrigated fallow agriculture fields and areas of small development. The acreage of each vegetation type within the Project is found within the description below. For any detailed biological information the BTRs in Appendix B-3 should be consulted.

Disturbed Mixed Saltbush Scrub (207 acres)

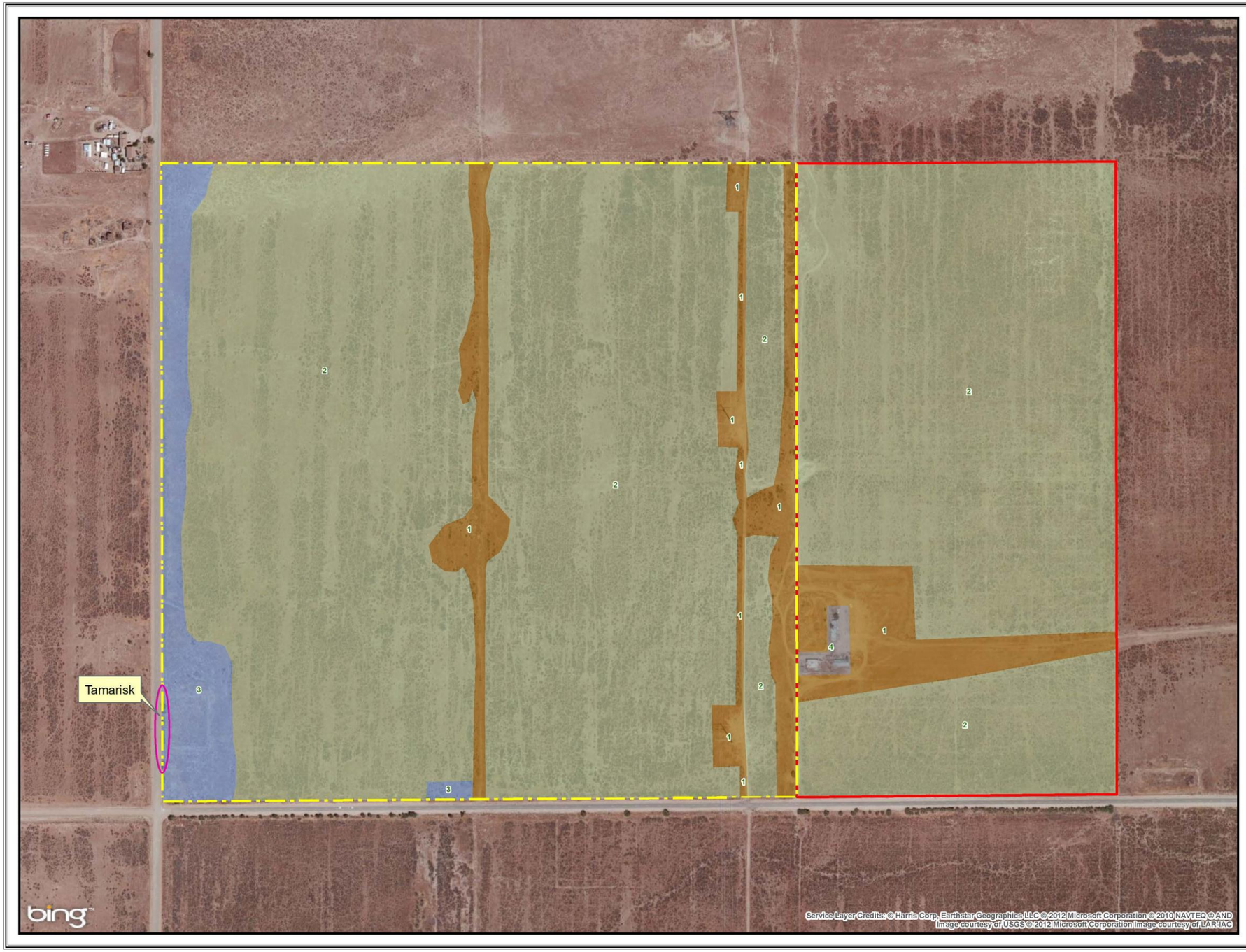
Project 1 is primarily comprised of Disturbed Mixed Saltbush scrub. Plant species found within this site typical of this vegetation type include: allscale (*Atriplex polycarpa*), foxtail chess (*Bromus madritensis* ssp. *rubens*), and western tansy-mustard (*Descurainia pinnata*).

Disturbed desert saltbush scrub is similar to intact desert saltbush scrub, in which saltbush species (*Atriplex* spp.) remain an important component; but this community is of low-quality with a higher percentage of non-native weedy species (i.e., greater than 20 percent of the species composition) and shows evidence of prior disturbance from grading, over-grazing, or other ground disturbance activities. Cover of native vegetation in this community is low with much bare ground between the widely-spaced shrubs. Microhabitat consists of fine-textured, poorly drained soils with high alkalinity and/or salinity surrounding playas on slightly higher ground at elevations below 4,000 feet amsl (Holland 1986).

Disturbed Areas (21 acres)

Disturbed areas are those areas that are either devoid of vegetation (cleared or graded) such as dirt roads, or those areas that have a high percentage of non-native weedy species (i.e., greater than 90 percent of the species cover).

Disturbed Areas are present within the Project 1 site in a small section along the southern half. Plant species found on the Project 1 site include: red-stemmed filaree (*Erodium cicutarium*), common fiddleneck (*Amsinckia menziesii*), and wreathplant (*Stephanomeria* sp.). Complete lists of observed species are contained within the 2011 and 2012 BTRs for each of the six Projects (Appendix B-3).



Project 1
North Lancaster Ranch Expansion

North Lancaster Ranch
North Lancaster Ranch Expansion

Vegetation Community

1. Disturbed or Barren (21.24 Acres)
2. Disturbed Mixed Saltbrush (206.61 Acres)
3. Ruderal (9.80 Acres)
4. Developed (0.89 Acres)

Figure 4.4-1

Project 1
Vegetation Map

N

SCALE=1:4,500

0 135 270 540
Feet

TETRA TECH

20327 - Y:\Projects\20327 Silverado Solar\MXD\North Lancaster Ranch Expansion Vegetation Map.mxd

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Ruderal Vegetation (10 acres)

Areas classified as ruderal tend to be dominated by pioneering herbaceous species that readily colonize disturbed ground and that are typically found in temporary, often frequently disturbed habitats. The soils in ruderal areas are typically characterized as heavily compacted or frequently disturbed. The vegetation in these areas is adapted to living in compact soils where water does not readily penetrate the soil. Often, ruderal areas are dominated by species of the *Centaurea*, *Brassica*, *Malva*, *Salsola*, *Croton, Amaranthus*, and *Atriplex* genera. Areas with ruderal vegetation are present throughout the northwest corner of Project 2. Ruderal plant species found on Project 2 include soft chess (*Bromus hordeaceus*) and red-stemed filaree.

Developed Areas (1 acre)

Developed areas are areas that have been altered by humans and now contain man-made structures such as houses, paved roads, buildings, parks, and other maintained areas. Developed areas are present within the site in a small area along the western border in the southern half of Project 1.

4.4.3.1.2 Plant Species

The following plant species were observed while habitat assessments were conducted on Project 1: allscale, common fiddleneck, annual mountain dandelion (*Agoseris heterophylla*), wreathplant, western tansy-mustard, red-stemmed filaree, and foxtail chess.

4.4.3.1.3 Wildlife Species

The following wildlife species were observed while habitat assessments were conducted on Project 1: kit fox, western kingbird (*Tyrannus verticalis*), rock pigeon (*Columba livia*), horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*). A detailed discussion of the species with the potential to occur on the Project site is presented in the BTR provided in Appendix B-3 of this EIR.

4.4.3.1.4 Special Status Species

The most current records at the time of the survey from the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB 2013) for *Little Butte, Rosamond,* and *Del Sur,* California USGS 7.5 minute quadrangles, and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2013) for Projects 1 – 6 included on *Little Butte, Rosamond,* and *Del Sur,* California USGS 7.5 minute quadrangles.

According to the literature review, 18 special status plant and 30 special status wildlife species were documented to occur within the vicinity of Project 1 and are described below. This list included 10 wildlife species that are federal or state-listed Endangered or Threatened. Of the 18 special status plant species listed in the literature review for Project 1, one (San Fernando Valley spineflower) is a federal Candidate for listing as Endangered and also a state-listed Endangered species. Note that desert tortoise and San Fernando Valley spineflower were on the list but are determined to be absent in the Project area. Please see the BTRs provided in Appendix B-3 for detailed descriptions of the range of plants and animals that may occur on this site.

Special Status Plant Species

There are 18 special status plant species that are considered absent from Project 1 due to a lack of suitable habitat or the species was not observed during protocol level focused plant surveys conducted during the appropriate blooming period. Special status plant species for Project 1 are summarized with their potential to occur on the Project site in Table 4.4-3.

Table 4.4-3 Summary Table of Potential for Occurrence of Special Status Plants by Project

Plant Species	State Rank[1]	Habitat Associations	Project 1[2]	Project 2	Project 3	Project 4	Project 5	Project 6
Alkali mariposa lily	S2	Alkaline meadows and seeps	Historical records of occurrence	Absent	Low potential	Absent	Absent	Historical records of occurrence
Barstow woolly sunflower	S2	Sandy or rock desert scrub	Absent	Absent	Absent	Absent	Absent	Absent
Clokey's cryptantha	S2	Sandy or rock desert scrub	Absent	Historical records of occurrence	Historical records of occurrence	Historical records of occurrence	Historical records of occurrence	Absent
Davidson's bush mallow	S2	Riparian	Absent	Absent	Absent	Absent	Absent	Absent
Desert cymopterus	S2	Alluvial fans and basins	Absent	Absent	Absent	Absent	Absent	Absent
Golden goodmania	S3	Desert scrub and grasslands	Absent	Absent	Absent	Absent	Absent	Historical records of occurrence
Horn's milk-vetch	S1	Alkili sink and wetland riparian	Historical records of occurrence	Absent	Absent	Absent	Absent	Absent
Lancaster milk-vetch	S1	Shadscale scrub	Absent	Absent	Absent	Absent	Absent	Absent
Lincoln rockcress	S2	Creosote bush and shadscale scrub	Absent	Absent	Absent	Absent	Absent	Absent
Mojave spineflower	S3	Creosote bush scrub	Historical records of occurrence	Absent	Present	Absent	Absent	Present with historical records of occurrence
Pale-yellow layia	S2	Valley grassland and riparian	Absent	Absent	Absent	Absent	Absent	Absent
Parish's popcorn-flower	S1	Mud flats and springs	Absent	Absent	Absent	Absent	Absent	Absent
Parry's spineflower	S2	Coastal sage scrub	Absent	Absent	Absent	Absent	Absent	Absent
Peirson's morning-glory	S3	Shadscale scrub and chaparral	Absent	Present with historical records of occurrence	Historical records of occurrence	Historical records of occurrence	Moderate potential, Historical records of occurrence	Absent
Recurved larkspur	S3	Valley sink scrub	Absent	Absent	Absent	Absent	Absent	Absent
Round-leaved filaree	S2	Grasslands with clay soil	Absent	Absent	Absent	Absent	Absent	Absent

Plant Species	State Rank[1]	Habitat Associations	Project 1[2]	Project 2	Project 3	Project 4	Project 5	Project 6
Short-joint beavertail	S3	Chaparral or Joshua tree woodlands	Absent	Historical records of occurrence	Historical records of occurrence	Historical records of occurrence	Historical records of occurrence	Absent
Slender mariposa lily	S2	Shaded foothill canyons and chaparral	Absent	Absent	Absent	Absent	Absent	Absent
Spreading pygmyleaf[3]	S2	Chaparral and valley grasslands	Absent	Absent	Absent	Absent	Absent	Moderate potential with historical records of occurrence
White pygmy-poppy	S3	Chaparral or Joshua tree woodlands	Absent	Absent	Absent	Absent	Absent	Historical records of occurrence

[1] Per CNDDB and CNPS (2013):
S1 = critically imperiled: extreme rarity (often 5 or fewer populations) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 = imperiled: rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 = vulnerable: relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

[2] absent = not observed during field visit and unsuitable habitat present within project; present = observed during site visit; historic records = recorded by CNPS (2013) and CNDDB (2013). Potential levels based on habitat quality observed during field visit

[3] also referred to as sagebrush loeflingia

Special Status Wildlife Species

There are 22 special status wildlife species that are considered absent from Project 1 due to a lack of suitable habitat and/or no historical records of the species occurring within 10 miles of the site. Special status wildlife species for Project 1 are summarized with their potential to occur on the Project site in Table 4.4-4.

The following five special status wildlife species have a low potential to occur on Project 1 due to the lack of suitable foraging habitat, the low quality of adjacent habitat, and historical records of these species occurring within 5 miles of Project 1:

- American badger (*Taxidea taxus*). Preconstruction surveys and construction monitoring will target American badger for potential badger burrows and simultaneously survey for Kit fox (potential for occurrence).
- Ferruginous hawk (*Buteo regalis*) is present in southern California during the winter season. The ferruginous hawk could potentially use Project 1 for foraging. This species is not federal or state-listed as Endangered or Threatened; it is listed as a Watch List species.

Table 4.4-4 Summary Table of Potential Occurrence of Sensitive Wildlife Species by Project

Wildlife Species	Federal/State Rank[1]	Habitat Associations[2]	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6
Amphibians								
Arroyo toad	FE / SSC	Uplands such as woodlands and chaparral but breeds in slow moving streams	Absent	Absent	Absent	Absent	Absent	Absent
California red-legged frog	FT / SSC	Slow moving or standing, deep ponds. Wet meadows	Absent	Absent	Absent	Absent	Absent	Absent
Sierra Madre yellow-legged frog	FC / SSC	Montane riparian	Absent	Absent	Absent	Absent	Absent	Absent
Reptiles								
Coast horned lizard	- / SSC	Assorted woodlands and grasslands	Absent	Low potential; no detections during 2013 survey but historical records of occurrence	Low potential; no detections during 2013 survey but historical records of occurrence	Low potential; no detections during 2013 survey but historical records of occurrence	Moderate potential; low quality suitable habitat, and historical records of occurrence	Absent
Northern California legless lizard		Coastal dune, valley foothill and chaparral	Absent	Absent	Absent	Absent	Absent	Absent
Two-striped garter snake	- / SSC	Permanent and semi permanent bodies of water	Absent	Absent	Absent	Absent	Absent	Absent
Western pond turtle	- / SSC	Permanent and semi permanent bodies of water	Absent	Absent	Absent	Absent	Absent	Absent

Wildlife Species	Federal/State Rank[1]	Habitat Associations[2]	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6
Birds								
Bell's sage sparrow	- / WL	Chaparral and scrub	Absent	Absent	Absent	Absent	Absent	Absent
Burrowing owl	- / SSC	Small mammal colonies in a variety of habitats	Low potential; no detections during 2013 survey but historical records of occurrence	Low potential; no detections during 2013 survey but historical records of occurrence	Low potential; no detections during 2013 survey but historical records of occurrence	Low potential; no detections during 2013 survey but historical records of occurrence	Low potential; no detections during 2013 survey but historical records of occurrence	Low potential; no detections during 2013 survey but historical records of occurrence
Cooper's hawk	- / WL	Live oak and woodlands near water	Absent	Absent	Absent	Absent	Absent	Absent
Ferruginous hawk	- / WL	Open grasslands, desert scrub, sagebrush flats, and foothills with suitable small mammal prey	Low potential; historical records of occurrence	Low potential; historical records of occurrence	High potential; high quality suitable habitat, and historical records of occurrence	Low potential; historical records of occurrence	Low potential; historical records of occurrence	Low; low quality suitable habitat, and historical records of occurrence
Le Conte's thrasher	- / SSC	Desert wash, scrub and flats	Low potential; historical records of occurrence	Absent	Absent	Absent	Absent	Absent
Least Bell's vireo	FE / SE	Willows and other dense valley foothill vegetation	Absent	Absent	Absent	Absent	Absent	Absent
Loggerhead shrike	- / SSC	open canopy hardwood, desert scrub, cropland, desert riparian and juniper woodland	High potential; high quality habitat present and historic records of occurrence	Low potential	Low potential	Absent	Absent	Present

Wildlife Species	Federal/State Rank[1]	Habitat Associations[2]	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6
Merlin	- / WL	Grassland and woodlands	Low potential	Low potential	Low potential	Absent	Absent	Low potential; historical records of occurrence
Mountain plover	PT / SSC	Short grasslands, plowed fields, and foothill valleys	Moderate potential; historical records of occurrence	Low potential; historical records of occurrence	Low potential; historical records of occurrence	Low potential; historical records of occurrence	Low potential; historical records of occurrence	Low potential; historical records of occurrence
Short-eared owl	- / SSC	Open grasslands, prairies, dunes, meadows, and wetlands	Absent	Absent	Absent	Absent	Absent	Absent
Southern California rufous-crowned sparrow	- / WL	Steep, rocky hillsides with patches of grass and forbs	Absent	Absent	Absent	Absent	Absent	Absent
Swainson's hawk	- / ST	Grassland and agriculture	Low potential; historical records of occurrence	Low potential; historical records of occurrence	Low potential; historical records of occurrence	Low potential; historical records of occurrence	Low potential; historical records of occurrence	Absent
Tricolored blackbird	- / SSC	Wetlands with dense cover, grassland and agriculture	Absent	Absent	Absent	Absent	Present	Low potential; historical records of occurrence
Western snowy plover	FT / -	Salt pond levees and alkili lakes	Absent	Absent	Absent	Absent	Absent	Absent
White-faced ibis	- / WL	Wetlands , innudated fields, cropland or grasslands	Absent	Absent	Absent	Absent	Absent	Low potential; historical records of occurrence

Wildlife Species	Federal/State Rank[1]	Habitat Associations[2]	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6
Mammals								
American badger	- / SSC	Scrub and forests with friable soils for burrowing	Low potential; historical records of occurrence	Low potential	Low potential	Low potential	Low potential	Low potential
Mohave ground squirrel	- / ST	Open and alkili desert scrub and grasslands	Absent	Absent	Absent	Absent	Absent	Low; presence of habitat that meets some of the species habitat requirements, and historical records of occurrence
Nelson's antelope squirrel	- / ST	Dry, sparsely vegetated loam soils	Absent	Absent	Absent	Absent	Absent	Absent
Pallid San Diego pocket mouse	- / SSC	Sandy herbaceous areas with coarse gravel	Absent	Absent	Absent	Absent	Absent	Absent
San Bernardino kangaroo rat (Merriam's)	FE / -	Alkali, desert scrub with fine to coarse grained sand and gravel	Absent	Absent	Absent	Absent	Absent	Absent
Southern grasshopper mouse	FE / -	Alkali, desert scrub including washes, and riparian areas	Absent	Absent	Absent	Absent	Low potential	Low potential
Tehachapi pocket mouse	- / SSC	Chaparral and sage scrub	Absent	Absent	Absent	Absent	Absent	Absent

Wildlife Species	Federal/State Rank[1]	Habitat Associations[2]	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6
Western mastiff bat	- / SSC	Exfoliating slabs of granite, sandstone or basalt	Absent	Absent	Absent	Absent	Absent	Absent

[1] As designated by CDFG 2011. FE = Federally endangered, FT = Federally threatened, PT = Proposed threatened, SE = State Endangered, ST = State threatened, SSC = species of special concern, WL = Watchlist, - = no status given.

[2] Habitat associations from: Zeiner et al. 1990

[3] absent = not observed during field visit and unsuitable habitat present within project; present = observed during site visit; historic records = recorded by CNPS (2013) and CNDDB (2013). Potential levels based on habitat quality observed during field visit.

- Merlin (*Falco columbarius*) is not federal or state-listed as an Endangered or Threatened species but is a state species of special concern. Suitable foraging habitat occurs at Project 1. Merlins inhabit fairly open country including shrubland. In general, they prefer a mix of low and medium-height vegetation with some trees. However, during spring or fall migration, they can utilize almost any habitat.
- Le Conte's thrasher (*Toxostoma lecontei*) – Le Contre's thrasher has a low potential to occur on Project site 1 due to the lack of suitable nesting or foraging habitat on the site or adjacent to it. There are historical records of occurrence within 5 miles identified in any of the record searches conducted for the Project.
- Swainson's hawk – Swainson's hawks have been recorded within one mile of Project 1. However, the lack of suitable nesting and foraging habitat on or adjacent to the Project site suggests that Swainson's hawk has a low potential for occurrence on Project 1 but may occur during spring or fall migration.

The following two special status wildlife species have a moderate potential to occur on Project 1 due to the presence of low quality suitable habitat and historical records of these species occurring within three miles of the site:

- Mountain plover (*Charadrius montanus*) – Mountain plovers have been recorded to occur within three miles of Project 1 and are known to be a winter resident in the region. The area consists of open disturbed saltbush scrub and disturbed areas of barren ground that may provide suitable wintering and foraging habitat, therefore, the mountain plover has a moderate potential to winter and forage on Project 1. This species is a CSC and is not federal or state-listed Threatened or Endangered.
- Burrowing owl (*Athene cunicularia*) – Burrowing owls have been recorded to occur within one mile of Project 1. Project 1 consists primarily of disturbed saltbush scrub. The burrowing owl has a moderate potential to occur on Project 1. The burrowing owls may use the site and surrounding lands for foraging and nesting. Although burrowing owls are not federal or state-listed as Endangered or Threatened, this species is listed as a CSC.

The following special status wildlife species has a high potential to occur on Project 1 due to the presence of high quality habitat and historical records of these species occurring within 1 mile of Project 1:

- Loggerhead shrike (*Lanius ludovicianus*) – The loggerhead shrike has been recorded to occur within one mile of Project 1. However, the site lacks tall trees and suitable nesting habitat to support the loggerhead shrike onsite. The loggerhead shrike has a high potential to forage on Project 1. This species is not federal or state-listed as Endangered or Threatened.

4.4.3.1.5 Jurisdictional Waters

There are no drainages, irrigation ditches, or swales on this Project site that are either USACE or CDFW jurisdictional waters. Biological surveys on the site assessed the parcel for potential waters features and there are none to consider.

4.4.3.2 Project 2

Project 2 includes one property for which a BTR was prepared. The Project is 159 acres in size and would generate 20 MW.

4.4.3.2.1 Vegetation Type

Project 2 is vegetated with ruderal, valley needlegrass grassland, native annual grassland, saltbush scrub, and rubber rabbitbush scrub vegetation types (Figure 4.4-2). The project is heavily bisected by access roads. The Project is heavily bisected by access roads (16 acres) while cudweed aster (*Lessingia filaginifolia*) composes a small portion of the Project (1.6 acres). Project 2 is surrounded by non-native grasslands and saltbush scrub. The acreage of each vegetation type within the Project is found within the description below. For any detailed biological information the BTRs in Appendix B-3 should be consulted.

Valley Needlegrass Grassland (69 acres)

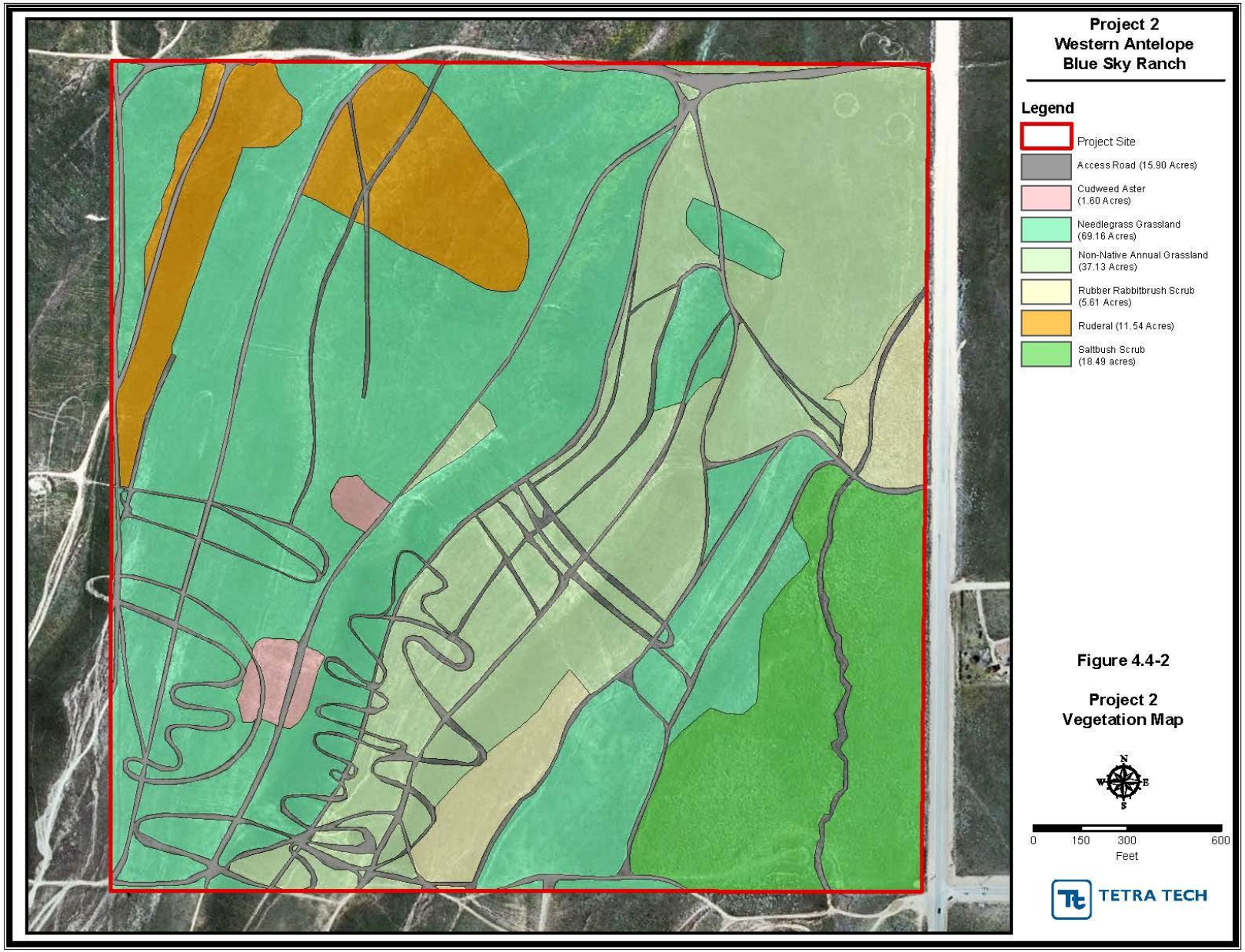
Valley needlegrass grassland is a mid-height (up to 2 feet) grassland dominated by perennial tussock-forming purple needlegrass (*Stipa pulchra*). Native and introduced annual herbaceous plants occur between the perennial grasses, often exceeding the bunchgrasses in overall vegetative cover. These grasslands are typically found on fine-textured, often clay soils, which can be moist or even waterlogged during the winter, but are very dry in the summer (Holland 1986). Valley needlegrass grassland is present throughout Project 2. Plant species found within the site typical of this vegetation type include purple needlegrass.

Native Annual Grasslands (37 acres)

Native annual grassland consists of a dense to sparse cover of annual grasses such as oats (*Avena* spp.), bromes (*Bromus* spp.), and perennial ryegrass (*Festuca perennis*) with flowering culms up to 3 feet in height. This community is often associated with numerous species of showy-flowered, native wildflowers such as California poppy (*Eschscholzia californica*), lupines (*Lupinus* spp.), and common goldfields (*Lasthenia gracilis*) especially in years of favorable rainfall (Holland 1986). Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from winter through spring. Typically plants are dead through the summer-fall dry season persisting as seeds. Native annual grasslands can be found on fine-textured usually clay soils, moist or even waterlogged during the winter rainy season and very dry during the summer and fall. Native grassland is present throughout the center and eastern portions of Project 2. Plant species found on Project 2 typical of this vegetation type include: cheatgrass (*Bromus tectorum*), foxtail chess, and Mediterranean schismus (*Schismus barbatus*).

Desert Saltbush Scrub (18.5 acres)

Desert saltbush scrub is typically characterized by low, grayish microphyllous shrubs 1 to 3 feet in height dominated by saltbush with some succulent species. Cover in this community is often low with much bare ground between the widely spaced shrubs. Microhabitat consists of fine-textured, poorly drained soils with high alkalinity and/or salinity surrounding playas on slightly higher ground at elevations below 4,000 feet amsl (Holland 1986). Desert saltbush scrub is present in the southeastern corner of Project 2. Plant species found within this Project typical of this vegetation type include allscale.


Project 2
Western Antelope
Blue Sky Ranch
Legend
Project Site
Access Road (15.90 Acres)
Cudweed Aster
(1.60 Acres)
Needlegrass Grassland
(69.16 Acres)
Non-Native Annual Grassland
(37.13 Acres)
Rubber Rabbitbrush Scrub
(5.61 Acres)
Ruderal (11.54 Acres)
Saltbush Scrub
(18.49 acres)
Figure 4.4-2
Project 2
Vegetation Map
N
W
E
S
0
150
300
600
Feet
TETRA TECH

Ruderal Vegetation (11.5 acres)

Areas classified as ruderal tend to be dominated by pioneering herbaceous species that readily colonize disturbed ground and that are typically found in temporary, often frequently disturbed habitats. The soils in ruderal areas are typically characterized as heavily compacted or frequently disturbed. The vegetation in these areas is adapted to living in compact soils where water does not readily penetrate the soil. Often, ruderal areas are dominated by species of the *Centaurea*, *Brassica*, *Malva*, *Salsola*, *Croton, Amaranthus*, and *Atriplex* genera. Areas with ruderal vegetation are present throughout the northwest corner of Project 2. Ruderal plant species found on Project 2 include soft chess (*Bromus hordeaceus*) and red-stemed filaree.

Rubber Rabbitbrush Scrub (6 acres)

Rubber rabbitbrush scrub is dominated by rubber rabbitbrush (*Ericameria nauseosa*), usually approximately 3 feet in height with regularly-spaced gray-green shrubs that bloom in late summer or early fall (Holland 1986). Rabbitbrush scrub is a disturbance-maintained community in which fire, grazing, or soil tilling perpetuate the same species within the herb and shrub layers and the disturbance occurs with regular (less than 10 years) frequency. Rubber rabbitbrush scrub is present throughout the southeastern portion of Project 2. Plant species found within this Project typical of this vegetation type include: western tansy-mustard and rubber rabbitbrush.

4.4.3.2.2 Plant Species

The following plant species were observed while habitat assessments were conducted on the Project site: Purple needlegrass, Common horehound (*Marrubium vulgare*), soft chess, common California aster (*Lessingia filaginifolia*), foxtail fescue (*Festuca myuros*), annual mountain dandelion, Peirson's morning glory, Bigelow's desert four o'clock (*Mirabilis laevis* var. *villosa*), doveweed (*Croton setigerus*), red-stemed filaree, cattle saltbush, western tansy-mustard, cheatgrass, foxtail chess, rattlesnake-weed (*Chamaesyce albomarginata*), common goldfields, California poppy, Mediterranean schismus, and rubber rabbitbrush.

4.4.3.2.3 Wildlife Species

The following wildlife species were observed while habitat assessments were conducted on Project 2: horned lark, American crow (*Corvus brachyrhynchos*), white-crowned sparrow (*Zonotrichia leucophrys*), western meadowlark, rock pigeon, and common raven (*Corvus corax*).

4.4.3.2.4 Special Status Species

The most recent records of the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB 2013) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2013) were reviewed for the quadrangles containing and surrounding Project 2 and included *Little Butte, Rosamond,* and *Del Sur*, California USGS 7.5 minute quadrangles).

According the literature review, 17 special status plant and 30 special status wildlife species were documented to occur within the vicinity of Project 2. This list included 10 wildlife species that are federal or state-listed Endangered or Threatened. Of the 18 special status plant species

listed in the literature review for Project 2, none are federal or state-listed Endangered or Threatened.

Special Status Plant Species

There are 17 special status plant species that are considered absent from Project 2 due to a lack of suitable habitat or the species was not observed during protocol level focused plant surveys conducted during the appropriate blooming period. Special status plant species for Project 2 are summarized with their potential to occur on the Project site in Table 4.4-3.

Peirson's morning-glory has a moderate potential to occur in Project 2 since it is known from a nearby project site. Therefore, preconstruction surveys will focus on this and other special status plant species.

Valley needlegrass grasslands were identified on portions of Project 2. Valley needlegrass grasslands are considered a sensitive vegetation type by CDFW and protected by the City of Lancaster and Los Angeles County. Mitigation lands being selected would replace lost valley needlegrass grassland habitat and efforts to reseed this vegetation type on site would also be made by including seeds of constituent species in the land reclamation seed mix.

Special Status Wildlife Species

There are 22 special status wildlife species that are considered absent from Project 2 due to a lack of suitable habitat and/or no historical records of the species occurring within 10 miles of Project 2. Special status wildlife species for Project 2 are summarized with their potential to occur on the Project site in Table 4.4-4.

The following special status wildlife species has a low potential to occur onsite due to the lack of suitable habitat (grasslands and scrub) and historical records of these species occurring within 5 miles of Project 2:

- Ferruginous hawk - The ferruginous hawk is present in southern California during the winter season. The ferruginous hawk could potentially use Project 2 for foraging. However, foraging habitat on Project 2 is of very low quality and therefore potential for foraging is low. This species is not federal or state-listed as Endangered or Threatened; it is listed as a Watch List species.
- Swainson's hawk – Swainson's hawks have historically nested and foraged within 5 miles of Project 2. However, the habitat on or adjacent to Project 2 is of very low quality and therefore, the potential for Swainson's hawk to occur on Project is low.
- Loggerhead shrike – Project site 2 lacks tall trees and suitable nesting and foraging habitat to support the loggerhead shrike on-site. Therefore, the potential for the species to occur on Project 2 is low. This species is not a federal or state-listed Endangered or Threatened species.
- Merlin is not a federal or state-listed Endangered or Threatened species but is of local interest. Merlins inhabit fairly open country including shrubland. In general, they prefer a mix of low and medium-height vegetation with some trees. Habitat on the site is of poor quality and therefore, merlin has low potential to occur on this site.
- Mountain plover – Mountain plovers are known to be a winter resident in the region. The Project site contains poor quality foraging habitat, therefore, the mountain plover

has a low potential to winter and forage on Project 2. This species is a CSC and is not federal or state-listed as Threatened or Endangered.

The following special status wildlife species have a moderate potential to occur on Project 2 due to the presence of low quality suitable habitat and historical records of these species occurring within 3 miles of Project 2:

- Coast horned lizard. Project 2 consists of saltbush scrub, valley needle grasslands, and sandy washes that provide areas for basking and cover for the coast horned lizard. Additionally, coast horned lizards have been recorded to occur within 3 miles of Project 2. The coast horned lizard has a moderate potential for occurrence on Project 2. This species is not federal or state-listed as Endangered or Threatened; therefore, no further surveys for this species are required at this time.
- Burrowing owl. Project 2 consists of Native annual grassland and saltbush scrub. Although no suitable burrows were observed, there is potential habitat on Project 2. In addition, burrowing owls have been recorded to occur within 3 miles of Project 2. The burrowing owl could potentially use Project 2 and surrounding lands for foraging and nesting. Therefore, the burrowing owl has a moderate potential for occurrence on Project 2. Although burrowing owls are not federal or state-listed as Endangered or Threatened, this species is listed as a CSC. While the majority of CSC listed species do not typically require focused surveys, specific focused survey protocol for the burrowing owl has been developed by the California Burrowing Owl Consortium and adopted by the CDFW. A pre-construction burrowing owl survey would be conducted and mitigation measures would be implemented.
- American badger. Preconstruction surveys and construction monitoring will target American badger for potential badger burrows and simultaneously survey for Kit fox (potential for occurrence).

4.4.3.2.5 Jurisdictional Waters

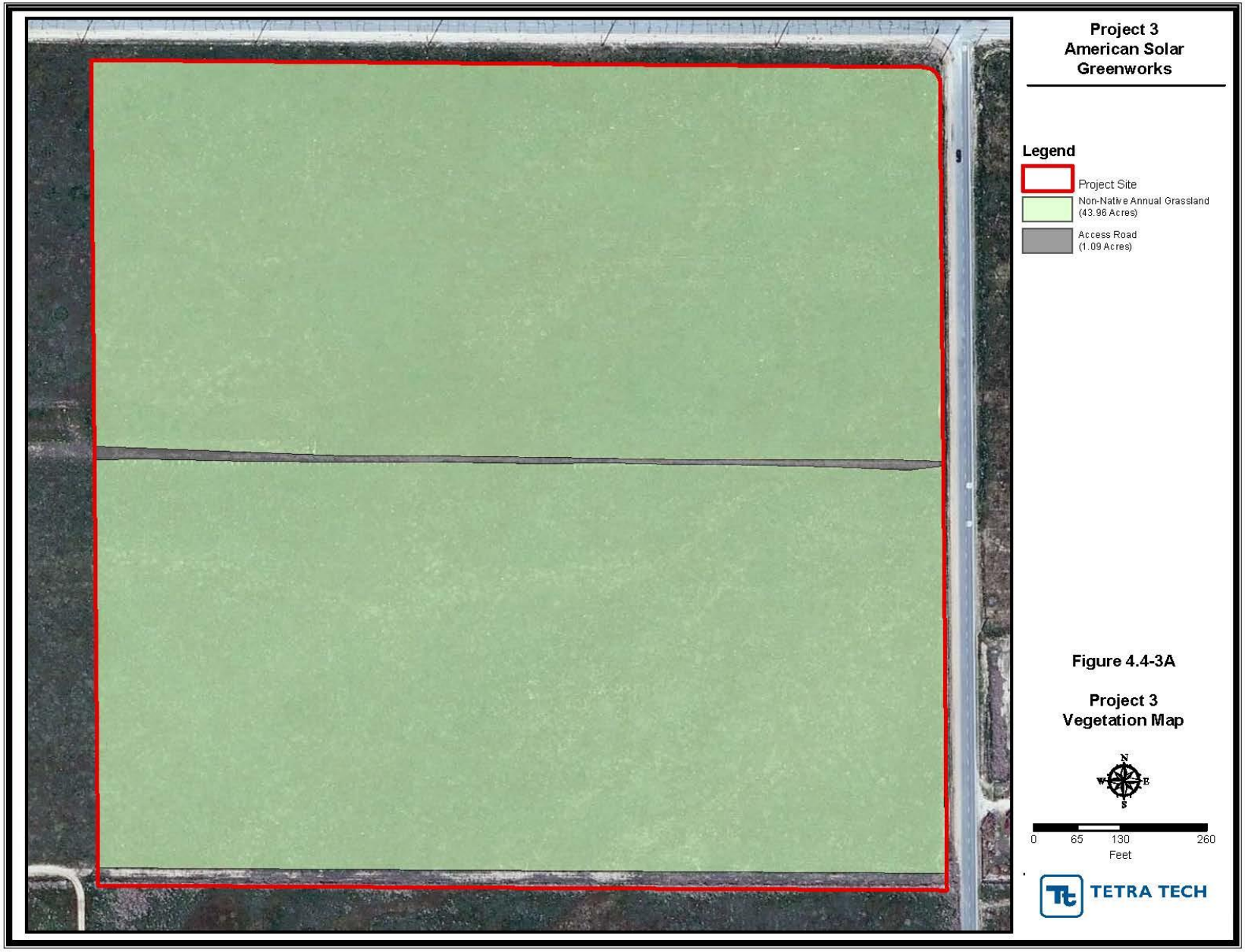
There are several ephemeral drainages on this site that convey flows in response to heavy rainfall. Table 4.4-5 shows the lengths and widths of these drainages and the acreage that is proposed as mitigation since these areas are subject to CDFW jurisdiction. These drainages have no riparian or wetland vegetation and are presently used as four wheel drive roads. The Project would avoid the upper reaches of the drainages as much as possible.

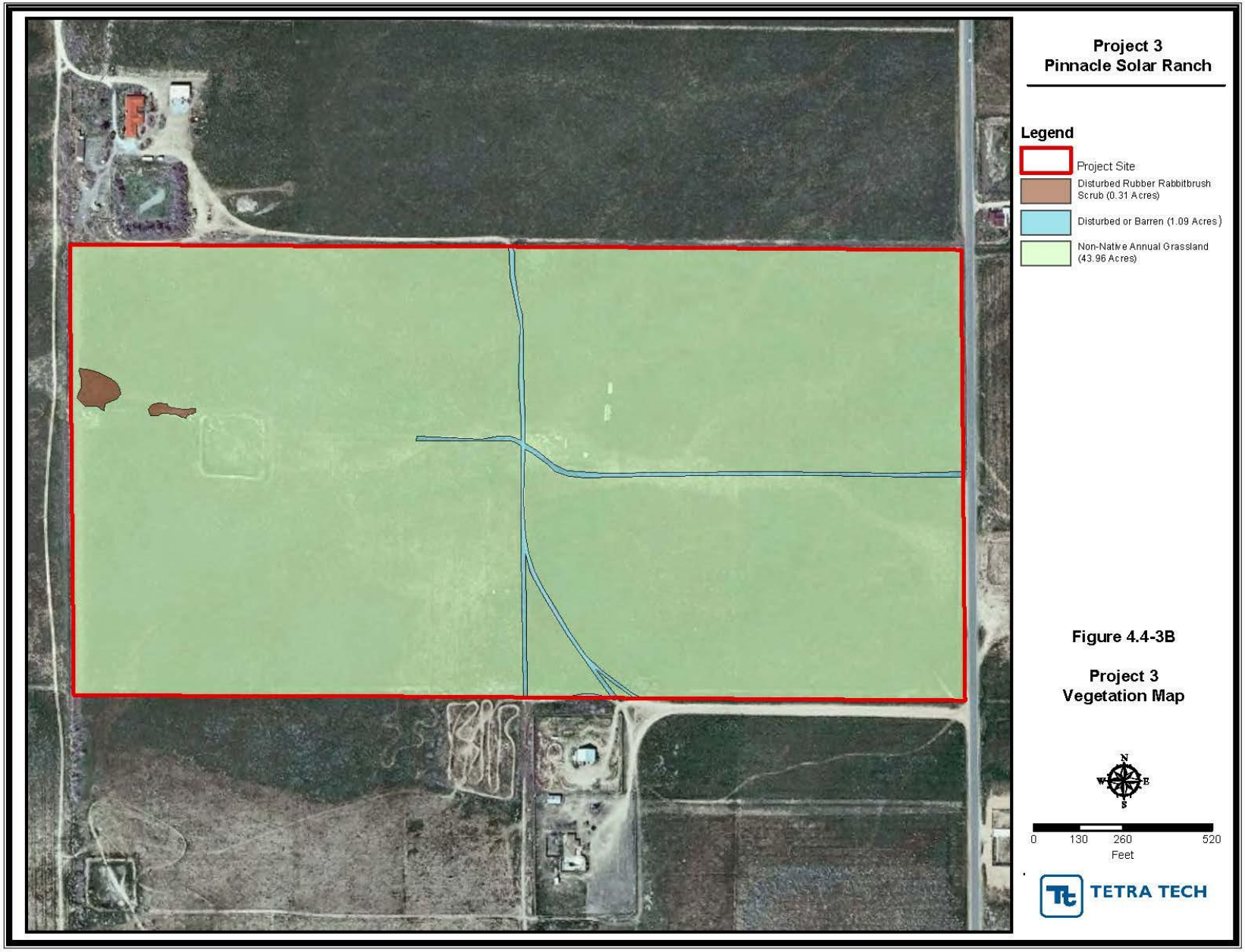
4.4.3.3 Project 3

Project 3 consists of three properties with APNs 3268-018-035, 3268-018-036, and 3268-018-002. The Project is 134 acres in size and would generate 35 MW.

4.4.3.3.1 Vegetation Type

Project 3 is vegetated with disturbed rubber rabbitbrush scrub and native annual grasslands (Figures 4.4-3A-C). Project 3 is surrounded by fallow fields and active agriculture fields. The Project is also composed of access roads (1 acres) and disturbed areas that contain little vegetation (1 acre). The acreage of each vegetation type within the Project is found within the description below. For any detailed biological information the BTRs in Appendix B-3 should be consulted.


Project 3
American Solar
Greenworks
Legend
Project Site
Non-Native Annual Grassland
(43.96 Acres)
Access Road
(1.09 Acres)
Figure 4.4-3A
Project 3
Vegetation Map
N
W
E
S
0
65
130
260
Feet
TETRA TECH


Project 3
Pinnacle Solar Ranch
Legend
Project Site
Disturbed Rubber Rabbitbrush Scrub (0.31 Acres)
Disturbed or Barren (1.09 Acres)
Non-Native Annual Grassland (43.96 Acres)
Figure 4.4-3B
Project 3
Vegetation Map
N
W
E
S
0
130
260
520
Feet
TETRA TECH


Project 3
West L.A. Greenworks
Legend
Non-Native Annual Grassland
(43.96 Acres)
Figure 4.4-3C
Project 3
Vegetation Map
N
W
E
S
0
65
130
260
Feet
TETRA TECH

Native Annual Grasslands (131 acres)

Native annual grassland consists of a dense to sparse cover of annual grasses such as oats, bromes, and ryegrass with flowering culms up to 3 feet in height. This community is often associated with numerous species of showy-flowered, native annual wildflowers such as California poppy, lupines, and common goldfields especially in years of favorable rainfall (Holland 1986). Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from winter through spring. Typically plants are dead through the summer-fall dry season persisting as seeds. Native annual grasslands can be found on fine-textured usually clay soils, moist or even waterlogged during the winter rainy season and very dry during the summer and fall. Oak woodland is often adjacent on moister, better-drained soils. Plant species found on Project 3 typical of this vegetation type include: foxtail barley (*Hordeum murinum*), four wing saltbush (*Atriplex canescens*), and cheatgrass.

Disturbed Rubber Rabbitbrush Scrub (0.3 acres)

Disturbed rubber rabbitbrush scrub is similar to intact rubber rabbitbrush scrub in which rubber rabbitbrush remains an important component. However, this community is of low-quality with a higher percentage of non-native weedy species (i.e., greater than 20 percent of the species composition) and shows evidence of prior disturbance from grading, over-grazing, or other ground-disturbance activities.

4.4.3.3.2 Plant Species

The following plant species were observed while habitat assessments were conducted on Project 3: Nevada ephedra (*Ephedra nevadensis*), annual bur-sage (*Ambrosia acanthicarpa*), prickly lettuce, common goldfields, common fiddleneck, western tansy-mustard, tumble mustard (*Sisymbrium altissimum*), spiny saltbrush (*Atriplex confertifolia*), Russian thistle (*Salsola tragus*), broad-lobed filaree (*Erodium botrys*), red-stemmed filaree, Mojave spineflower (*Chorizanthe spinosa*), annual buckwheat (*Eriogonum gracillimum*), desert needlegrass (*Stipa speciosa*), soft chess, cheatgrass, saltgrass (*Distichlis spicata*), foxtail barley, Mediterranean schismus, cereal rye (*Secale cereale*), foxtail fescue, annual sunflower (*Helianthus annuus*), rattlesnake weed, red-stemmed filaree, dune evening primrose (*Oenothera deltoides*), pineapple weed (*Matricaria discoidea*), rubber rabbitbrush, common goldfields, common fiddleneck, four-wing saltbush, foxtail chess, and small fescue (*Festuca microstachys*).

4.4.3.3.3 Wildlife Species

The following wildlife species or species sign were observed while habitat assessments were conducted on Project 3: Bell's sparrow (*canescens* subspecies, *Artemisiospiza belli canescens*), owl pellets, California quail (*Callipepla californica*), American crow, black-tailed jackrabbit (*Lepus californicus deserticola*), Cassin's kingbird (*Tyrannus vociferans*), California ground squirrel burrows (*Otospermophilus beecheyi*), California vole burrows (*Microtus* sp.), kit fox bones, common raven, Botta's pocket gopher mounds (*Thomomys bottae*), and house finch (*Carpodacus mexicanus*).

4.4.3.3.4 Special Status Species

The most recent records of the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB 2013) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPSEI 2011) were reviewed for the quadrangles containing and surrounding Project 3 and included Little Butte, Rosamond, and Del Sur, California USGS 7.5 minute quadrangles).

According to the literature review, 18 special status plant and 30 special status wildlife species were documented to occur within the vicinity of Project 3. This list included 10 wildlife species that are federal or state-listed Endangered or Threatened. Of the 18 special status plant species listed in the literature review for Project 2, none are federal or state-listed Endangered or Threatened.

Special Status Plant Species

There are 17 special status plant species that are considered absent from the Project 3 site due to a lack of suitable habitat or Project 3 occurs outside the elevation range or historic range of the species. Special status plant species for Project 3 are summarized with their potential to occur on the Project site in Table 4.4-3.

Alkali mariposa lily has low potential to occur on Project 5. Preconstruction surveys would target this species; otherwise, no additional surveys for the special status plant species listed above would be required.

Special Status Wildlife Species

There are 22 special status wildlife species that are considered absent from Project 3 due to a lack of suitable habitat. Special status wildlife species for Project 3 are summarized with their potential to occur on the Project site in Table 4.4-4.

The following five special status wildlife species have a low potential to occur on Project 3 due to the lack of suitable nesting or foraging habitat on Project 3, the quality of habitat, and lack of historical records of these species occurring within 5 miles of Project 3:

- Merlin – Merlin (foraging) is not a federal or state-listed Endangered or Threatened species but is of local interest. Merlins inhabit fairly open country that includes shrubland. In general, they prefer a mix of low and medium-height vegetation with some trees, which Project 3 lacks.
- Northern California legless lizard – The northern California legless lizard has a low potential to occur on Project site 3 due to the presence of low quality suitable habitat, the poor quality of adjacent habitat, and lack of historical records of these species occurring within 5 miles of the site.
- Loggerhead shrike – Project site 3 lacks tall trees and suitable nesting and foraging habitat to support the loggerhead shrike on-site. Therefore, the potential for the species to occur on Project 3 is low. This species is not a federal or state-listed Endangered or Threatened species.
- Mountain plover – Mountain plovers are known to be a winter resident in the region. The Project site contains poor quality foraging habitat, therefore, the mountain plover

has a low potential to winter and forage on Project 3. This species is a CSC and is not federal or state-listed as Threatened or Endangered.

- Swainson's hawk – Swainson's hawks have historically nested within 5 miles of Project 3. However, the habitat on or adjacent to Project 3 is of very low quality and therefore, the potential for Swainson's hawk to occur on Project 3 is low.

The following special status wildlife species have moderate potential to occur on Project 3 due to the presence of low quality suitable habitat and/or historical records of these species occurring within 3 miles of Project 3:

- American badger. Pre-construction surveys will target potential burrows and presence of American badger.
- Burrowing owl. Project 3 has open fields with disturbed rubber rabbitbrush scrub and native annual grasslands with California ground squirrel burrows onsite and pipes that could be used for burrows. Additionally, burrowing owls have been recorded to occur within 3 miles of the Project site. The burrowing owls could potentially use Project 3 for foraging. Therefore, the burrowing owl has a moderate potential for occurrence on Project 3. Although burrowing owls are not federal- or state-listed as Endangered or Threatened, this species is listed as a CSC.

The following special status wildlife species has a high potential to occur on Project 3 due to the presence of suitable habitat and historical records of these species occurring within 1 mile of Project 3:

- Ferruginous hawk. The ferruginous hawk is present in southern California during the winter season. Project 3 consists of open areas of grassland and sparse shrub which the ferruginous hawk prefers. Ferruginous hawk would winter in the area and roost in open areas with lone trees where pocket gophers, ground squirrels, or rabbits are abundant. Additionally, ferruginous hawks have been recorded to occur within 1 mile of Project 3. The ferruginous hawk could potentially use Project 3 for foraging. Therefore, the ferruginous hawk has a high potential to forage on Project 3. This species is not federal- or state-listed as Endangered or Threatened; it is listed as a Watch List species.

4.4.3.3.5 Potential Jurisdictional Waters

For APNs 3268-018-035 and 3268-018-002, based on the observations of biologists, the man-made irrigation ditches along the north, east, and west sides of the site may contain some water in the spring; however, these ditches do not support riparian vegetation. The solar development would not change these ditches so there is no impact on them and no mitigation is required. APN 3268-018-036 has some low points or natural depressions; however, these areas do not support wetland or riparian vegetation and are not subject to CDFW jurisdiction. There are no other areas that have potential CDFW jurisdiction on the Project 3 site.

4.4.3.4 Project 4

Project 4 includes five properties which had individual BTRs prepared for them (Figures 4.4-4A-D). The properties are all adjacent to each other and have similar ecological characteristics. Together they comprise one solar project known as Project 4, which is 256 acres and would generate 52 MW.

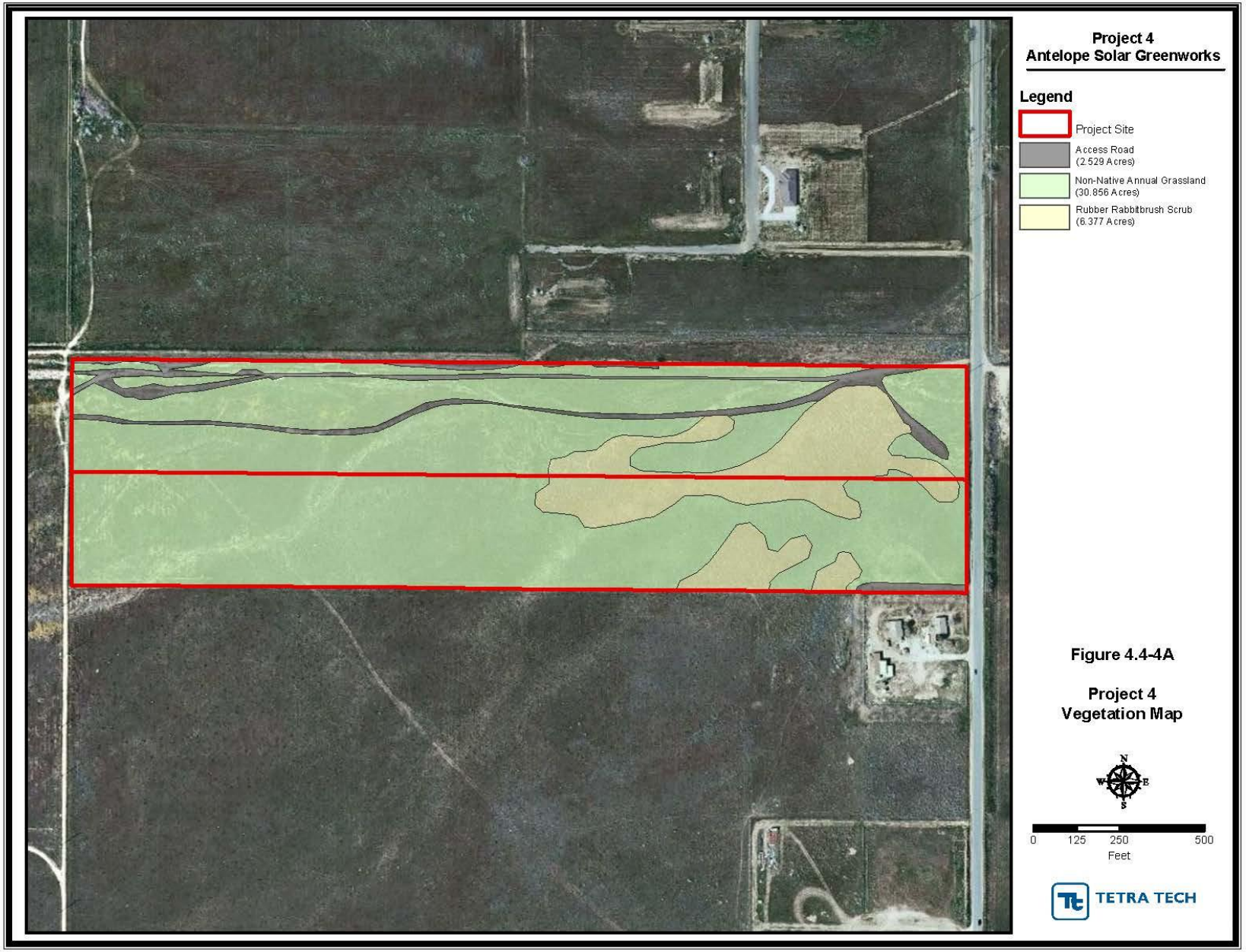
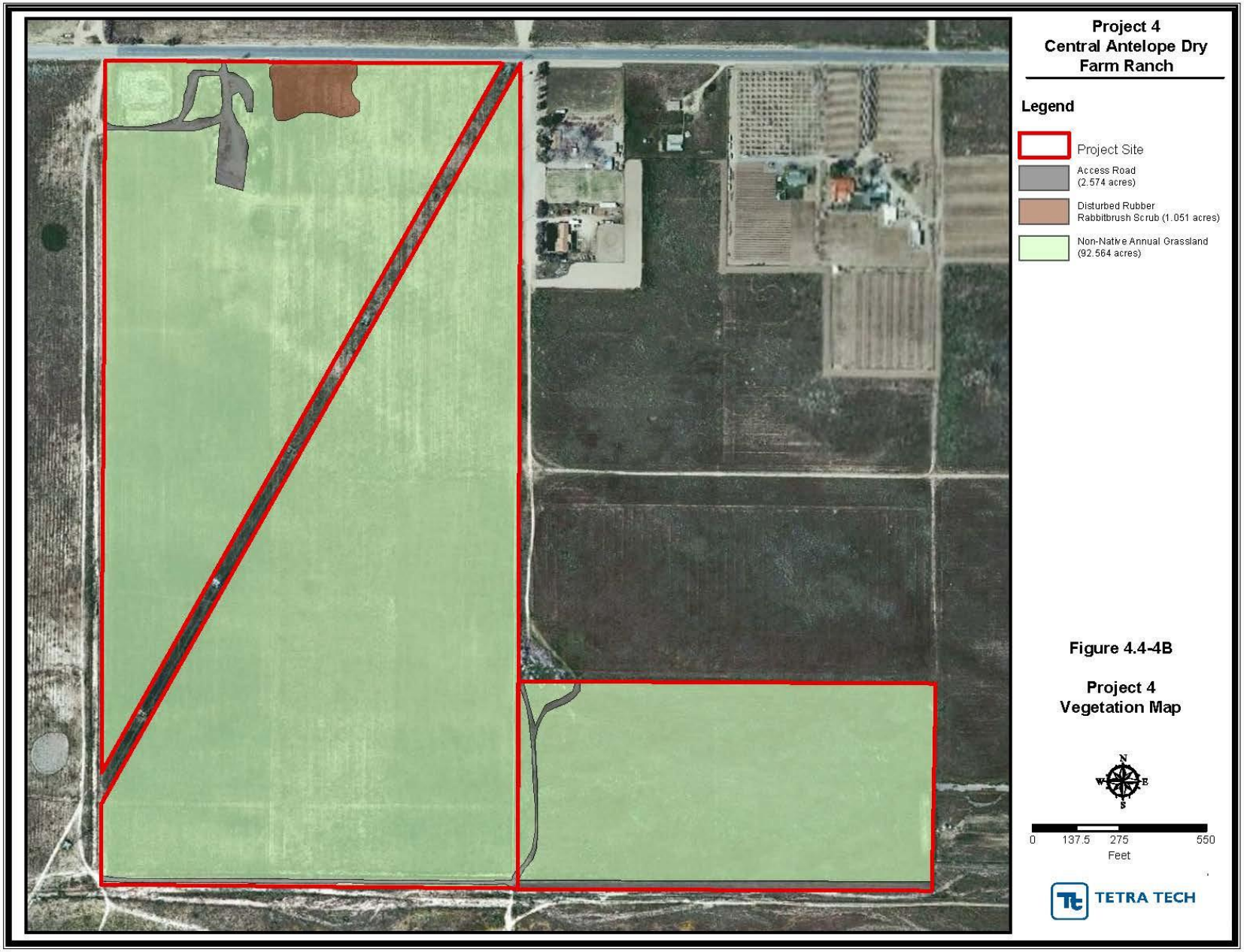
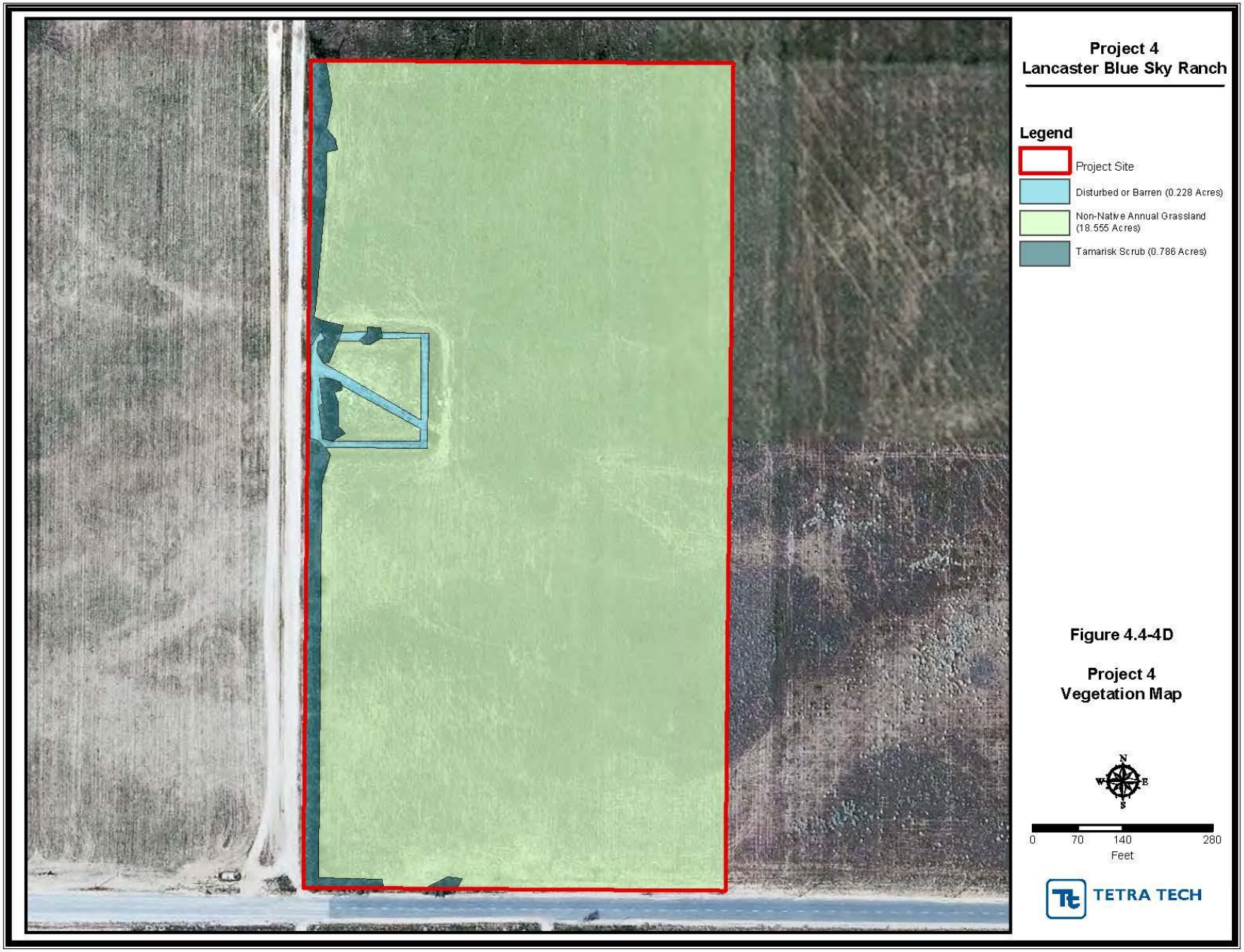


Figure 4.4-4A

Project 4
Vegetation Map


Project 4
Central Antelope Dry
Farm Ranch
Legend
Project Site
Access Road
(2.574 acres)
Disturbed Rubber
Rabbitbrush Scrub (1.051 acres)
Non-Native Annual Grassland
(92.564 acres)
Figure 4.4-4B
Project 4
Vegetation Map
N
W
E
S
0
137.5
275
550
Feet
TETRA TECH


Project 4
Halcyon Solar
Legend
Project Site
Access Road (0.542 Acres)
Drainage Feature
(0.104 Acres)
Non-Native Annual Grassland
(37.611 Acres)
Ruderal (0.321 Acres)
Tamarisk Scrub
(0.395 Acres)
Figure 4.4-4C
Project 4
Vegetation Map
N
W
E
S
0
70
140
280
Feet
TETRA TECH


Project 4
Lancaster Blue Sky Ranch
Legend
Project Site
Disturbed or Barren (0.228 Acres)
Non-Native Annual Grassland (18.555 Acres)
Tamarisk Scrub (0.786 Acres)
Figure 4.4-4D
Project 4
Vegetation Map
N
W
E
S
0
70
140
280
Feet
TETRA TECH

4.4.3.4.1 Vegetation Type

Project 4 is vegetated with disturbed rubber rabbitbrush scrub and native annual grasslands. Project 3 is surrounded by fallow fields and active agriculture fields. In addition to vegetation types described below, the Projects are also composed of access roads (5.6 acres) and a small drainage feature (0.1 acre). The acreage of each vegetation type within the Project is found within the description below. For any detailed biological information the BTRs in Appendix B-3 should be consulted.

Native Annual Grasslands (179 acres)

Native annual grassland consists of a dense to sparse cover of annual grasses such as oats, bromes, and ryegrass with flowering culms up to 3 feet in height. This community is often associated with numerous species of showy-flowered, native annual wildflowers such as California poppy, lupines, and common goldfields especially in years of favorable rainfall (Holland 1986). Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from winter through spring. Typically plants are dead through the summer-fall dry season persisting as seeds. Native annual grasslands can be found on fine-textured usually clay soils, moist or even waterlogged during the winter rainy season and very dry during the summer and fall. Project 4 is primarily composed of this community, and native annual grasslands are adjacent to Project 4. Plant species found on Project 4 typical of this vegetation type include: cheatgrass, foxtail chess, and Mediterranean schismus.

Rubber Rabbitbrush Scrub (6 acres)

Rubber rabbitbrush scrub is dominated by rubber rabbitbrush, usually approximately 3 feet in height with regularly-spaced gray-green shrubs that bloom in late summer or early fall (Holland 1986). Rabbitbrush scrub is a disturbance-maintained community in which fire, grazing, or soil tilling perpetuate the same species within the herb and shrub layers and the disturbance occurs with regular (less than 10 years) frequency. A small amount of rubber rabbitbrush scrub is present throughout the eastern portion of Project 4. Plant species found within this site typical of this vegetation type include: rattlesnake weed, foxtail fescue, and rubber rabbitbrush.

Tamarisk Scrub (1 acre)

Tamarisk scrub is composed of weedy mainly monoculture of any of several tamarisk species (*Tamarix* sp., including salt-cedar [*Tamarix ramosissima*]) usually supplanting native vegetation following a major disturbance. Soil is usually sandy or gravelly in braided washes or intermittent streams, often in areas where high evaporation increases the streams saltiness. Because salt-cedar is a strong phreatophyte and prolific seeder, this species is predisposed to aggressively compete in disturbed riparian corridors (Holland 1986). Tamarisk scrub is present adjacent to Project 4. Plant species found adjacent to the site typical of this vegetation type include: salt-cedar, Russian thistle, and prickly lettuce.

Developed areas (0.2 acre)

Developed areas are areas that have been altered by humans and now display man-made structures such as houses, paved roads, buildings, parks, and other maintained areas. Developed areas are present within Project 4.

Ruderal (0.3)

Areas classified as ruderal are dominated by pioneering herbaceous species that readily colonize disturbed ground and that are typically found in temporary, often frequently disturbed habitats. The soils in ruderal areas are typically characterized as heavily compacted or frequently disturbed. The vegetation in these areas is adapted to living in compacted soils where water does not readily penetrate the soil. Often, ruderal areas are dominated by species of the *Centaurea*, *Brassica*, *Malva*, *Salsola*, *Croton, Amaranthus*, and *Atriplex* genera. Ruderal plant species found on Project 4 includes tumble mustard.

4.4.3.4.2 Plant Species

For APNs 3218-002-018 and 3218-002-023 the following plant species were observed while habitat assessments were conducted on the site: pineapple weed, rubber rabbitbrush, common goldfields, cudweed aster, wreathplant, silver puffs (*Uropappus lindleyi*), common fiddleneck, Arizona popcorn-flower (*Plagiobothrys arizonicus*), shortpod mustard (*Hirschfeldia incana*), calabazilla (*Cucurbita foetidissima*), rattlesnake weed, miniature lupine (*Lupinus bicolor*), red-stemmed filaree, vinegar weed (*Trichostema lanceolatum*), desert mallow (*Sphaeralcea ambigua*), annual buckwheat (*Eriogonum* sp.), red willow (*Salix laevigata*), Siberian elm (*Ulmus pumila*), foxtail chess, cheatgrass, big wildrye (*Elymus multisetus*), purple needlegrass, Mediterranean schismus, and foxtail fescue. The following wildlife species were observed while habitat assessments were conducted on the site: Botta's pocket gopher (mounds), mule deer (scat; *Odocoileus hemionus*), common raven (nest), black-tailed jackrabbit, coyote (scat; *Canis latrans*), and California vole (burrows).

For APNs 3203-002-015 and 3203-002-017 the following plant species were observed while habitat assessments were conducted on Project 4: annual bur-sage, pineapple weed, prickly lettuce, cudweed aster, wreathplant, fiddlenecks (*Amsinckia* spp.), western tansy-mustard, Russian thistle, rattlesnake weed, dove weed, lupine, red-stemmed filaree, California evening primrose, salt cedar, Siberian elm, cheatgrass, foxtail barley, Mediterranean schismus and foxtail fescue. The following wildlife species were observed while habitat assessments were conducted on the site: Great horned owl (2 nests; *Bubo virginianus*), common raven, horned lark, Botta's pocket gopher (mounds), and California ground squirrel (burrows).

For APNs 3218-001-002, 3218-001-003 and 3218-001-004 the following plant species were observed: annual mountain dandelion, rubber rabbitbrush, white margin sandmat, common goldfields, cudweed aster, common fiddleneck, shortpod mustard, tumble mustard, Russian thistle, field bindweed (*Convolvulus arvensis*), dove weed, lupine, broad-lobed filaree, vinegar weed, Siberian elm, foxtail chess, cheatgrass, foxtail barley, small fescue, and foxtail fescue. The following wildlife species were observed while habitat assessments were conducted on the site: Common raven (nest), California ground squirrel, western meadowlark, and kangaroo rat (bones; *Dipodomys* sp.).

For APNs 3203-002-011, 3203-002-012, 3203-002-013 and 3203-002-014 the following plant species were observed: cudweed aster, common fiddleneck, cryptantha (*Cryptantha* spp.), tumble mustard, Russian thistle, black locust, red-stemed filaree, horehound, salt-cedar, velvet ash (*Fraxinus velutina*), ripgut grass, yellow pincushion, foxtail chess, cheatgrass, and bottle-brush squirreltail (*Elymus elymoides*). The following wildlife species were observed while habitat assessments were conducted on Project 4: California ground squirrel, common raven (nest), desert cottontail (*Sylvilagus audubonii*), house finch, greater roadrunner (*Geococcyx californianus*), hooded oriole (*Icterus cucullatus*), western meadowlark, and killdeer (*Charadrius vociferous*).

For APN 3219-019-011 the following plant species were observed: Annual bur-sage, rubber rabbitbrush, common goldfields, fiddlenecks, tumble mustard, doveweed, miniature lupine, California poppy, salt-cedar, cheatgrass, Mediterranean grass, and foxtail fescue. The following wildlife species were observed: barn owl (pellets; *Tyto alba*), American crow, coyote (scat), sheep (scat; *Ovis aries*), and Botta's pocket gopher (burrows).

4.4.3.4.3 Wildlife Species

The following wildlife species or species sign were observed while habitat assessments were conducted on Project 4: Botta's pocket gopher (mounds), mule deer (scat), common raven (nest), black-tailed jackrabbit, coyote (scat), California vole (burrows), great horned owl (two nests), horned lark, western meadowlark, kangaroo rat (bones), California ground squirrel (burrows), desert cottontail, house finch, greater roadrunner, hooded oriole, western meadowlark, killdeer, barn owl (pellets), and American crow.

4.4.3.4.4 Special Status Species

For all six of the properties the most recent records of the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB 2013) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPSEI 2011) were reviewed for the quadrangles containing Project 4 and included Little Butte, Rosamond, and Del Sur, California USGS 7.5 minute quadrangles).

According to the literature review, a maximum of 18 special status plant and 29 special status wildlife species were documented to occur within the vicinity of each of the five properties for Project 4. This list included 10 wildlife species that are federal or state-listed Endangered or Threatened. Of the 18 special status plant species listed in the literature review for Project 4, none are federal or state-listed Endangered or Threatened. For any detailed information on species lists, for property vegetation maps, for the percent of vegetation types on a property or for other detailed biological information the BTRs in Appendix B-3 should be consulted.

Special Status Plant Species

There are 18 special status plant species that are considered absent from Project 4 due to a lack of suitable habitat and/or no historical records of the species occurring within 10 miles of Project 4. Special status plant species for Project 4 are summarized with their potential to occur on the Project site in Table 4.4-3.

Special Status Wildlife Species

There are 24 special status wildlife species that are considered absent from Project 4 due to a lack of suitable habitat and/or no historical records of the species occurring within 10 miles of Project 4. Special status wildlife species for Project 4 are summarized with their potential to occur on the Project site in Table 4.4-4.

The following 7 species have potential (ranging from low to high) to occur within Project 4.

- Merlin. is not federal or state-listed as Endangered or Threatened species but is of local interest. Merlins inhabit fairly open country including shrubland. In general, they prefer a mix of low and medium-height vegetation with some trees.
- Swainson's hawk. APNs 3203-002-011, 3203-002-012, 3203-002-013, and 3203-002-014 were rated as habitat for Swainson's hawk. A row of salt-cedar trees and 12 kV power lines run along the western border adjacent to the site and several trees (15-20 feet tall) are adjacent to the western boundary of the site. However, none of these represent dominate crown class structures that would provide suitable nesting habitat for this species. In addition, the site does not contain suitable foraging habitat (Noreas, 2013b). Therefore, the Swainson's hawk has low potential for occurrence on APNs 3203-002-011, 3203-002-012, 3203-002-013, and 3203-002-014. Swainson's hawk was observed within 0.5 mile of the Project 4 site. This species is protected by the California Endangered Species Act; additionally, it and other raptors are protected during nesting season through various state and federal regulations (Migratory Bird Treaty Act and the following state regulations: Fish and Game Code, Sections 3503, 3503.5, 3505 and 3513, and California Code of Regulation, Title 14, Sections 251.1, 652 and 783-786.6).
- Northern California legless lizard. The biological reports for APNs 3203-002-015, 3203-002-017, 3218-001-002, 3218-001-003, 3218-001-004, 3203-002-011, 3203-002-012, 3203-002-013, and 3203-002-014 of Project 4 concluded that the northern California legless lizard has a low potential to occur on these sites due to the presence of low quality suitable habitat, the quality of adjacent habitat, and historical records of these species occurring within 5 miles of the sites. APNs 3218-002-0018, 3218-002-023, and 3219-019-011 were rated as having this species absent.
- Coast horned lizard. The biological reports for APNs 3218-002-018, 3218-002-023, 3203-002-011, 3203-002-012, 3203-002-013, 3202-002-014, and 3219-019-011 concluded that the coast horned lizard has a low to moderate potential for occurrence. Project 4 consists of a swale, rubber rabbitbrush scrub and nonnative grasslands that may provide areas for basking and cover for the coast horned lizard. Additionally, coast horned lizards have been recorded to occur within 3 miles of the site. APNs 3203-002-015, 3203-002-017, 3218-001-002, 3218-001-003, and 3218-001-004 were rated as having this species absent.
- Burrowing owl. The burrowing owl is not federa-l or state-listed as Endangered or Threatened, but this species is listed as a CSC. While the majority of CSC listed species do not typically require focused surveys, specific focused survey protocol for the burrowing owl has been developed by the California Burrowing Owl Consortium and adopted by the California Department of Fish and Game Wildlife (CDFW). Because burrowing owl was assumed to have potential to occur on all five of the Project 4 properties, a focused burrowing owl survey was conducted in 2013 for Project 4 No burrowing owls were observed within the study area and surveyors concluded that no further studies were recommended for Project 4.

- Ferruginous hawk. The ferruginous hawk is present in southern California during the winter season. This species winters in open terrain from grasslands to deserts where small mammals are abundant. Ferruginous hawks have been recorded to occur within 1 to 3 miles of Project 4. Small mammal burrows were observed on the many areas of Project 4. The ferruginous hawk has a moderate to high potential for occurrence to use Project 4 as foraging habitat. All five properties were rated as potential habitat.
- Savannah sparrow. Savannah sparrow is on the Los Angeles County Audubon watch list. The species breeds in open areas with low vegetation including most of North America. In winter, Savannah sparrows can be seen on the ground, in open areas and along edges of roads adjacent to farms. This species was seen within the Project 4 study area during burrowing owl surveys.

4.4.3.4.5 Jurisdictional Waters

The Project 4 site has a man-made irrigation ditch along Lancaster Boulevard that may contain some water in spring; however, this ditch does not support riparian vegetation. The solar development would not change this ditch so there is no impact on it and no mitigation is required. Project 4 has some low points or natural depressions; however, these areas do not support wetland or riparian vegetation and are not subject to CDFW jurisdiction. There are no other areas that have potential CDFW jurisdiction on Project 4.

4.4.3.5 Project 5

Project 5 includes one property for which a BTR was prepared. The Project is 160 acres in size and would generate 20 MW.

4.4.3.5.1 Vegetation Type

The site is vegetated with native annual grassland, rubber rabbitbrush scrub, valley needlegrass grassland, and developed areas (Figure 4.4-5). In addition, a small drainage feature (4 acres) is located on-site. The acreage of each vegetation type within the Project is found within the description below. For any detailed biological information the BTRs in Appendix B-3 should be consulted.

Native Annual Grassland (140 acres)

Native annual grassland consists of a dense to sparse cover of annual grasses such as oats, bromes, and ryegrass with flowering culms up to 3 feet in height. This community is often associated with numerous species of showy-flowered, native annual wildflowers such as California poppy, lupines, and common goldfields especially in years of favorable rainfall (Holland 1986). Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from winter through spring. Typically plants are dead through the summer-fall dry season persisting as seeds. Native annual grasslands can be found on fine-textured usually clay soils, moist or even waterlogged during the winter rainy season and very dry during the summer and fall.

Figure 4.4-5

Project 5
Vegetation Map

Native annual grasslands are present within Project 5. Plant species found on Project 5 typical of this vegetation type include: foxtail barley, annual sunflower, and ripgut grass (*Bromus diandrus*).

Rubber Rabbitbrush Scrub (3.5 acres)

Rubber rabbitbrush scrub is dominated by rubber rabbitbrush, usually approximately 3 feet in height with regularly-spaced gray-green shrubs that bloom in late summer or early fall (Holland 1986). Rabbitbrush scrub is a disturbance-maintained community in which fire, grazing, or soil tilling perpetuate the same species within the herb and shrub layers and the disturbance occurs with regular (less than 10 years) frequency.

Rubber rabbitbrush scrub is present within Project 5. Plant species found within this site typical of this vegetation type include: tumble mustard, red-stemed filaree, and rubber rabbitbrush.

Valley Needlegrass Grassland (0.3 acres)

Valley needlegrass grassland is mid-height (up to 2 feet) grassland dominated by perennial tussock forming purple needlegrass. Native and introduced annual herbaceous plants occur between the perennial grasses, often exceeding the bunchgrasses in overall vegetative cover. These grasslands are typically found on fine-textured, often clay soils, which can be moist or even waterlogged during the winter, but are very dry in the summer (Holland 1986). Valley needlegrass grasslands are protected by the City of Lancaster and Los Angeles County. Plant species found within the site typical of this vegetation type include: cheatgrass, minature lupine, and purple needlegrass.

Developed Areas (14 acres)

Developed areas have been altered by humans and now display man-made structures such as houses, paved roads, buildings, parks, and other maintained areas. Developed areas are present within the site.

4.4.3.5.2 Plant Species

The following plant species were observed while habitat assessments were conducted on Project 5: tumbling pigweed (*Amaranthus albus*), pineapple weed, rubber rabbitbrush, horseweed (*Conyza canadensis*), annual sunflower, prickly lettuce, common goldfields, cudweed aster, grassy tarweed (*Madia gracilis*), wreathplant, silver puffs, common fiddleneck, popcorn-flower (*Plagiobothrys* sp.), tumble mustard, Russian thistle, rattlesnake weed, miniature lupine, red-stemed filaree, horehound, vinegar weed, desert four o'clock(*Mirabilis multiflora* var. *pubescens*), four spot (*Clarkia purpurea* ssp. *quadrivulnera*), California poppy, annual buckwheat, common knotweed (*Polygonum aviculare* ssp. *depressum*), jimson weed (*Datura wrightii*), slender wild oat (*Avena barbata*), ripgut grass, cheatgrass, bottle-brush squirreltail, foxtail barley, purple needlegrass, and foxtail fescue.

4.4.3.5.3 Wildlife Species

The following wildlife species were observed while habitat assessments were conducted on Project 5: unidentified rattlesnake, California ground squirrel, common raven, Cassin’s kingbird,

horned lark, chipping sparrow (*Spizella passerina*), European starling (*Sturnus vulgaris*), turkey vulture (*Cathartes aura*), lesser goldfinch (*Spinus psaltria*), house sparrow (*Passer domesticus*), western tanager (*Piranga ludoviciana*), tricolored blackbird (*Agelaius tricolor*), red-winged blackbird (*Agelaius phoeniceus*), gopher snake (*Pituophis catenifer*), Botta's pocket gopher (burrows), black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), unidentified hawk (*Buteo* sp.), Brewer's blackbird (*Euphagus cynanocephalus*), northern mockingbird (*Mimus polyglottos*), and Great Basin side-blotched lizard (*Uta stansburiana elegans*).

4.4.3.5.4 Special Status Species

The California Department of Fish and Wildlife California Natural Diversity Database (CNDDB 2013) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPSEI 2011) were reviewed for the quadrangles containing Project 5 and included *Little Butte, Rosamond,* and *Del Sur,* California USGS 7.5 minute quadrangles). For any detailed information on species lists, for property vegetation maps, for the percent of vegetation types on a property or for other detailed biological information the BTRs in Appendix B-3 should be consulted.

According the literature review, 18 special status plant and 30 special status wildlife species were documented to occur within the vicinity of Project 5. This list included 10 wildlife species that are federally or state-listed Endangered or Threatened. Of the 18 special status plant species listed in the literature review, none are federally or state-listed Endangered or Threatened.

Special Status Plant Species

Of the 18 special status plant species listed in the literature review for Project 5, none are federally or state-listed Endangered or Threatened. There are 17 special status plant species that are considered absent from the Project site due to a lack of suitable habitat or Project 5 occurs outside the elevation range or historic range of the species. Special status plant species for Project 5 are summarized with their potential to occur on the Project site in Table 4.4-3.

Peirson's morning glory has a moderate potential to occur on Project 5. Preconstruction surveys will target Peirson's morning glory; otherwise, no additional surveys for the special status plant species listed above are required.

Special Status Wildlife Species

There are 21 special status wildlife species that are considered absent from Project 5 due to a lack of suitable habitat. Special status wildlife species for Project 5 are summarized with their potential to occur on the Project site in Table 4.4-4.

The following seven special status wildlife species have a low potential to occur onsite due to the presence of low quality suitable nesting or foraging habitat on Project 5, the quality of adjacent habitat, and/or lack of historical records of these species occurring within 5 miles of Project 5:

- American badger – Pre-construction surveys will target potential burrows and presence of American badger.
- Ferruginous hawk – The ferruginous hawk is present in southern California during the winter season and requires open areas of grassland and sparse shrub cover. Habitat for foraging is of poor quality on Site 5 and therefore, the ferruginous hawk has a low potential to forage on Project 5. This species is not federal or state-listed as Endangered or Threatened; it is listed as a Watch List species.
- Loggerhead shrike – Project site 5 lacks tall trees and suitable nesting and foraging habitat to support the loggerhead shrike on-site. Therefore, the potential for the species to occur on Project 5 is low. This species is not a federal or state-listed Endangered or Threatened species.
- Merlin – Merlin is not a federal or state-listed Endangered or Threatened species but is of local interest. Merlins inhabit fairly open country including shrubland. In general, they prefer a mix of low and medium-height vegetation with some trees. Project site 5 lacks habitat for Merlin.
- Mountain plover – Mountain plovers are known to be a winter resident in the region. The Project site contains poor quality foraging habitat, therefore, the mountain plover has a low potential to winter and forage on Project 5. This species is a CSC and is not federal or state-listed as Threatened or Endangered.
- Swainson's hawk – Swainson's hawks have historically nested within 5 miles of Project 5. However, the habitat on or adjacent to Project 5 is of very low quality and therefore, the potential for Swainson's hawk to occur on Project 3 is low.
- Southern grasshopper mouse – Habitat for southern grasshopper mouse on Project site 5 is of low quality and therefore, occurrence on the site is expected to be low.

The following special status wildlife species has a moderate potential to occur on Project 5 due to the presence of low quality suitable habitat and historical records of these species occurring within 3 miles of Project 5:

- Coast horned lizard. Project 5 consists of areas of valley needlegrass grasslands which may provide suitable habitat for the coast horned lizard. In addition, there are historical records of this species occurring within 3 miles of Project 5. Therefore, the coast horned lizard has a moderate potential to occur on Project 5. Although this species is not federally or state-listed as Endangered or Threatened, it is listed as a CSC.

The following special status wildlife species has a high potential to occur on Project 5 due to the presence of high quality suitable habitat and historical records of these species occurring within 1 mile of Project 5:

- Burrowing owl. Project 5 consists of native and non-native grasslands which could provide suitable habitat for burrowing owls. Several suitable burrows with white-wash and possible prey species were also observed within Project 5. In addition, burrowing owls have been recorded to occur within 1 mile of Project 5. Therefore, the burrowing owl has a high potential for occurrence on Project 5. Although burrowing owls are not federally or state-listed as Endangered or Threatened, this species is listed as a CSC. While the majority of CSC listed species do not typically require focused surveys, specific focused survey protocol for the burrowing owl has been developed by the California Burrowing Owl Consortium and adopted by the CDFW. A pre-

construction burrowing owl survey would be conducted and mitigation measures for burrowing owl are included.

- Tricolored blackbird – Observed during sight visit; however little suitable nesting and foraging habitat is present.

4.4.3.5.5 Jurisdictional Waters

On Project 5 drainage wash (ditch) trends from the west to the east across the site. This is a man-made drainage that has definitive bed and bank morphology, with the bed consisting of coarse sands and no vegetation. The drainage does not contain riparian vegetation, hydric soils, and does not demonstrate any wetland characteristics. In addition the drainage system abates into the landscape east of the project site and does not drain into any navigable waters, wetlands, or waters of the United States (waters under jurisdiction of the USACE). Although the "isolated" drainage is not a Water of the U.S. under Clean Water Act Section 404, the drainage is subject to jurisdiction under the Department of the Fish and Wildlife. Table 4.4-1 provides an estimate of CDFW required mitigation acreage associated with the drainage feature.

4.4.3.6 Project 6

Project 6 includes one property for which a BTR was prepared. The project is 256 acres in size and would generate 5 MW.

4.4.3.6.1 Vegetation Type

Project 6 consists of desert saltbush scrub, disturbed desert saltbush scrub, and saltgrass grassland vegetation (Figure 4.4-6). Within the disturbed desert saltbush scrub near the agricultural/farming basin, scattered salt-cedar were present. The Project 6 site is surrounded by native desert shrub communities, native and non-native grasslands, and active agricultural fields. In addition to vegetation types listed below the Project consisted of disturbed or barren land (0.04 acres) and a drainage feature (0.3 acres). The acreage of each vegetation type within the Project is found within the description below. For any detailed biological information the BTRs in Appendix B-3 should be consulted.

Desert Saltbush Scrub (40 acres)

Desert saltbush scrub is typically characterized by low, grayish, microphyllous shrubs 1 to 3 feet in height dominated by saltbush with some other shrub and succulent species. Cover in this community is often low with much bare ground between the widely spaced shrubs. Microhabitat consists of fine-textured, poorly drained soils with high alkalinity and/or salinity surrounding playas on slightly higher ground at elevations below 4,000 feet amsl (Holland 1986). Desert saltbush scrub is present throughout the majority of Project 6. Plant species found within this site typical of this vegetation type include spiny saltbush and fourwing saltbush.

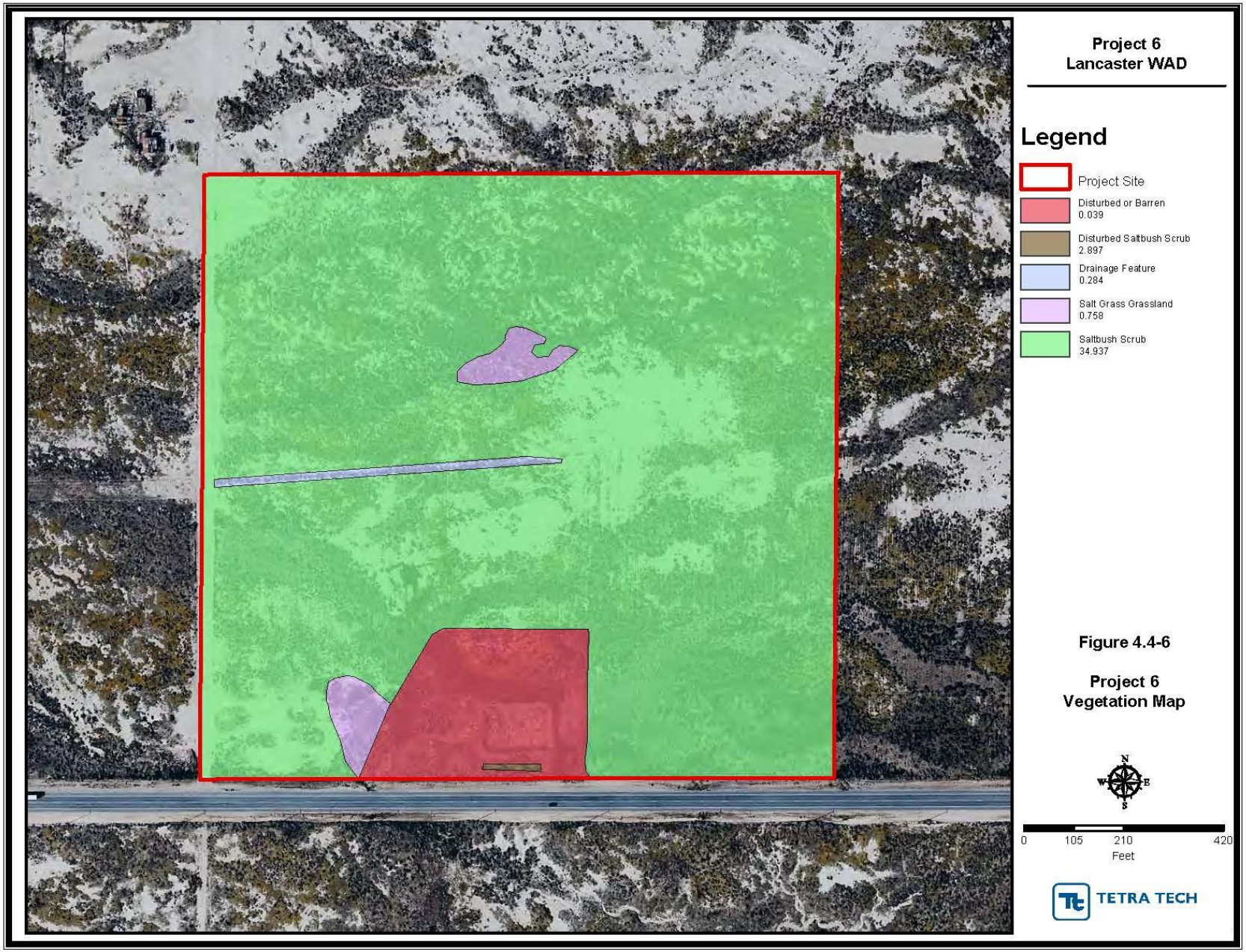


Figure 4.4-6

Project 6
Vegetation Map

Disturbed Desert Saltbush Scrub (3 acres)

Disturbed desert saltbush scrub is typically characterized by low, grayish, microphyllous shrubs 1 to 3 feet in height dominated by saltbush with some other shrub and succulent species, and over 90 percent cover of non-native plant species. Native cover in this community is still often low with some of the bare ground between the widely spaced shrubs inhabited by non-native annual grasses. Microhabitat consists of fine-textured, poorly drained soils with high alkalinity and/or salinity surrounding playas on slightly higher ground at elevations below 4,000 feet amsl (Holland 1986).

Disturbed desert saltbush scrub is present in the southern area of Project 6, in and around the abandoned agricultural/farming basin. Plant species found within this site typical of this vegetation type include spiny saltbush, four-wing saltbush, and non-native annual brome grasses.

Saltgrass Grassland (0.75 acres)

Saltgrass grassland is typically characterized by low, green to yellow grasses 1 to 2 feet in height dominated by saltgrass with other grasses and annual species mixed in at lower abundances. Cover in this community is often high, with some smaller patches of bare ground between the creeping grass patches. Microhabitat consists of fine-textured, poorly drained soils with high alkalinity, moisture, and/or salinity on grounds near marshes, temporary pools, or playas at elevations below 4,000 feet amsl (Holland 1986).

Saltgrass grassland is present in two main locations within Project 6 in moderately sized patches near areas that show recent evidence of pooling. Plant species found within this site typical of this vegetation type include saltgrass.

4.4.3.6.2 Plant Species

The following plant species were observed while the habitat assessment was conducted on Project 6: pineapple weed, rubber rabbitbrush, shortpod mustard, salt heliotrope (*Heliotropium curassavicum*), four-wing saltbush, spiny saltbrush, leafcover saltweed (*Atriplex phyllostegia*), allscale, sea-blite (*Suaeda nigra*), filaree (*Erodium* sp.), Mojave spineflower, salt-cedar, western ragweed (*Ambrosia psilostachya*), doveweed, soft chess, foxtail chess, cheatgrass, saltgrass, Russian thistle, puncturevine (*Tribulus terrestris*), popcorn-flower, eriastrum (*Eriastrum* sp.), seaside barley (*Hordeum marinum*), Mediterranean schismus, and Nevada ephedra.

4.4.3.6.3 Wildlife Species

The following wildlife species were observed or detected while the habitat assessment was conducted on Project 6: common raven, Bell's sparrow (*canescens* subspecies), loggerhead shrike, western meadowlark, desert cottontail (scat), black-tailed jackrabbit (scat), coyote (scat), desert woodrat (*Neotoma lepida lepida*; midden), and Great Basin whiptail (*Aspidoscelis tigris tigris*).

4.4.3.6.4 Special Status Species

The most recent records of the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB 2013) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPSEI 2011) were reviewed for the quadrangles containing and surrounding Project 6 and included *Rosamond, Little Butte,* and *Del Sur*, California USGS 7.5-minute quadrangles). For any detailed information on species lists, for property vegetation maps, for the percent of vegetation types on a property or for other detailed biological information the BTRs in Appendix B-3 should be consulted.

According to the literature review, 19 special status plant and 30 special status wildlife species were documented to occur within the vicinity of Project 6. This list included 10 wildlife species that are federally or state-listed as Endangered or Threatened. Of the 19 special status plant species listed in the literature review, none is federally or state-listed as Endangered or Threatened.

Special Status Plant Species

There are 16 special status plant species that are considered absent from Project 6 due to a lack of suitable habitat, no historical records of these species have been recorded within 10 miles of Project 6, and/or they were not observed during the reconnaissance-level field survey. Special status plant species for Project 6 are summarized with their potential to occur on the Project site in Table 4.4-3.

The following special status plant species has a moderate potential to occur on Project 6 due to the presence of suitable habitat, and historical records of this species occurring within 3 miles of Project 6:

- Spreading pygmyleaf. Undisturbed suitable habitat (saltbush scrub) for the Spreading pygmyleaf was observed on the site. In addition, this species has been recorded to occur within 3 miles of Project 6; therefore, Spreading pygmyleaf has a moderate potential to occur on Project 6.

The following special status plant species has a high potential to occur on Project 6 due to the presence of high quality suitable habitat, and historical records of this species occurring within 1 mile of Project 6:

- Alkali mariposa lily. High quality alkali playa habitat suitable for the alkali mariposa lily was observed on Project 6. In addition, alkali mariposa lily has been recorded to occur within 1 mile of Project 6; therefore, the alkali mariposa lily has a high potential to occur on Project 6.

The following special status plant species was present on Project 6:

- Mojave spineflower. The Mojave spineflower is a special status plant species that was observed during Project 6 visit. The Mojave spineflower was observed onsite during the survey; this species was present throughout multiple portions of the western half of Project 6.

Special Status Wildlife Species

There are 16 special status wildlife species that are considered absent from Project 6 due to a lack of suitable habitat. Special status wildlife species for Project 6 are summarized with their potential to occur on the Project site in Table 4.4-4.

The following 12 special status wildlife species have low potential to occur on Project 6 due to the lack of nesting and foraging habitat that meets some of the species' habitat requirements and/or lack of historical records of these species occurring within 5 miles of Project 6:

- American badger
- Southern grasshopper mouse
- Bell's sage sparrow
- Coast horned lizard
- Cooper's hawk
- Ferruginous hawk
- Least Bell's vireo
- Le Conte's thrasher
- Mohave ground squirrel
- Mountain plover
- Swainson's hawk
- White-faced ibis

The following special status wildlife species has a moderate potential to occur on Project 6 due the presence of suitable quality habitat, and historical records of this species occurring within 5 miles of Project 6:

- Burrowing owl. Several burrows suitable for the burrowing owl were observed on the Project site. Several potential prey species were also observed or detected (i.e., presence of burrows and scat). In addition, burrowing owls have been recorded to occur within 3 miles of the Project site; therefore, the burrowing owl has a moderate potential to occur on Project 6. Although burrowing owls are not federal or state-listed as Endangered or Threatened, this species is listed as a CSC and specific focused survey protocol for the burrowing owl has been developed by the California Burrowing Owl Consortium and adopted by CDFW. A pre-construction burrowing owl survey would be conducted and mitigation measures for burrowing owl would be included.

The following special status animal species was present on Project 6:

- Loggerhead shrike. The loggerhead shrike was observed on Project 6 during the reconnaissance-level survey. An adult shrike was seen foraging with two juveniles. This site offers high quality habitat preferred by this species of bird (open shrubby area with perches to hunt prey and several larger salt-cedar trees to potentially nest in). Scattered salt-cedar was identified that could support nesting on site. Although

loggerhead shrikes are not federal or state-listed as Endangered or Threatened, this species is listed as a CSC.

4.4.3.6.5 Jurisdictional Waters

There is a man-made irrigation ditch on the site that is no longer in use and does not support any wetland or riparian vegetation. Areas of the site also show evidence that water ponds and evaporates from the area. This is a playa area and the surface soils become very dry and crack after the wet season. There is no wetland or riparian vegetation supported on the site at any time. This type of alkaline playa exists over thousands of acres to the east and north of the site. It is unknown if CDFW would take jurisdiction over this area.

4.4.3.7 Summary Table of Vegetation Types by Project

Table 4.4-5 is a summary table of vegetation types contained within each Project site. Refer to the project sections for acreages by vegetation type.

Table 4.4-5 Summary Table of Vegetation Types by Project

Vegetation Type	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6
Desert saltbush scrub		X				X
Developed areas	X			X	X	
Disturbed or barren	X					
Disturbed desert saltbush scrub	X					X
Disturbed rubber rabbitbrush scrub			X			
Drainage feature				X	X	X
Native annual grassland		X	X	X	X	
Rubber rabbitbrush scrub		X		X	X	
Ruderal		X		X		
Saltgrass grassland						X
Tamarisk scrub				X		
Valley needlegrass grassland		X			X	

Table 4.4-6 Vegetation Composition by Project

Vegetation Type	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6	Total
Desert saltbush scrub	0.00	18.49	0.00	0.00	0.00	34.94	53.43
Developed areas	0.89	0.00	1.09	5.80	0.00	0.00	7.78
Disturbed or barren	21.24		1.09		14.12	0.04	36.49
Disturbed rubber rabbitbrush scrub	0.00	0.00	0.31	0.00	0.00	0.00	0.31
Disturbed saltbush scrub	206.61	0.00	0.00	0.00	0.00	2.90	209.51
Drainage feature	0.00	0.00	0.00	0.10	4.17	0.28	4.55
Native annual grassland	0.00	38.73	131.88	179.00	139.91	0.76	490.28
Rubber rabbitbrush scrub	0.00	5.61	0.00	6.00	3.53	0.00	15.14
Ruderal	9.80	11.54	0.00	0.30	0.00	0.00	21.64
Tamarisk scrub	0.00	0.00	0.00	1.00	0.00	0.00	1.00
Valley needlegrass grassland	0.00	69.16	0.00	0.00	0.30	0.00	69.46
Total	238.54	143.53	134.37	192.20	162.03	38.92	909.59

4.4.3.8 Summary Table of Jurisdictional Waters by Project

Table 4.4-7 is a summary of the jurisdictional waters for each of the six projects.

Table 4.4-7 CDFW Potentially Jurisdictional Waters

Project Sites With Potential CDFW Issues	On site feature	On site length (feet)	Width (feet)	Acres	Flow regime	Potential Jurisdictional Acreage (USACE)	Potential Jurisdictional Acreage (CDFW)
Project 1 – APN 3262-001-006	None identified	N/A	N/A	N/A	N/A	0.00	0.00
Project 2 – APN 3262-001-006	Natural drainage	1,090	25	0.63	Ephemeral	0.00	0.63
	Natural drainage	1,061	25	0.61	Ephemeral	0.00	0.61
	Natural drainage	1,137	25	0.65	Ephemeral	0.00	0.65
	Natural drainage	861	25	0.49	Intermittent	0.49	0.49
Project 3 – APN 3268-018-035	Drainage ditch	1,281	10	0.29	Ephemeral	0.00	0.00
	Drainage ditch	1,221	10	0.28	Ephemeral	0.00	0.00
	Drainage ditch	670	10	0.15	Ephemeral	0.00	0.00
Project 4 – APN 3218-002-018	Natural depressions and swales	187	172	0.74	Ephemeral	0.00	0.00
Project 4 – APNs 3203-002-011, 3203-002-012, 3203-002-013, 3203-002-014	Drainage ditch	1,285	10	0.29	Ephemeral	0.00	0.00
	Drainage ditch	1,290	10	0.30	Ephemeral	0.00	0.00
Project 5 – APN 3267-003-001, 3267-003-002, 3627-003-003	Drainage ditch	1,400	25	1.00	Intermittent	1.00	1.00
Project 6 – APN 3115-010-004	Desert Playa	250	400	2.30	Ephemeral	0.00	0.00
Total Acres		**N/A**	**N/A**	**7.53**		**1.00**	**3.38**

4.4.4 Regulatory Setting

Summaries of federal, state, and local laws and regulations governing biological resources that are potentially applicable to the proposed Projects are provided below.

4.4.4.1 Federal

4.4.4.1.1 Federal Endangered Species Act

Section 9 of the Endangered Species Act (ESA) prohibits the "take" of federal listed Threatened and Endangered species. The ESA defines "take" as any action that would harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any Threatened or Endangered species. If a proposed project may result in "take" of a listed species, and the project is not funded, authorized, or carried out by a federal agency, an Incidental Take Permit under Section 10(a)(1)(B) of the ESA from the U.S. Fish and Wildlife Service (USFWS) is required; a Habitat Conservation Plan must accompany this permit application. If there is a nexus with a federal

agency, the acting agency is required to consult with the USFWS under Section 7 of the ESA and to obtain a Biological Opinion indicating that the proposed action would neither jeopardize the continued existence of the species nor result in destruction or adverse modification of designated critical habitat. Because no federal listed species are known or suspected to occur on the Projects or along the off-site transmission line routes, applicability of this statute would be contingent on unanticipated discovery of such species.

4.4.4.1.2 Bald and Golden Eagle Protection Act

The Bald and Golden eagle Protection Act (BGEPA) prohibits the take of any bald or golden eagle, alive or dead, including any part, nest, or egg. “Take” is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb” a bald or golden eagle. “Disturb” means to agitate or bother an eagle to a degree that causes, or is likely to cause, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. Historically permits were not available under the BGEPA for incidental takes from otherwise lawful activities; however, USFWS-promulgated regulations in 2009 provided for permits for incidental take associated with otherwise lawful activities, including renewable energy (50 Code of Federal Regulations § 22.26). Draft Eagle Conservation Plan Guidance outlining the recommended steps for wind energy projects applying for incidental take permits was released by USFWS in February 2011, with revised technical appendices released in August 2012, and final guidance released in April 2013 (USFWS 2011,2012, 2013).

4.4.4.1.3 Migratory Bird Treaty Act

The proposed Projects would also be subject to the requirements of the Migratory Bird Treaty Act. This regulation protects all migratory birds and their nests and makes it unlawful to “take” (e.g., pursue, kill, harm, harass, etc.) any migratory birds or their eggs or active nests.

4.4.4.1.4 Federal Clean Water Act

Perennial and intermittent drainages, creeks, and streams that are tributary to navigable waters are generally subject to jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Federal Clean Water Act (CWA). This statute requires that any person proposing to discharge dredge or fill material into waters of the U.S. first obtain a permit from the USACE authorizing such discharge. The lateral limit of “waters of the U.S.” is the ordinary high water mark, although the presence of adjacent wetlands can expand jurisdiction under some circumstances.

U.S. Army Corps of Engineers Responsibility and Jurisdiction

Pursuant to Section 404 of the CWA, the USACE regulates the discharge of dredged and/or fill material into waters of the U.S. Section 404 requires that any person proposing such a discharge first obtain a permit from the USACE. The Section 404 Permit is a federal permit subject to the terms of Section 401, and the USACE cannot issue Section 404 permits in the region unless the permit applicant also receives a Section 401 Certification from the Lahontan RWQCB. Section 401 of the CWA is restricted to activities requiring a federal license or permit,

and does not apply to activities affecting waters outside federal jurisdiction such as isolated, intrastate waters. If the USACE concurs that waters onsite are non-jurisdictional, a Water Quality Certification under Section 401 would not be required.

The California Lahontan RWQCB can issue Section 401 Certifications for projects in northeastern Los Angeles County. Under Section 401 of the CWA, every applicant for a federal permit or license for any activity which may result in a discharge of dredge or fill material to a water body must obtain a State-issued Water Quality Certification that the proposed activity would comply with state water quality standards (i.e., beneficial uses, water quality objectives, and anti-degradation policy).

Generally speaking, waters of the U.S. are defined to include navigable waterways and their tributaries and adjacent wetlands. Intrastate waters that are not tributary to navigable waterways are generally not waters of the U.S. The lateral limits of waters of the U.S., in the absence of adjacent wetlands, are defined by the ordinary high-water mark on the stream bank. Wetlands are defined using a three-parameter approach under the CWA, which requires a site to possess a predominance of hydrophytic vegetation, wetland hydrology, and hydric soils to qualify as a wetland. For the Projects none of the drainages, irrigation ditches, or swales on the Project sites are regulated by the USACE as waters of the U.S.

4.4.4.2 State

4.4.4.2.1 California Code of Regulation, Title 14, Sections 251.1, 652 and 783-786.6

These codes specifically protect birds of prey (hawks, falcons, kites, eagles, vultures and owls) as well as requiring implementation of the California Endangered Species Act.

4.4.4.2.2 California Endangered Species Act

Section 2080 of the California Endangered Species Act (CESA) prohibits the “take” of state-listed Threatened and Endangered species. As defined in Section 86 of the California Fish and Game Code, “take” means to hunt, pursue, catch, capture, or kill, or to attempt any of these activities. If a proposed project may result in “take” of a listed species, an Incidental Take Permit pursuant to Section 2081 of CESA is required from the CDFW. Although Swainson’s hawk, a State Threatened species was not observed on-site during surveys, the species occurs within the Project vicinity and has low potential to be impacted by the Project. Swainson’s hawk will be a target species during preconstruction, construction and operations monitoring surveys.

4.4.4.2.3 California Fish and Game Code (Sections 3503, 3503.5, 3505, and 3513)

The proposed Projects would also be subject to the requirements of Sections 3503, 3503.5, 3505, and 3513 of the California Fish and Game Code. These regulations protect all native birds and their nests and make it unlawful to “take” (e.g., hunt, pursue, catch, capture, or kill) any migratory bird and their active nests. Within Los Angeles County, CDFW Region 5 has responsibility for administering these requirements.

4.4.4.2.4 California Fish and Game Code (Sections 1600–1616)

Pursuant to Sections 1600-1616 of the California Fish and Game Code, any entity proposing to divert, obstruct, or substantially alter the bed, bank, or channel of a stream or lake must first obtain a Streambed Alteration Agreement from the CDFW. Regulations promulgated by the CDFW define streams to include bodies of water that flow at least periodically or intermittently through a bed or channel having banks and supporting aquatic life, including watercourses having surface or subsurface flow that supports or has supported riparian vegetation. Jurisdiction under this statute encompasses all portions of the bed, banks, and channel of any stream, extending laterally to the upland edge of riparian vegetation. Within Los Angeles County, CDFW Region 5 has responsibility for administering these requirements.

CDFW defines streams to include bodies of water that flow at least periodically or intermittently through a bed or channel having banks and supporting aquatic life, including watercourses having surface or subsurface flow that supports or has supported riparian vegetation. Jurisdiction under this statute encompasses all portions of the bed, banks, and channel of any stream, extending laterally to the upland edge of riparian vegetation. The upstream limit of CDFW jurisdiction is the point upstream of which there is no evidence of a defined bed and bank, and riparian vegetation is not present. Pursuant to Sections 1600-1616 of the California Fish and Game Code, any entity proposing to divert, obstruct, or substantially alter the bed, bank, or channel of a stream or lake must first coordinate with the CDFW and if required obtain a Streambed Alteration Agreement from the CDFW. Mitigation for the loss of riparian wildlife habitats can be required.

4.4.4.2.5 California Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 – 1913)

The NPPA was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

4.4.4.2.6 Lahontan Regional Water Quality Control Board Responsibility and Jurisdiction

The Lahontan RWQCB has jurisdiction over all “waters of the State,” defined as any surface water or groundwater, including saline waters, within the boundaries of the state, under the Porter-Cologne Water Quality Control Act (a state statute). To ensure that California’s isolated waters are protected and that the permitting process is as efficient as possible, the State Water Resources Control Board has issued general WDRs regulating discharges to “isolated” waters of the State.

4.4.4.3 Local

4.4.4.3.1 Los Angeles County General Plan

Conservation and Open Space Element Policy 7. Preserve significant ecological areas and habitat management areas by appropriate measures, including preservation, mitigation, and enhancement.

4.4.4.3.2 Antelope Valley Areawide General Plan

Policy Statement 69. Protect significant vegetation such as the Joshua tree.

Policy Statement 123. Preserve the Antelope Valley's Significant Ecological Areas (SEAs) in as viable and natural a condition as possible, recognizing the resource values at stake and the constraints imposed by competing priorities and objectives.

Policy Statement 141. Prohibit the harvesting of Joshua or juniper trees for fuel purposes or for transplantation out of their normal habitat area.

Los Angeles County General Plan. The general plan serves as the foundation for all land use decisions.

Conservation and Open Space Element Policy 7. Preserve significant ecological areas and habitat management areas by appropriate measures, including preservation, mitigation, and enhancement.

4.4.5 Significance Criteria

The following significance criteria are from the Los Angeles County Environmental Checklist Form and correspondence with Los Angeles County. These criteria form the basis for the analysis of each Project's potential impacts.

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any 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 Game Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?

b) Would the project have a substantial adverse effect on sensitive natural communities (e.g., riparian habitat, coastal sage scrub, oak woodlands, non-jurisdictional wetlands) identified in local or regional plans, policies, and regulations CDFW or USFWS?

c) Would the project have a substantial adverse effect on federally protected wetlands (including marshes, vernal pools, and coastal wetlands) or waters of the United States, as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means?

d) Would the project 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?

e) Would the project convert oak woodlands (as defined by the state, oak woodlands are oak stands with greater than 10% canopy cover with oaks at least 5 inch in diameter

measured at 4.5 feet above mean natural grade) otherwise contain oak or other unique native trees(junipers, Joshuas, southern California black walnut, etc.)?

f) Would the project conflict with any local policies or ordinances protecting biological resources, including Wildflower Reserve Areas (L.A. County Code, Title 12, Ch. 12.36), the Los Angeles County Oak Tree Ordinance (L.A. County Code, Title 22, Ch. 22.56, Part 16), the Significant Ecological Areas (SEAs) (L.A. County Code, Title 22, Section 22.56.215), and the SERAs, (L.A. County Code, Title 22, Section 22.44, Part 6)?

g) Would the project conflict with the provisions of an adopted state, regional, or local habitat conservation plan?

4.4.6 Impacts Analysis

The following sections discuss potential impacts that could result from construction and operations of each of the six Projects on a criterion by criterion basis as described above in Section 4.4.5. A summary of all impacts associated with each of the six proposed Projects is presented in Section 4.4.6. For each criterion, impacts for construction and operations are considered together unless otherwise noted. The impacts for construction (noise, disturbance and removal of habitat or foraging opportunity leading to avoidance of the site by the species) are the same for operations accept construction noise and disturbance levels are assumed to be higher. The impacts to foraging habitat are implemented during construction; however, it is assumed that the habitat will continue to be unavailable during operations.

4.4.6.1 Impacts Associated with Gen-tie Lines

Each of the six Projects would connect to the SCE grid to deliver the power generated from the solar modules. Phase 1 of Project 1 and Projects 3, 4 and 6 would interconnect to transmission and distribution lines located immediately adjacent to the sites. Phase 2 of Project 1 would interconnect to the transmission line west of the site via a gen-tie near the southern boundary of the site. Projects 2 and 5 would have gen-tie lines that connect to the Antelope Substation. All gen-tie lines located in Los Angeles County would be underground and the power cables would be put into trenches built along public roads in mainly previously disturbed areas. Interconnection would disturb a total of 17.96 acres of land almost entirely in existing road or power line right-of-way corridors. Where possible, connection tunnels would be constructed under existing roads and the gen-tie cables would be placed under the roads. Along the road rights-of-way, a trenching machine would be used to dig the gen-tie trenches. Once the cables are installed the trenches would be covered over with soil and the lands would be reclaimed as specified in the reclamation plan for the project site. Permanent impacts to vegetation and wildlife would be negligible since the road rights-of-way are already disturbed and contain little value as habitat. Table 4.4-8 describes the interconnection plans for each site as shown in Section 3.0 Project Description, Figures 3-4 through 3-9 of this EIR.

Table 4.4-8 Description of Interconnection per Project site

Project Number	Interconnection Description	Length in miles	ROW Width in Feet	Acres Used	Other Comments
1	Phase 1: Gen-tie crosses 110th St W underground to SCE 66 kV transmission line running north-south on west side of road. Phase 2: Gen-tie runs west along south side of W Ave B underground for 0.54 miles and connects to SCE 66 kV transmission line running north-south on west side of road at SW corner of W Ave B and 110th St W.	Phase 1: 0.02 Phase 2: 0.54	30	2.04	Phase 1 and 2: On public ROW, underground and under existing road, minor soil disturbance
2	Gen-tie leaves Project substation at NE corner of Project. Runs 1.9 miles north along east side of 110th St W and east along south side of W Ave J to the SCE Antelope Substation.	1.9	30	6.91	On public ROW or private land, partially underground, minor soil disturbance
3	Gen-tie connects directly from Project substation to existing SCE 66 kV transmission line located adjacent to northern property line on south side of W Ave G, at NE corner of Project.	Less than 0.01	0	0	Pole to pole or pole to riser above ground. No new disturbance
4	POI 1: Gen-tie crosses W Ave J underground to SCE 66 kV transmission line running east-west on south side of road. POI 2: Gen-tie crosses 90th St W underground to SCE 12.47 kV distribution line running north-south on east side of road. POI 3: Gen-tie connects to existing SCE 66 kV transmission line located on-site near NE corner of 97th St W and Lancaster Blvd. POI 4: Project would tie into existing SCE 12.47 kV distribution line located adjacent to the Project site on the north side of W Ave I.	POI 1: 0.02 POI 2: 0.02 POI 3: 0.02 POI 4: Less than 0.01	30	0.22	On public ROW, would be under existing roads, minor soil disturbance
5	Gen-tie leaves Project substation at SE corner of Project. Runs 2.4 miles east along private property, south along east side of 110th Street West, and east along south side West Avenue J to the SCE Antelope Substation.	2.4	30	8.72	On public ROW or private land, partially underground, minor soil disturbance
6	Gen-tie crosses W Ave D underground to SCE 12.47 kV distribution line running east-west on south side of road.	0.02	30	0.07	On public ROW, would be under existing roads, minor soil disturbance

The land utilized for the gen-tie lines would be treated the same as any lands to be disturbed by the solar development and the same protections would apply. All of the mitigation measures for the sites would be followed for all of the gen-tie routes.

4.4.6.2 Project Impacts: Criterion A – Would the project have a substantial adverse effect, either directly or through habitat modifications, on any 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 (CDFW) or U.S. Fish and Wildlife Service (USFWS)?

4.4.6.2.1 Project 1

Construction and Operations

Project 1 has low potential for American badger, ferruginous hawk, merlin, and Le Conte's thrasher to occur onsite. There is moderate potential for mountain plover and burrowing owl to occur onsite based on habitat suitability. Burrowing owls were not observed onsite during 2013 targeted surveys but potential burrows were observed. In addition, although not a sensitive species, kit fox is plays an important role in providing burrow sites for burrowing owl and has potential to occur within Project 1. Potential for Swainson's hawk is low due to the lack of nesting and foraging habitat on the site. There is high potential for loggerhead shrike to occur onsite. Developing this site as a solar generating facility would remove habitat for this species and would result in a significant impact.

Mitigation measures provided in Section 4.4.8 would reduce these impacts substantially; however, the 240 acres of land for Project 1 would be mostly unavailable as wildlife habitat during the life of Project 1. The impacts would be significant.

4.4.6.2.2 Project 2

Construction and Operations

The site has low potential for ferruginous and Swainson's hawk, loggerhead shrike, merlin, and mountain plover to occur onsite. There is moderate potential for coast horned lizard and American badger to occur onsite. There is relatively high potential for burrowing owl to occur on site (burrowing owl was observed adjacent to the Project study area during 2013 targeted surveys). Developing this site as a solar generating facility would remove habitat for these species and would result in a significant impact.

Mitigation measures shown in Section 4.4.8 would reduce these impacts substantially; however, the 118 acres of land to be developed for Project 2 would be mostly unavailable as wildlife habitat during the life of Project 2. The impacts would be significant.

4.4.6.2.3 Project 3

Construction and Operations

The site has low potential for alkali mariposa lily, merlin, northern California legless lizard, loggerhead shrike, mountain plover, and Swainson's hawk to occur onsite. There is moderate potential for American badger. There is low potential for burrowing owl to occur on site as no individuals or potential burrows were observed during 2013 targeted species. There is high potential for ferruginous hawk to occur onsite. Developing the site as a solar generating facility would remove habitat for these species and would result in a significant impact.

Mitigation Measures shown in Section 4.4.6 would reduce these impacts substantially; however, the 135.61 acres of land for Project 3 would be mostly unavailable as wildlife habitat during the life of Project 3. The impacts would be significant.

4.4.6.2.4 Project 4

Construction and Operations

Because this site is made up of multiple parcels that were surveyed separately and at different times, the survey results are presented by APN numbers. The potential for the following species to occur on the various parcels that make up this site is presented below.

Northern California legless lizard: For APNs 3203-002-015, 3203-002-017 3218-001-002, 3218-001-003, 3218-001-004, 3203-002-011, 3203-002-012, 3203-002-013, and 3203-002-014 the northern California legless lizard has a low potential to occur on these sites. On APNs 3218-002-0018, 3218-002-023, and 3219-019-011 this species was determined to be absent.

Coast horned lizard: For APNs 3218-002-018, 3218-002-023, 3203-002-011, 3203-002-012, 3203-002-013, 3202-002-014, and 3219-019-011 the coast horned lizard has a low to moderate potential for occurrence. On APNs 3203-002-015, 3203-002-017, 3218-001-002, 3218-001-003, and 3218-001-004 this species was determined to be absent.

Burrowing owl: Burrowing owl has low potential to occur on all five of the Project 4 APNs; however no individual owls or potential burrows were observed within the Project study area during 2013 targeted burrowing owl surveys.

Ferruginous hawk: All five Project 4 properties were determined to be potential habitat for this species.

Merlin: All five Project 4 properties were determined to be potential foraging habitat, as merlins may forage on any type of habitat.

Swainson's hawk: Low quality Swainson's hawk nesting or foraging habitat is present on APNs 3203-002-011, 3203-002-012, 3203-002-013, and 3203-002-014 (NOREAS 2013c).

Development of the Project 4 site would remove habitat for some species and would result in a significant impact. Mitigation Measures shown in Section 4.4.6 would reduce these impacts substantially; however, the 256 acres of land for Project 4 would be mostly unavailable as wildlife habitat during the life of Project 4. The impacts would be significant.

4.4.6.2.5 Project 5

Construction and Operations

The site has low potential for Peirson's morning glory, American badger, loggerhead shrike, merlin, mountain plover, southern grasshopper mouse, and ferruginous and Swainson's hawk to occur onsite. There is moderate potential for the coast horned lizard to occur on site. There is low potential for the burrowing owl to occur onsite as no individuals or suitable burrows were observed during 2013 targeted burrowing owl surveys. Developing the site as a solar generating

facility would remove habitat for these species and would result in a significant impact. Mitigation measures shown in Section 4.4.6 would reduce these impacts substantially; however, the 160 acres of land for Project 5 would be mostly unavailable as wildlife habitat during the life of Project 5. The impacts would be significant.

4.4.6.2.6 Project 6

Construction and Operations

Several special status plants have potential to occur or occurred on this site. Spreading pygmyleaf has a moderate potential to occur on the site. The alkali mariposa lily has a high potential to occur on Project 6. The Mojave spineflower is a special status plant species that was observed during the site visit. This species was present throughout multiple portions of the western half of Project 6.

The site has low potential for the following species to occur onsite: Bell's sage sparrow, coast horned lizard, Cooper's hawk, ferruginous hawk, least Bell's vireo, Le Conte's thrasher, Mohave ground squirrel, mountain plover, American badger, southern grasshopper mouse, white-faced ibis, and Swainson's hawk.

There is moderate potential for the burrowing owl to occur on site. There is high potential for the loggerhead shrike to occur onsite. Developing this site as a solar generating facility would remove habitat for these species and would result in a significant impact. Mitigation Measures shown in Section 4.4.8 would mitigate these impacts substantially; however, the 38.49 acres of land for Project 6 would be mostly unavailable as wildlife habitat during the life of Project 6. The impacts would be significant.

4.4.6.3 Project Impacts: Criterion B – Would the project have a substantial adverse effect on sensitive natural communities (e.g., riparian habitat, coastal sage scrub, oak woodlands, non-jurisdictional wetlands) identified in local or regional plans, policies, and regulations CDFW or USFWS?.

4.4.6.3.1 Projects 1 – 6

Construction and Operations

Valley needlegrass grasslands were identified on portions of Projects 2 and 5. Valley needlegrass grasslands are considered a sensitive vegetation type by CDFW and protected by the City of Lancaster and Los Angeles County. Mitigation lands being selected would replace the habitat lost for Valley Needlegrass, and efforts to reseed this plant on site would also be made by including these seeds in the land reclamation seed mix.

Projects 1 – 6 do not have riparian habitat, coastal sage scrub, oak woodlands, wetlands, Joshua trees, or yucca trees on the site. These sites do not contain non-jurisdictional or state regulated waters. A discussion of wetlands is provided under Criterion C, a discussion of tree ordinances is provided under Criterion E, and a discussion of SEAs is provided under Criterion F. The impacts for this significance criterion are less than significant.

4.4.6.4 Project Impacts: Criterion C – Would the project have a substantial adverse effect on federally protected wetlands (including marshes, vernal pools, and coastal wetlands) or waters of the United States, as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means?

4.4.6.4.1 Project 1

Construction and Operations

There are no wetlands, vernal pools, or riparian habitat identified on this site. No federally protected wetlands (including marshes, vernal pools, and coastal wetlands) or waters of the United States, as defined by Section 404 of the Clean Water Act features, were identified on the Project 1 site. The impacts would be less than significant.

4.4.6.4.2 Project 2

Construction and Operations

There are no wetlands, vernal pools, or riparian habitat identified on this site. No federally protected wetlands (including marshes, vernal pools, and coastal wetlands) or waters of the United States, as defined by Section 404 of the Clean Water Act features, were identified on Project 2. The site slopes from elevation 2,724 on the southeast corner to elevation 2,589 on the northeast corner creating moderate slopes for runoff. Thus, drainages are evident and were identified within the Project 2 site, but these drainages do not provide wetlands or riparian habitat. The habitat in the drainage is not substantially different than the surrounding land. The impacts would be less than significant.

4.4.6.4.3 Project 3

Construction and Operations

There are no wetlands, vernal pools, or riparian habitat identified on this site. No federally protected wetlands (including marshes, vernal pools, and coastal wetlands) or waters of the United States, as defined by Section 404 of the Clean Water Act features, were identified on the site. The site slopes from elevation 2,394 on the north side to elevation 2,379 dropping only 15 feet across the site. Thus, drainages do not occur on the site. There are some small and limited depressions or swales on the site but they do not support riparian or wetland vegetation of any kind. The habitat in the swales is not substantially different than the surrounding land. Based on site observations, the man-made irrigation ditches along the north and east boundaries and through the middle of Project 3 do not support riparian vegetation or riparian habitats. The impacts would be less than significant.

4.4.6.4.4 Project 4

Construction and Operations

There are no wetlands, vernal pools, or riparian habitat identified on Project 4. Based on the observation during the biological surveys by Chambers Group, APNs 3218-002-018 and 3218-002-023 have natural swales located onsite, but these do not support wetlands or riparian vegetation or riparian habitats. A man-made agricultural irrigation canal is present along

Lancaster Blvd. on the northern boundary of APNs 3203-002-012 and 3203-002-014. This feature does not support riparian vegetation or riparian habitats.

Project 4 does not have any features that could be federally protected wetlands (including marshes, vernal pools, and coastal wetlands) or waters of the United States, as defined by Section 404 of the Clean Water Act. The impacts would be less than significant.

4.4.6.4.5 Project 5

Construction and Operations

The natural swales located on Project 5 do not support riparian vegetation or riparian habitats. The impacts would be less than significant.

4.4.6.4.6 Project 6

Construction and Operations

There is a man-made agricultural irrigation canal and detention basin on the site. These features do not support riparian vegetation or riparian habitats. The impacts would be less than significant.

4.4.6.5 Project Impacts: Criterion D – Would the project 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?

4.4.6.5.1 Projects 1, 2, 3, 4, and 6

Construction and Operations

Projects 1, 2, 3, 4 and 6 are within an area of topographically homogeneous open space, and there are no local constraints to movement of resident or migratory wildlife that development of the Projects would further aggravate. There are no known wildlife migration pathways that would be impacted by the Projects.

Wildlife nursery areas on the Project sites may include nesting sites of native bird species, which are protected by the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) and the California Fish and Game Code Section 3503. Burrowing owls may have suitable burrows on the sites and protections for bird nesting and burrowing owls are provided in mitigation measures B-1, B-2, B-3 and B-4.

The intent of acquiring mitigation lands would be to select available parcels that would replace lost breeding/foraging/winter foraging habitat and enhance the overall quality of habitat for a variety of species including migratory bird species. The potential to acquire parcels that would also maintain or enhance wildlife migration corridors in the area would also be considered. Planting of shrubs and native vegetation on the Project would improve the opportunities for shrub-nesting bird species on the Project site when it is complete.

Therefore the biological impacts for this threshold criterion would be reduced to less than significant levels with implementation of mitigation measures.

4.4.6.5.2 Project 5

Construction and Operations

Project #5 is within an area of topographically homogeneous open space and also near a crossing of the California Aqueduct. Lighting, fencing, and increased human activity related to construction and operation would have the potential to impact the continued viability of this crossing for numerous wildlife species.

Wildlife nursery areas on the Project may include nesting sites of native bird species, which are protected by the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) and the California Fish and Game Code Section 3503. Burrowing owls may have suitable burrows on the sites and protections for bird nesting and burrowing owls are provided in mitigation measures B-1, B-2, B-3 and B-4.

As noted above, the intent of acquiring mitigation lands would be to select available parcels that would replace lost breeding/foraging/winter foraging habitat and enhance the overall quality of habitat for a variety of species including migratory bird species. The potential to acquire parcels that would also maintain or enhance wildlife migration corridors in the area would also be considered. Planting of shrubs and native vegetation on the Project would improve the opportunities for shrub-nesting bird species on the Project site when it is complete. The implementation of mitigation measure A-6 described in Section 4.1 Aesthetics, which provides for the preparation of a lighting plan to minimize fugitive light from security lighting on the site.

Therefore the biological impacts for this threshold criterion would be reduced to less than significant levels with implementation of mitigation measures.

4.4.6.6 Project Impacts: Criterion E – Would the project convert oak woodlands (as defined by the state, oak woodlands are oak stands with greater than 10% canopy cover with oaks at least 5 inch in diameter measured at 4.5 feet above mean natural grade) otherwise contain oak or other unique native trees(junipers, Joshuas, southern California black walnut, etc.)?

4.4.6.6.1 Projects 1, 2, 3, 4, and 6

Construction and Operations

Projects 1 – 6 do not contain oak trees, juniper trees, Joshua trees, or other unique native trees. The biological impacts for this threshold criterion are less than significant.

4.4.6.6.2 Project 5

Construction and Operations

Project 5 does not contain oak trees, Joshua trees, or other unique native trees aside from a minimal number of juniper trees. Juniper trees will be avoided if possible; however, in considering mitigation lands to be selected, lands with important habitat elements such as

native trees will be sought. The biological impacts for this threshold criterion would be less than significant with mitigation.

4.4.6.7 Project Impacts: Criterion F – Would the project conflict with any local policies or ordinances protecting biological resources, including Wildflower Reserve Areas (L.A. County Code, Title 12, Ch. 12.36), the Los Angeles County Oak Tree Ordinance (L.A. County Code, Title 22, Ch. 22.56, Part 16), the Significant Ecological Areas (SEAs) (L.A. County Code, Title 22, Section 22.56.215), and the Sensitive Environmental Resource Areas (SERAs), (L.A. County Code, Title 22, Section 22.44, Part 6)?

4.4.6.7.1 Project 1

Construction and Operations

Project 1 and the immediate vicinity do not contain or conflict with any SEAs, Wildflower Reserve Areas, or SERAs. The closest SEAs to Project 1 are Fairmont and Antelope Buttes which are 4 miles south and Rosamond Lake which is 10 miles east. Therefore, Project 1 would not conflict with any local policies or ordinances protecting biological resources. The impacts would be less than significant.

4.4.6.7.2 Project 2

Construction and Operations

Project 2 and the immediate vicinity do not contain or conflict with any SEAs, Wildflower Reserve Areas, or SERAs. The closest SEAs to Project 2 are Portal Ridge-Liebre Mountain which is 3.12 miles west, Fairmont and Antelope Buttes which are 4.16 miles south, and the Ritter ridge SEA which is 6.9 miles southeast.

4.4.6.7.3 Project 3

Construction and Operations

Project 3 and the immediate vicinity do not contain or conflict with any SEAs, Wildflower Reserve Areas, or SERAs. The closest SEAs to Project 3 are Fairmont and Antelope Buttes which are 5.4 miles west and Rosamond Lake which is 9 miles east. Therefore, Project 3 would not conflict with any local policies or ordinances protecting biological resources. The impacts would be less than significant.

4.4.6.7.4 Project 4

Construction and Operations

Project 4 and the immediate vicinity do not contain or conflict with any SEAs, Wildflower Reserve Areas, or SERAs. The closest SEAs to Project 4 are the Ritter Ridge SEA located approximately 6 miles southeast of Project 4, Portal Ridge-Liebre Mountain located approximately 5 miles west of Project 4, and the Fairmont and Antelope Buttes SEA located approximately 5 miles northwest of Project 4. The Angeles National Forest is located approximately 6 miles to the southwest of Project 4 and the Antelope Valley California Poppy Preserve is located approximately 6 miles northwest of Project 4. Therefore, Project 4 would not

conflict with any local policies or ordinances protecting biological resources. The impacts would be less than significant.

4.4.6.7.5 Project 5

Construction and Operations

Project 5 and the immediate vicinity do not contain or conflict with any SEAs, Wildflower Reserve Areas, or SERAs. The closest SEAs to Project 5 are Portal Ridge-Liebre Mountain, which is 3.5 miles west, and Fairmont and Antelope Buttes which are 3.42 miles south. Therefore, Project 5 would not conflict with any local policies or ordinances protecting biological resources. The impacts would be less than significant.

4.4.6.7.6 Project 6

Construction and Operations

Project 6 and the immediate vicinity do not contain or conflict with any SEAs, Wildflower Reserve Areas, or SERAs. The closest SEA to Project 6 is Rosamond Lake SEA, 3 miles to the east. Therefore, Project 6 would not conflict with any local policies or ordinances protecting biological resources. The impacts would be less than significant.

4.4.6.8 Project Impacts: Criterion G – Would the project conflict with the provisions of an adopted state, regional, or local habitat conservation plan?

4.4.6.8.1 Projects 1 – 6

Construction and Operations

There are no adopted state, regional, or local habitat conservation plans in effect within the boundaries of Projects 1 – 6. Therefore, there is no impact.

4.4.7 Biological Resources Impacts Summary by Project

Table 4.4-9 below presents the results of the impact analysis described above and the impacts on biology that would result from each of the six proposed Projects. These impact designations represent the impacts after proposed mitigation is applied.

Table 4.4-9 Summary Table

Project #	Criterion A	Criterion B	Criterion C	Criterion D	Criterion E	Criterion F
Project 1	less than significant	less than significant	less than significant	less than significant	less than significant	less than significant
Project 2	less than significant	less than significant	less than significant	less than significant	less than significant	less than significant
Project 3	less than significant	less than significant	less than significant	less than significant	less than significant	less than significant
Project 4	less than significant	less than significant	less than significant	less than significant	less than significant	less than significant
Project 5	less than significant	less than significant	less than significant	less than significant	less than significant	less than significant
Project 6	less than significant	less than significant	less than significant	less than significant	less than significant	less than significant

4.4.8 Mitigation Measures

All of the proposed mitigation measures apply to each of the six Project sites and are listed below.

4.4.8.1 Biological Mitigation Measures Affecting All Six Solar Projects

Biological Mitigation Measures Affecting All Six Solar Projects

Potential impacts related to biological resources would be mitigated by implementing the following Mitigation Measures.

The applicant will provide vegetative buffers along portions of the perimeter of the project sites. These buffer areas will provide nesting and foraging habitat to small mammals and increase the prey base for several avian species, which will have a positive impact on the area as a whole. Buffer width and area will vary by Project site (provided inTable 4.4-10).

Table 4.4-10 Vegetative Screening Acreage

Project Number	Area of Vegetative Screening Proposed (acres)
1	1.20
2	0.51
3	1.47
4	1.94
5	0.59
6	0.31

B-1: Prior to the issuance of a grading permit, a qualified biologist shall be retained by the Applicant as the lead biological monitor subject to the approval of the LACDRP and CDFW. That person shall ensure that impacts to all biological resources are minimized or avoided, and shall conduct (or supervise) pre-grading field surveys for species that may be avoided, affected, or eliminated as a result of grading or any other site preparation activities. The lead biological monitor shall ensure that all surveys are conducted by qualified personnel (e.g. avian biologists for bird surveys, herpetologists for reptile surveys, etc.) and that they possess all necessary permits and memoranda of understanding with the appropriate agencies for the handling of potentially-occurring special-status species. The lead biological monitor shall also ensure that daily monitoring reports (e.g., survey results, protective actions, results of protective actions, adaptive measures, etc.) are prepared, and shall make these monitoring reports available to DRP and CDFW at their request.

B-2: Pre-Construction surveys will be conducted prior to ground disturbance at each project site. These surveys will include all special-status species identified as having the potential to be present on the project site; including, but not limited to, badger, kit fox, southern grasshopper mouse, and the species listed below.

- Pre-survey information gathering will include reviewing of all available agency nest data and mapping.
- A focused pre-construction Swainson's hawk survey shall be conducted to locate any nesting sites within 5 miles of Projects 1 – 6. If Swainson's hawks or their active nests are located within 500 feet of the project sites, all construction-related work shall be postponed and CDFW will be consulted.
- Project-related activities likely to have the potential of disturbing suitable bird nesting habitat, which includes ground nesting birds, shall be prohibited from February 1 through August 31, unless a qualified monitoring biologist conducts nesting bird surveys prior to any construction-related disturbance to confirm the absence of active bird nests or bird nesting habitat. Disturbance shall be defined as any activity that physically removes or damages vegetation or habitat or any action that may cause disruption of nesting behavior such as loud noise from equipment or artificial night lighting. Surveys shall be conducted weekly, beginning no later than 30 days and ending no earlier than 3 days prior to the commencement of disturbance. If an active bird nest is discovered, disturbance within 500 feet for raptors shall be postponed until the nest is vacated, offspring are independent of the nest area and there is no evidence of further attempts at nesting. Limits of avoidance shall be marked with high-visibility flagging or fencing. The Applicant shall record the results of the recommended protective measures and submit the records to LACDRP and CDFW to document compliance with applicable state and federal laws pertaining to the protection of native birds.
- A pre-construction burrowing owl survey shall be conducted on each site prior to grading. Pre-construction surveys for burrowing owl shall be conducted weekly, beginning no later than 30 days and ending no earlier than 3 days prior to the commencement of disturbance. The surveys shall follow the protocols set forth by the California Burrowing Owl Consortium (1993 and 2012).

  If burrowing owls are found during the pre-construction survey, then replacement burrows and habitat must be provided prior to the commencement of construction. The Applicant shall be prepared to provide artificial replacement burrows in the event that owls are detected, either as wintering or breeding individuals.

  Wintering individuals may be evicted with the use of exclusion devices followed by a period of seven days to ensure that animals have left their burrows. When it can be assured that owls are no longer using the burrows, the burrows can be hand excavated and collapsed under the supervision of the avian biologist.

  Breeding owls must not be disturbed and must be allowed to complete the raising of young until the fledglings can forage independently of adults and it can be confirmed that further attempts at nesting shall not be undertaken. When this has been confirmed, the owls can be evicted as described above for wintering animals.
- Pre-construction surveys shall be conducted for special-status ground-dwelling reptiles, including but not limited to coast horned lizard and northern California legless lizard. Surveys shall be conducted by placing coverboards on the ground 4 to 6 weeks in advance of the survey effort, checking weekly for such species. Any special-status reptiles or other species determined important by the qualified biological monitor (i.e., biologist must be appropriately permitted for collection and relocation activities) occurring within the work area prior to the start of work shall be collected and relocated to areas outside of the designated work zones.

B-3: During grading, earthmoving activities, and other construction activities the biological monitor shall be present to inspect and enforce all mitigation requirements and to relocate any species that may come into harm's way to an appropriate offsite location of similar habitat. The biological monitor shall be authorized to stop specific grading or construction activities if violations of mitigation measures or any local, state, or federal laws are suspected. The biological monitor shall file a report of the monitoring activities with LACDRP and CDFW. If ongoing biological monitoring of construction activities reveals the presence of any special-status reptiles within an active work area, then work shall be temporarily halted until the animals can be collected and relocated to areas outside of the designated work zones. Work areas shall be surveyed for special-status reptile species, such as the coast horned lizard and northern California legless lizard, during construction activities. During the construction, surveys shall be conducted by placing coverboards on the ground in appropriate work areas and checking them weekly for such species. Any special-status reptiles occurring within the work area shall be collected and relocated to areas outside of the designated work zones.

B-4: Mitigation lands shall be acquired for Swainson's hawk, burrowing owl, special-status migratory and wintering birds, and alkali mariposa lily.

Swainson's hawk: Impacts due to development of the projects shall be mitigated by the acquisition of good quality Swainson's hawk habitat targeted within the Antelope Valley. Land shall be purchased or placed in a conservation easement or other suitable deed restriction and managed to maintain suitable habitat in perpetuity.

The proposed development is not expected to result in the "take" of Swainson's hawk; however, the Applicant shall be required to consult CDFW in the event of take, which may result in additional mitigation prescribed by CDFW. Although the Projects are not expected to result in "take" of Swainson's hawk, mitigation will still be required to alleviate the effects of cumulative impacts on raptor, migratory bird, and burrowing owl habitats:

Replacement land will be provided based on the quality of the mitigation land relative to the impacted habitat. The ratio of such replacement shall be determined as follows:

- A ratio of one acre of replacement land for each 3 acres of development if the replacement land is superior nesting and foraging habitat contiguous to occupied nesting and foraging habitat, and is within a designated or proposed Significant Ecological Area (SEA).
- A ratio of one acre of replacement land for each 2 acres of development if the replacement land is unoccupied irrigated land, contiguous to occupied habitat and providing superior quality foraging habitat with trees or other such nesting habitat;
- A ratio of 1 acre of replacement land for each acre of development if the replacement land provides similar foraging and nesting habitat.

Burrowing Owl: Mitigation for any occupied burrowing owl burrows found during pre-construction surveys will include a comprehensive tiered approach:

- Pre-construction and construction monitoring surveys conducted by a qualified biologist to detect potential new owl activity onsite;

- Disturbance avoidance of occupied burrows during nesting period February 1 – August 31;
- Impact avoidance of occupied burrows;
- Burrow exclusion and closure and offsite relocation (>100 m), as described previously in in B-2, will be conducted for unavoidable impacts to occupied burrows (after consultation with CDFW).
- Minimizing impacts by protecting in-place any owls, their burrows, and their immediate habitat by establishing setback zones and visual screens for burrows adjacent to construction activity; by placing visible markers, and by conducting construction worker awareness training. Setback widths will be applied as appropriate to the level of existing disturbance and owl stage of activity (e.g., for low to moderate construction-related disturbance activity outside the nesting season near burrows in currently high-traffic or disturbance areas, it is assumed owls are adapted to human disturbance and will not need a large setback).
- Mitigating unavoidable impacts to habitat: restore temporary impacts to pre-existing conditions; replace nesting/occupied and satellite burrows lost with the same number of suitable burrows on the mitigation site. Mitigation acreage for foraging habitat provided for Swainson's hawk will be sufficient to replace lost burrowing owl habitat because the hawk's replacement habitat will be in-kind or better (i.e., the Project habitat is low quality overall and mitigation habitat will be at least the same quality as the lost habitat OR will have higher quality habitat features overall, such as increased vegetative structure, higher numbers of prey species, less disturbance, and less potential for predation by domestic animals, etc.). Specific habitat considerations as provided in the CDFW 2012 burrowing owl guidance will be considered in selecting the overall habitat replacement acres for the project.

Alkali Mariposa Lily: Alkali mariposa lily will be avoided to the greatest extent possible. If pre-construction surveys reveal individuals that cannot be avoided, mitigation of lost alkali mariposa lily shall be provided at a minimum 1:1 ratio. This acreage will be calculated with input from LACDRP and CDFW. Additionally, because alkali mariposa Lilies have locally available seed sources, plantings of the lilies on appropriate soil types on Projects shall be implemented in selected areas. The lilies may also be transplanted from areas planned for disturbance to more suitable locations in the Project area. Transplantation locations must be situated within adequately buffered areas to be found suitable.

For all species the mitigation acreage may be located within the Project sites, but outside of the area of development, subject to LACDRP and CDFW approval, if acreage of sufficient quantity and quality exists.

B-5: Review and Approval of Habitat Management Lands Prior to Acquisition: The Applicant shall provide a mitigation land acquisition proposal to LACDRP and CDFW for their approval before acquiring the property. The proposal shall discuss the suitability of the property by comparing it to the selection criteria. As a part of the preparation of the land acquisition proposal, acreage quantification by habitat category will be developed with LACDRP and CDFW based on the following criteria:

> **Habitat Management Land Selection Criteria**: The Applicant must identify the region within which lands shall be acquired, and the type and quality of habitat to be acquired.

Detailed criteria and acreage for each habitat category will be developed with Los Angeles County and CDFW. Foraging habitat shall be assessed as moderate to good with a capacity to improve in quality and value to Swainson's hawks, and must be within the Antelope Valley Swainson's hawk breeding range. Foraging habitat with suitable nest trees is preferred.

Habitat Management Lands Acquisition: Prior to initiating ground-disturbing activities, the Applicant shall provide a proposal to LACDRP and CDFW for off-site mitigation land to be restored, enhanced, or maintained according to the requirements of the biological mitigation measures in this EIR. The proposal will require that mitigation lands identified shall be preserved as open space in perpetuity. Within 45 days of acquiring the mitigation land(s), the Applicant shall record a permanent deed restriction on the mitigation land(s) to be preserved as open space. The deed restriction or conservation easement language shall be submitted to LACDRP and CDFW for review and approval prior to recordation. Alternatively, should a conservation easement on the mitigation land be offered, the permanent conservation easement shall be recorded to the satisfaction of LACDRP and CDFW.

The Applicant shall establish a fund sufficient for the restoration, enhancement, and maintenance of the mitigation land(s) until such time when the mitigation land(s) become self-sustaining and until such time as the mitigation land(s) meet the requirements of this mitigation measure. The fund shall be established within 90 days of mitigation land(s) acquisition in an amount acceptable to the LACDRP and CDFW.

Land Acquisition Schedule and Financial Assurances: The Applicant shall complete acquisition, or execute an irrevocable option to purchase, of proposed Habitat Management lands and shall provide financial assurances for dedicating adequate funding for impact avoidance, minimization, and compensation measures, if necessary, prior to the issuance of building permits. If an irrevocable option to purchase is utilized, the applicant shall provide a proposed date of purchase which coincides with construction of the facility.

B-6: Prior to alteration of any streambeds, the Applicant shall enter into an agreement with the CDFW, pursuant to Sections 1601 through 1603 of the State Fish and Game Code.

B-7: Within all interior portions of the site within and adjacent to the proposed solar arrays, re-vegetation shall be accomplished (excluding interior roads) as follows:

Vegetation seeded in these areas shall comprise locally-sourced, native species if available, or, native compatible as approved by the County biologist if sufficient locally-sourced native seed stock is not available, approximating low-growing communities such as native perennial or annual grasslands (i.e., wildflower fields). Shrub species shall not be used due to these species inability to survive continued vegetation trimming. Vegetation shall be maintained in accordance with Los Angeles County Fire Department regulations.

4.4.8.2 Level of Significance After Mitigation

The total biological impacts for the Projects are determined to be less than significant with mitigation. Habitat loss for wildlife in the Antelope Valley would be 987.1 acres. This is a significant habitat loss but it would be mitigated and the mitigation measures shown above would substantially reduce the overall impact to less than significant with mitigation.

The loss of habitat would be mitigated by the provision of wildlife mitigation lands on a mitigation site(s) selected with input from Los Angeles County and CDFW in the Antelope Valley. Attempts will be made to obtain mitigation lands that are more valuable for wildlife habitat than the previously disturbed low value habitat being used by the Applicant to develop Projects 1 – 6; otherwise, habitat restoration will be conducted on mitigation lands to elevate the levels of habitat value required of the target species. There would be an overall reduction of open space for wildlife in Antelope Valley, but the long term value and protection of the mitigation lands would compensate for this loss. The plan to maintain low growing vegetation under the solar modules and to plant specialized seed mixes would provide habitat for small mammals, birds, and reptiles, and would help maintain the populations and prey forage base for the numerous raptors in the Antelope Valley.

By providing construction mitigation measures, planting of shrubs around the sites and providing high value wildlife mitigation lands in perpetuity, and by planting special seed mixes on the Project 1 – 6 sites where they are viable, the unmitigated would be largely reduced and the environment would receive the maximum possible protection while allowing solar energy to be developed and utilized.

The existing Project lands consist of fallow farmlands, annual and perennial grassland, and saltbrush or rabbitbrush scrub lands which are presently habitat for plants and wildlife. Once developed, these lands would be converted to new habitat types that are tolerant of the altered site conditions within the fenced solar sites, with low growing vegetation underneath and around the modules and trees along the perimeters of the Projects. This land would be altered for the duration of the 35-year timeframe planned for the Projects.

Mitigation land provided via conservation easements or other suitable deed restrictions would replace the previously disturbed farmlands and scrub lands with better quality habitat for key species such as Swainson’s hawk and burrowing owls. While the change to the impact sites would be significant the mitigation measures would reduce it to less than significant, the higher quality habitat provided by conservation easements or other suitable deed restrictions would provide a net gain in improved viability for the target species.

4.4.9 Cumulative Impacts

The total area included in the map in Figure 3-17 showing a 5.0 mile radius outward from each of the Project 1 – 6 solar sites comprises 165,349 acres. Solar development in the area is 8,086 acres (4.9 percent of the 165,349 acres shown in Figure 3-17). The Silverado Projects cover 987 acres (only 0.6 percent of the total area).

The cumulative impacts of all proposed solar and real estate projects within this habitat occurring in Los Angeles County are considered unavoidable but less than significant because

the acreage is low overall. Open space and wildlife mitigation lands would be acquired and preserved in perpetuity for Projects 1 – 6. Since the mitigation lands are intended to comprise higher quality wildlife habitat than those impacted by the Projects, impacts will be mitigated. The permanent nature of the land mitigation and preservation program to be implemented would assure that these new wildlife habitat mitigation lands would always be maintained and enhanced for wildlife values. Therefore, cumulative impacts from the Project would be unavoidable but less than significant.

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4.5 CULTURAL RESOURCES AND PALEONTOLOGICAL RESOURCES

4.5.1 Introduction

Cultural resources include prehistoric resources; historic buildings, structures, objects, districts, and sites; and sites and resources of concern to Native American and other ethnic groups. The cultural resources assessments prepared for the Projects include a description of the six Project sites and affected environment; existing conditions of the sites; a summary of the ethnography, prehistory, and history of the region; a review of records of the sites for previously completed cultural resource investigations and recorded sites in the six Areas of Potential Effect (APEs) and within a 1-mile study area; the results of the archaeological surveys of the APE; and the Native American consultation. Complete documentation of the cultural and paleontological resources assessment is appended in the archaeological survey reports *Cultural Resources Survey of Silverado Power's Proposed Panel Stations-CUP #6-22, #7-29, #8-5, #9, #10A, #10B, #11-26, #12-13, #12-25, #13-14 and #15-21, County of Los Angeles, California* (Dice and Lord 2011), *Addendum to Cultural Resource Survey for the Silversun Greenworks Project CUP #11-26. Community of Del Sur, Los Angeles County, California* (Dice 2013b), *Historical Resource Evaluation of an Abandoned Farm Complex located at APN#3268018002 (46503 N 70th Street), County of Los Angeles, California, Silverado Project CUP9* (Dice 2013a), *Cultural Resource Survey for the Plainview Solarworks Project, Los Angeles County, California* (Cisneros 2013), *Phase I Cultural Resources Assessment Western Antelope Dry Ranch and Plainview Solarworks Project Sites (CUP 11-07)* (Drover and Maxon 2011), and an *Historical Resource Evaluation of an Abandoned Farm Complex located at APN#3268018002 (46530 N 70th Street), County of Los Angeles, California Silverado Project CUP 9* (Dice 2013) (Appendix B-4, Cultural Resources). Information presented in this section is taken from those reports. Table 4.5-1 explains the correlation between internal CUP#s to DEIR Projects 1 – 6.

Table 4.5-1 Internal/External Project Number Correlation

Project Number and Name	Correlating Internal CUP Number
Project 1 North Lancaster Ranch	CUP#6-22
Project 2 West Antelope Blue Sky Ranch	CUP#7-29
Project 3 American Solar Greenworks	CUP#9
Project 4 Antelope Solar Greenworks	CUP#10A
Project 5 Silver Sun Greenworks	CUP#11-26
Project 6 Lancaster WAD	CUP#15-21

*All other CUP#s are not related to Project 1 – 6 and should be disregarded.

4.5.2 Environmental Setting

4.5.2.1 Regional Setting

The Antelope Valley is a sediment-filled, closed basin of about 4,000 square kilometers that lies between the San Andreas and Garlock faults, and is bounded by the Transverse Range/San Gabriel Mountains to the south and southwest, and the Tehachapi Mountains to the north and northwest. Low-lying hills in the Mojave Desert lie to the east and northeast. The Valley forms the southwestern-most extension of the Mojave Desert geologic province in southern California. Elevations within the region range from about 700 meters on the basin floor to over 1,200

meters in the foothills. A series shallow dry lake basins in the valley near Rosamond (Rosamond playa) and Edwards Air Force Base (Rogers playa) mark areas with the lowest elevation. An ancestral playa, Pleistocene Lake Thompson, once encompassed Rosamond and Rogers lake and covered the area within the Project area during the Pleistocene and early Holocene periods (Dice and Lord 2011). Rosamond and Rogers playas are the floor of the extinct Lake Thompson. The valley is generally arid with winds out of the north and west. Vegetation is generally sparse on the basin floor and consisted, before agricultural development, of saltbush, sage, and Joshua trees. The foothills are covered in grasses and sage with stands of Joshua trees, juniper, and pine. The Antelope Valley is generally confined to Los Angeles and Kern counties, although a small portion is within San Bernardino County.

The Projects are located on properties bounded by paved and dirt roads: most have been developed for agriculture in the last 80 years. At the extreme, these properties are completely plowed and are covered with dried red brome grass, while a few do not appear to have been modified by agriculture. Properties in the extreme southwestern portion of the Valley appear to have had dryland cereals grown on them (wheat or barley) at least to the 1960s and once dryland farming was no longer productive the properties lay fallow until today. A few properties exhibited farming complexes built in the 1920s and at least one has a farm house on it that is still occupied; the rest have been demolished. Several properties bore evidence of subsurface irrigation in the form of buried irrigation lines (this evidence can be observed on modern aerial photographs) and abandoned concrete standpipes. In sum, the topsoil of most properties has been churned by plowing except in a very few places. None of these properties exhibited active farming.

4.5.2.2 Geology and Paleontological Setting

Surficial sediments within the valley are dominated by Quaternary alluvium derived from the Transverse Ranges and the Tehachapi Mountains as a result of extensive uplift of the San Gabriel Mountains. Quaternary sediments in the Antelope Valley have been divided into three major formations: Tylerhorse (lower, middle, and upper), Palmdale (upper and lower), and Post-Palmdale.

The Tylerhorse (Pleistocene) deposits are generally confined to foothills and represent uplifted deposits that might not have a relationship with modern drainage patterns in the valley.

The Palmdale (Pleistocene and early Holocene) deposits cover the majority of the valley floor and occur along margins of the basin as terraces. The upper Palmdale deposits are exposed over a large portion of the Antelope Valley, including the Project area.

The Post-Palmdale (Holocene) deposits consist of two units that are less than 5 meters thick and generally near active stream channels.

More details of the paleontological setting are included the Cultural Resources Technical Report (Dice and Lord 2011) in Appendix B-4.

4.5.2.3 Prehistoric Background

This section provides a brief overview of the prehistory and history of the Projects area. A more detailed description can be found in ethnographic studies, mission records, and major published sources including Kroeber (1925), Wallace (1955), Warren (1968), Heizer (1978), Moratto (1984), and Chartkoff and Chartkoff (1984). Fagan (2003), Moratto, and Chartkoff and Chartkoff provide recent overviews of California archaeology in general and review the history of the desert regions in southern California. The most accepted regional chronology for the coastal and central interior Southern California is derived from Wallace's four-part *Horizon* format, which was later updated and revised by Warren. Presently, regional archaeologists generally follow Wallace's Southern California format but the loosely established times for each period subunit are often challenged. The documented stages are as follows:

- Desert Culture Period (12000 to 10000 B.C.)
- Western Hunting Culture or Lake Mohave Period (~9000 to 5000 B.C.)
- Pinto Period (5000 to 2500 B.C.)
- Protohistoric (2500 B.C. to A.D. 1769)

4.5.2.3.1 Desert Culture Period (12000 to 10000 B.C.)

Comparatively, little is known of Paleo-Indian peoples in the California archaeological record, although highly documented archaeological village sites in the Southwest have revealed associated bones of now extinct large mammals, as well as Clovis and Folsom tool traditions (Fagan 2000). However, this period is noted for an increase in drier weather, consequently most of the known California Late Paleo-Indian/early Archaic sites are located near extinct desert valley lakes, rock shelters, and on the Channel Islands off the coast (Chartkoff and Chartkoff 1984; Forbes 1989). These consist of occupation sites, butchering stations, and burials. This period ends with a marked extinction of large game native to North America and a distinct change in prehistoric tool kits used to prepare plant foods. Small projectile points, choppers, flat scrapers, drills, and digging sticks are also common (Forbes 1989).

4.5.2.3.2 Western Hunting Culture or Lake Mohave Period (~9000 to 5000 B.C.)

It is thought that as the hunting of large mammals became less available as a food resource due to drier weather conditions, the West and Southwest showed an increased reliance in using small game, such as squirrels and rabbits, and wild plants to sustain the small tribal bands (Jennings 1989; Oswalt 1988). This period is also marked by the absence of food grinding stone implements. However, the period ends when stone grinding implements become increasingly more prevalent in the archaeological record (Forbes 1989; Jennings 1989; Oswalt 1988). In the early part of this period, large lakes formed in much of the now-dry eastern California deserts. The largest playas, known as the Rosamond Dry Lake and the larger Rogers Dry Lake, formed and filled with water due to the wetter climate, and lasted for several thousand years. Numerous flaked lithic sites are known on the periphery of the lake.

4.5.2.3.3 Pinto Period (~5000 to 2500 B.C.)

This period highlights a combination of both Desert Culture and Western Hunting Cultures, where an increase in grinding tools appears in the archaeological record. Such tools suggest an increased level of reliance on wild plants and small animals (Forbes 1989; Jennings 1989; Oswalt 1988). The Pinto spear-point tool tradition is the hallmark of this period. This tradition is characterized by small coarsely chipped points, which tend to be triangular and sometimes are found with parallel sides. These points may have tipped the atlatl. A slight variation in tool type appears towards the end of this period, which is represented by Gypsum points and Elko points. The Gypsum point is typified by its contracting stem, whereas Elko points are corner notched (Jennings 1989). It is thought that the playa lakes in the eastern Antelope Valley dried at the end of this period.

4.5.2.3.4 Saratoga Springs Period (1500 to 800 B.C.)

This period is environmentally similar to earlier periods. In the southwest Great Basin, this period is characterized by the introduction of the bow and arrow, exploitation of the pine nut, and an increase in logistical complexity relative to landscape use. With these changes came a diversification of resource use and a more sedentary settlement pattern in the Owens Valley. The nature and number of sites attributed to this time period changed such that the “winter villages” became larger, numbers of such villages were reduced, and base camps in the upland areas became larger, more diversified, and more numerous.

4.5.2.3.5 Protohistoric (~2500 B.C. to A.D. 1769)

In the southwestern Great Basin, this period is characterized as having cooler and wetter conditions than that previously experienced, an environment similar to that of today. Sites appear in previously unoccupied areas of California. The numbers of sites in some regions, especially near ephemeral lakes, seem to have risen dramatically. In the Owens Valley, permanent village sites were utilized, along with the addition of upland dry-environment sites. These changes reflect a phenomenon found throughout the western United States where an increase in population and changes in tool kits and living arrangements resulted in more specialized uses of materials and landscapes. Diagnostic artifacts associated with this period consist of Elko and Gypsum projectile points.

The abandonment of village sites at the end of the Late Prehistoric Period is attributed to a change in climate, and is an event mirrored in other parts of the American Southwest, California, and in Mexico. Trade of Coso obsidian in southern California apparently ended during this period.

4.5.2.4 Ethnohistoric Background

Lands in Los Angeles County north of the San Gabriels and east of Interstate 5 are believed to be the homeland of three tribal groups prior to European contact (Heizer 1978): the Tataviam, the Kitanemuk, and the Serrano. A dry, flat plain surrounded by mountains and hills with no natural watershed outlet, the Antelope Valley’s use by native peoples was heavily constrained by the lack of major watercourses. Pronghorn antelope herds numbered approximately 60,000 in the mid-1880s (Settle 1989) and were likely caught by most tribal peoples, but it was the

smaller mammals (rabbits) and plants that were likely to have supported the population. The pronghorn in California is found only in sagebrush, low sage, bitterbrush, grassland, pinyon-juniper, riparian, and alkali desert scrub habitats. Herds were known throughout southern California until about 1900 but the Antelope Valley seemed to have the largest populations. The original sage and bitterbrush flats surrounding the dry lake playas likely provided other animal and plant resources until stock raising, farming, and use of scarce ground water heavily modified the natural high desert environment. The Antelope Valley was also located near two major trade routes: Colorado River Tribes/Owens Valley Paiute to Chumash via the Mojave River watershed and southern California/Chumash tribes to Central Valley tribes via Fort Tejon/Grapevine Pass. This combination of factors likely led to the extirpation of aboriginal populations within a few decades after the Spanish Missions were constructed along the coast.

As an example of the difficulties aboriginal populations faced, in 1854 (closed 1864) Fort Tejon was established by the U.S. Army along the Grapevine Pass. The purpose of the Fort was to protect the San Joaquin Valley from Indian incursions from the south and east. Several different tribal members lived there at the time (Hodge 1907) including Emigdiano Chumash (Chumash speakers), Yawelmani Yokuts from Tule Lake (Yokuts speakers) and the few remaining members of the Kitanemuk (Shoshone speakers). Soldiers were placed there to suppress stock rustling and protect settlers from attacks by certain “untamed” Paiute and Mojave tribesmen, and to monitor the less aggressive Interior Chumash (Emigdiano) villages living on the nearby San Sebastian Reservation to the west. The Emigdiano were generally cooperative with the European settlers and the Army because all Chumash had been incorporated into the Spanish Mission system by 1800. These events all took place before anthropologists and linguists began to study the local populations. When the earliest scientists began to write about the native populations and interview the last survivors, their cultures had been disrupted for over 100 years.

4.5.2.4.1 Kitanemuk

The Kitanemuk lived in the Tehachapi Mountains to the south of the Kawaiisu of the Tehachapi Valley, and likely the northwestern edge of the west end of the Antelope Valley. The Kitanemuk had an important settlement on Tejon Creek, just southwest of the Tehachapi Valley, which Father Garces visited in 1776. Garces indicated that the Kitanemuk of the Tehachapis were a different group from related people living in the southern Antelope Valley, who were probably the Vanyume Serrano. The Kitanemuk spoke a language of Uto-Aztecan descent. This may have been a dialect of Serrano, which was spoken by groups located as far distant as modern Yucca Valley and Twenty-nine Palms, east of the San Bernardino Mountains.

Like their northern neighbors, the Kitanemuk depended on both piñon pine nuts and on acorns as important food staples. The acorns were abundant on the western slopes of the Tehachapis, facing the San Joaquin Valley, while the groves of piñon pine tended to be found on the eastern side of the range, facing the desert. The Kitanemuk lived in permanent winter villages of 50 to 80 people or more. The groups dispersed into smaller mobile gathering groups during the late spring, summer, and fall months. The smaller groups made use of temporary camps for relatively short times, visiting different “environmental niches” as the important food-producing plants in them became ready to harvest. The Kitanemuk shared some elements of culture with

the rest of the Serrano groups, but some customs such as rituals and practices to honor the dead may have been different. The Kitanemuk appear to have buried their dead, while the Serrano cremated them. The population of the Kitanemuk has been placed in the 500 to 1,000 range at the time of the arrival of the Spanish.

4.5.2.4.2 Tataviam

Compared to larger and more distinct populations in early southern California, the Tataviam are little known to ethnohistorians (King and Blackburn 1978) and very obscure as far as cultural qualities are concerned. When the Spanish arrived, several villages in the upper portions of the Santa Clara River were populated with a people who spoke a language that later researchers (primarily Harrington 1913) were able to differentiate through word lists from nearby Chumash and Gabrielino speakers. Garces Expedition documents and Mission registers suggest that these people, who lived mainly between Piru and Lake Elizabeth, shared customs with other tribes in the region. It is suggested by King and Blackburn that at the time the Spanish arrived there were less than 1,000 Tataviam in existence. Apparently by 1810, all Tataviam had been baptized at the San Fernando Mission and by 1834 most of these tribesmen had married into other groups, particularly the Kitanemuk. Reports suggest that the northeastern portion of their original territory included the westernmost portion of the Antelope Valley.

4.5.2.4.3 Serrano

According to Bean and Smith (1978), the far eastern portions of the Projects are located near the western portion of an area utilized by the Serrano. All indigenous groups adjacent to the eastern San Bernardino Mountains were decimated by Spanish diseases, especially after an outpost was built in Redlands in 1819, but some Serrano survived intact for many years in the far eastern San Bernardino Mountains due to the ruggedness of the terrain and the dispersed population. Kroeber (1925) and Bean and Smith (1978) form the primary historical sources for this group. The Serrano spoke a language that belongs to the Cupan group of the Takic subfamily of the Uto-Aztecan language family, a language family that includes the Shoshonean groups of the Great Basin. The total Serrano population at contact was roughly 2,000 people. Their range is generally thought to have been located in and east of the Cajon Pass area of the San Bernardino Mountains, north of Yucaipa, west of Twenty-Nine Palms, and south of Victorville. The range of this group was limited and restricted by reliable water.

Serrano populations studied in the early part of the last century were a mere remnant and a shadow of their cultural form prior to contact with the Spanish Missionaries. Nonetheless, the Serrano are viewed as clan and moiety-oriented or local lineage-oriented group tied to traditional territories or use-areas. Typically, a “village” consisted of a collection of families centered about a ceremonial house, with individual families inhabiting willow-framed huts with tule thatching. Considered hunter-gatherers, Serrano exhibited a sophisticated technology devoted to hunting small animals and gathering roots, tubers, and seeds of various kinds. Today, Serrano descendants are found mostly on the Morongo and San Manuel reservations.

According to the Antelope Valley Museum cultural resource website, the Vanyume were a relatively unknown group who lived beyond and along much of the length of the Mojave River, from the eastern Mojave Desert to at least the Victorville region, and perhaps even farther

upstream to the south. They also appear to have lived in the southern and southwestern Antelope Valley. They intermarried with the Serrano and spoke a dialect of the Serrano language, so they may be thought of as a desert division or branch of the Serrano proper. According to Bean and Smith (1978), full-blooded members of this group went extinct before 1900. These researchers indicated that the Vanyume were politically distinct from the Serrano, but had a similar language.

The Serrano-speaking villages of the southeastern Antelope Valley were, according to the 18th Century missionary Padre Francisco Tomás Garcés, affiliated with this desert branch of the Serrano. Garcés had passed up the length of the Mojave River in early 1776, and then crossed the southwestern Antelope Valley some weeks later. Garcés was accompanied by Mojave guides from the Colorado River who knew where the tribal boundaries were. In any case, these southern Antelope Valley native communities, including Maviajek and Kwarung, had strong ties with Serrano-speaking communities on the upper Mojave River and in the areas of the northern San Bernardino and San Gabriel Mountains.

4.5.2.5 Historic Background

The early European-influenced history of the Antelope Valley can be divided into several periods of influence; pertinent historic periods are briefly summarized below.

4.5.2.5.1 Spanish Period

Early exploration into the Valley region began with the expeditions of Spanish Captain Pedro Fages in 1772 and Father Francisco Garcés in 1776. Following these early explorers were Franciscan monks searching for suitable locations to establish missions and convert the local Native Americans to Christianity. Unfortunately for the Franciscans, the lack of water and difficult mountainous trails led them to choose a route through Santa Barbara and north to Monterey instead of inland to the Southern San Joaquin Valley. Spanish Missionary rule led to the displacement of interior tribal peoples either through baptisms or disease, and the traditional trade between the Chumash and the Colorado River tribes was probably disrupted. There were no Spanish outposts known for this area as the Antelope Valley was likely considered a deserted wasteland.

4.5.2.5.2 Mexican and Early California Period

With the declaration of Mexican independence in 1821, Spanish control of Alta California ended, although little change actually occurred. Political change did not take place until mission secularization in 1834, when Native Americans were released from missionary control and the mission lands were granted to private individuals. Shoup and Milliken (1999) state that mission secularization removed the social protection and support on which Native Americans had come to rely. It exposed them to further exploitation by outside interests, often forcing them into a marginal existence as laborers for large ranchos. Following mission secularization, the Mexican population grew as the native population continued to decline. Anglo-American settlers began to arrive in during this period and often married into Mexican families, becoming Mexican citizens, which made them eligible to receive land grants. In 1846, on the eve of the U.S.-Mexican War (1846 to 1848), the estimated population of Alta California was 8,000 non-natives and 10,000

natives. However, these estimates have been debated. Cook (1976) suggests the Native American population was 100,000 in 1850; the U.S. Census of 1880 reports the Native American population as 20,385.

In the early 1850s, cattle and horses were the subject of theft in the northern part of Los Angeles County because no army post or state representation was available (Kielbasa 1998). Highway robberies were frequent in the Tejon Pass region and local Indians were blamed for most of the thefts. In late 1852, Edward F. Beale was appointed Commissioner of Indian Affairs for California and Nevada and at a place now near the community of Lebec, Beale established the San Sebastian Reservation. It was the first formal Indian reservation in California, comprising of displaced Indians from Chumash, Tataviam, and Kitanemuk tribelets. The villages inside the reservation grew to house about 2,200 persons, but the experiment failed soon after Beale was assigned the federal post of Surveyor General for the new State of California.

In 1855, Beale purchased the Rancho La Liebre for three cents an acre. The 48,799 acre rancho was originally granted to Jose Maria Flores in April 1846 by then-Governor Pio Pico. Flores was the commander and chief of the Mexican forces in California during the Mexican War, but nearly lost his entitlement to the rancho when the U.S. Lands Commission declared the grant to be illegal. Flores won an appeal and kept the title. The rancho was mostly comprised of mountainous terrain and exhibited millions of jackrabbits. By the time Beale acquired the rancho, he had married and had a son named Truxtun. Beale built an adobe home for his family in the Canon de las Osas (Bear Canyon) located on the western edge of the Antelope Valley. In 1854, Beale established Fort Tejon, which housed the First Dragoons of the U.S. Army. The Fort was abandoned in 1864.

During the Civil War, Beale fought for the Union, where he attained the rank of Brigadier General. When he returned to California, he began purchasing huge *Californio* ranches north of the Rancho La Liebre. In 1865, Beale returned to California and purchased the Rancho El Tejon from Don Ygnacio del Valle and John (Juan) Temple. This 97,616 acre ranch extended from Fort Tejon to the southern Sierra Nevadas. That same year, Beale bought the Rancho de Castac, which began at the northwestern corner of Los Angeles County near Castac Lake and was set between Rancho La Liebre and Rancho El Tejon. Rancho de los Alamos y Agua Caliente was added to the Beale ranches, also in 1865. This 26,626 acre ranch was purchased from Agustin Olvera and his business associates. By the time he retired and moved east to Washington D.C., Beale's property investments exceeded 297,000 acres. The modern Tejon Ranch encompasses much of his holdings. His son, Truxton Beale, sold the Tejon Ranch to a syndicate of investors headed by Los Angeles Times magnate Harry Chandler in 1912. Portions of the westernmost Antelope Valley are included in the Tejon.

4.5.2.6 Northern Los Angeles County History

4.5.2.6.1 Lancaster and the Western Antelope Valley

The City of Lancaster website provides a good generalized historical background review of the Lancaster area as does the photo-essay style book by Gurba (2005). Far more obscure is the USGS Water Supply Paper by Johnson (1911) which discusses in some detail how early agricultural development of the Antelope Valley affected the water supplies of the entire area.

Johnson notes that when the Southern Pacific (SP) Railroad was put through the Valley in the late 1870s, a land development bubble occurred with extensive well drilling until 1893 when the boom ended and a developmental recession swept through most of California. Numerous communities created by the first land speculators, including Lancaster, Rosamond, Palmdale, Little Rock, Almondale, Hispaniola, Tierra Bonita, Willow Springs, Fairmont, Del Sur, Neenach, Manzana, Llano, and Redman, among many others, were born. Many of these community names survive only on topographic maps and street signs.

Speculators platted the town of Lancaster to parallel the SP tracks and began to subdivide the former SP property and sell it to emigrants hoping to earn a living beside California's primary north-south railroad (Settle and Settle 1984). Nearby Palmdale was established soon after Lancaster, its plat aligned to the U.S. rural grid rather than the railroad's 7-degree off-north direction (Jalbert 2002). With these settlements in place, the Valley bloomed as an agricultural community. In the decade and a half preceding 1893, settlers poured in attracted by the cheap land prices and apparently unlimited supply of artesian and well water from the aquifer. The 1887 Wright Irrigation Act hastened the formation of irrigation districts and agricultural colonies. Alfalfa, a water-intensive crop irrigated with artesian well-water, quickly became the staple cash crop for farmers. They also cultivated dry-land wheat, barley, oats, and other cereals, and planted the slightly higher southern edge of the valley in deciduous fruits such as pears, almonds, olives, and prunes. Land values in the Valley's southern portions rose as these fruit trees came into production.

In 1893, just as a drought began to drive farmers off their land in the West and Midwest, the Panic of 1893 occurred, which became the most intense depression in the history of the United States. The Panic was caused by railroad overbuilding, hard metal mine overproduction, and subsequent devaluation of hard currency, and subsequent bank failures. Most failures occurred in the West, approximately 15 to 17 percent of persons became unemployed, and the loss of life savings caused many homeowners to walk away from their homes leading to abandonment and foreclosure. Despite these challenges, the Town of Lancaster grew slowly first as a farming community, then as a service community for state water projects and the military, then as a Los Angeles bedroom community. Incorporation occurred in 1977.

Transportation from Los Angeles is an important part of the history of the area. The California Department of Transportation (Caltrans) maintains well-written historical information on-line (Los Angeles Rocks N' Roads 2011, California Highways 2011). The road that was to become US 6 was first constructed as the Mint Canyon Road in 1921: this was the first paved road to join Los Angeles and Lancaster. To travel to the Antelope Valley from Los Angeles at that time one would have traveled via San Fernando Road to Saugus, Soledad Canyon Road to Solemint, and then onto the Mint Canyon Road. During this time, the road from Mojave to Bishop was known as El Camino Sierra, or The Sierra Highway, which is a name that exists today. In 1938, a bypass around Newhall and Saugus was built from San Fernando Road to Soledad Canyon Road. Also during the same year, the Newhall Tunnel, originally built in 1910, was removed and the road through Newhall Pass was widened to four lanes. This route would remain the main highway to the north from Los Angeles to the Antelope Valley and beyond until 1963.

In 1963, the first segment of the Antelope Valley freeway was completed. Further segments of the freeway were completed between 1965 and 1972. The Sierra Highway (then SR-14) was also widened into a four lane divided highway in 1968 from Solemint Junction to Newhall Pass. The rest remained as a two lane road until being bypassed by the Antelope Valley Freeway.

4.5.2.6.2 Rosamond and Muroc Dry Lakes

These lake beds lie at the lowest point in the Antelope Valley. Rosamond Dry Lake lies entirely within Edwards Air Force Base and stands at 2,274 feet above sea level (ASL). Buckhorn Dry Lake lies to the east and is much smaller, generally located at 2,285 feet ASL, while Rogers Dry Lake is located in the northeast corner of the basin and stands at 2,270 ft ASL. No currently active creeks flow into these basins, which are covered with a thick veneer clay hardpan in most places. Amargosa Creek, a now dry wash, brings occasional floodwaters into Rosamond Lake, but such basins are normally completely dry, extremely flat, and exhibit water only during heavy rainstorms. They each rest in the rainshadow of the San Gabriel Mountains. Given that the amount of rainfall throughout the Antelope Valley is typically 10 inches per year and less, the development of the hardpan and the overall flatness was what attracted the Army Air Corps to the area. Aircraft manufacturing plants in Los Angeles were able to ship their products via rail to the bases, leading to a burgeoning military industrial complex for the Lancaster area that has lasted until this day.

In the 1930s, before the Army Air Corps and Air Force bases were developed, Rogers Dry Lake was found to be very suitable for airplane take offs and landings. Muroc was also known to auto racing enthusiasts, who drove cars to the site from Los Angeles during attempts to break early speed records. Muroc Army Air Field was established in 1933 and expanded during the beginnings of World War II (ASP 1978). The base was renamed in 1949 to honor Captain Glen W. Edwards who was killed test-flying an experimental aircraft. According to the National Park Service's (NPS) thematic review of the Rogers Dry Lake Historic Landmark, the area (probably "Edwards Siding") was a water stop for the Atchison, Topeka & Santa Fe Railroad (ATSF) locomotives. In 1883, the Southern Pacific built a line from Mojave through to Barstow and Needles to serve the mines near the corridor, and in 1884 the SP transferred the line to the ATSF. In 1910, Clifford Corum, his wife Effie, and his brother Ralph:

> …were homesteaders and were the earliest known settlers of this region. Seeking to attract others to the area they built a combination store and post office. Effie drove the family buggy across the scorching desert seeking the necessary signatures for a petition that would officially give the Corum name to their post office. When the Postal Department rejected the name because of its similarity to another California town, the Corums persisted in immortalizing their name. They decided to reverse the letters in Corum and the name Muroc was born.
>
> Muroc was first used by the military in 1933 when a small advance party from March Field in Riverside came to design and maintain a bombing range for the Army Air Corps. Four years later, the entire Air Corps was performing bombing and gunnery maneuvers here... (NPS 2001).

4.5.2.6.3 The Southern Pacific Railroad

The SP built a line from San Francisco to Los Angeles through what was to become Bakersfield, Tehachapi, and the Antelope Valley. Passenger service began in late 1876 to early 1877. Along the line was a water stop located in what is now Lancaster. The SP constructed homes for their employees engaged in maintaining the railroad and the Gilwyn Hotel (1888) was built to serve travelers. Generally, the name "Lancaster"" is attributed to Mr. M.L. Wicks, a real estate developer who in 1884 purchased over 38,000 acres of land for approximately $96,000 from the SP. SP was divesting properties it received free from the federal government soon after its railroads were built. Wicks apparently named the area after his former home, Lancaster, Pennsylvania. However, in publications pre-dating Wicks, a place called "Lancaster" in association with the railroad was mentioned, so the term may be associated with the Southern Pacific Railroad. Its employees were fond of naming new places along the line for their hometowns. For example, the term "Oban," a siding north of Lancaster, is an island off the coast of Scotland.

4.5.2.6.4 Lake Los Angeles

The idea of developing the northeast portion of the county for housing and recreation began with the efforts of Raymond Watt (Watt Industries) who conceptualized developing 4,500 acres of desert near a dusty dirt crossroads location known as Antelope (Lovejoy) Buttes. In the 1950s and early 1960s the Buttes area was the location of a number of television Western productions including Bonanza, Wagon Train, and Rawhide, and a few shops and ranch houses were located nearby. Watt, a significant southern California developer destined to become the Builder of the Year in 1968 and Assistant Secretary of HUD for the Nixon Administration in 1969, was determined to create the Lake Los Angeles community by digging a 27 acre pit and dirt dam at the southeast corner of what is now Lake Los Angeles Blvd and 175th Street E (at the sites of two now-dry springs) and filling it with water. This occurred around 1967 or possibly 1966. Development of Lake Los Angeles mirrors in many ways the methods southern California developers used during the pre-Depression periods.

Watt divided the entire acreage into 1 and 2-acre parcels, graded dirt streets, and then Watt Industries sold the properties to individuals and in bulk to real estate agents. Extensive and glowing advertising plus the construction of showcased models, retail shops, and strip malls gave potential buyers a sense that the community would develop completely and flourish. Cheap prices for the individual parcels attracted numerous buyers from inner city locations, but as soon as the land was sold, Lake Los Angeles dried up and Watt completely abandoned his stake in the community. The Los Angeles Times wrote many articles about the project and warned the public of Watt Industries' less than complimentary ("shyster" and "huckster" were terms used) developmental methods. Due to the remoteness of the land and the rush to develop the property so as to gain a quick buck, community-based services were never provided except for power and water. In less than 20 years, Lake Los Angeles became one of the poorest regions in Los Angeles County with one of the highest crime rates.

4.5.3 Regulatory Setting

4.5.3.1 Federal

There is no federal permitting component for proposed Projects 1 – 6, therefore, descriptions of federal laws and regulations pertaining to cultural resources and paleontological resources are not provided.

4.5.3.2 State

4.5.3.2.1 California Environmental Quality Act

Under the California Environmental Quality Act (CEQA), cultural resources listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) or a local register meet the CEQA definition of "historical resources" and must be given consideration in the CEQA process. Under the California Code of Regulations (CCR), Title 14, Chapter 11.5, properties listed on or formally determined to be eligible for listing in the NRHP are automatically eligible for listing in the CRHR. A resource is generally considered to be historically significant under CEQA if it meets the criteria for listing in the CRHR. It should be noted that under CEQA paleontological resources and unique geological features are also considered cultural resources.

A resource is considered eligible for inclusion in the CRHR, and therefore a historical resource under CEQA, if it is at least 45 years old and meets at least one of the CRHR eligibility criteria, or it can be demonstrated that sufficient time has passed to understand its historical importance. Similar to the NRHP, the criteria for CRHR eligibility are as follows:

1. An association with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
2. An association with the lives of persons important to local, California, or national history.
3. An embodiment of the distinctive characteristics of a type, period, region, or method of construction, or a representation of the work of a master, or possesses high artistic values.
4. A resource that has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

If an archaeological resource does not fall within the definition of a historical resource, it may meet the definition of a "unique archaeological resource" (Public Resources Code [PRC] 21083.2(g)). Unique archaeological resources includes archaeological artifacts, objects, or sites that:

a) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
b) Has a special and particular quality such as being the oldest of its type or the best available example of its type; or

c) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

4.5.3.2.2 California Health and Safety Code, Section 7052 and 7050.5

Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the Native American Heritage Commission (NAHC).

4.5.3.2.3 California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both state and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and that the county coroner be notified. If the remains are Native American, the coroner must notify the NAHC. The NAHC will then identify and notify a most likely descendant (MLD). The Act stipulates the procedures the MLD may follow for treating or disposing of the remains and associated grave goods.

4.5.3.2.4 California Public Resource Code, Section 5097

PRC Section 5097, specifies the procedures to be followed in the event of an unexpected discovery of human remains on non-federal land. The disposition of Native American remains falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states:

“No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.”

As used in this section, “public lands” means lands owned by, or under the jurisdiction of the state or any city, county, district, authority, public corporation, or any agency thereof.

4.5.3.2.5 California State Senate Bill 18

California State Senate Bill 18 (SB18), signed into law in September 2004 and implemented March 1, 2005, requires cities and counties to notify and consult with California-recognized Native American Tribes about proposed local land use planning decisions for the purpose of protecting Traditional Tribal Cultural Places. The Governor’s Office of Planning and Research was mandated to amend its General Plan Guidelines to include the stipulations of SB18 and to add advice for consulting with California Native American Tribes.

4.5.3.3 Local

4.5.3.3.1 Los Angeles County

The County promotes the protection of historic, cultural, and paleontological resources and is guided in development decision by federal, state, and local programs that protect such resources. The county is in the process of updating the County General Plan; the existing adopted General Plan's Conservation, and Open Space Element chapter (Los Angeles County 1980) provides the following guidelines for development project:

1. A literature search for valid archaeological or paleontological surveys shall be conducted for each initial study or private project.
2. If a literature search indicates a strong likelihood that an archaeological or paleontological resource would be impacted by the proposed project, a study of the project site shall be made by a qualified archaeologist or paleontologist. The study shall determine the scientific value of the finds and provide recommendations as to their preservation or disposition.
3. Prior to approving a project, the approving agency shall review the cultural and/or paleontological report to determine the conditions necessary to preserve the resources.
4. When a determination has been made to salvage the finds, a reasonable period of time shall be allowed prior to the start of grading to adequately salvage the site.

4.5.3.3.2 Antelope Valley Area

The Antelope Valley Area Plan portion of the Countywide General Plan was first approved in 1986 (CLADRP 1986), and the Area Plan is currently undergoing an update. The existing Area Plan, Chapter 5 – Policy Statement No. 137, 138, and 139 addresses cultural resources.

> No. 137: Protect known archaeological and historical resources to the extern appropriate.
>
> No. 138: Mandate that the county require an archaeological surface reconnaissance and impact assessment by a qualified archaeologist for any significant development proposed on or adjacent to archaeological sites.
>
> No. 139: Negative impacts must be mitigated where a development would adversely affect a known significant archaeological site. Adequacy of the proposed mitigation measures shall be determined by permit approving lead agency

To fulfill the cultural and paleontological resource portion of the Area Plan, Appendix G of the CEQA Guidelines must be consulted, and then it must be established through archaeological survey that potentially significant cultural resources do, or do not, exist within an individual project site. If cultural or paleontological resources are found on the project site, it must be first established that such sites are or are not significant resources.

4.5.4 Significance Criteria

Appendix G of the State CEQA Guidelines contains the Initial Study Environmental Checklist form, which includes questions relating to cultural resources. The issues presented in the Initial

Study Checklist have been used as significance criteria. Accordingly, a project may result in a significant environmental impact if it:

a) Would cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.

b) Would cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

c) Would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

d) Would disturb any human remains, including those interred outside of formal cemeteries.

4.5.5 Impact Analysis

4.5.5.1 Cultural Resources Methodology

In general, the methodology for the identification and assessment of cultural resources consisted of the following steps:

- File search and literature review for cultural and paleontological resources
- Native American Heritage Commission sacred land file search
- Field inventory and recordation of cultural resources
- Assessment of California Register of Historic Resources (CRHR) eligibility and impact of project to eligible resources
- Development of mitigation measures

Please note that the results of cultural resources investigation reports containing site location information are required by state and federal law to be held in confidence, and therefore the results presented in this EIR are summaries from those technical reports. These summaries for each Project include general descriptions of the various resources identified during the cultural and paleontological investigations. Also note that Appendix B-4 contains the cover sheets of the various confidential reports, but not the reports themselves.

4.5.5.2 Cultural Resources Results

4.5.5.2.1 CHRIS Center File Search

Cultural Resources records searches were conducted on September 15, 2011, by Michael Brandman Associates staff (Dice and Lord 2011), on July 7, 2011 by Tetra Tech staff (Drover and Maxon 2011), and on April 9, 2013 by Chambers Group staff (Cisneros 2013), for each of the Project sites, at the South Central Coastal Information Center (SCCIC). THE SCCIC is the official state cultural resource information center located at California State University, Fullerton for this part of California. To identify any historic properties, staff examined the current SCCIC database, inventories of the NRHP, the CRHR, the California Historical Landmarks list, and the California Points of Historical Interest list. In addition, the Historic Resources Inventory was examined to determine the existence of previously documented local historical resources. The

search focused specifically on the Projects areas and adjacent lands within a 1-mile search radius.

Table 4.5-2 shows the previously recorded cultural resources found in or near the six Project sites. None of the Project sites had previously been subject to professional inventory. More detail on the file searches can be found in Confidential Appendix B-4.

Table 4.5-2 Previously Recorded Cultural Resources In and Near the Projects Sites

IC Primary Number	Location[b]	Type	>1 mile	~½ mile	~¼ mile	On Site?
Project 1 (North Lancaster Ranch (n=2))						
P19-000076	Confidential	Prehistoric quarry detected in 1949		X		No
P19-003726	Confidential	Small lithic artifact scatter	X			No
Project 2 (Western Antelope Blue Sky Ranch (n=16))						
P19-001334	Confidential	Extensive but dispersed lithic artifact scatter	X			No
P19-003119	Confidential	Historic-era Trash Scatter			X	No
P19-003477	Section 19	Historic-era public utility building, the "Antelope Substation," built 1952				Yes, but no effect possible[c]
P19-004126	Section 27	Historic-era water storage features	X			No
P19-004154	Various quads	East Branch California Aqueduct		X		No
P19-004245	Section 13	Historic-era Road			X	No
P19-004249	Section 13/24	Historic-era Road				Yes, but no effect possible[c]
P19-004250	Section 13/24	Historic-era Road				Yes, but no effect possible[c]
P19-004251	Section 13	Historic-era Road		X		No
P19-100811	Confidential	Isolate Prehistoric flake	X			No
P19-100812	Confidential	Isolate Prehistoric flake	X			No
P19-100815	Confidential	Isolate-Prehistoric flake	X			No
P19-100817	Confidential	Isolate Prehistoric flake	X			No
P19-100919	Section 13	Isolate historic-era			X	No
P19-100920	Section 13	Isolate historic-era				Yes, but no effect possible[c]
P19-100927	Section 13	Isolate historic-era			X	No
Project 3 (American Solar Greenworks (n=0))						
		No sites are recorded within 1 mile of Project				
Project 4 (Antelope Solar Greenworks (n=6))						
P19-001579	Confidential	Historic Del Sur cemetery: pioneer cemetery.				Yes, but no effect as the site would be avoided[c].
P19-001612	Section 7	Historic era ranch house with adobe walls	X			No
P19-003477	Section 19	Historic-era public utility building, the "Antelope Substation," built 1952		X		No
P19-003983	Section 19	Historic-era trash scatter			X	No

IC Primary Number	Location[b]	Type	>1 mile	~½ mile	~¼ mile	On Site?
P19-186876	Various quads	Historic-era electric transmission towers and line		X		No
P19-189425	Various quads	Historic-era electric transmission towers and line				Yes, but no effect possible[c]
Project 5 (Silver Sun Greenworks (n=9))						
P19-003119	Confidential	Historic-era Trash Scatter			X	No
P19-003477	Section 19	Historic-era public utility building, the "Antelope Substation," built 1952				Yes, but no effect possible[c]
P19-004245	Section 13	Historic-era Road			X	No
P19-004249	Section 13/24	Historic-era Road				Yes, but no effect possible[c]
P19-004250	Section 13/24	Historic-era Road				Yes, but no effect possible[c]
P19-004251	Section 13	Historic-era Road		X		No
P19-100919	Section 13	Isolate historic-era			X	No
P19-100920	Section 13	Isolate historic-era				Yes, but no effect possible[c]
P19-100927	Section 13	Isolate historic-era			X	No
Project 6 (Lancaster WAD (n=1))						
P19-002066	Section 18	Historic-era homestead ruin dated to 1908-1925 period	X			No

Notes: IC=Information Center, n=number

a. The identification numbers are typically assigned by the respective Cultural Information Center, which identifies any cultural resources.

b. The location provides the cadastral section number or Township, Range, and/or Section information.

c. This resource is located within the project area; however, the project will not alter the cultural resource.

4.5.5.2.2 Native American Sacred Lands File Review and Contacts

Michael Brandman Associates (Dice and Lord 2011) and Bonterra Consulting (Drover and Maxon 2011) contacted the Native American Heritage Commission (NAHC) in 2011, and Chambers Group (Cisneros 2013) contacted the NAHC on April 9, 2013, requesting a Sacred Lands File Search for traditional cultural properties in and near the Projects sites. The NAHC responses, dated July 22, 2011 (Drover and Maxon 2011), September 16, 2011 (Dice and Lord 2011), and April 26, 2013 (Cisneros 2013), indicated that no sacred lands or traditional cultural properties are known within or near the Projects sites. The NAHC also forwarded a list of Native American groups or individuals that may have knowledge regarding cultural resources/lands in the Projects sites, and/or have a general interest in the Projects. To ensure that Native American concerns are addressed, the NAHC recommended an informational letter describing the proposed Projects, including a map illustrating the locations of each respective Project site be sent to each of 10 NAHC-listed tribal contacts. An information letter was sent to each of the tribal contacts on July 14, 2011 (Drover and Maxon 2011), September 23, 2011(Dice and Lord 2011), and April 26, 2013 (Cisneros 2013). As of this date, no responses have been received from any listed tribal authority (see Appendix B-4 for NAHC and Tribal letters).

4.5.5.2.3 Cultural Resource Inventory and Results

The field survey team consisted of Michael Brandman Associates' Senior Archaeologist Michael Dice, M.A., and staff archaeologists Arabesque Said-Abdelwahed, Eduardo Iglesias, and Andrea Stella. Each project area was examined using a block-transect technique, with 15 to 25-meter spacing depending on conditions. The field inventory was conducted between September 13 and September 20, 2011. The field survey team for the proposed above ground gen-tie lines (Option 1 and 2) consisted of First Carbon Solutions Senior Archaeologist Michael Dice and Chambers Group Senior Archaeologist Charles Cisneros, and staff archaeologists Ryan Glenn, Gena Granger, and Katie Crosmer. The proposed linear project features were surveyed on April 18 and April 30, 2013 (Cisneros 2013) and July 12, 2013 (Dice 2013). The teams examined the project area using linear transects spaced no more than 15 meters apart. More details on the conduct of the survey can be found in the Confidential Cultural Resources Technical Reports in Appendix B-4.

4.5.5.2.3.1 Project 1

An abandoned structure complex consisting of two houses and several outbuildings are located on the Project 1 site and the visual aspects of the structures suggested that they were more than 45 years old. The buildings located onsite are pending demolition (Dice and Lord 2011). This resource was recorded on California Department of Parks and Records (DPR) 523 forms, the form was submitted to the SCCIC, and the site was assigned a primary number, P-19-004222 (temporary field number was CUP 6-22a).It was recommended that the resource is not eligible for inclusion on the CRHR or NRHP because it has lost nearly all integrity from its period of significance, which would be the late 1950s (Dice and Lord 2011)

4.5.5.2.3.2 Project 2

No cultural resources were detected during the transect survey of Project site 2 (Dice and Lord 2011). Previously recorded site P19-004250 is within gen-tie line Option 1A and 1B and was recommended as not eligible to the CRHR (Cisneros 2013). Previously recorded sites P19-004249, P19-186876, and P19-003477 are within gen-tie line Options 1B and were all recommended as not eligible to the CRHR (Cisneros 2013). Previously recorded site P19-004249 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004249 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Site P19-004250 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004250 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Previously recorded site P19-186876 is a transmission line and was recommended not eligible for inclusion on the CRHR because it does not meet any of the Criterion (A-D) (Cisneros 2013). Previously recorded site P19-003477 is an electrical substation and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions

of a historical resource or a unique archaeological resources as defined by CEQA. P19-003477 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013).

4.5.5.2.3.3 Project 3

No prehistoric cultural resources were detected during the survey. Historic-era structures appear to have once been on the Project 3 site based on a review of historic aerial photos, but all have been demolished (Dice and Lord 2011). Some features and remnants of the demolished structures were identified and recorded as CA-LAN-4341H on a DPR 523 form. This site was recommended as not eligible for inclusion on the CRHR or NRHP because it lacks any physical integrity.

4.5.5.2.3.4 Project 4

No prehistoric resources were detected during the transect survey, but two historic farming complexes were observed and recorded on DPR 523 forms (Dice and Lord 2011). The forms were submitted to the SCCIC and assigned primary numbers, P-19-004223 (temporary field number CUPA-a) and P-19-189453 (temporary field number CUPA-b). Upon review, both sites were evaluated and recommended as not eligible for inclusion on the CRHR or NRHP (Dice and Lord 2011).

Two previously recorded resources were revealed in the file search for Project 4. P19-189425 is an historic electric transmission line that has not been evaluated for CRHR eligibility. Site number CA-LAN-1579H, the historic Del Sur Cemetery, is shown as located within the Project 4 boundaries site. This cemetery was originally recorded by the Antelope Valley Historical Society in 1989 and is believed to have been used from 1881–1926. No trace of the site was detected during the survey conducted by Michael Brandman Associates (Dice and Lord 2011).

In a further effort to relocate and assess the condition of CA-LAN-1579H, the site area was visited by Tetra Tech archaeologists Jenna Farrell and Erin King on April 5 and 6, 2012. The Tetra Tech archaeologists were also unable to find any surface indications of the cemetery such as headstones or depressions that would show the locations of the graves or that would show whether any burials actually remained there. Information on the original site form indicated that a flood event in the 1930s likely had washed away the markers and filled in any depressions. Farrell and King interviewed a number of local informants to get more information on the Del Sur Cemetery, but were unable to find any more location information. After completing the field visit, they prepared an update to the DPR 523 form for CA-LAN-1579H that documented the new information they gathered from informants and described the current physical condition of the location. This updated form is included in Appendix B-4.1 (under a confidential filing).

In a final effort to locate the Del Sur Cemetery, the Institute for Canine Forensics was brought in to conduct a search with human remains detection dogs. Their search was conducted on June 13 and 14, 2012 and resulted in a cluster of seven “dog alerts” indicating the presence of burials and located the cemetery. The report produced by the Institute for Canine Forensics is included

in Appendix B-4.2 (under a confidential filing. This site will be avoided by the Project and monitoring will be implemented within 50 feet of the resource.

4.5.5.2.3.5 Project 5

No cultural resources were detected during the transect survey (Dice and Lord 2011). Previously recorded sites P19-004250 is within gen-tie Option 1A-D and 2A-D and was recommended as not eligible to the CRHR (Cisneros 2013). Previously recorded sites P19-004249, P19-186876, and P19-003477 are within gen-tie Options 1B and 1D, and 2B and 2D and were all recommended as not eligible to the CRHR (Cisneros 2013). Previously recorded site P19-004249 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004249 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Site P19-004250 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004250 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Previously recorded site P19-186876 is a transmission line and was recommended not eligible for inclusion on the CRHR because it does not meet any of the Criterion (A-D) (Cisneros 2013). Previously recorded site P19-003477 is an electrical substation and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-003477 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013).

4.5.5.2.3.6 Project 6

No prehistoric cultural resources were detected during the transect survey. One historic-era farm complex was observed during this survey and recorded on a DPR523 form (Dice and Lord 2011). The form was submitted to the SCCIC and the site was assigned a primary number, P-19-004225 (temporary field number CUP 15-21a). The features that made up the farm complex appear to have been demolished decades before and due to the lack of integrity it is not considered eligible for the CRHR or NRHP (Dice and Lord 2011).

4.5.6 Paleontological Resources Investigations Methods

In general, the methodology for the identification and assessment of paleontological resources consisted of the following steps:

- File search and literature review for paleontological resources
- Field reconnaissance for paleontological resources
- Development of mitigation measures

4.5.6.1 Paleontological Resources Results

4.5.6.1.1 Paleontological Resources Record Search

A paleontological records search was conducted for all the Project areas by Dr. Sam McLeod of the Los Angeles County Museum of Natural Historic on October 3, 2011 (Dice and Lord 2011). The record search results indicated that no known vertebrate fossils localities are recorded within Project areas 1 – 6 boundaries. However, there are several localities nearby in sedimentary deposits that are similar to the type of exposed deposits within the Project areas. Nearby localities of the Anaverde Formation include LACM (CIT) 399 and LACM (CIT) 451 that produced fossil specimens of elephants (Elephantoidea), and horse (Equus). In addition, Quaternary deposits south of the San Andreas Rift Zone, are fossil localities LACM (CIT) 589 that yielded specimens of mastodont (Mammut), and horse (Equus), and LACM 5761 that yielded mastodont (Mammut), horse (Equus), birds (Aves), carnivores (Cornivora), and rabbits (Lepus and Sylvilagus), and rodents (Reithrodontomys, Peromyscus, and Neotoma). More details of the paleontological record search can be seen in Appendix C of the Cultural Resources Technical Report (Dice and Lord 2011) in Appendix B-4.

4.5.6.1.2 Paleontological Inventory and Results

Michael Brandman Associates Paleontologist, Kenneth J. Lord Ph.D. conducted the paleontological field assessment for the Project on September 15, 2011. In an effort to access the potential for impacts to paleontological resources for the entire Project, three (Project areas 2, 4, and 6) different environmental settings were selected for survey. These areas were chosen because they represented distinctly different landforms found within the entire Project area (Dice and Lord 2011). The paleontologist walked 20 meters transects across the selected survey areas. The following Project areas were selected to represent the entire Project:

4.5.6.1.2.1 Project 2

The Project site 2 field survey focused on the eroded channels on the south-central portion of the site. No vertebrate fossil remains were identified, however, it should be noted that the area has a potential to contain significant vertebrate fossil remains at a shallow depth (below 10 feet).

4.5.6.1.2.2 Project 4

The field survey of Project site 3 covered 30 acres and no paleontological resources were detected. It is unlikely that any intact significant paleontological resources are or will be located on the property.

4.5.6.1.2.3 Project 6

The field survey of Project site 6 covered 30 acres and no paleontological resources were detected. It is unlikely that any intact significant paleontological resources are or will be located on the property to at least the depth of the plow zone.

Based on the paleontological assessment (Dice and Lord 2011), it is unlikely that any intact significant paleontological resources are or will be located within the Project areas. Surface grading or shallow excavations in certain Quaternary alluvial deposits, either within the older

Quaternary fan deposits or the younger *Quaternary basin* deposits typically found at the surface throughout the Antelope Valley are unlikely to uncover significant vertebrate fossils. If deep project related excavations (10 feet or more below current grade) reveal *older Quaternary* deposits and/or the *later Miocene* deposits are exposed, there will be a higher potential for encountering significant vertebrate fossil remains. Deep cuts should be inspected by a qualified paleontologist in an attempt to identify the more sensitive older alluvial strata.

More details of the paleontological survey are included the Cultural Resources Technical Report in Appendix B-4.

The following provides the impacts expected to be associated with the CEQA significance criteria listed previously, based upon the results summarized above.

4.5.6.2 Project Impacts: Criterion A – Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.

4.5.6.2.1 Project 1

Construction Impacts

One historic-era site was identified within Project 1. Site P-19-004222 is a complex of partially demolished and dilapidated farm structures. Site P-19-004222 is in ruins and lacks any physical integrity from its period of significance (c, 1950s) and the recordation of surface artifacts has likely exhausted the date potential for the site. P19-004222 is recommended as not eligible for listing on the CRHR or NRHP and no further management consideration of the resource is necessary (Dice and Lord 2011). Therefore, construction and operation of Project 1 can cause no change in its level of significance.

There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 1. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within or near Project area 1, therefore, impacts from the operations and maintenance of the proposed Project would be less than significant.

4.5.6.2.2 Project 2

Construction Impacts

No historical resources were detected within Project 2 during the transect survey (Dice and Lord 2011). Four previously recorded sites were identified during the record search and revisited during the transect survey of the proposed Gen-tie Options 1 and 2 (Cisneros 2013). Previously recorded sites P19-004250 is within gen-tie Option 1A and 1B and was recommended as not

eligible to the CRHR (Cisneros 2013). Previously recorded sites P19-004249, P19-186876, and P19-003477 are within gen-tie Options 1B and were all recommended as not eligible to the CRHR (Cisneros 2013). Previously recorded site P19-004249 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004249 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Site P19-004250 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004250 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Previously recorded site P19-186876 is a transmission line and was recommended not eligible for inclusion on the CRHR because it does not meet any of the Criterion (A-D) (Cisneros 2013). Previously recorded site P19-003477 is an electrical substation and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-003477 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013).Therefore, construction of Project 1 can cause no change in the significance of historical resources.

There is a moderate possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of proposed Project 2 (Dice and Lord 2011). Although the likelihood of encountering archaeological resources on the site is considered moderate (Dice and Lord 2011), this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes procedures to be followed in the event that cultural resources are discovered, would be required. CUL-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within or near Project area 2, therefore, impacts from the operations and maintenance of proposed Project 2 would be less than significant.

4.5.6.2.3 Project 3

Construction Impacts

No prehistoric resources were detected during the survey. Historic-era structures appear to have once been on the Project 3 site from 1954 to 1974, but all structures were demolished sometime between 1974 and 2005 based on a review of historic and modern aerial photos (Dice and Lord 2011). Some features and remnants of the demolished farm complex remain dispersed on the parcel and were recorded on a DPR 523 form (CA-LAN-4351H). The integrity of the site has been compromised by the demolition of the structures. Site CA-LAN-4351H lacks

any physical integrity and the recordation of surface artifacts has likely exhausted the date potential for the site. Site CA-LAN-4351H is recommended as not eligible for listing on the CRHR or NRHP and no further management consideration of the resource is necessary (Dice 2013a). Therefore, construction of Project 3 can cause no change in the significance of historical resources.

There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 3. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within or near Project area 3, therefore, impacts from the operations and maintenance of proposed Project 3 would be less than significant.

4.5.6.2.4 Project 4

Construction Impacts

No prehistoric resources were detected during the transect survey. Site P-19-004223 and P19-189453, two historic period farming complexes, were recorded at this location. Both sites lack integrity and the recordation of surface artifacts has likely exhausted the date potential for the sites. Site P19-004223 and P19-189453 are recommended as not eligible for listing on the CRHR or NRHP and no further management consideration of the resource is necessary (Dice and Lord 2011). Therefore, Construction of Project 4 can cause no change in the level of significance to a historical resource. Two previously recorded resources were revealed in the file search for Project 4. P19-189425 is an historic electric transmission line that has not been evaluated for CRHR eligibility. Implementation of Mitigation Measure CUL-3, calling for avoidance of this resource, will ensure that impacts are reduced to a less than significant level.

Site number CA-LAN-1579H, the historic Del Sur Cemetery, is located within the boundary of Project 4. This cemetery has not been evaluated for CRHR eligibility, but a survey conducted by the Institute for Canine Forensics established that there are still human remains interred at that location (Morris and Pence 2012. The report produced by the Institute for Canine Forensics is confidential and is not included in Appendix B-4.2. Implementation of Mitigation Measure CUL-4, calling for avoidance of this resource, and Mitigation Measure CUL 5, calling for archaeological monitoring around the perimeter of the site, will ensure that impacts are reduced to a less than significant level.

There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 4. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes

procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level. In addition, the possibility that other previously undiscovered remains could be found within the boundary of Project 4 during construction will be addressed by implementation of Mitigation Measure CUL-2.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within or near Project area 4, therefore, impacts from the operations and maintenance of proposed Project 4 would be less than significant.

4.5.6.2.5 Project 5

Construction Impacts

No prehistoric or historic resources were detected during the transect survey of the Project Site. Four previously recorded sites were identified during the record search and revisited during the transect survey of the proposed Gen-tie Options 1 and 2 (Cisneros 2013). Previously recorded sites P19-004250 is within gen-tie Option 1A-D and 2A-D and was recommended as not eligible to the CRHR (Cisneros 2013). Previously recorded sites P19-004249, P19-186876, and P19-003477 are within gen-tie Options 1B and 1D, and 2B and 2D and were all recommended as not eligible to the CRHR (Cisneros 2013). Previously recorded site P19-004249 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004249 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Site P19-004250 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004250 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Previously recorded site P19-186876 is a transmission line and was recommended not eligible for inclusion on the CRHR because it does not meet any of the Criterion (A-D) (Cisneros 2013). Previously recorded site P19-003477 is an electrical substation and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-003477 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Therefore, construction of Project 5 can cause no change in the level of significance to a historical resource.

There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 5. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes

procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within or near Project area 5, therefore, impacts from the operations and maintenance of proposed Project 5 would be less than significant.

4.5.6.2.6 Project 6

Construction Impacts

Site P19-004225, an historic-era farm complex was observed during the survey of Project 6 and recorded. The features that made up the farm complex were demolished at some point in the past. Site P19-004225 is in ruins and lacks any physical integrity from its period of significance and the recordation of surface artifacts has likely exhausted the date potential for the site. P19-004225 is recommended as not eligible for listing on the CRHR or NRHP and no further management consideration of the resource is necessary (Dice and Lord 2011). Therefore, construction of Project 6 can cause no change in the level of significance to a historical resource.

There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 6. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within or near Project area 6, therefore, impacts from the operations and maintenance of proposed Project 6 would be less than significant.

4.5.6.3 Project Impacts: Criterion B – Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

4.5.6.3.1 Project 1

Construction Impacts

No archeological resources were detected during the transect survey. Therefore, Project 1 would not cause a substantial adverse change in the significance of an archaeological resource.

There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 1. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes

procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No archeological resources were detected during the transect survey. Therefore, impacts from the operations and maintenance of the proposed Project would be less than significant.

4.5.6.3.2 Projects 2, 5

Construction Impacts

No archeological resources were detected during the transect survey of the Project Sites 2 and 5. Four previously recorded sites were identified during the record search and revisited during the transect survey of the proposed Gen-tie Options 1 and 2 (Cisneros 2013). Four previously recorded sites were identified during the record search and revisited during the transect survey of the proposed Gen-tie Options 1 and 2 (Cisneros 2013). Previously recorded sites P19-004250 is within gen-tie Option 1A-D and 2A-D and was recommended as not eligible to the CRHR (Cisneros 2013). Previously recorded sites P19-004249, P19-186876, and P19-003477 are within gen-tie Options 1B and 1D, and 2B and 2D and were all recommended as not eligible to the CRHR (Cisneros 2013). Previously recorded site P19-004249 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004249 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Site P19-004250 is a two-track dirt road and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-004250 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Previously recorded site P19-186876 is a transmission line and was recommended not eligible for inclusion on the CRHR because it does not meet any of the Criterion (A-D) (Cisneros 2013). Previously recorded site P19-003477 is an electrical substation and was recommended not eligible for inclusion on the CRHR because it does not appear to meet the formal definitions of a historical resource or a unique archaeological resources as defined by CEQA. P19-003477 is comparatively recent (early to mid-twentieth century), has little potential to yield additional data, and does not meet Criteria A-D and therefore recommended as not eligible for listing on the CRHR (Cisneros 2013). Therefore, Projects 2 and 5 would not cause a substantial adverse change in the significance of an archaeological resource.

There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Projects. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within Project 2 and 5. Therefore, impacts from the operations and maintenance of the proposed Projects would be less than significant.

4.5.6.3.3 Project 3

Construction Impacts

No prehistoric resources were detected during the survey. Historic-era structures appear to have once been on the Project 3 site from 1954 to 1974, but all structures were demolished sometime between 1974 and 2005 based on a review of historic and modern aerial photos (Dice and Lord 2011). Some features and remnants of the demolished farm complex remain dispersed on the parcel and were recorded on a DPR 523 form (CA-LAN-4351H). The integrity of the site has been compromised by the demolition of the structures. Site CA-LAN-4351H lacks any physical integrity and the recordation of surface artifacts has likely exhausted the date potential for the site. Site CA-LAN-4351H is recommended as not eligible for listing on the CRHR or NRHP and no further management consideration of the resource is necessary (Dice 2013a). No CRHR or NRHP eligible or listed sites were identified within the Project 3 site. Therefore, Project 3 would not cause a substantial adverse change in the significance of an archaeological resource.

There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 3. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within the Project 3. Therefore, impacts from the operations and maintenance of the proposed Project would be less than significant.

4.5.6.3.4 Project 4

Construction Impacts

No prehistoric archaeological resources were detected during the transect survey. Site P-19-004223 and P19-189453, two historic-era farming complexes were recorded at this location. These two sites lack integrity and are not considered significant. Therefore, site P19-004223 and P19-189453 are recommended as not eligible for the CRHR or NRHP and no further action is required (Dice and Lord 2011). Therefore, Project 4 would not cause a substantial adverse change in the significance of an archaeological resource.

Only recorded resources were revealed in the file search for Project 4. P19-189425 is an historic electric transmission line that has not been evaluated for CRHR eligibility.

Implementation of Mitigation Measure CUL-3, calling for avoidance of this resource, will ensure that impacts are reduced to a less than significant level.

Site number CA-LAN-1579H, the historic Del Sur Cemetery, is located within the boundary of Project 4. This cemetery has not been evaluated for CRHR eligibility, but a survey conducted by the Institute for Canine Forensics established that there are still human remains interred at that location (Morris and Pence 2012). The report produced by the Institute for Canine Forensics is included in Appendix B-4.2. Implementation of Mitigation Measure CUL-4, calling for avoidance of this resource, and Mitigation Measure CUL 5, calling for archaeological monitoring around the perimeter of the site will ensure that impacts are reduced to a less than significant level. The possibility that other previously undiscovered remains could be found within the boundary of Project 4 during construction will be addressed by implementation of Mitigation Measure CUL-2.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within the Project 4. Therefore, impacts from the operations and maintenance of the proposed Project would be less than significant.

4.5.6.3.5 Project 6

Construction Impacts

Site P19-004225, an historic-era farm complex was observed during the survey of Project 6 and recorded. The features that made up the farm complex were demolished at some point in the past. Site P19-004225 is in ruins and lacks any physical integrity from its period of significance and the recordation of surface artifacts has likely exhausted the date potential for the site. P19-004225 is recommended as not eligible for listing on the CRHR or NRHP and no further management consideration of the resource is necessary (Dice and Lord 2011). Therefore, Project 6 would not cause a substantial adverse change in the significance of an archaeological resource. There is a possibility that historical and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 6. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-1, which describes procedures to be followed in the event that cultural resources are discovered, is required. CUL-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No CRHR or NRHP eligible or listed resources were identified within the Project 6. Therefore, impacts from the operations and maintenance of the proposed Project would be less than significant.

4.5.6.4 Project Impacts: Criterion C – Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or contain rock formations indicating potential paleontological resources?

4.5.6.4.1 Projects 1, 3, and 5

Construction Impacts

No paleontological resources were detected during the transect survey. Based on the paleontological assessment (Dice and Lord 2011), it is unlikely that any intact significant paleontological resources are or will be located on the property. Therefore, Projects 1, 3, and 5 would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature, or contain rock formations indicating potential paleontological resources.

If Project excavations reach 10 feet or more below current grade and reveal that *older Quaternary* deposits and/or the *later Miocene* deposits are exposed, there will be a higher potential for encountering significant vertebrate fossil remains. Deep cuts should be inspected by a qualified paleontologist in an attempt to identify the more sensitive older alluvial strata.

There is a possibility that paleontological materials would be uncovered if excavations for the construction of the proposed Projects 1, 3, and 5 reach a depth of 10 feet or more below current grade. Although the likelihood of encountering paleontological resources within the Project area is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure PALEO-1, the development of a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) by a qualified paleontologist if construction excavation depth is below 10 feet or more below current grade, is required. PALEO-1 would reduce this potential impact to a less than significant level.

Operation Impacts

No paleontological resources were detected during the transect survey. Operations of Projects 1, 3, and 5 would not require any excavations to a depth of potential paleontological resources. Based on the paleontological assessment (Dice and Lord 2011), it is unlikely that any intact significant paleontological resources are or will be located on the property. Therefore, operation of Projects 1, 3, and 5 would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.5.6.4.2 Project 2

Construction Impacts

Although no paleontological resources were detected during the transect survey of Project 2, the area has potential to contain significant vertebrate fossil remains at relatively shallow depths (10 feet below surface). Based on the paleontological assessment (Dice and Lord 2011), it is unlikely that any intact significant paleontological resources are or will be located on the property. Therefore, Project 2 would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature, or contain rock formations indicating potential paleontological resources. If Project excavations reach 10 feet or more below current grade and reveal that *older Quaternary* deposits and/or the *later Miocene* deposits are exposed, there will

be a higher potential for encountering significant vertebrate fossil remains. Deep cuts should be inspected by a qualified paleontologist in an attempt to identify the more sensitive older alluvial strata.

There is a possibility that paleontological materials would be uncovered if excavations for the construction of the proposed Project 2 reach a depth of 10 feet or more below current grade. Although the likelihood of encountering paleontological resources within the Project 2 area is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure PALEO-1, the development of a PRMMP by a qualified paleontologist is required if construction excavation depth is below 10 feet or more below current grade. PALEO-1 would reduce this potential impact to a less than significant level.

Operation Impacts

Operation of Project 2 would not require any excavations to the depth of potential paleontological resources. There, operation of Project 2 would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or contain rock formations indicating potential paleontological resources.

4.5.6.4.3 Project 4

Construction Impacts

No paleontological resources were detected during the transect survey of Project 4. Based on the paleontological assessment (Dice and Lord 2011), it is unlikely that any intact significant paleontological resources are or will be located on the property. Therefore, Project 4 would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature, or contain rock formations indicating potential paleontological resources. If Project excavations reach 10 feet or more below current grade and reveal that *older Quaternary* deposits and/or the *later Miocene* deposits are exposed, there will be a higher potential for encountering significant vertebrate fossil remains. Deep cuts should be inspected by a qualified paleontologist in an attempt to identify the more sensitive older alluvial strata.

There is a possibility that paleontological materials would be uncovered if excavations for the construction of the proposed Project 4 reach a depth of 10 feet or more below current grade. Although the likelihood of encountering paleontological resources within the Project area is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure PALEO-1, the development of a PRMMP by a qualified paleontologist is required if construction excavation depth is below 10 feet or more below current grade. PALEO-1 would reduce this potential impact to a less than significant level.

Operation Impacts

Operation of Project 4 would not require any excavations to the depth of potential paleontological resources. There, operation of Project 2 would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or contain rock formations indicating potential paleontological resources.

4.5.6.4.4 Project 6

Construction Impacts

No paleontological resources were detected during the transect survey of Project 6. Based on the paleontological assessment (Dice and Lord 2011), it is unlikely that any intact significant paleontological resources are or will be located on the property. Therefore, Project 6 would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature, or contain rock formations indicating potential paleontological resources.

There is a possibility that paleontological materials would be uncovered if excavations for the construction of the proposed Project 6 reach a depth of 10 feet or more below current grade. Although the likelihood of encountering paleontological resources within the Project area is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure PALEO-1, the development of a PRMMP by a qualified paleontologist if construction excavation depth is below 10 feet or more below current grade, is required. PALEO-1 would reduce this potential impact to a less than significant level.

Operation Impacts

Operation of Project 6 would not require any excavations to the depth of potential paleontological resources. There, operation of Project 2 would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or contain rock formations indicating potential paleontological resources.

4.5.6.5 Project Impacts: Criterion D – Would the project disturb any human remains, including those interred outside of formal cemeteries.

4.5.6.5.1 Projects 1, 2, 3, 5 and 6

Construction Impacts

There is no indication as a result of this study that human remains are present within the boundaries of the proposed Project sites. The records search and the field survey indicate no evidence of human remains on or near the sites. Project-related earth disturbance, however, has the potential to unearth previously undiscovered remains, resulting in a potentially significant impact. However, implementation of Mitigation Measure CUL-2 that describes procedures to be followed in the event that human remains are discovered would ensure that impacts are reduced to a less than significant level.

Operation Impacts

Operations of Projects 1, 2, 3, 5, and 6 would not require any excavation and therefore would not have the potential to disturb any human remains, including those interred outside of formal cemeteries.

4.5.6.5.2 Project 4

Construction Impacts

There is a possibility that human remains, historical, and/or archaeological materials would be uncovered during necessary subsurface excavations for the construction of the proposed Project 4 near the boundary of CA-LAN-1579H. Although the likelihood of encountering archaeological resources on the site is considered low, this impact is potentially significant. Therefore, implementation of Mitigation Measure CUL-4, avoidance of the site, CUL-5, archaeological monitoring of the defined perimeter of the site, and CUL-1, which describes procedures to be followed in the event that cultural resources are discovered, is required. Mitigation Measures CUL-1, CUL-4, and CUL-5 would reduce this potential impact to a less than significant level.

Operation Impacts

Operation of Project 4 would not require any excavation and therefore would not disturb any human remains, including those interred outside of formal cemeteries.

4.5.7 Mitigation Measures

All of the mitigation measures for the six Project sites are listed below.

4.5.7.1 Cultural Resources Mitigation Measures

CUL-1: In the event cultural resources are encountered during construction of the Projects, all ground-disturbing activities within the vicinity of the find shall cease and a qualified archaeologist and Native American Monitor shall be notified of the find. The archaeologist and Native American Monitor shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to recordation and excavation of the finds and evaluation and processing of the finds in accordance with § 15064.5 of the CEQA Guidelines. Potentially significant cultural resources consist of, but are not limited to, stone, bone, fossils, wood or shell artifacts or features, including hearths, structural remains, or historic dumpsites.

If the resources are determined to be unique historic resources as defined under § 15064.5 of the CEQA Guidelines, Mitigation Measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate Mitigation Measures for significant resources could include but not be limited to avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.

No further earthwork shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any archaeological artifacts recovered because of mitigation will be donated to a qualified scientific institution approved by the Lead Agency where they would be afforded long-term preservation to allow future scientific study. This Mitigation Measure shall apply to all Projects.

CUL-2: In the event of an accidental discovery or recognition of any human remains, California State Health and Safety Code § 7050.5 dictates that no further disturbance shall

occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to CEQA regulations and PRC § 5097.98. This Mitigation Measure shall apply to all Projects.

CUL-3: Project 4 construction of gen-tie lines shall maintain the right of way buffer zones prescribed by SCE for this historic electric transmission line resource, which is an active transmission line. This Mitigation Measure shall apply to Project 4 only.

CUL-4: Project construction for Project 4 shall maintain a one acre undisturbed area surrounding the Del Sur Cemetery site. This Mitigation Measure shall apply to Project 4 only.

CUL-5: A County approved archaeologist will be retained to initiate and supervise cultural resource monitoring during Project related earthwork in areas of the Project that are within 50 feet from certain significant cultural resources, specifically from the defined perimeter of site CA-LAN-1579H (Project 4). If resources are identified, the procedures outlined in CUL-1 will be followed and/or CUL-2 (as necessary). This Mitigation Measure shall apply to Project 4 only.

4.5.7.2 Paleontological Resource Mitigation Measures

PALEO-1: A qualified paleontologist shall be retained by the Applicant prior to excavations reaching 10 feet in depth or greater. The paleontologist shall develop and execute a Paleontological Resource Mitigation and Monitoring Program and supervise a paleontological monitor whom shall monitor all ground-disturbing activities associated with such excavations. The Program will outline the procedures to follow in regards to paleontological resources (e.g. monitoring protocols, curation, data recovery of fossils, reporting). If fossils are found during such excavation, the paleontological monitor shall be authorized to halt ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment according to the Program.

4.5.7.3 Level of Significance After Mitigation

Potential impacts related to Cultural and Paleontological Resources were determined to be less than significant with the implementation of mitigation measures. The Projects involve the construction and operation of six SGFs and their associated gen-tie lines. Implementation of the above mitigation measures would reduce potential impacts to cultural resources associated with the Projects to less than significant levels.

4.5.8 Cumulative Impacts

There are 29 cumulative projects within a 5-mile radius of the proposed Projects, amounting to 20,909 acres of development including Projects 1 – 6 (see Table 3-7). For the purposes of this cumulative analysis, the worst case scenario is assumed, i.e., all cumulative projects would be constructed at the same time. It is also assumed that all cumulative projects would comply with all applicable laws, ordinances, regulations and standards (LORS).

As described above under the Project Impacts, impacts related to cultural resources would be mitigated to less than significant levels since the CRHR and NRHP eligible resources in the area would be avoided. Because impacts to cultural resources would be mitigated to less than

significant through avoidance, the proposed Projects 1 – 6 would not result in an incremental increase in effects on cultural resources when combined with the other 29 projects. Therefore, no significant cumulative impacts would be expected to occur.

4.5.9 References

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4.6 GEOLOGY AND SOILS

4.6.1 Introduction

The following section evaluates Projects 1 – 6 to determine each project's potential to create a physical change in the surface or subsurface soil and rock characteristics, and determine if the project would expose people or structures to major geotechnical hazards. Geotechnical Critical Issues Analyses and Custom Soil Resource Reports prepared by Tetra Tech (Tetra Tech 2011, 2012) were used to assist in the overall assessment of geological impacts and hazards and are included as Appendix B-5.

4.6.2 Environmental Setting

4.6.2.1 Geologic Setting

The proposed Projects and associated gen-tie lines, are located within the western Antelope Valley in unincorporated Los Angeles County, California. The Antelope Valley is bound by the Transverse Ranges to the southwest, the San Gabriel Mountains to the southeast, and the Tehachapi Mountains to the northwest. Projects 1 and 3 – 6 are relatively flat, with the location of Project 2 containing some rolling hills.

The Projects are located in the western wedge-shaped corner of the Mojave Desert physiographic province. The Mojave Desert province is a topographically closed basin, bounded to the north by the Garlock Fault and Tehachapi Mountains (southern boundary of the Sierra Nevada), and to the south by the San Andreas Fault and San Gabriel Mountains (part of the Transverse Ranges northern boundary). The province contains broad expanses of desert plains and isolated mountain ranges with elevations ranging from 2,300 to 3,500 feet amsl. Annual rainfall generally ranges between 5 to 10 inches and drains into interior playas. The geology of the region consists of Pre-Tertiary (greater than 1,000 million years [MY] to 66 MY) crystalline igneous and metamorphic rocks, Tertiary age (66 MY to 1.6 MY) sedimentary and volcanic rocks, and Quaternary age (1.6 MY to present) alluvial and sedimentary units. The Antelope Valley is underlain by up to 4,000 feet of alluvial fill from the surrounding uplands, and further underlain by basement rocks including gneiss, granite, and other metamorphic and igneous rocks. Geologic units that make up the basement complex reach the surface in some parts of the valley, and are similar to the surrounding uplands. The uplands are primarily Pre-Tertiary and Tertiary uplifted granite, gneiss, schist, and volcanic rocks, with uplifted sedimentary units in the traverse ranges to the west. Much of these units have undergone extensive deformation throughout their geologic history and continue to undergo additional folding and faulting from the tectonic processes associated with movement along the San Andreas Fault (the North American and Pacific Plate boundary).

The general underlying geology of the proposed Project sites is Pleistocene (2.6 MY to 11,700 years) and Holocene (11,700 years to present) aged alluvial and lacustrine deposits. These deposits typically consist of compacted gravels, sand, silt, and clay; and deposits generally fine towards the center parts of the valley (Duell 1987). Coarse alluvial deposits make up the upper and lower aquifers and are separated by confining layers of clay lake deposits up to 400 feet thick.

4.6.2.2 Geotechnical Hazards

The following section provides a discussion of the potential geotechnical hazards at Projects 1 – 6.

4.6.2.2.1 Faults and Fault Rupture

Regionally, seismicity has mostly been attributed to crustal deformation resulting from the San Andreas Fault and other local fault zones. Faults are considered active if there has been displacement in the last 11,000 years, and potentially active if there has been movement over the Quaternary period (2.6 MY to present). Several active faults and fault zones have been noted in the vicinity of the Projects on both federal (USGS) and state (CGS) databases (Figure 4.6-1). The major fault zones in the vicinity of the Projects are identified below.

- *San Andreas Fault Zone (SAFZ)* – The SAFZ is the transform boundary between the Pacific Plate and the North American Plate and has a right-lateral sense of displacement between 1.5 to 2.5 inches per year (Wallace 1990). The SAFZ has the highest probability of producing a magnitude 6.7 earthquake or greater, and has produced two 8+ magnitude earthquakes in Parkfield (150 miles from the site) and San Francisco (300 miles from the site) in the last 153 years.
- Garlock Fault Zone – The Garlock fault is a left lateral strike slip fault that forms the northern portion of the Antelope Valley at the base of the Tehachapi Mountains. The fault extends 200 miles northeast from the Castaic Lake region, is approximately 15-25 miles from the Projects, and has historically produced magnitude 5.7 earthquakes within 30 miles of the Projects.
- *Sierra Madre and San Fernando Fault Zones* – These fault zones are reverse thrust faults located approximately 35 to 45 miles south to southwest of the Projects. These faults zones have produced multiple 5+ magnitude earthquakes over the last 100 years.

These active faults have the ability to cause surface fault rupture along the trace of the fault and cause significant seismic activity in the region. No federal, state, city, or academic data indicated the presence of an active fault directly beneath the Projects.

4.6.2.2.2 Seismicity and Ground Motion

Historically recorded seismic events (earthquakes) in the vicinity of the proposed Projects, greater than or equal to a magnitude of 5.0, are listed in Table 4.6-1 and shown on Figure 4.6-1. The largest recorded magnitude earthquake within 62 miles (100 kilometers [km]) occurred approximately 40-50 miles northwest of the Projects and was reported at a magnitude of 8.3 and an intensity of 7. The closest reported earthquake larger than magnitude 5.0 occurred in 1971, approximately 20 to 25 miles south of the Projects in Santa Clarita, and was recorded at a magnitude of 6.4.

Based on the USGS National Seismic Hazard Map (2008), the Projects are located in areas mapped from 30 to 80 percent gravity for peak horizontal acceleration with a 10 percent probability of exceedance in the next 50 years. According to the USGS, and dependent on structural design, 10 percent gravity is the lower threshold at which damages to structures are likely to occur. Peak ground acceleration zones are shown in Figure 4.6-2.

Table 4.6-1 Earthquakes within 62 Miles (100 km) of the Project Site with Magnitudes Greater Than or Equal to 5.0

Year	Magnitude	Intensity	Latitude	Longitude
1812[(1)]	6.9	8	34.37	-117.65
1857[(1)]	8.3	7	35.00	-119.00
1899	6.5	8	34.30	-117.50
1916	6	7	34.90	-118.90
1930[(1)]	5.2	7	34.03	-118.64
1952[(1)]	7.7	11	35.00	-119.02
1952[(1)]	5.8	8	35.33	-118.92
1952	7.2	11	35.00	-119.02
1952	6.4	5	35.00	-119.00
1952	5.4	7	35.00	-118.83
1952	5.7	7	35.22	-118.82
1952	5.7	6	35.32	-118.52
1952	5.7	6	35.32	-118.50
1952	5.8	8	35.33	-118.92
1952	5.8	6	35.33	-118.60
1952	6.1	6	35.37	-118.58
1952	6.1	7	35.38	-118.85
1954	5.9	7	35.00	-119.02
1971[(1)]	6.5	11	34.41	-118.40
1971	6.4	11	34.41	-118.40
1973[(1)]	5.7	7	34.10	-119.00
1973	5.9	7	34.10	-119.04
1987[(1)]	5.7	8	34.06	-118.08
1987	5.9	8	34.06	-118.08
1987	5.3	7	34.07	-118.10
1990[(1)]	5.5	7	34.14	-117.70
1990	5.2	7	34.14	-117.70
1991[(1)]	5.1	7	34.26	-118.00
1991	5.4	7	34.26	-118.00
1992	5.7	5	35.21	-118.07
1994[(1)]	6.7	9	34.21	-118.54
1994	6.7	NA	34.21	-118.54
1994	5.3	5	34.23	-118.48
1994	5.4	6	34.31	-118.58
1994	5.6	NA	34.33	-118.70
1994	5.5	NA	34.38	-118.70
1994	5.5	NA	34.38	-118.71
1995	5.2	5	34.39	-118.67
2008[(1)]	5.4	6	33.95	-117.76

Sources were identified by a query search conducted by the National Geophysical Data Center, a division of the National Oceanic and Atmospheric Administration (NOAA) and USGS Earthquake database.
NOAA data denoted by superscript (1).
"Maximum Intensity" is another measurement of perceptible ground movement. However, "Local Magnitude" was used whenever possible throughout the study.

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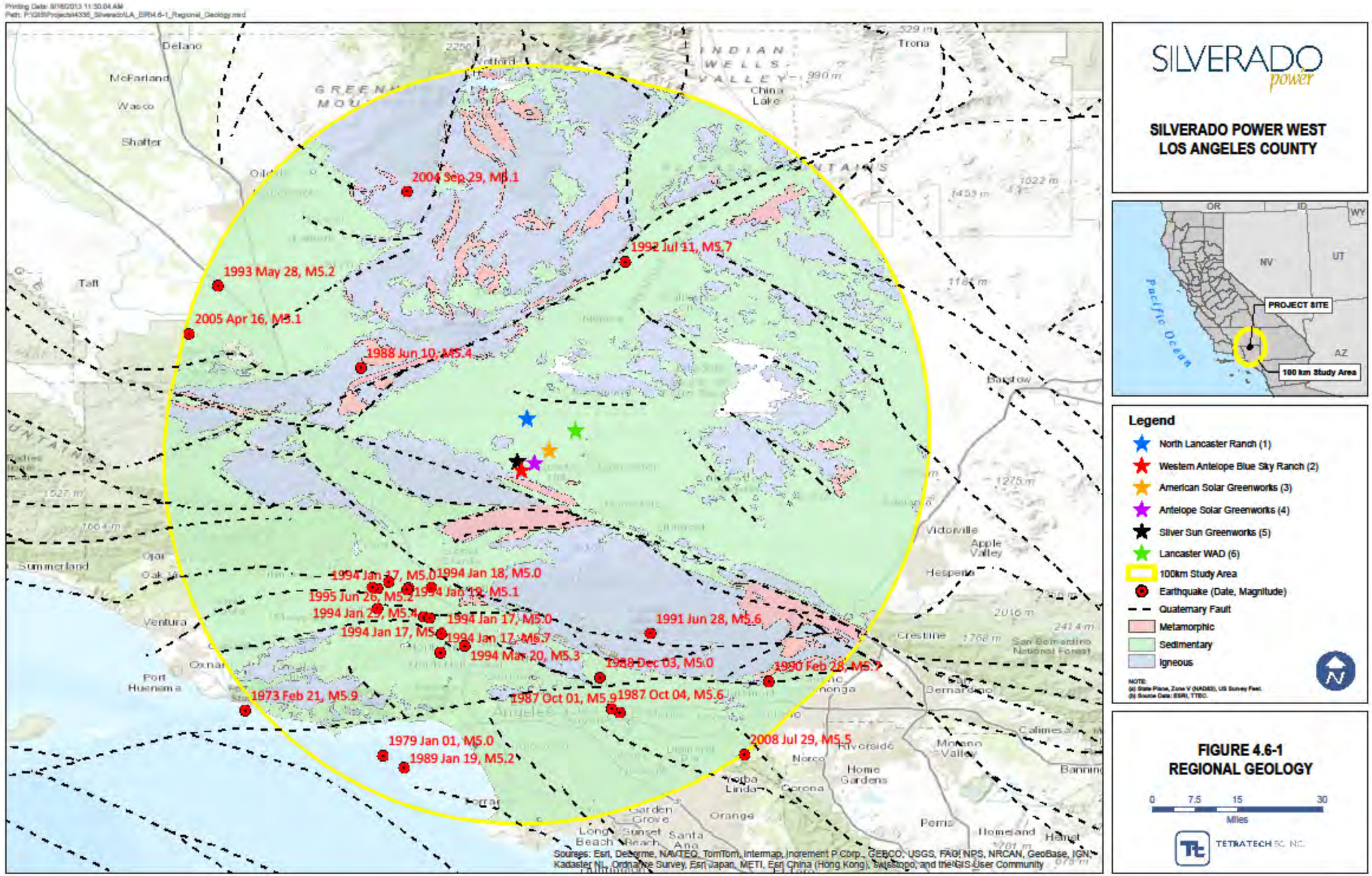
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Delano
McFarland
Wasco
Shafter
Taft
Oildale
Bakersfield
Edison
Arvin
Tehachapi
Mojave
Trona
China Lake
Barstow
Victorville
Apple Valley
Hesperia
Crestline
San Bernardino National Forest
Summerland
Ojai
Oak View
Ventura
Port Hueneme
Oxnard
Camarillo
Thousand Oaks
Simi Valley
Moorpark
Fillmore
Santa Paula
Piru
Lake Piru
Castaic
Valencia
Santa Clarita
Lancaster
Palmdale
Pearblossom
Littlerock
Acton
Agua Dulce
Canyon Country
Sylmar
San Fernando
Pacoima
Glendale
Burbank
Pasadena
Alhambra
Monterey Park
Rosemead
El Monte
Baldwin Park
Azusa
Glendora
San Dimas
La Verne
Claremont
Pomona
Chino
Ontario
Rancho Cucamonga
Fontana
Rialto
Colton
San Bernardino
Redlands
Yucaipa
Riverside
Norco
Corona
Eastvale
Jurupa Valley
Mira Loma
Home Gardens
Moreno Valley
Perris
Homeland
Hemet
Lake Elsinore
Canyon Lake
Menifee
Murrieta
Temecula
Wildomar
Calimesa
Beaumont
Banning
Cherry Valley
Whitewater
Desert Hot Springs
Palm Springs
Cathedral City
Rancho Mirage
Palm Desert
Indian Wells
La Quinta
Indio
Coachella
Thermal
Mecca
Orange
Garden Grove
Long Beach
Sunset Beach
Santa Ana
Huntington Beach
Fountain Valley
Westminster
Anaheim
Yorba Linda
Brea
Fullerton
La Habra
Whittier
Hacienda Heights
La Puente
Walnut
Diamond Bar
Chino Hills
Tehachapi Mountains
San Gabriel Mountains
San Bernardino Mountains
Santa Ynez Mountains
Transverse Ranges
Pacific Ocean
2004 Sep 29, M5.1
1992 Jul 11, M5.7
1993 May 28, M5.2
2005 Apr 16, M5.1
1988 Jun 10, M5.4
1994 Jan 17, M5.0
1994 Jan 18, M5.0
1995 Jun 26, M5.2
1994 Jan 19, M5.1
1994 Jan 17, M5.0
1994 Jan 17, M5.0
1994 Jan 17, M5.7
1994 Mar 20, M5.3
1991 Jun 28, M5.6
1988 Dec 03, M5.0
1990 Feb 28, M5.7
1973 Feb 21, M5.9
1987 Oct 01, M5.9
1987 Oct 04, M5.6
2008 Jul 29, M5.5
1979 Jan 01, M5.0
1989 Jan 19, M5.2
Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, and the GIS User Community
SILVERADO power
SILVERADO POWER WEST
LOS ANGELES COUNTY
OR
ID
WY
NV
UT
AZ
PROJECT SITE
100 km Study Area
Pacific Ocean
Legend
North Lancaster Ranch (1)
Western Antelope Blue Sky Ranch (2)
American Solar Greenworks (3)
Antelope Solar Greenworks (4)
Silver Sun Greenworks (5)
Lancaster WAD (6)
100km Study Area
Earthquake (Date, Magnitude)
Quaternary Fault
Metamorphic
Sedimentary
Igneous
NOTE:
(a) State Plane, Zone V (NAD83), US Survey Feet.
(b) Source Data: ESRI, TTBC.
FIGURE 4.6-1
REGIONAL GEOLOGY
0
7.5
15
30
Miles
TETRATECH EC, INC.

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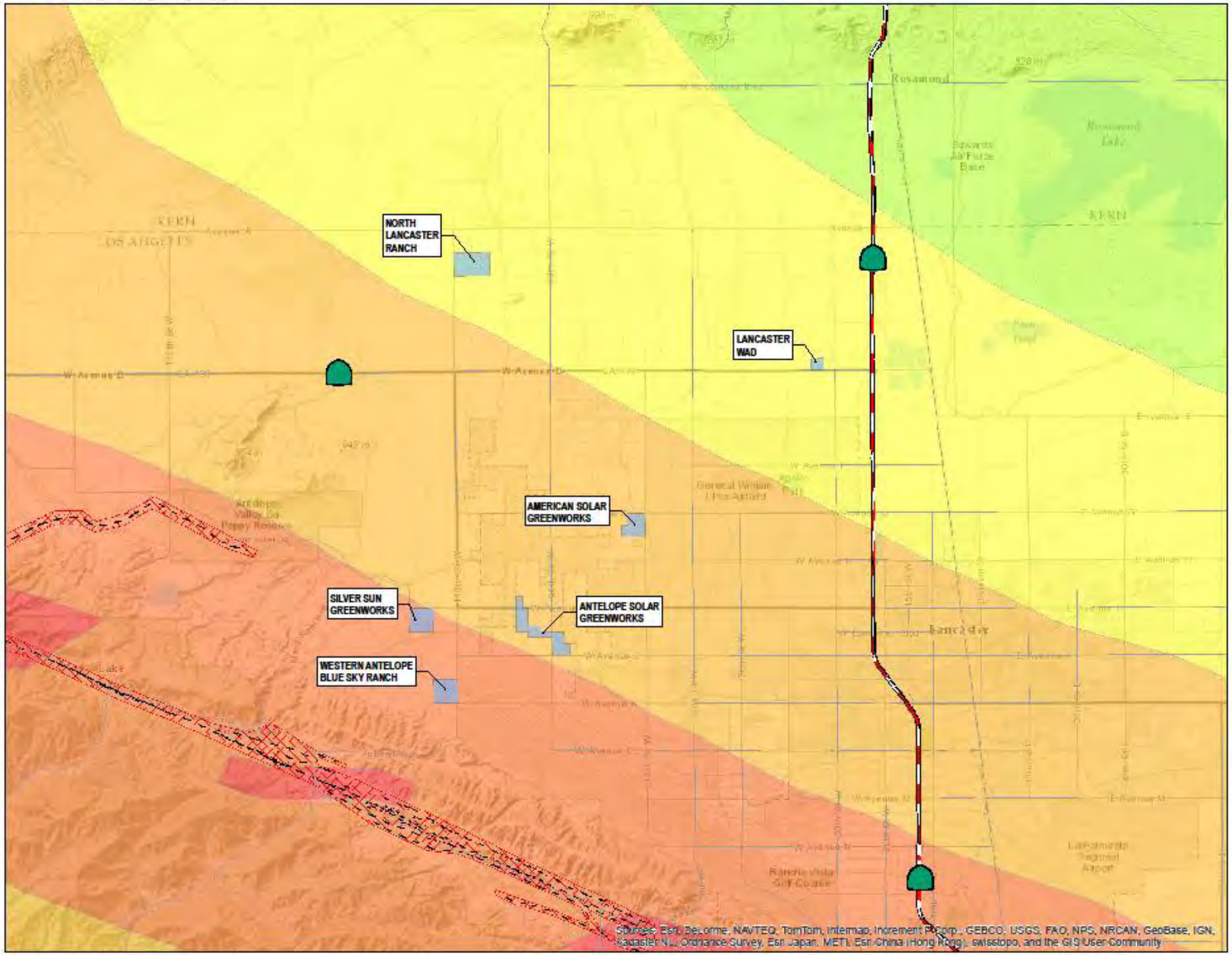

SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

Legend

- Project Site
- Primary Limited Access or Interstate
- Secondary State and County Highway
- Quaternary Fault
- Fault-Rupture Hazard Zone

Peak Acceleration (%g) with 10% Probability of Exceedance in 50 Years

- 20-30
- 30-40
- 40-60
- 60-80
- 80-100

NOTE:
(a) State Plane, Zone V (NAD83), US Survey Feet.
(b) Source Data: ESRI, USGS, CA Geologic Survey, TTEC.

FIGURE 4.6-2
GEOLOGIC HAZARDS

0 1 2 4
Miles

TETRA TECH EC, INC.

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A more detailed ground motion analysis based on the maximum allowed ground motion considered for the International Building Code, section 1615 (2009) was calculated using the USGS ground motion parameter calculator (USGS 2012). Also, according to the California Building Code (CBC), spectral accelerations for short period waves (Ss) and spectral accelerations for 1-second period waves (S1) were determined for the Projects and are used for estimates of the acceleration that structures and facilities will be designed to withstand. Ss and S1 values were calculated for very dense soils and soft rock (Class C) and stiff soils (Class D). Spectral accelerations ranged between 0.075 and 1.812 percent gravity as shown in Table 4.6-2.

Table 4.6-2 Spectral Accelerations for the Projects

Project	Latitude (Degrees)	Longitude (Degrees)	Site Class C				Site Class C			
			Ss (g)	S1 (g)	SDs (g)	SD1 (g)	Ss (g)	S1 (g)	SDs (g)	SD1 (g)
1	30.81	-118.32	0.163	0.112	0.109	0.075	0.217	0.159	0.145	0.106
2	34.68	-118.33	1.812	1.173	1.208	0.782	1.812	1.353	1.208	0.902
3	34.74	-118.26	1.5	0.78	1	0.52	1.5	0.9	1	0.6
4	34.69	-118.29	1.567	0.996	1.044	0.664	1.567	1.149	1.044	0.766
5	34.7	-118.34	1.646	1.05	1.098	0.7	1.646	1.212	1.098	0.808
6	34.78	-118.19	1.313	0.78	0.875	0.52	1.313	0.9	0.875	0.6

Source: USGS 2010 Ground Motion Calculator (2009 International Building Code Data Edition)
Notes: (g) - gravity (S1) - 1-second period wave (SD1) - seismic design 1-second wave
(Ss) -short period wave (SDs) - seismic design short wave

Seismicity will affect the site, and structural design of facilities will be required. Further analysis will be required to determine final CBC design requirements.

4.6.2.2.3 Liquefaction and Lateral Spreading

Liquefaction is the phenomenon whereby saturated soils develop high pore water pressures during seismic shaking and lose their strength characteristics. This phenomenon generally occurs in areas of high seismic activity where groundwater is shallow and loose granular soils or hydraulic fill soils are present. Based on the Geotechnical Reports (Tetra Tech 2011, 2012), the Projects are located in areas with groundwater levels 100 feet below ground surface (bgs) and outside zones that require investigation for liquefaction. There is no evidence of the potential for liquefaction or lateral spreading at the proposed sites.

4.6.2.2.4 Landslide and Slope Stability

Slope stability is a function of many factors including slope gradient, water content, rock and soil type, slope aspect, vegetation, seismic conditions, and human activities. Based on the Geotechnical Reports (Tetra Tech 2011, 2012), the Projects are not identified in the CGS Seismic Hazard Zone Map (CGS 2008) as being located in zones of required investigation for earthquake induced landslides. Therefore, the risk for landslides or slope failure at the location of the Projects is considered low to negligible.

4.6.2.2.5 Subsidence and Collapsible Soil

Subsidence is the result of fluid withdrawal from compressible sediments, and may also be triggered by seismic events. The Antelope Valley region has historically undergone a significant amount of subsidence ranging from greater than 6 feet near the City of Lancaster to 1 to 2 feet in and near the locations of the Projects (Sneed and Galloway 2000). Collapsible soils are characterized as alluvial soils in arid and semi-arid environments that are prone to collapse with an increase in moisture content even without an increase in external loads.

4.6.2.2.6 Erodibility and Expansive Soils

The Geotechnical Reports (Tetra Tech 2011, 2012) prepared for the Projects include soil survey maps and physical soil properties reports generated from the NRCS Web Soil Survey (USDA 2011). This information includes erodibility factors and expansive soil ratings.

Erosion is a chemical or physical breakdown and transportation of rock or soil from one place to another. There are two primary types of erosion: water erosion and wind erosion. Water erosion typically occurs during flooding or when there is surface water runoff. The erosion potential of soil is compared using the erosion factor, or the K factor, which indicates the susceptibility of a soil to water erosion. The K factor can range from 0.02 to 0.69, with higher values indicating an increased susceptibility to water erosion.

Wind erosion of soil typically occurs in areas with poor vegetative cover or soil disturbance. Wind erodibility groups ranging from 1 to 8 are used to assess the susceptibility of soil to wind erosion. Soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Expansive soil consists of fine-grained clay which occurs naturally. It is generally found in areas that were historically a floodplain or lake area, but may occur in hillside areas. Expansive soil is subject to swelling and shrinkage, varying in proportion to the amount of moisture present in the soil. Excessive drying and wetting of the soil can progressively deteriorate structures over the years and lead to differential settlement beneath foundations.

Based on the Geotechnical Reports (Tetra Tech 2011, 2012), the soils at the proposed site locations were determined to have a low to high susceptibility to water erosion, a low to medium susceptibility to wind erosion, and a low shrink/swell potential.

4.6.3 Regulatory Setting

Regulations, plans, and standards for management of geologic and seismic hazards have been enacted by federal, state, county, and local government. Federal and state government allows local counties and cities to manage and/or implement many federal and state regulations relating to the construction and operation of facilities. A summary of potentially applicable regulatory programs are presented below.

4.6.3.1 Federal

No applicable regulatory statutes.

4.6.3.2 State

4.6.3.2.1 Earthquake Fault Zoning Act, California PRC 25523(a): 20 CCR § 1252 (b) and (c).

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act) regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture (CGS 1972). The act provides for the adoption and administration of zoning laws, ordinances, rules, and regulations by cities and counties in the implementation of the general plan that is in effect in any city or county. It is intended to provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults. This act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be "sufficiently active" and "well defined" by detailed site-specific geologic explorations in order to determine whether building setbacks should be established.

4.6.3.2.2 Seismic Hazards Mapping Act, California PRC 2695(a): (1) and (3) – (5)

The Seismic Hazards Mapping Act of 1990 (PRC, Chapter 7.8, Division 2) directs the California Geological Survey (CGS) to delineate Seismic Hazard Zones. The purpose of the act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards. Cities, counties, and state agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. The act requires that site-specific geotechnical investigations be performed prior to permitting most urban developments within seismic hazard zones. It addresses the effects of strong ground shaking, liquefaction, landslides, or other ground failure and other seismic hazards caused by earthquakes.

4.6.3.3 Local

Elements of the General Plan for Los Angeles County and the Antelope Valley Areawide General Plan contain certain policies for the avoidance of geotechnical hazards as described below.

4.6.3.3.1 Los Angeles County General Plan

The Safety Element of the Los Angeles County General Plan (LACDRP 1990) provides goals and policies to reduce impacts from seismic and geotechnical hazards. The main policies that are potentially applicable to the Projects are: (1) minimize injury and loss of life, damage, and social, cultural, and economic impacts caused by earthquake hazards, and (2) protect public safety and minimize the social and economic impacts from geotechnical hazards. Proper design of facilities located at the Projects will meet these goals and will be consistent with the Los Angeles Safety Element.

4.6.3.3.2 Antelope Valley Areawide General Plan

The Antelope Valley Areawide General Plan (LACDRP 1986) is a component of the Los Angeles County General Plan and provides policies related to public planning in the Antelope Valley Area, including policies related to seismic and geotechnical hazards. These policies generally include enforcement of construction standards and criteria developed to reduce impacts from seismic design and geotechnical hazards; advocate detailed site evaluations and improved seismic design and construction standards for critical linear system facilities; and programs and practices for dealing with erosion, settlement, and other soil-related hazards. The Projects will be consistent with the policies presented in this document.

4.6.4 Significance Criteria

The potential for the proposed Projects to impact geologic or soil conditions, or to be impacted by geotechnical hazards is based on the CEQA significance criteria as specified by the LACDRP. Potential impacts have been assessed using the criteria from the LACDRP Initial Study Environmental Checklist. The significance criteria are as follows:

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known active fault trace?

b) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

c) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic related ground failure, including liquefaction and lateral spreading?

d) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

e) Would the project result in substantial soil erosion or the loss of topsoil?

f) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

g) Would the project be located on expansive soil?

h) Would the project have soils incapable of adequately supporting the use of onsite wastewater treatment systems where sewers are not available for the disposal of wastewater?

i) Would the project conflict with the Hillside Management Area Ordinance or hillside design standards in the County General Plan Conservation and Open Space Element?

4.6.5 Impact Analysis

The impact analyses in this section were performed by applying the significance criteria from the LACDRP Initial Study Environmental Checklist to applicable baseline data (Section 4.6.6) and the Project 1 – 6 descriptions.

4.6.5.1 Project Impacts: Criterion A – Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known active fault trace?

The Projects were evaluated to determine if people or structures would be exposed to potential hazards as a result of a known earthquake fault. The most recent official and proposed preliminary Alquist-Priolo Earthquake Fault Zone Maps (CGS 2010) were used in association with other available information to assess the potential for surface fault rupture at Projects.

4.6.5.1.1 Project 1 and Gen-tie Line

Construction and Operations Impacts

Project 1 and the Project 1 gen-tie line are not located in an active or potentially active fault zone according to the CGS Seismic Hazard Zone Maps (CGS 2008) and Alquist-Priolo Earthquake Fault Zoning Map (CGS 2010). The closest fault zones are the San Andreas Fault Zone, which is located approximately 10.5 miles to the south southwest of the Project 1 site, and the Garlock Fault Zone, which is located approximately 15.5 miles northwest of the Project 1 site. Based on research and available information, Project 1 is susceptible to seismicity but is not susceptible to fault rupture; therefore, impacts involving the rupture of a known earthquake fault will be less than significant.

4.6.5.1.2 Project 2 and Gen-tie Line

Construction and Operations Impacts

Project 2 and the Project 2 gen-tie line are not located in an active or potentially active fault zone according to the CGS Seismic Hazard Zone Maps (CGS 2008) and Alquist-Priolo Earthquake Fault Zoning Map (CGS 2010). The closest fault zones are the San Andreas Fault Zone, which is located approximately 2 miles to the south southwest of the Project 2 site, and the Garlock Fault Zone, which is located approximately 23 miles northwest of the Project 2 site. Based on research and available information, Project 2 is susceptible to seismicity but is not susceptible to fault rupture; therefore, impacts involving the rupture of a known earthquake fault will be less than significant.

4.6.5.1.3 Project 3 and Gen-tie Line

Construction and Operations Impacts

Project 3 and the Project 3 gen-tie line are not located in an active or potentially active fault zone according to the CGS Seismic Hazard Zone Maps (CGS 2008) and Alquist-Priolo Earthquake Fault Zoning Map (CGS 2010). The closest fault zones are the San Andreas Fault

Zone, which is located approximately 7.25 miles to the south southwest of the Project 3 site, and the Garlock Fault Zone, which is located approximately 20 miles northwest of the Project 3 site. Based on research and available information, Project 3 is susceptible to seismicity but is not susceptible to fault rupture; therefore, impacts involving the rupture of a known earthquake fault will be less than significant.

4.6.5.1.4 Project 4 and Gen-tie Line

Construction and Operations Impacts

Project 4 and the Project 4 gen-tie line are not located in an active or potentially active fault zone according to the CGS Seismic Hazard Zone Maps (CGS 2008) and Alquist-Priolo Earthquake Fault Zoning Map (CGS 2010). The closest fault zones are the San Andreas Fault Zone, which is located approximately 4.2 miles to the south southwest of the Project 4 site, and the Garlock Fault Zone, which is located approximately 20 miles northwest of the Project 4 site. Based on research and available information, Project 4 is susceptible to seismicity but is not susceptible to fault rupture; therefore, impacts involving the rupture of a known earthquake fault will be less than significant.

4.6.5.1.5 Project 5 and Gen-tie Line

Construction and Operations Impacts

Project 5 and the Project 5 gen-tie line are not located in an active or potentially active fault zone according to the CGS Seismic Hazard Zone Maps (CGS 2008) and Alquist-Priolo Earthquake Fault Zoning Map (CGS 2010). The closest fault zones are the San Andreas Fault Zone, which is located approximately 3.1 miles to the south southwest of the Project 5 site, and the Garlock Fault Zone, which is located approximately 20 miles northwest of the Project 5 site. Based on research and available information, Project 5 is susceptible to seismicity but is not susceptible to fault rupture; therefore, impacts involving the rupture of a known earthquake fault will be less than significant.

4.6.5.1.6 Project 6 and Gen-tie Line

Construction and Operations Impacts

Project 6 and the Project 6 gen-tie line are not located in an active or potentially active fault zone according to the CGS Seismic Hazard Zone Maps (CGS 2008) and Alquist-Priolo Earthquake Fault Zoning Map (CGS 2010). The closest fault zones are the San Andreas Fault Zone, which is located approximately 12 miles to the south southwest of the Project 6 site, and the Garlock Fault Zone, which is located approximately 20 miles northwest of the Project 6 site. Based on research and available information, Project 6 is susceptible to seismicity but is not susceptible to fault rupture; therefore, impacts involving the rupture of a known earthquake fault will be less than significant.

4.6.5.2 Project Impacts: Criterion B – Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

The Projects were evaluated to determine if people or structures would be exposed to potential hazards as a result of seismicity or ground shaking. USGS Seismic Hazard Maps, ground motion analysis using the USGS Ground Motion Parameter Calculator, and historically recorded seismic events (earthquakes) within 62 miles (100 km) were used to assess ground shaking hazards at the Projects. The Projects would include ground mounted solar and electrical facilities but would not not include occupancy structures.

4.6.5.2.1 Project 1 and Gen-tie Line

Construction Impacts

The USGS National Seismic Hazard Map (2008) indicates that Project 1 and the Project 1 gen-tie line are located in an area mapped from 30 to 40 percent gravity for peak horizontal acceleration with a 10 percent probability of exceedance in the next 50 years. According to the USGS, and dependent on structural design, 10 percent gravity is the lower threshold at which damages to structures are likely to occur. Based on geologic and soil conditions at the site, the USGS Ground Motion Parameter Calculator indicates that Project 1 facilities will need to be designed to sustain spectral accelerations of approximately 0.075 to 0.217 percent gravity (USGS 2012).

Project 1 has the potential to be subjected to ground motion during the construction of the facility. However, because of the temporary nature of the construction period relative to the frequency of occurrence of significant seismic events, the potential for Project 1 construction to expose people or structures to substantially adverse effects due to seismicity and ground motion will be less than significant.

Operations Impacts

During operation of the facility, Project 1 and the Project 1 gen-tie line have significant potential to be subjected to strong ground motion. All Project 1 structures and operational facilities will be designed in accordance with the CBC and applicable industry standards. The design and construction of the Project would comply with all applicable building codes and standards established by regulatory agencies including the Los Angeles County Department of Public Works and the CBC. Therefore, the Project's seismic shaking and strong ground motion hazards would result in a less than significant level.

4.6.5.2.2 Project 2 and Gen-tie Line

Construction Impacts

The USGS National Seismic Hazard Map (2008) indicates that Project 2 and the Project 2 gen-tie line are located in an area mapped from 60 to 80 percent gravity for peak horizontal acceleration with a 10 percent probability of exceedance in the next 50 years. According to the USGS, and dependent on structural design, 10 percent gravity is the lower threshold at which damages to structures are likely to occur. Based on geologic and soil conditions at the site, the

USGS Ground Motion Parameter Calculator indicates that Project 2 facilities will need to be designed to sustain spectral accelerations of approximately 0.782 to 1.812 percent gravity (USGS 2012).

Project 2 has the potential to be subjected to ground motion during the construction of the facility. However, because of the temporary nature of the construction period relative to the frequency of occurrence of significant seismic events, the potential for Project 2 construction to expose people or structures to substantially adverse effects due to seismicity and ground motion will be less than significant.

Operations Impacts

During operation of the facility, Project 2 and the Project 2 gen-tie line have significant potential to be subjected to strong ground motion. All Project 2 structures and operational facilities will be designed in accordance with the CBC and applicable industry standards. The design and construction of the Project would comply with all applicable building codes and standards established by regulatory agencies including the Los Angeles County Department of Public Works and the CBC. Therefore, will reduce seismic shaking and strong ground motion hazards to a less than significant level.

4.6.5.2.3 Project 3 and Gen-tie Line

Construction Impacts

The USGS National Seismic Hazard Map (2008) indicates that Project 3 and the Project 3 gen-tie line are located in an area mapped from 40 to 60 percent gravity for peak horizontal acceleration with a 10 percent probability of exceedance in the next 50 years. According to the USGS, and dependent on structural design, 10 percent gravity is the lower threshold at which damages to structures are likely to occur. Based on geologic and soil conditions at the site, the USGS Ground Motion Parameter Calculator indicates that Project 3 facilities will need to be designed to sustain spectral accelerations of approximately 0.52 to 1.5 percent gravity (USGS 2012).

Project 3 has the potential to be subjected to ground motion during the construction of the facility. However, because of the temporary nature of the construction period relative to the frequency of occurrence of significant seismic events, the potential for Project 3 construction to expose people or structures to substantially adverse effects due to seismicity and ground motion will be less than significant.

Operations Impacts

During operation of the facility, Project 3 and the Project 3 gen-tie line have significant potential to be subjected to strong ground motion. All Project 3 structures and operational facilities will be designed in accordance with the CBC and applicable industry standards. The design and construction of the Project would comply with all applicable building codes and standards established by regulatory agencies including the Los Angeles County Department of Public Works and the CBC. Therefore, the Project's seismic shaking and strong ground motion hazards would result in a less than significant level.

4.6.5.2.4 Project 4 and Gen-tie Line

Construction Impacts

The USGS National Seismic Hazard Map (2008) indicates that Project 4 and the Project 4 gen-tie line are located in an area mapped from 40 to 60 percent gravity for peak horizontal acceleration with a 10 percent probability of exceedance in the next 50 years. According to the USGS, and dependent on structural design, 10 percent gravity is the lower threshold at which damages to structures are likely to occur. Based on geologic and soil conditions at the site, the USGS Ground Motion Parameter Calculator indicates that Project 4 facilities will need to be designed to sustain spectral accelerations of approximately 0.664 to 1.567 percent gravity (USGS 2012).

Project 4 has the potential to be subjected to ground motion during the construction of the facility. However, because of the temporary nature of the construction period relative to the frequency of occurrence of significant seismic events, the potential for Project 4 construction to expose people or structures to substantially adverse effects due to seismicity and ground motion will be less than significant.

Operations Impacts

During operation of the facility, Project 4 and the Project 4 gen-tie line have significant potential to be subjected to strong ground motion. All Project 4 structures and operational facilities will be designed in accordance with the CBC and applicable industry standards. The design and construction of the Project would comply with all applicable building codes and standards established by regulatory agencies including the Los Angeles County Department of Public Works and the CBC. Therefore, the Project's seismic shaking and strong ground motion hazards would result in a less than significant level.

4.6.5.2.5 Project 5 and Gen-tie Line

Construction Impacts

The USGS National Seismic Hazard Map (2008) indicates that Project 5 and the Project 5 gen-tie line are located in an area mapped from 60 to 80 percent gravity for peak horizontal acceleration with a 10 percent probability of exceedance in the next 50 years. According to the USGS, and dependent on structural design, 10 percent gravity is the lower threshold at which damages to structures are likely to occur. Based on geologic and soil conditions at the site, the USGS Ground Motion Parameter Calculator indicates that Project 5 facilities will need to be designed to sustain spectral accelerations of approximately 0.7 to 1.646 percent gravity (USGS 2012).

Project 5 has the potential to be subjected to ground motion during the construction of the facility. However, because of the temporary nature of the construction period relative to the frequency of occurrence of significant seismic events, the potential for Project 5 construction to expose people or structures to substantially adverse effects due to seismicity and ground motion will be less than significant.

Operations Impacts

During operation of the facility, Project 5 and the Project 5 gen-tie line have significant potential to be subjected to strong ground motion. All Project 5 structures and operational facilities will be designed in accordance with the CBC and applicable industry standards. The design and construction of the Project would comply with all applicable building codes and standards established by regulatory agencies including the Los Angeles County Department of Public Works and the CBC. Therefore, the Project's seismic shaking and strong ground motion hazards would result in a less than significant level.

4.6.5.2.6 Project 6 and Gen-tie Line

Construction Impacts

The USGS National Seismic Hazard Map (2008) indicates that Project 6 and the Project 6 gen-tie line are located in an area mapped from 30 to 40 percent gravity for peak horizontal acceleration with a 10 percent probability of exceedance in the next 50 years. According to the USGS, and dependent on structural design, 10 percent gravity is the lower threshold at which damages to structures are likely to occur. Based on geologic and soil conditions at the site, the USGS Ground Motion Parameter Calculator indicates that Project 6 facilities will need to be designed to sustain spectral accelerations of approximately 0.52 to 1.313 percent gravity (USGS 2012).

Project 6 has the potential to be subjected to ground motion during the construction of the facility. However, because of the temporary nature of the construction period relative to the frequency of occurrence of significant seismic events, the potential for Project 6 construction to expose people or structures to substantially adverse effects due to seismicity and ground motion will be less than significant.

Operations Impacts

During operation of the facility, Project 6 and the Project 6 gen-tie line have significant potential to be subjected to strong ground motion. All Project 6 structures and operational facilities will be designed in accordance with the CBC and applicable industry standards. The design and construction of the Project would comply with all applicable building codes and standards established by regulatory agencies including the Los Angeles County Department of Public Works and the CBC. Therefore, the Project's seismic shaking and strong ground motion hazards would result in a less than significant level.

4.6.5.3 Project Impacts: Criterion C – Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic related ground failure, including liquefaction and lateral spreading?

The Projects were evaluated to determine if people or structures would be exposed to potential hazards as a result of ground failure. Ground failure is typically caused by liquefaction which is the phenomenon whereby saturated soils develop high pore water pressures during seismic shaking and lose their strength characteristics. This phenomenon generally occurs in areas of

high seismic activity, where groundwater is shallow and loose granular soils or hydraulic fill soils are present.

4.6.5.3.1 Project 1 and Gen-tie Line

Construction and Operations Impacts

The CGS Seismic Hazard Zone Map (CGS 2008) does not identify Project 1 or the Project 1 gen-tie line as being located in zones with the potential for liquefaction or ground failure. Additionally, Project 1 is located on poorly sorted coarse grained materials with groundwater typically greater than 150 bgs (USGS 2008). Based on available geologic information, the potential susceptibility of ground failure is less than significant for Project 1 construction and operation.

4.6.5.3.2 Projects 2, 3, 4 and 5 and Gen-tie Lines

Construction and Operations Impacts

The CGS Seismic Hazard Zone Map (CGS 2008) does not identify Projects 2 – 5 (or gen-tie lines) as being located in zones with the potential for liquefaction or ground failure. Additionally, Projects 2 – 5 are located on poorly sorted coarse grained materials with groundwater typically greater than 100 feet bgs (USGS 2008). Based on available geologic information, the potential susceptibility of ground failure is less than significant for Projects 2 – 5 construction and operation.

4.6.5.3.3 Project 6 and Gen-tie Line

Construction and Operations Impacts

The CGS Seismic Hazard Zone Map (CGS 2008) does not identify Project 6 or the Project 6 gen-tie line as being located in zones with the potential for liquefaction or ground failure. Project 6 is located on loose sand and silt deposits in the upper 40 feet of the stratigraphic section which may be susceptible to liquefaction when saturated; however, groundwater levels have remained below 100 feet bgs (USGS 2008) for approximately 60 years. Based on available geologic information, the potential susceptibility of ground failure is less than significant for Project 6 construction and operation.

4.6.5.4 Project Impacts: Criterion D – Would the Projects expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The Projects were evaluated to determine if people or structures would be exposed to potential landslide hazards. Landslide potential was evaluated at each Project based on ground surface gradient, landslide hazard maps, and historical evidence.

4.6.5.4.1 Projects 1, 3, 4 and 6 and Gen-tie Lines

Construction and Operations Impacts

The location of Projects 1, 3, 4, and 6 (and associated gen-tie lines) contain generally low slopes of less than 1 percent gradient. As indicated in the Project description, development of the solar facility would not result in significant changes to existing site grades, and would not increase the susceptibility to slope failure. Additionally, the CGS Seismic Hazard Zone Map (CGS 2008) does not identify Projects 1, 3, 4, and 6 as being located in zones susceptible to landslides or slope failure. Therefore, the potential susceptibility for slope failure and landslides during construction and operation is less than significant for Projects 1, 3, 4, and 6.

4.6.5.4.2 Project 2 and Gen-tie Line

Construction and Operations Impacts

The location of Project 2 and the Project 2 gen-tie line includes sloped sections; however, Project 2 development will be constrained to areas consisting of less than 20 percent gradients, with the majority of development occurring in areas with slopes ranging from flat to 5 percent. As indicated in the Project description, development of the solar facility will not result in significant changes to existing site grades, and will not increase the susceptibility to slope failure. Additionally, the CGS Seismic Hazard Zone Map (CGS 2008) does not identify Project 2 as being located in zones susceptible to landslides or slope failure. Therefore, the potential susceptibility for slope failure and landslides during construction and operation is less than significant for Project 2.

4.6.5.4.3 Project 5 and Gen-tie Line

The location of Project 5 and the Project 5 gen-tie line contains generally low slopes of 1 to 2 percent gradient. As indicated in the Project description, development of the solar facility will not result in significant changes to existing site grades, and will not increase the susceptibility to slope failure. Additionally, the CGS Seismic Hazard Zone Map (CGS 2008) does not identify Project 5 as being located in zones susceptible to landslides or slope failure. Therefore, the potential susceptibility for slope failure and landslides during construction and operation is less than significant for Project 5.

4.6.5.5 Project Impacts: Criterion E – Would the Projects result in substantial soil erosion or the loss of topsoil?

The Projects were evaluated to determine if construction or operation would result in substantial soil erosion or the loss of topsoil. Erosion is a chemical or physical breakdown and transportation of rock or soil from one place to another. There are two primary types of erosion: water erosion and wind erosion. The Geotechnical Reports (Tetra Tech 2011, 2012) prepared for the Projects include soil survey maps and physical soils properties reports generated from the NRCS Web Soil Survey (USDA 2011). Both geologic and soil data were evaluated to determine the potential for soil erosion due to water or wind erosion.

Water erosion typically occurs during flooding or when there is surface water runoff. The erosion potential of soil is compared using the erosion factor, or the K factor, which indicates the

susceptibility of a soil to water erosion. The K factor can range from 0.02 to 0.69, with higher values indicating an increased susceptibility to water erosion.

Wind erosion of soil typically occurs in areas with poor vegetative cover or soil disturbance. Wind erodibility groups ranging from 1 to 8 are used to assess the susceptibility of soil to wind erosion. Soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

4.6.5.5.1 Project 1 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 1 and the Project 1 gen-tie was indicated to be Rosamond fine sandy loam. This soil series has an erosion factor of 0.32 to 0.37, indicating a medium susceptibility to water erosion, and a wind erodibility group of 3, indicating a low to medium susceptibility to wind erosion. Implementation of appropriate erosion and sediment control BMPs will be implemented during construction and operation of Project 1, as outlined in Hydrology Section 4.9 and Air Quality Section 4.3, and will mitigate potential impacts to less than significant levels.

4.6.5.5.2 Project 2 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 2 and the Project 2 gen-tie line include Greenfield sandy loam, Hanford coarse sandy loam, Hesperia fine sandy loam, Ramona coarse sandy loam, and terrace escarpments. These soil series have an erosion factor of 0.15 to 0.28, indicating a low to medium susceptibility to water erosion, and a wind erodibility group of 3, indicating a low to medium susceptibility to wind erosion. Implementation of appropriate erosion and sediment control BMPs will be implemented during construction and operation of Project 2, as outlined in Hydrology Section 4.9 and Air Quality Section 4.3, and will mitigate potential impacts to less than significant levels.

4.6.5.5.3 Project 3 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 3 and the Project 3 gen-tie line was indicated to be Hesperia fine sandy loam. This soil series has an erosion factor of 0.28 to 0.32, indicating a low to medium susceptibility to water erosion, and a wind erodibility group of 3, indicating a low to medium susceptibility to wind erosion. Implementation of appropriate erosion and sediment control BMPs will be implemented during construction and operation of Project 3, as outlined in Hydrology Section 4.9 and Air Quality Section 4.3, and will mitigate potential impacts to less than significant levels.

4.6.5.5.4 Project 4 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 4 and the Project 4 gen-tie line include Greenfield sandy loam, Sunrise sandy loam, Ramona coarse sandy loam, and Hesperia sandy loam. These soil series have an erosion factor of 0.24 to 0.32, indicating a low to medium susceptibility to water erosion, and a wind erodibility group of 3, indicating a low to medium susceptibility to wind erosion. Implementation of appropriate erosion and sediment control BMPs will be implemented during construction and operation of Project 4, as outlined in Hydrology Section 4.9 and Air Quality Section 4.3, and will mitigate potential impacts to less than significant levels.

4.6.5.5.5 Project 5 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 5 and the Project 5 gen-tie line include Greenfield sandy loam and Ramona coarse sandy loam. These soil series have an erosion factor of 0.24 to 0.28, indicating a medium susceptibility to water erosion, and a wind erodibility group of 3, indicating a low to medium susceptibility to wind erosion. Implementation of appropriate erosion and sediment control BMPs will be implemented during construction and operation of Project 5, as outlined in Hydrology Section 4.9 and Air Quality Section 4.3, and will mitigate potential impacts to less than significant levels.

4.6.5.5.6 Project 6 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 6 and the Project 6 gen-tie line was indicated to be the Pod-Oban complex. This soil series has an erosion factor of 0.20 to 0.55, indicating a medium to high susceptibility to water erosion, and a wind erodibility group of 3, indicating a low to medium susceptibility to wind erosion. Implementation of appropriate erosion and sediment control will be implemented during construction and operation of Project 6, as outlined in Hydrology Section 4.9 and Air Quality Section 4.3, and will mitigate potential impacts to less than significant levels.

4.6.5.6 Project Impacts: Criterion F – Would the Projects be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

4.6.5.6.1 Project 1 and Gen-tie Line

Construction and Operations Impacts

Based on the information in the Geotechnical Critical Issues Analyses and Custom Soil Resource Reports prepared by Tetra Tech (Tetra Tech 2011, 2012), the location of Project 1 and the Project 1 gen-tie line contains generally low gradient slopes. Development of solar facilities will not result in significant changes to existing site grades, and will not increase the

susceptibility to slope failure. Additionally, the CGS Seismic Hazard Zone Map (CGS 2008) indicates that Project 1 is not susceptible to landslide or liquefaction hazards.

Although subsidence has occurred throughout the Antelope Valley, the majority of subsidence has been concentrated near the City of Lancaster and was caused by excessive groundwater pumping and decreased water levels. Subsidence in the vicinity of Project 1 was between 0 to 2 feet from 1930 to 1992 (Sneed and Galloway 2000). Surficial evidence such as fissures and differential settling has not been observed at or near the location of Project 1. Based on historic rates of subsidence and a relatively stabilizing water level due to reduced pumping and proposed aquifer management, future subsidence is expected to be minimal. In the event that minor future subsidence does occur, the potential impact to the proposed structural design (post mounted racking systems and relatively small foundations for electrical equipment) would be minimal.

Based on geologic data and the proposed construction and operation as described in the Project description, Project 1 impacts to on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse will be less than significant.

4.6.5.6.2 Project 2 and Gen-tie Line

Construction and Operations Impacts

Based on the information in the Geotechnical Critical Issues Analyses and Custom Soil Resource Reports prepared by Tetra Tech (Tetra Tech 2011, 2012), the location of Project 2 and the Project 2 gen-tie line contains mostly low gradient slopes and rolling hills. Development of solar facilities will not result in significant changes to existing site grades, and will not increase the susceptibility to slope failure. Additionally, the CGS Seismic Hazard Zone Map (CGS 2008) indicates that Project 2 is not susceptible to landslide or liquefaction hazards.

Although subsidence has occurred throughout the Antelope Valley, the majority of subsidence has been concentrated near the City of Lancaster and was caused by excessive groundwater pumping and decreased water levels. Subsidence did not occur in the vicinity of Project 2 from 1930 to 1992 (Sneed and Galloway 2000) and there has been no surficial evidence such as fissures and differential settling near the Project 2 location. Based on historic rates of subsidence and a relatively stabilizing water level due to reduced pumping and proposed aquifer management, future subsidence is expected to negligible in the vicinity of the Project.

Based on geologic data and the proposed construction and operation as described in the Project description, Project 2 would not significantly contribute to or be impacted by the potential for landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, impacts to on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse will be less than significant.

4.6.5.6.3 Projects 3 and 6 and Gen-tie Lines

Construction and Operations Impacts

Based on the information in the Geotechnical Critical Issues Analyses and Custom Soil Resource Reports prepared by Tetra Tech (Tetra Tech 2011, 2012), the location of Projects 3 and 6 (and gen-tie lines) contains generally low gradient slopes. Development of solar facilities will not result in significant changes to existing site grades, and will not increase the susceptibility to slope failure. Additionally, the CGS Seismic Hazard Zone Map (CGS 2008) indicates that Projects 3 and 6 are not susceptible to landslide or liquefaction hazards.

Although subsidence has occurred throughout the Antelope Valley, the majority of subsidence has been concentrated near the City of Lancaster and was caused by excessive groundwater pumping and decreased water levels. Subsidence in the vicinity of Projects 3 and 6 was between 2 to 3 feet from 1930 to 1992 (Sneed and Galloway 2000). Surficial evidence such as fissures and differential settling has not been observed at or near the location of Projects 3 and 6. Based on historic rates of subsidence and a relatively stabilizing water level due to reduced pumping and proposed aquifer management, future subsidence is expected to be minimal. In the event that minor future subsidence does occur, the potential impact to the proposed structural design (post mounted racking systems and relatively small foundations for electrical equipment) would be minimal.

Based on geologic data and the proposed construction and operation as described in the Project description, Projects 3 and 6 would not significantly contribute to or be impacted by the potential for landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, impacts to on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse will be less than significant.

4.6.5.6.4 Projects 4 and 5 and Gen-tie Lines

Construction and Operations Impacts

Based on the information in the Geotechnical Critical Issues Analyses and Custom Soil Resource Reports prepared by Tetra Tech (Tetra Tech 2011, 2012), the location of Projects 4 and 5 (and gen-tie lines) contains generally low gradient slopes. Development of solar facilities will not result in significant changes to existing site grades, and will not increase the susceptibility to slope failure. Additionally, the CGS Seismic Hazard Zone Map (CGS 2008) indicates that Projects 4 and 5 are not susceptible to landslide or liquefaction hazards.

Although subsidence has occurred throughout the Antelope Valley, the majority of subsidence has been concentrated near the City of Lancaster and was caused by excessive groundwater pumping and decreased water levels. Subsidence in the vicinity of Projects 4 and 5 was between 0 to 3 feet from 1930 to 1992 (Sneed and Galloway 2000). Surficial evidence such as fissures and differential settling has not been observed at or near the location of Projects 4 and 5. Based on historic rates of subsidence and a relatively stabilizing water level due to reduced pumping and proposed aquifer management, future subsidence is expected to be minimal. In the event that minor future subsidence does occur, the potential impact to the proposed

structural design (post mounted racking systems and relatively small foundations for electrical equipment) would be minimal.

Based on geologic data and the proposed construction and operation as described in the Project description, Projects 4 and 5 would not significantly contribute to or be impacted by the potential for landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore impacts to on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse will be less than significant.

4.6.5.7 Project Impacts: Criterion G – Would the Projects be located on expansive soil?

The Geotechnical Reports (Tetra Tech 2011, 2012) prepared for the Projects include soil survey maps and physical soils properties reports generated from the NRCS Web Soil Survey (USDA 2011). This information includes expansive soil ratings.

Expansive soil consists of fine-grained clay which occurs naturally. It is generally found in areas that were historically a floodplain or lake area, but may occur in hillside areas. Expansive soil is subject to swelling and shrinkage, varying in proportion to the amount of moisture present in the soil. Excessive drying and wetting of the soil can progressively deteriorate structures over the years and lead to differential settlement beneath foundations.

4.6.5.7.1 Project 1 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 1 and the Project 1 gen-tie line was indicated to be Rosamond fine sandy loam. This soil series is rated for a low shrink/swell potential. The potential for expansive soils to affect Project 1 is less than significant.

4.6.5.7.2 Project 2 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 2 and the Project 2 gen-tie line include Greenfield sandy loam, Hanford coarse sandy loam, Hesperia fine sandy loam, Ramona coarse sandy loam, and terrace escarpments. These soil series are rated for a low shrink/swell potential. The potential for expansive soils to affect Project 2 is less than significant.

4.6.5.7.3 Project 3 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 3 and the Project 3 gen-tie line was indicated to be Hesperia fine sandy loam. This soil series is rated for a low shrink/swell potential. The potential for expansive soils to affect Project 3 is less than significant.

4.6.5.7.4 Project 4 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 4 and the Project 4 gen-tie line include Greenfield sandy loam, Sunrise sandy loam, Ramona coarse sandy loam, and Hesperia sandy loam. These soil series are rated for a low shrink/swell potential. The potential for expansive soils to affect Project 4 is less than significant.

4.6.5.7.5 Project 5 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 5 and the Project 5 gen-tie line include Greenfield sandy loam and Ramona coarse sandy loam. These soil series are rated for a low shrink/swell potential. The potential for expansive soils to affect Project 5 is less than significant.

4.6.5.7.6 Project 6 and Gen-tie Line

Construction and Operations Impacts

The soil series at the location of Project 6 and the Project 6 gen-tie line was indicated to be the Pod-Oban complex. This soil series is rated for a low shrink/swell potential. The potential for expansive soils to affect Project 6 is less than significant.

4.6.5.8 Project Impacts: Criterion H – Would the Projects have soils incapable of adequately supporting the use of onsite wastewater treatment systems where sewers are not available for the disposal of wastewater?

4.6.5.8.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations

Projects 1 – 6 (and gen-tie lines) do not propose the use of any sanitary facilities that will require septic tanks or sanitary wastewater disposal during either construction or operation. Therefore, no impact will occur.

4.6.5.9 Project Impacts: Criterion I – Would the Projects conflict with the Hillside Management Area Ordinance or hillside design standards in the County General Plan Conservation and Open Space Element?

4.6.5.9.1 Project 1, 3, 4, 5 and 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1, 3, 4, 5 and 6 (and gen-tie lines) are located on the floor of the Antelope Valley where the terrain is nearly flat. Projects 1, 3, 4, 5 and 6 are not in the hillside area and are not affected by Hillside Management Areas. Therefore, no impact will occur.

4.6.5.9.2 Project 2 and Gen-tie Line

Construction and Operations Impacts

Project 2 and the Project 2 gen-tie line are located on rolling hills near the floor of the Antelope Valley. Project 2 is not in the hillside area and is not affected by Hillside Management Areas. Therefore, no impact will occur.

4.6.6 Mitigation Measures

No mitigation measures are required for Geology and Soils. See applicable mitigation measures described in Section 4.3 and Section 4.9 of this EIR.

4.6.6.1 Level of Significance After Mitigation

No mitigation measures are required for Geology and Soils. The construction and operation of the Projects will have less than significant impacts associated with geotechnical and soils hazards.

4.6.7 Cumulative Impacts

There are 29 cumulative projects within a 5-mile radius of the Projects, amounting to 20,909 acres of development including Projects 1 – 6 (see Table 3-7). For the purposes of this cumulative analysis, the worst case scenario is assumed, i.e., all cumulative projects would be constructed at the same time.

It is assumed that construction of all of the cumulative projects would comply with all applicable LORS and that geotechnical studies would be performed to assess and mitigate any geotechnical hazards associated with them; therefore the cumulative projects would not expose people or structures to potential substantial adverse effects. It is also assumed that the cumulative projects would comply with all applicable erosion control and stormwater management LORS, therefore the construction of the cumulative projects would not contribute to cumulative soil erosion or loss of topsoil.

Proposed Projects 1 – 6 would not expose the public to adverse affects from strong seismic ground shaking because the projects would be contained within a secure fenced area at each location and not open to the public. The potential for injury to workers is also quite low as they will not be on-site the majority of the time, and the likelihood that a seismic event would occur when workers are present is quite small. The projects would also not result in significant soil erosion because the design and construction of the Projects' facilities would comply with all applicable building codes and standards established by regulatory agencies, including Los Angeles County Department of Public Works and the CBC. The proposed Projects 1 – 6 would therefore not contribute incrementally to cumulative impacts resulting from other development within the 5-mile radius.

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4.7 GREENHOUSE GAS AND CLIMATE CHANGE

4.7.1 Introduction

This section addresses greenhouse gas (GHG) emissions generated by construction and operations of Applicant's Projects 1 – 6. The analysis also addresses the potential impacts of the six proposed Projects, their short-term construction and long-term operations, and the potential impacts to global climate change. The analysis also addresses the consistency of the proposed Projects with the policies and goals set forth by Los Angeles County and the Antelope Valley Air Quality Management District (AVAQMD). The analysis of Project-generated air emissions focuses on whether the proposed Projects would cause a significant impact to global climate change. It also describes the impacts on GHG emissions that would result from implementation of the Projects, and mitigation measures that would reduce these impacts. Technical data utilized in this section are included as Appendix B-2 of this EIR.

The Projects are located in the northern portion of unincorporated Los Angeles County, in the western portion of Antelope Valley. Silverado proposes to develop six Project sites, which cover a total of 987.10 acres and would produce a maximum of 172 megawatts (MW) of solar power in total. The Projects are located on rural land west of the Sierra Highway 138. A majority of the Projects are located on unproductive farmland that is no longer used for farming.

4.7.2 Environmental Setting

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and our predictive capabilities are advancing. However, significant scientific uncertainties remain, for example, in predictions of local effects of climate change, occurrence of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of Earth's climate system, the uncertainty surrounding climate change may never be completely eliminated. There continues to be significant debate regarding the extent to which increased concentrations of GHGs have caused or will cause climate change and with respect to the appropriate actions to limit and/or respond to climate change. In addition, it is impossible to label a single development project as the cause of future specific climate change impacts.

The Intergovernmental Panel on Climate Change (IPCC), in its Fourth Assessment Report (FAR), stated that "it is likely that there has been significant anthropogenic (human-related) warming over the past 50 years." However, it is impossible to identify a single development project as the cause of future specific climate change impacts due to the global nature of climate change. Also in the FAR, the IPCC holds that the impacts of future climate change will vary across regions, which also affects development projects.

According to the California Air Resources Board (CARB), potential impacts of global warming in California may cause increases in snow pack loss, sea level, extreme heat days per year, high ozone days, large forest fires, and drought years (CARB 2007). Below is a summary of numerous studies that include some of the potential effects that could be experienced in California as a result of global warming and climate change:

4.7.2.1 Air Quality

Higher temperatures, conducive to the formation of air pollution, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone (O_3), but the magnitude of the direct and indirect effects is uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which would further worsen air quality. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (California Energy Commission [CEC] 2006). However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the associated pollution.

4.7.2.2 Water Supply

Studies have found that, "considerable uncertainty about precise impacts of climate change on California hydrology and water resources will remain until we have more precise and consistent information about how precipitation patterns, timing, and intensity will change." (Kiparsky et al., 2003). For example, some studies identify little change in total annual precipitation in projections for California (California Climate Change Center [CCCC] 2006). Other studies show significantly more precipitation (California Department of Water Resources [DWR] 2006). Even assuming that climate change leads to long-term increases in precipitation, analysis of the impact of climate change is further complicated by the fact that no studies have identified or quantified the runoff impacts that an increase in precipitation would have in particular watersheds (CCCC 2006). Also, little is known about how groundwater recharge and water quality will be affected (Id.). Higher rainfall could lead to greater groundwater recharge, although reductions in spring runoff and higher evapotranspiration could reduce the amount of water available for recharge (CCCC 2006).

The California Department of Water Resources (DWR 2006) report on climate change and the effects on the State Water Project (SWP), the Central Valley Project, and the Sacramento-San Joaquin Delta concludes that "[c]limate change will likely have a significant effect on California's future water resources . . . [and] future water demand." It also reports that "much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain" (DWR 2006). The relationship between climate change and its potential effect on water demand is not well understood (DWR 2006). DWR adds that "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future." Nevertheless, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (Kiparsky 2003; DWR 2005; Cayan 2006, Cayan et al., 2006).

4.7.2.3 Hydrology

As discussed above, climate changes could potentially affect the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding;

coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion which could jeopardize California's water supply. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

4.7.2.4 Agriculture

California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. Higher carbon dioxide (CO_2) levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase and crop-yield could be threatened by a less reliable water supply. Also, greater ozone pollution could increase plants susceptibility to pest and disease outbreaks. Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, thus affecting their quality (CCCC 2006).

4.7.2.5 Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists expect that the average global surface temperature could rise between 1.0 - 4.5°F (0.6 - 2.5°C) within the next 50 years and 2.2 - 10°F (1.4 - 5.8°C) within the next century, with significant regional variation (EPA 2000). Soil moisture is likely to decline in many regions, and intense rainstorms could become more frequent. Sea level could rise as much as 2 feet along most of the Unites States (U.S.) coast. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events, (2) geographic range, (3) species' composition within communities, and (4) ecosystem processes such as carbon cycling and storage (Parmesan and Galbraith 2004).

4.7.2.6 Global Climate Change

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation, and storms. Historical records indicate that global climate changes have occurred in the past due to natural phenomena; however, some data indicate that the current global conditions differ from past climate changes in rate and magnitude. Global climate change attributable to anthropogenic emissions of GHGs is currently one of the most important and widely debated scientific, economic, and political issues in the U.S. and the world. There continues to be significant scientific uncertainty concerning the extent to which increased concentrations of GHGs have caused or will cause climate change, and over the appropriate actions to limit and/or respond to climate change.

GHGs, which result from both natural and anthropogenic activities, are compounds in the earth's atmosphere that play a critical role in determining temperature near the earth's surface. More specifically, these gases allow high-frequency shortwave solar radiation to enter the earth's atmosphere but block some of the low frequency infrared energy from being radiated back from the Earth towards space, resulting in a warming of the atmosphere. GHGs include CO_2, methane (CH_4), O_3, water vapor, nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). CO_2 is the most abundant GHG in the

atmosphere. Forest fires, volcanoes, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions.

4.7.2.7 Regional Context

Worldwide anthropogenic emissions of GHGs were approximately 40,000 million metric tons of CO_2 equivalent ($MMTCO_2e$), including ongoing emissions from industrial and agricultural sources, but excluding emissions from land use changes (i.e., deforestation, biomass decay) (IPCC 2007). Carbon dioxide emissions from fossil fuel use accounts for 56.6 percent of the total emissions of 49,000 $MMTCO_2e$ (inclusive of land use changes) and all CO_2 emissions are 76.7 percent of the total. Methane emissions account for 14.3 percent and N_2O emissions for 7.9 percent (IPCC 2007).

4.7.2.8 Local Area Conditions

Total U.S.-related GHG emissions in 2008 (the latest year available) were 6,958 $MMTCO_2e$ (EPA 2010), or approximately 14 percent of world-wide totals. Overall, total U.S. emissions have risen by 14 percent from 1990 to 2008. However, U.S. emissions decreased by 2.9 percent (211.3 $MMTCO_2e$) from 2007 to 2008, due in large part to the record high costs of fuels that occurred in 2008. Additionally, electricity demand declined in 2008 due in part to a significant increase in the cost of fuels used to generate electricity. The primary GHG emitted by human activities in the United States was CO_2, representing approximately 85.1 percent of total GHG emissions (EPA 2010). The largest source of CO_2, and of overall GHG emissions, was fossil fuel combustion. Methane emissions, which have declined from 1990 levels, resulted primarily from enteric fermentation associated with domestic livestock, decomposition of wastes in landfills, and natural gas systems. Agricultural soil management and mobile source fossil fuel combustion were the major sources of N_2O emissions. The emissions of substitutes for O_3 depleting substances and emissions of HFC-23 (trifluoromethane or CHF_3) during the production of HCFC-22 (chlorodifluoromethane or $CHClF_2$) were the primary contributors to aggregate HFC emissions. Electrical transmission and distribution systems accounted for most SF_6 emissions, while PFC emissions resulted from semiconductor manufacturing and as a by-product of primary aluminum production.

The residential and commercial end-use sectors accounted for 21 percent and 19 percent, respectively, of CO_2 emissions from fossil fuel combustion in 2008 (EPA 2010). Both sectors relied heavily on electricity for meeting energy demands, with 71 and 79 percent, respectively, of their emissions attributable to electricity consumption for lighting, heating, cooling, and operating appliances. The remaining emissions were due to the consumption of natural gas and petroleum for heating and cooking. California is the second largest contributor of GHG's in the U.S. and the sixteenth largest in the world (Association of Environmental Professions [AEP] 2007). Based upon the 2008 GHG inventory data compiled by CARB (CARB 2008a), California produced 474 $MMTCO_2e$. The major source of GHG emission in California is transportation, contributing 37 percent of the state's total. Electricity generation is the second largest source, contributing 25 percent of the state's GHG emissions (CARB 2008a). Eighty-five percent of California's 2008 GHG emissions (in terms of CO_2e) were CO_2 produced from fossil fuel combustion, with 2.5 percent from other sources of CO_2, 6.0 percent from CH_4, and 2.8 percent from N_2O (CARB 2008a). California emissions are due in part to its large size and large

population. However, California in 2001 had the fourth lowest CO_2 emissions per capita from fossil fuel combustion in the country due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the state's GHG emissions rate of growth by more than half of "business as usual" conditions (CEC 2006).

4.7.3 Regulatory Setting

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change established an agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs. In October 1993, President Bill Clinton announced his Climate Change Action Plan, which had a goal to return GHG emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in GHG emissions (California Air Pollution Control Officers Association [CAPCOA] 2008).

On March 21, 1994, the U.S. joined numerous countries in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments: gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change (UNFCCC 2007).

A particularly notable result of the UNFCCC efforts was the Kyoto Protocol Treaty, negotiated in December 1997. The agreement was implemented on February 16, 2005 following ratification by Russia on November 18, 2004. When countries sign the treaty, they demonstrate their commitment to reduce their GHG emissions or engage in emissions trading. As of March 2011, a total of 192 countries and other governmental entities have ratified the agreement. Although the U.S. symbolically signed the Protocol in 1998 it has yet to be ratified by the U.S. Senate. Other countries, such as India and China, which have ratified the protocol, are not required to reduce carbon emissions under the present agreement despite large populations.

Global warming and climate change have received substantial public attention for more than 15 years. For example, the United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human induced changes in Earth's global environmental system, to monitor, understand and predict global change, and to provide a sound scientific basis for national and international decision making. However, the analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG emissions, or the resulting effects on climate change in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are also yet to be developed.

Regulatory oversight for air quality in the Mojave Desert Air Basin (MDAB) rests at the EPA Region IX office at the federal level, CARB at the state level, and at the regional level with the AVAQMD and the County of Los Angeles.

4.7.3.1 Federal

4.7.3.1.1 U.S. Environmental Protection Agency – Clean Air Act

On April 2, 2007, in Massachusetts v. EPA, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act (CAA). The Court held that the EPA must determine whether or not GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA is required to follow the language of Section 202(a) of the CAA. The Supreme Court decision resulted from a petition for rulemaking under Section 202(a) filed by more than a dozen environmental, renewable energy as well as other organizations[1].

On April 17, 2009, the EPA Administrator[2], signed proposed endangerment and cause or contribute findings for GHGs under Section 202(a) of the CAA. The EPA held a 60-day public comment period, which ended June 23, 2009, and received over 380,000 public comments. These included both written comments as well as testimony at two public hearings in Arlington, Virginia and Seattle, Washington. The EPA carefully reviewed, considered, and incorporated public comments and has now issued its final Findings.

The EPA found that six GHGs taken in combination endanger both the public health and welfare of current and future generations. The EPA also found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the greenhouse effect as air pollution that endangers public health and welfare under CAA Section 202(a). These Findings were based on careful consideration of the full weight of scientific evidence and a thorough review of numerous public comments received on the Proposed Findings published April 24, 2009. These Findings became effective on January 14, 2010.

Specific GHG Regulations EPA has adopted to date are:

- 40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule. This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2e emissions per year (EPA 2009). Additionally, reporting of emissions is required for owners of sulfur hexafluoride (SF_6)- and perfluorocarbon (PFC)-insulated equipment when the total nameplate capacity of these insulating gases is above 17,280 pounds. The proposed Projects are not believed to trigger GHG reporting as required by this regulation.
- 40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule. EPA recently mandated implementation of the Prevention of Significant Deterioration (PSD) requirements to facilities whose

[1] Supreme Court ruling, Massachusetts v. EPA, 549 U.S. 497 (2007).http://www.supremecourt.gov/opinions/06pdf/05-1120.pdf

[2] The EPA Acting “Administrator”, Lisa P. Jackson, signed Section 202(a) of the Clean Air Act on April 17, 2009.

stationary source CO_2e emissions exceed 75,000 tons per year. The proposed Projects are not believed to trigger PSD permitting as required by this regulation.

4.7.3.1.2 Corporate Average Fuel Economy Standards (2009)

On May 19, 2009, President Obama announced a new federal policy, the Corporate Average Fuel Economy (CAFE), "aimed at both increasing fuel economy and reducing greenhouse gas pollution for all new cars and trucks sold in the United States." The policy proposes the following:

- The CAFE standards apply to model years 2012-2016 for all passenger vehicles sold in the United States, including cars, light trucks and SUVs. Significant improvements in fuel efficiency will be required of all new vehicles in 2012 model, with yearly gains of 5 percent or more in subsequent years.
- By 2016, automakers' passenger vehicle fleets must achieve a combined average fuel-economy standard of 35.5 mpg—39 mpg for cars and 30 mpg for light trucks and SUVs—a 40 percent improvement over current standards. The new CAFE standards also achieve the target goal four years sooner than the current law passed by Congress in 2007, which required average fuel economy of 35 mpg by 2020.
- The CAFE standards are expected to save 1.8 billion barrels of oil over the life of all new passenger vehicles sold during the five years between 2012 and 2016. To help put those fuel savings in perspective, 1.8 billion barrels is more oil than the United States imported in 2008 from Saudi Arabia, Venezuela, Libya and Nigeria combined.
- The CAFE standards are expected to achieve a reduction of 900 million metric tons in vehicle tailpipe carbon dioxide (CO_2) emissions, the equivalent of taking 177 million cars off the road or shutting down 194 coal-fired power plants.

4.7.3.2 State

There are a variety of statewide and local air pollution control district-level rules and regulations that have been implemented or are in development in California that mandate the quantification or reduction of GHGs. Under CEQA, an analysis and mitigation of emissions of GHGs and climate change in relation to a proposed project is required where it has been determined that a project would result in a significant addition of GHGs. However, neither thresholds of significance nor methods of analysis have been defined in CEQA. Certain Air Pollution Control Districts (APCDs) have proposed their own levels of significance.

4.7.3.2.1 Executive Order S-3-05 (2005)

In June 2005, former Governor Schwarzenegger signed Executive Order S-3-05, which established GHG emissions targets for the state, as well as a process to ensure the targets are met. The order directed the Secretary for California EPA to report every two years on the state's progress toward meeting the GHG emission reduction targets.

In 2005, in recognition of California's vulnerability to the effects of climate change, former Governor Schwarzenegger established Executive Order S-3-05, which set forth a series of target dates for statewide emissions of GHGs to be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;

- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

4.7.3.2.2 Senate Bill 1368 (2006)

SB 1368 was enacted in 2006 and required the California Public Utilities Commission (CPUC) to establish a CO_2 emissions standard for base load generation owned by or under long-term contract with publicly owned utilities. SB 1368 requires the CPUC and CEC to establish GHG emission performance standards for the generation of electricity. The CEC estimates approximately 12 percent of California's retail electric load is currently met with renewable resources. These standards will generally apply to power generated outside of California and imported into the State. SB 1368 provides a mechanism for reducing the emissions of electricity providers, which helps CARB to meet its mandate under AB 32. On January 25, 2007, the CPUC adopted an interim GHG Emissions Performance Standard (EPS), a facility-based emissions standard requiring that all new long-term commitments for base load generation to serve California consumers be with power plants that have GHG emissions no greater than a combined cycle gas turbine plant, which is1,100 pounds of CO_2 per megawatt-hour (MW/hr). Further, on May 23, 2007, the CEC adopted regulations that establish and implement an identical EPS of 1,100 pounds of CO_2 per MW/hr (see CEC order No. 07-523-7).

4.7.3.2.3 Assembly Bill 32 (2006)

On September 27, 2006, AB 32, the California Global Warming Solutions Act of 2006 was enacted by the State of California. The legislature stated that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." AB 32 caps California's GHG emissions at 1990 levels by 2020, and defines GHG emissions as all of the following gases: CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), PFCs, and SF_6. This agreement represents the first enforceable statewide program in the U.S. to cap all GHG emissions from major industries that includes penalties for noncompliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB 32 lays out a program to inventory and reduce GHG emissions in California and from power generation facilities located outside the state that serve California residents and businesses (CAPCOA 2008).

AB 32 charges CARB with the responsibility to monitor and regulate sources of GHG's to ultimately reduce those emissions. CARB staff recommended an amount of 427 $MMTCO_2e$ as the total statewide GHG 1990 emissions level and 2020 emissions limit, which was approved on December 6, 2007. This limit is an aggregated statewide limit, rather than a sector- or facility-specific one. AB 32 Scoping Plan contains the main strategies California will use to reduce the GHGs that cause climate change. The scoping plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, market-based mechanisms, such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program.

The Scoping Plan was first approved by the Board in 2008 and is required to be updated every five years to evaluate the mix of AB 32 policies to ensure California is on track to achieve the 2020 GHG reduction goal. In early 2013, CARB initiated activities to update the AB 32 Scoping Plan.

The 2013 AB 32 Scoping Plan update will define ARB's climate change priorities for the next five years and lay the groundwork to reach post-2020 goals set forth in Executive Orders S-3-05 and B-16-2012. The update will highlight California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan (2008). It will also evaluate how to align the state's longer-term GHG reduction strategies with other state policy priorities, such as water, waste, natural resources, clean energy and transportation, and land use.

To address the state's near-term and longer-term GHG goals, the update will have both a 2020 element and the post-2020 element. The 2020 element will focus on state, regional, and local initiatives that are currently being implemented to assist us in meeting the 2020 goal. The post-2020 element will provide a high level view of a long-term strategy for meeting the 2050 GHG goals. CARB plans to focus on six key topics areas for the post-2020 element: 1) transportation, fuels, and infrastructure; 2) energy generation, transmission, and efficiency; 3) waste; 4) water; 5) agriculture; and 6) natural resources.

In late-September 2013, CARB expects to release a preliminary draft of the 2013 update to the AB 32 Scoping Plan for public review and comment. In October 2013, CARB plans to hold a public workshop; and provide an update to the Board. In December 2013, CARB will have a Board meeting discussion that will include additional opportunities for stakeholder feedback and public comment.

Climate Change Scoping Plan

As a result of this executive order, the California Climate Action Team (CAT), led by the Secretary of the California EPA, was formed. The CAT is comprised of representatives from numerous state agencies and was formed to implement global warming emission reduction programs and to report on the progress made toward meeting statewide targets established under the Executive Order. State agency members include the Business, Transportation and Housing Agency; Department of Food and Agriculture; Resources Agency; CARB; CEC; the Public Utilities Commission; and DWR. In December 2008, CARB released a Scoping Plan outlining the state's strategy to achieve the 2020 GHG emissions limit. This Scoping Plan, developed by CARB in coordination with the CAT, proposed a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify energy sources, save energy, create new jobs, and enhance public health. It was adopted by CARB at its meeting in December 2008.

AB 32 commits the state to achieving the following:

- 2000 GHG emission levels by 2010, which represents an approximately 11 percent reduction from business as usual (BAU)
- 1990 levels by 2020, approximately 28.5 percent below BAU
- 80 percent below 1990 levels by 2050

To achieve these goals, AB 32 mandates that CARB establish a quantified emissions cap, which is now the Cap-and-Trade Program. The Cap-and-Trade program institutes a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary

sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. The following schedule outlines the CARB actions mandated by AB 32:

- By January 1, 2008, CARB adopts regulations for mandatory GHG emissions reporting, defines 1990 emissions baseline for California (including emissions from imported power), and adopts it as the 2020 statewide cap. CARB adopted 427 MMT CO_2e as the total statewide greenhouse gas 1990 emissions level and the 2020 emissions limit in 2007.
- By January 1, 2009, CARB adopts plan to effect GHG reductions from significant sources of GHG via regulations, market mechanisms and other actions. CARB approved the AB 32 Scoping Plan in December 2008.
- During 2009, CARB drafts rule language to implement its plan and holds a series of public workshop on each measure (including market mechanisms).
- By January 1, 2010, early action measures will take effect.
- During 2010, CARB, after workshops and public hearings, conducts series of rulemakings to adopt GHG regulations including rules governing market mechanisms.
- By January 1, 2011, CARB completes major rulemakings for reducing GHGs, including market mechanisms. CARB revised and adopted the rules in October 2011 to achieve the 33 percent renewable energy goal by 2020.
- By January 1, 2012, GHG rules and market mechanisms adopted by CARB take effect and become legally enforceable.
- December 31, 2020 is the deadline for achieving 2020 GHG emissions cap.

CARB's list of discrete early action measures that can be adopted and implemented before January 1, 2010 was approved on June 21, 2007. This list focuses on major statewide contributing sources and industries and not on individual development projects or practices. Early action measures are: (1) a low-carbon fuel standard; (2) reduction of refrigerant losses from motor vehicle air conditioning system maintenance; and (3) increased CH_4 capture from landfills.

4.7.3.2.4 SB 1078/Executive Order S-14-08 (2008)

Executive Order S-14-08 was established by former Governor Arnold Schwarzenegger in November 2008. Executive Order S-14-08 establishes a Renewables Portfolio Standard (RPS) for all retail sellers of electricity. The CEC estimates that about 12 percent of California's retail electric load is currently met with renewable resources. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. Established in 2002 under SB 1078, California's RPS was accelerated in 2006 under SB 1078, which requires 20 percent of electricity retail sales be served by renewable energy resources by 2010. Increased use of renewables will decrease California's reliance on fossil fuels, thus reducing emissions of GHGs from the electricity sector.

Subsequent recommendations in California energy policy reports advocated a goal of 33 percent by 2020. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08 requiring that "...[a]ll retail sellers of electricity shall serve 33 percent of their load

with renewable energy by 2020." The following year, Executive Order S-21-09 directed CARB, under AB 32 authority, to enact regulations to achieve the goal of 33 percent renewables by 2020. Due to this RPS, the Climate Change Scoping Plan anticipates that California will have 33 percent of its electricity provided by renewable resources by 2020, and includes this reduction in GHG emissions.

In the ongoing effort to codify the ambitious 33 percent by 2020 goal, Senate Bill X1-2 was signed by Governor Edmund G. Brown, Jr., in April 2011. This new RPS preempts CARB's 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must adopt the new RPS goals of 20 percent of retails sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement being met by the end of 2020 (CPUC 2011).

The specifics of this Executive Order include the following:

- Requires retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020;
- Requires various state agencies to streamline processes for the approval of new renewable energy facilities and determine priority renewable energy zones; and
- Establishes the requirement for the creation/adoption of the Desert Renewable Energy Conservation Plan (DRECP) process for the Mojave and Colorado Desert regions.

This Executive Order does not include any specific requirements that pertain directly to the proposed Projects. However, these Projects, as renewable energy projects, would help the utilities contracting the power from these Projects to meet the established RPS standard.

4.7.3.2.5 CARB Preliminary Draft Staff Proposal (2008)

In its Staff Proposal, CARB took the first step toward developing recommended statewide interim thresholds of significance for GHGs that may be adopted by local agencies. The proposal does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. CARB is developing thresholds in these sectors to advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state.

CARB's staff has developed a preliminary interim threshold concept for industrial projects (CARB 2008b). CARB's objective in this proposal is to develop a threshold of significance that will result in the vast majority (approximately 90 percent statewide) of the GHG emissions from new industrial projects to be subject to CEQA's requirement to impose feasible mitigation. CARB believes this can be accomplished with a threshold that allows small projects to be considered less than significant. CARB staff used existing data for the industrial sector to derive a proposed hybrid threshold. The threshold is 10,000 metric tons of CO_2e per year for operational emissions (excluding transportation) per project, and performance standards for construction and transportation emissions.

Functional Equivalent Document (2010)

In 2010, CARB released the draft CEQA Functional Equivalent Document (FED), which proposed GHG emission reduction targets specific to each Metropolitan Planning Organization (MPO). CARB recognizes that GHG reduction measures may be unique to particular areas of the state where GHG reduction measures that are feasible in one area may not be in another.

Cap-and-Trade (2011)

In designing emission reduction measures to reduce GHG emissions to achieve the emissions cap by 2020, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the state's efforts to improve air quality. As of October 20, 2011, CARB submitted final rules for California's Cap-and-Trade Program to the California Office of Administrative Law (OAL). With OAL's approval of the rules on December 13, 2011, Article 5: "California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms" was formally added to Subchapter 10 of Title 17 of the California Code of Regulations (CCR). The OAL approved the rulemaking and filed it with the Secretary of State on December 13, 2011. The Cap-and-Trade regulation has been in effect since January 1, 2012.

Cap-and-trade is a market based regulation designed to reduce GHGs from multiple sources. The Cap-and-Trade Program will reduce GHG emissions from major sources (covered entities) by setting a firm cap on statewide GHG emissions while employing market mechanisms to cost-effectively achieve the emission-reduction goals. This cap will help minimize compliance costs of achieve AB 32 goals. The statewide cap for GHG emissions from major sources, which is measured in metric tons of carbon dioxide equivalent ($MTCO_2e$), will be set in 2013 and lowered by 3 percent annually, achieving GHG emission reductions throughout the program's duration. Each covered entity will be required to surrender one permit to emit (the majority of which will be allowances, entities are also allowed to use a limited number of CARB offset credits) each ton of GHG emissions. Covered entities will be allocated allowances with the option to buy additional allowances at auction, purchase allowances from others, or purchase offset credits. Cap-and-trade is an environmentally effective and economically efficient response to climate change.

Given that the proposed Projects would emit GHG emissions during construction and operations, many of the global climate change regulations and plans noted above are applicable to the Projects.

4.7.3.3 Local Agencies

4.7.3.3.1 Los Angeles County

The County of Los Angeles has proposed draft regulations under the 2013 Draft 2035 Los Angeles County General Plan, which includes goals, objectives, policies, and implementation measures applicable to air quality. The Draft Air Quality Element addresses the General Plan's Guiding Principles by promoting the following Smart Growth policies: promote land use patterns that reduce the number and length of motor vehicle trips, implement best management practices to reduce emissions associated with construction, implement that new development areas and associated community-wide facilities be linked and oriented to existing developed areas of the

community through open space systems and bicycle and pedestrian systems, and establish a comprehensive and safe system of bicycle routes and pedestrian trails for short-range commuting, shopping trips, and for recreational use.

4.7.3.3.2 Antelope Valley AQMD

The AVAQMD is the agency principally responsible for comprehensive air pollution control in the MDAB. AVAQMD's intent is to protect the people and the environment of the Antelope Valley from the effects of air pollution through developing and implementing programs and regulations to improve the region's air quality. The AVAQMD, which has regulatory authority over the air emissions from these Projects, has established a significance threshold and is further discussed below in Section 4.7.4, Significance Criteria.

4.7.4 Significance Criteria

Section 15064.7 of the CEQA Guidelines defines a threshold of significance as an identifiable quantitative, qualitative, or performance level of a particular environmental effect. Non-compliance with these guidelines means the effect will normally be determined to be significant by the agency and compliance with these guidelines means the effect normally will be determined to be less than significant. CEQA mostly grants determination of what impacts are significant to the lead agencies and does not prescribe thresholds of significance, analytical methodologies, or specific mitigation measures. CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects. In the latest CEQA Guidelines, effective March 18, 2010, the California Office of Planning and Research (OPR) encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

A project may have a significant impact on air quality if it would exceed the significance thresholds included in Section VII, Greenhouse Gas Emissions, in Appendix G to the CEQA Guidelines. As such, the proposed Projects would result in significant impact to global climate change if they would:

a) Generate direct or indirect GHG emissions that may have a significant impact on the environment, based on any applicable threshold of significance; or

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the GHG emissions.

The County of Los Angeles utilizes the CEQA Air Quality Handbook and the Antelope Valley CEQA & Federal Conformity Guidelines, August 2011[3], as guidance documents for the environmental review of plans and development proposals within its jurisdiction.

[3] Antelope Valley CEQA & Federal Conformity Guidelines, August 2011. http://www.avaqmd.ca.gov/index.aspx?page=3.

The AVAQMD's daily and annual GHG significance thresholds are shown in Table 4.7-1. The AVAQMD CEQA & Federal Conformity Guidelines state that the emissions thresholds are given as a daily value and an annual value, so that a multi-phased project (such as a project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value. As such, the daily threshold of 548,000 pounds CO_2e per day is applicable to analyze short-term emissions per Project; and the annual threshold of 100,000 metric tons CO_2e per year is applicable to analyze long-term, cumulative emissions for Projects 1 – 6.

Table 4.7-1 AVAQMD Significance Thresholds

Criteria Pollutant	Daily Threshold (pounds)	Annual Threshold (metric tons)
Greenhouse Gases (CO_2e)	548,000	100,000

Source: Antelope Valley CEQA & Federal Conformity Guidelines, August 2011.

4.7.5 Analysis Methods

4.7.5.1 Construction Emissions

As a conservative analysis, the construction of the proposed Projects 1 – 6 and their gen-tie lines would occur continuously over the course of two years, beginning in the first quarter of 2014 and ending in second quarter of 2015. As shown in Figure 4.7-1 construction would be conducted in phases, staggered to reduce short-term construction emissions. The URBEMIS 2007 model divides the construction processes into phases, including demolition, mow (site preparation using a mower), fencing/infrastructure construction (trenching, paving, gen-tie line construction), and photovoltaic (PV) installation. These model settings can be modified to fit appropriate features of a specific project. This timeframe is important since construction emissions are directly related to the intensity of construction activities with an increase in the overall amount of construction activity related to an increase in emissions. Actual construction may proceed at a less intensive pace, which would result in lower daily emissions.

For Projects 1 and 4, the following construction phases are assumed:

Phase 1: Demolition
Phase 2: Mow
Phase 3: Fencing/Infrastructure Construction
Phase 4: PV Installation

For Projects 2, 3, 5 and 6, the following construction phases are assumed:

Phase 1: Mow
Phase 2: Fencing/Infrastructure Construction
Phase 3: PV Installation

Figure 4.7-1 Construction Schedule of Projects

Project #	Project Name	MW	Total Acres	Construction Phase	Start Date	End Date	2014												2015											
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	**North Lancaster Ranch**	**20**	**P1: 158**	**Phase 1**																										
(CUP 6)				Mow	7/1/2014	10/31/2014																								
				Trenching/Infrastructure	11/1/2014	11/31/2014																								
				PV Installation	12/1/2014	12/31/2014																								
			P2: 80	**Phase 2**																										
				Demolition	1/1/2015	1/31/2015																								
				Mow	2/1/2015	4/30/2015																								
				Trenching/Infrastructure	5/1/2015	5/31/2015																								
				PV Installation	6/1/2015	6/31/2015																								
2	**Western Antelope Blue Sky Ranch**	**40**	**157**																											
(CUP 7)				Mow	1/31/2014	4/30/2014																								
				Trenching/Infrastructure	5/1/2014	6/31/2014																								
				PV Installation	7/1/2014	8/31/2014																								
3	**American Solar Greenworks**	**35**	**135.61**																											
(CUP 9)				Mow	6/1/2014	8/31/2014																								
				Trenching/Infrastructure	9/1/2014	10/31/2014																								
				PV Installation	11/1/2014	12/31/2014																								
4	**Antelope Solar Greenworks**	**52**	**256**	**Phase 1**																										
(CUP 10a)				Mow	1/1/2014	3/15/2014																								
				Trenching/Infrastructure	3/16/2014	3/31/2014																								
				PV Installation	4/1/2014	4/31/2014																								
				Phase 2																										
				Demolition	4/1/2014	4/31/2014																								
				Mow	5/1/2014	9/31/2014																								
				Trenching/Infrastructure	10/1/2014	10/31/2014																								
				PV Installation	11/1/2014	12/31/2014																								
5	**Silver Sun Greenworks**	**20**	**160**																											
(CUP 11)				Mow	7/1/2014	10/31/2014																								
	2.4 mile gen-tie			Trenching/Infrastructure	11/1/2014	11/30/2014																								
				PV Installation	12/1/2014	12/31/2014																								
6	**Lancaster WAD**	**5**	**38.49**																											
(CUP 15)				Mow	2/1/2014	3/15/2014																								
				Trenching/Infrastructure	3/16/2014	3/31/2014																								
				PV Installation	4/1/2014	4/31/2014																								

Color Key

- Demolition
- Mow
- Trenching/Infrastructure
- PV Installation

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For Projects 1 – 6, a gen-tie line will connect the facilities' generated solar power to the nearest substation.

Each construction phase has the potential to generate the following: (1) fugitive dust emissions resulting from grading required for roads, basins and inverter pads, mowing the remainder of the ground to prepare the site (a less intensive soil disturbance alternative as compared to grading); (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from vehicles fuel combustion used for worker commute, material hauling, and construction debris disposal. The principal sources of pollutants during construction would be earth-moving activities, construction equipment, trucks bringing materials to the site, and construction crew commuting vehicles. The Applicant is committed to implementing mitigation measures listed in Section 4.7.6 during all construction phases of the Projects to further reduce emissions. Technical Reports in Volume 2 – Appendix B-2, show construction schedules and construction equipment.

4.7.5.2 Operations Emissions

During operations, the Projects do not require any large-scale equipment that would emit a large amount of air pollutants. The sources of pollutants would be limited to the vehicles used by the operations and maintenance staff. Activities during operation are expected to be minimal, as maintenance is not expected to occur for no more than ten visits per year.

4.7.5.3 Emissions Modeling

Numerous air quality modeling tools are available to assess air quality and greenhouse gas impacts of the Projects. Emissions during construction and operations were estimated based on the air emission modeling software package, CARB's URBEMIS 2007. Not all GHGs exhibit the same ability to induce climate change. As a result, in URBEMIS, GHG contributions are commonly quantified in the equivalent mass of CO_2, denoted as CO_2e. Mass emissions are calculated by converting pollutant specific emissions to CO_2e emissions by applying the proper global warming potential (GWP) value. These GWP ratios are available from the EPA and published in the California Climate Action Registry (CCAR) General Reporting Protocol (GRP). By applying the GWP ratios, Project-related CO_2e emissions can be tabulated in metric tons per year. The CO_2e values are calculated for construction years as well as the existing and Projects build-out conditions to generate a net change in GHG emissions for construction and operations.

The CCAR has prepared a protocol for calculating and reporting GHG emissions from a number of general and industry-specific activities. This guidance was used to address GHG emissions from the Projects. Construction emissions are calculated using the URBEMIS 2007 model, which is based on OFFROAD2007 model outputs. OFFROAD 2007 is an emissions estimation model developed by CARB to calculate emissions from construction activities. The output values used in this analysis were adjusted to be Project-specific, based on usage rates of construction equipment, type of fuel, and construction schedule. These values were then applied to the construction phasing assumptions used in the criteria pollutant analysis to generate GHG emissions values for each construction year (refer to Appendix B-2). The URBEMIS 2007 model outputs CO_2 emissions only. Therefore, CH_4 and N_2O emissions were

estimated based on the emissions ratios for construction and industrial equipment from the *2006 IPCC Guidelines for National Greenhouse Gas Inventories.* Since potential impacts resulting from GHG emissions are long-term, GHG emissions were calculated on an annual basis.

The GHG emissions resulting from the incremental increase in on-road mobile vehicles, electricity, and natural gas use after a Projects' construction are considered as Project-related. Emissions calculations for the Project prior to credits or reductions are considered the Project's baseline emissions. Mobile source emission calculations associated with operations of a proposed project utilize a projection of trip rate and annual vehicle miles traveled (VMT), which is derived from URBEMIS 2007 defaults or from a Project-specific traffic analysis. Trip rates for this project were thus calculated based on VMT per day, per acre.. Mobile source calculations also utilize CARB's tool for assessing the population, activity, and emissions from mobile sources called EMFAC2007 and the California Climate Action Registry General Reporting Protocol (CCAR GRP), Version 3.1 to generate emission factors for CO_2, CH_4, and N_2O. The URBEMIS 2007 software was used to compile the vehicle emissions during long-term Projects' operations. In calculating mobile source emissions, the URBEMIS 2007 assumptions were applied to arrive at the annual VMT. It should be noted that GHG reduction factors from *Alternative Compliance Strategies*, contained in Assembly Bill (AB) 1493, were not applied in the EMFAC2007 software. Therefore, Project-related emissions are likely overstated because emission factors for fleet mixes containing post-2012 vehicles would not emulate reductions that would otherwise go into effect as a result of AB 1493.

GHG emissions are generated by the consumption of fossil fuels to generate electricity and provide heating and hot water. Future fuel consumption rates and water demand are estimated based on square footage of the Projects. Natural gas and electricity usage factors derived from the CCAR GRP[4] are used to project fuel consumption rates. Embodied energy rates associated with the proposed Projects' future water supply needs are calculated using factors derived from the CEC.[5] GHG emission factors from the CCAR GRP are then applied to the respective usage rates, to calculate annual GHG emissions in metric tons. Water conveyance associated with the proposed Projects are regional in nature; therefore, emission factors used in this component of the analysis represent a state-wide average of known power producing facilities, utilizing various technologies and emission control strategies. The CCAR GRP emission factors do not reflect targeted future reductions in GHG emissions under Senate Bill (SB) 1368. Thus, these emission factors are considered conservative and representative. The CEQA Guidelines leave the determination of whether a qualitative or quantitative analysis is warranted to the discretion of the lead agency. The proposed improvements do not include stationary sources of emissions and are not expected to substantively alter the existing traffic patterns; therefore, operational GHG emissions are expected to be minimal.

Our understanding of the fundamental processes responsible for global climate change has improved over the past decade, and our predictive capabilities are advancing. However, there

[4] Energy usage includes construction, electricity, water conveyance, and natural gas usage. All CO_2e factors were derived using the CCAR General Reporting Protocol; Version 3.1, January 2009.

[5] California Energy Commission, Refining Estimates of Water Related Energy Use in California, 2006.

remain significant scientific uncertainties in predictions of local effects of climate change, occurrence of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, changes in oceanic circulation, etc. Due to the complexity of the Earth's climate system, the uncertainty surrounding climate change may never be completely eliminated. There continues to be significant debate regarding the level of impact increased GHG concentrations have or will have on climate change and the corresponding appropriate actions needed to limit and/or respond to climate change. In addition, it is impossible to label a single development project as the cause of future specific climate change impacts.

4.7.6 Impact Analysis

4.7.6.1 Project Impacts: Criterion A – Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment based on any applicable threshold of significance?

Construction of the Projects have the potential to create global climate change impacts through the use of heavy-duty construction equipment, earth-moving activities, and through vehicle trips generated from construction workers traveling to and from the Projects sites. The Projects propose six SGFs at various locations throughout the county. A detailed schedule of Projects 1 – 6 site initiations and completion was used to quantitatively evaluate the potential impacts. Each Project site was analyzed based on the Project's surface area, construction schedule, and equipment mix. In addition, each SGF would consist of the following components:

- PV modules
- PV module mounting system
- Electrical boxes (e.g., combiner boxes, electrical disconnects)
- Electrical inverters and transformers
- Electrical AC collection system, including switchgear
- Data monitoring equipment
- Gen-tie line
- Access roads and chain link perimeter security fencing

Emissions during construction were forecasted using each site's applicable construction schedule and applying the mobile-source and fugitive dust emissions factors derived from URBEMIS 2007. A complete listing of the construction equipment by phase and construction phase duration assumptions used in this analysis is included within the URBEMIS 2007 printout sheets that are provided in the Appendix B-2 of this EIR.

Following build-out of the Projects 1 – 6, construction-related GHG emissions would cease. Therefore, as construction-related GHG emissions for each Project are considered temporary and short term, the AVAQMD daily significance threshold of 548,000 pounds (lbs) of CO_2e per day (as discussed in Section 4.7.4, Significance Criteria) was used to analyze Project impacts during construction.

4.7.6.1.1 Project 1 and Gen-tie Line

Construction Impacts

Table 4.7-2 summarizes emissions during construction of Project 1. As shown, the short-term GHG emissions during the construction phase would not exceed AVAQMD significant thresholds. As such, the Project would not exceed thresholds or result in violating GHG standards or contribute substantially to an existing or projected GHG violation. Project 1 is less than significant with implementation of mitigation measures listed in Section 4.7-6.

Table 4.7-2 Project 1 –Construction Emissions[a] (lbs/day)

North Lancaster Ranch	CO_2e
Phase 1	
Phase 1 – Mow	2,037
Phase 2 – Fencing/Trenching/Infrastructure	988
Phase 3 – PV Installation	7,064
Phase 2	
Phase 1 – Demolition	3,768
Phase 2 – Mow	5,294
Phase 3 – Fencing/Trenching/Infrastructure	988
Phase 4 – PV Installation	7,064
Maximum Daily Emissions	7,064
AVAQMD Daily Significance Threshold	**548,000**
Over / (Under)	(540,936)
Exceed Threshold?	No

Source: Tetra Tech 2013

** Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

4.7.6.1.2 Project 2 and Gen-tie Line

Construction Impacts

Table 4.7-3 summarizes emissions during construction of Project 2. As shown, the short-term GHG emissions during the construction phase will not exceed AVAQMD significant thresholds. As such, the Project will not exceed thresholds or result in violating GHG standards or contribute substantially to an existing or projected GHG violation. Project 2 is less than significant with implementation of mitigation measures listed in Section 4.7-6.

Table 4.7-3 Project 2 –Construction Emissions[a] (lbs/day)

Western Antelope Blue Sky Ranch	CO_2e
Phase 1 – Mow	5,423
Phase 2 – Fencing/Trenching/Infrastructure	988
Phase 3 – PV Installation	5,189
Maximum Daily Emissions	5,423
AVAQMD Daily Significance Threshold	**548,000**
Over / (Under)	(542,577)
Exceed Threshold?	No

Source: Tetra Tech 2013

** Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

4.7.6.1.3 Project 3 and Gen-tie Line

Construction Impacts

Table 4.7-4 summarizes emissions during construction of Project 3. As shown, the short-term emissions during the construction phase will not exceed AVAQMD significant thresholds. As such, the project will not exceed thresholds or result in violating GHG standards or contribute substantially to an existing or projected GHG violation. Project 3 is less than significant with implementation of mitigation measures listed in Section 4.7-6.

Table 4.7-4 Project 3 –Construction Emissions[a] (lbs/day)

American Solar Greenworks	CO_2e
Phase 1 – Mow	3,645
Phase 2 – Fencing/Trenching/Infrastructure	988
Phase 2 – PV Installation	5,335
Maximum Daily Emissions	**5,335**
AVAQMD Daily Significance Threshold	**548,000**
Over / (Under)	(542,665)
Exceed Threshold?	No

Source: Tetra Tech 2013

** Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

4.7.6.1.4 Project 4 and Gen-tie Line

Construction Impacts

Table 4.7-5 summarizes emissions during construction of Project 4. As shown, the short-term emissions during the construction phase will not exceed AVAQMD significant thresholds. As such, the Project will not exceed thresholds or result in violating GHG standards or contribute substantially to an existing or projected GHG violation. Project 4 is less than significant with implementation of mitigation measures listed in Section 4.7-6.

Table 4.7-5 Project 4 –Construction Emissions[a] (lbs/day)

Central Antelope Dry Ranch	CO_2e
Phase 1	
Phase 1 – Mow	4,472
Phase 2 – Fencing/Trenching/Infrastructure	1,275
Phase 3 – PV Installation	7,310
Phase 2	
Phase 1 – Demolition	3,898
Phase 2 – Mow	4,472
Phase 3 – Fencing/Trenching/Infrastructure	1,275
Phase 4 – PV Installation	7,310
Concurrent Emissions	11,208
Maximum Daily Emissions	11,208
AVAQMD Daily Significance Threshold	**548,000**
Over / (Under)	(536,792)
Exceed Threshold?	No

Source: Tetra Tech 2013

** Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

4.7.6.1.5 Project 5 and Gen-tie Lines

Construction Impacts

Table 4.7-6 summarizes emissions during construction of Project 5. As shown, the short-term emissions during the construction phase will not exceed AVAQMD significant thresholds. As such, the project will not exceed thresholds or result in violating GHG standards or contribute substantially to an existing or projected GHG violation. Project 5 is less than significant with implementation of mitigation measures listed in Section 4.7-6.

Table 4.7-6 Project 5 –Construction Emissions[a] (lbs/day)

Silver Sun Greenworks	CO_2e
Phase 1 – Mow	3,976
Phase 2 – Fencing/Trenching/Infrastructure	1,282
Phase 3 – PV Installation	5,450
Maximum Daily Emissions	5,450
AVAQMD Daily Significance Threshold	**548,000**
Over / (Under)	(542,550)
Exceed Threshold?	No

Source: Tetra Tech 2013

**Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

4.7.6.1.6 Project 6 and Gen-tie Line

Construction Impacts

Table 4.7-7 summarizes emissions during construction of Project 6. As shown, the short-term emissions during the construction phase will not exceed AVAQMD significant thresholds. As such, the Project will not exceed thresholds or result in violating GHG standards or contribute

substantially to an existing or projected GHG violation. Project 6 is less than significant with implementation of mitigation measures listed in Section 4.7-6.

Table 4.7-7 Project 6 –Construction Emissions[a] (lbs/day)

Lancaster WAD	CO_2e
Phase 1 - Mow	2,964
Phase 2 - Fencing/Trenching/Infrastructure	1,282
Phase 3 - PV Installation	3,859
Maximum Daily Emissions	3,859
AVAQMD Daily Significance Threshold	**548,000**
Over / (Under)	(544,141)
Exceed Threshold?	No

Source: Tetra Tech 2013

**Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

4.7.6.1.7 Concurrent Construction of Projects 1 – 6

Concurrent construction emissions of Projects 1-6 were analyzed by emissions per year and thus compared to the annual GHG threshold of 100,000 metric tons of CO_2e per year, for long-term emissions (as discussed in Section 4.7.4, Significance Criteria). As shown in Table 4.7-8, the unmitigated peak annual construction levels are expected to result in annual GHG emissions below the most stringent annual threshold proposed by the AVAQMD. As such, the Project will not exceed thresholds or result in violating GHG standards or contribute substantially to an existing or projected GHG violation. Projects 1 – 6 is less than significant with implementation of mitigation measures listed in Section 4.7-6.

Table 4.7-8 Unmitigated Peak Annual Construction Greenhouse Gas Emissions[a] (tons/yr)

2014 (unmitigated)		CO_2e
Project 1	North Lancaster Ranch	183
Project 2	Western Antelope Blue Sky Ranch	371
Project 3	American Solar Greenworks	119
Project 4	Antelope Solar Greenworks	668
Project 5	Silver Sun Greenworks	252
Project 6	Lancaster WAD	94
Total Annual Emissions		1,688
AVAQMD Annual Significance Threshold		**100,000**
Above/(Below)		**(98,312)**
Above Annual Threshold?		**No**
2015 (unmitigated)		**CO_2e**
Project 1	North Lancaster Ranch	301
Total Annual Emissions		301
AVAQMD Annual Significance Threshold		**100,000**
Above/(Below)		**(99,699)**
Above Annual Threshold?		**No**

Source: Tetra Tech 2013

**Values may not exactly add up due to rounding.*

[a] Compiled using the URBEMIS emissions inventory model. The equipment mix and use assumption for each phase is provided in Appendix B-2.

4.7.6.1.8 Projects 1 – 6 and Gen-tie Lines

Operations Impacts

During operations, each of the six Project's facility operation would be limited to general maintenance, panel washing, and security. The primary source of emissions during operations is mainly the vehicles used by facility maintenance staff to and from the site. It is anticipated that operations and maintenance would utilize one water truck for panel washing and one light duty truck twice per year. Although each Project is scheduled for biannual panel washing, a maximum of ten trips were assumed for each Project (four round trips plus one additional round trip to be conservative). The operation emissions provided for each Project are considered the Project's baseline emissions since it does not include any solar energy reductions.

As operations-related GHG emissions are considered long term, the AVAQMD daily significance threshold of 100,000 metric tons of CO_2e per year was used to analyze impacts during operations.

Project 1 and Gen-tie Line

Table 4.7-9 summarizes the operation emissions compared with the annual threshold, since operations are long-term. The primary sources of emissions during operations are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of one water truck and one light duty truck for panel washing twice per year. Although each Project is scheduled for biannual panel washing, a maximum of ten trips were assumed for each Project (four round trips plus an additional roundtrip to be conservative). As shown in Table 4.7-9, emissions during the long-term operations do not exceed AVAQMD significance thresholds; therefore Project 1 is less than significant with mitigation.

Table 4.7-9 Project 1 –Operation Emissions (tons/yr)

	CO_2e
Area[a]	0.00
Energy[b]	0.00
Mobile[c]	4.68
Water[d]	1.36
Total Operations Emissions	**6.04**
AVAQMD Annual Significance Threshold	**100,000**
Over / (Under)	(99,944)
Exceed Threshold?	No

Source: Tetra Tech 2013

**All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.*

[a] Area sources related to the Project include minimal consumer products, <1 ton per year.

[b] Project would generate solar energy only and would not use electricity or natural gas.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 trips per year was assumed. The Project Trip Rate is 0.01.

[d] Panel washing is estimated to use one acre foot of water per year.

Project 2 and Gen-tie Line

Table 4.7-10 summarizes the operation emissions compared with the annual threshold, since operations are long-term. The primary sources of emissions during operations are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of one water truck and one light duty truck for panel washing twice per

year. Although each Project is scheduled for biannual panel washing, a maximum of ten trips were assumed for each Project (four round trips plus an additional roundtrip to be conservative). As shown in Table 4.7-10, emissions during the long-term operations do not exceed AVAQMD significance thresholds; therefore Project 2 is less than significant with mitigation.

Table 4.7-10 Project 2 –Operation Emissions (tons/yr)

	CO_2e
Area[a]	0.00
Energy[b]	0.00
Mobile[c]	2.30
Water[d]	2.71
Total Operations Emissions	**5.01**
AVAQMD Annual Significance Threshold	**100,000**
Over / (Under)	(99,995)
Exceed Threshold?	No

Source: Tetra Tech 2013

**All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.*

[a] Area sources related to the Project include minimal consumer products, <1 ton per year.

[b] Project would generate solar energy only and would not use electricity or natural gas.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 trips per year was assumed. The Project Trip Rate is 0.01.

[d] Panel washing is estimated to use one acre foot of water per year.

Project 3 and Gen-tie Line

Table 4.7-11 summarizes the operation emissions compared with the annual threshold, since operations are long-term. The primary sources of emissions during operations are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of one water truck and one light duty truck for panel washing twice per year. Although each Project is scheduled for biannual panel washing, a maximum of ten trips were assumed for each Project (four round trips plus an additional roundtrip to be conservative). As shown in Table 4.7-11, emissions during the long-term operations do not exceed AVAQMD significance thresholds; therefore Project 3 is less than significant with mitigation.

Table 4.7-11 Project 3 –Operation Emissions (tons/yr)

	CO_2e
Area[a]	0.51
Energy[b]	0.00
Mobile[c]	2.65
Water[d]	2.37
Total Operations Emissions	**5.53**
AVAQMD Annual Significance Threshold	**100,000**
Over / (Under)	(99,994)
Exceed Threshold?	No

Source: Tetra Tech 2013

**All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.*

[a] Area sources related to the Project include minimal consumer products, <1 ton per year.

[b] Project would generate solar energy only and would not use electricity or natural gas.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 trips per year was assumed. The Project Trip Rate is 0.01.

[d] Panel washing is estimated to use one acre foot of water per year.

Project 4 and Gen-tie Line

Table 4.7-12 summarizes the operation emissions compared with the annual threshold, since operations are long-term. The primary sources of emissions during operations are vehicles used by facility maintenance staff traveling to and from the site. For worst-case analysis, maintenance activities would consist of one water truck and one light duty truck for panel washing twice per year. Although each Project is scheduled for biannual panel washing, a maximum of ten trips were assumed for each Project (four round trips plus an additional roundtrip to be conservative). As shown in Table 4.7-12, emissions during the long-term operations do not exceed AVAQMD significance thresholds; therefore Project 4 is less than significant with mitigation.

Table 4.7-12 Project 4 –Operation Emissions (tons/yr)

	CO_2e
Area	0.51
Energy	0.00
Mobile	5.56
Water	3.52
Total Operations Emissions	**9.59**
AVAQMD Annual Significance Threshold	**100,000**
Over / (Under)	**(99,990)**
Exceed Threshold?	No

Source: Tetra Tech 2013

**All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.*

[a] Area sources related to the Project include minimal consumer products, <1 ton per year.

[b] Project would generate solar energy only and would not use electricity or natural gas.

[c] Mobile emissions are based on Project's trip generation. A maximum of 10 trips per year was assumed. The Project Trip Rate is 0.01.

[d] Panel washing is estimated to use 2.50 acre feet of water per year.

Project 5 and Gen-tie Lines

Table 4.7-13 summarizes the operation emissions for Project 5, compared with the annual threshold, since operations are long-term. The primary sources of emissions during operations are vehicles used by facility maintenance staff to and from the site. For worst-case analysis, maintenance activities would consist of one water truck and one light duty truck for panel washing twice per year. Although each Project is scheduled for biannual panel washing, a maximum of ten trips were assumed for each Project (four round trips plus an additional roundtrip to be conservative). As shown in Table 4.7-13, emissions during the long-term operations do not exceed AVAQMD significant thresholds.

Table 4.7-13 Project 5 –Operation Emissions (tons/yr)

	CO_2e
Area	0.51
Energy	0.00
Mobile	1.56
Water	1.36
Total Operations Emissions	**3.43**
AVAQMD Annual Significance Threshold	**100,000**
Over / (Under)	(99,997)
Exceed Threshold?	No

Source: Tetra Tech 2013

**All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.*

[a] Area sources related to the Project include minimal consumer products, <1 ton per year.
[b] Project would generate solar energy only and would not use electricity or natural gas.
[c] Mobile emissions are based on Project's trip generation. A maximum of 10 trips per year was assumed. The Project Trip Rate is 0.01.
[d] Panel washing is estimated to use one acre foot of water per year.

Project 6 and Gen-tie Lines

Table 4.7-14 summarizes the operation emissions for Project 6, compared with the annual threshold, since operations are long-term. The primary sources of emissions during operations are vehicles used by facility maintenance staff to and from the site. For worst-case analysis, maintenance activities would consist of one water truck and one light duty truck for panel washing twice per year. Although each Project is scheduled for biannual panel washing, a maximum of ten trips were assumed for each Project (four round trips plus an additional roundtrip to be conservative). As shown in Table 4.7-14, emissions during the long-term operations do not exceed AVAQMD significant thresholds.

Table 4.7-14 Project 6 –Operation Emissions (tons/yr)

	CO_2e
Area	0.51
Energy	0.00
Mobile	0.75
Water	0.34
Total Operations Emissions	**1.60**
AVAQMD Annual Significance Threshold	**100,000**
Over / (Under)	(99,998)
Exceed Threshold?	No

Source: Tetra Tech 2013
**All values were calculated using URBEMIS, unless otherwise stated. Values may not exactly add up due to rounding.*
[a] Area sources related to the Project include minimal consumer products, <1 ton per year.
[b] Project would generate solar energy only and would not use electricity or natural gas.
[c] Mobile emissions are based on Project's trip generation. A maximum of 10 trips per year was assumed. The Project Trip Rate is 0.01.
[d] Panel washing is estimated to use 0.20 acre feet of water per year.

4.7.6.1.9 Concurrent Operations Projects 1 – 6

The URBEMIS model runs, which estimate the operations emissions, are presented in Appendix B-2. Table 4.7-15 summarizes the operations emission calculations compared with the AVAQMD annual significance threshold. As shown in Table 4.7-15, operations of the Projects would generate a maximum of approximately 31 metric tons of CO_2e annually. The annual emissions during long-term operations do not exceed AVAQMD significance thresholds. Therefore, due to the nature of the Projects, the changes in operational GHG emissions are expected to be minimal.

Since the AVAQMD does not provide actual guidance for quantifying GHG emissions, following the methodology prescribed by the SCAQMD CEQA Significance Threshold Working Group, construction emissions were amortized over the life of the project, defined as 35 years, to obtain total annual GHG emissions. According to Table 4.7-16, Projects 1 – 6's overall SGF development of 172 MW is calculated by adding the amortized construction emissions of 38 metric tons per year, plus the annual operational GHG emissions of 31 metric tons per year, which totals to 69 metric tons per year, far below the annual significance threshold.

Table 4.7-15 Peak Annual Operations Greenhouse Gas Emissions (tons/yr)

Project	Project Name	CO_2e
Project 1	North Lancaster Ranch	6.04
Project 2	Western Antelope Blue Sky Ranch	5.01
Project 3	American Solar Greenworks	5.53
Project 4	Antelope Solar Greenworks	9.59
Project 5	Silver Sun Greenworks	3.43
Project 6	Lancaster WAD	1.60
Total Annual Emissions (35 year lifetime) (tons/year)		**31**
AVAQMD Annual Significance Threshold (tons/year)		**100,000**
Above/(Below)		**(99,969)**
Above Annual Threshold?		**No**

Source: Tetra Tech 2013
* Values may not exactly add up due to rounding.

Table 4.7-16 Projects Total Greenhouse Gas Emissions (tons/yr)

	CO_2e
2014 Construction	1,029
2015 Construction	301
Total Construction GHG Emissions	1,330
Construction (Amortized/35 years)	**38**
Operations	**31**
Total Annual Emissions	**69**
AVAQMD Annual Significance Threshold	**100,000**
Above/(Below)	**(99,931)**
Above Annual Threshold?	**No**

Source: Tetra Tech 2013
**Values may not exactly add up due to rounding.*

4.7.6.2 Project Impacts: Criterion B – Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The OPR encourages lead agencies to develop a GHG reduction plan that meets the requirements set forth in the latest OPR guidelines. In accordance with the OPR, the County of Los Angeles' Climate Action Plan specifies the county's goals for GHG emission reductions by 2020 and 2035 within the unincorporated areas. The Climate Action Plan includes a GHG inventory for the unincorporated areas; an action plan for how the County will meet its GHG emission targets; and the mechanism for tracking and evaluating its progress toward meeting the county's goals in the 2013 Draft 2035 Los Angeles County General Plan. In addition, Los Angeles County is currently developing a Renewable Energy Ordinance to expedite approval of new renewable energy development to meet the RPS.

4.7.6.2.1 Projects 1 – 6 and Gen-tie Lines

Construction Impacts

Construction-related emissions from Projects 1 – 6 would be temporary and finite in nature, below the thresholds being considered, and are consistent with the AB 32 Scoping Plan, the Projects' construction-related GHG emissions would not be a cumulatively considerable contribution to climate change. The Projects' operations-related GHG emissions would be

negligible and not comprise a cumulatively considerable contribution to climate change and, therefore, would be less than significant.

Operations Impacts

With implementation of the Projects' solar facilities, there would be an added environmental benefit to displace GHG emissions in the region. The solar energy generation would offset emissions from electricity usage, which would otherwise be produced by fossil-fueled power generation facilities using petroleum, natural gas, or coal combustion. Projects 1 – 6 would result in a temporary increase in GHG emissions below the most stringent proposed threshold, employ active solar technologies supportive of the state's goals to reduce GHG emissions, and are consistent with the County of Los Angeles's goals.

The Projects would therefore be in accordance with the state's need for the construction of renewable energy power plants to meet the state's GHG reduction objectives including:

- California's RPS that requires California's investor-owned electric utilities to obtain 20 percent of the electricity that they supply by 2010 from renewable sources.
- Executive Order S-14-08, which established the RPS targets for California that "all retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020."
- Executive Order S-03-05 on climate change to advance renewable energy and other solutions to lower California's GHG emissions.
- The California Global Warming Solutions Act of 2006 (AB 32) that established a comprehensive program of regulatory and market mechanisms to reduce GHG emissions to 1990 levels by the year 2020.

As such, the Projects would not conflict with any applicable plan, policy, or regulation to reduce GHG emissions.

4.7.7 Mitigation Measures

The Projects would be required to comply with regional and local (AVAQMD) rules that assist in mitigating GHG impacts. Mitigation Measures include the following:

GHG-1 All off-road diesel powered construction equipment less than 50 hp shall meet or exceed Tier 2 off-road emission standards. Off-road diesel-powered construction equipment greater than or equal to 50 hp shall meet or exceed Tier 3 off-road emission standards. The construction equipment requirement shall be increased to Tier 4 off-road emission standards by January 1, 2015. Post-January 1, 2015, all off-road diesel-powered construction equipment greater than 50 hp shall meet or exceed Tier 4 off-road emission standards, where available. Verification documentation such as an ongoing log shall be provided to the County of Los Angeles Department of Regional Planning upon request within five business days.

GHG-2 During construction, the off-road equipment, vehicles, and trucks shall not be idle more than five minutes in any one hour.

GHG-3 The off-road construction equipment drivers shall have documented training in operating the equipment efficiently, taking into account ways to reduce the hours of operations of the equipment and/or operate the equipment at a lower load factor.

GHG-4 Traffic speeds on all unpaved roads shall be maintained at 15 mph or less.

GHG-5 During construction, there shall be documented carpools, vanpools, and/or shuttles provided for construction employees.

4.7.7.1 Projects 1 – 6 Design Features

The proposed Projects include various project design features and objectives that address global climate change and reduce GHG emissions. Projects design features include aspects of the Projects that either must be incorporated as part of the conditions of approval, or that the Applicant has committed to include to reduce GHG impacts associated with the Projects. The Projects would be designed to reduce emissions through specific goals set. The expected Projects features would directly or indirectly result in lower emissions of GHGs.

The Projects design features that address global climate change impacts include the following:

- Vegetation to sequester GHGs
  - Preserve natural areas by mowing, which maintains the organic material in the soil
  - Preserve open space by limiting constructing on portions of Projects sites
  - Plant trees and shrubs along the edges as buffers to adjacent receptors
- Construction limitations to minimize GHG emissions
  - Limit construction equipment idling beyond regulation requirements
  - Limit number of simultaneous construction projects by phasing

4.7.7.2 Level of Significance After Mitigation

Incorporation of the mitigation measures provided above would ensure that the Projects would not conflict with or obstruct implementation of the state GHG reduction strategies. Implementing these mitigation measures would further reduce emissions below AVAQMD requirements. GHG impacts would therefore be less than significant after mitigation.

The Projects' incremental contribution to global climate change would be an added benefit to the overall environment, and would be less than significant.

4.7.8 Cumulative Impacts

As defined in CEQA Guidelines Section 15355, a "cumulative impact" is an environmental effect that may result from the combination of two or more environmental effects associated with a proposed project, or from the combination of one or more project environmental effects with related environmental effects caused by other closely related projects. However, in the case of global climate change, the proximity of the Projects to other GHG-generating activities is not

directly relevant to the determination of a cumulative impact. Although AB 32 sets statewide targets for future GHG emissions, the scoping plan and other implementing tools of the law are clear that the reductions are not expected to occur uniformly from all sources or sectors. The Project-level analysis above highlights the manner by which the proposed Projects intend to meet many of these strategies.

There exist numerous options for project developers to reduce their contribution to city-, county-, and state-wide GHG emissions, while helping to meet the region's future housing, jobs, and infrastructure needs. However, it is not possible at this time to accurately quantify GHG emissions expected from the related Projects or the GHG reductions anticipated from the above-listed strategies. There is no certain basis for concluding that an emissions increase resulting from the Projects and the related Projects could cause a measurable increase in global GHG emissions sufficient to force global climate change due to the complex physical, chemical and atmospheric mechanisms involved in global climate change. In addition, the emissions models used for Project-level evaluations do not fully reflect improvements in technology and other reductions in GHG emissions that are likely to occur pursuant to state regulations, such as AB 1493, SB 1368, AB 32, and Executive Order S-3-5, as well as future federal and/or state regulations. Therefore, it is not possible or meaningful to calculate emissions from each of the identified related Projects and compare that with a numeric threshold or reduction target.

Projects 1-6 would be consistent with the state's goals in helping the state meet the RPS (Table 4.7-17), resulting in a GHG emission profile that is below established thresholds, and include implementation of the mitigation measures listed in Section 4.7.7 above. Therefore, the Projects do not contribute considerably to cumulatively significant global climate change impacts.

Table 4.7-17 GHG Reduction Strategies

Source	Category / Description
Renewable Portfolio Standard (SB 1078/Executive Order S-14-08)	• Requires electricity retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020; • Requires various state agencies to streamline processes for the approval of new renewable energy facilities and determine priority renewable energy zones; and • Establishes the requirement for the creation/adoption of the DRECP process for the Mojave and Colorado Desert regions.

Source: CPUC 2011

4.7.9 References

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4.8 HAZARDS AND HAZARDOUS MATERIALS

4.8.1 Introduction

The following section provides a discussion of the existing conditions and the potential impacts of proposed Projects 1 – 6 with regard to hazards or hazardous materials issues as identified in part by the site-specific environmental data record search reports prepared by Environmental Data Resources, Inc. (EDR 2011) included as Appendix B-6 of this EIR. Phase I ESA have not been conducted on any of the six sites to date.

4.8.2 Environmental Setting

4.8.2.1 Regional Setting

The proposed Projects are located within the Antelope Valley in unincorporated Los Angeles County. The Project sites range in size from approximately 39 acres to 256 acres, and are primarily undeveloped, disturbed land with previous agricultural use.

4.8.2.2 Environmental Data Review

An Environmental Data Review (EDR) was conducted on each of the Project site locations. The purpose of the EDR was to gather information concerning the subject properties and surrounding areas to identify conditions indicative of the release or threatened release of hazardous substances including, but not limited to pollutants, contaminants, petroleum or petroleum products, and controlled substances to identify and evaluate Recognized Environmental Conditions (RECs) affecting the Project sites. The EDR report for each of the Project site locations is included as Appendix B-6.

At the location of Project 1, the EDR records indicated the presence of a historic underground storage tank (UST). The records indicate that the UST is a 500 gallon fuel tank. The UST is not reported to have leaked. Subsequent interviews with the property owner established that the UST was used historically for the refueling of farm equipment. It is unknown when use of the UST ceased, but all associated above-ground pumps and fittings were removed in 2009 and the UST was abandoned in place. As stated in mitigation measure HH-4, a closure permit for the UST will be verified or obtained from the Los Angeles County Fire Department, Health Hazardous Materials Division. No other RECs were identified at the location of Project 1 in the EDR.

The EDR conducted at the location of Project 2 indicated that the site was not listed in any of the EDR databases nor known to contain a REC. The EDR report indicated that RECs were not identified in the area surrounding the Project 2 location.

The EDR conducted at the location of Project 3 indicated that the site was not listed in any of the EDR databases nor known to contain a REC. The EDR report indicated the presence of one REC in the vicinity of the location of Project 3. A UST tank is identified in the EDR as being located approximately 0.38 miles to the west northwest of Project 3. The EDR indicated the presence of a 550 gallon underground fuel tank with no record of release to the environment.

The EDR conducted at the location of Project 4 indicated that the site was not listed in any of the EDR databases nor known to contain a REC. The EDR report indicated the presence of two RECs in the vicinity of the location of Project 4. A UST is identified in the EDR as being located approximately 0.75 miles to the south of Project 4, at the Antelope Substation. The EDR indicated that the 2,000 gallon underground fuel tank was previously removed and had no record of release to the environment. The EDR also indicated the presence of a clandestine drug lab reported to be adjacent to the location of Project 4, on the opposite side of Avenue I.

The EDR conducted at the location of Project 5 indicated that the site was not listed in any of the EDR databases nor known to contain a REC. The EDR report indicated that RECs were not identified in the area surrounding the Project 5 location.

The EDR conducted at the location of Project 6 indicated that the site was not listed in any of the EDR databases nor known to contain a REC. The EDR report indicated that RECs were not identified in the area surrounding the Project 6 location.

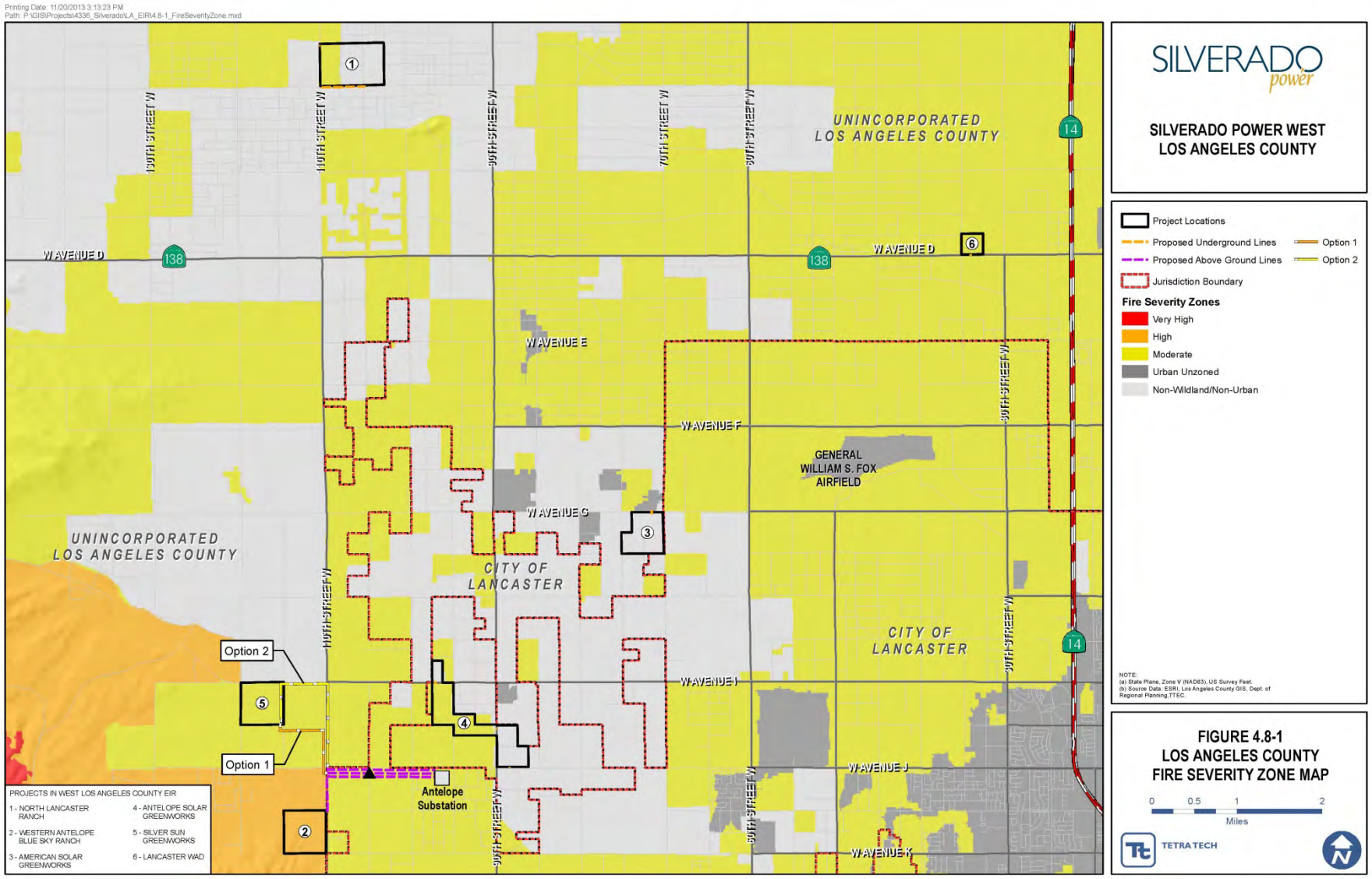
4.8.2.3 Division of Oil, Gas, and Geothermal Resources File Review

Based on review of the available documentation from Division of Oil, Gas, and Geothermal Resources (DOGGR), there is one abandoned oil and gas well located near Project 2 (DOGGR 2012). The well is located approximately 350 feet to the west of the Project 2 western boundary. The well is reported to be API Number 0.3705294, also referred to as Schwandt 57-23. The well was reported to be in the Schwandt Lease and was developed by C.W. Colgrove. The well was reportedly plugged, but the date of abandonment was not available.

Based on review of the available documentation from DOGGR, Project 1 and Projects 3 – 6 are not located on or near any active or abandoned oil and gas wells. A summary of the DOGGR file review is provided in Appendix B-6.

4.8.2.4 Los Angeles County Fire Hazard Severity Zones

Based upon a review of the Los Angeles County Fire Hazard Severity Zone map, Projects 1 – 6 are not located in areas designated “Very High Fire Hazard Severity Zones.” The Los Angeles County Fire Severity Zone Map is depicted in Figure 4.8-1.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Path: P:\GIS\Projects\4336_Silverado\LA_EIR\4.8-1_FireSeverityZone.mxd
SILVERADO power
SILVERADO POWER WEST
LOS ANGELES COUNTY
Project Locations
Proposed Underground Lines
Proposed Above Ground Lines
Option 1
Option 2
Jurisdiction Boundary
Fire Severity Zones
Very High
High
Moderate
Urban Unzoned
Non-Wildland/Non-Urban
UNINCORPORATED LOS ANGELES COUNTY
CITY OF LANCASTER
GENERAL WILLIAM S. FOX AIRFIELD
W AVENUE D
W AVENUE E
W AVENUE F
W AVENUE G
W AVENUE I
W AVENUE J
W AVENUE K
110TH STREET W
90TH STREET W
70TH STREET W
Option 2
Option 1
Antelope Substation
PROJECTS IN WEST LOS ANGELES COUNTY EIR
1 - NORTH LANCASTER RANCH
2 - WESTERN ANTELOPE BLUE SKY RANCH
3 - AMERICAN SOLAR GREENWORKS
4 - ANTELOPE SOLAR GREENWORKS
5 - SILVER SUN GREENWORKS
6 - LANCASTER WAD
NOTE:
(a) State Plane, Zone V (NAD83), US Survey Feet.
(b) Source Data: ESRI, Los Angeles County GIS, Dept. of Regional Planning,TTEC
FIGURE 4.8-1
LOS ANGELES COUNTY
FIRE SEVERITY ZONE MAP
0 0.5 1 2
Miles
TETRATECH

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4.8.2.5 Airfields

The General William J. Fox Airfield is located in the City of Lancaster, approximately two miles northeast of the location of Project 3. Based upon a review of the *General William J. Fox Airfield Land Use Compatibility Plan*, Project 3 is located in an area designated Zone C: Extended Approach/Departure Zone. Power plants, electrical substations, and power lines are considered potentially compatible with restrictions in Zone C. Generally, there is no concern with regard to any object up to 50 feet tall within Zone C; the County of Los Angeles Regional Planning Commission Airport Land Use Commission (ALUC) stated that ALUC review is not required for Project 3. This letter from the ALUC is included in Appendix B-12.

Project 6 is located approximately 2.16 miles north of General William J. Fox Airfield and is located within Zone E: Other Airport Environs, of the Airport Land Use Compatibility Plan for General William J. Fox Airfield. Power plants, electrical substations, and power lines are considered potentially compatible with restrictions in Zone E. Generally, there is no concern with regard to any object up to 100 feet tall within Zone E; the ALUC stated that ALUC review is not required for Project 6. This letter from the ALUC is included in Appendix B-12.

Project 1 is located approximately two miles northwest of the Little Buttes Antique Airfield Airport, which is a privately-owned dirt airstrip. Project 4 is located approximately 0.15 miles from Bohunks Airpark, which is a privately-owned dirt airstrip. Neither airstrip has adopted land use plans.

Projects 2 and 5 are not located in the immediate vicinity of any airports or private airstrips.

4.8.2.6 Cadmium Telluride Containing Photovoltaic Panels

The photovoltaic (PV) panel technology to be used in the construction of Projects 1 – 6 will be determined at the time of Project construction, and may include crystalline silicon or thin-film cadmium telluride (CdTe) type panels. There are potential environmental health and safety concerns associated with the use of cadmium-containing PV panels. Elemental cadmium (Cd), which forms CdTe when reacted with tellurium (Te), is a lung carcinogen, and can cause detrimental effects on kidney and bone with long-term exposure (Fthenakis and Zweibel 2003).

According to a 2003 report from the National Renewable Energy Laboratory, the only pathways for human exposure to CdTe are via ingesting flakes or dust particles, or inhaling dust and fumes. In PV panels, the CdTe layers are encapsulated between layers of glass, and are therefore stable. Unless the module is purposely ground into a fine dust, dust particles will not be generated. Preliminary studies have indicated that CdTe releases are unlikely to occur during accidental breakage. In the event that a panel is cracked or broken, it will be immediately removed and transported to an appropriate facility for recycling.

In the case of a fire, CdTe may pose an increased health risk. The melting point of CdTe is 1041°C, and evaporation starts at 1050°C. The thin layers of CdTe are encapsulated between glass plates, which would be molten at these temperatures, making vapor emissions unlikely.

4.8.3 Regulatory Setting

Regulations, plans, and standards for management of hazards and hazardous materials have been enacted by state, county, and local government. Federal and state governments allow local counties and cities to manage and/or implement many federal and state regulations relating to the construction and operation of facilities. A summary of potentially applicable regulatory programs are presented below.

4.8.3.1 Regulatory Definitions

The following definitions are for terms used by the various agencies with regulatory oversight for hazards and hazardous materials for the Projects. It is important to understand how these terms are used throughout this section.

4.8.3.1.1 Hazardous Materials

Hazardous materials are any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, and any material which a handler or the administering regulatory agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment (California Health and Safety Code [CHSC], Section 25501). A number of properties may cause a substance to be considered hazardous, including toxicity, ignitibility, corrosivity, or reactivity.

4.8.3.1.2 Hazardous Waste

A waste or combination of wastes which, because of its quantity, concentration, or physical chemical, or infection characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitation-reversible illness; or pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, disposed of, or otherwise managed (CHSC, Section 25141) (California State Board of Equalization 2012). California waste identification and classification regulations are found in Title 22 of the CCR.

4.8.3.2 Federal

4.8.3.2.1 U.S. Environmental Protection Agency (U.S. EPA)

The U.S. EPA is the principal regulatory agency responsible for the safe use and handling of hazardous materials.

4.8.3.2.2 Superfund Amendments and Reauthorization Act Public Law 99-499 (100 Stats. 1613)

The Superfund Amendments and Reauthorization Act (SARA) amended the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 United States Code [U.S.C.] § 9601 et seq.) on October 17, 1986. SARA reflected the U.S. EPA's experience in administering the complex Superfund program during its first 6 years and made several important changes and additions to the program. SARA also required the U.S. EPA to revise the Hazard Ranking System to ensure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled hazardous waste sites that may be placed on the National Priorities List.

SARA specifically addresses the management of hazardous materials by requiring public disclosure of information relating to the types and quantities of hazardous materials used at various types of facilities. SARA Title III (42 U.S.C. § 11001 et seq.) is referred to as the Emergency Planning and Community Right to Know Act. The act addresses community emergency planning, emergency release notification, and hazardous materials chemical inventory reporting.

4.8.3.2.3 Resource Conservation and Recovery Act 42 U.S.C. § 6901 et seq.

The Resource Conservation and Recovery Act (RCRA) gave the U.S. EPA the authority to control hazardous waste. This includes generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous waste.

The 1986 amendments to the RCRA enabled the U.S. EPA to address environmental problems that could result from underground tanks that store petroleum and other hazardous substances. The RCRA focuses on active and future facilities; however, once a hazardous material is released to the environment, it is deemed a waste as soon as the material impacted is disturbed or moved. Therefore, contaminated soil can be regulated under the RCRA. The California Department of Toxic Substances Control (DTSC) implements the RCRA in California, and regulations regarding hazardous waste are contained in CCR, Title 26.

4.8.3.2.4 U.S. Department of Transportation

The U.S. Department of Transportation (DOT) has the regulatory responsibility for the safe transportation of hazardous materials. The federal Hazardous Materials Transportation Law, 49 U.S.C. § 5105, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to "protect against the risk to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce."

4.8.3.2.5 Asbestos Regulations and Requirements

The Federal Occupational Safety and Health Administration (OSHA) has the responsibility to regulate asbestos as a worker health and safety issue through the Asbestos Standards for the Construction Industry. U.S. EPA regulations concerning the identification, handling,

management, and abatement of asbestos-containing materials are found in the Asbestos Hazard Emergency Response Act and the National Emission Standards for Hazardous Air Pollutants.

4.8.3.2.6 Lead-based Paint Regulations and Requirements

Federal OSHA and the California Division of Occupational Safety and health (Cal/OSHA) regulate worker exposure during construction activities that impact lead-based paint. The Interim Final Rule found in 29 CFR Part 1926.62 covers construction work where employees may be exposed to lead during activities such as demolition and removal.

4.8.3.3 State

4.8.3.3.1 California Office of Emergency Services

The California Office of Emergency Services coordinates the emergency response to an accidental release of acutely/extremely hazardous material.

4.8.3.3.2 California Health and Safety Code Section 25500

The CHSC, Section 25500, requires companies that handle hazardous materials in sufficient quantities to develop a Hazardous Materials Business Plan (HMBP). The HMBP includes basic information on the location, type, quantity, and health risks of hazardous materials handled, stored, used, or disposed of that could accidentally be released into the environment. It also includes a plan for training new personnel and for the annual training of all personnel in safety procedures to follow in the event of a release of hazardous materials. Additionally, the HMBP includes an Emergency Response Plan and identifies the business representatives able to assist emergency personnel in the event of a release.

4.8.3.3.3 Department of Toxic Substance Control

The objective of the DTSC is to protect human health and the environment from exposure to hazardous materials and waste. The DTSC has the authority to respond to and enforce the cleanup of hazardous substance release. Transportation of hazardous waste must be done by a transporter registered with the DTSC.

4.8.3.3.4 California Division of Oil, Gas, and Geothermal Resources

The DOGGR is mandated by Section 3106 of the PRC to supervise the drilling, operation, maintenance, and abandonment of oil wells for the purpose of preventing: (1) damage to life, health, property, and natural resources; (2) damage to underground and subsurface waters suitable for irrigation or domestic use; (3) loss of oil, gas, or reservoir energy; and (4) damage to oil and gas deposits by infiltrating water and other causes.

The DOGGR is also charged with implementing Section 3208.1 of the PRC. The Construction Site Plan Review Program was developed to assist local permitting agencies in identifying and reviewing the status of oil or gas wells located near or beneath structures. Before issuing building or grading permits, local agencies review and implement DOGGR preconstruction well

requirements. Interaction between local permitting agencies and DOGGR helps resolve use issues and allows for responsible development in oil and gas fields.

4.8.3.3.5 California Department of Pesticide Regulation

The California Department of Pesticide Regulation is the principal agency responsible for the regulation of pesticide sales and use in the state. The Department of Pesticide Regulation oversees licensing and certification of dealers, pest control advisors, and pest control businesses and applicators. The Department of Pesticide Regulation also assumes overall responsibility for pesticide incident investigations, administers pesticide residual monitoring programs, and coordinates pesticide use reporting. Section 11501 of the California Food and Agricultural Code requires pesticide applications to be confined to their target and to avoid contamination of non-target properties. Violations can result in either civil penalties or a revocation of pesticide use permit.

4.8.3.3.6 California Fire Code

Fire safety requirements outlined in the California Fire Code include the installation of fire sprinklers in all high-rise buildings, the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas, and the establishment of fire resistance standards for fire doors, building materials, and particular types of construction. Specific CBC fire safety regulations have been incorporated by reference in the Los Angeles County Code, with local amendments.

4.8.3.3.7 Regional Water Quality Control Board

The Regional Water Quality Control Board (RWQCB) has jurisdiction over sites that potentially threaten groundwater or surface waters of the state. Construction disturbing an area greater than one acre must prepare a SWPPP and obtain a permit from the RWQCB. The proposed Projects 1 – 6 fall under the jurisdiction of the Lahontan Regional Water Quality Control Board.

4.8.3.4 Local

4.8.3.4.1 Certified Unified Program Agency

The Certified Unified Program Agency (CUPA) is an agency certified by the DTSC to conduct the Unified Program, which consists of hazardous waste generator and on-site treatment programs; aboveground storage tank and underground storage tank (UST) programs, Hazardous Materials Management, HMBPs, and Inventory Statements; and the Risk Management and Prevention Program. In the area of Projects 1 – 6, the CUPA is the Los Angeles County Fire Department (LACFD) Health and Hazardous Materials Division (HHMD).

The LACFD HHMD Site Mitigation Unit oversees corrective action at contaminated sites in Los Angeles County.

4.8.3.4.2 Los Angeles County Fire Code and Building Code

The Los Angeles County Fire Code (Title 32) and Building Code (Title 26) establish standards for the construction, design, and distribution of fire suppression facilities. These policies ensure

new developments comply with criteria regarding fire flow, minimum distance to fire stations, public and private fire hydrants, and access provisions for firefighting units.

4.8.3.4.3 Los Angeles County Fire Department Regulations

The LACFD has adopted programs directed at wildland fire prevention, including adoption of State Fire Code standards for new development in hazardous fire areas. Fire prevention requirements include the provision of access roads, adequate road width, and clearance of brush around structures located in hillside areas. In addition, proof of adequate water supply for fire flow is required within a designated distance for new construction.

4.8.4 Significance Criteria

The potential impacts of Projects 1 – 6 with respect to hazards and hazardous materials is based on the CEQA significance criteria as specified by the LACDRP. Potential impacts have been assessed using the criteria from the LACDRP Initial Study Environmental Checklist (included in Appendix A-2 of this document). The significance criteria are as follows:

a) Would the project create a significant hazard to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials?

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials or waste into the environment?

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of sensitive land uses?

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

e) For a project located within an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

g) Would the project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

h) Would the project expose people or structures to a significant risk of loss, injury, or death involving fires, because the project is located within a Very High Fire Hazard Severity Zones (Zone 4)?

i) Would the project expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located within a high fire hazard area with inadequate access?

j) Would the project expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located within an area with inadequate water and pressure to meet fire flow standards?

k) Would the project expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located within proximity to land uses that have the potential for dangerous fire hazard?

l) Does the proposed use constitute a potentially dangerous fire hazard?

4.8.5 Impact Analysis

The impact analyses in this section were performed by applying the significance criteria from the LACDRP Initial Study Environmental Checklist to applicable baseline data (Section 4.8.3) and the Project 1 – 6 descriptions.

4.8.5.1 Project Impacts: Criterion A – Would the project create a significant hazard to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials?

4.8.5.1.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and gen-tie lines would not require extensive or ongoing use of hazardous materials. Hazardous materials used during the construction of Projects 1 – 6 would be typical of most construction projects of this type. Hazardous materials used during construction activities may include gasoline, diesel fuel, oils, lubricants, solvents, detergents, degreasers, paints, and other supplies. All hazardous materials would be transported, stored, and properly disposed of in compliance with all applicable laws and regulations. The accidental release of hazardous materials or wastes during construction activities is possible. The accidental release of hazardous materials or wastes would be promptly contained and abated in accordance with all applicable laws and regulatory requirements, and therefore is not expected to result in a significant impact.

During the operation phase of Projects 1 – 6, limited quantities of hazardous materials would be stored on-site. These materials would include fire suppressant and transformer insulating oil (mineral oil). The mineral oil would be contained within electrical transformers and switches at Projects 1 – 6 locations.

Proposed Projects 1 – 6 would develop and implement a hazardous materials and hazardous waste management program for both construction and operational phases. The program would include the following, as required by applicable regulations.

Hazardous Materials and Hazardous Waste Handling: The construction contractor would prepare a Project-specific hazardous materials management and hazardous waste management program for Projects 1 – 6 locations. This program would be implemented prior to the start of construction activities. The program would prescribe proper hazardous material use, storage, and disposal requirements, as well as hazardous waste management procedures. The program would identify specific types of hazardous materials to be used during Project 1 – 6 construction and operation, and specific types of wastes that will be generated. All personnel would be provided with Project-specific training. These programs would be developed to ensure that all hazardous materials and hazardous wastes would be handled and disposed of in a safe

and environmentally sound manner consistent with all applicable laws and regulations. Employees and contractor personnel handling wastes would receive hazardous materials training and be trained in hazardous waste procedures, spill contingencies, waste minimization procedures and treatment, storage, and disposal facility (TSDF) training in accordance with OSHA Hazard Communication Standard and 22 CCR. Prior to the start of construction of Projects 1 – 6, a HMBP will be prepared and submitted in accordance with Chapter 6.95 of the CHSC and Title 22 CCR, as required by CUPA.

Construction Stormwater Pollution Prevention Plan: The construction contractor would prepare a site-specific Stormwater Pollution Prevention Plan (SWPPP) for review and approval by the appropriate regulatory agencies and implement it prior to the start of demolition or construction activities at Projects 1 – 6 sites. The SWPPP would utilize Best Management Practices (BMPs) to address the storage and handling of hazardous materials and sediment runoff during demolition and construction activities.

Transport of Hazardous Materials and Hazardous Wastes: Hazardous materials transported by truck would include fuel (diesel fuel and gasoline) and oils and lubricants for equipment. Transportation of hazardous waste may include hazardous building materials and small amounts of construction waste such as waste oils, solvents, or cleaners. The construction contractor would prepare written procedures for the transport of hazardous materials and hazardous waste in accordance with the CVC, California Highway Patrol (CHP) Regulations (CCR Title 13); DOT Regulations, Title 49, CFR; and U.S. EPA Regulations, Title 40 CFR, and CCR 22 regulations prior to the start of construction activities at Projects 1 – 6.

Fueling and Maintenance of Construction Equipment: The construction contractor would prepare written procedures for the fueling and maintenance of construction equipment prior to the start of construction activities at Projects 1 – 6. Vehicles and equipment would be refueled off-site or on-site by refueling trucks. If on-site refueling or maintenance activities are required, refueling and maintenance procedures would include implementation of BMPs to ensure that chemicals do not come in contact with the ground. Equipment will be inspected daily for potential leakage or failures.

Emergency Release Response Procedures: The construction contractor would prepare an Emergency Release Response Plan (ERRP) detailing the response to releases of hazardous materials. The ERRP would be prepared prior to the start of construction activities at Projects 1 – 6. The ERRP would prescribe hazardous materials handling procedures for reducing the potential for a release during construction activities, and would include an emergency response program to ensure the rapid and safe cleanup of any accidental spills. All hazardous material spills of threatened release would be immediately reported. All construction and operations personnel would be aware of federal, state, and local emergency response reporting guidelines.

Implementation of the aforementioned hazardous materials and hazardous waste management programs would reduce the potential impacts associated with the handling, transport, and use of hazardous materials during both construction and operation of Projects 1 – 6 to less than significant levels.

4.8.5.2 Project Impacts: Criterion B – Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials or waste into the environment?

4.8.5.2.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

If lead based paint is found during construction, the applicant would comply with County requirements and provide a copy of the qualifications/license of the lead based paint abatement contractor that will perform the abatement or removal of lead based paint to the Department of Public Works Building and Safety Division and the County of Los Angeles Fire Department Health and Hazardous Materials Division. If required by the County, the applicant would prepare and submit a Hazardous Building Materials Demolition Assessment and Management Plan to the Department of Public Works and Fire Department for review and approval to ensure compliance with all applicable federal, State, and local laws, and regulations. OSHA regulations are in place to assure that these materials are safely removed prior to or during demolition and renovation activities. In compliance with regulations requiring removals by firms and individuals licensed to do such work pursuant to applicable regulations the Project's potential impacts regarding lead exposure would be less than significant.

Implementation of the aforementioned ERRP would reduce the potential impacts associated with upset and accidental release conditions at Projects 1 – 6 (and gen-tie lines) to less than significant levels.

4.8.5.3 Project Impacts: Criterion C – Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of sensitive land uses?

4.8.5.3.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 would convert sunlight directly into electrical energy without the creation of hazardous emissions. The primary emissions created by Projects 1 – 6 (and gen-tie lines) would be air emissions from vehicle and equipment exhaust generated during construction activities. Potential impacts due to air emissions created during construction and maintenance activities at Projects 1 – 6 would be less than significant. Refer to Section 4.3 for detailed analyses of Projects 1 – 6 air emissions.

4.8.5.4 Project Impacts: Criterion D – Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

4.8.5.4.1 Project 1 and Gen-tie Line

Construction Impacts

Based on the EDR, the location of Project 1 and the Project 1 gen-tie line is included on a list of hazardous materials sites complied pursuant to Government Code § 65962.5. The location of Project 1 was indicated to contain a 500 gallon UST. Prior to the start of construction activities at Project 1, a Phase I ESA would be conducted to evaluate the potential hazards associated with the previously abandoned UST located at the Project 1 site. A closure permit for the UST will be verified or obtained from the Los Angeles County Fire Department, Health Hazardous Materials Division. Based on the information compiled in the Project 1 EDR, potential Project 1 impacts due to site hazards to the public and environment would be less than significant.

Operations Impacts

Project 1 impacts due to site hazards to the public and environment during operations would be less than significant.

4.8.5.4.2 Projects 2, 5 and 6 and Gen-tie Lines

Construction Impacts

Based on the EDR, Projects 2, 5, and 6 (and gen-tie lines) are not located at a known site that is included on a list of hazardous materials sites complied pursuant to Government Code § 65962.5. No RECs were indicated to be located in the vicinity of Project 2. No known releases have occurred at Projects 2, 5, and 6 or adjacent to Projects 2, 5, and 6. Based on the information compiled in the EDR, Projects 2, 5, and 6 would have no impact due to site hazards to the public and environment.

Operations Impacts

Projects 2, 5, and 6 impacts due to site hazards to the public and environment during operations would be less than significant.

4.8.5.4.3 Project 3 and Gen-tie Line

Construction Impacts

Based on the EDR, Project 3 and the Project 3 gen-tie line is not located on a site that is included on a list of hazardous materials sites complied pursuant to Government Code § 65962.5; however, RECs indicated to be in the vicinity of Project 3 include a UST. No known releases have occurred at Project 3 or adjacent to Project 3. Based on the information compiled in the Project 3 EDR, potential Project 3 impacts due to site hazards to the public and environment would be less than significant.

Operations Impacts

Project 3 impacts due to site hazards to the public and environment during operations would be less than significant.

4.8.5.4.4 Project 4 and Gen-tie Line

Construction Impacts

Based on the EDR, Project 4 and the Project 4 gen-tie line is not located on a site that is included on a list of hazardous materials sites complied pursuant to Government Code § 65962.5; however, RECs indicated to be in the vicinity of Project 4 include a UST and a clandestine drug lab. No known releases have occurred at Project 4 or adjacent to Project 4. Based on the information compiled in the Project 4 EDR, potential Project 4 impacts due to site hazards to the public and environment would be less than significant.

Operations Impacts

Project 4 impacts due to site hazards to the public and environment during operations would be less than significant.

4.8.5.5 Project Impacts: Criterion E – For a project located within an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

4.8.5.5.1 Projects 1, 2, 4 and 5 and Gen-tie Lines

Construction and Operations Impacts

Projects 1, 2, 4, and 5 (and gen-tie lines) are not located within an airport land use plan area or within 2 miles of a public use airport. Therefore, Projects 1, 2, 4, and 5 would have no impact on public use airports.

4.8.5.5.2 Project 3 and Gen-tie Line

Construction and Operations Impacts

Based upon a review of the *General William J. Fox Airfield Land Use Compatibility Plan*, Project 3 and the Project 3 gen-tie line are located within the General William J. Fox Airfield land use plan. Project 3 is located in General William J. Fox Airfield's Zone C: Extended Approach/Departure Zone. Generally, there is no concern with regard to any object up to 50 feet tall within Zone C. Additionally, the ALUC has stated that review of Project 3 is not required. Therefore, Project 3 impacts to public airports or public use airports would be less than significant.

4.8.5.5.3 Project 6 and Gen-tie Line

Construction and Operations Impacts

Based upon a review of the *General William J. Fox Airfield Land Use Compatibility Plan*, Project 6 and the Project 6 gen-tie line are located within the General William J. Fox Airfield land use plan. Project 6 is located in General William J. Fox Airfield's Zone E: Other Airport Environs. Generally, there is no concern with regard to any object up to 100 feet tall within Zone E. Additionally, the ALUC has stated that review of Project 6 is not required. Therefore, Project 6 impacts to public airports or public use airports would be less than significant.

4.8.5.6 Project Impacts: Criterion F – For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

4.8.5.6.1 Project 1 and Gen-tie Line

Construction and Operations

Project 1 and its associated gen-tie line are located approximately 2 miles northwest of the Little Buttes Antique Airfield Airport, which is a privately-owned dirt airstrip. Little Buttes Antique Airfield Airport has not adopted a land use plan.

Project 1 is not expected to significantly alter surrounding land use or result in the construction of features greater in height than those already present in the surrounding areas. The solar generating facilities would introduce minimal amounts of glare to the existing landscape. The PV modules are designed to absorb sunlight, and the glass modules that protect the PV surface are typically formulated glass designed to allow sunlight to pass with minimal reflection. As stated in Section 4.1 Aesthetics, construction activities would be limited to daylight hours and any lighting that may occur would be in compliance with the requirements of the Los Angeles County Rural Outdoor Lighting District Ordinance. Therefore, the Project 1 impacts on people residing or working in the vicinity of a private airstrip would be less than significant.

4.8.5.6.2 Projects 2, 3, 5, 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 2, 3, 5, and 6 (and gen-tie lines) are not located within the vicinity of a private airstrip. Therefore, Projects 2, 3, 5, and 6 would have no impact on public use airports.

4.8.5.6.3 Project 4 and Gen-tie Lines

Construction and Operations Impacts

Project 4 and the Project 4 gen-tie line is located approximately 0.15 miles from Bohunks Airpark, which is a privately-owned dirt airstrip. Bohunks Airpark has not adopted a land use plan.

Project 4 is not expected to significantly alter surrounding land use or result in the construction of features greater in height than those already present in the surrounding areas. The solar generating facilities would introduce minimal amounts of glare to the existing landscape. The PV

modules are designed to absorb sunlight, and the glass modules that protect the PV surface are typically formulated glass designed to allow sunlight to pass with minimal reflection. As stated in Section 4.1 Aesthetics, construction activities would be limited to daylight hours and any lighting that may occur would be in compliance with the requirements of the Los Angeles County Rural Outdoor Lighting District Ordinance. Therefore, the Project 4 impacts on people residing or working in the vicinity of a private airstrip would be less than significant.

4.8.5.7 Project Impacts: Criterion G – Would the project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

4.8.5.7.1 Projects 1 – 6 and Gen-tie Lines

Construction Impacts

Emergency response and evacuation procedures for the proposed Projects 1 – 6 are coordinated by the Los Angeles County Sheriff's Department (LACSD) and the LACFD.

During construction activities at Projects 1 – 6 sites (and gen-tie lines) the LACSD and LACFD require that adequate vehicular access be provided and maintained. Refer to Section 4.13 for additional information regarding transportation and traffic control plans. The Traffic Control Plan would provide for the required access of emergency vehicles during construction activities; therefore, Projects 1 – 6 impacts during construction to emergency response and emergency evacuation plans would be less than significant.

Operations Impacts

During operation of Projects 1 – 6 (and gen-tie lines), project operation staff would work with both the LACSD and the LACFD to ensure adequate emergency procedures are in place. The HMBP would include an Emergency Response Plan. Additionally, an Emergency Action Plan and a Fire Prevention Plan would be prepared for Projects 1 – 6 sites as required by Cal/OSHA. These plans would ensure that the project would have established plans and procedures for responding to emergency situations, and would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Therefore, Projects 1 – 6 impacts to emergency response plans or emergency evacuation plans would be less than significant.

4.8.5.8 Project Impacts: Criterion H – Would the project expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located within a Very High Fire Hazard Severity Zones (Zone 4)?

4.8.5.8.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 (and gen-tie lines) are not located in a Very High Fire Hazard Severity Zone. Therefore, no impact would occur.

4.8.5.9 Project Impacts: Criterion I – Would the project expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located within a high fire hazard area with inadequate access?

4.8.5.9.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 (and gen-tie lines) are not located in a Very High Fire Hazard Severity Zone. Therefore, no impact would occur.

4.8.5.10 Project Impacts: Criterion J – Would the project expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located within an area with inadequate water and pressure to meet fire flow standards?

4.8.5.10.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations

A public water system for fire control does not exist near Projects 1 – 6 (and gen-tie lines). The facility design includes a dedicated 10,000-gallon fire water storage tank to be installed and maintained at Projects 1 – 6 in compliance with LACFD Regulation 19 and other applicable Fire Department water tank specifications. Because the SGF design includes a dedicated fire water tank meeting Fire Department requirements, the water and pressure would meet fire flow needs. Therefore, impacts would be less than significant.

4.8.5.11 Project Impacts: Criterion K – Would the project expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located within proximity to land uses that have the potential for dangerous fire hazard?

4.8.5.11.1 Projects 1 – 6 and Gen-tie Lines

Projects 1 – 6 (and gen-tie lines) are surrounded by rural agricultural lands with no industrial uses, manufacturing uses, or other particularly high fire hazard uses in the vicinity. Although there are a few homes located within the vicinity of the Project sites, the Projects would comply with all applicable Fire Code and County and City ordinance requirements, and fire safety standards, as stated in Section 4.12 Public Safety. A Fire Management Plan, which would be prepared for the Projects, establishes standards and practices that would minimize the risk of fire and, in the event of fire, provide for immediate suppression and notification. Therefore, a less than significant impact would occur.

4.8.5.12 Project Impacts: Criterion L – Does the proposed use constitute a potentially dangerous fire hazard?

4.8.5.12.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 will convert sunlight into electrical energy through a process which would not constitute a fire hazard. All materials and equipment used in the construction of each facility would be specified based on applicable codes and building regulations The risk of fire danger

from the proposed Project would be primarily related refueling and operating vehicles and other equipment off roadways. Welding activities may also potentially result in the combustion of brush and vegetation. A Fire Protection and Prevention Plan would reduce the potential impacts to less than significant. The Fire Prevention Plan would be prepared for Projects 1 – 6 sites (and gen-tie lines) as required by Cal/OSHA, and the Project sites would include a dedicated 10,000-gallon fire water storage tank in compliance with LACFD Regulation 19. Therefore, Projects 1 – 6 do not constitute a potentially dangerous fire hazard and would have a less than significant impact on fire hazards in the area.

4.8.6 Mitigation Measures

HH-1 Prior to the start of construction activities, a Hazardous Materials Management and Hazardous Waste Management Plan shall be implemented for each project.

HH-2 Prior to the start of construction activities, a Hazardous Waste Management Plan shall be implemented for each project.

HH-3 Prior to the start of construction activities on the parcel containing the historic UST at the location of Project 1, a Phase I ESA will be completed. This mitigation measure only applies to Project 1.

HH-4 Prior to the start of construction activities, a closure permit for the UST will be verified or obtained from the Los Angeles County Fire Department, Health Hazardous Materials Division. This mitigation measure only applies to Project 1.

HH-5 Construction activities shall be halted if previously unidentified soil contamination is observed or indicated by testing during any earthwork activities. Construction will be halted or redirected until such soil contamination is evaluated and disposed of and/or treated

4.8.6.1 Level of Significance After Mitigation

Following the implementation of the mitigation measures provided in Section 4.8.6, the construction and operation of Projects 1 – 6 would have less than significant impacts associated with environmental safety.

4.8.7 Cumulative Impacts

There are 29 cumulative projects within a 5-mile radius of the Projects, amounting to 20,909 acres of development including Projects 1 – 6 (see Table 3-7). For the purposes of this cumulative analysis, the worst case scenario is assumed, i.e., all cumulative projects would be constructed at the same time. It is also assumed that all cumulative projects would comply with all applicable Laws, Ordinances, Regulations, and Standards (LORS). It is assumed that for each of the cumulative projects, Hazardous Materials Management Plans and Hazardous Waste Management Plans would be implemented, a SWPPP would be prepared, and all applicable environmental due diligence would be conducted (i.e., a Phase I ESA). If any of the cumulative projects are within an airport land use plan or airport influence area, the projects would obtain the appropriate authorizations and permitting from the respective ALUC. The

cumulative projects would have a less than significant impact with mitigation to hazards and hazardous materials.

Based on the land uses in the surrounding areas (primarily agricultural) and the limited amount and type of hazardous materials to be used as part of the proposed Projects 1 – 6, no significant incremental cumulative impacts associated with environmental safety are expected to occur as a result of the construction and operation of the proposed Projects 1 – 6. Regulations implemented by the DTSC, LACSD, LACFD, and Cal/OSHA would require similar measures be applied to other developments in the region. Therefore, Projects 1 – 6 are not expected to result in significant incremental cumulative impacts related to hazards and hazardous materials.

4.8.8 References

California Division of Oil, Gas, and Geothermal Resources (DOGGR). 2012. DOGGR File Review. Website accessed at: http://maps.conservation.ca.gov/doms/doms-app.html.

California State Board of Equalization. 2012. California Health and Safety Code (CHSC). Hazardous Waste Fee Health and Safety Code Section 25141. Accessed at http://www.boe.ca.gov/lawguides/business/current/btlg/vol4/hwf/hwf-25141.html.

Environmental Data Resources, Inc. (EDR). 2011. EDR Aerial Photo Decade Package; EDR Certified Sanborn Map Report; EDR Historical Topological Report; and EDR Radius Map Report. June.

Fthenakis, V., and K. Zweibel. 2003. CdTe PV: Real and perceived EHS risks. Paper read at NCPV and Solar Program.

4.9 HYDROLOGY AND WATER QUALITY

4.9.1 Introduction

This section presents the environmental and regulatory settings for hydrology and water quality of the proposed Projects 1 – 6. The analysis of the potential impacts to hydrology and water quality that could result from implementation of the Projects is then presented. Recommended mitigation measures that would reduce potential impacts to less than significant levels are also presented. The section closes with the cumulative analysis of the Proposed Projects in conjunction with other projects proposed in the area. This section is a summary of the analysis presented in the Hydrology Study/Drainage Concept/SUSMP/LID Reports created by Tetra Tech, which can be found in Appendix B-7.

4.9.2 Environmental Setting

The following section presents the existing conditions on the proposed Project 1 – 6 sites, which are located within the Antelope Valley Watershed and Groundwater Basin. The conditions described relate to climate, hydrology, flood hazards, groundwater, and surface water.

The Projects are found within the Los Angeles County portion of the Antelope Valley Watershed. The six Project sites comprise 987.10 acres in total. The primary soil classification at the locations of Projects 1 – 6 is soil classification 120 from the Los Angeles County Hydrology Manual (Tetra Tech 2013).

Hydrology Study/Drainage Concept/SUSMP/LID Reports prepared by Tetra Tech are provided in Appendix B-7 for the six Project sites. A brief description of the hydrology of each site as provided in the site-specific reports is provided below.

4.9.2.1 Regional Setting

4.9.2.1.1 Climate

The Antelope Valley Hydrologic Region experiences extensive summers that are hot and dry, while winters are cool and short. Most rainfall occurs within the time period of December to March, and the average rainfall for the year is 7.91 inches. More precisely, the northern boundaries of the region experience rainfall of about 5 inches per year, while the southern boundaries experience about 10 inches of rainfall per year. Average temperatures in the region tend to be at a high of 77.1°F and a low of 47.0°F. The Projects fall under the City of Lancaster within the Antelope Valley region (LACDPW 2007).

The City of Lancaster experiences average summer temperatures that range from a low of 66°F to a high of 96°F, while the winter temperatures range from a low of 31°F to a high of 57°F. On average, Lancaster experiences 7.5 inches of rainfall per year. About 75 percent of this figure occurs during the winter months of December to March (U.S. Climate Data 2012).

4.9.2.1.2 Surface Water Resources

The Projects are located within Los Angeles County watersheds and groundwater basins. A watershed is a piece of land in which all the water that falls within its boundaries would

eventually converge to one point or area. The boundaries of the watershed are created by the elevations in the topography of the land. In California, the large watershed areas and the smaller sub-watershed areas within them are named and numbered by the California Interagency Watershed Mapping Committee with the assistance of the Natural Resources Conservation Service (NRCS) (CalWater 2008).

4.9.2.1.3 Floodplains/Drainage Plan

Some of the proposed Project sites are located within Federal Emergency Management Administration (FEMA) Flood Hazard Areas. The FEMA flood zone boundaries and area designations for the proposed Project sites can be seen in Figures 4.9-1 through 4.9-6. Projects 1, 2, 3, and 5 are located entirely within Zone X (unshaded). Zone X (unshaded) is an area of minimal flood hazard, usually above the 500-year flood level. Project 4 has portions of its area within Zone A and Zone X-Shaded. Project 6 is completely within Zone A. Zone A is an area with a 1 percent annual chance of flooding and a 26 percent chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones. Zone X-shaded are areas of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Zone X-shaded designations are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile. Floodplain management ordinances must be followed for the areas located within Zone A and Zone X-Shaded.

4.9.2.1.4 Watersheds

The proposed Project sites are located within the Antelope Valley Watershed, which is located in the western Mojave Desert. Portions of Los Angeles County, Kern County, and San Bernardino County are situated within this watershed. This large and flat basin receives water from the San Gabriel Mountains through Big Rock Creek, Little Rock Creek, and Armargosa Creek, and the Tehachapi Mountains through Oak Creek and Cottonwood Creek. The watershed is a flat, closed basin with low to moderate slopes along with some hilly regions. The Antelope Valley has no outlets to the ocean, and therefore the streams of water that start at the region's mountains and foothills travel through the valley floor toward the region's dry lakes. The three major dry lakes are Rosamond Lake, Rogers Dry Lake, and Buckhorn Dry Lake. Most of the watershed does not possess natural defined channels and therefore it largely experiences unpredictable sheet flow (LACDPW 2007). The Project sites in total have 21 primary drainage paths (Drainages A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, and U) as seen on Figures 4.9-7 through 4.9-12 per the Hydrology Study/Drainage Concept/SUSMP/LID Reports prepared by Tetra Tech and included in Appendix B-7.

4.9.2.1.5 Groundwater Resources

The Projects are located on top of the Antelope Valley Groundwater Basin, which is located within the South Lahontan Hydrologic Region and is bounded on the northwest by the Garlock Fault Zone at the base of the Tehachapi Mountains and on the southwest by the base of the San Gabriel Mountains.

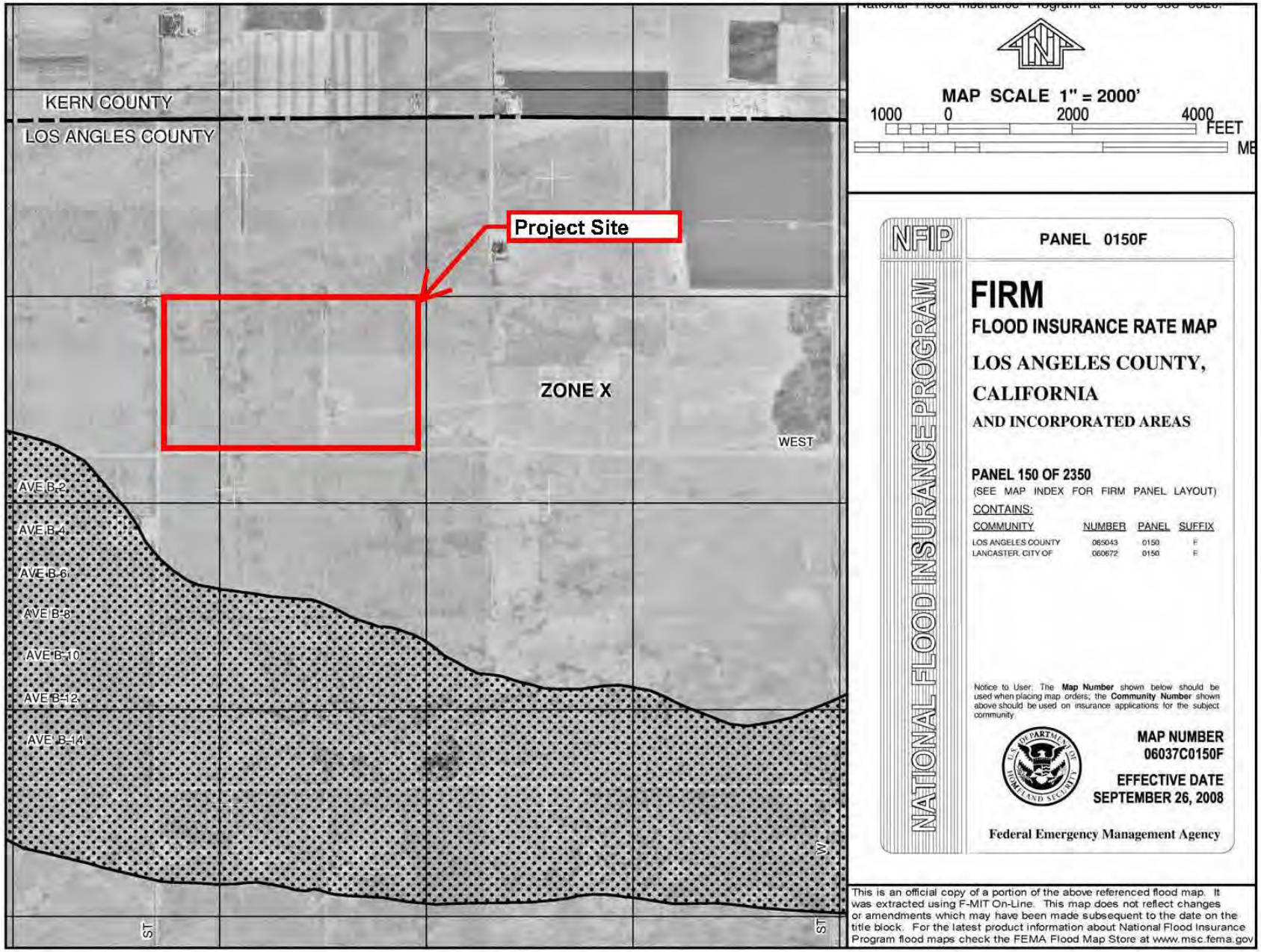

FIGURE 4.9-1 FEMA FLOOD INSURANCE RATE MAP FOR PROJECT 1

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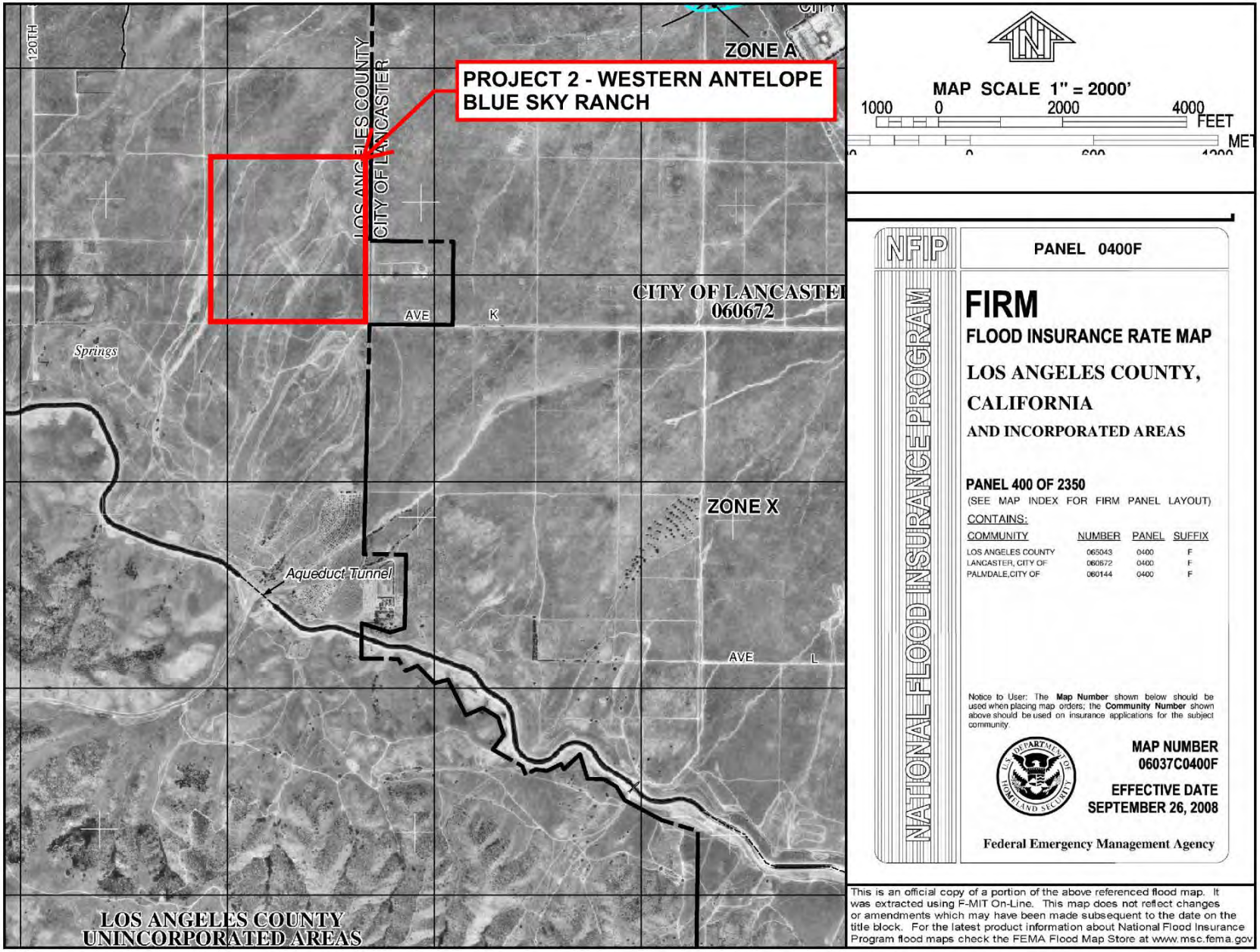

FIGURE 4.9-2 FEMA FLOOD INSURANCE RATE MAP FOR PROJECT 2

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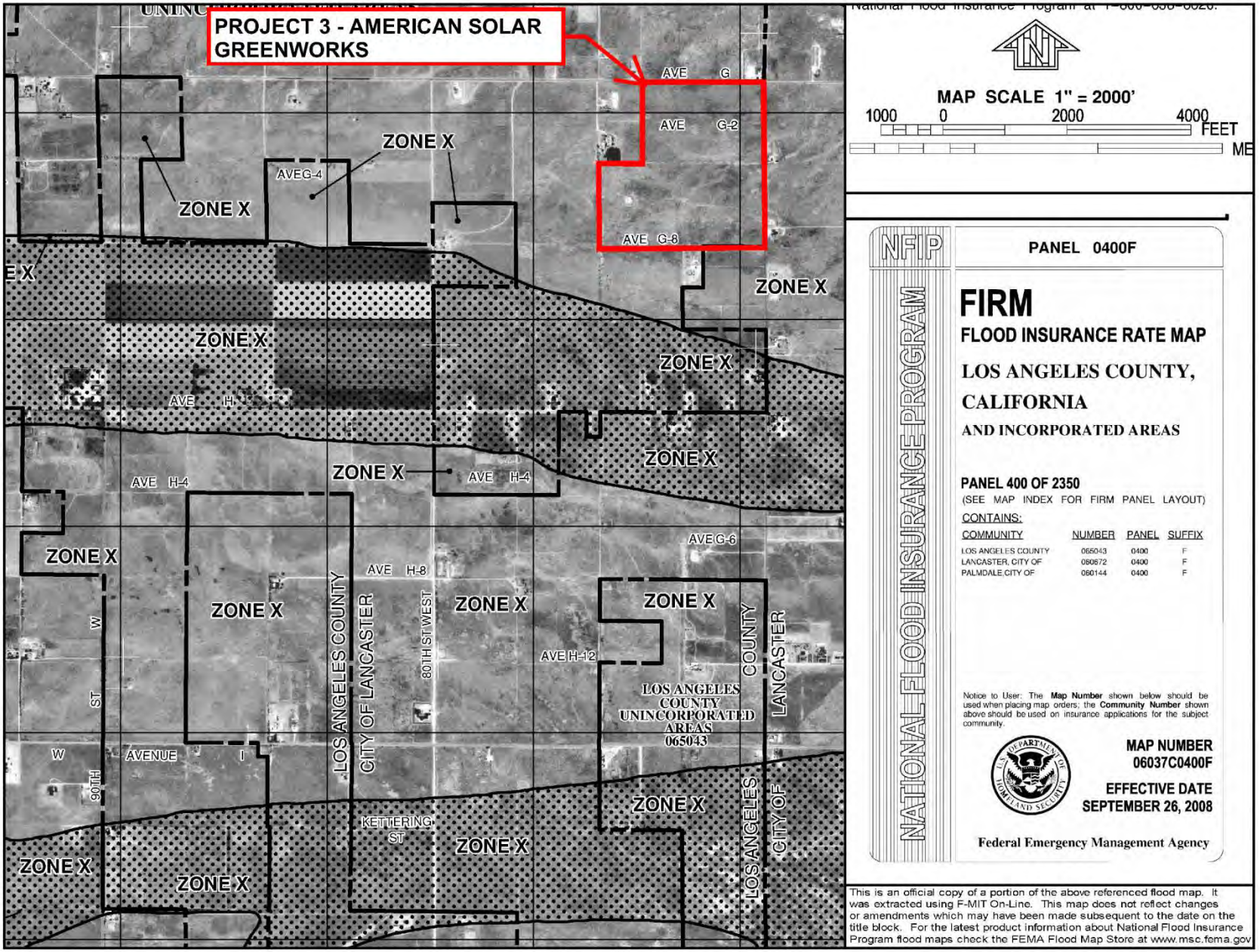

FIGURE 4.9-3 FEMA FLOOD INSURANCE RATE MAP FOR PROJECT 3

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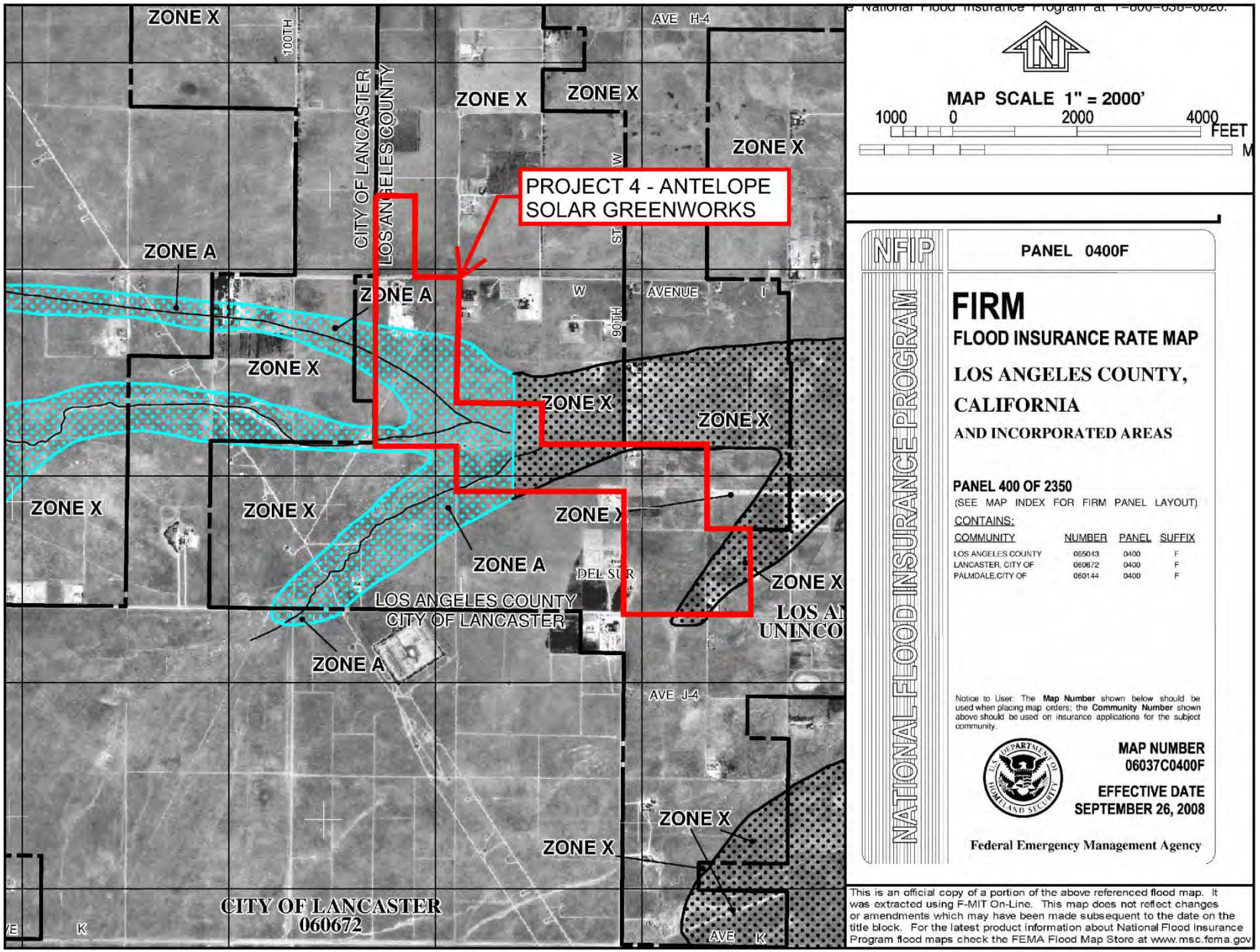

FIGURE 4.9-4 FEMA FLOOD INSURANCE RATE MAP FOR PROJECT 4

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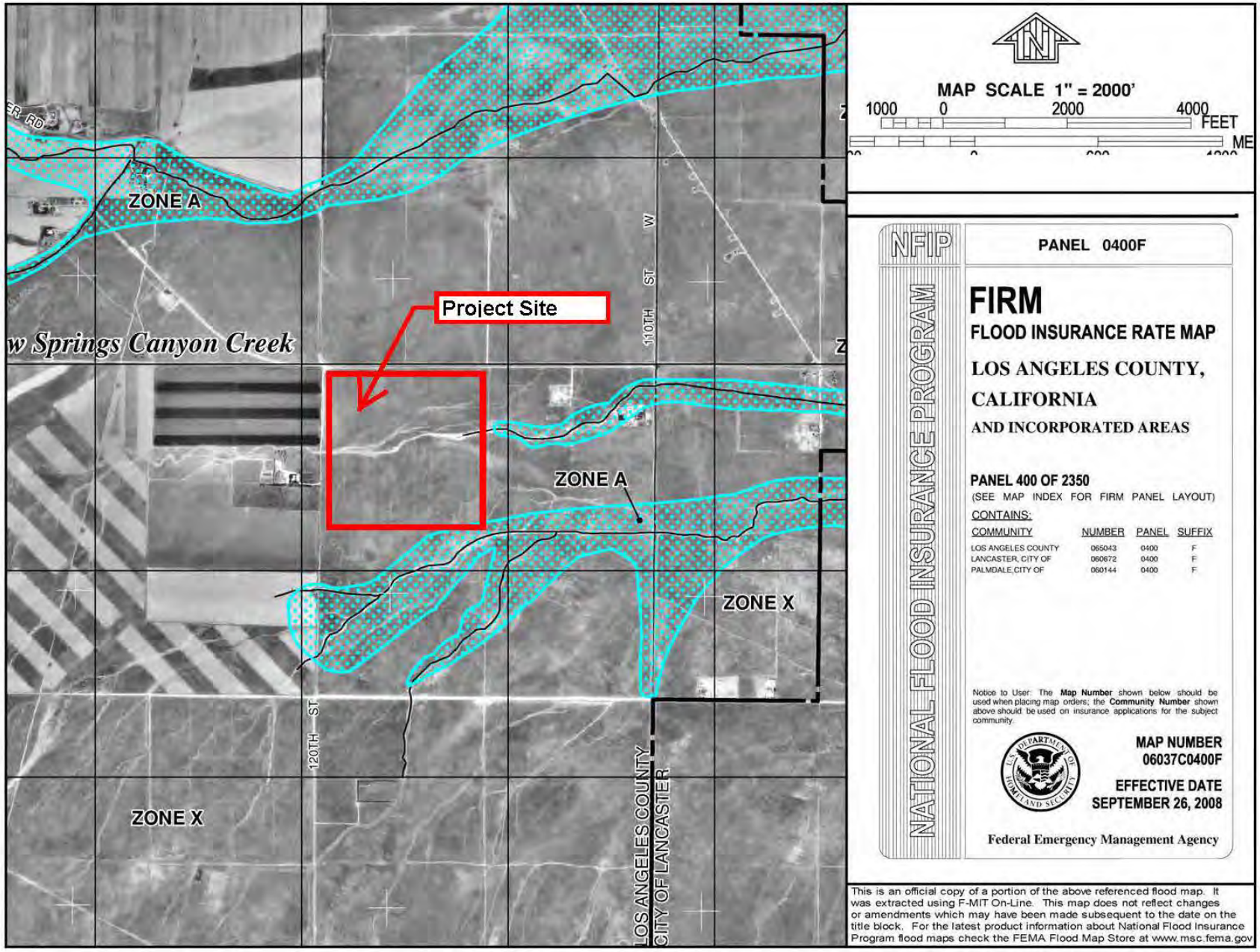

FIGURE 4.9-5 FEMA FLOOD INSURANCE RATE MAP FOR PROJECT 5

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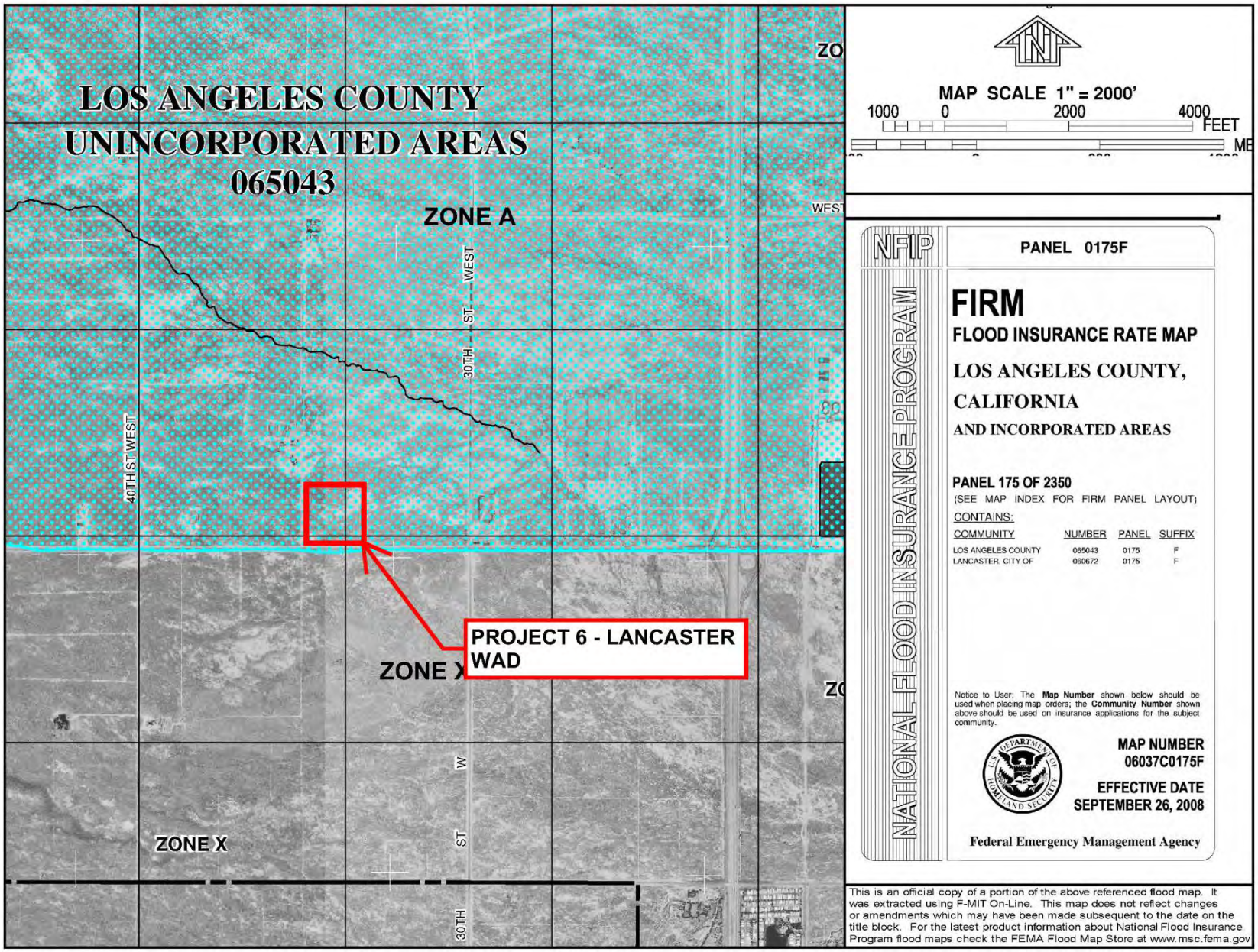

FIGURE 4.9-6 FEMA FLOOD INSURANCE RATE MAP FOR PROJECT 6

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DRAINAGE A
AVE A-8
W AVE A-8
AVE A-12
W AVE B
105TH ST W
100TH ST W
LEGEND
PROJECT BOUNDARY
DRAINAGE FROM DRAINAGE CONCEPT REPORT
BLUE LINE DRAINAGE AS PER USGS
TETRA TECH
17885 VON KARMAN AVE., STE. 500
IRVINE, CA 92614-6213
949-809-5000
Scale: N.T.S.
Date: 9-9-2013
LOS ANGELES COUNTY
FIGURE 4.9-7
PROJECT 1 - NORTH LANCASTER RANCH
USGS BLUE LINE DRAINAGE

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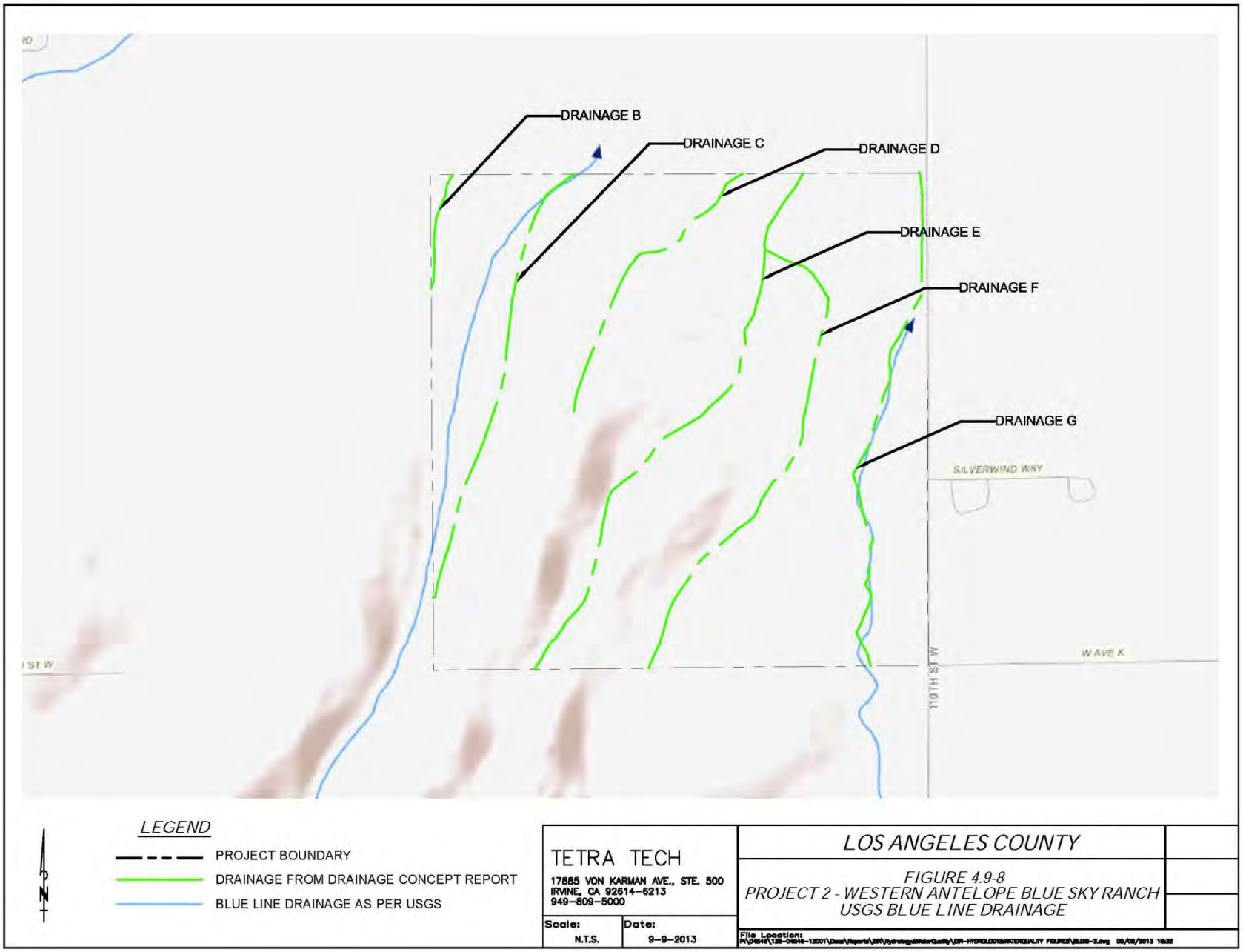
DRAINAGE B
DRAINAGE C
DRAINAGE D
DRAINAGE E
DRAINAGE F
DRAINAGE G
SILVERWIND WAY
W AVE K
110TH ST W
LEGEND
PROJECT BOUNDARY
DRAINAGE FROM DRAINAGE CONCEPT REPORT
BLUE LINE DRAINAGE AS PER USGS
TETRA TECH
17885 VON KARMAN AVE., STE. 500
IRVINE, CA 92614-6213
949-809-5000
Scale: N.T.S.
Date: 9-9-2013
LOS ANGELES COUNTY
FIGURE 4.9-8
PROJECT 2 - WESTERN ANTELOPE BLUE SKY RANCH
USGS BLUE LINE DRAINAGE
File Location:

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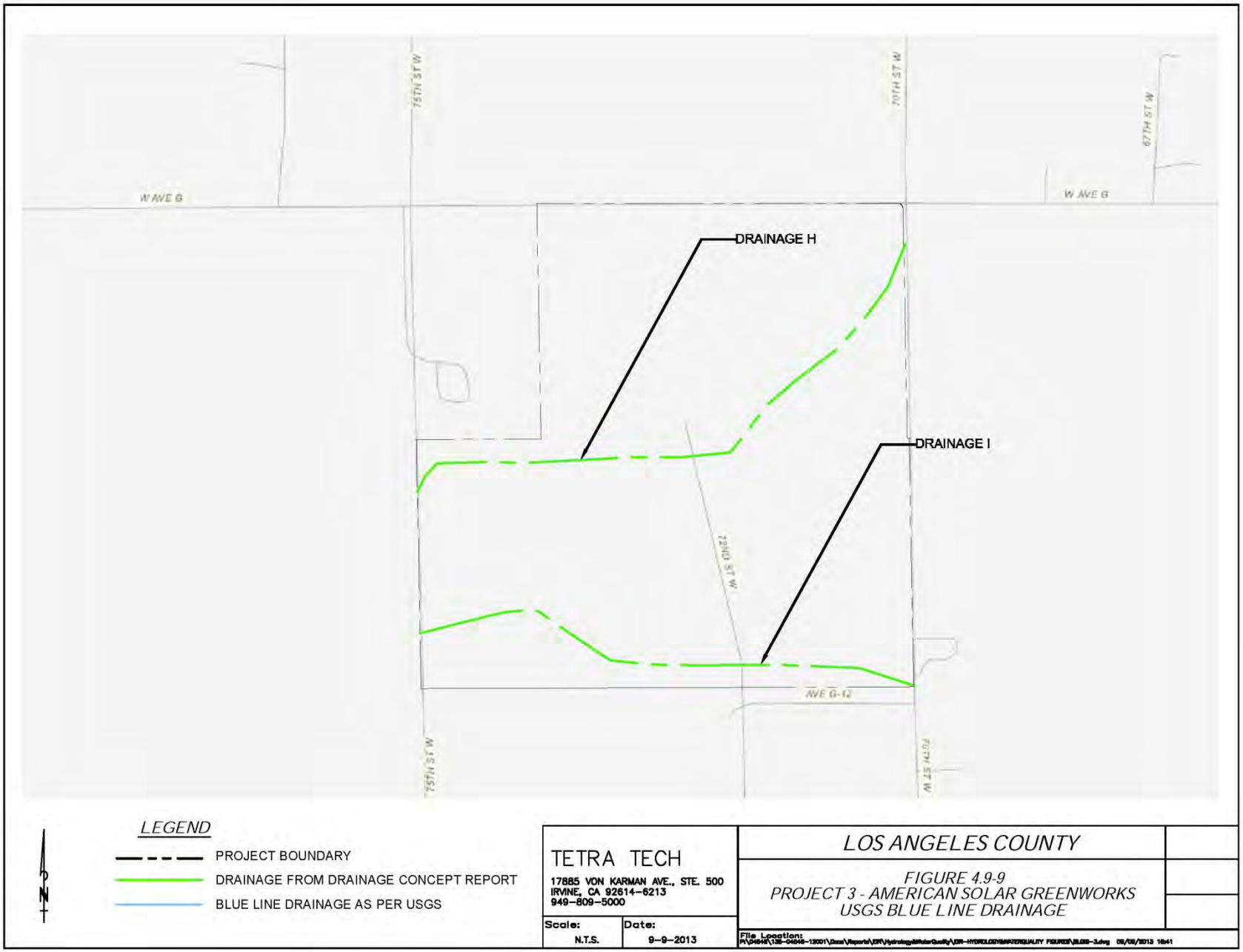
75TH ST W
70TH ST W
67TH ST W
W AVE G
W AVE G
DRAINAGE H
DRAINAGE I
72ND ST W
AVE G-12
75TH ST W
70TH ST W
LEGEND
PROJECT BOUNDARY
DRAINAGE FROM DRAINAGE CONCEPT REPORT
BLUE LINE DRAINAGE AS PER USGS
N
TETRA TECH
17885 VON KARMAN AVE., STE. 500
IRVINE, CA 92614-6213
949-809-5000
Scale:
N.T.S.
Date:
9-9-2013
LOS ANGELES COUNTY
FIGURE 4.9-9
PROJECT 3 - AMERICAN SOLAR GREENWORKS
USGS BLUE LINE DRAINAGE
File Location:

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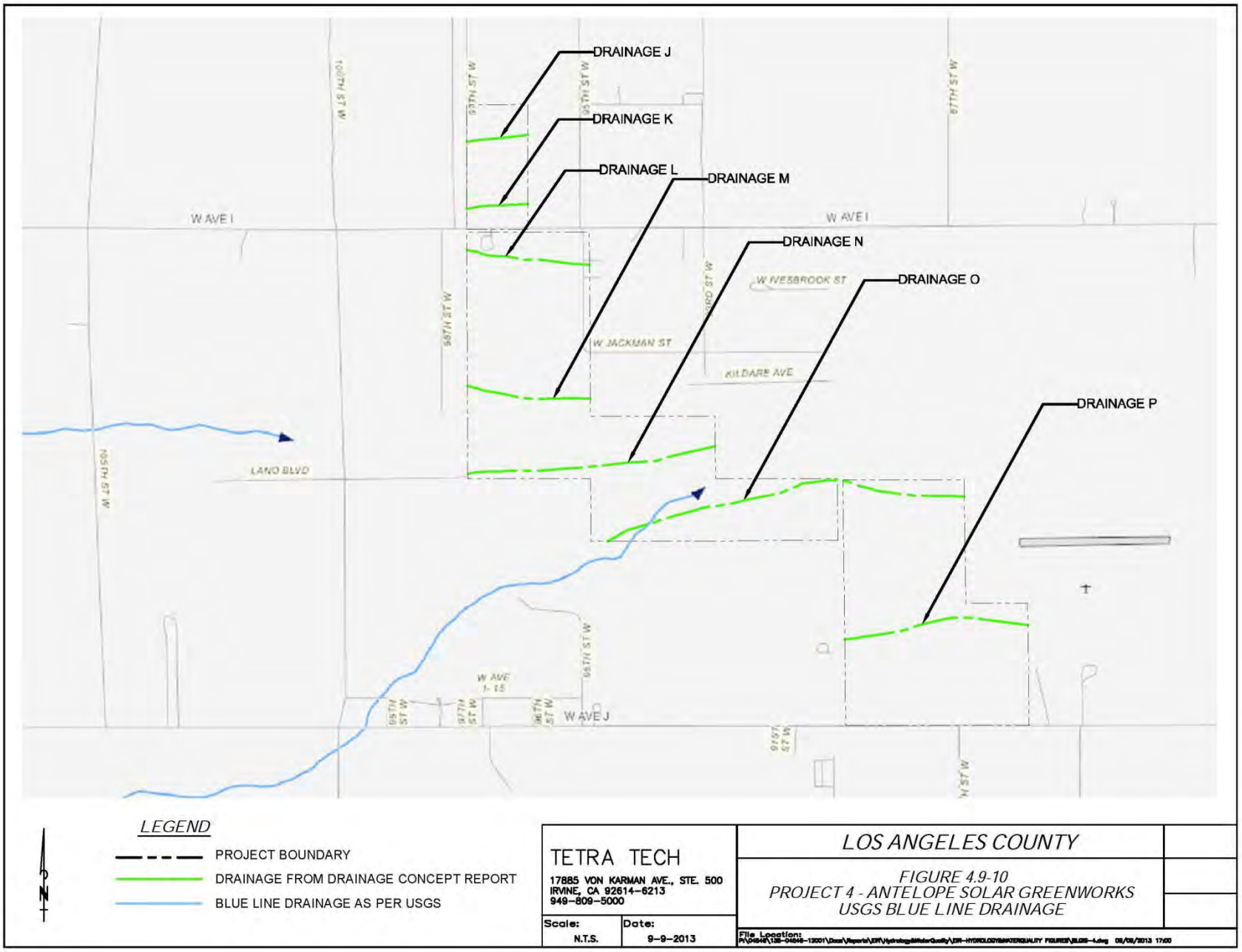
DRAINAGE J
DRAINAGE K
DRAINAGE L
DRAINAGE M
DRAINAGE N
DRAINAGE O
DRAINAGE P
W AVE I
W AVE I
W AVE J
W IVESBROOK ST
W JACKMAN ST
KILDARE AVE
LAND BLVD
90TH ST W
95TH ST W
97TH ST W
87TH ST W
LEGEND
PROJECT BOUNDARY
DRAINAGE FROM DRAINAGE CONCEPT REPORT
BLUE LINE DRAINAGE AS PER USGS
TETRA TECH
17885 VON KARMAN AVE., STE. 500
IRVINE, CA 92614-6213
949-809-5000
Scale: N.T.S.
Date: 9-9-2013
LOS ANGELES COUNTY
FIGURE 4.9-10
PROJECT 4 - ANTELOPE SOLAR GREENWORKS
USGS BLUE LINE DRAINAGE

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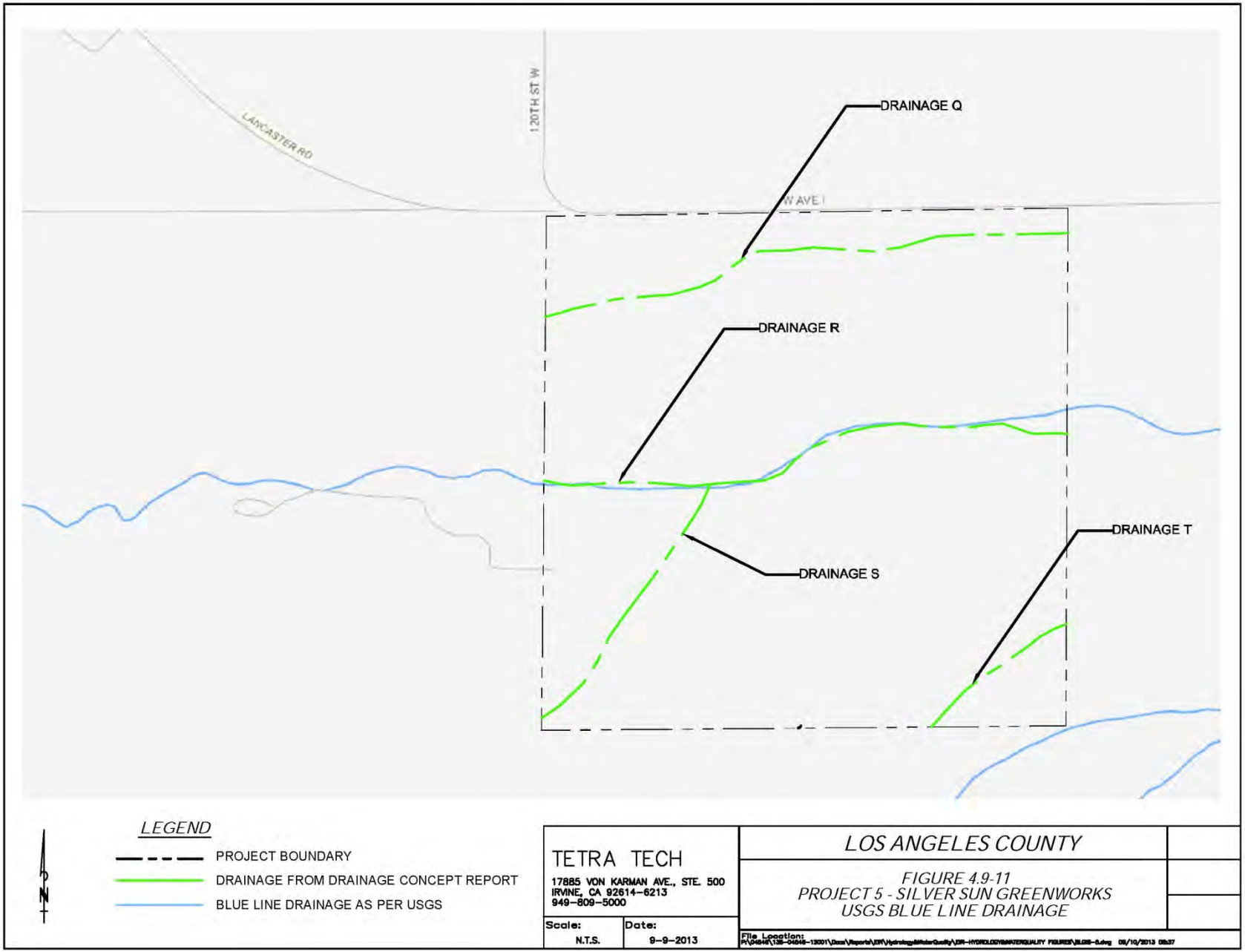
LANCASTER RD
120TH ST W
W AVE I
DRAINAGE Q
DRAINAGE R
DRAINAGE S
DRAINAGE T
LEGEND
PROJECT BOUNDARY
DRAINAGE FROM DRAINAGE CONCEPT REPORT
BLUE LINE DRAINAGE AS PER USGS
N
TETRA TECH
17885 VON KARMAN AVE., STE. 500
IRVINE, CA 92614-6213
949-809-5000
Scale:
N.T.S.
Date:
9-9-2013
LOS ANGELES COUNTY
FIGURE 4.9-11
PROJECT 5 - SILVER SUN GREENWORKS
USGS BLUE LINE DRAINAGE
File Location:

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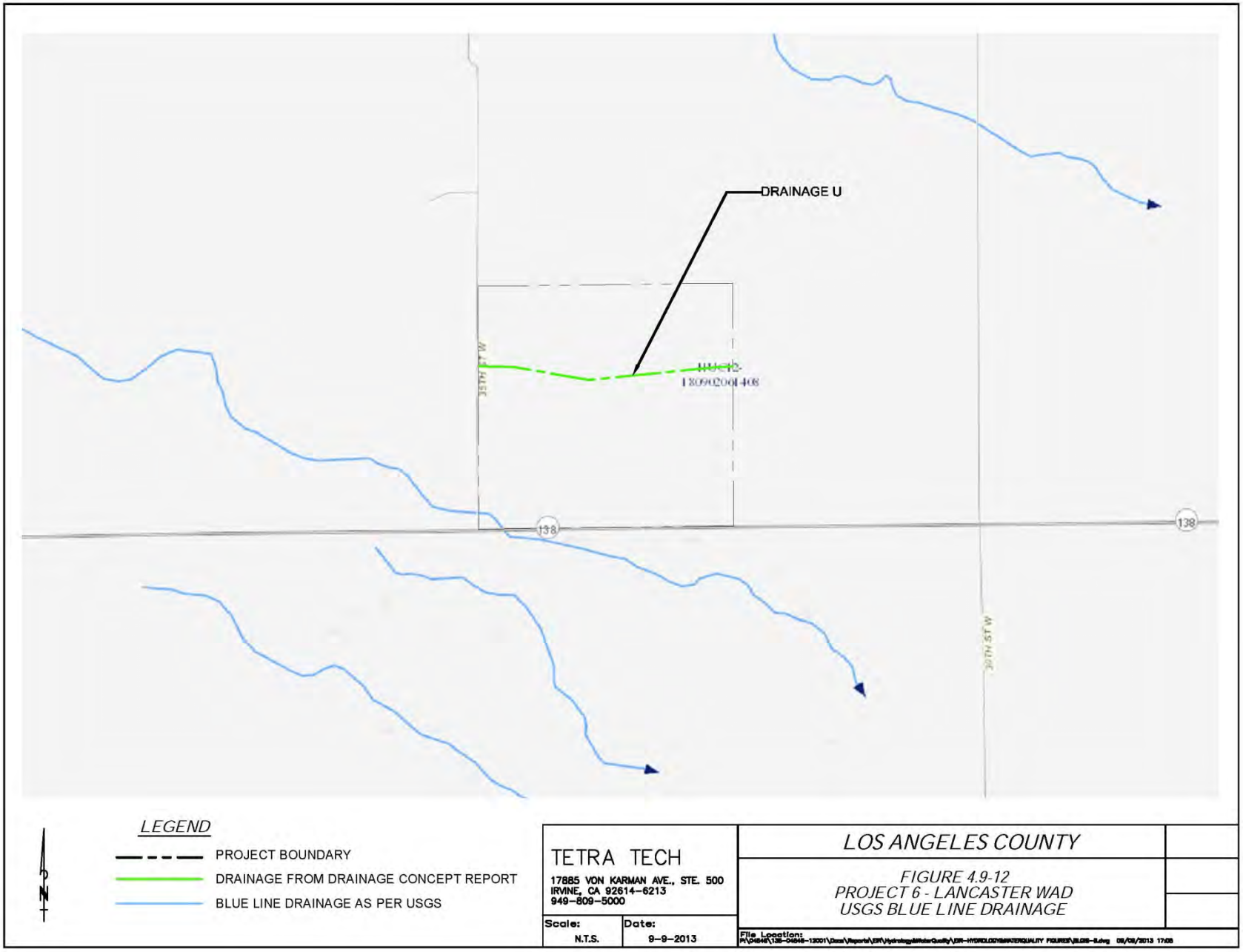
DRAINAGE U
138
138
35TH ST W
35TH ST W
LEGEND
PROJECT BOUNDARY
DRAINAGE FROM DRAINAGE CONCEPT REPORT
BLUE LINE DRAINAGE AS PER USGS
TETRA TECH
17885 VON KARMAN AVE., STE. 500
IRVINE, CA 92614-6213
949-809-5000
Scale: N.T.S.
Date: 9-9-2013
LOS ANGELES COUNTY
FIGURE 4.9-12
PROJECT 6 - LANCASTER WAD
USGS BLUE LINE DRAINAGE
File Location:

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Per Section 4.14.3, the groundwater flows toward topographic low points from the San Gabriel and Tehachapi Mountains.

4.9.2.2 Project Setting

4.9.2.2.1 Project 1

Project 1 has runoff from approximately 31 acres of off-site watershed tributary area that enters the site from the north. Once on-site, flow follows Drainage Path A eastward (see Figure 4.9-7). The elevations of Project 1 range from approximately 2,490 feet along the western project boundary to 2,470 feet toward the eastern project boundary. The 25-year pre-development flow leaving Project 1 is equal to 18.01 cubic feet per second (cfs), while the pre-development flow volume is 5.76 acre-feet (ac*ft). The post-development 25-year post-development flow and flow volume are 28.14 cfs and 8.99 ac*ft respectively Infiltration basins will capture the change in volume equal to 3.23 ac*ft in order to capture the runoff created by the development and maintain pre-development conditions (Tetra Tech 2013). Groundwater levels near Project 1 are approximately 180 feet below ground surface (bgs), with historical depths recorded as low as 290 feet bgs.

4.9.2.2.2 Project 2

Project 2 has runoff from approximately 512 acres of off-site watershed tributary area that enters the site from the south and is split between drainage paths B, C, E, F, and G that flow toward the northeast (see Figure 4.9-8). The elevations for Project 2 range from 2,672 feet along the southern site boundary to 2,586 feet toward the northeast. The total pre-development 25-year flow leaving Project 2 is 713.34 cfs, while the total flow volume is 46.37 ac*ft. The total 25-year post-development flow and flow volume are 730.53 cfs and 49.60 ac*ft respectively. Infiltration basins will capture the change in volume equal to 3.23 ac*ft in order to capture the runoff created by the development and maintain pre-development conditions (Tetra Tech 2013). Groundwater levels near Project 2 are approximately 235 feet bgs, with historical depths recorded between 160 feet and 290 feet bgs.

4.9.2.2.3 Project 3

The off-site tributary area for Project 3 is approximately 173 acres and contributes runoff to the projects site from the west. Once on-site, runoff follows the drainage paths H and I on-site toward the northeast and southeast, respectively (see Figure 4.9-9). The elevations range from 2,392 feet along the southwest project boundary to 2,378 feet toward the northeast project boundary. The total 25-year pre-development flows and flow volumes leaving the site are 21.89 cfs and 6.99 ac*ft respectively. . The total 25-year post-development flow and flow volumes are 27.82 cfs and 8.89 ac*ft respectively. An infiltration basin will capture the change in volume equal to 1.90 ac*ft in order to capture the runoff created by the development and maintain pre-development conditions (Tetra Tech 2013). Groundwater levels near Project 3 range from approximately 135 feet to approximately 160 feet bgs, with historical depths recorded as low as 280 feet bgs.

4.9.2.2.4 Project 4

Project 4 has a large off-site tributary area of approximately 7,986 acres with runoff that flows on-site from the west and into the drainage paths J, K, L, M, N, O, and P toward the east (see Figure 4.9-10). The elevations range from 2,450 feet along the north-western project boundary to 2,403 feet along the south-eastern project boundary. The total 25-year pre-development flow and flow volume leaving Project 4 are 7,751.85 cfs and 516.71 ac*ft respectively. The total 25-year post-development flow and flow volume are 7,768.67 cfs and 521.38 ac*ft respectively. Infiltration basins will capture the change in volume equal to 4.67 ac*ft in order to capture the runoff created by the development and maintain pre-development conditions (Tetra Tech 2013). Groundwater levels near Project 4 range from approximately 217 feet to approximately 235 feet bgs, with historical depths recorded as low as 290 feet bgs.

4.9.2.2.5 Project 5

Project 5 has a large off-site tributary area that consists of approximately 4,285 acres that contributes runoff to the project from the west. The runoff flows on-site into the drainage paths Q, R, S, and T (see Figure 4.9-11). The elevations run from 2,553 feet along the north-western project boundary to 2,523 feet along the north-eastern project boundary. Project 5's total 25-year pre-development flow and flow volume leaving the site are 6,597.02 cfs and 332.09 ac*ft respectively. The total 25-year post-development flow and flow volume are 6,613.16 cfs and 335.99 ac*ft respectively. Infiltration basins will capture the change in volume equal to 3.90 ac*ft in order to capture the runoff created by the development and maintain pre-development conditions (Tetra Tech 2013). Groundwater levels near Project 5 range from approximately 136 feet to approximately 160 feet bgs, with historical depths recorded as low as 290 feet bgs.

4.9.2.2.6 Project 6

The acreage for the off-site tributary to Project 6 is 85 acres, and its runoff enters the project from the west. Once on-site, the runoff travels the site via Drainage Path U eastward (see Figure 4.9-12). The elevations range from 2,337 feet along the western project boundary to 2,333 feet toward the eastern project boundary. The pre-development values for 25-year flow and flow volume leaving the site are 8.01 cfs and 2.54 ac*ft respectively. The 25-year post-development values for the flow and flow volume are 9.62 cfs and 3.05 ac*ft respectively. An infiltration basin will capture the change in volume equal to 0.51 ac*ft in order to capture the runoff created by the development and maintain pre-development conditions (Tetra Tech 2013). Groundwater levels near Project 6 range from approximately 117 feet to approximately 119 feet bgs, with historical depths recorded as shallow as 34 feet bgs.

4.9.3 Regulatory Setting

When there is a potential for discharge of stormwater from any new development to enter natural drainages, wetlands, and floodplains or affect water quality, it is necessary to adhere to related federal, state, and local regulations and policies.

4.9.3.1 Federal

4.9.3.1.1 National Flood Insurance Program

The National Flood Insurance Program (NFIP) is overseen by the FEMA. FEMA creates Flood Insurance Rate Maps (FIRMs) that indicate locations in a community that are known to be Special Flood Hazard Areas (SFHAs) (FEMA 2008). If a community adopts a floodplain management ordinance in order to lessen future flood damage on new construction in SFHAs, then the federal government would grant the community flood insurance through the NFIP. The ordinance recommended for California by the Department of Water Resources is the California Model Floodplain Management Ordinance (FEMA 2011).

4.9.3.1.2 Federal Clean Water Act

The CWA is the expanded 1972 version of the Federal Water Pollution Control Act. It was created to regulate the discharge of pollutants into United States waterways and the overall quality of surface waters. Through the CWA, standards have been established to maintain and improve water quality by controlling point-source discharges. The National Pollutant Discharge Elimination System (NPDES) permit program controls these regulations (EPA 2012a). There are nine RWQCBs in California in charge of overseeing the program, and the Projects fall under the Lahontan Regional Water Quality Control Board (LRWQCB) (SWRCB 2012a).

Section 303(d) of the Clean Water Act. Under this section of the CWA, states must create lists of impaired water bodies and submit them to the EPA. To be impaired, a water body must not meet the water quality standards set by the state. As a result, Total Maximum Daily Loads (TMDLs) must be created for pollutants that impair the waters in order to meet the water quality standards. The proposed Projects are not expected to impair any water bodies (EPA 2012b).

Section 304(a) of the Clean Water Act. Under Section 304(a), states must use the latest scientific knowledge to develop water quality criteria and standards in order to protect aquatic and human life (EPA 2012c).

4.9.3.1.3 Title 40 of the Code of Federal Regulations, Part 112 (40 CFR 112)

These regulations are designed to assist in the prevention of waters from oil pollution. Facilities with aboveground and underground storage tanks that hold regulated amounts of oil-based products must follow the regulations set forth within the 40 CFR 112 (NARA 2012).

4.9.3.2 State

4.9.3.2.1 Standardized Urban Stormwater Mitigation Plan

Standardized Urban Stormwater Mitigation Plans (SUSMPs) were introduced with the installment of NPDES permit by the Los Angeles RWQCB on July 15, 1996. These NPDES permits apply to Los Angeles County and 85 cities. This permit program was created to regulate the levels of stormwater pollution created by new projects. The SUSMP was designed to address this by providing BMPs to use based upon the type of project (SWRCB 2012b).

4.9.3.2.2 Porter-Cologne Water Quality Control Act (Water Code, §13000 et seq.)

The Porter-Cologne Water Quality Control Act granted the SWRCB the power to oversee the water rights and quality policies of the State of California. Additionally, it established nine RWQCBs to do the same at a more local scale. Each RWQCB creates and updates water quality control plans that address the region's surface and groundwater beneficial uses and quality standards, while also controlling the release of certain point and non-point source forms of pollution into California's waterways (CWIS 2002).

4.9.3.2.3 California Water Code §13260

The California Water Code §13260 states that a person must submit a discharge report to their region's RWQCB if they discharge or plan to discharge waste into an area that may disturb the state's water quality. Community sewer systems do not apply. For the proposed Projects, reports would be sent to the LRWQCB (Official California Legislative Information 2012).

4.9.3.2.4 NPDES General Permit and Waste Discharge Requirements for Discharges of Stormwater Associated with Construction Activity, Order No. 99-08-DWQ

This regulation, administered by the SWRCB, requires construction activities to acquire an individual permit or the General NPDES permit for the discharge of storm water to surface water. It also requires them to implement BMPs. This applies to all construction activities, except for construction that occurs on Tribal Lands, land under 1 acre in area, or land deemed to be not covered by the General Permit by the region's RWQCB. In order to acquire the General Permit, the discharger must file a Notice of Intent (NOI) to the SWRCB. Along with this, a SWPPP must be prepared and utilized during construction (SWRCB 2012c).

4.9.3.2.5 Notice of Intent to Comply with Wastes Discharge Requirements, Order No. R6T-2003-0004

To comply with the requirements of the General Permit, a NOI must be filed to the LRWQCB under the direction of the General Waste Discharge Requirements for Minor Streambed/ Lakebed Alteration Projects in the Lahontan Region (LRWQCB 2003).

4.9.3.3 Local

4.9.3.3.1 Los Angeles County General Plan

The following are applicable Hydrology and Water Quality policies that are stated in the Los Angeles County General Plan:

Los Angeles County General Plan, Safety Policy 12. "Promote the use of floodplain management measures in high-risk inundation areas, and require expansion of existing and proposed new developments to be flood-proofed and secured to minimize future flood losses" (LACDRP 1990).

Antelope Valley Area Wide General Plan, Policy 114. "As an interim policy, pending construction of regional drainage facilities, require installation of appropriate systems and

facilities to retain the increase in storm runoff due to development on the project site or equivalent mitigation measures" (LACDRP 1986).

Antelope Valley Area Wide General Plan, Policy 152. "Prevent public exposure to flood hazards by prohibiting residential, commercial, and industrial development in recognized flood inundation areas unless proper mitigation is instituted" (LACDRP 1986).

County Code Title 12 Chapter 12.84, Low Impact Development Standards. The implementation of Low Impact Development (LID) Standards allows sustainable growth to be achieved while maintaining the watersheds, drainage paths, natural resources, and water sources of the County (LACDRP 2009). The development's effect on the distribution of the stormwater and urban runoff is countered with the use of structural devices, engineered systems, vegetated natural designs, and education in order to preserve the natural characteristics (Municipal Code Corporation 2012a).

4.9.3.3.2 Los Angeles County Department of Public Works

The LACDPW is in charge of the design, construction, operations, maintenance, and repair of roads, bridges, traffic signals, airports, sewers, flood control, water supply, water quality, water conservation facilities, and capital projects. The LACDPW also has the authority over regulatory and ministerial programs for Los Angeles County, Los Angeles County Water Resources Division, certain districts, and cities under contract. LACDPW has manuals for the design, operations, and maintenance of drainage facilities. Any changes made to these policies must be approved. The LACDPW also holds manuals with standards for the hydrologic design of stormwater management facilities and flood control (LACDPW 2010).

Capital Flood. The runoff created by a 50-year frequency design storm with burned, bulked, and saturated watershed conditions is known as a Capital Flood. At a 50-year frequency, the design storm has a 1/50 chance of occurring each year, and its magnitude is based on the average conditions of the particular watershed. By incorporating a burned and bulked factor, the runoff value addresses a worst case scenario where the land has been burned and flow rates are increased by the addition of debris. Additionally, a saturated watershed prevents the reduction of the flow via infiltration into the ground (LACDPW 2006).

Protection for the Capital Flood is applicable for all facilities that are found within or receive flood water from natural watercourses, such as closed conduits, open channels, dams, bridges, and debris basins. These facilities cannot be under the jurisdiction of the State of California, otherwise they would also need to obey California requirements. Watercourses are the result of the topography of the land creating pathways for water to flow. During a Capital Flood, these watercourses must drain watersheds that are at least 100 acres, have remained untouched by significant engineering changes, have a flow velocity that is larger than 5 feet per second (ft/s), and have a flow depth that is larger than 1.5 ft. If a facility is to replace a natural watercourse but lacks the capacity to handle the capital flood, water surface elevation analysis must be performed. Through this, the water height must remain at least a foot under any structure found along the channel. Before construction, the NFIP should be checked for any other requirements (LACDPW 2006).

In addition to the above, the Capital Flood applies to all floodways that have been mapped, all culverts found under main and secondary highways, and any facilities that drain natural depressions or sumps, such as channels, closed conduits, retention basins, detention basins, pump stations, and the underpasses of highways. Depressions lack a surface flow exit, and they require a depth of 3 feet or more during a Capital Flood. Once again, if a facility is not capable of withholding the capacity of the Capital Flood, water surface elevations must be kept 1 foot under all existing structures found along the channel, except if the ponded water becomes surface flow before rising to the level of the existing structures (LACDPW 2006).

Water Resource Division. The Water Resource Division of the LACDPW is charged with the responsibility of minimizing regional flood related damage, increasing water supply sustainability, supplying high-quality drinking water and treated water, and improving the quality of waterways and stormwater runoff for Los Angeles County (LACDPW 2010).

4.9.3.3.3 Water Quality Control Plan (Basin Plan) for the Lahontan Region

This basin plan serves as the water quality control plan for the LRWQCB and establishes the Lahontan Region's surface and groundwater quality regulations. Within it, the region's surface and groundwater quality standard are set forth, and any water quality issues and measures to counter those issues are pinpointed. When necessary, discharges to zones may be controlled. Current and old monitoring programs are listed and defined, while new potential monitoring programs are specified (LRWQCB 1995).

4.9.3.3.4 County Code Title Chapter 12.80, Stormwater and Runoff Pollution Control

According to County Code Chapter 12.80:

- Discharge may not enter the storm drain system unless the discharge:
  - Is made of pure stormwater
  - Is made of a non-stormwater that has been granted a NPDES permit by the SWRCB or the LRWQCB
  - Is involved with an emergency fire situation
- Construction activities cannot begin until the conditions for the required permit are met. This includes adding all mitigation requirements for stormwater and runoff pollution.
- All permit conditions involving the addition of BMPs for construction activity must be in full effect for the entire duration of the project.
- All BMPs that are used must follow environmental laws and regulations in regards to air, groundwater, surface soils, and other media pollution.
- Maximum practical BMP levels must be utilized in all industrial and commercial buildings (Municipal Code Corporation 2012a).

4.9.3.3.5 County Code Title 11 Chapter 11.38, Water and Sewers

Chapter 11.38 covers the requirements that must be met to utilize existing wells and to construct new usable wells (Municipal Code Corporation 2012b).

4.9.4 Significance Criteria

The following significance criteria from the Los Angeles County Environmental Checklist Form and correspondence with Los Angeles County are stated below. These criteria form the basis for the analysis of each Project's potential impacts.

a) Violate any water quality standards or waste discharge requirements?

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

f) Generate construction or post-construction runoff that would violate applicable stormwater NPDES permits or otherwise significantly affect surface water or groundwater quality?

g) Conflict with the Los Angeles County Low Impact Development Ordinance (L.A. County Code, Title 12, Ch. 12.84 and Title 22, Ch. 22.52)?

h) Result in point or nonpoint source pollutant discharges into State Water Resources Control Board-designated Areas of Special Biological Significance?

i) Use onsite wastewater treatment systems in areas with known geological limitations (e.g. high groundwater) or in close proximity to surface water (including, but not limited to, streams, lakes, and drainage course)?

j) Otherwise substantially degrade water quality?

k) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or within a floodway or floodplain?

l) Place structures, which would impede or redirect flood flows, within a 100-year flood hazard area, floodway, or floodplain?

m) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

n) Place structures in areas subject to inundation by seiche, tsunami, or mudflow?

4.9.5 Impact Analysis

This section of the EIR summarizes the potential construction and operations impacts associated with each of the six proposed Projects and gen-tie lines on a criterion by criterion basis for each criterion described above in Section 4.9.4.

4.9.5.1 Project Impacts: Criterion A – Violate any water quality standards or waste discharge requirements?

4.9.5.1.1 Project 1 – 6 and Gen-tie Lines

Construction Impacts

A NOI form would be submitted to the SWRCB to apply for coverage under the NPDES General permit. During construction, the Projects would implement BMPs as specified in the site-specific Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would be developed by a State of California certified Qualified SWPPP Developer (QSD) and during construction monitored by a State of California certified Qualified SWPPP Practitioner (QSP). The SWPPP would be approved by the County and uploaded to the State via the State SMARTs system prior to ground-breaking. The SWPPP would identify construction-phase BMPs to be implemented. The anticipated BMPs are summarized in Section 4.9.6.1 and are considered for Projects 1 – 6. With implementation of the BMPs, Projects 1 – 6 and their associated gen-tie lines would only have the potential to generate less than significant effects on groundwater and/or stormwater runoff, and therefore the Projects do not anticipate violating any water quality standards or waste discharge requirements.

Operations Impacts

Mechanical equipment on the solar farm would either be made of pollutant free materials or fitted with special containment units to house any possible drips or spills of lubricants, oils, or other chemicals. Maintenance activities, including solar array washing, would be performed with clean water and allowed to evaporate or drip to the ground. Maintenance and operations personnel would be required to maintain all necessary spill prevention, control, and countermeasures on hand during site visits. These spill response kits would include, but not limited to, personal protective equipment, spill pads, absorbents, booms, shovels, garbage bags, plastic sheeting, and disposal drums. Permanent treatment BMPs would include Infiltration basins on each Project site to preserve water quality. With these spill prevention, control, and countermeasures on-site, there would be a less than significant impact on groundwater and stormwater runoff quality. The associated gen-tie lines would have no impact. Therefore, the Projects do not anticipate violating any water quality standards or waste discharge requirements.

4.9.5.2 Project Impacts: Criterion B – Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

4.9.5.2.1 Projects 1 – 6 and Gen-tie Lines

Construction Impacts

As stated in Section 4.14.5 of the EIR, water would be required for dust control measures during the duration of construction efforts. An analysis of the water supply, including the use of well water, is presented in Section 4.14 Utilities and Service Systems. At the outset of construction, out of Basin water would be supplied via truck to meet the demands of the Projects. Well water is not considered available at this time and would be reevaluated upon a change in status. The demands of the Projects are anticipated to have a less than significant impact on the region's groundwater supplies. Furthermore, construction activities are not anticipated to interfere substantially with groundwater recharge.

Operations Impacts

As stated in Section 4.14.5 of the EIR, water may be required in the first few years of operation to establish the mature vegetation planted after construction. Similar to construction, water would be supplied via truck to all Project sites. The volume of water required would be considerably less than the water required for construction activities. Well water would be considered if its availability changes. Like construction, impacts to the region's groundwater supplies are anticipated to be less than significant. Also, the effect on groundwater recharge by the development's increase in impervious surface will be mitigated by the proposed infiltration basins from section 4.9.6 and the Hydrology Study/Drainage Concept/SUSMP/LID Reports supplied by Tetra Tech and included in Appendix B-7. These infiltration basins will allow the increase in runoff volume from the proposed development (up to the 25-year storm event) to infiltrate on-site and recharge the groundwater basin. Therefore, less than significant impacts to groundwater recharge are anticipated.

4.9.5.3 Project Impacts: Criterion C – Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

4.9.5.3.1 Projects 1 – 6 and Gen-tie Lines

Construction Impacts

During the construction of the Projects 1 – 6 and their associated gen-tie lines, soils would be disturbed through activities such as minor grading and vegetation removal, which could lead to issues with soil erosion and siltation on- and off-site. Through the implementation of construction control measures per California Association of Stormwater Quality Agencies (CASQA) standards (silt fencing, fiber rolls, and sandbag barriers), the Projects would have less than significant impacts on erosion and debris deposition during construction (CASQA 2003).

Operations Impacts

Projects 1 – 6 and their associated gen-tie lines would require minor grading on-site which would not drastically change the existing drainage patterns or natural channels. Best Management Practices and the Hydrology Study/Drainage Concept/SUSMP/LID Reports would help account for the increase in runoff erosion capabilities resulting from the developments' increase in impervious surfaces. The infiltration basins would help reduce flow velocities and the sediment load of the runoff, which would lower the erosion and siltation capabilities of the runoff. Therefore, the Projects anticipate less than significant impacts to erosion and siltation on- and off-site.

4.9.5.4 Project Impacts: Criterion D – Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

4.9.5.4.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and their associated gen-tie lines would require minor grading on-site which would not drastically change the existing drainage patterns or natural channels. The increase in runoff flow rates and volumes from the developments' increase in impervious surfaces would be addressed by Best Management Practices and the Hydrology Study/Drainage Concept/SUSMP/LID Reports located in Appendix B-7. The infiltration basins, created by elevated road sections, would capture the increase in runoff volume (up to the 25-year storm event) and allow it to infiltrate on-site. The remaining runoff would flow over the road section and return to pre-development flow conditions before leaving the project site. With this measure, less than significant impacts are anticipated for flooding on- and off-site.

4.9.5.5 Project Impacts: Criterion E – Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

4.9.5.5.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Best Management Practices and the Hydrology Study/Drainage Concept/SUSMP/LID Reports located in Appendix B-7 would address the increase in runoff flow rates and volumes from the developments' increase in impervious surfaces. The infiltration basins, created by elevated road sections, would capture the increase in runoff volume (up to the 25-year storm event) and allow it to infiltrate on-site. The remaining runoff would flow over the road section and return to pre-development flow conditions before leaving the project site. The basins would be placed within the first half of the site in order to allow flows over the roads sections enough time to normalize before leaving Projects 1 – 6. Project soils would treat the captured runoff at the infiltration basins. Therefore, less than significant impacts to existing or planned stormwater drainage systems are anticipated. Also, significant impacts to polluted runoff are not anticipated.

Table 4.9-1 Flow Rates and Volumes for Pre-Development and Post-Development[1]

	Pre-Development		Post-Development[2]	
Outlet	**Flow (cfs)**	**Volume (acre-feet)**	**Flow (cfs)**	**Volume (acre-feet)**
Drainage A[3]	18.01	5.76	28.14	8.99
Drainage B[4]	15.93	1.27	16.48	1.36
Drainage C[5]	38.99	3.46	42.22	4.15
Drainage D[6]	2.76	0.66	4.05	1.08
Drainage E[7]	50.22	4.23	51.61	4.56
Drainage F[8]	318.64	18.17	321.55	18.91
Drainage G[9]	284.39	18.34	291.38	19.16
Drainage H[10]	15.42	4.92	19.47	6.22
Drainage I[11]	6.47	2.07	8.35	2.67
Drainage J[12]	4,544.88	244.15	4,545.32	244.29
Drainage K[13]	1,005.92	70.10	1,006.61	70.32
Drainage L[14]	491.43	44.24	492.22	44.49
Drainage M[15]	410.65	36.06	416.39	36.96
Drainage N[16]	398.84	35.42	400.59	36.06
Drainage O[17]	483.68	39.72	487.79	41.18
Drainage P[18]	416.45	47.02	419.75	48.08
Drainage Q[19]	2,460.91	121.63	2,463.86	122.56
Drainage R[20]	1553.28	72.66	1554.68	72.92
Drainage S[21]	784.40	40.37	785.85	40.74
Drainage T[22]	1,743.21	93.45	1,745.34	93.85
Drainage U[23]	8.01	2.54	9.62	3.05

[1] Source: Tetra Tech 2013. Flow rates and volumes calculated for Los Angeles County 25-year clean flow condition. See Appendix B-7 for Hydrology Study/Drainage Concept/SUSMP/LID Reports.
[2] Before mitigation measures are in effect. Mitigation measures sized for difference in volumes between and pre- and post-development.
[3] Drainage A is located on Project 1. Refer to Figure 4.9-7.
[4] Drainage B is located on Project 2. Refer to Figure 4.9-8.
[5] Drainage C is located on Project 2. Refer to Figure 4.9-8.
[6] Drainage D is located on Project 2. Refer to Figure 4.9-8.
[7] Drainage E is located on Project 2. Refer to Figure 4.9-8.
[8] Drainage F is located on Project 2. Refer to Figures 4.9-8.
[9] Drainage G is located on Project 2. Refer to Figure 4.9-8.
[10] Drainage H is located on Project 3. Refer to Figure 4.9-9.
[11] Drainage I is located on Project 3. Refer to Figure 4.9-9.
[12] Drainage J is located on Project 4. Refer to Figure 4.9-10.
[13] Drainage K is located on Project 4. Refer to Figure 4.9-10.
[14] Drainage L is located on Project 4. Refer to Figure 4.9-10.
[15] Drainage M is located on Project 4. Refer to Figure 4.9-10.
[16] Drainage N is located on Project 4. Refer to Figure 4.9-10.
[17] Drainage O is located on Project 4. Refer to Figure 4.9-10.
[18] Drainage P is located on Project 4. Refer to Figure 4.9-10.
[19] Drainage Q is located on Project 5. Refer to Figure 4.9-11.
[20] Drainage R is located on Project 5. Refer to Figure 4.9-11.
[21] Drainage S is located on Project 5. Refer to Figure 4.9-11.
[22] Drainage T is located on Project 5. Refer to Figure 4.9-11.
[23] Drainage U is located on Project 6. Refer to Figure 4.9-12.

4.9.5.6 Project Impacts: Criterion F – Generate construction or post-construction runoff that would violate applicable stormwater NPDES permits or otherwise significantly affect surface water or groundwater quality?

4.9.5.6.1 Projects 1 – 6 and Gen-tie lines

Construction Impacts

A NOI form would be submitted to the SWRCB to apply for coverage under the NPDES General permit. During construction, the Projects would implement BMPs as specified in the site-specific Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would be developed by a State of California certified Qualified SWPPP Developer (QSD) and during construction monitored by a State of California certified Qualified SWPPP Practitioner (QSP). The SWPPP would be approved by the County and uploaded to the State via the State SMARTs system prior to ground-breaking. The SWPPP would identify construction-phase BMPs to be implemented. The anticipated BMPs are summarized in Section 4.9.6.1 and are considered for Projects 1 – 6. With implementation of the BMPs, Projects 1 – 6 and their associated gen-tie lines would only have the potential to generate less than significant effects on groundwater and/or stormwater runoff.

Operations Impacts

Mechanical equipment on the solar farm would either be made of pollutant free materials or fitted with special containment units to house any possible drips or spills of lubricants, oils, or other chemicals. Maintenance activities, including solar array washing, would be performed with clean water and allowed to evaporate or drip to the ground. Maintenance and operations personnel would be required to maintain all necessary spill prevention, control, and countermeasures on hand during site visits. These spill response kits would include, but not limited to, personal protective equipment, spill pads, absorbents, booms, shovels, garbage bags, plastic sheeting, and disposal drums. Permanent treatment BMPs would include Infiltration basins on each Project site to preserve water quality. With these spill prevention, control, and countermeasures on-site, there would be a less than significant impact on groundwater and stormwater runoff quality. The associated gen-tie lines would have no impact.

4.9.5.7 Project Impacts: Criterion G – Conflict with the Los Angeles County Low Impact Development Ordinance (L.A, County Code, Title 12, Ch. 12.84 and Title 22, Ch. 22.52)?

4.9.5.7.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and their gen-tie lines would incorporate Los Angeles County LID standards, while following the requirements of the LACDPW. Existing on-site drainage patterns and channels would not be significantly altered by the Projects' minimal grading, and all off-site drainage patterns and channels would not be significantly impacted either. Best Management Practices and the Hydrology Study/Drainage Concept/SUSMP/LID Reports located in Appendix B-7 would allow the developments' increase in runoff (up to the 25-year storm event) to be both infiltrated and treated on-site. This also minimizes downstream impacts as by returning to pre-development flow conditions. Therefore, Projects 1 – 6 do not anticipate conflicts with the Los Angeles County Low Impact Development Ordinance.

4.9.5.8 Project Impacts: Criterion H – Result in point or nonpoint source pollutant discharges into State Water Resources Control Board-designated Areas of Special Biological Significance?

4.9.5.8.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and their associated gen-tie lines are not in the vicinity of any State Water Resources Control Board-designated Areas of Special Biological Significance. Therefore, no impacts are anticipated.

4.9.5.9 Project Impacts: Criterion I – Use onsite wastewater treatment systems in areas with known geological limitations (e.g. high groundwater) or in close proximity to surface water (including, but not limited to, streams, lakes, and drainage course)?

4.9.5.9.1 Projects 1 – 6 and Gen-tie Lines

Construction Impacts

During construction, wastewater treatment systems would not be necessary. The Projects would contract services to supply and maintain portable toilets. Therefore, the impacts to the water quality of groundwater and surface water would be less than significant impact.

Operations Impacts

The same portable toilet services would be contracted for operations. Temporary portable toilet services would be delivered during the required maintenance periods on an as needed basis. As a result, there would be less than significant impacts to the water quality of groundwater and surface water.

4.9.5.10 Project Impacts: Criterion J – Otherwise substantially degrade water quality?

4.9.5.10.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

As discussed in previous sections, Projects 1 – 6 and their associated gen-tie lines do not anticipate to substantially degrade the water quality of the area with the implementation of the mitigation measures discussed in Section 4.9.6 and the Hydrology Study/Drainage Concept/SUSMP/LID Reports prepared by Tetra Tech and located in Appendix B-7.

4.9.5.11 Project Impacts: Criterion K – Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or within a floodway or floodplain?

4.9.5.11.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 do not involve the construction of housing. Therefore, no housing will be placed within a 100-year flood hazard area, and no impacts are anticipated.

4.9.5.12 Project Impacts: Criterion L – Place structures, which would impede or redirect flood flows, within a 100-year flood hazard area, floodway, or floodplain?

4.9.5.12.1 Projects 1, 2, 3, 5 and Gen-tie Lines

Construction and Operations Impacts

Per Figures 4.9-1, 4.9-2, 4.9-3, and 4.9-5, along with the Hydrology Study/Drainage Concept/SUSMP/LID Reports supplied by Tetra Tech and included in Appendix B-7, Projects 1, 2, 3, and 5 are not located within a 100-year flood hazard area, floodway, or floodplain. Therefore, no impacts are anticipated.

Construction and Operations Impacts

4.9.5.12.2 Projects 4, 6 and Gen-tie Lines

Per Figures 4.9-4 and 4.9-6, along with the Hydrology Study/Drainage Concept/SUSMP/LID Reports supplied by Tetra Tech and included in Appendix B-7, Projects 4 and 6 are located within 100-year flood areas. Some of the proposed infiltration basins within these sites, created by elevated road sections, cross the 100-year flow areas. Once full, runoff will flow over the elevated road section. These basins have been placed in the first half of the project sites in order to allow the flows to normalize and return to their pre-development sheet flow condition before leaving the project site. Therefore, the proposed basins will not significantly impede or redirect the flood flows.

4.9.5.13 Project Impacts: Criterion M – Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

4.9.5.13.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and their associated gen-tie lines are not within the immediate vicinity of any levees or dams which would place people or structures at risk of significant loss, injury or death in the event of a failure. In the event of a failure of the aqueduct near the Project 1 – 6, the distance between the sites and the aqueduct would allow the flow to dissipate. Therefore, less than significant impacts are anticipated.

4.9.5.14 Project Impacts: Criterion N – Place structures in areas subject to inundation by seiche, tsunami, or mudflow?

4.9.5.14.1 Projects 1, 3, 4, 5, 6 and Gent-tie Lines

Construction and Operations Impacts

According to the Hydrology Study/Drainage Concept/SUSMP/LID Reports supplied by Tetra Tech and included in Appendix B-7, the slopes of the Project sites are very mild, as sites 1, 3, 4, 5, and 6 experiences slopes less than 2 percent. Therefore, high mudflow conditions are not anticipated, and any mudflow conditions are expected to have a less than significant impact.

4.9.5.14.2 Project 2 and Gen-tie Lines

Construction and Operations Impacts

According to the Hydrology Study/Drainage Concept/SUSMP/LID Report supplied by Tetra Tech and included in Appendix B-7, Project 2 has slopes that are less than 5 percent. Additionally, the Project and its gen-tie line are not within the vicinity of any significantly steep slopes which could generate high mudflow conditions. Therefore, high mudflow conditions are not anticipated, and any mudflow conditions are expected to have a less than significant impact.

4.9.5.15 Indirect Impacts

No significant indirect impacts are anticipated with respect to flood hazards or water quality for the proposed Projects 1 – 6.

4.9.6 Mitigation Measures

Erosion control and stormwater management measures would be implemented during construction activities in order to control and inhibit pollutants and debris from entering the stormwater systems, while they would also prevent increases in erosion on- or off-site. These mitigation measures would include CASQA controls discussed in Section 4.6, in addition to the BMPs stated in Section 4.9.6.1. As a result, the impact to erosion, flooding, and surface water quality would be expected to be less than significant during construction activities. During operations, the infiltration basins discussed in Section 4.9.5.5.1 and the Hydrology Study/Drainage Concept/SUSMP/LID Reports, along with the BMPs provided in the SUSMPs, would reduce the impact on erosion, flooding, and surface water quality to less than significant levels.

The following mitigation measures would be implemented for Projects 1 – 6 in order to reduce the impact to erosion, flooding, and stormwater quality during construction and operations.

4.9.6.1 Construction

HYDRO-1 Education and training for Property Owners, Tenants, Occupants and Employees. Appropriate educational materials and training for preventing stormwater pollution and additional BMP Fact Sheets from the California Stormwater Best Management Practice Handbooks can be found at www.cabmphandbooks.com. Practical information material will be provided to employees on general good housekeeping practices. These materials will describe, but are not limited to, spill prevention and control and the use of chemicals, petroleum products, pesticides and fertilizers that should be limited to the property, with no discharge of wastes directly or indirectly to gutters, catch basins or the storm drain system. Information will be distributed directly to the employees as well as being posted in public areas. This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities. The required materials shall be available at each project site and a log kept to show education has occurred prior to the start of construction.

HYDRO-2 A spill contingency plan will be prepared by the owner/building operator. As a minimum the Spill Contingency Plan will "mandate the stockpiling of cleanup materials, notification of responsible agencies, disposal of cleanup materials and documentation." This

Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities.

HYDRO-3 No hazardous materials are anticipated to be stored on-site. If hazardous materials are required to be stored on-site, a designated representative of the owner shall provide information to the Fire Authority in accordance with requirements of the Health & Safety Code and store the materials according to applicable regulations. This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities.

HYDRO-4 A designated representative of the owner shall provide information to the Fire Authority in compliance of the current requirements of the County of Los Angeles Fire Code. This Mitigation Measure shall be implemented at Projects 1 – 6 for the entire duration of construction activities.

4.9.6.2 Operations

HYDRO-5 Site waste receptacles shall be emptied on a weekly basis or more often to prevent containers from overflowing. Upon inspection any debris or rubbish will be picked up and the site cleaned. The trash area is NOT to be cleaned by hosing down. The type of materials used to clean the area and storage of said materials will be determined by the Contractor. Signage will be posted that lids shall be kept closed at all times. This Mitigation Measure shall be implemented at Projects 1 – 6 at all times during facility operations.

4.9.6.3 Best Management Practices

BMPs considered for these six Project sites may include but are not limited to the following: stabilized construction entrances, silt fencing and straw bales along the site perimeter, check dams, soil stabilization for disturbed areas, and construction waste control and management. Specific BMPs will be selected during the development of the SWPPP.

The following indicates the source control BMPs (routine non-structural and routine structural) included in these Projects.

4.9.6.3.1 Routine Non-Structural BMPs

In compliance with County DPW's requirements, a variety of construction and operational best management practices shall be specified in the Project's SWPPP and SUSMP and implemented to insure that no interference or alteration of the established drainage pattern is performed unless approved by the regulatory agency.

Education for Property Owners, Tenants, Occupants and Employees. Appropriate educational materials for preventing stormwater pollution and additional BMP Fact Sheets from the California Stormwater Best Management Practice Handbooks can be found at www.cabmphandbooks.com.

Activity Restrictions. The list of restrictions and guidelines for implementation and maintenance of allBMPs specified herein include, but will not be limited to:

- TRASH: No rubbish, trash or other material shall be kept on site or on any street abutting the properties, except in sanitary containers located in an appropriate trash containment area.
- DRAINAGE: There shall be no interference or alteration of the established drainage pattern unless an alternative is approved by the regulatory agency.
- DUMPSTER LIDS: Dumpster lids shall be closed at all times.
- DEBRIS: No blowing or sweeping of litter anywhere at the site.

BMP Maintenance. Appendix A indicates the person(s) responsible for the implementation and maintenance of the non-structural and structural BMPs.

Title 22 CCR Compliance. Not applicable, per Title 22, Division 4.5., Chapter 11 of the California Code of Regulations definition of hazardous wastes. No Hazardous Materials are anticipated to be onsite.

Local Industrial Permit Compliance. Not applicable, there are no fuel dispensing areas and/or other areas of concern to the public proposed.

Spill Contingency Plan. A spill contingency plan will be prepared by the owner/building operator. As a minimum the Spill Contingency Plan will "mandate the stockpiling of cleanup materials, notification of responsible agencies, disposal of cleanup materials and documentation."

Hazardous Materials Disclosure Compliance. No hazardous materials are anticipated to be stored on- site. If deemed otherwise, a designated representative of the owner shall provide information to the Fire Authority in accordance with requirements of the Health & Safety Code.

Uniform Fire Code Implementation. A designated representative of the owner shall provide information to the Fire Authority in compliance with Article 80 of the Uniform Fire Code (UFC).

Common Area Litter Control. Site litter shall be strictly controlled by onsite maintenance personnel during construction and upon maintenance visits during operations.

Employee Training. A representative of the owner will provide information available from the City/County on education regarding good housekeeping practices that contribute to the protection of storm water quality. Practical information material will be provided to employees on general good housekeeping practices. These materials will describe, but are not limited to, spill prevention and control and the use of chemicals, petroleum products, pesticides and fertilizers that should be limited to the property, with no discharge of wastes directly or indirectly to gutters, catch basins or the storm drain system. Information will be distributed directly to the employees as well as being posted in public areas.

4.9.6.3.2 Routine Non-Structural BMPs

Properly Design Trash Storage Areas. Site waste receptacles shall be emptied on a weekly basis or more often if containers are overflowing. Upon inspection any debris or rubbish will be picked up and the site cleaned. The trash area/room is NOT to be cleaned by hosing down. The

type of materials used to clean the area and storage of said materials will be determined by the Contractor. Signage will be posted that lids shall be kept closed at all times.

Protect Slopes and Channels. The protection of slopes and irrigation shall be implemented as indicated on the County of Los Angeles' approved Landscape Plans and shall be consistent with the County Water Conservation Resolution or County equivalent. Slope protection will be achieved through landscaping of the slopes. Runoff from irrigation shall be kept to a minimum. A designated representative of the owner will be responsible for continual maintenance of landscaped areas.

4.9.6.3.3 Site Design BMPs

The following table shows the site design BMPs that are included in this project. A description of each BMPs follows:

Technique	Included		Brief Description of Method
	Yes	No	
Minimize Impervious Area/Maximize Permeability (C-Factor Reduction)		X	
Minimize Directly Connected Impervious Areas (DCIAs) (C-Factor Reduction)		X	
Create Reduced or "Zero Discharge" Areas (Runoff Volume Reduction)	X		Infiltration basins
Conserve Natural Areas (C-Factor Reduction)		X	

The site design BMPs that were used extensively in this design were to create "Runoff Volume Reduction" by utilizing the infiltration basin system design concept. The mitigation volume is captured behind the elevated roads and is allowed to infiltrate in the ground.

4.9.6.3.4 Treatment BMPs

The following table shows the treatment BMPs that are included in this project. A description of each BMPs follows:

Name	Included		If not applicable, state brief description
	Yes	No	
Vegetated (Grass) Strips		X	Not proposed.
Vegetated (Grass) Swales		X	Not proposed.
Proprietary Control Measures		X	Not proposed.
Dry Detention Basin		X	Not proposed.
Wet Detention Basin		X	Not proposed.
Constructed Wetland		X	Not proposed.
Detention Basin/Sand Filter		X	Not proposed.
Porous Pavement Detention		X	Not proposed.
Porous Landscape Detention		X	Not proposed.
Infiltration Basin	X		
Infiltration Trench		X	Not proposed.
Media Filter		X	Not proposed.
Proprietary Control Measures		X	Not proposed.

This Project is considered a Priority Project. This section of the SUSMP addresses Treatment Control BMPs. The primary control strategy for design Treatment Control BMPs is to treat the frequent, low-flow storm events. The selected treatment controls for this project is the Infiltration Basins.

4.9.7 Level of Significance after Mitigation

The proposed Projects 1 – 6 and gen-tie lines would have less than significant impacts on erosion, flooding, debris deposition, or stormwater quality with the implementation of the previously described Mitigation Measures Hydro-1 through 11.

4.9.8 Cumulative Impacts

There are 29 cumulative projects within a 5-mile radius of the proposed Project sites, amounting to 20,909 acres of development including Projects 1 – 6 (see Table 3-3). For the purpose of this cumulative analysis, the worst case scenario is assumed, i.e., all cumulative projects would be constructed at the same time. It is also assumed that all cumulative projects would comply with all applicable laws ordinances regulations and standards.

As discussed in Section 3, projects located within 5 miles of the proposed Projects entail the geographic extent under consideration of cumulative impacts. The proposed Projects are six of several proposed renewable development projects that would impact existing and proposed land uses within the general Project area. As shown in Table 3-7 and Figure 3-17 in Chapter 3.0, the proposed Projects would entail approximately 0.60 percent of all proposed projects within a 5-mile radius.

Similar potential impacts can result from these projects as from Projects 1 – 6 with respect to consistency with the policies listed in Section 4.9.3, and impacts to compatibility with surrounding projects. All cumulative projects that may be approved and implemented would also assess potential impacts related to hydrology and water quality. The proposed Projects 1 – 6 were found to have less than significant impacts related to erosion, flooding, debris deposition, and stormwater quality, with no off-site impacts. Additionally, the proposed Projects would not result in any significant or unavoidable impacts and represent a small fraction of the total amount of lands affected by renewable projects and foreseeable projects within a 5-mile radius of the Projects. Therefore, the proposed Projects would not be expected to significantly contribute to potential cumulative impacts associated with other projects in the Projects' region.

4.9.9 References

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4.10 LAND USE AND PLANNING

4.10.1 Introduction

This section presents the current land use and zoning of the region, evaluates them in relation to the proposed Project sites 1 – 6, and analyzes the potential impacts that would occur with implementation of the Projects with respect to the CEQA significance criteria. This could include conflicts with existing or authorized land uses, or conflict with applicable land use plans, policies, or regulations.

4.10.2 Environmental Setting

4.10.2.1 Regional Setting

The Projects are located in unincorporated Antelope Valley in north Los Angeles County. The Antelope Valley is located north of the San Gabriel Mountains, which separates the Los Angeles metropolitan area from the high desert valley. A sphere of influence (SOI) is a plan for the probable physical boundaries and service areas of a local agency, as determined by a Local Agency Formation Commission (LAFCO). The LAFCO establishes a SOI for each city and special district regulated by the LAFCO. The SOI is generally the territory that a city or special district is expected to annex. Cities and special districts cannot provide services outside their SOI except in very limited circumstances. As shown in Figures 4.10-1 through 4.10-5, portions of the gen-tie lines for Projects 2 and 5 would be located within the boundary of the City of Lancaster (City) and Lancaster SOI. Please refer to the Site Plans located in Appendix B-14 for more detailed drawings of the sites and gen-tie lines. Although the Projects are located within Lancaster's SOI, the Project sites are located within Los Angeles County jurisdiction and boundary (LAFCO 2004).The main population centers located within the vicinity of the proposed Projects and in Antelope Valley are the City of Lancaster and City of Palmdale.

The three most extensive land uses in the Antelope Valley are agriculture, residential areas, and military reservations. The western, eastern, and southern fringes of the Antelope Valley contain existing and historic agricultural farming areas that have been declining. The majority of the residential areas are found in the central and southern Antelope Valley including the cities of Lancaster and Palmdale, and areas adjacent to Edwards Air Force Base and U.S. Air Force Plant 42. Additionally, as stated in Section 4.4 Biological Resources, the Projects and their associated gen-tie lines are not located within a designated Significant Ecological Area (SEA).

4.10.2.2 Project-Specific General Plan and Zoning Designations

Detailed descriptions of all applicable Los Angeles County and City of Lancaster land use regulations are addressed in Section 4.10.3 Regulatory Settings. These Project-specific General Plan designations and zoning are addressed in this section.

4.10.2.2.1 General Plan Designations

Projects 1 – 6 and Gen-tie Lines 1, 3, 4, and 6

Projects 1 – 6 are located within the N-1 Non-Urban General Plan land use designation.

Projects 1, 3, 4, and 6 gen-tie lines and portions of the gen-tie line for Project 5 are located within the N-1 General Plan land use designation. Under the N-1 land use designation, allowable uses include:

- Local and highway oriented commercial and industrial uses to serve the needs of local residents and travelers
- Manufacturing activities requiring remote or secluded locations for product testing, development and storage, including storage of volatile/hazardous substances
- Public and semi-public uses typically located in non-urban environs, such as solid and liquid waste disposal sites, utility and communication installations, and schools and other public facilities necessary to serve non-urban populations
- Private and commercial recreational uses and specialized activities such as nature study centers, scientific research and educational camps, lodges and retreats, and visitor accommodations, services, and facilities when designed in a manner compatible with and sensitive to surrounding scenic and natural resources
- Agricultural activities including livestock grazing, beekeeping, orchards, and vineyards
- Mineral extraction uses such as quarries and oil and gas fields

Projects 2 and 5 Gen-tie Lines

The gen-tie line for Project 2 traverses through the City of Lancaster jurisdiction. The gen-tie line for Project 2 traverses through the City's Non-Urban (NU) and Urban Residential (UR) general plan designations.

The gen-tie line for Project 5 traverses through both the City and County jurisdiction. The gen-tie line for Project 5 traverses through land designated as N-1 in the County and through land designated within the City of Lancaster's general plan designations NU and UR.

In the City's Urban Residential and Non-Urban land use categories, different zone classifications have been identified to enable the City to establish a transitional or graduated zoning pattern which will provide for the highest degree of compatibility to mitigate the interface between higher and lower intensity land uses (City of Lancaster 2009). The City's General Plan also advocates the development of infill land within the urbanizing area prior to conversion of rural residential land to urban density use in order to promote orderly, efficient and fiscally sound land use patterns and to conserve resources and open space.

City Non-urban (NU) residential designations are intended to provide for single-family dwellings in a NU environment with minimal urban service.

City Urban Residential (UR) designations and zones are intended to provide for single-family dwellings in an urban environment with full urban services. Only these additional uses that are complementary to and exist in harmony with an urban residential neighborhood are allowed.

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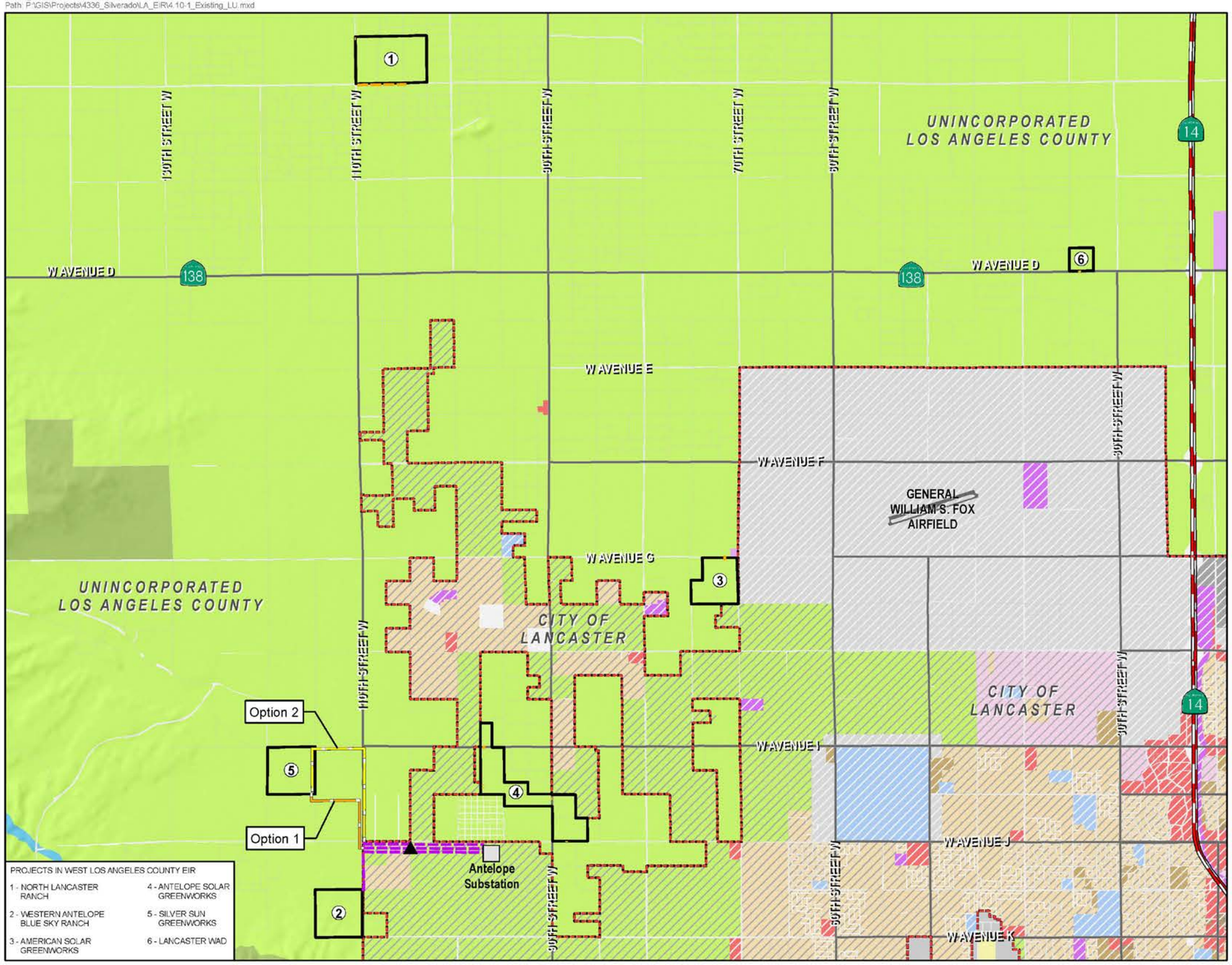

SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

Project Locations
Proposed Underground Lines — Option 1
Proposed Above Ground Lines — Option 2
Jurisdiction Boundary

City of Lancaster General Plan Land Use
- NU - Non-Urban Residential (0.4 - 2.0 DU/AC)
- UR - Urban Residential (2.1 - 6.5 DU/AC)
- MR1 - Multi-Residential (6.6 - 15.0 DU/AC)
- MR2 - Multi-Residential (15.1 - 30.0 DU/AC)
- MU - Mixed Use
- C - Commercial
- LI - Light Industrial
- HI - Heavy Industrial
- P - Public Use
- O - Open Space

Unincorporated Los Angeles County Land Use
- N1 - Non-Urban 1 (0.5 du/ac)
- N2 - Non-Urban 2 (1.0 du/ac)
- U1.5 - Urban 1.5 (1.1 to 3.3 du/ac)
- C - Commercial
- P - Public Service Facilities
- O - Open Space
- O-W - Water Body

NOTE:
(a) State Plane, Zone V (NAD83), US Survey Feet.
(b) Source Data: ESRI, Los Angeles County GIS, Dept. of Regional Planning,TTEC.

FIGURE 4.10-1
GENERAL PLAN
LAND USE DESIGNATION

0 0.5 1 2
Miles

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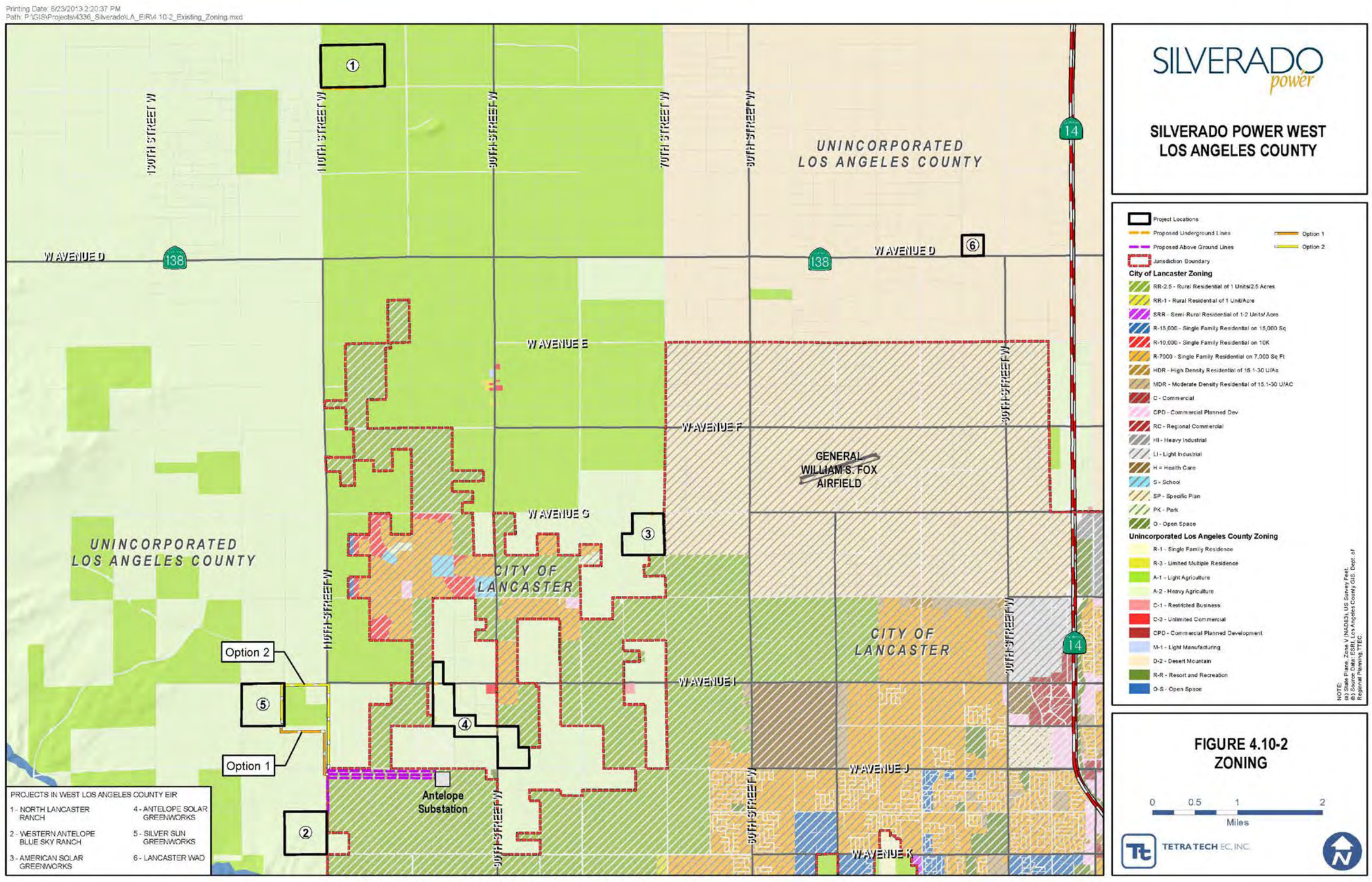
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SILVERADO power
SILVERADO POWER WEST
LOS ANGELES COUNTY
UNINCORPORATED
LOS ANGELES COUNTY
CITY OF
LANCASTER
GENERAL
WILLIAM S. FOX
AIRFIELD
W AVENUE D
W AVENUE E
W AVENUE F
W AVENUE G
W AVENUE I
W AVENUE J
W AVENUE K
105TH STREET W
110TH STREET W
90TH STREET W
70TH STREET W
50TH STREET W
30TH STREET W
138
14
Option 1
Option 2
Antelope
Substation
PROJECTS IN WEST LOS ANGELES COUNTY EIR
1 - NORTH LANCASTER RANCH
2 - WESTERN ANTELOPE BLUE SKY RANCH
3 - AMERICAN SOLAR GREENWORKS
4 - ANTELOPE SOLAR GREENWORKS
5 - SILVER SUN GREENWORKS
6 - LANCASTER WAD
Project Locations
Proposed Underground Lines
Proposed Above Ground Lines
Jurisdiction Boundary
Option 1
Option 2
City of Lancaster Zoning
RR-2.5 - Rural Residential of 1 Units/2.5 Acres
RR-1 - Rural Residential of 1 Unit/Acre
SRR - Semi-Rural Residential of 1-2 Units/ Acre
R-15,000 - Single Family Residential on 15,000 Sq
R-10,000 - Single Family Residential on 10K
R-7000 - Single Family Residential on 7,000 Sq Ft
HDR - High Density Residential of 15.1-30 U/Ac
MDR - Moderate Density Residential of 15.1-30 U/AC
C - Commercial
CPD - Commercial Planned Dev
RC - Regional Commercial
HI - Heavy Industrial
LI - Light Industrial
H - Health Care
S - School
SP - Specific Plan
PK - Park
O - Open Space
Unincorporated Los Angeles County Zoning
R-1 - Single Family Residence
R-3 - Limited Multiple Residence
A-1 - Light Agriculture
A-2 - Heavy Agriculture
C-1 - Restricted Business
C-3 - Unlimited Commercial
CPD - Commercial Planned Development
M-1 - Light Manufacturing
D-2 - Desert Mountain
R-R - Resort and Recreation
O-S - Open Space
NOTE:
(a) State Plane, Zone V (NAD83), US Survey Feet.
(b) Source Data: ESRI, Los Angeles County GIS Dept. of Regional Planning, TTEC.
FIGURE 4.10-2
ZONING
0 0.5 1 2
Miles
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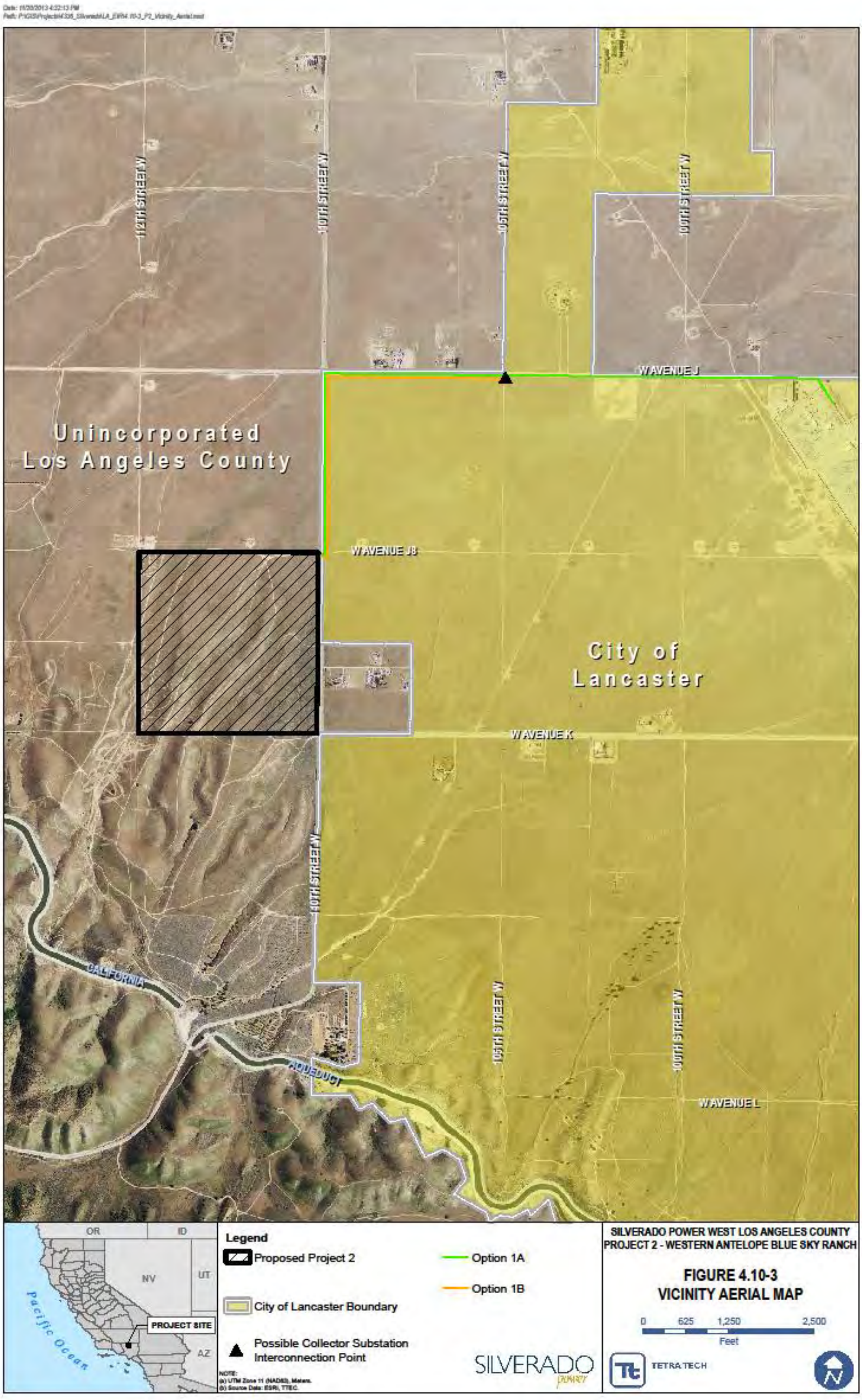
112TH STREET W
110TH STREET W
105TH STREET W
100TH STREET W
W AVENUE J
Unincorporated
Los Angeles County
W AVENUE J8
City of
Lancaster
W AVENUE K
110TH STREET W
CALIFORNIA
AQUEDUCT
105TH STREET W
100TH STREET W
W AVENUE L
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project 2
City of Lancaster Boundary
Possible Collector Substation Interconnection Point
Option 1A
Option 1B
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 2 - WESTERN ANTELOPE BLUE SKY RANCH
FIGURE 4.10-3
VICINITY AERIAL MAP
0 625 1,250 2,500
Feet
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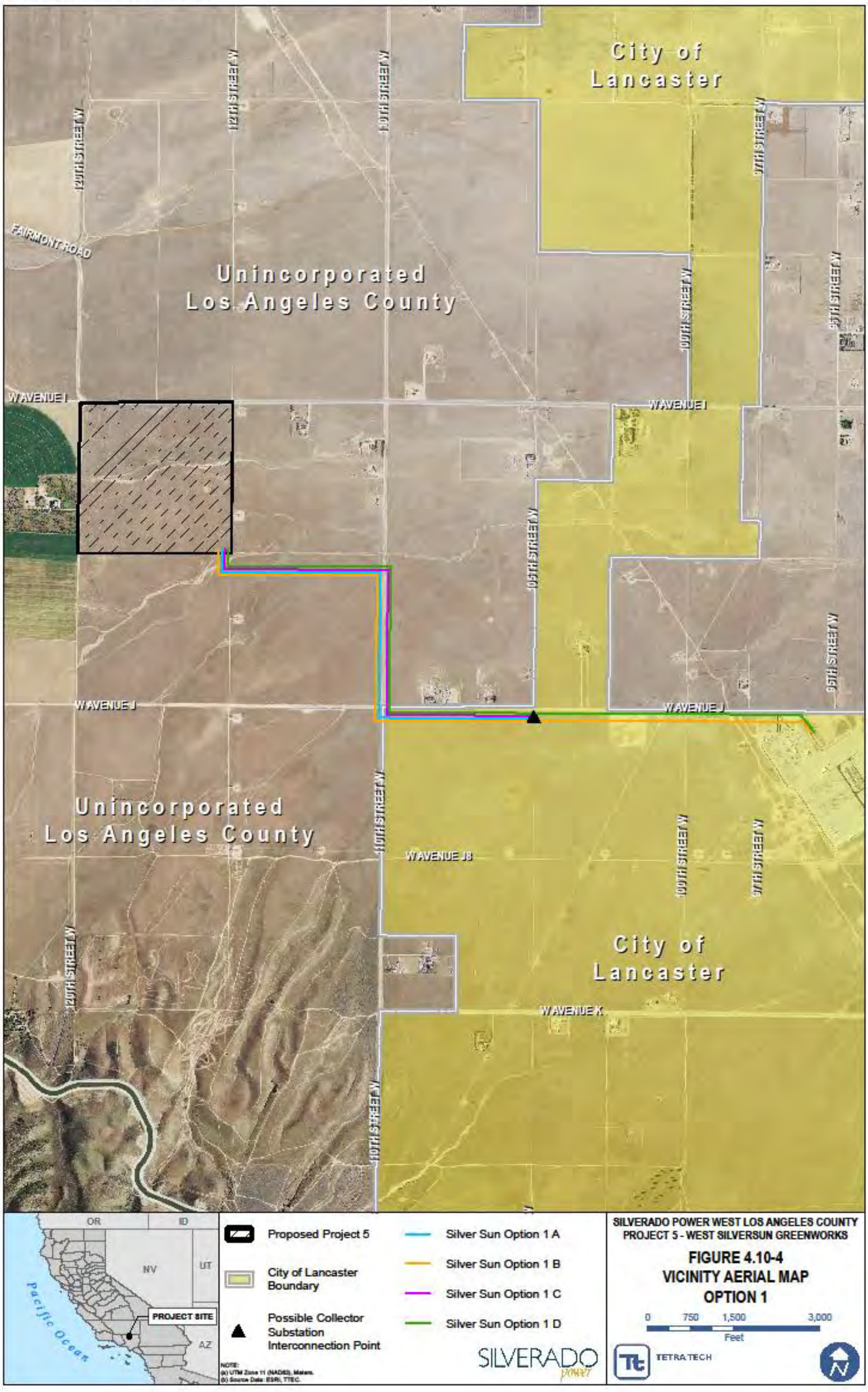
City of Lancaster
Unincorporated Los Angeles County
Unincorporated Los Angeles County
City of Lancaster
12TH STREET W
10TH STREET W
FAIRMONT ROAD
W AVENUE I
W AVENUE J
W AVENUE J8
W AVENUE K
105TH STREET W
95TH STREET W
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Proposed Project 5
City of Lancaster Boundary
Possible Collector Substation Interconnection Point
Silver Sun Option 1 A
Silver Sun Option 1 B
Silver Sun Option 1 C
Silver Sun Option 1 D
SILVERADO POWER
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 5 - WEST SILVERSUN GREENWORKS
FIGURE 4.10-4
VICINITY AERIAL MAP
OPTION 1
0 750 1,500 3,000
Feet
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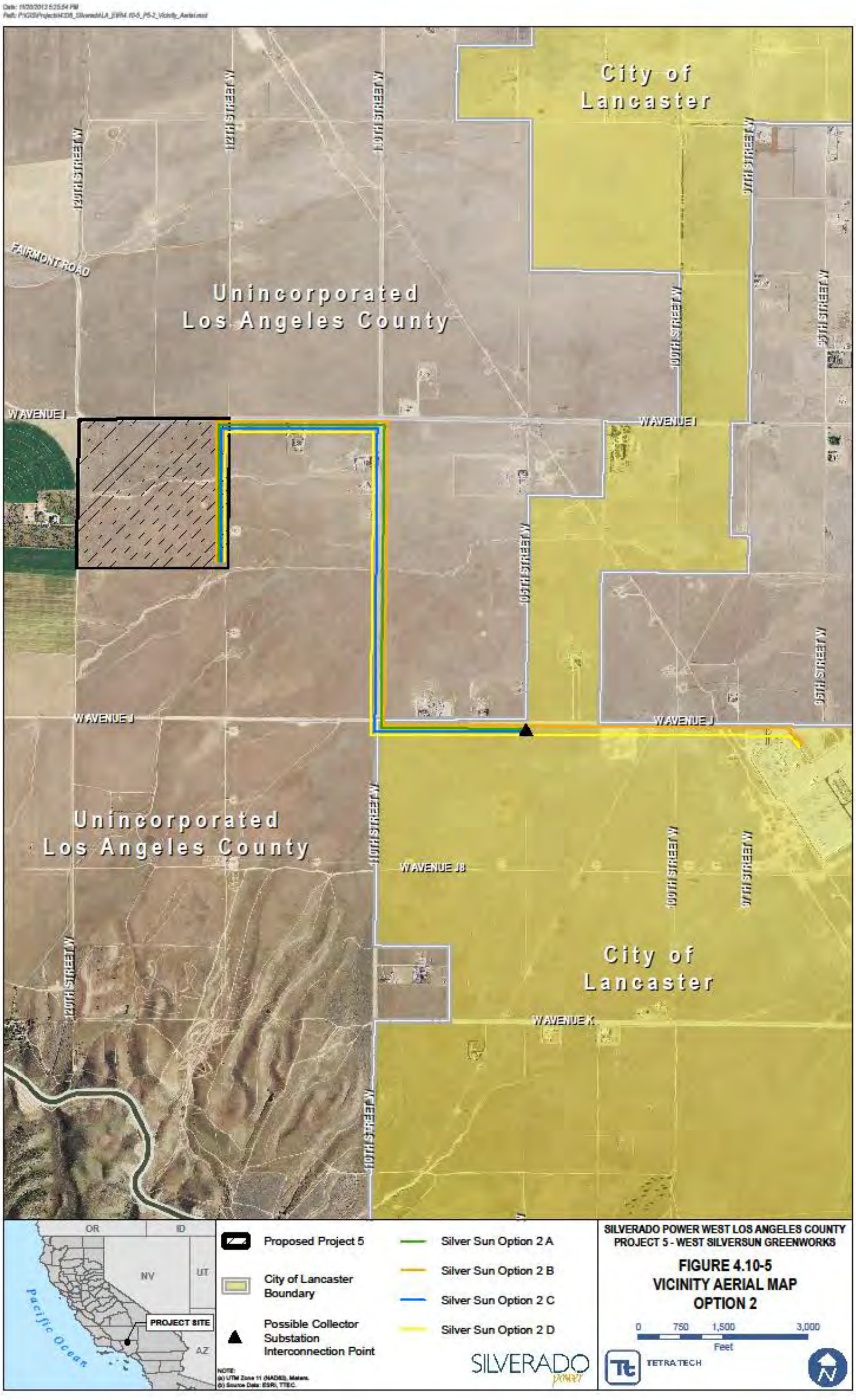
City of Lancaster
Unincorporated Los Angeles County
Unincorporated Los Angeles County
City of Lancaster
City of Lancaster
12TH STREET W
10TH STREET W
FAIRMONT ROAD
W AVENUE I
W AVENUE J
W AVENUE J8
W AVENUE K
105TH STREET W
100TH STREET W
97TH STREET W
95TH STREET W
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Proposed Project 5
City of Lancaster Boundary
Possible Collector Substation Interconnection Point
Silver Sun Option 2 A
Silver Sun Option 2 B
Silver Sun Option 2 C
Silver Sun Option 2 D
SILVERADO POWER WEST LOS ANGELES COUNTY
PROJECT 5 - WEST SILVERSUN GREENWORKS
FIGURE 4.10-5
VICINITY AERIAL MAP
OPTION 2
0 750 1,500 3,000
Feet
TETRA TECH

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4.10.2.2.2 Zoning Designations

Project 1 and Gen-tie Line

As shown in Figure 4.10-2, Project 1 and its gen-tie line are zoned in the County as Light Agriculture (A-1), which does not permit electric generating plants within this zone. Since Project 1 and its gen-tie line are located within Zone A-1, a zone change from Zone A-1 to A 2 (Heavy Agriculture) will be required to construct and operate the SGF. Adjacent properties that are located north, east, and south of Project 1 are assigned Zone A-1 zoning designation; adjacent property located west of Project 1 is zoned R-1 zoning. The current use of the surrounding properties includes vacant land and agricultural fields.

Project 1 and Gen-tie Line

The gen-tie line for Project 1, Phase 2 would traverse through the County of Los Angeles to connect to SCE's 66 kV transmission line. The gen-tie line for Project 1, Phase 1 would connect directly to an existing transmission or distribution line located adjacent the site within Los Angeles County. The proposed off-site gen-tie lines would be located on private land adjacent to the public road right-of-way (ROW) or within the public road ROW. The proposed gen-tie line route would traverse underground within Los Angeles County jurisdiction unless other applicable regulations require above-ground installation. See Table 4.4-2, the description of Interconnections by Project site, and Figure 4.10-2 for additional gen-tie line information.

Project 2 and Gen-tie Line

As shown in Figure 4.10-2, the current zoning for the Project 2 site is Heavy Agriculture (A-2). Pursuant to Section 22.24.150 of the Los Angeles County Code, "Electric distribution substations, electric transmission substations, and generating plants" are permissible uses within the A-2 Zone pursuant to the issuance of a CUP. Project 2 will follow all applicable requirements of the Los Angeles County Code, and therefore will be consistent with the County Zoning Ordinance.

The gen-tie line for Project 2 would be located within the County's A-2 and the City's Rural Residential (RR 2.5) zone. The City's RR 2.5 zone is intended for rural single-family residential use, allowing one dwelling unit per minimum net area of one hundred thousand (100,000) square feet. Commercial solar electrical generation facilities and electric distribution substations are allowed under RR 2.5 with a Conditional Use Permit (CUP).

As shown in Figure 4.10-2, properties immediately surrounding Project 2 in the County of Los Angeles have A-2 zoning designations. Additionally, the property located east of the Project 2 site is located in RR-2.5 Rural Residential zoning designation in the City of Lancaster. The current use of the surrounding properties includes vacant land, agricultural fields, and a few ranch homes.

Project 2 and Gen-tie Line

The gen-tie line for Project 2 would traverse through the County of Los Angeles and City of Lancaster jurisdiction to connect to the Antelope Valley Substation. The proposed off-site gen-tie

line would be located on private land adjacent to the public road ROW or within the public road ROW. The proposed gen-tie line route would traverse underground within Los Angeles County jurisdiction unless other applicable regulations require above-ground installation, and above-ground or underground within the City of Lancaster (City). See Table 4.4-2, the description of Interconnections by Project site, and Figure 4.10-2 for additional gen-tie line information.

Project 3 and Gen-tie Line

As shown in Figure 4.10-2, the current zoning for the Project 3 site and gen-tie line is Heavy Agriculture (A-2). Pursuant to Section 22.24.150 of the Los Angeles County Code, "Electric distribution substations, electric transmission substations, and generating plants" are permissible uses within the A-2 Zone pursuant to the issuance of a CUP. Project 3 will follow all applicable requirements of the Los Angeles County Code, and therefore will be consistent with the County Zoning Ordinance.

Adjacent properties located north, west, and south of Project 3 are A-2 zoning designations. Adjacent properties located east of the Project site in the City of Lancaster are zoned RR-2.5 Rural Residential. The current use of the surrounding properties includes vacant land and agricultural fields. Additionally, single family residences are located adjacent to the Project site and a mobile home park is located to the west of the Project site.

Project 3 and Gen-tie Line

The gen-tie line for Project 3 would connect directly to an existing transmission or distribution line located adjacent to the site within Los Angeles County. The proposed off-site gen-tie line would be located on private land adjacent to the public road ROW or within the public road ROW. The proposed gen-tie line route would traverse underground within Los Angeles County to the extent feasible. See Table 4.4-2, the description of Interconnections by Project site, and Figure 4.10-2 for additional gen-tie line information.

Project 4 and Gen-tie Line

As shown in Figure 4.10-2, the current zoning for the Project 4 site and gen-tie line is Heavy Agriculture (A-2). Pursuant to Section 22.24.150 of the Los Angeles County Code, "Electric distribution substations, electric transmission substations, and generating plants" are permissible uses within the A-2 Zone pursuant to the issuance of a CUP. Project 4 will follow all applicable requirements of the Los Angeles County Code, and therefore will be consistent with the County Zoning Ordinance.

Within Los Angeles County, properties located adjacent to Project 4 are zoned A-2, with one parcel that is located southwest of Project 4 zoned Resort and Recreation (R-R). Within the City of Lancaster, adjacent properties located to the east and west of the Project site are zoned rural residential (RR-2.5), or one residential unit for every 2.5 acres. The current use of the surrounding properties includes vacant land, grazing land, and farmland. Additionally, residences are located east and west of Project 4.

Project 4 and Gen-tie Line

The gen-tie lines for Project 4 would connect directly to an existing transmission or distribution line located adjacent to the site within Los Angeles County. The proposed off-site gen-tie lines would be located on private land adjacent to the public road ROW or within the public road ROW. The proposed gen-tie line routes would traverse underground within Los Angeles County unless other applicable regulations require above-ground installation. See Table 4.4-2, the description of Interconnections by Project site, and Figure 4.10-2 for additional gen-tie line information.

Project 5 and Gen-tie Line

As shown in Figure 4.10-2, the current zoning for the Project 5 site is Heavy Agriculture (A-2). Pursuant to Section 22.24.150 of the Los Angeles County Code, "Electric distribution substations, electric transmission substations, and generating plants" are permissible uses within the A-2 Zone pursuant to the issuance of a CUP. Additionally, the gen-tie line for Project 5 is located within the County zone A-2 and the City's zone Rural Residential (RR 2.5). Project 5 will follow all applicable requirements of the Los Angeles County Code, and therefore will be consistent with the County Zoning Ordinance.

Adjacent properties located north, west, and south of Project 5 are A-2 zoning designations. The adjacent property located east of Project 5 is zoned A-1. The current use of the surrounding properties includes vacant land, grazing land, and farmland directly west of the site.

Project 5 and Gen-tie Line

The gen-tie line for Project 5 would traverse through the County of Los Angeles and City of Lancaster jurisdiction to connect to the Antelope Valley Substation. The proposed off-site gen-tie lines would be located on private land adjacent to the public road ROW or within the public road ROW. The proposed gen-tie line routes would traverse underground within Los Angeles County unless other applicable regulations require above-ground installation and aboveground or underground within the City of Lancaster. See Table 4.4-2, the description of Interconnections by Project site, and Figure 4.10-2 for additional gen-tie line information.

Project 6 and Gen-tie Line

As shown in Figure 4.10-2, the current zoning for the Project 6 site and its gen-tie line is Desert Mountain (D-2). Pursuant to Section 22.32.080 of the Los Angeles County Code, properties in Zone D-2 may be used for any use permitted in Heavy Agriculture Zone (A-2). Electric generating plants are permissible uses within the A-2 Zone, pursuant to the issuance of a CUP. Project 6 will follow all applicable requirements of the Los Angeles County Code, and therefore will be consistent with the County Zoning Ordinance.

Adjacent properties located north, south, east, and west of Project 6 are designated as D-2 zoning designations. Surrounding properties include vacant land and agricultural fields.

Project 6 and Gen-tie Line

The gen-tie line for Project 6 would connect directly to an existing transmission or distribution line located adjacent to the site within Los Angeles County. The proposed off-site gen-tie line

would be located on private land adjacent to the public road ROW or within the public road ROW. The proposed gen-tie line routes would traverse underground within Los Angeles County unless other applicable regulations require above-ground installation. See Table 4.4-2, the description of Interconnections by Project site, and Figure 4.10-2 for additional gen-tie line information.

4.10.3 Regulatory Setting

One aspect of land use planning considered under CEQA is the consistency of a proposed project with relevant planning documents. The proposed Projects 1 – 6 would be required to be consistent with the applicable provisions of the Los Angeles County General Plan land use designations and policies, and to comply with the regulations contained in the Los Angeles County Zoning Ordinance. Portions of the gen-tie lines for Projects 2 and 5 will traverse through Los Angeles County and the City of Lancaster; thus, the applicable provisions of the Lancaster General Plan and Zoning regulations are also applicable to the proposed gen-tie lines for Projects 2 and 5. Tables 4.10-1, 4.10-2, and 4.10-3 contain the potentially applicable land use regulations and the Projects' consistency with each regulation.

4.10.3.1 State

With the exception of CEQA, no applicable state regulatory statutes were identified.

4.10.3.2 Regional

4.10.3.2.1 Southern California Association of Governments

The Southern California Association of Governments (SCAG) is responsible for most regional planning in Southern California (Ventura, Los Angeles, Riverside, San Bernardino, Orange, and Imperial Counties). SCAG has been preparing long-range growth and development plans for the SCAG region since the early 1970s. SCAG provides a framework to coordinate local and regional decisions regarding future growth and development. An important component of this process is the preparation of growth forecasts at intervals ranging from three to five years.

SCAG has developed a Regional Comprehensive Plan (RCP) that recommends methods that local governments can redirect regional growth to minimize traffic congestion and better protect environmental quality. Although SCAG has no authority to mandate implementation of the RCP, the Plan's goals have implications upon the land use composition of the County of Los Angeles.

SCAG's Regional Transportation Plan (RTP) is a long-range 20 year plan that provides a blueprint for future transportation improvements and investments based on specific transportation goals, objectives, policies, and strategies. The RTP is based on federal transportation law requiring comprehensive, cooperative, and continuous transportation planning. SCAG meets these requirements by developing comprehensive transportation plans that include all surface transportation modes (multi-modal planning), to ensure efficient people and goods movements throughout the region. Please refer to Table 4.10-1 for the Projects' consistency with the SCAG RTP.

Table 4.10-1 Consistency with Regional and Local Land Use Policies and Ordinances

Policy	Relationship of Projects to Policy
Southern California Association of Governments	
Regional Transportation Plan Goals	
RTP G5 – Protect the environment, improve air quality, and promote energy efficiency.	**Consistent –** The objective of the Projects is to generate clean energy using solar renewable energy resources. The Projects would generate 172 MW of electricity, but would consume substantially less fossil fuels and emit substantially less combustion and GHG emissions compared with conventional power generation facilities (i.e., natural gas-fired power plant). The Projects are designed to protect and minimize impacts to biological resources (i.e., wildlife permeable fencing, avoidance of drainages, avoidance of Joshua tree recruitment area, etc.), and would require a minimal amount of human presence and maintenance efforts during operation.
RTP G6 – Encourage land use and growth patterns that complement our transportation investments.	**Consistent –** The Projects will not encourage sprawl as it maintains the site in a use consistent with agricultural uses, and would not result in growth-inducing impacts.
Compass Growth Visioning Goals	
GV P3.5 – Encourage civic engagement.	**Consistent –** Public participation and comment is encouraged during the development of the Projects. A scoping meeting was held on July 14, 2012 to gather public input. Additionally, circulation of this Draft EIR is intended to engage public response and participation as part of the Projects' decision-making process.
GV P4.1 – Preserve rural, agricultural, recreational, and environmentally sensitive areas.	**Consistent –** The current land use pattern in the Projects area is vacant agricultural lands. Surrounding land uses include undeveloped and agricultural lands. The current land use for the Project sites as set forth by the General Plan's Land Use designation is Non-Urban (N-1). The Projects will develop on zoned agricultural and desert mountain lands (A-1, A-2, and D-2). The A-2 and D-2 zoning designation permits alternative land uses, such as the Projects with a CUP. Additionally, the Project Applicant would apply for a zone change from A-1 to A-2 to allow development and conformance of the proposed Projects. The Projects will operate with a low level of activity (minimal noise, air emissions, lighting, traffic, and human presence). Additionally, the Projects are designed and would implement measures to minimize indirect impacts to environmentally sensitive receptors.
GV P4.2 – Focus development in urban centers and existing cities.	**Consistent –** The Projects are renewable energy projects and are not residential or commercial development projects that would need to focus its development in urban centers or existing cities. The Projects are not proposing housing development and/or development that would increase the density within the area. The Projects are located in areas of Los Angeles County that are compatible with solar facilities, such as agricultural and vacant land.

Policy	Relationship of Projects to Policy
GV P4.3 – Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution, and significantly reduce waste.	**Consistent –** The Projects would generate clean, renewable electricity using sunlight energy. The Projects would encourage the preservation of petroleum resources, reduce GHG emissions, and would generate substantially less combustion emissions compared to conventional natural gas-fired power plants.
GV P4.4 – Utilize "green" development techniques.	**Consistent –** The proposed Projects will implement applicable Green Building Ordinance guidelines, as required by the County of Los Angeles. However, the County Department of Public Works has found Projects 1 – 6 exempt from the tree planting requirements required under the Green Building Ordinance.
Los Angeles County General Plan	
Conservation and Open Space Element	
1. Actively support strict air quality regulations for mobile and stationary sources, and continued research to improve air quality. Promote van pooling, carpooling, and improved public transportation.	**Consistent** – The Projects would have temporary impacts to air quality during construction. During operations, the Projects would offset carbon dioxide and other greenhouse gases that would have resulted from producing an equivalent amount of electricity utilizing generators powered by fossil fuels. Solar energy projects can displace energy created from sources that pollute the air.
2. Support the conservation of energy and encourage the development and utilization of new energy sources including geothermal, thermal waste, solar, wind, and ocean-related sources.	**Consistent –** The Projects propose to develop six SGFs totaling 172 MW. Therefore, the proposed Projects utilize new energy sources.
3. Promote the use of solar energy to the extent possible.	**Consistent –** The Projects propose to develop six SGFs totaling 172 MW. The Projects utilize solar energy.
7. Preserve significant ecological areas by appropriate measures, including preservation, mitigation, and enhancement.	**Consistent –** The Project sites and gen-tie lines are not located within any designated SEA boundaries. As discussed in Section 4.4, Biological Resources, the Projects would not result in significant impacts to the SEA. The Projects will generate minimal air emissions and noise during operations. Human activity will be light, and most of the activity will occur in and around the relatively small area of the on-site SGF facilities. Infrequent SGF maintenance activities will be required.
16. Protect the visual quality of scenic areas including ridgelines and scenic views from public roads, trails, and key vantage points.	**Consistent –** The Projects will be consistent with the Conservation and Open Space Element policies of the Los Angeles County General Plan.
17. Protect cultural heritage resources, including historical, archaeological, paleontological, and geological sites, and significant architectural structures.	**Consistent –** The Projects will be consistent with the Conservation and Open Space Element policies of the Los Angeles County General Plan.
Land Use Element	
11. Promote planned industrial development in order to avoid land use conflicts with neighboring activities.	**Consistent –** The Projects will not conflict with any neighboring land uses.

Policy	Relationship of Projects to Policy
Economic Development Element	
24. Encourage industries that utilize energy most efficiently or that manufacture products that contribute to the efficient use of energy, including renewable energy sources, to locate or remain in the County.	**Consistent –** The Projects contribute to efficient use of renewable energy sources.
Safety Element	**Consistent –** The Projects will be consistent with the Safety Element policies of the Los Angeles County General Plan.
Antelope Valley Area Wide Plan	
Land Use	
2. Closely monitor growth in the Antelope Valley to maintain a balance between development and the capacity of the environmental, economic, and manmade or social systems.	**Consistent –** The Projects are consistent with this policy as they do not exceed the capacity of environmental, economic, or manmade/social systems in the region.
3. Provide for development which is consistent with the Plan, and encourage other governmental and private agencies to do the same.	**Consistent –** The Projects are consistent with the Antelope Valley Area Wide Plan.
Environmental Hazards and Constraints	
14. Designate appropriate areas of steeper slope (exceeding 25 percent) as "Hillside Management Areas".	**Consistent -** Portions of Project 2 are located within the Hillside Management Area; however, the area of development of the solar facility will be constrained to areas consisting of less than 20 percent gradients. Projects 1, 3, 4, 5, and 6 are not located within the Hillside Management Area.
15. Designate areas of the 100-year flood as delineated on mapping provided by the Federal Emergency Management Agency of the Federal Insurance Administration or areas mapped by the Department of Public Works as "Flood Plain Management Area".	**Consistent** – Project 4 has portions of its area within Zone A and Zone X, Shaded, while Project 6 is completely within Zone A. Floodplain management ordinances will be followed for the Project areas located within Zone A and Zone X, Shaded.
Environmental Sensitivities	
18. Direct future growth away from areas exhibiting high environmental sensitivity to land use development unless appropriate mitigating measures can be implemented.	**Consistent –** The Projects would not be sited in areas of high environmental sensitivity.
19. Minimize disruption and degradation of the environment as land use development occurs, integrating land uses so that they are compatible with natural environmental systems.	**Consistent –** The Projects would be sited in areas previously used for agriculture. Minimal degradation of the environment would result from development of these areas.
22. Minimize environmental degradation by enforcing controls on pollutants (including visual pollution) and noise.	**Consistent –** The Projects would comply with all applicable environmental regulations. The Projects would not create significant visual pollution or noise.
23. Protect underground water supplies by enforcing controls on sources of pollutants	**Consistent –** The Projects would comply with all applicable environmental regulations.

Policy	Relationship of Projects to Policy
Land Use Compatibility	
25. Designate all areas within a projected year 2000 annual CNEL contour of 60 dB for airports, highways projected for heavy use, freeways, railroads, and rapid transit lines as "Noise Impact Management Areas." Within these areas State mandated noise reduction requirements will be implemented.	**Not applicable -** None of the Projects are located within an aviation-related 60 dBA CNEL noise contour, although Project 4 is within the 55-60 dBA CNEL noise contour for the Fox Airfield.
Agricultural Lands	
28. Within designated "Agricultural Opportunity Areas," carefully evaluate extension of urban and suburban uses (outside the urban areas and the rural communities) for its impact on adjacent agricultural operations.	**Consistent** – The Projects 1-5 are located within an AOA. The Projects would generate power in a passive manner, and would result in minimal air emissions, traffic, and noise impacts, and would not impact adjacent agricultural operations. Additionally, Project 4, which was designated Prime Farmland and Farmland of Statewide, is in the process of being remapped to Grazing Land by the Department of Conservation (DOC). Project 6 is not located within an AOA and this criteria does not apply to this site.
Resource Conservation	
40. Encourage efficient utilization of resources in the allocation of land to various uses, and incorporate energy conservation measures into the design and implementation of public and private projects.	**Consistent** – The Projects' proposed use of PV solar arrays, which absorb renewable solar energy resources in order to generate power, would thereby conserve fossil fuel use. The Projects are also proposed to be developed on previously disturbed agricultural lands, and would require modest quantities of water compared with other traditional power generation technologies.
Physical Appearances/Community Image	
65. Encourage the locating of new power distribution networks, communication lines, and other service network facilities underground in urban areas. Transmission lines should be located underground where feasible.	**Consistent** – The proposed gen-tie lines and onsite lines will be located underground to the extent feasible.
Natural Resources	
137. Protect known archaeological and historical resources to the extent appropriate.	**Consistent –** The Projects will be consistent with the Cultural Resources policies of the Antelope Valley Area Wide Plan.
138. Require archaeological surface reconnaissance and impact assessment by a qualified archeologist for any significant development proposed on, or adjacent to, known archaeological sites.	**Consistent –** The Projects will be consistent with the Cultural Resources policies of the Antelope Valley Area Wide Plan.
139. Require that negative impacts be mitigated where a development would adversely affect a known significant archaeological site. Adequacy of the proposed mitigation measures shall be determined by the public agency responsible for project approval.	**Consistent –** The Projects will be consistent with the Cultural Resources policies of the Antelope Valley Area Wide Plan.
140. Promote air quality that is compatible with health, well-being, and enjoyment of life. The public nuisance, property and vegetative damage, and deterioration of aesthetic qualities that result from air pollution contaminants should be prevented to the greatest degree possible.	**Consistent –** The Projects will be consistent with the Environmental Resource policies of the Antelope Valley Area Wide Plan.

Policy	Relationship of Projects to Policy
Managed Resource Protection	
142. Encourage the continued production of existing agricultural lands within the Antelope Valley.	**Consistent –** The Projects would not take any existing agricultural lands out of production. As stated in Section 4.2 Agriculture and Forestry, Projects 1 – 6 sites are located on fallow land that have not been in production and are not irrigated. Additionally, Project 4, which was designated Prime Farmland and Farmland of Statewide, is in the process of being remapped to Grazing Land by the Department of Conservation (DOC).
Hazardous Areas	**Consistent –** The Projects will be consistent with the Hazardous Areas policies of the Antelope Valley Area Wide Plan.
Recreation	
166. Where a proposed discretionary project encompasses a mapped trail corridor, a trail dedication requirement will be a condition of approval.	**Consistent –**As shown and discussed in Section 4.1 Aesthetics**,** Project 1 is located adjacent to the Little Buttes Trail and will provide a 12 feet wide dedication for this trail. Project 2 is located adjacent to the California Poppy Trail and will provide a 12 feet wide dedication for this trail. Projects 3 – 6 are neither located within nor encompass a mapped trail or hiking corridor.
Land Use and Development Controls	
173. Designate all areas shown on the Hazards and Resources Map within a projected annual CNEL contour of 60 dB for airports, highways projected for heavy use, freeways, railroads, and rapid transit lines as "Noise Impact Management Areas". Within these areas State mandated noise reduction requirements will be implemented. Land use types and densities may be restricted due to the presence of noise, if compliance with the appropriate insulation standards cannot be achieved.	**Not applicable -** None of the Projects are located within an aviation-related 60 dBA CNEL noise contour, although Project 4 is within the 55-60 dBA CNEL noise contour for the Fox Airfield.
Seismic Safety	
183. Establish and enforce standards and criteria to reduce unacceptable levels of seismic risk.	**Consistent** – The Projects will be constructed to reduce seismic shaking and strong ground motion hazards to a less than significant level.
184. Require all new development and appropriate existing development to comply with established seismic safety standards.	**Consistent** – The Projects will comply with all established seismic safety standards.
189. Advocate detailed site evaluations and improved seismic design and construction standards for critical linear system facilities.	**Consistent** – The Projects will comply with all established seismic design and construction standards.
Public Safety	
203. Require all new development and appropriate existing development to comply with established fire and geologic safety standards.	**Consistent** – The Projects will comply with all established fire and geologic safety standards.

Policy	Relationship of Projects to Policy
Energy Conservation	
217. Promote use of alternative energy sources (including solar and wind) for heating and cooling.	**Consistent –** The proposed Projects would develop a total of 172 MW PV solar facilities. Therefore, the proposed Projects utilize new energy sources.
General Conditions for Development 3. Non-Residential Uses In Non-Urban Areas	
a) Location (1) The proposed use should be located and designed so as not to conflict with established community land use and circulation patterns.	**Consistent** – The current land use pattern in the Project areas is vacant agricultural lands. The proposed Projects are consistent with surrounding agricultural land uses and will not affect existing circulation patterns.
(2) The necessary public services and infrastructure should be readily available.	**Consistent** – As analyzed in Section 4.13, Transportation and Traffic, and Section 4.12, Public Services (Police and Fire), adequate public services and infrastructure are readily available, and the Projects would result in less than significant impacts to these resources.
(3) The proposed use should be located and designed so as to provide an appropriate buffer between potentially disruptive, polluting or hazardous uses and other existing development.	**Consistent** – The proposed Project sites will be surrounded by high chain link fences and will provide a buffer between the Projects and existing development. The Projects propose standard construction and operational electricity production precautions and no disruptive, polluting, or hazardous uses are proposed.
(4) The proposed use shall be located and designed so as to minimize the scenic, noise, and odor impacts on adjacent neighborhoods and other adjacent land uses.	**Consistent -** The Projects would be located in areas of generally low population density and surrounding areas consist of agricultural and undeveloped land. As analyzed in Sections 4.3, Air Quality, 4.1, Aesthetics, and 4.11, Noise, the Projects would result in less than significant impacts following implementation of prescribed mitigation measures.
(5) The proposed use shall be located in areas deemed suitable from ecologic, geologic and topographic standpoint.	**Consistent -** The proposed Projects are considered to be suitable with on-site and surrounding ecological resources as discussed in Section 4.4, Biological Resources, and geology and soils as discussed in Section 4.6, Geology and Soils. The Project will generate minimal air emissions and noise during operations. Human activity will be light, and most of the activity will occur in and around the relatively small area of the on-site operations.
b) Access (1) Access, egress, and on-site parking should be provided in a manner which maximizes safety and convenience, and minimizes adverse impacts on surrounding land use patterns.	**Consistent –** The proposed Projects would provide adequate on-site parking as shown in the Site Plans located in Section 3.0. Implementation of mitigation measures described in Section 4.13, Transportation and Traffic, of this EIR will ensure that demands of the proposed Projects will not overburden existing roadways. The proposed Projects do not include the use of hazardous or special conditions that can be detrimental to the public health and safety (as discussed in Section 4.8, Hazards and Hazardous Materials).
(2) The design and location of the project should insure that the transport of toxic, explosive, or hazardous substances will avoid existing residential communities.	

Policy	Relationship of Projects to Policy
c) Design (1) The proposed site should be appropriately landscaped such that the development blends into the surrounding landscape as much as possible. Appropriate landscaping should include, whenever practical, materials appropriate to desert environs.	**Consistent –** Landscaping, including vegetation screening, will be installed per the County of Los Angeles landscaping requirements. A vegetative buffer 10 feet in width is proposed for screening each of the Projects to mitigate potential visual impacts.
(2) The proposed site should be appropriately fenced, if necessary.	**Consistent -** The proposed Projects will be surrounded by chain link fences.
(5) If located in a hillside area, the proposed site should be designed so as to minimize necessary grading and to take advantage of existing hillside contours. The design should also minimize the scenic and geologic impacts of the project, particularly erosion and land slippage.	**Consistent –** As discussed in Section 4.6, Geology and Soils, portions of Project 2 is located within the Hillside Management Area. However, development of Project 2 would be constrained to areas consisting of less than 20 percent gradient, with the majority of development occurring in areas with slopes ranging from flat to 5 percent. Projects 1, 3, 4, 5, and 6 are not located within the Hillside Management Area.
General William J. Fox Airfield Land Use Compatibility Plan	
Zone C. Extended Approach/Departure Zone. Prohibited Uses: • Children's Schools, libraries • Hospitals, nursing homes • Buildings with >3 habitable floors above ground • Highly noise-sensitive uses (e.g., outdoor theaters) • Hazards to flight Other Development Conditions: • Minimum Noise Level Reduction (NLR) of 20 decibels (dB) in residences (including mobile homes) and office buildings • Airspace review required for objects > 50 feet tall • Deed notice required	**Consistent –** Project 3 is located within Zone C of the Fox Airfield Land Use Compatibility Plan. Project 3 does not conflict with the prohibited uses listed under Zone C. The proposed Project 3 would not be a hazard to flight since Project components will introduce minimal amounts of glare to the existing landscape. The PV modules are designed to absorb sunlight, and the glass modules that protect the PV surface are typically formulated glass designed to allow sunlight to pass with minimal reflection. Solar generating projects do not result in electronic forms of interference with the safety of aircraft operations. The gen-tie lines would be constructed underground to the extent feasible and would not pose a hazard to flight. Additionally, the Project proposes to build a solar generating facility, and would not build schools, libraries, hospitals, nursing homes, and buildings with habitable floors above ground, and is not highly noise sensitive uses. The Project's tallest structure would be the fencing and substation, which would not exceed 45 feet in height and would not create hazards to flight. Therefore, airspace review for objects over 50 feet tall would not be required. **Not Applicable** – Projects 1, 2, 4, 5, and 6 are not located within Zone C of the Fox Airfield Land Use Compatibility Plan.
Zone E. Other Airport Environs Prohibited Uses: • Hazards to Flight Other Development Conditions: • Airspace review required for objects> 100 feet tall	**Consistent –** Project 6 is located within Zone E of the Fox Airfield Land Use Compatibility Plan. Project 6 will not pose a hazard to flight. Project 6 proposes to build solar generating facilities and would not construct objects over 100 feet tall: Project 6 would not include a substation onsite. The Project's tallest structure would be a riser pole that would not exceed 45 feet in height. Therefore, airspace review for objects over 100 feet tall would not be required.

Policy	Relationship of Projects to Policy
• Major spectator-oriented sports stadiums, amphitheaters, concert halls discouraged beneath principal flight tracks	Additionally, Project 6 does not propose to build sports stadiums, amphitheaters, and concert halls. **Not Applicable** – Projects 1, 2, 3, 4, and 5 are not located within Zone E of the Fox Airfield Land Use Compatibility Plan.
City of Lancaster General Plan	
Land Resources	
3.5 Preserve the land resources through the application of appropriate soils management techniques and the protection and enhancement of surrounding landforms and open space.	**Consistent –** The proposed gen-tie line(s) for the Projects would not conflict with lands designated as open space. Additionally, BMPs and/or mitigation measures will be implemented to preserve the land resources through the application of appropriate soils management techniques.
Energy Resources	
3.6.6 Consider and promote the use of alternative energy such as wind energy and solar energy.	**Consistent –** The gen-tie lines would support the proposed Projects, which are photovoltaic SGFs.
Scenic Resources	**Consistent –** The gen-tie lines will be consistent with the Scenic Resources policies of the City of Lancaster General Plan.
Geology and Seismicity	**Consistent –** The gen-tie lines will be consistent with the Geology and Seismicity policies of the City of Lancaster General Plan.
Flooding and Drainage	**Consistent –** The gen-tie lines will be consistent with the Flooding and Drainage policies of the City of Lancaster General Plan.
Noise	**Consistent –** The gen-tie lines will be consistent with the Noise policies of the City of Lancaster General Plan.
Air Installation Land Use Compatibility	**Consistent –** The gen-tie lines will be consistent with the Air Installation Land Use Compatibility policies of the City of Lancaster General Plan.
Hazardous Materials	**Consistent –** The gen-tie lines will be consistent with the Hazardous Materials policies of the City of Lancaster General Plan.
Fire Prevention and Suppression Services	**Consistent –** The gen-tie lines will be consistent with the Fire Prevention and Suppression Services policies of the City of Lancaster General Plan.
Historical, Archaeological, and Cultural Resources	**Consistent –** The gen-tie lines will be consistent with the Historical, Archaeological, and Cultural Resources policies of the City of Lancaster General Plan.

Table 4.10-2 Compliance with Regional and Local Zoning Ordinances

County of Los Angeles Zoning Ordinance	
Section 22.24 Agricultural Zones Part 2 A-1 Light Agricultural Zone, 22.24.100 Uses Subject to Permits.	
Electric generating plants are not permitted within the Light Agriculture (A-1) zoning district.	**Complies –** Since Project 1 is located within Zone A-1, a zone change from Zone A-1 (Light Agriculture) to A-2 (Heavy Agriculture) will be required and is proposed to construct and operate the SGF.
Section 22.24 Agricultural Zones Part 3 A-2 Heavy Agricultural Zone	
22.24.150 Uses subject to permits.	
Property in Zone A-2 may be used for: A. The following uses, provided a conditional use permit has first been obtained as provided in Part 1 of Chapter 22.56, and while such permit is in full force and effect in conformity with the conditions of such permit for: - Electric distribution substations, electric transmission substations and generating plants, including microwave facilities used in conjunction with any one thereof.	**Compliant** –Projects 1-6 will comply with the A-2 zone development standards.
22.24.170 Development standards. Front, side and rear yards shall be provided as required in Zone R-1. Premises in Zone A-2 shall provide the required area as specified in Part 2 of Chapter 22.52	**Compliant** – Projects 1-6 will comply with the A-2 zone development standards.
22.52.610 Specifications for fences and walls. Where a fence or wall is required pursuant to Section 22.52.570, it shall be developed as provided herein: A. All fences and walls shall be of uniform height in relation to the ground upon which they stand, and shall be a minimum of eight feet and shall not exceed 15 feet in height. Where fences or walls exceed a height of 10 feet and are located on street or highway frontages they shall be set back at least three feet from the property line. The area between the fence and the lot line shall be fully landscaped according to the specifications hereinafter described in Section 22.52.630 B. All fences and walls open to view from any street or highway or any area in a residential, agricultural or commercial zone shall be constructed of the following materials: 1. Metallic panels, at least .024 inches thick, painted with a "baked on" enamel or similar permanent finish; 2. Masonry; 3. Other materials comparable to the foregoing if approved by the director. C. Required fences which are not open to view from any street or highway or any area in a residential, agricultural or commercial zone may be constructed of material other than as specified in subsection B of this section if constructed and maintained in accordance with the provisions of this Part 7. D. All fences and walls shall be constructed in workmanlike manner and shall consist solely of new materials unless the director approves the substitution of used materials where, in his opinion, such used materials will provide the equivalent in service, appearance and useful life. E. 1. All fences and walls, excluding masonry and approved permanent-finish panels, shall be	**Compliant** –Projects 1-6will comply with the applicable specifications for fences and walls upon issuance of the CUP.

County of Los Angeles Zoning Ordinance	
painted a uniform, neutral color, excluding black, which blends with the surrounding terrain, and improvements shall be maintained in a neat, orderly condition at all times. 2. No portion of the wall or fence shall be used for advertising or display purposes except for the name and address of the firm occupying the premises, and such identification sign shall not consist of an aggregate area in excess of 30 square feet. F. Any structures which are used as part of the yard boundaries and/or are exposed to view from a street or highway frontage shall be subject to painting, maintenance and sign requirements for fences and walls as provided in subsection E of this section.	
22.52.630 Landscaping requirements. A. All required fences or walls which are open to view from any street or highway, or any area in a residential, agricultural or commercial zone, shall be provided with at least one square foot of landscaping for each linear foot of such frontage, and said landscaping shall be developed in accordance with a site plan which complies with the following criteria: 1. Landscaping shall be distributed along said frontage in accordance with the site plan approved by the director. 2. No planting area shall have a horizontal dimension of less than three feet. 3. Landscaping shall be maintained in a neat, clean and healthful condition, including proper pruning, weeding, removal of litter, fertilizing and replacement of plants when necessary. 4. A permanent watering system shall be provided which satisfactorily irrigates all planted areas. Where the watering system consists of hose bibs alone, these bibs shall be located not more than 50 feet apart within the required landscaped area. Sprinklers used to satisfy the requirements of this provision shall be spaced to assure complete coverage of the required landscape area. B. The director may approve alternative methods of providing landscaping where the criteria provided herein would cause unnecessary hardship or constitute an unreasonable requirement and an alternative plan will, in his opinion, provide as well or better for landscaping within the intent of this provision.	**Compliant –**Projects 1-6 will comply with the applicable landscaping requirements.
Part 9 Rural Outdoor Lighting District 22.44.540 General development standards. In addition to complying with the applicable provisions of the Building and Electrical Codes of the County of Los Angeles, outdoor lighting within the rural outdoor lighting district, other than street lights, shall be subject to the following requirements: A. Lighting allowance. For properties located in a residential, agricultural, open space, or watershed zone, outdoor light fixtures installed above 15 feet in height shall have a manufacturer's maximum output rating of no greater than 400 lumens. B. Light trespass. Outdoor lighting shall cause no unacceptable light trespass. C. Shielding. Outdoor lighting shall be fully shielded. D. Maximum height. 1. The maximum height for an outdoor light fixture, as measured from the finished grade to the top of the fixture, shall be as follows:	**Compliant** –Projects 1-6 lighting will comply with these requirements.

County of Los Angeles Zoning Ordinance	
a. 20 feet for a property located in a residential, agricultural, open space, or watershed zone; b. 35 feet for a property located in an industrial zone; and c. 30 feet for property located in any other zone. 2. Notwithstanding subsections a, b, and c of this subsection D, the height of any new outdoor light fixture used for an outdoor recreational activity area, regardless of the zone, shall be the minimum height necessary to illuminate the activity area, but in no event shall exceed 75 feet; and 3. Notwithstanding subsections D.1. and D.2. of this section 22.44.540, the Director of Regional Planning may permit an outdoor light fixture with a height higher than as otherwise permitted by these subsections through a site plan review, if the applicant demonstrates that a higher light fixture would reduce the total number of light fixtures needed at the involved site, and/or would reduce the light trespass of the outdoor lighting. E. Maintenance. Outdoor lighting shall be maintained in good repair and function as designed, with shielding securely attached to the outdoor lighting.	
22.44.550 Additional standards for commercial, industrial, and mixed uses. In addition to complying with the applicable provisions of section 22.44.540, outdoor lighting located on a property with a commercial, industrial, or mixed use shall be subject to the following requirements: A. Building entrances. All building entrances shall have light fixtures providing light with an accurate color rendition so that persons entering or exiting the building can be easily recognized from the outside of the building. B. Hours of operation. 1. Outdoor lighting shall be turned off between the hours of 10:00 p.m., and sunrise every day, unless the use on the involved property operates past 10:00 p.m., and then the outdoor lighting shall be turned off within one hour after the use's operation ends for the day. Notwithstanding the foregoing, if the use on the involved property requires outdoor lighting between 10:00 p.m., and sunrise every day for safety or security reasons, outdoor lighting shall be allowed during these hours, but only if: a. Fully-shielded motion sensors are used to turn the outdoor lighting on after 10:00 p.m., and these sensors turn the outdoor lighting off automatically no more than 10 minutes after the involved area has been vacated; or b. Where the use is commercial or industrial, at least 50 percent of the total lumen levels for the outdoor lighting are reduced, or 50 percent of the total number of outdoor light fixtures are turned off, between 10:00 p.m., and sunrise. 2. Exemption from hours of operation. Outdoor lighting shall be exempt from the hours of operation requirements of this subsection B if such lighting: a. Is required by the County Building Code for steps, stairs, walkways, or points of ingress and egress to buildings; or b. Is governed by a discretionary land use permit which specifically provides for different	**Compliant** –Projects 1-6 lighting will comply with these requirements.

County of Los Angeles Zoning Ordinance	
hours of operation. C. Automatic controls. Outdoor lighting shall use automatic control devices or systems to turn the outdoor lighting off so as to comply with the applicable hours of operation requirements of subsection B.1. These devices or systems shall have backup capabilities so that, if power is interrupted, the schedule programmed into the device or system is maintained for at least seven days.	
Chapter 22.32 - Industrial Zones Part 3 D-2 Desert-Mountain Zone 22.32.090 Permitted and conditional uses. Premises in Zone D-2 may be used for: A. Any use permitted in Zone A-2, subject to all the conditions and requirements of this Title 22 relating to Zone A-2; or B. Any use permitted in Zone M-1, subject to all the conditions and requirements of this Title 22 relating to Zone M-1, except that outdoor advertising signs are prohibited.	**Compliant** – Project 6 is located within the D-2 zone and is subject to the conditions and requirements of Title 22 relating to Zone A-2. See Section 22.24 Agricultural Zones Part 3 A-2 Heavy Agricultural Zone.

Table 4.10-3 Compliance with Ordinances for Low Impact Development, Drought-Tolerant Landscaping, and Green Building

Ordinances for Low Impact Developments, Drought-Tolerant Landscaping, and Green Building	
L.A. County Title 12 Chapter 12.84, Low Impact Development (LID) Standards	
12.84.440(A)1. Mimic undeveloped stormwater and urban runoff rates and volumes in any storm event up to and including the "50-year capital design storm event," as defined by Public Works.	**Compliant** – The drainage concepts for the proposed Projects will be prepared in accordance with the applicable standards detailed in the LID Standards.
12.84.440(A)2. Prevent pollutants of concern from leaving the development site in stormwater as the result of storms, up to and including a water quality design storm event.	**Compliant** – The Projects will implement applicable stormwater pollution prevention standards detailed in the LID Standards (refer to Section 4.9 Hydrology and Water Quality).
12.84.440(A)3. Minimize hydromodification impacts to natural drainage systems.	**Compliant** – The proposed Projects will adhere to applicable standards detailed in the LID Standards.
12.84.460(A) All grading and/or site drainage plans for the development shall incorporate the features of the approved LID plan described in subsection B of Section 12.84.450.	**Compliant** – The proposed Projects will adhere to applicable standards detailed in the LID Standards.
12.84.460(B) The development's LID features shall be maintained and shall remain operable at all times and shall not be removed from the development unless and until such features have been replaced with other LID features in accordance with this Chapter 12.84. A covenant or agreement shall be recorded in the office of the Los Angeles County Registrar-Recorder/County Clerk indicating that the owner of the subject development is aware and agrees to the requirements in this subsection B. The covenant or agreement shall also include a diagram of the site indicating the location and type of each LID feature incorporated into the development. The time to record such covenant or agreement shall be as follows: 1. For any subdivision, prior to final map approval; and 2. For any other development, prior to issuance of a grading permit for the development, and when no grading permit is required, prior to the issuance of a building permit for the development.	**Compliant** – The proposed Projects will adhere to applicable standards detailed in the LID Standards.
L.A. County Title 22 Chapter 22.52 Part 21, Drought-tolerant Landscaping Ordinance	
22.52.2230(A)1. A minimum of 75 percent of such total landscaped area shall contain plants from the drought-tolerant plant list.	**Compliant –** The Projects will adhere to applicable landscaping standards detailed in the Drought-tolerant Landscaping ordinance guidelines**.**
22.52.2230(A)2. A maximum of 25 percent of such total landscaped area shall consist of turf, however, in no event shall turf be planted in strips that are less than 5 feet wide, and in no event shall the total landscaped area contain more than 5,000 square feet of turf.	**Compliant –** The Projects will adhere to applicable landscaping standards detailed in the Drought-tolerant Landscaping ordinance guidelines.
22.52.2230(A)3. All turf in such total landscaped area shall be water-efficient. The green building technical manual shall contain a list of turf that meets this requirement.	**Compliant –** The Projects will adhere to applicable landscaping standards detailed in the Drought-tolerant Landscaping ordinance guidelines.
22.52.2230(A)4. The plants in such total landscaped area shall be grouped in hydrozones in accordance with their respective water, cultural (soil, climate, sun, and light) and maintenance requirements.	**Compliant –** The Projects will adhere to applicable landscaping standards detailed in the Drought-tolerant Landscaping ordinance guidelines.

Ordinances for Low Impact Developments, Drought-Tolerant Landscaping, and Green Building	
22.52.2250(A). A covenant shall be recorded in the office of the Los Angeles County Registrar-Recorder/County Clerk indicating that the owner of the subject project is aware of the drought-tolerant landscaping requirements of this Part 21 and is also aware of how said requirements apply to the owner's project.	**Compliant –** The Projects will adhere to applicable landscaping requirements detailed in the Drought-tolerant Landscaping ordinance guidelines.
22.52.2250(b). Any and all planting restrictions placed on the project by the County Fire Department shall apply to the project, including, but not limited to the restrictions under said Department's fuel modification plan guidelines.	**Compliant –** The Projects will adhere to applicable landscaping requirements detailed in the Drought-tolerant Landscaping ordinance guidelines.
L.A. County Title 22 Chapter 22.52 Part 20, Green Building Ordinance	
1. All projects shall be designed to consume at least fifteen (15) percent less energy than allowed under the 2005 Update to the California Energy Efficiency Standards, except projects exempt from energy compliance under these 2005 standards.	**Compliant –** The Projects will adhere to the Green Building Standards detailed in the Green Building Ordinance guidelines, if applicable.
2. Outdoor Water Conservation: 1) A smart irrigation controller shall be installed for any area of a lot that is landscaped or designated for future landscaping; and b) All landscaped areas shall meet the drought-tolerant requirements set forth in Part 21 of Chapter 22.52.	**Compliant –** The Projects will adhere to the Green Building Standards detailed in the Green Building Ordinance guidelines, if applicable.
3. Indoor Water Conservation: All tank-type toilets installed in non-residential buildings with a gross floor area of at least 10,000 square feet shall be high-efficiency toilets**.**	**Compliant –** The Projects will adhere to the Green Building Standards detailed in the Green Building Ordinance guidelines, if applicable.
4. Resource Conservation: A minimum of 65 percent of non-hazardous construction and demolition debris by weight from non-residential buildings with a gross area of at least 10,000 square feet shall be recycled and/or salvaged for reuse.	**Compliant –** The Projects will adhere to the Green Building Standards detailed in the Green Building Ordinance guidelines, if applicable.
5. Tree Planting: For each lot containing non-residential buildings, a minimum of three 15-gallon trees shall be planted and maintained for every 10,000 square feet of developed area, at least sixty-five (65) percent of which shall be from the drought-tolerant plant list.	**Not Applicable –** The County Department of Public Works has determined that Projects 1 – 6 are exempt from the tree planting requirements required under the Green Building Ordinance. No buildings are proposed on the Projects' sites.

4.10.3.3 Local

4.10.3.3.1 County of Los Angeles General William J. Fox Airfield Land Use Compatibility Plan

General William J. Fox Airfield (Fox Airfield) Land Use Compatibility Plan, which was adopted by the Los Angeles County Airport Land Use Commission (ALUC), sets forth land use compatibility policies applicable to future development within the vicinity of the airport. The policies are designed to ensure that future land uses in the surrounding area will be compatible with potential long-range aircraft activity at the airport. These policies provide the basis which the ALUC can carry out its land use development review responsibilities in accordance with the California State Aeronautics Act (Section 21670 et. seq of the Public Utilities Code).

The compatibility criteria defined by the policies are also intended to be reflected in the general plans and other policy instruments adopted by the entities having jurisdiction over land uses near the airport. This airport land use plan requires action by the County of Los Angeles and the City of Lancaster. Policies associated with land use compatibility are contained within the airport land use plan. Please refer to Table 4.10-1 for the Projects' consistency with the Fox Airfield Land Use Compatibility Plan.

4.10.3.3.2 County of Los Angeles General Plan

The General Plan Land Use Element includes policies and land use maps that guide the future development of the County. The General Plan includes a series of area plans which address specific policies for each of the identified geographic areas. The Projects are located within the Antelope Valley Areawide General Plan of the Los Angeles County General Plan. Please refer to Table 4.10-1 and Section 4.10.5.2 for the Projects' consistency with the County of Los Angeles General Plan. Refer to Section 4.1 Aesthetics and Section 4.10 Transportation and Traffic for a description of bikeway routes, scenic highway, and trails within the vicinity to the Projects.

Hillside Management Areas

As defined by Los Angeles County Ordinance Section 22.08.080, Hillside Management Areas are defined as any portion of a lot or parcel of land which contains terrain with a natural slope of 25 percent or greater. The purpose of the Hillside Management Areas Regulations is to: 1) protect scenic hillside views and 2) avoid excessive grading and landform alteration to protect hillside resources from incompatible development and land uses. Please refer to Table 4.10-1 and Section 4.10.5.4 for the Projects' consistency with the Hillside Management Areas of the County of Los Angeles General Plan.

Significant Ecological Areas

SEA Program is a component of the Los Angeles County General Plan Conservation/Open Space Element. SEAs are ecologically important land and water systems that support valuable habitat for plants and animals. They are often integral to the preservation of rare, threatened, or endangered species and the conservation of biological diversity in the County. The SEAs are not preserves but they are areas the County designate and deem important to facilitate a balance between development and resource conservation. The proposed Projects 1 – 6 and

associated gen-tie lines are not located within a designated SEA; therefore, SEA conformance criteria do not apply.

Floodplain Management Areas

The Los Angeles County General Hazard and Resources Map describe areas of special concern based on hazards or unique resources within each identified location. One of the mapped areas of concern includes Floodplain Management Areas. The Federal Emergency Management Agency (FEMA) has defined flood zones according to varying levels of flood risk. Zone X (Unshaded) is known to be areas within the 500-year floodplain that exhibit a very low flood risk. Zone X (Shaded) is known to be an area of low to moderate to low risk; it is usually the area between the limits of the 100-year and 500-year floods. Zone A is known to be an area of high risk and has a 1 percent annual chance of flooding and 25 percent chance of flooding over the life of a 30-year mortgage. No depths or base flood elevations are shown within Zone A. Please refer to Table 4.10-1 and Section 4.10.5.4 for the Projects' consistency with the Floodplain Management Areas of the County of Los Angeles General Plan.

Antelope Valley Areawide General Plan

The Antelope Valley Areawide General Plan is a component of the Los Angeles County General Plan. The purpose of the Antelope Valley Area Plan (Area Plan) is to achieve the communities' shared vision of the future through specific goals and policies. The Area Plan is a blueprint for future development and conservation in the Antelope Valley. The plan ensures that projects are consistent with and supportive of the communities' vision. The Area Plan refines the countywide goals and policies in the General Plan by addressing specific issues relevant to the Antelope Valley. The General Plan provides guidance on all issues not covered in the Area Plan (LACRP 2011). Please refer to Table 4.10-1 and Section 4.10.5.2 for the Projects' consistency with the Antelope Valley Areawide Plan.

Prime Farmland and Agricultural Opportunity Areas

Agricultural Opportunity Areas

Areas located east and west of the Antelope Valley are designated as Agricultural Opportunity Areas. These large contiguous areas are either currently in production or have a recent history of production. Although parts of these areas are in a decline, the Antelope Valley Plan recognizes the validity of these areas, establishes agricultural activities as a "priority" land use over adjacent (and potentially incompatible) development, and discourages the premature conversion of these areas to other uses. The intent is to provide assistance to landowners who desire to remain in production through such measures as tax relief and "right to farm" legislation to discourage inappropriate nuisance suits (County of Los Angeles 1986). Please refer to Table 4.10-1 for the Projects' consistency with the Antelope Valley Areawide Plan Agricultural Opportunity Areas.

Prime Farmland

The California Department of Conservation (DOC) is a state agency that administers a variety of programs to balance orderly growth and the preservation of agricultural resources in the state.

One program is the Farmland Mapping and Monitoring Program (FMMP), which was established in 1982 to provide data for use in planning the present and future of California's agricultural land resources and applies National Resources Conservation Services (NRCS) soil classifications to identify agricultural lands and designations.

Prime Farmland has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date. Refer to Section 4.2 Agriculture and Forestry for additional information on Prime Farmland.

Noise Management Areas

The 1986 Antelope Valley Areawide Plan designates areas within the 60 dBA noise contour from transportation sources such as airports, railroads, and major highways as Noise Management Areas (NMA). Plan policy for these areas calls for the reduction of noise impacts on adjacent land uses through both hazard avoidance actions, where practical, and hazard mitigation practices, in other cases. The Antelope Valley Areawide General Plan is currently in the process of being updated; however, no updated guidelines or standards related to noise are currently available. The Community Noise Equivalent Level (CNEL) contours prepared for the Fox Airfield Land Use Compatibility Plan is the primary determinant for whether proposed development in the airport vicinity will be compatible with the noise impacts of Fox Airfield. Please refer to Section 4.10.5.4 for the Projects' consistency with the Antelope Valley Areawide Plan Noise Management Areas. Refer to Section 4.11 Noise for additional information.

4.10.3.3.3 County of Los Angeles Zoning Ordinance

Development of the Projects is regulated by the County of Los Angeles zoning ordinance (Title 22). This ordinance contains the regulatory framework that specifies allowable uses for real property and development intensities; the technical standards such as site layout, building setbacks, heights, lot coverage, and parking; aesthetics related to physical appearances, landscaping, and lighting; a program that implements policies of the General Plan; and the procedural standards for amending or establishing new zoning regulations, including CUPs for certain uses that have been deemed to require an additional level of review prior to permitting. Please refer to Table 4.10-2 and Section 4.10.5.3 for the Projects' consistency with the County of Los Angeles Zoning Ordinance.

4.10.3.3.4 County of Los Angeles Ordinances for Green Building, Low Impact Development, and Drought-Tolerant Landscaping

As an amendment to Title 12- Environmental Protection, Title 21 – Subdivisions, and Title 22- Planning and Zoning of the Los Angeles County Code, the County ordinance amendments established the Low Impact Development (LID), Drought-Tolerant Landscaping, and Green Building Standards in unincorporated Los Angeles County.

The main objectives for the LID standards are to protect surface and groundwater quality, maintain the integrity of ecosystems, and preserve the physical integrity of receiving waters by controlling rainfall and stormwater runoff at or close to the source. LID incorporates

multifunctional site design elements or BMPs for stormwater detention and water quality improvements. As stated in Ordinance 12.84.440(C)2, for non-residential developments:

- The excess volume (as defined in 12.84.420 to be the additional volume of stormwater caused by development; excess volume is determined by calculating the difference in the volume of the runoff under undeveloped and post-developed conditions, using the water quality design storm event) from each lot upon which such development is occurring shall be infiltrated at the lot level, or in the alternative, the excess volume from the entire development site, including streets and public right-of-ways, shall be infiltrated in sub-regional facilities. The tributary area of a sub-regional facility shall be limited to 5 acres, but may be exceeded with approval of the Director (Department of Public Works). When infiltration of all excess volume is not technically feasible, on-site storage, reuse, or other water conservation uses of the excess volume is required and shall be implemented as authorized by the Director in accordance with the requirements and provisions in the LID Standards Manual.
- The stormwater runoff from the water quality design storm event associated with the developed site hydrology must be treated to the satisfaction of the Director before discharge.

The Drought-Tolerant Landscaping standards are intended to help conserve water resources by requiring landscaping that is appropriate to the region's climate, and to the nature of the project's use. All projects are to comply with Section 22.52.2230, which states:

- The total landscaped area of a lot or parcel of land on which a project is situated shall satisfy the following:
  - A minimum of 75 percent of such total landscaped area shall contain plants from the drought-tolerant plant list;
  - A maximum of 25 percent of such total landscaped area shall consist of turf, however, in no event shall turf be planted in strips that are less than 5 feet wide, and in no event shall the total landscaped area contain more than 5,000 square feet of turf;
  - All turf in such total landscaped area shall be water-efficient. The green building technical manual shall contain a list of turf that meets this requirement; and
  - The plants in such total landscaped area shall be grouped in hydrozones in accordance with their respective water, cultural (soil, climate, sun, and light) and maintenance requirements.

For habitable buildings constructed after January 1, 2009, the Green Building Development standards will apply to these developments. Standards address energy conservation, outdoor and indoor water conservation, resource conservation, and tree planting. However, it should be noted that the Los Angeles County Department of Public Works found Projects 1 – 6 to be exempt from the tree planting requirements required under the Green Building Ordinance since the Projects do not propose buildings (Burger 2013). Section 22.52.2130 General Provisions, Table 22.52.2130-1 summarizes general green building requirements for a project that includes buildings.

Please refer to Table 4.10-3 for a discussion of the Projects' compliance with applicable ordinances for low impact developments, drought-tolerant landscaping, and green building.

4.10.3.3.5 City of Lancaster General Plan

The Lancaster 2030 General Plan contains policies that guide the development of land within the City, or the portion of land that the gen-tie transmission lines are located, and provides a long-term vision for the City. The General Plan sets forth the land use designations for the City, including the permitted uses for each land use designation (City of Lancaster 2009). Please refer to Table 4.10-1 for the Projects' consistency with the City of Lancaster General Plan.

4.10.3.3.6 City of Lancaster Zoning Ordinance

Title 17 of the City's Municipal Code addresses zoning within the City. The intent of the zoning ordinance is to protect public health, safety, and the general welfare of residents and visitors. The Zoning Ordinance provides detailed definitions and requirements of uses allowed by the General Plan in residential, commercial, industrial, and special zones. Additionally, the zoning ordinance regulates the use of buildings and structures and provides restrictions on the location, height, and bulk area covered by said uses. The City of Lancaster implements portions of its zoning ordinances through the use of the City's zoning maps (City of Lancaster 2011). The gen-tie lines are linear facilities that would not result in any changes to the existing land use patterns in the proposed Projects areas. However, a discussion of the Projects' consistency with the City of Lancaster Zoning Ordinance is provided in Section 4.10.5.3.

4.10.4 Significance Criteria

The following significance criteria are interpreted from the Los Angeles County Environmental Checklist Form and correspondence with Los Angeles County included in Appendix B-1.1. These criteria form the basis for the analysis of each Project's potential impacts.

a) Would the project physically divide an established community?

b) Would the project be inconsistent with applicable County plans for the subject property including, but not limited to, the General Plan, specific plans, local coastal plans, area plans, and community/neighborhood plans?

c) Would the project be inconsistent with the zoning ordinance as applicable to the subject properties?

d) Would the project conflict with Hillside Management criteria, Significant Ecological Areas conformance criteria, or other applicable land use criteria?

4.10.5 Impacts Analysis

As described in Section 4.0 of this EIR, the following sections discuss potential impacts from construction and operation of each of the six proposed Project sites on a criterion by criterion basis for each land use criterion described above. An assessment of the Projects for consistency/compliance with policies of applicable land use plans and ordinances is presented in Tables 4.10-1, 4.10-2, and 4.10-3. All applicable policies and land use ordinances were reviewed. Each Project's consistency with applicable regional and local land use policies and ordinances is included in Table 4.10-1. Each Project's compliance with applicable zoning

ordinances is included in Table 4.10-2. Each Project's compliance with applicable ordinances for low impact developments, drought-tolerant landscaping, and green building is included in Table 4.10-3. As presented in these tables, all Projects will be consistent/compliant with all applicable land use policies and ordinances.

4.10.5.1 Project Impacts: Criterion A – Would the project physically divide an established community?

4.10.5.1.1 Projects 1 – 6 and Gen-Tie Lines

The proposed Projects are located within a sparsely populated area and are not located within any established communities. The closest established community is Antelope Acres, which is located approximately 1.4 miles north of Project 3, or the nearest Project site. The proposed Projects are located in an area that has been characterized by agricultural uses for several decades and has been in transition to residential uses or vacant land. Although there are homes located near the Project sites, the proposed Projects would not physically alter the community, would not divide any community, nor would the Projects change any public access routes to them. Impacts would be considered to be less than significant.

The proposed gen-tie lines would not result in physical improvements that would result in dividing an established community and the proposed gen-tie line would be located within a public ROW or an easement on private land. Therefore, the proposed Projects would not divide an established community and impacts would be less than significant.

4.10.5.2 Project Impacts: Criterion B – Would the project be inconsistent with the applicable County plans for the subject property including, but not limited to, the General Plan, specific plans, local coastal plans, area plans, and community/neighborhood plans?

4.10.5.2.1 Projects 1 – 6 and Gen-Tie Lines

County Plans

The conformance of the proposed Projects 1 – 6 to the County of Los Angeles General Plan indicate that the Projects are not located within the boundaries of a Community Standards District; therefore, no district development standards apply to the Projects. Please refer to Table 4.10-1 for the Projects' consistency with the Countywide General Plan and the Antelope Valley Areawide General Plan.

The Antelope Valley Areawide General Plan designates all six Project sites as N-1 Non-Urban use. According to the Antelope Valley Areawide General Plan, allowable uses in the N-1 designation include utility installations (County of Los Angeles 1986). The proposed Projects are considered, utility installations, and therefore would be consistent with the N-1 land use designation. As a result, the proposed Projects would be consistent with the General Plan Land Use designation. Development of the Projects will be consistent with permissible uses associated with the land use designations and the policies, goals, and objectives outlined in the Los Angeles County General Plan and the Antelope Valley Areawide General Plan. See Table 4.10-1 for policy consistency. The six Projects would not be inconsistent with applicable County plans; therefore impacts would be less than significant.

The gen-tie lines for proposed Projects 1 – 6 are linear infrastructure that would not result in any changes to the existing land use patterns in the area of the Project sites. The gen-tie lines would be located underground within Los Angeles County to the extent practicable and aboveground within the City of Lancaster, either in a public road ROW or on private lands adjacent to the public road ROW. The gen-tie line routes for Projects 2 and 5 would traverse land use designations N-1 in the County of Los Angeles. Within the City of Lancaster, the gen-tie line routes would traverse land use designations NU Residential and UR in the City of Lancaster.

According to the County's Antelope Valley Areawide General Plan, allowable uses in the N-1 designation include utility installations. Additionally, the City's NU land use designation permits solar generating facilities and utility installations within its designation. In July 2013, the City approved a General Plan Amendment for the UR designation to NU designation for another applicant's solar project that the gen-tie line would traverse to connect to the Antelope Substation. A franchise agreement will be obtained by the applicant with the City of Lancaster for the gen-tie line that will traverse through this jurisdiction. This agreement will grant a utility franchise and right of way privileges for the proposed gen-tie line. Therefore, no impact to County and City Plans would occur.

4.10.5.2.2 Projects 1, 2, 4, and 5 and Gen-tie Lines

Fox Airfield airport influence area (AIA): Projects 1, 2, 4, and 5 and their respective gen-tie lines would not be located within the Fox Airfield's AIA. Therefore, the Plan is not applicable to these Projects and there would be no impacts.

4.10.5.2.3 Project 3 and Gen-tie Line

Fox Airfield AIA: The Project 3 site and gen-tie line would be located within Fox Airfield's AIA, Zone C. As discussed in Table 4.10-1, Prohibited uses under Zone C include: children's schools, libraries, hospitals, nursing homes, buildings with more than three habitable floors above ground, highly noise-sensitive uses, and hazards to flight. Hazards to flight include physical (e.g. tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds to increase is also prohibited (Los Angeles County ALUC 2004). As discussed in Table 4.10-1, Project 3 would be consistent with the Fox Airfield Land Use Compatibility Plan. Therefore impacts would be less than significant.

4.10.5.2.4 Project 6 and Gen-tie Line

Fox Airfield AIA: The Project 6 site and associated gen-tie line would be located within the Fox Airfield AIA, Zone E. As discussed in Table 4.10-1, prohibited uses under Zone E include hazards to flight (Los Angeles County ALUC 2004). Hazards to flight include physical (e.g. tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds to increase is also prohibited. As discussed in Table 4.10-1, Project 6 and its associated gen-tie line would be consistent with the Fox Airfield Land Use Compatibility Plan. Therefore, impacts would be less than significant.

4.10.5.3 Project Impacts: Criterion C – Would the project be inconsistent with zoning ordinance as applicable to the subject property?

The CUP entitlement process involves the discretionary review of a project, whereby conditions of approval for the project would be assigned. A project's implementation of the environmental mitigation measures and CUP conditions would be expected to minimize the project's potential impacts such that the project could occur while maintaining zoning compliance within the designated zone. As a result, a project would be consistent with the County's zoning designations. Permitting processes for those portions of the gen-tie lines located in the City of Lancaster would require necessary approvals from the City. Compliance with applicable City zoning regulations and conditions would enable project consistency with City's zoning designations.

4.10.5.3.1 Project 1 and Gen-tie Line

Zoning: Project 1 and lands adjacent to its associated gen-tie line ROW are zoned Light Agriculture (A-1), which does not permit electric generating facilities within this zone. A zone change from A-1 to Heavy Agriculture (A-2) would be required. Under the jurisdiction of the County of Los Angeles, electric generating plants and transmission lines are allowed in A-2 zones with issuance of a CUP.

The proposed Project 1 gen-tie line would be constructed underground within Los Angeles County unless other applicable regulations require above-ground installation. The gen-tie line would be located on private lands adjacent to the public road ROW or within the public road ROW. It is a linear component that would not result in any changes to the existing land use patterns in the proposed Project area, and would be permitted as part of the CUP. Additionally, a CUP for the Project would be required by the County of Los Angeles under the A-2 zoning designation. Therefore, Project 1 and the associated gen-tie line would result in a less than significant impact relative to the subject proposed A-2 zoning in Los Angeles County.

4.10.5.3.2 Projects 2, 3, 4, and 5 and Gen-tie Lines

Zoning: Projects 2, 3, 4, and 5 are located within the County's Heavy Agriculture (A-2) Zone. The proposed Projects are considered equivalent to an electric generating plant. Under the County zoning code for the A-2 zoning designation (Los Angeles County Code Section 22.24.150), electric generating plants and transmission substations are allowed in the A-2 zones with the issuance of a CUP.

Lands adjacent to the gen-tie line for Project 2 would consist of the City's RR 2.5 Zone. Lands adjacent to the gen-tie line Project 5 gen-tie line would consist of the City's RR 2.5 Zone and the County's A-1 and A-2 Zone. Lands adjacent to the gen-tie lines for Projects 3 – 5 would consist of the County's A-2 Zone. The proposed gen-tie lines would be constructed underground within Los Angeles County unless other applicable regulations require above-ground installation and aboveground or underground within the City of Lancaster. The gen-tie lines would be located on private lands adjacent to the public road ROW or within the public road ROW. They are linear facilities that would not result in any changes to the existing land use patterns in the proposed Projects areas, and would be permitted as part of their respective County CUPs and City permitting requirements.

As a result, implementation of the proposed Projects 2 – 5 and their associated gen-tie lines would be expected to be consistent with County and City zoning designations. Therefore, Projects 2 – 5 and their associated gen-tie lines would result in a less than significant impact relative to the A-2 zoning in Los Angeles County and the RR 2.5 zoning in the City of Lancaster.

4.10.5.3.3 Project 6 and Gen-tie Line

Zoning: Project 6 is located within the Desert Mountain (D-2) zone. Under the County's zoning code for Zone D-2 (Los Angeles Code Section 22.32.090), any use permitted in Zone A-2 and Light Manufacturing (M-1) is permitted under Zone D-2. Electric generating facilities, solar generating facilities, and transmission substations are permitted under Zones A-2 and M-1; Project 6 and gen-tie line are therefore permitted under Zone D-2 with a CUP.

The proposed Project 6 gen-tie line would be constructed underground within Los Angeles County unless other applicable regulations require above-ground installation. The gen-tie line would be located on private lands adjacent to the public road ROW or within the public road ROW. It is a linear infrastructure that would not result in any changes to the existing land use patterns in the proposed Project area, and would be permitted as part of the CUP. As a result, implementation of the proposed Project 6 and gen-tie line would be expected to be consistent with the zoning designation. Therefore, Project 6 and its associated gen-tie line would result in a less than significant impact relative to the D-2 zoning in Los Angeles County.

4.10.5.4 Project Impacts: Criterion D – Would the project conflict with Hillside Management criteria, Significant Ecological Areas conformance criteria, or other applicable land use criteria?

Refer to Section 4.1 Aesthetics and Section 4.10 Transportation and Traffic for a description of impacts associated with bikeway routes, scenic highways, and trails located in proximity to Projects 1 – 6.

4.10.5.4.1 Projects 1 – 6 and Gen-tie Lines

Significant Ecological Areas: As discussed in Section 4.4 Biological Resources, the proposed Projects and associated gen-tie lines are not located within a designated SEA; therefore, SEA conformance criteria do not apply. Additionally, no local community conservation plans that could contain applicable land use criteria apply to the proposed Projects, and the associated gen-tie lines. Therefore, no impacts would occur.

4.10.5.4.2 Projects 1, 3, 4, 5, and 6 and Gen-tie Lines

Hillside Management Areas: As discussed in Section 4.6 Geology and Soils, Projects 1, 3, 4, 5, and 6 and their associated gen-tie lines contain generally low slopes of less than 1 percent gradient would not be located within or conflict with designated Hillside Management Areas. Therefore, no impacts would occur.

4.10.5.4.3 Project 2 and Gen-tie Line

Hillside Management Areas: Project 2 is located near the foothills and the site has slightly greater slopes. Portions of Project 2 are located within the Hillside Management Area; however,

this Project would not conflict with the Hillside Management criteria since construction of the solar facility and gen-tie line would be constrained to areas consisting of less than 20 percent slope. Development of the solar facility will not result in significant changes to existing site grades, and would not increase the susceptibility to slope failure. Additionally, the CGS Seismic Hazard Zone Map does not identify Project 2 as being proposed in zones of required investigation for earthquake-induced landslide potential. Additionally, the gen-tie line for Project 2 would not be located within a Hillside Management Area. Therefore, there is no impact from the risk for landslides or slope failure.

4.10.5.4.4 Projects 1 – 5 and Gen-tie Lines

Agricultural Opportunity Areas: Projects 1 – 5 and their associated gen-tie lines are located within areas designated as AOA. Refer to Section 4.2 Agriculture and Forestry, for Project impacts associated with the AOA.

The Antelope Valley Areawide General Plan Policy states that land located within the AOA should be protected from incompatible uses. Additionally, the plan states that applications for non-agricultural uses in the AOA areas will be evaluated for the impact upon adjacent agricultural operations.

Projects 1 – 5 would generate electrical power through renewable solar PV technology which is an allowable use with a CUP and where necessary, a zone change. Projects 1 – 5 would involve conversion of land that was formerly used for agricultural production to renewable energy production. Construction and operation of these Projects would not involve other restrictions, obstructions, or resources that could result in conversion of farmland to non-agricultural use. Additionally, these Projects would be located on fallow land that is currently not irrigated, with surrounding parcels being mostly undeveloped and fallow agricultural land. Projects 1 – 5 would produce power in a passive manner and would result in minimal air emissions, traffic, and noise, and would not affect adjacent agricultural operations. Therefore, a less than significant impact would occur.

Prime Farmland: Projects 1, 2, 3 and 5 sites (and gen-tie lines) contain no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2010), as discussed in Section 4.2 Agriculture and Forestry. Therefore, Projects 1, 2, 3 and 5 will have no impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Project 4 contains 113.7 acres of Prime Farmland and 43.4 acres of Farmland of Statewide Importance (DOC 2010). The DOC states that Prime Farmland and Farmland of Statewide Importance “must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.” Additionally, the Project 4 gen-tie line would traverse underground and through land designated as Prime Farmland and Farmland of Statewide Importance (DOC 2010).

The DOC has reviewed the site and, in a letter dated December 31, 2012, determined that the properties “will be reclassified to Grazing Land on the 2012 edition of the Important Farmland Map for Los Angeles County.” The DOC letter is attached in Appendix B.11. Based upon the DOC review of the project site, once the designations have been updated the property will not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, impacts will be less than significant.

4.10.5.4.5 Project 6 and Gen-tie Line

Agricultural Opportunity Areas: Project 6 and its gen-tie line are not located within the County's AOA. Therefore, the criteria do not apply and no impacts would occur.

Prime Farmland: Project 6 (and gen-tie line) contains no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2010), as discussed in Section 4.2 Agriculture and Forestry. Therefore, Project 6 will have no impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

4.10.5.4.6 Projects 1, 2, 3, and 5 and Gen-tie Lines

Flood Management Areas: Projects 1, 2, 3, and 5 are located within the 500-year floodplain Zone X (Unshaded). These areas are known to be of a very low flood risk. As stated above, Zone X (Unshaded) is known to be an area of low to moderate risk. All of the Project area would be developed, and measures would be taken in the design of the site's solar panels in order to account for the flood hazards. Therefore, a less than significant impact would occur.

The gen-tie lines for Projects 1 and 3 are located within the 500-year floodplain Zone X (Unshaded).

The gen-tie lines for Projects 2 and 5 are located within the 100-year (Zone A) and 500-year (Zone X, Shaded) floodplains. Measures would be taken in the design of the gen-tie lines in order to account for the flood hazards. Therefore, a less than significant impact would occur.

4.10.5.4.7 Project 4 and Gen-tie Line

Flood Management Areas: Portions of the Project 4 site is located within the 100-year (Zone A) and portions are located within the 500-year (Zone X, Shaded) floodplains. The Project 4 gen-tie line in its entirety would be located within the 500-year floodplain (Zone X, Shaded). All of the Project 4 site would be developed, and measures would be taken in the design of the site's solar panels and gen-tie line in order to account for the flood hazards. Therefore, a less than significant impact would occur.

4.10.5.4.8 Project 6 and Gen-tie Line

Flood Management Areas: Project 6 and its gen-tie line are located completely within Zone A. All of the Project area would be developed, and measures would be taken in the design of the site's solar panels in order to account for the flood hazards. Therefore, a less than significant impact would occur.

4.10.5.4.9 Projects 1, 2, 4, and 5 and Gen-tie Lines

Noise Management Areas: No railroads are located within 0.5 miles from Projects 1, 2, 4, and 5 and gen-tie lines. The nearest major highway is State Route 14, which is located approximately 8 miles east of Project 1, approximately 9.3 miles east of Project 2, approximately 6.4 miles east of Project 4, and approximately 8.4 miles east of Project 5. None of the Projects are located within a NMA.

The Projects are not located close to an airport aviation-related 60 dBA CNEL noise contour. No railroads are located within 0.5 miles of any of the SGFs, and therefore sound from railroad activities is anticipated to be less than 60 dBA. The nearest major highway is State Route 14, located approximately 8 miles east of Project 1. Peak hour traffic volumes on rural roads, such as those around the Projects sites, are unlikely to be heavy enough to generate traffic noise of 60 dBA L_{eq} or greater at any of the SGFs. Therefore none of the SGFs are located within a NMA and impacts would be less than significant.

4.10.5.4.10 Project 3 and Gen-tie Line

Noise Management Areas: No railroads are located within 0.5 miles from Project 3 and gen-tie line. The nearest major highway is State Route 14, which is located approximately 4.8 miles east of Project 3. Project 3 is located approximately 1.3 miles west of Fox Airfield and within Zone C of the Airport Land Use Compatibility Plan for the Fox Airfield. Zone C contains most of 55 CNEL contour. Prohibited uses under Zone C include: children's schools, libraries, hospitals, nursing homes, buildings greater than 3 habitable floors above ground, highly noise-sensitive uses (such as outdoor theaters), and hazards to flights. As shown in Table 4.10-1, Project 3 represents a permitted use in this area and a less than significant impact would occur.

4.10.5.4.11 Project 6 and Gen-tie Line

Noise Management Areas: No railroads are located within 0.5 miles from Project 6 and gen-tie line. The nearest major highway is State Route 14, which is located approximately one mile east of Project 6. Project 6 is located approximately 2.16 miles north of Fox Airfield and is located within Zone E of the Airport Land Use Compatibility Plan for Fox Airfield. Zone E contains areas beyond the 55 CNEL contour and represents areas where sounds from the airport are not a concern, or in other words are low level such that sounds from operation of the airport largely blend in with the ambient background noise. Sound levels for Project 6 would be less than 55 dBA outside of the Project limits and therefore, less than significant.

4.10.5.5 Land Use Impacts Summary by Project

The proposed Projects could result in indirect impacts due to land use compatibility. Although the Projects are consistent with the General Plan Land Use designation and zoning designation, some of the actual uses allowed in these zones may not be compatible with the Project.

"Compatible" land uses create less than significant environmental impacts with each other. "Incompatible" land uses create environmentally significant impacts between the land uses. In addition to the compatibility issues discussed in this section, potential land use compatibility issues include such potential impacts as unsuitable noise levels, unsafe traffic conditions, offensive views, odors, and air/water quality degradation. Such compatibility issues can be quantified but can be subjective in other cases.

Potential Project impacts which could result in land use incompatibilities are identified and discussed in the respective sections of this EIR. As analyzed in this EIR, Project impacts regarding land use compatibility were determined to be less than significant. Thus, land uses

are considered compatible and land use compatibility impacts are considered to be less than significant.

A CUP Burden of Proof is required to be submitted to determine the Project's consistency with the General Plan, compatibility with surrounding land uses, conditions to ensure compatibility, land suitability and physical constraints, project design, availability of adequate access, public services and facilities to serve the development, and identify potential environmental impacts and mitigation measures. As shown in Tables 4.10-1, 4.10-2, and 4.10-3, the Projects are consistent with County land use designations and compatible with adjacent and surrounding land uses. Impacts are considered to be less than significant.

4.10.6 Mitigation Measures

No mitigation measures specific to Land Use are required.

4.10.6.1 Level of Significance after Mitigation

No mitigation measures specific to Land Use are required. With approval of the Projects' requested discretionary actions, potential impacts related to regulatory consistency and land use compatibility were determined to be less than significant. The Projects involve the construction and operation of six SGFs and their associated gen-tie lines. The solar facilities are allowed within the land use and zoning designations with discretionary review and approval. As discussed above in Section 4.10.7, the applicant has filed an application for a zone change for Project 1 from Zone A-1 to Zone A-2. There are no established communities that would be divided as a result of the Projects. The proposed Projects would be in compliance with applicable land use plans, policies, and regulations; therefore, the Projects would result in a less than significant impact to land use.

4.10.7 Cumulative Impacts

There are 29 cumulative projects within a 5-mile radius of the Projects, amounting to 20,909 acres of development including Projects 1 – 6. For the purposes of this cumulative analysis, the worst case scenario is assumed, i.e., all cumulative projects would be constructed at the same time. It is also assumed that all cumulative projects would comply with all applicable laws, ordinances, regulations, and standards (LORS).

As discussed in Chapter 3, projects located within 5 miles of the proposed Projects entail the geographic extent under consideration of cumulative impacts. The proposed Projects are six of several proposed renewable development projects that would impact existing and proposed land uses within the general Project area.

Similar potential impacts can result from these projects as from the Projects with respect to consistency with the subject general plan land use plans and policies, impacts to compatibility with surrounding land uses, and regulatory compliance with zoning ordinances. All cumulative projects that may be approved and implemented would also assess potential impacts related to land use and planning. The proposed Projects were found to have less than significant impacts related to compliance with County zoning, consistency with the County General Plan Land Use Plan intent and applicable land use conformance criteria, dividing an existing community, and

with no significant impacts to the adjacent City of Lancaster. Additionally, the proposed Projects would not result in any significant or unavoidable land use impacts and represent a small fraction of the total amount of lands affected by renewable projects and foreseeable projects within a 5 mile radius of the Projects. Therefore, the proposed Projects would not be expected to significantly contribute to potential cumulative land use related impacts associated with other projects in the Projects' region.

4.10.8 References

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4.11 NOISE

4.11.1 Introduction

This section presents information on the noise and vibration levels associated with these activities. The following approach was used to complete a Noise Impact Assessment for each of the six Projects:

- Define the terminology used in this section;
- Describe the regulatory setting;
- Describe the existing noise environment in the vicinity of the Projects;
- Define and evaluate the anticipated noise impacts from the Projects during construction and operation;
- Recommend measures to mitigate the potential noise impacts from the Projects, as needed;
- Define the cumulative noise impacts; and
- Provide conclusions on the levels of significance after mitigation.

4.11.1.1 Acoustic and Vibration Terminology

Acoustic Terminology

Sound levels are presented on a logarithmic scale to account for the large pressure response range of the human ear, and are expressed in units of decibels (dB). A decibel is defined as the ratio between a measured value and a reference value usually corresponding to the lower threshold of human hearing defined as 20 micropascals. Typically, a noise analysis examines 11 octave (or 33 1/3 octave) bands ranging from 16 Hertz (Hz) (low) to 16,000 Hz (high), which encompasses the human audible frequency range. Since the human ear does not perceive every frequency with equal loudness, spectrally varying sounds are often adjusted with a weighting filter. The A-weighted filter is applied to compensate for the frequency response of the human auditory system, known as decibels (acoustic) (dBA). Unweighted sound levels are referred to as linear. Linear decibels are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low and high frequency noise. Sound levels that are linear are presented as "dBL."

An inherent property of the logarithmic decibel scale is that the sound pressure levels of two separate sources are not directly additive. For example, if a sound of 50 dBA is added to another sound of 50 dBA, the result is a 3-decibel increase (or 53 dBA), not an arithmetic doubling to 100 dBA. With respect to how the human ear perceives changes in sound pressure level relative to changes in "loudness," scientific research demonstrates the following general relationships between sound level and human perception for two sound levels with the same or very similar frequency characteristics:

- 1 dBA is the practical limit of accuracy for sound measurement systems and corresponds to an approximate 10 percent variation in the sound pressure level. A 1 dBA increase or decrease is a non-perceptible change in sound.

- 3 dBA increase or decrease is a doubling (or halving) of acoustic pressure level and it corresponds to the threshold of change in loudness perceptible in a laboratory environment. In practice, the average person is not able to distinguish a 3 dBA difference in environmental sound outdoors.
- 5 dBA increase or decrease is described as a perceptible change in sound level and is a discernible change in an outdoor environment.
- 10 dBA increase or decrease is a tenfold increase or decrease in acoustic pressure level but is perceived as a doubling or halving in loudness (i.e., the average person will judge a 10 dBA change in sound level to be twice or half as loud).

Estimations of common noise sources and outdoor acoustic environments and the comparison of relative loudness are presented in Table 4.11-1.

Table 4.11-1 Sound Pressure Levels (L_P) and Relative Loudness of Common Noise Sources and Soundscapes

Noise Source or Activity	Sound Level (dBA)	Subjective Impression	Relative Loudness (perception of different sound levels)
Jet aircraft takeoff from carrier (50 ft)	140	Threshold of pain	64 times as loud
50-hp siren (100 ft)	130		32 times as loud
Loud rock concert near stage Jet takeoff (200 ft)	120	Uncomfortably loud	16 times as loud
Float plane takeoff (100 ft)	110		8 times as loud
Jet takeoff (2,000 ft)	100	Very loud	4 times as loud
Heavy truck or motorcycle (25 ft)	90		2 times as loud
Garbage disposal Food blender (2 ft) Pneumatic drill (50 ft)	80	Loud	Reference loudness
Vacuum cleaner (10 ft)	70	Moderate	1/2 as loud
Passenger car at 65 mph (25 ft)	65		
Large store air-conditioning unit (20 ft)	60		1/4 as loud
Light auto traffic (100 ft)	50	Quiet	1/8 as loud
Quiet rural residential area with no activity	45		
Bedroom or quiet living room Bird calls	40	Faint	1/16 as loud
Typical wilderness area	35		
Quiet library, soft whisper (15 ft)	30	Very quiet	1/32 as loud
Wilderness with no wind or animal activity	25	Extremely quiet	
High-quality recording studio	20		1/64 as loud
Acoustic test chamber	10	Just audible	
	0	Threshold of hearing	

Sound levels can be measured, modeled, and presented in various formats. The sound metrics that were employed in this analysis have the following definitions:

L_{eq}: Conventionally expressed in dBA, the L_{eq} is the energy-averaged, A-weighted sound level over a specified time period. It is defined as the steady, continuous sound level over a specified time, which has the same acoustic energy as the actual varying sound levels over the specified period.

L_{max}: The maximum A-weighted sound level as determined during a specified measurement period. It can also be described as the maximum instantaneous sound pressure level generated by a piece of equipment or during a construction activity.

L_{dn}: The L_{dn} measures the 24-hour average noise level at a given location. It was adopted by the EPA for developing criteria for the evaluation of community noise exposure. The L_{dn} is calculated by averaging the 24-hour hourly L_{eq} levels at a given location after adding 10 dB to the nighttime period (10:00 p.m. – 7:00 a.m.) to account for the increased sensitivity of people to noises that occur at night.

CNEL: Community Noise Equivalent Level (CNEL) is another average A-weighted L_{eq} sound level measured over a 24-hour period; however, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained after adding 5 dB to sound levels occurring during evening hours (7:00 p.m. to 10:00 p.m.) and 10 dB to sound levels occurring during nighttime hours (10:00 p.m. to 7:00 a.m.).

Vibration Terminology

According to the Federal Transit Authority Noise and Vibration Impact Assessment (FTA 2006), construction activities can be a source of ground-borne vibration. Activities such as pile driving and operation of heavy equipment may cause ground-borne vibration while constructing the Projects. Vibration is an oscillatory motion which can be described in terms of the displacement, velocity, or acceleration (FTA 2006). Velocity or acceleration is typically used to describe vibration. Two descriptors are frequently used when discussing quantification of vibration, the peak particle velocity (PPV) and the root mean square (rms).

Peak particle velocity (PPV) – The maximum instantaneous positive or negative peak of the vibration signal (FTA 2006).

Root mean square (rms) – The square root of the average of the squared amplitude of the vibration signal, typically calculated over a 1-second period (FTA 2006).

The PPV is often used to assess stress on structures and the rms is used to describe the human response to vibration. The Caltrans construction vibration guidance is used in this assessment. This guidance includes a human response equivalent based on the PPV instead of using rms.

4.11.2 Environmental Setting

4.11.2.1 Regional Setting

The degree of audibility of a new or modified sound source is dependent in a large part upon the existing ambient sound level. The proposed Projects are located in the west/central portion of the Antelope Valley, which is part of the Mojave Desert basin. The Antelope Valley is broad and relatively flat, with little variation in topography.

The major north/south thoroughfare in the area is the Antelope Valley Freeway, which links the Lancaster/Palmdale area with Rosamond and areas further north. The portion of the Antelope Valley where the proposed Projects would be located is crossed by a grid-like road system with paved roads and dirt roads.

Energy facilities and infrastructure are common in the western Antelope Valley. Several high-voltage transmission lines (constructed as both single pole structures and lattice structures) cross the area and converge at the Antelope Substation, located at the intersection of West Avenue J and 95th Street West. A large wind energy facility is situated at the foothills of the Tehachapi Mountains, approximately 17 miles north/northwest of the Project 1. Solar energy facilities in the Antelope Valley include PV solar fields and the Sierra SunTower "power tower" facility, located adjacent to the Antelope Valley Freeway in Lancaster. Several other solar energy facilities are proposed in the valley.

Development in the western Antelope Valley around the proposed SGFs is rural in nature. Noise sensitive receptors such as residences are mostly widely-spaced rural ranch-type of residences, with some active farms. Clusters of more dense residential developments such as Westview Estates at West Avenue I/90th Street West, and the Antelope Acres community situated around 80th Street West and West Avenue D, occur but are widely spaced.

A wide range of noise settings may occur within the study area for each Project, which consists of all areas that could be potentially affected by construction or operational noise resulting from the proposed SGF. The closest residences (receptors) to each of the Projects are summarized in Table 4.11-2 and shown on Figures 4.11-1 through 4.11-6 below.

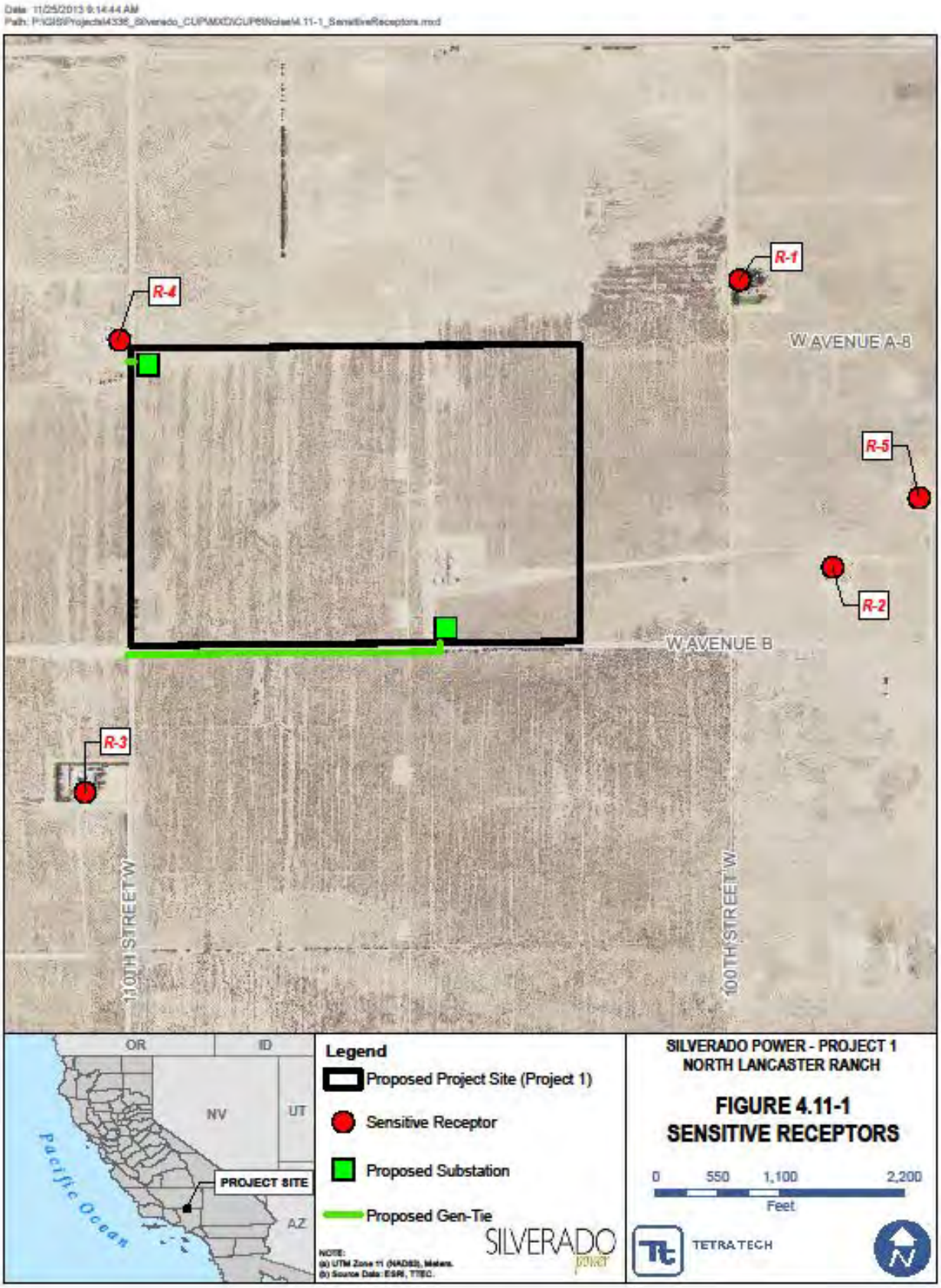
Table 4.11-2 Comparison of Distances (in feet) of the Closest Residence to each Project

Project Component	Distance in feet to Closest Residence* (Map ID)	Direction
Project 1		
Solar Farm	466 (R-4)	NW
Gen-Tie Transmission Line (underground)	200 (R-4)	NW
Substation	325 (R-4)	NW
Project 2		
Solar Farm	235 (R-3)	E
Gen-Tie Transmission Line (underground)	1,662 (R-3)	E
Substation	1,511 (R-3)	E
Project 3		
Solar Farm	133 (R-15)	E
Substation	650 (R-8)	N
Project 4		
Solar Farm	120 (R-47)	N
Substation	1,000 (R-47)	W
Project 5		
Solar Farm	466 (R-1)	W
Gen-Tie Transmission Line (underground)	800 (R-1)	NW
Substation	748 (R-1)	NW
Project 6		
Solar Farm	525 (R-1)	NW

*(R-#) is the map ID used for Projects 1, 2, 5, and 6 see Figures 4.11-1 through 4.11-6.

* Solar Farm refers to the solar panels within the respective project

Distance from sound source to NSR is calculated per county ordinance.


R-1
R-2
R-3
R-4
R-5
W AVENUE A-8
W AVENUE B
110TH STREET W
100TH STREET W
OR
ID
NV
UT
AZ
Pacific Ocean
PROJECT SITE
Legend
Proposed Project Site (Project 1)
Sensitive Receptor
Proposed Substation
Proposed Gen-Tie
SILVERADO power
SILVERADO POWER - PROJECT 1
NORTH LANCASTER RANCH
FIGURE 4.11-1
SENSITIVE RECEPTORS
0 550 1,100 2,200
Feet
TETRA TECH

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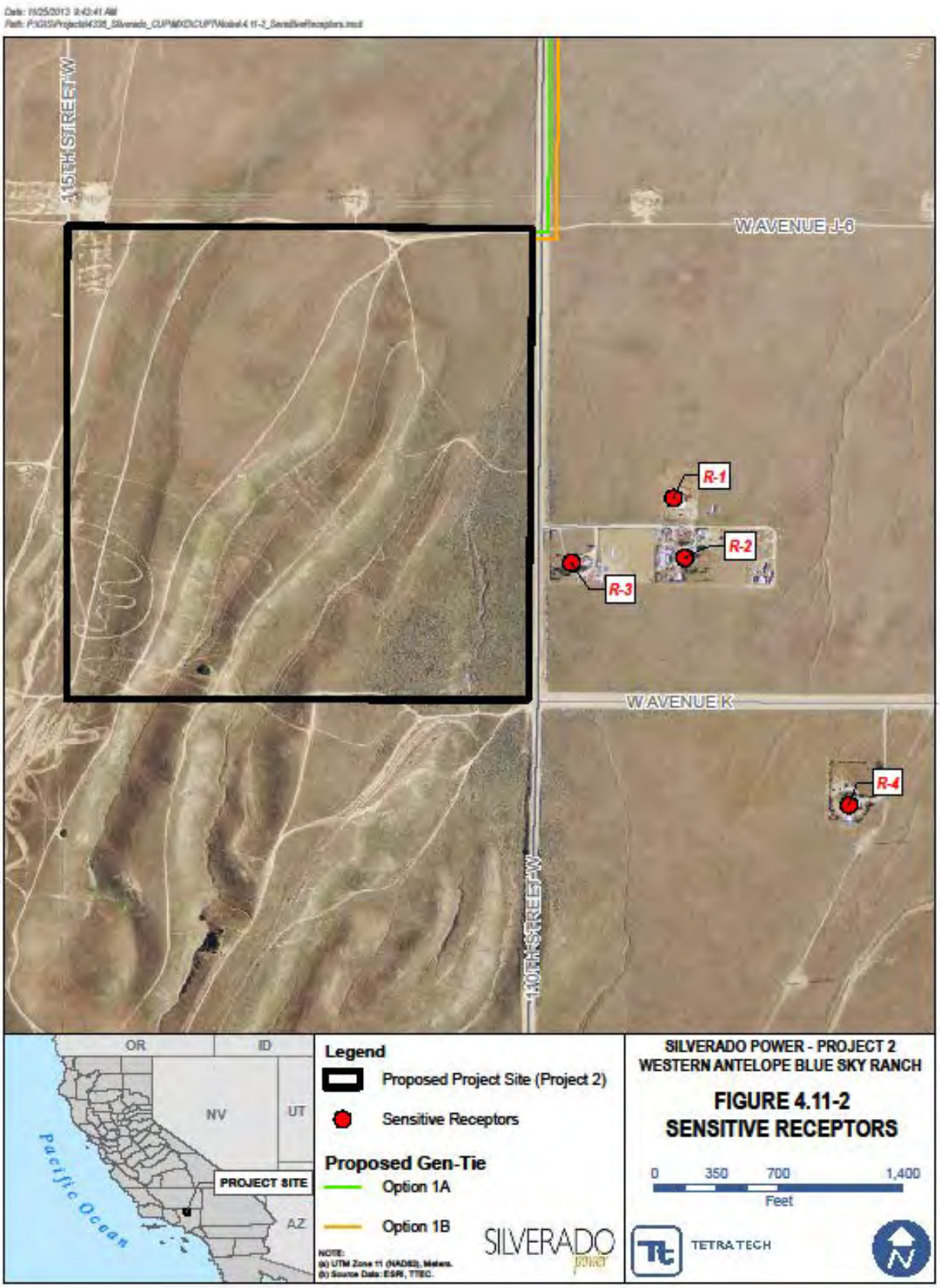
115TH STREET W
W AVENUE J-8
W AVENUE K
110TH STREET W
R-1
R-2
R-3
R-4
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project Site (Project 2)
Sensitive Receptors
Proposed Gen-Tie
Option 1A
Option 1B
SILVERADO power
SILVERADO POWER - PROJECT 2
WESTERN ANTELOPE BLUE SKY RANCH
FIGURE 4.11-2
SENSITIVE RECEPTORS
0 350 700 1,400
Feet
TETRA TECH

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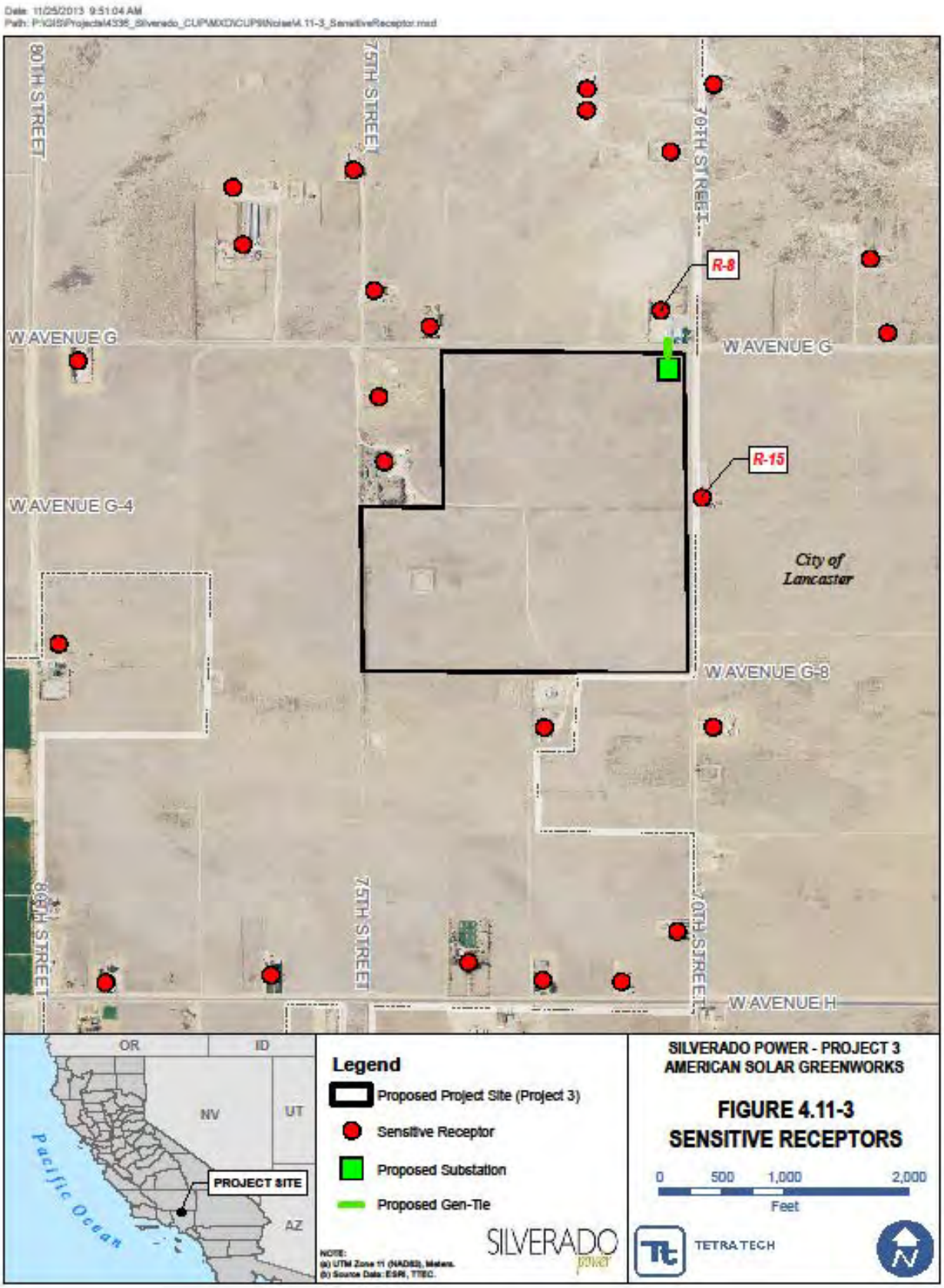
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90TH STREET
75TH STREET
70TH STREET
R-8
W AVENUE G
W AVENUE G
R-15
W AVENUE G-4
City of Lancaster
W AVENUE G-8
90TH STREET
75TH STREET
70TH STREET
W AVENUE H
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project Site (Project 3)
Sensitive Receptor
Proposed Substation
Proposed Gen-Tie
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 3
AMERICAN SOLAR GREENWORKS
FIGURE 4.11-3
SENSITIVE RECEPTORS
0 500 1,000 2,000
Feet
TETRA TECH
N

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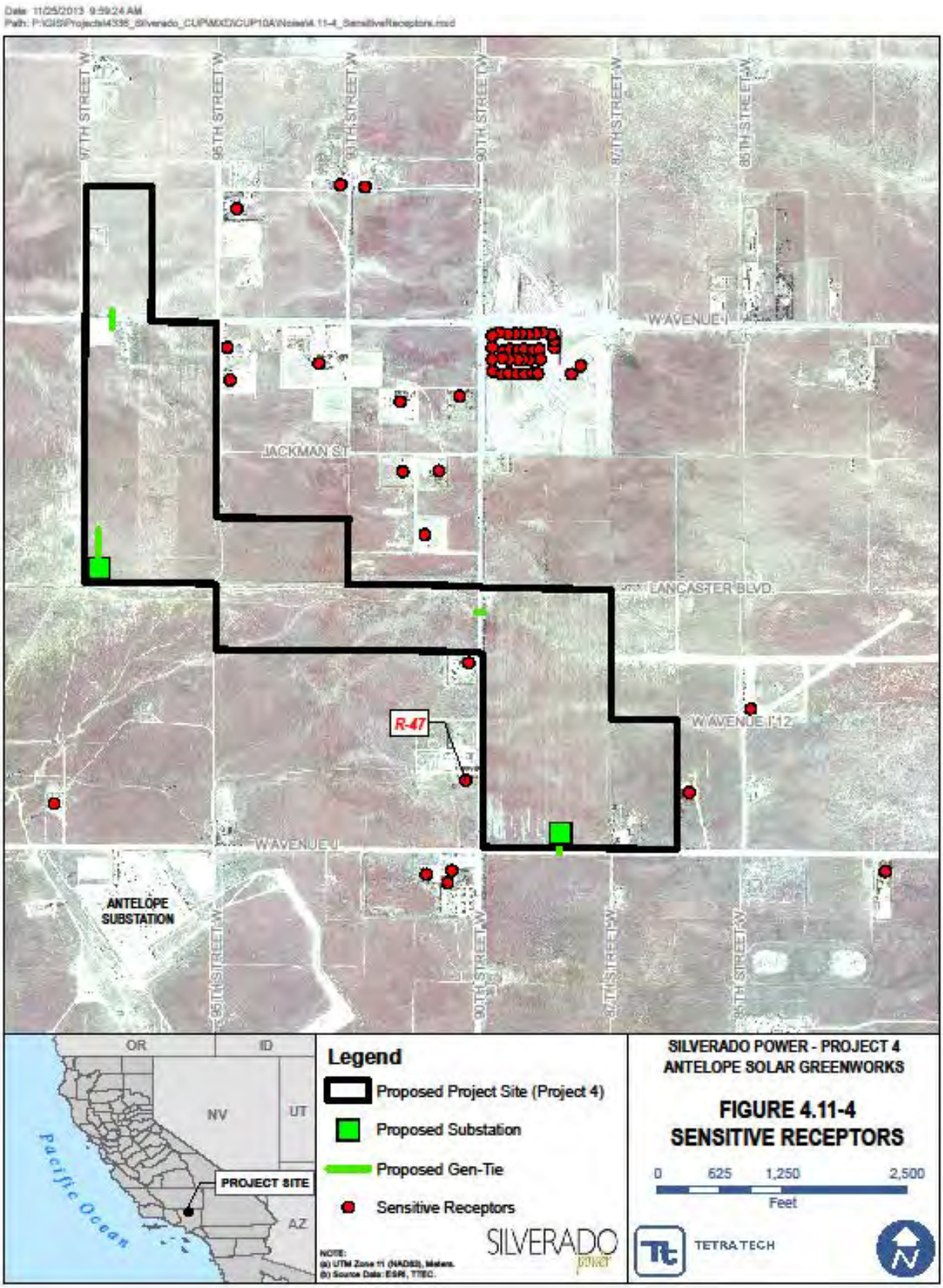
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97TH STREET W
95TH STREET W
93TH STREET W
90TH STREET W
87TH STREET W
85TH STREET W
W AVENUE I
JACKMAN ST
LANCASTER BLVD
R-47
W AVENUE I 12
W AVENUE J
ANTELOPE SUBSTATION
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project Site (Project 4)
Proposed Substation
Proposed Gen-Tie
Sensitive Receptors
SILVERADO power
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO POWER - PROJECT 4
ANTELOPE SOLAR GREENWORKS
FIGURE 4.11-4
SENSITIVE RECEPTORS
0 625 1,250 2,500
Feet
TETRA TECH
N

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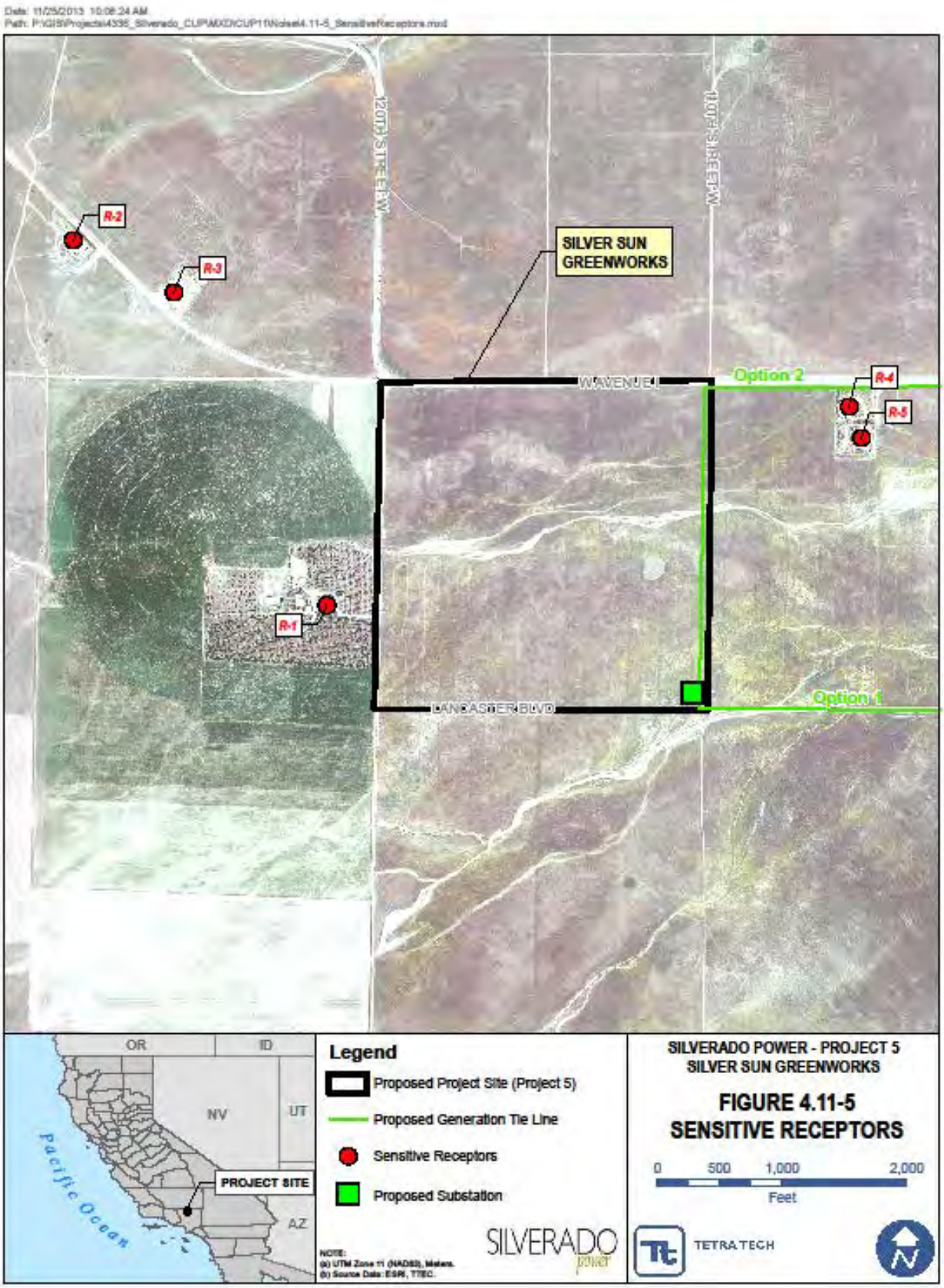
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120TH STREET W
110TH STREET W
SILVER SUN GREENWORKS
R-1
R-2
R-3
R-4
R-5
W AVENUE I
Option 2
Option 1
LANCASTER BLVD
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Proposed Project Site (Project 5)
Proposed Generation Tie Line
Sensitive Receptors
Proposed Substation
SILVERADO power
SILVERADO POWER - PROJECT 5
SILVER SUN GREENWORKS
FIGURE 4.11-5
SENSITIVE RECEPTORS
0 500 1,000 2,000
Feet
TETRA TECH

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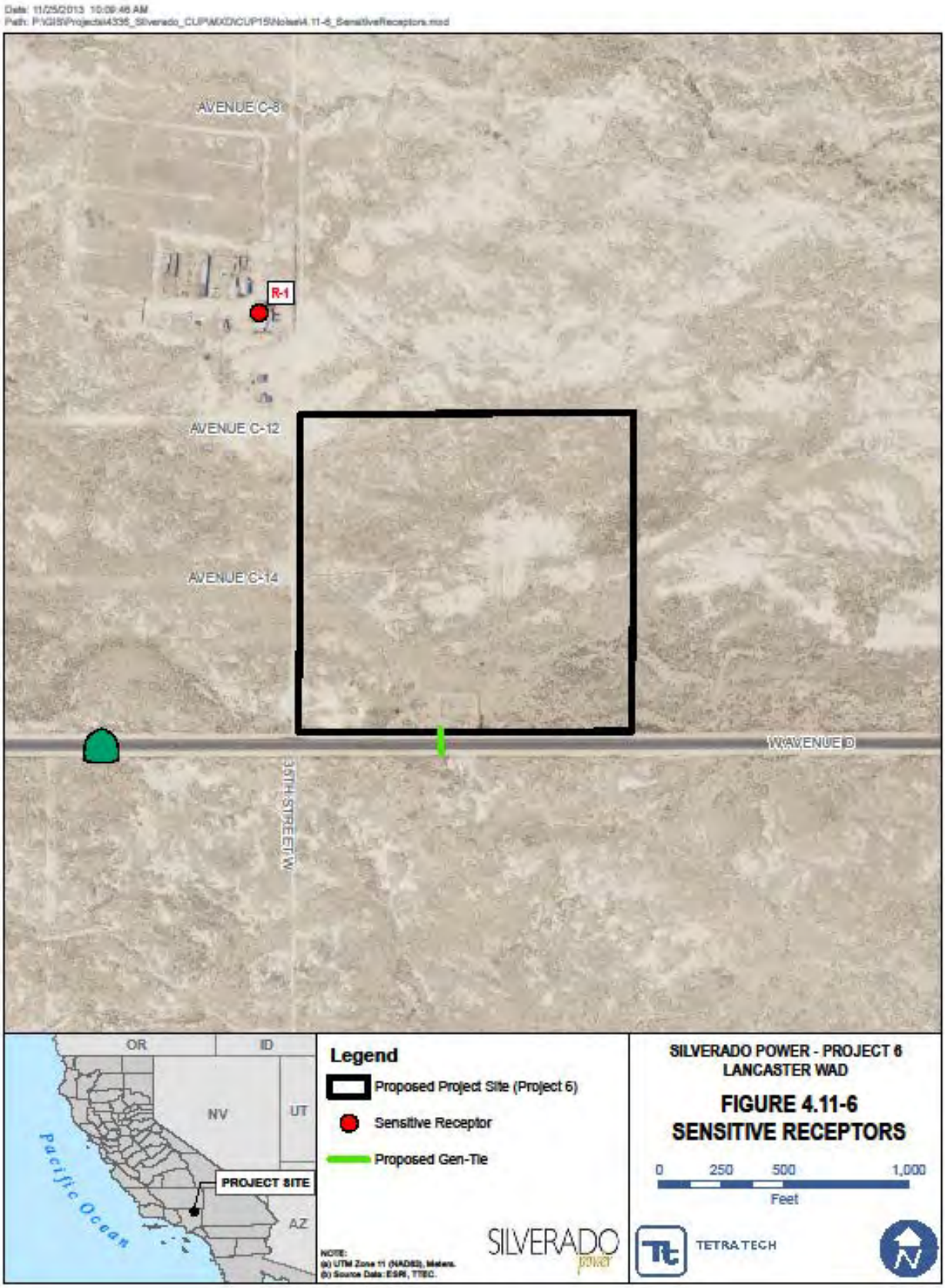
Date: 11/25/2013 10:09:46 AM
Path: P:\GIS\Projects\4335_Silverado_CUP\MXD\CUP15\Noise\4.11-6_SensitiveReceptors.mxd
AVENUE C-8
R-1
AVENUE C-12
AVENUE C-14
AVENUE D
35TH STREET W
OR
ID
NV
UT
AZ
Pacific Ocean
PROJECT SITE
Legend
Proposed Project Site (Project 6)
Sensitive Receptor
Proposed Gen-Tie
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 6
LANCASTER WAD
FIGURE 4.11-6
SENSITIVE RECEPTORS
0 250 500 1,000
Feet
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4.11.2.1.1 Project 1

A detailed description of existing conditions for Project 1 is provided in the North Lancaster Ranch Noise and Vibration Technical Report (Appendix B-8.1).

The degree of audibility of a new or modified sound source is dependent in a large part upon the existing ambient sound level. A wide range of noise settings may occur within the Project 1 study area, which consists of all areas that could be potentially affected by construction or operational noise resulting from Project 1. The Project 1 site encompasses previously disturbed, fallow agricultural land in northern Los Angeles County. The closest noise sensitive receptor (residence) is located 325 feet northwest from Project 1. Additionally, the next closest residence is 1,000 feet to the southwest. The Project 1 vicinity includes agricultural fields and scattered residences intermixed with non-native grasslands.

Existing ambient sound levels within the Project 1 study area are expected to be relatively low, although sound levels may be sporadically elevated in localized areas due to roadway noise or periods of human activity. Background sound levels would vary both spatially and temporally depending on proximity to area sound sources, roadways and natural and/or weather related sounds. Principal contributors to the existing acoustic environment likely include motor vehicle traffic, mobile farming equipment, farming activities such as plowing and irrigation, all-terrain vehicles, local roadways, periodic aircraft flyovers, and natural sounds such as birds, insects, and leaf or vegetation rustle during elevated wind conditions. Open lands, predominantly or rural in nature, will have comparatively lower ambient sound levels than more developed areas. Diurnal effects result in sound levels that are typically quieter during the night than during the daytime, except during periods when evening and nighttime insect noise may dominate in warmer seasons. Because of these variations a conservative background ambient of 35 dBA has been assumed.

4.11.2.1.2 Project 2

A detailed description of existing conditions for Project 2 is provided in the Western Antelope Blue Sky Ranch Noise Impacts Report (Appendix B-8.2).

The degree of audibility of a new or modified sound source is dependent in a large part upon the existing ambient sound level. A wide range of noise settings may occur within the Project 2 study area, which consists of all areas that could be potentially affected by construction or operational noise resulting from the Project. The Project site encompasses previously disturbed, grazing land in northern Los Angeles County. The Project vicinity includes agricultural fields and scattered residences intermixed with non-native grasslands. The closest residence (receptor) is located approximately 235 feet east of the Project site, across 110th Street West. Additionally, two residences are located further east both approximately 815 feet east of Project 2. Another residence is located southeast of the intersection between 110th Street West and West Avenue K approximately 1,900 feet from Project 2.

Like Project 1, existing ambient sound levels within the Project 2 vicinity are expected to be relatively low, although sound levels may be sporadically elevated in localized areas due to roadway noise or periods of human activity. Background sound levels will vary both spatially and temporally depending on proximity to area sound sources, roadways and natural and/or

weather related sounds. Principal contributors to the existing acoustic environment likely include motor vehicle traffic, mobile farming equipment, farming activities such as plowing and irrigation, all-terrain vehicles, local roadways, periodic aircraft flyovers, and natural sounds such as birds, insects, and leaf or vegetation rustle during elevated wind conditions. Open lands, predominantly or rural in nature, will have comparatively lower ambient sound levels than more developed areas. Diurnal effects result in sound levels that are typically quieter during the night than during the daytime, except during periods when evening and nighttime insect noise may dominate in warmer seasons. Because of these variations a conservative background ambient of 35 dBA has been assumed.

4.11.2.1.3 Project 3

A detailed description of existing conditions for Project 3 is provided in the American Solar Greenworks Noise Impacts Report (Appendix B-8.3).

The degree of audibility of a new or modified sound source is dependent in a large part upon the existing ambient sound level. A wide range of noise settings may occur within the Project study area, which consists of all areas that could be potentially affected by construction or operational noise resulting from Project 3. The Project 3 site encompasses previously disturbed, fallow agricultural land in northern Los Angeles County. The Project 3 vicinity includes agricultural fields and scattered residences intermixed with non-native grasslands. The closest residences (receptors) are located approximately 336 feet north, 133 feet east, 452 feet south, 479 feet northwest of the Project 3 site. The old Esperanza School is located at the northwest corner of the intersection of West Avenue G and 70th Street West, approximately 82 feet from the Project site. The school building is no longer an active school and is not used for any purpose.

Existing ambient sound levels within the Project 3 vicinity are expected to be relatively low, although sound levels may be sporadically elevated in localized areas due to roadway noise, aviation activity at the General William J. Fox Airfield, or periods of human activity. Project 3 would be located within Zone C of the Land Use Compatibility Criteria listed in the Airport Land Use Compatibility Plan for airport. Zone C is the Extended Approach/Departure Zone which contains most of the 55-CNEL contour, and noise impacts are considered moderate.

Background sound levels will vary both spatially and temporally depending on proximity to area sound sources, roadways and natural and/or weather related sounds. Principal contributors to the existing acoustic environment likely include motor vehicle traffic, mobile farming equipment, farming activities such as plowing and irrigation, all-terrain vehicles, local roadways, periodic aircraft flyovers, and natural sounds such as birds, insects, and leaf or vegetation rustle during elevated wind conditions. Open lands, predominantly or rural in nature, will have comparatively lower ambient sound levels than more developed areas. Diurnal effects result in sound levels that are typically quieter during the night than during the daytime, except during periods when evening and nighttime insect noise may dominate in warmer seasons. Because of the proximity to General William J. Fox Airfield it is assumed, based on noise contour mapping for the airport, that a conservative background ambient of 40 dBA is appropriate for the Project 3 area.

4.11.2.1.4 Project 4

A detailed description of existing conditions for Project 4 is provided in the Antelope Solar Greenworks Noise Impacts Report (Appendix B-8.4).

The degree of audibility of a new or modified sound source is dependent in a large part upon the existing ambient sound level. A wide range of noise settings may occur within the Project 4 study area, which consists of all areas that could be potentially affected by construction or operational noise resulting from Project 4. The Project 4 site encompasses previously disturbed, fallow agricultural land in northern Los Angeles County. The Project 4 site is surrounded by agricultural fields, intermixed with non-native grasslands and scattered residences with some immediately adjacent to or across the street from the site. The nearest residences are immediately adjacent to or across the street from the Project 4 site southeast of West Avenue I at 95th Street W and along 90th Street West north of West Avenue J, approximately 118 feet from the Project site.

Existing ambient sound levels within the Project 4 vicinity are expected to be relatively low, although sound levels may be sporadically elevated in localized areas due to roadway noise or periods of human activity. Background sound levels will vary both spatially and temporally depending on proximity to area sound sources, roadways and natural and/or weather related sounds. Principal contributors to the existing acoustic environment likely include motor vehicle traffic, mobile farming equipment, farming activities such as plowing and irrigation, all-terrain vehicles, local roadways, periodic aircraft flyovers, and natural sounds such as birds, insects, and leaf or vegetation rustle during elevated wind conditions. Open lands, predominantly or rural in nature, will have comparatively lower ambient sound levels than more developed areas. Diurnal effects result in sound levels that are typically quieter during the night than during the daytime, except during periods when evening and nighttime insect noise may dominate in warmer seasons. Because of these variations a conservative background ambient of 35 dBA has been assumed.

4.11.2.1.5 Project 5

A detailed description of existing conditions for Project 5 is provided in the Silver Sun Greenworks Noise and Vibration Technical Report (Appendix B-8.5).

The degree of audibility of a new or modified sound source is dependent in a large part upon the existing ambient sound level. A wide range of noise settings may occur within the Project 5 study area, which consists of all areas that could be potentially affected by construction or operational noise resulting from Project 5. The Project 5 site encompasses previously disturbed, fallow agricultural land in northern Los Angeles County. The Project 5 vicinity includes active agricultural fields, orchards, grasslands, major roads, and scattered residences with the closest residence located approximately 466 feet west of the Project site and the second closest residence approximately 807 feet east of Project 5. All other residences are half-mile or further from Project 5.

Existing ambient sound levels within the Project 5 vicinity are expected to be relatively low, although sound levels may be sporadically elevated in localized areas due to roadway noise or periods of human activity. Background sound levels will vary both spatially and temporally

depending on proximity to area sound sources, roadways and natural and/or weather related sounds. Principal contributors to the existing acoustic environment likely include motor vehicle traffic, mobile farming equipment, farming activities such as plowing and irrigation, all-terrain vehicles, local roadways, periodic aircraft flyovers, and natural sounds such as birds, insects, and leaf or vegetation rustle during elevated wind conditions. Open lands, predominantly or rural in nature, will have comparatively lower ambient sound levels than more developed areas. Diurnal effects result in sound levels that are typically quieter during the night than during the daytime, except during periods when evening and nighttime insect noise may dominate in warmer seasons. Because of these variations a conservative background ambient of 35 dBA has been assumed.

4.11.2.1.6 Project 6

A detailed description of existing conditions for Project 6 is provided in the Lancaster WAD Noise Impacts Report (Appendix B-8.6).

The degree of audibility of a new or modified sound source is dependent in a large part upon the existing ambient sound level. A wide range of noise settings may occur within the Project 6 study area, which consists of all areas that could be potentially affected by construction or operational noise resulting from Project 6. The Project 6 site encompasses previously disturbed, fallow agricultural land in northern Los Angeles County. The Project 6 vicinity includes agricultural fields and scattered residences intermixed with non-native grasslands. One residence (receptor) is located approximately 525 feet northwest of Project 6. General William J. Fox Airfield is located approximately 2.3 miles south of Project 6 and a large portion of the site is located partially within Zone E of the Land Use Compatibility Criteria listed in the Airport Land Use Compatibility Plan for the airport. Zone E is the Other Airport Environs Zone which contains areas beyond the 55 CNEL contour, and noise impacts are considered low.

Existing ambient sound levels within the Project 6 vicinity are expected to be relatively low, although sound levels may be sporadically elevated in localized areas due to roadway noise or periods of human activity. Background sound levels will vary both spatially and temporally depending on proximity to area sound sources, roadways and natural and/or weather related sounds. Principal contributors to the existing acoustic environment likely include motor vehicle traffic, mobile farming equipment, farming activities such as plowing and irrigation, all-terrain vehicles, local roadways, periodic aircraft flyovers, and natural sounds such as birds, insects, and leaf or vegetation rustle during elevated wind conditions. Open lands, predominantly or rural in nature, will have comparatively lower ambient sound levels than more developed areas. Diurnal effects result in sound levels that are typically quieter during the night than during the daytime, except during periods when evening and nighttime insect noise may dominate in warmer seasons. Because of these variations a conservative background ambient of 35 dBA has been assumed.

4.11.3 Regulatory Settings

This section provides an overview of federal, state, and local regulations related to noise issues applicable to the Projects.

4.11.3.1 Federal

Federal laws, regulation, and guidance establish the national framework for noise regulations and include those from the OSHA and the EPA.

4.11.3.1.1 Occupational Safety and Health Administration, Occupational Noise Exposure; Hearing Conservation Amendment (29 CFR 1910.95)

This standard establishes mandates to protect employees from excessive noise exposure and requires a Hearing Conservation Program when routine exposure to high noise levels is expected to occur.

4.11.3.1.2 U.S. Environmental Protection Agency in "Information of Levels on Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." (EPA 550/9-74-004) (USEPA 1974)

Published in 1974, this document identifies safe levels of environmental noise exposure and is intended to "provide State and Local governments as well as the Federal Government and the private sector with an informational point of departure for the purpose of decision making." While the EPA has no regulation governing environmental noise, the agency has conducted several extensive studies to identify the effects of sound level on public health and welfare. For outdoor residential areas, the recommended EPA guideline is an Ldn of 55 dBA and an indoor Ldn limit of 45 dBA. These levels are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and healthcare areas. Noise-level criteria to protect against hearing damage in commercial and industrial areas are identified as 24-hour Leq values of 70 dBA (both outdoors and indoors). This publication remains the authoritative study based on a large sampling of community reaction to noise. The EPA sound level guidelines do not provide an absolute measure of noise impact, but rather a consensus on potential activity interference, human health and welfare effects, and annoyance. Since these protective levels were derived without concern for technical or economic feasibility, and contain a margin of safety to ensure their protective value, they should not be viewed as standards, criteria, regulations, or goals. Rather, they should be viewed as levels below which there is no reason to suspect that the general population would be at risk from any of the identified effects of noise. The EPA guideline limits are summarized in Table 4.11-3.

Table 4.11-3 Summary of EPA Cause and Effect Noise Levels

Location	Level	Effect
All public accessible areas with prolonged exposure	70 dBA $L_{eq(24)}$	Safety
Outdoor at residential structure and other noise sensitive receptors where a large amount of time is spent	55 dBA L_{dn}	Protection against annoyance and activity interference
Outdoor areas where limited amounts of time are spent, e.g., park areas, school yards, golf courses, etc.	55 dBA $L_{eq(24)}$	
Indoor residential	45 dBA L_{dn}	
Indoor non-residential	55 dBA $L_{eq(24)}$	

Source: USEPA 1974.

4.11.3.2 State

In 1987, the California Department of Health Services published guidelines for the noise element of local general plans. These guidelines include a noise level/land use compatibility chart that categorizes various outdoor L_{dn} ranges into up to four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable), depending on land use. For many land uses, the chart shows L_{dn} ranges for two or more compatibility categories. The noise element guidelines chart identifies the normally acceptable range for low-density residential uses as less than 60 dBA, while the conditionally acceptable range is 60-70 dBA. The normally acceptable range for high-density residential uses is identified as L_{dn} values below 65 dBA, while the conditionally acceptable range is identified as 65-70 dBA. For educational and medical facilities, L_{dn} values below 60 dBA are considered normally acceptable, while L_{dn} values of 60-70 dBA are considered conditionally acceptable. For office and commercial land uses, L_{dn} values below 67.5 dBA are considered normally acceptable, while L_{dn} values of 67.5-77.5 dBA are categorized as conditionally acceptable. These normally and conditionally acceptable L_{dn} ranges are intended to indicate that local conditions (existing noise levels and community attitudes toward dominant noise sources) should be considered in evaluating land use compatibility at specific locations. These guidelines are used by many agencies, environmental planners, and acoustical specialists as a starting point to evaluate the potential for noise impact on and by a project. The guidelines are also employed to evaluate methods for achieving noise compatibility with respect to nearby existing uses. Table 4.11-4 summarizes these guidelines for the normally and conditionally acceptable L_{dn} exposures.

Table 4.11-4 California Department of Health Services Noise Guidelines

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)	
	Normally Acceptable	Conditionally Acceptable
Residential – Low Density	50 – 60	60 – 70
Residential – High Density	50 – 65	65 – 70
Transient Lodging – Motels, Hotels	50 – 65	65 – 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 60	60 – 65
Auditoriums, Concert Halls, Amphitheaters	NA	50 – 70
Sports Arenas, Outdoor Spectator Sports	NA	50 – 75
Playgrounds, Neighborhood Parks	50 – 67.5	NA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA
Office Buildings, Business Commercial and Professional	50 – 67.5	67.5 – 77.5
Industrial, Manufacturing, Utilities, Agriculture	50 – 70	70 – 80

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures (24 CCR T25-28). These standards require that “interior CNEL with windows closed, attributable to exterior sources, shall not exceed an annual CNEL of 45 dB in any habitable room.”

Occupational exposure to noise is regulated by the California Occupational Safety and Health Act in Title 8, Group 15, Article 105, Sections 5095–5100. The standard stipulates that

protection against the effects of noise exposure would be provided when sound levels exceed 90 dBA over an 8-hour exposure period.

4.11.3.2.1 California Environmental Quality Act

The CEQA requires that significant environmental impacts be identified and that such impacts be eliminated or mitigated to the extent feasible. The CEQA guidelines (AEP 2012) set forth characteristics that signal a potentially significant impact (see below in Section 4.11.4, Impacts).

4.11.3.3 Local

4.11.3.3.1 Los Angeles County 2011 Draft General Plan 2035

The Draft General Plan 2035 lists policies related to noise that include using land uses such as parks to buffer noise-sensitive uses from excessive noise impacts, promoting land use compatibility, and ensuring adequate mitigation.

4.11.3.3.2 Los Angeles County Code

The County Noise Control Ordinance, Title 12 of the County Code, was established to reduce and restrict certain noise-producing activities. Activities may not generate noise levels above the specified limits either at the exterior or interior areas of neighboring land uses. The limits are derived from tabulated values that depend on the land use, with adjustments to create a series of noise standards. The exterior limits are presented in Table 4.11-5. Additional standards are provided in the event that the exterior limits are exceeded.

Table 4.11-5 Exterior Noise Standards, Los Angeles County Code

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Exterior Noise Level (dB)
I	Noise-sensitive area	Anytime	45
II	Residential properties	10:00 p.m. to 7:00 a.m. (nighttime)	45
		7:00 a.m. to 10:00 p.m. (daytime)	50
III	Commercial properties	10:00 p.m. to 7:00 a.m. (nighttime)	55
		7:00 a.m. to 10:00 p.m. (daytime)	60
IV	Industrial properties	Anytime	70

Source: Section 12.08.390 of the Los Angeles County Code (a portion of the Noise Control Ordinance).

In addition, the County Noise Control Ordinance also prohibits construction activities and noise during certain times in areas that would affect a residential or commercial property. The prohibited times are between the weekday hours of 7:00 p.m. and 7:00 a.m. and any time on Sundays or holidays. The Ordinance identifies maximum noise levels for mobile and stationary equipment as shown in Table 4.11-6. All internal combustion-engine-powered equipment “shall be equipped with suitable exhaust and air intake silencers in proper working order.” A 5 dBA penalty is applied to noises that are considered impulsive.

Table 4.11-6 Maximum Noise Levels for Construction Noise from Stationary Equipment (10 days or more)

	Single-family Residential	Multi-family Residential	Semi-residential/ Commercial
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Source: Section 12.08.440 of the Los Angeles County Code (a portion of the Noise Control Ordinance).

4.11.3.3.3 Antelope Valley Areawide General Plan

The 1986 Antelope Valley Areawide Plan designates areas within the 60 dBA noise contour from transportation sources such as airports, railroads, and major highways as Noise Management Areas. Plan policy for these areas calls for the reduction of noise impacts on adjacent land uses through both hazard avoidance actions, where practical, and hazard mitigation practices, in other cases. The Antelope Valley Areawide General Plan is currently in the process of being updated; however, no updated guidelines or standards related to noise are currently available.

None of the Projects are located close enough to an airport to be within an aviation-related 60 dBA CNEL noise contour, although Project 4 is within the 55-60 dBA CNEL noise contour for the General William J. Fox Airfield. No railroads are located within 0.5 miles of any of the Projects, and therefore sound from railroad activities is anticipated to be less than 60 dBA. The nearest major highway is State Route 14, located approximately one mile east of Project 6. Peak hour traffic volumes on rural roads, such as those around the Projects sites, are unlikely to be heavy enough to generate traffic noise of 60 dBA L_{eq} or greater at any of the Projects. Therefore none of the Projects are located within a Noise Management Area.

4.11.4 Significance Criteria

The CEQA requires that significant environmental impacts be identified and that such impacts be eliminated or mitigated to the extent feasible. The CEQA guidelines (AEP 2012) set forth characteristics that signal a potentially significant impact. Under CEQA the proposed Project would be considered to have significant noise and vibration impacts if it results in the following:

a) Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the

project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

4.11.5 Impacts Analysis

4.11.5.1 Proposed Projects 1 – 6 Overview

Sound generated from Projects 1 – 6 would consist of: (1) short duration sounds resulting from construction activities, and (2) sound during normal facility operations. Vibration from the Projects would only result during construction. Construction activities would take place only during daytime hours. An evaluation of expected noise and vibration levels was performed and the ability of the Projects to comply with applicable noise requirements was assessed.

For the proposed Projects 1 – 6, the following criteria were determined to be inapplicable or to result in no impact:

- Exposure of on-site workers to noise levels that exceed occupational safety standards (90 dBA as a time-weighted 8-hour average or peak noise levels above 115 dBA).
- Exposure of residents to airport or private airstrip-related noise levels above a CNEL of 65 dBA. Projects 3 and 6 are located within 2 miles of an airport with significant aircraft traffic, but is located outside the 65 dBA CNEL noise contours and the Projects are not residential developments.

Occupational noise exposure is governed by federal and state regulations. Cal/OSHA administers industrial safety regulations in California. Cal/OSHA regulations establish a time-weighted noise exposure limit of 90 dBA averaged over 8 hours (CCR, Title 8, Article 105). Noise source controls, administrative procedures, or worker hearing protection must be provided if worker noise exposure would exceed the 90 dBA limit. The construction contractor selected for the Projects would be required to follow Cal/OSHA requirements for construction worker noise exposure. Consequently, worker noise exposure issues are not discussed further under any of the alternatives.

4.11.5.2 Project Impacts: Criterion A – Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Project Impacts: Criterion C – Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Project Impacts: Criterion D – Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

4.11.5.2.1 Project 1 and Gen-tie Line

Construction Impacts

Construction noise, although temporary, can be a source of concern for sensitive receptors, such as nearby residences. Construction at Project 1 would take place between the third quarter of 2014 and the second quarter of 2015. Construction would require the use of heavy equipment that may be periodically audible at offsite locations. Received sound levels would fluctuate, depending on the construction activity, equipment type, and distance between noise source and receiver. Sound from construction equipment would vary dependent on the construction phase and the number and class of equipment at a location at any given time.

The variation in power and usage imposes additional complexity in characterizing construction noise levels. Expected sound levels for each phase of construction are presented in Table 4.11-7. Each construction phase identified would require different types of construction equipment. The estimated composite site noise level is based on the assumption that all equipment would operate at a given usage load factor, over a standard 8-hour workday, to calculate the composite average daytime L_{eq}. The load factor accounts for the fraction of time that the equipment is in use over the specified time period. The composite noise level from several pieces of equipment operating during the same phase is obtained from decibel addition of the L_{eq} of each individual unit.

Table 4.11-7 Summary of Construction Noise by Phase at Nearest Residence from Project 1 Centroid

Construction Phase	Composite Noise Level from Project 1 Centroid 2,507 ft (764 m) Average Daytime dBA
Demolition	54
Mow (site preparation)	55
Fine Grading – Road Construction	50
Trenching / Infrastructure Construction	51
PV Installation (pile driving)	62
Building Construction / PV Installation	52

Data compiled and methodologies developed in part from:
Federal Highway Administration, "Construction Noise Handbook", Report FHWA-HEP-06-015, 2006.
Communication with equipment manufacturers of comparable equipment.
Construction phases such as site preparation are described in 3.4 of the EIR.

Pile driving is the method planned for installation of the foundations for the solar PV modules. Pile driving can generate high noise levels. Noise is generated from both the ram striking the pile as well as the operating air or diesel exhaust as it is exhausted from the cylinder (this is not present with hydraulic impact hammers). For the purposes of the construction acoustic analysis, it was assumed Project 1 would use a GAYK 2L41C ram pile driver, which produces a sound pressure level of 111 dBA at 20 feet assuming an impact rate of 1,400 blows per minute. Depending on need, the Project 1 may use a different pile driver that produces equal or lesser sound pressure. Actual pile driving averages 30-45 seconds per pile at a 6-foot embedment depth, and the engine would typically run close to 3,000 rpm for use with this ram. Pile drivers are classified as impact devices in the Los Angeles County Noise Ordinance; therefore, the applicable standard is 55 dBA (see Table 4.11-6 and apply a 5 dBA penalty due to use of impact device). Assuming a load or usage factor of 20 percent (FHWA 2006), it is expected that

sound from pile driving would attenuate to 76 dBA at the nearest residence and would attenuate to below 60 dBA within 1 linear mile of this construction activity, depending on meteorological and topographical effects. The usage factor is the portion of each day of construction that a certain construction activity is conducted. The average noise level from pile driving is predicted to be 62 dBA, similar to the level resulting at the Project centroid located 2507 feet from the nearest residence (map identifier R-4 on Figure 4.11-1). Because sound levels would be higher than 60 dBA, at times, and up to 76 dBA at the closest residence, an exceedance of the County's construction noise level limits is anticipated. Therefore, where pile driving is planned to occur within 3,000 feet of an occupied NSR an acoustic curtain or sound barrier with a sound transmission class of 19 or greater would be used to reduce received sound levels at the NSRs to levels at or below the County's construction noise limit of 60 dBA. Additionally, pile driving is expected to last more than 10 days, which requires a variance to the County's noise ordinance. The variance process is described in Section 12.08 of the Los Angeles County code and is separate from the EIR process and would be completed with the County's Public Health department prior to construction.

Generally, construction sound would attenuate with increased distance from the sound sources. Other factors, such as vegetation, terrain, and obstacles such as buildings will act to limit the impact of construction noise levels, but were not considered in the evaluation. Trees free of foliage, such as deciduous trees in the late fall to early spring, provide little screening. According to the Federal Highway Administration, "Vegetation must be a minimum of 100 feet thick, a minimum of 20 feet high and sufficiently dense so that it cannot be seen through in order to provide a 5-dBA noise reduction. Anything less than that thickness would not result in any significant noise reduction." Actual received sound levels would fluctuate, depending on the construction activity, equipment type, and separation distances between source and receiver.

Construction noise is a temporary noise source that would only occur during daytime hours. Sound levels from construction are expected to be comparable to sound produced by farm machinery, such as equipment used in nearby agricultural fields. Worst case construction noise levels for the nearest residence would last no more than a few weeks, as construction activities progress across Project 1. Therefore, no one residence would be exposed to significant noise levels for any extended period of time. Pile driving poses the biggest construction noise concern for the project as that activity results in the highest received sound levels and depending on duration could be significant. The noise level listed for Project 1 in Table 4.11-7 represents the expected noise level at the closest residence to the Project 1 centroid. This was calculated in order to provide an average of the anticipated variation in noise levels.

Traffic noise generated during construction of Project 1 on and offsite would also temporarily add to overall sound levels. As a general construction practice, functional mufflers would be maintained on all equipment to maintain noise levels as low as reasonably achievable. The Applicant would make reasonable efforts to minimize noise resulting from construction activities as described in the mitigation measures listed in Section 4.11.6. With mitigation measures N1-N6 implemented, including the use of sound curtains or barriers during pile driving, construction sound levels would be less than significant.

Operations Impacts

Project 1 would generate power using PV modules mounted in rows of parallel racks. The Project is anticipated to be unmanned during normal operation. Systems monitoring would be completed remotely and onsite staff would be limited to repair or cleaning of the PV modules. Maintenance staff would visit two times per year to clean the PV modules, mowed as needed to abide by Fire Department requirements, and as needed to perform other general maintenance activities. See Section 3.4.11 for a description of maintenance activities including the frequency of such activities.

Sound sources considered in the operational acoustic analysis include the inverters and transformers associated with the PV modules, the substation, and the transmission line. The principal sources of noise are the cooling-ventilation fans, the electrical components of the inverters and the step-up transformers at the on-site substations. Gen-tie lines for Project 1 would be underground and therefore sound from the gen-tie line would not be perceptible. Additionally, because corona noise is typically attributed to higher voltage lines of approximately 345 kV and above, noise complaints from the Project's lower voltage transmission lines (66 kV) are not anticipated. These sound sources are all predicted to be less than 35 dBA at nearby NSRs and would be less than significant.

Each PV module 1 MW block would have two inverters and a ventilation fan housed inside a pre-fabricated enclosure and one transformer mounted on a concrete pad. Each inverter generates a noise level of about 75 dBA at a distance of 10 feet and it is expected that the enclosure would provide 15 to 20 dBA of noise reduction, reducing the inverter noise to approximately 58-63 dBA at a distance of 10 feet from the enclosure. The type of PV module transformer to be implemented on the Project is unknown at this point, but generally transformers produce a noise level of about 58 dBA at a distance of 6 feet. The PV module transformers and inverters would be centrally located within each 1 MW block of solar modules. No solar arrays would be located within 50 feet of the property line and would be expected to generate low noise levels (i.e., 35 dBA or less) beyond the Project extents; however, the exact sound level of which would be dependent upon the technology the Applicant ultimately chooses to install. PV station transformers and power inverters located within the facility are generally considered a low level source of noise, limited to daytime hours when the solar arrays are generating electricity and anticipated to result in received sound levels that are at or below the assumed 35 dBA L_{eq} existing ambient sound level and would be less than significant.

The Project 1 substations would have switching, protection and control equipment, and a transformer, which generate the sound generally described as a low humming. There are three main sound sources associated with a transformer: core noise, load noise, and noise generated by the operation of the cooling equipment. The core is the principal noise source and does not vary significantly with electrical load. The load noise is primarily caused by the load current in the substation transformer's conducting coils (or windings) and consequently the main frequency of this sound is twice the supply frequency: 100 Hz for 50 Hz substation transformers and 120 Hz for 60 Hz substation transformers. The cooling equipment (fans) may also be an important noise component, depending on fan design. During the air forced cooling method, cooling fan noise is produced in addition to the core noise. The resulting audible sound is a combination of hum and the broadband fan noise. After sunset, when the plant no longer

receives solar radiation, the inverters would not produce noise and the transformers would be energized but likely operating under low noise condition using natural draft cooling, but not in operation (no fans) due to lower nighttime heat loads. Breaker noise is a sound event of very short duration buzz lasting approximately 5-10 seconds, expected to occur infrequently throughout the year. Just as horsepower ratings designate the power capacity of an electric motor, a substation transformer's megavolt ampere (MVA) rating indicates its maximum power output capacity. The transformers included in the PV modules are rated at 1-MVA whereas the transformers at each Project's substation are rated at 25-MVA.

Transformers are designed and catalogued by MVA rating. The American National Standards Institute and the International Electrotechnical Commission have established methodologies for measurement of noise from transformers and other electrical devices. Measurements involve taking reference sound level measurements using microphones positioned 0.3 m (1 foot) from a tautly drawn string that encircles the device at a height above grade set at one-half the overall height of the device. The transformer noise output is the average of all measurements taken around the perimeter, incorporating contributions from both cooling fans and auxiliary equipment. The NEMA published standards TR1-1993 (R2000) also establishes the maximum noise level allowed for transformers, voltage regulators, and shunt reactors based on the equipment's method of cooling its dielectric fluid (air-cooled versus oil-cooled) and the electric power rating.

Based on CEQA guidance, an incremental increase of 5 dBA over the existing L_{eq} is identified as the threshold when adverse noise impacts may begin to occur. Receptors that experience Project-related received sound levels below the 5 dBA cumulative increase threshold have a lower likelihood of disturbance. For example, if a background sound level of 35 dBA is assumed, the total cumulative sound level of 40 dBA, or 5 dBA above the estimated background sound level, would become the onset threshold of potential adverse noise impact per CEQA guidelines. For areas where potential exceedances of the 5 dBA threshold might be expected, a second level noise mitigation evaluation may be necessary towards evaluating potential exceedance condition(s). This second level noise mitigation evaluation involves the re-evaluation of transformer NEMA ratings used at the on-site substations and is described in further detail below. The NEMA sound rating refers to the sound generated by the substation transformer and not the received sound level at the nearest residence.

Numerical modeling was used to estimate the maximum substation transformer sound source level, or NEMA sound rating, which would result in received sound levels remaining at or below 40 dBA at the nearest residence to the Project 1 substation transformer. The estimated NEMA sound rating is based on preliminary Project design information that best represents their expected acoustic performance, inclusive of a standardized engineering safety factor. The surface area [S] of the substation transformers was estimated using the following empirical relationship based on rated capacity [MVA]:

$$10\log [S] = 14 + 2.5\log [MVA]$$

Assuming substation transformer dimensions of an 11-foot length, 10-foot width, and 15-foot height, the above equation yields an estimated surface area of 604.6 square feet (or 56.2 m^2). Using the surface area and MVA rating, the maximum substation transformer NEMA sound

rating was determined for Project 1 and is 74 dB which is also listed in Table 4.11-8. NEMA sound ratings are associated with the sound source level at the substation transformer. Mitigation of transformer noise would be achieved through design compliance with these sound levels and would ensure that Project 1 substation transformers comply with CEQA by not increasing the sound levels in the area and at the closest residences by more than 5 dBA over the assumed background ambient of 35 dBA. Currently, substation design is only at a schematic level, but any substation transformer installed would conform to all relevant NEMA standards. The exact sound power profile would be dependent upon the technology the Applicant ultimately chooses to install. However, actual equipment installed for Project 1 would be designed to have a similar NEMA sound power profile or less, than those NEMA ratings assumed for this analysis. Therefore Project 1 sound levels would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project and would be less than significant.

Table 4.11-8 Project 1 Substation Transformer NEMA Sound Level Rating

Project	Distance to Nearest NSR from Substation Transformer (feet)	Maximum NEMA Transformer Sound Rating for Design 40 (dB) at Source
Project 1	325	74

Note: Sound Rating is at the transformer location, not at an NSR.

4.11.5.2.2 Project 2 and Gen-tie Line

Construction Impacts

Project 2 construction noise would be similar to that for Project 1, therefore the discussion in this section is focused on the differences between Project 1 and Project 2, namely received sound levels at the nearest noise sensitive receptor. Construction at Project 2 would take place between the first and third quarters of 2014. Received sound levels would fluctuate, depending on the construction activity, equipment type, and distance between noise source and receiver. Sound from construction equipment would vary dependent on the construction phase and the number and class of equipment at a location at any given time.

The variation in power and usage imposes additional complexity in characterizing construction noise levels. Expected sound levels for each phase of construction are presented in Table 4.11-9. Each construction phase identified would require different types of construction equipment. The estimated composite site noise level is based on the assumption that all equipment would operate at a given usage load factor, over a standard 8-hour workday, to calculate the composite average daytime L_{eq}. The load factor accounts for the fraction of time that the equipment is in use over the specified time period. The composite noise level from several pieces of equipment operating during the same phase is obtained from decibel addition of the L_{eq} of each individual unit.

Table 4.11-9 Summary of Construction Noise by Phase at Nearest Residence from Project 2 Centroid

Construction Phase	Composite Noise Level from Project 2 Centroid 1,545 ft (489 m) Average Daytime dBA
Demolition	N/A
Mow (site preparation)	60
Fine Grading – Road Construction	54
Trenching / Infrastructure Construction	56
PV Installation (pile driving)	66
Building Construction / PV Installation	57

Data compiled and methodologies developed in part from:
Federal Highway Administration, "Construction Noise Handbook", Report FHWA-HEP-06-015, 2006.
Communication with equipment manufacturers of comparable equipment.
Construction phases such as mass grading are described in 3.4 of the EIR.

The same pile driver would be used to install the PV modules at Project 2 as that for Project 1. Assuming a load or usage factor of 20 percent (FHWA 2006), it is expected that sound from pile driving would attenuate to 83 dBA at the nearest residence and would attenuate to below 60 dBA within 1 linear mile of this construction activity, depending on meteorological and topographical effects The average noise level from pile driving is predicted to be 66 dBA, similar to the level resulting at the Project centroid located 1,545 feet from the nearest residence. Because sound levels would be higher than 60 dBA at times, and up to 83 dBA at the closest residence, an exceedance of the County's construction noise level limits is anticipated. Therefore, where pile driving is planned to occur within 3,000 feet of an occupied NSR an acoustic curtain or sound barrier with a sound transmission class of 19 or greater will be used to reduce received sound levels at the NSRs to levels at or below the County's construction noise limit of 60 dBA. Pile driving is expected to last more than 10 days and a variance to the noise ordinance in the County of Los Angeles would be required. However, with mitigation measures implemented, including the use of sound curtains or barriers during pile driving, construction sound levels would be less than significant.

Operations Impacts

Project 2 would generate power using PV modules mounted in rows of parallel racks. The Project is anticipated to be unmanned during normal operation. Systems monitoring would be completed remotely and onsite staff would be limited to repair or cleaning of the PV modules. Maintenance staff would visit two times per year to clean the PV modules, seasonally to clear vegetation, and as needed to perform other general maintenance activities. See Section 3.4.11 for a description of maintenance activities including the frequency of such activities.

Sound sources considered in the operational acoustic analysis include the inverters and transformers associated with the PV modules, the substation, and the transmission line. The principal sources of noise are the cooling-ventilation fans, the electrical components of the inverters and the step-up transformers at the on-site substations. Gen-tie lines for Project 2 would be underground to the extent practicable, and therefore sound from the gen-tie line would not be perceptible. Additionally, because corona noise is typically attributed to higher voltage lines of approximately 345 kV and above, noise complaints from the Project's lower voltage

transmission lines (66 kV) are not anticipated. These sound sources are all predicted to be less than 35 dBA at nearby NSRs and would be less than significant.

Each PV module 1 MW block would have two inverters and a ventilation fan housed inside a pre-fabricated enclosure and one transformer mounted on a concrete pad. Each inverter generates a noise level of about 75 dBA at a distance of 10 feet and it is expected that the enclosure would provide 15 to 20 dBA of noise reduction, reducing the inverter noise to approximately 58-63 dBA at a distance of 10 feet from the enclosure. The type of PV module transformer to be implemented on the Project is unknown at this point, but generally transformers produce a noise level of about 58 dBA at a distance of 6 feet. The PV module transformers and inverters would be centrally located within each 1 MW block of solar modules. No solar arrays would be located within 50 feet of the property line and would be expected to generate low noise levels (i.e., 35 dBA or less) beyond the Project extents; however, the exact sound level of which would be dependent upon the technology the Applicant ultimately chooses to install. PV station transformers and power inverters located within the facility are generally considered a low level source of noise, limited to daytime hours when the solar arrays are generating electricity and anticipated to result in received sound levels that are at or below the assumed 35 dBA L_{eq} existing ambient sound level and would be less than significant.

The Project 2 substations would have switching, protection and control equipment, and a transformer, which generate the sound generally described as a low humming. There are three main sound sources associated with a transformer: core noise, load noise, and noise generated by the operation of the cooling equipment. The core is the principal noise source and does not vary significantly with electrical load. The load noise is primarily caused by the load current in the substation transformer's conducting coils (or windings) and consequently the main frequency of this sound is twice the supply frequency: 100 Hz for 50 Hz substation transformers and 120 Hz for 60 Hz substation transformers. The cooling equipment (fans) may also be an important noise component, depending on fan design. During the air forced cooling method, cooling fan noise is produced in addition to the core noise. The resulting audible sound is a combination of hum and the broadband fan noise. After sunset, when the plant no longer receives solar radiation, the inverters would not produce noise and the transformers would be energized but likely operating under low noise condition using natural draft cooling, but not in operation (no fans) due to lower nighttime heat loads. Breaker noise is a sound event of very short duration buzz lasting approximately 5 to 10 seconds, expected to occur infrequently throughout the year. Just as horsepower ratings designate the power capacity of an electric motor, a substation transformer's MVA rating indicates its maximum power output capacity. The transformers included in the PV modules are rated at 1-MVA whereas the transformers at each Project's substation are rated at 25-MVA.

Transformers are designed and catalogued by MVA rating. The American National Standards Institute and the International Electrotechnical Commission have established methodologies for measurement of noise from transformers and other electrical devices. Measurements involve taking reference sound level measurements using microphones positioned 0.3 m (1 foot) from a tautly drawn string that encircles the device at a height above grade set at one-half the overall height of the device. The transformer noise output is the average of all measurements taken around the perimeter, incorporating contributions from both cooling fans and auxiliary equipment. The NEMA published standards TR1-1993 (R2000) also establishes the maximum

noise level allowed for transformers, voltage regulators, and shunt reactors based on the equipment's method of cooling its dielectric fluid (air-cooled versus oil-cooled) and the electric power rating.

Based on CEQA guidance, an incremental increase of 5 dBA over the existing L_{eq} is identified as the threshold when adverse noise impacts may begin to occur. Receptors that experience Project-related received sound levels below the 5 dBA cumulative increase threshold have a lower likelihood of disturbance. For example, if a background sound level of 35 dBA is assumed, the total cumulative sound level of 40 dBA, or 5 dBA above the estimated background sound level, would become the onset threshold of potential adverse noise impact per CEQA guidelines. For areas where potential exceedances of the 5 dBA threshold might be expected, a second level noise mitigation evaluation may be necessary towards evaluating potential exceedance condition(s). This second level noise mitigation evaluation involves the re-evaluation of transformer NEMA ratings used at the on-site substations and is described in further detail below. The NEMA sound rating refers to the sound generated by the substation transformer and not the received sound level at the nearest residence.

Numerical modeling was used to estimate the maximum substation transformer sound source level, or NEMA sound rating, which would result in received sound levels remaining at or below 40 dBA at the nearest residence to the Project 1 substation transformer. The estimated NEMA sound rating is based on preliminary Project design information that best represents their expected acoustic performance, inclusive of a standardized engineering safety factor. The surface area [S] of the substation transformers was estimated using the following empirical relationship based on rated capacity [MVA]:

$$10\log [S] = 14 + 2.5\log [MVA]$$

Assuming substation transformer dimensions of an 11-foot length, 10-foot width, and 15-foot height, the above equation yields an estimated surface area of 604.6 square feet (or 56.2 m^2). Using the surface area and MVA rating, the maximum substation transformer NEMA sound rating was determined for Project 2 and is 81 dB which is also listed in Table 4.11-10. NEMA sound ratings are associated with the sound source level at the substation transformer. Mitigation of transformer noise would be achieved through design compliance with these sound levels and would ensure that Project 2 substation transformers comply with CEQA by not increasing the sound levels in the area and at the closest residences by more than 5 dBA over the assumed background ambient of 35 dBA. Currently, substation design is only at a schematic level, but any substation transformer installed would conform to all relevant NEMA standards. The exact sound power profile would be dependent upon the technology the Applicant ultimately chooses to install. However, actual equipment installed for Project 2 would be designed to have a similar NEMA sound power profile or less, than those NEMA ratings assumed for this analysis. Therefore Project 2 sound levels would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project and would be less than significant.

Table 4.11-10 Project 2 Substation Transformer NEMA Sound Level Rating

Project	Distance to Nearest NSR from Substation Transformer (feet)	Maximum NEMA Transformer Sound Rating for Design 40 (dB) at Source
Project 2	1,511	81

Note: Sound Rating is at the transformer location, not at an NSR.

4.11.5.2.3 Project 3 and Gen-tie Line

Construction Impacts

Project 3 construction noise would be similar to that for Project 1 therefore the discussion in this section is focused on the differences between Project 1 and Project 3, namely received sound levels at the nearest noise sensitive receptor. Construction at Project 3 would take place between the second quarter of 2014 and the fourth quarter of 2014. Received sound levels would fluctuate, depending on the construction activity, equipment type, and distance between noise source and receiver. Sound from construction equipment would vary dependent on the construction phase and the number and class of equipment at a location at any given time.

The variation in power and usage imposes additional complexity in characterizing construction noise levels. Expected sound levels for each phase of construction are presented in Table 4.11-11. Each construction phase identified would require different types of construction equipment. The estimated composite site noise level is based on the assumption that all equipment would operate at a given usage load factor, over a standard 8-hour workday, to calculate the composite average daytime L_{eq}. The load factor accounts for the fraction of time that the equipment is in use over the specified time period. The composite noise level from several pieces of equipment operating during the same phase is obtained from decibel addition of the L_{eq} of each individual unit.

Table 4.11-11 Summary of Construction Noise by Phase at Nearest Residence from Project 3 Centroid

Construction Phase	Composite Noise Level from Project 3 Centroid 1,271 ft (387 m) Average Daytime dBA
Demolition	N/A
Mow (site preparation)	61
Fine Grading – Road Construction	58
Trenching / Infrastructure Construction	58
PV Installation (pile driving)	68
Building Construction / PV Installation	59

Data compiled and methodologies developed in part from:
Federal Highway Administration, "Construction Noise Handbook", Report FHWA-HEP-06-015, 2006.
Communication with equipment manufacturers of comparable equipment.

The same pile driver would be used to install the PV modules at Project 3 as that for Project 1. Assuming a load or usage factor of 20 percent (FHWA 2006), it is expected that sound from pile driving would attenuate to 88 dBA at the nearest residence and would attenuate to below 60 dBA within 1 linear mile of this construction activity, depending on meteorological and topographical effects. The average noise level from pile driving is predicted to be 68 dBA similar to the level resulting at the Project centroid located 1271 feet from the nearest residence.

Because sound levels would be higher than 60 dBA at times, and up to 88 dBA at the closest residence, an exceedance of the County's construction noise level limits is anticipated. Therefore, where pile driving is planned to occur within 3,000 feet of an occupied NSR an acoustic curtain or sound barrier with a sound transmission class of 19 or greater will be used to reduce received sound levels at the NSRs to levels at or below the County's construction noise limit of 60 dBA. If pile driving is expected to last more than 10 days, a variance to the noise ordinance in the County of Los Angeles would be required. However, with mitigation measures implemented, including sound curtains or barriers during pile driving, construction sound levels would be less than significant.

Operations Impacts

Project 3 would generate power using PV modules mounted in rows of parallel racks. The Project is anticipated to be unmanned during normal operation. Systems monitoring would be completed remotely and onsite staff would be limited to repair or cleaning of the PV modules. Maintenance staff would visit two times per year to clean the PV modules, seasonally to clear vegetation, and as needed to perform other general maintenance activities. See Section 3.4.11 for a description of maintenance activities including the frequency of such activities.

Sound sources considered in the operational acoustic analysis include the inverters and transformers associated with the PV modules, the substation, and the transmission line. The principal sources of noise are the cooling-ventilation fans, the electrical components of the inverters and the step-up transformers at the on-site substations. Gen-tie lines for Project 3 would be above ground and could be a source of corona noise. However, because corona noise is typically attributed to higher voltage lines of approximately 345 kV and above, noise complaints from the Project's lower voltage transmission lines (66 kV) are not anticipated. These sound sources are all predicted to be less than 35 dBA at nearby NSRs and would be than significant.

Each PV module 1 MW block would have two inverters and a ventilation fan housed inside a pre-fabricated enclosure and one transformer mounted on a concrete pad. Each inverter generates a noise level of about 75 dBA at a distance of 10 feet and it is expected that the enclosure would provide 15 to 20 dBA of noise reduction, reducing the inverter noise to approximately 58-63 dBA at a distance of 10 feet from the enclosure. The type of PV module transformer to be implemented on the Project is unknown at this point, but generally transformers produce a noise level of about 58 dBA at a distance of 6 feet. The PV module transformers and inverters would be centrally located within each 1 MW block of solar modules. No solar arrays would be located within 50 feet of the property line and would be expected to generate low noise levels (i.e., 35 dBA or less) beyond the Project extents; however, the exact sound level of which would be dependent upon the technology the Applicant ultimately chooses to install. PV station transformers and power inverters located within the facility are generally considered a low level source of noise, limited to daytime hours when the solar arrays are generating electricity and anticipated to result in received sound levels that are at or below the assumed 35 dBA L_{eq} existing ambient sound level and would be less than significant.

The Project 3 substations would have switching, protection and control equipment, and a transformer, which generate the sound generally described as a low humming. There are three

main sound sources associated with a transformer: core noise, load noise, and noise generated by the operation of the cooling equipment. The core is the principal noise source and does not vary significantly with electrical load. The load noise is primarily caused by the load current in the substation transformer's conducting coils (or windings) and consequently the main frequency of this sound is twice the supply frequency: 100 Hz for 50 Hz substation transformers and 120 Hz for 60 Hz substation transformers. The cooling equipment (fans) may also be an important noise component, depending on fan design. During the air forced cooling method, cooling fan noise is produced in addition to the core noise. The resulting audible sound is a combination of hum and the broadband fan noise. After sunset, when the plant no longer receives solar radiation, the inverters would not produce noise and the transformers would be energized but likely operating under low noise condition using natural draft cooling, but not in operation (no fans) due to lower nighttime heat loads. Breaker noise is a sound event of very short duration buzz lasting approximately 5-10 seconds, expected to occur infrequently throughout the year. Just as horsepower ratings designate the power capacity of an electric motor, a substation transformer's MVA rating indicates its maximum power output capacity. The transformers included in the PV modules are rated at 1-MVA whereas the transformers at each Project's substation are rated at 25-MVA.

Transformers are designed and catalogued by MVA rating. The American National Standards Institute and the International Electrotechnical Commission have established methodologies for measurement of noise from transformers and other electrical devices. Measurements involve taking reference sound level measurements using microphones positioned 0.3 m (1 foot) from a tautly drawn string that encircles the device at a height above grade set at one-half the overall height of the device. The transformer noise output is the average of all measurements taken around the perimeter, incorporating contributions from both cooling fans and auxiliary equipment. The NEMA published standards TR1-1993 (R2000) also establishes the maximum noise level allowed for transformers, voltage regulators, and shunt reactors based on the equipment's method of cooling its dielectric fluid (air-cooled versus oil-cooled) and the electric power rating.

Based on CEQA guidance, an incremental increase of 5 dBA over the existing L_{eq} is identified as the threshold when adverse noise impacts may begin to occur. Receptors that experience Project-related received sound levels below the 5 dBA cumulative increase threshold have a lower likelihood of disturbance. For example, if a background sound level of 35 dBA is assumed, the total cumulative sound level of 40 dBA, or 5 dBA above the estimated background sound level, would become the onset threshold of potential adverse noise impact per CEQA guidelines. For areas where potential exceedances of the 5 dBA threshold might be expected, a second level noise mitigation evaluation may be necessary towards evaluating potential exceedance condition(s). This second level noise mitigation evaluation involves the re-evaluation of transformer NEMA ratings used at the on-site substations and is described in further detail below. The NEMA sound rating refers to the sound generated by the substation transformer and not the received sound level at the nearest residence.

Numerical modeling was used to estimate the maximum substation transformer sound source level, or NEMA sound rating, which would result in received sound levels remaining at or below 40 dBA at the nearest residence to the Project 3 substation transformer. The estimated NEMA sound rating is based on preliminary Project design information that best represents their

expected acoustic performance, inclusive of a standardized engineering safety factor. The surface area [S] of the substation transformers was estimated using the following empirical relationship based on rated capacity [MVA]:

$$10\log [S] = 14 + 2.5\log [MVA]$$

Assuming substation transformer dimensions of an 11-foot length, 10-foot width, and 15-foot height, the above equation yields an estimated surface area of 604.6 square feet (or 56.2 m^2). Using the surface area and MVA rating, the maximum substation transformer NEMA sound rating was determined for Project 3 and is 74 dB which is also listed in Table 4.11-12. NEMA sound ratings are associated with the sound source level at the substation transformer. Mitigation of transformer noise would be achieved through design compliance with these sound levels and would ensure that Project 3 substation transformers comply with CEQA by not increasing the sound levels in the area and at the closest residences by more than 5 dBA over the assumed background ambient of 35 dBA. Currently, substation design is only at a schematic level, but any substation transformer installed would conform to all relevant NEMA standards. The exact sound power profile would be dependent upon the technology the Applicant ultimately chooses to install. However, actual equipment installed for Project 3 would be designed to have a similar NEMA sound power profile or less, than those NEMA ratings assumed for this analysis. Therefore Project 3 sound levels would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project and would be less than significant.

Table 4.11-12 Project 3 Substation Transformer NEMA Sound Level Rating

Project	Distance to Nearest NSR from Substation Transformer (feet)	Maximum NEMA Transformer Sound Rating for Design 40 (dB) at Source
Project 3	650	74

Note: Sound Rating is at the transformer location, not at an NSR.

4.11.5.2.4 Project 4 and Gen-tie Line

Construction Impacts

Project 4 construction noise would be similar to that for Project 1 therefore the discussion in this section is focused on the differences between Project 1 and Project 4, namely received sound levels at the nearest noise sensitive receptor. Construction at Project 4 would take place between the first and fourth quarters of 2014. Received sound levels would fluctuate, depending on the construction activity, equipment type, and distance between noise source and receiver. Sound from construction equipment would vary dependent on the construction phase and the number and class of equipment at a location at any given time.

The variation in power and usage imposes additional complexity in characterizing construction noise levels. Expected sound levels for each phase of construction are presented in Table 4.11-13. Each construction phase identified would require different types of construction equipment. The estimated composite site noise level is based on the assumption that all equipment would operate at a given usage load factor, over a standard 8-hour workday, to calculate the composite average daytime L_{eq}. The load factor accounts for the fraction of time

that the equipment is in use over the specified time period. The composite noise level from several pieces of equipment operating during the same phase is obtained from decibel addition of the L_{eq} of each individual unit.

Table 4.11-13 Summary of Construction Noise by Phase at Nearest Residence from Project 4 Centroid

Construction Phase	Composite Noise Level from Project 4 Centroid 887 ft (270 m) Average Daytime dBA
Demolition	65
Mow (site preparation)	64
Fine Grading – Road Construction	63
Trenching / Infrastructure Construction	64
PV Installation (pile driving)	71
Building Construction / PV Installation	63

Data compiled and methodologies developed in part from:
Federal Highway Administration, "Construction Noise Handbook", Report FHWA-HEP-06-015, 2006.
Communication with equipment manufacturers of comparable equipment.
Construction phases such as "mow " are described in 3.4 of the EIR.

The same pile driver would be used to install the PV modules at Project 4 as that for Project 1. Assuming a load or usage factor of 20 percent (FHWA 2006), it is expected that sound from pile driving would attenuate to 94 dBA at the nearest residence and would attenuate to below 60 dBA within 1 linear mile of this construction activity, depending on meteorological and topographical effects. Because sound levels would be higher than 60 dBA at times, and up to 94 dBA at the closest residence, an exceedance of the County's construction noise level limits is anticipated. Therefore, where pile driving is planned to occur within 3000 feet of an occupied NSR an acoustic curtain or sound barrier with a sound transmission class of 19 or greater will be used to reduce received sound levels at the NSRs to levels at or below the County's construction noise limit of 60 dBA. The average noise level from pile driving is predicted to be 71 dBA, similar to the level resulting at the Project centroid located 887 feet from the nearest residence. Pile driving is expected to last more than 10 days and a variance to the noise ordinance in the County of Los Angeles would be required. However, with mitigation measures implemented, including sound curtains or barriers during pile driving, construction sound levels would be less than significant.

Operations Impacts

Project 4 would generate power using PV modules mounted in rows of parallel racks. The Project is anticipated to be unmanned during normal operation. Systems monitoring would be completed remotely and onsite staff would be limited to repair or cleaning of the PV modules. Maintenance staff would visit two times per year to clean the PV modules, seasonally to clear vegetation, and as needed to perform other general maintenance activities. See Section 3.4.11 for a description of maintenance activities including the frequency of such activities.

Sound sources considered in the operational acoustic analysis include the inverters and transformers associated with the PV modules, the substation, and the transmission line. The principal sources of noise are the cooling-ventilation fans, the electrical components of the inverters and the step-up transformers at the on-site substations. Gen-tie lines for Project 4

would be above ground and could be a source of corona noise. However, because corona noise is typically attributed to higher voltage lines of approximately 345 kV and above, noise complaints from the Project's lower voltage transmission lines (66 kV) are not anticipated. These sound sources are all predicted to be less than 35 dBA at nearby NSRs and would be less than significant.

Each PV module 1 MW block would have two inverters and a ventilation fan housed inside a pre-fabricated enclosure and one transformer mounted on a concrete pad. Each inverter generates a noise level of about 75 dBA at a distance of 10 feet and it is expected that the enclosure would provide 15 to 20 dBA of noise reduction, reducing the inverter noise to approximately 58-63 dBA at a distance of 10 feet from the enclosure. The type of PV module transformer to be implemented on the Project is unknown at this point, but generally transformers produce a noise level of about 58 dBA at a distance of 6 feet. The PV module transformers and inverters would be centrally located within each 1 MW block of solar modules. No solar arrays would be located within 50 feet of the property line and would be expected to generate low noise levels (i.e., 35 dBA or less) beyond the Project extents; however, the exact sound level of which would be dependent upon the technology the Applicant ultimately chooses to install. PV station transformers and power inverters located within the facility are generally considered a low level source of noise, limited to daytime hours when the solar arrays are generating electricity and anticipated to result in received sound levels that are at or below the assumed 35 dBA L_{eq} existing ambient sound level and would be less than significant.

The Project 4 substations would have switching, protection and control equipment, and a transformer, which generate the sound generally described as a low humming. There are three main sound sources associated with a transformer: core noise, load noise, and noise generated by the operation of the cooling equipment. The core is the principal noise source and does not vary significantly with electrical load. The load noise is primarily caused by the load current in the substation transformer's conducting coils (or windings) and consequently the main frequency of this sound is twice the supply frequency: 100 Hz for 50 Hz substation transformers and 120 Hz for 60 Hz substation transformers. The cooling equipment (fans) may also be an important noise component, depending on fan design. During the air forced cooling method, cooling fan noise is produced in addition to the core noise. The resulting audible sound is a combination of hum and the broadband fan noise. After sunset, when the plant no longer receives solar radiation, the inverters would not produce noise and the transformers would be energized but likely operating under low noise condition using natural draft cooling, but not in operation (no fans) due to lower nighttime heat loads. Breaker noise is a sound event of very short duration buzz lasting approximately 5-10 seconds, expected to occur infrequently throughout the year. Just as horsepower ratings designate the power capacity of an electric motor, a substation transformer's MVA rating indicates its maximum power output capacity. The transformers included in the PV modules are rated at 1 MVA whereas the transformers at each Project's substation are rated at 25 MVA.

Transformers are designed and catalogued by MVA rating. The American National Standards Institute and the International Electrotechnical Commission have established methodologies for measurement of noise from transformers and other electrical devices. Measurements involve taking reference sound level measurements using microphones positioned 0.3 m (1 foot) from a tautly drawn string that encircles the device at a height above grade set at one-half the overall

height of the device. The transformer noise output is the average of all measurements taken around the perimeter, incorporating contributions from both cooling fans and auxiliary equipment. The NEMA published standards TR1-1993 (R2000) also establishes the maximum noise level allowed for transformers, voltage regulators, and shunt reactors based on the equipment's method of cooling its dielectric fluid (air-cooled versus oil-cooled) and the electric power rating.

Based on CEQA guidance, an incremental increase of 5 dBA over the existing L_{eq} is identified as the threshold when adverse noise impacts may begin to occur. Receptors that experience Project-related received sound levels below the 5 dBA cumulative increase threshold have a lower likelihood of disturbance. For example, if a background sound level of 35 dBA is assumed, the total cumulative sound level of 40 dBA, or 5 dBA above the estimated background sound level, would become the onset threshold of potential adverse noise impact per CEQA guidelines. For areas where potential exceedances of the 5 dBA threshold might be expected, a second level noise mitigation evaluation may be necessary towards evaluating potential exceedance condition(s). This second level noise mitigation evaluation involves the re-evaluation of transformer NEMA ratings used at the on-site substations and is described in further detail below. The NEMA sound rating refers to the sound generated by the substation transformer and not the received sound level at the nearest residence.

Numerical modeling was used to estimate the maximum substation transformer sound source level, or NEMA sound rating, which would result in received sound levels remaining at or below 40 dBA at the nearest residence to the Project 4 substation transformer. The estimated NEMA sound rating is based on preliminary Project design information that best represents their expected acoustic performance, inclusive of a standardized engineering safety factor. The surface area [S] of the substation transformers was estimated using the following empirical relationship based on rated capacity [MVA]:

$$10\log [S] = 14 + 2.5\log [MVA]$$

Assuming substation transformer dimensions of an 11-foot length, 10-foot width, and 15-foot height, the above equation yields an estimated surface area of 604.6 square feet (or 56.2 m^2). Using the surface area and MVA rating, the maximum substation transformer NEMA sound rating was determined for Project 4 and is 83 dB which is also listed in Table 4.11-14. NEMA sound ratings are associated with the sound source level at the substation transformer. Mitigation of transformer noise would be achieved through design compliance with these sound levels and would ensure that Project 4 substation transformers comply with CEQA by not increasing the sound levels in the area and at the closest residences by more than 5 dBA over the assumed background ambient of 35 dBA. Currently, substation design is only at a schematic level, but any substation transformer installed would conform to all relevant NEMA standards. The exact sound power profile would be dependent upon the technology the Applicant ultimately chooses to install. However, actual equipment installed for Project 4 would be designed to have a similar NEMA sound power profile or less, than those NEMA ratings assumed for this analysis. Therefore Project 4 sound levels would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project and would be less than significant.

Table 4.11-14 Project 4 Substation Transformer NEMA Sound Level Rating

Project	Distance to Nearest NSR from Substation Transformer (feet)	Maximum NEMA Transformer Sound Rating for Design 40 (dB) at Source
Project 4	1,000	77

Note: Sound Rating is at the transformer location, not at an NSR.

4.11.5.2.5 Project 5 and Gen-tie Line

Construction Impacts

Project 5 construction noise would be similar to that for Project 1 therefore the discussion in this section is focused on the differences between Project 1 and Project 5, namely received sound levels at the nearest noise sensitive receptor. Construction at Project 5 would take place between the third quarter of 2014 and the fourth quarter of 2014. Received sound levels would fluctuate, depending on the construction activity, equipment type, and distance between noise source and receiver. Sound from construction equipment would vary dependent on the construction phase and the number and class of equipment at a location at any given time.

The variation in power and usage imposes additional complexity in characterizing construction noise levels. Expected sound levels for each phase of construction are presented in Table 4.11-15. Each construction phase identified would require different types of construction equipment. The estimated composite site noise level is based on the assumption that all equipment would operate at a given usage load factor, over a standard 8-hour workday, to calculate the composite average daytime L_{eq}. The load factor accounts for the fraction of time that the equipment is in use over the specified time period. The composite noise level from several pieces of equipment operating during the same phase is obtained from decibel addition of the L_{eq} of each individual unit.

Table 4.11-15 Summary of Construction Noise by Phase at Nearest Residence from Project 5 Centroid

Construction Phase	Composite Noise Level from Project 5 Centroid 1,807 ft (551 m) Average Daytime dBA
Demolition	N/A
Mow (site preparation)	58
Fine Grading – Road Construction	54
Trenching / Infrastructure Construction	55
PV Installation (pile driving)	65
Building Construction / PV Installation	54

Data compiled and methodologies developed in part from:
Federal Highway Administration, "Construction Noise Handbook", Report FHWA-HEP-06-015, 2006.
Communication with equipment manufacturers of comparable equipment.
Construction phases such as mass grading are described in 3.4 of the EIR.

The same pile driver would be used to install the PV modules at Project 5 as that for Project 1. Assuming a load or usage factor of 20 percent (FHWA 2006), it is expected that sound from pile driving would attenuate to 77 dBA at the nearest residence and would attenuate to below 60 dBA within 1 linear mile of this construction activity, depending on meteorological and topographical effects. The average noise level from pile driving is predicted to be 65 dBA,

similar to the level resulting at the Project centroid located 1,807 feet from the nearest residence. Because sound levels would be higher than 60 dBA at times, and up to 77 dBA at the closest residence, an exceedance of the County's construction noise level limits is anticipated. Therefore, where pile driving is planned to occur within 3,000 feet of an occupied NSR an acoustic curtain or sound barrier with a sound transmission class of 19 or greater will be used to reduce received sound levels at the NSRs to levels at or below the County's construction noise limit of 60 dBA. Pile driving is expected to last more than 10 days and a variance to the noise ordinance in the County of Los Angeles would be required. However, with mitigation measures implemented, including the use of sound curtains or barriers during pile driving, construction sound levels would be less than significant.

Operations Impacts

Project 5 would generate power using PV modules mounted in rows of parallel racks. The Project is anticipated to be unmanned during normal operation. Systems monitoring would be completed remotely and onsite staff would be limited to repair or cleaning of the PV modules. Maintenance staff would visit two times per year to clean the PV modules, seasonally to clear vegetation, and as needed to perform other general maintenance activities. See Section 3.4.11 for a description of maintenance activities including the frequency of such activities.

Sound sources considered in the operational acoustic analysis include the inverters and transformers associated with the PV modules, the substation, and the transmission line. The principal sources of noise are the cooling-ventilation fans, the electrical components of the inverters and the step-up transformers at the on-site substations. Gen-tie lines for Project 5 would be underground and therefore sound from the gen-tie line would not be perceptible. Additionally, because corona noise is typically attributed to higher voltage lines of approximately 345 kV and above, noise complaints from the Project's lower voltage transmission lines (66 kV) are not anticipated. These sound sources are all predicted to be less than 35 dBA at nearby NSRs and would be less than significant.

Each PV module 1 MW block would have two inverters and a ventilation fan housed inside a pre-fabricated enclosure and one transformer mounted on a concrete pad. Each inverter generates a noise level of about 75 dBA at a distance of 10 feet and it is expected that the enclosure would provide 15 to 20 dBA of noise reduction, reducing the inverter noise to approximately 58-63 dBA at a distance of 10 feet from the enclosure. The type of PV module transformer to be implemented on the Project is unknown at this point, but generally transformers produce a noise level of about 58 dBA at a distance of 6 feet. The PV module transformers and inverters would be centrally located within each 1 MW block of solar modules. No solar arrays would be located within 50 feet of the property line and would be expected to generate low noise levels (i.e., 35 dBA or less) beyond the Project extents; however, the exact sound level of which would be dependent upon the technology the Applicant ultimately chooses to install. PV station transformers and power inverters located within the facility are generally considered a low level source of noise, limited to daytime hours when the solar arrays are generating electricity and anticipated to result in received sound levels that are at or below the assumed 35 dBA L_{eq} existing ambient sound level and would be less than significant.

The Project 5 substations would have switching, protection and control equipment, and a transformer, which generate the sound generally described as a low humming. There are three main sound sources associated with a transformer: core noise, load noise, and noise generated by the operation of the cooling equipment. The core is the principal noise source and does not vary significantly with electrical load. The load noise is primarily caused by the load current in the substation transformer's conducting coils (or windings) and consequently the main frequency of this sound is twice the supply frequency: 100 Hz for 50 Hz substation transformers and 120 Hz for 60 Hz substation transformers. The cooling equipment (fans) may also be an important noise component, depending on fan design. During the air forced cooling method, cooling fan noise is produced in addition to the core noise. The resulting audible sound is a combination of hum and the broadband fan noise. After sunset, when the plant no longer receives solar radiation, the inverters would not produce noise and the transformers would be energized but likely operating under low noise condition using natural draft cooling, but not in operation (no fans) due to lower nighttime heat loads. Breaker noise is a sound event of very short duration buzz lasting approximately 5-10 seconds, expected to occur infrequently throughout the year. Just as horsepower ratings designate the power capacity of an electric motor, a substation transformer's MVA rating indicates its maximum power output capacity. The transformers included in the PV modules are rated at 1 MVA whereas the transformers at each Project's substation are rated at 25 MVA.

Transformers are designed and catalogued by MVA rating. The American National Standards Institute and the International Electrotechnical Commission have established methodologies for measurement of noise from transformers and other electrical devices. Measurements involve taking reference sound level measurements using microphones positioned 0.3 m (1 foot) from a tautly drawn string that encircles the device at a height above grade set at one-half the overall height of the device. The transformer noise output is the average of all measurements taken around the perimeter, incorporating contributions from both cooling fans and auxiliary equipment. The NEMA published standards TR1-1993 (R2000) also establishes the maximum noise level allowed for transformers, voltage regulators, and shunt reactors based on the equipment's method of cooling its dielectric fluid (air-cooled versus oil-cooled) and the electric power rating.

Based on CEQA guidance, an incremental increase of 5 dBA over the existing L_{eq} is identified as the threshold when adverse noise impacts may begin to occur. Receptors that experience Project-related received sound levels below the 5 dBA cumulative increase threshold have a lower likelihood of disturbance. For example, if a background sound level of 35 dBA is assumed, the total cumulative sound level of 40 dBA, or 5 dBA above the estimated background sound level, would become the onset threshold of potential adverse noise impact per CEQA guidelines. For areas where potential exceedances of the 5 dBA threshold might be expected, a second level noise mitigation evaluation may be necessary towards evaluating potential exceedance condition(s). This second level noise mitigation evaluation involves the re-evaluation of transformer NEMA ratings used at the on-site substations and is described in further detail below. The NEMA sound rating refers to the sound generated by the substation transformer and not the received sound level at the nearest residence.

Numerical modeling was used to estimate the maximum substation transformer sound source level, or NEMA sound rating, which would result in received sound levels remaining at or below

40 dBA at the nearest residence to the Project 5 substation transformer. The estimated NEMA sound rating is based on preliminary Project design information that best represents their expected acoustic performance, inclusive of a standardized engineering safety factor. The surface area [S] of the substation transformers was estimated using the following empirical relationship based on rated capacity [MVA]:

$$10\log [S] = 14 + 2.5\log [MVA]$$

Assuming substation transformer dimensions of an 11-foot length, 10-foot width, and 15-foot height, the above equation yields an estimated surface area of 604.6 square feet (or 56.2 m^2). Using the surface area and MVA rating, the maximum substation transformer NEMA sound rating was determined for Project 5 and is 82 dB which is also listed in Table 4.11-16. NEMA sound ratings are associated with the sound source level at the substation transformer. Mitigation of transformer noise would be achieved through design compliance with these sound levels and would ensure that Project 5 substation transformers comply with CEQA by not increasing the sound levels in the area and at the closest residences by more than 5 dBA over the assumed background ambient of 35 dBA. Currently, substation design is only at a schematic level, but any substation transformer installed would conform to all relevant NEMA standards. The exact sound power profile would be dependent upon the technology the Applicant ultimately chooses to install. However, actual equipment installed for Project 5 would be designed to have a similar NEMA sound power profile or less, than those NEMA ratings assumed for this analysis. Therefore Project 5 sound levels would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project and would be less than significant.

Table 4.11-16 Project 5 Substation Transformer NEMA Sound Level Rating

Project	Distance to Nearest NSR from Substation Transformer (feet)	Maximum NEMA Transformer Sound Rating for Design (dB) at Source
Project 5	748	82

Note: Sound Rating is at the transformer location, not at an NSR.

4.11.5.2.6 Project 6 and Gen-tie Line

Construction Impacts

Project 6 construction noise would be similar to that for Project 1 therefore the discussion in this section is focused on the differences between Project 1 and Project 6, namely received sound levels at the nearest noise sensitive receptor. Construction at Project 6 would take place during the first quarter of 2014. Received sound levels would fluctuate, depending on the construction activity, equipment type, and distance between noise source and receiver. Sound from construction equipment would vary dependent on the construction phase and the number and class of equipment at a location at any given time.

The variation in power and usage imposes additional complexity in characterizing construction noise levels. Expected sound levels for each phase of construction are presented in Table 4.11-17. Each construction phase identified would require different types of construction equipment. The estimated composite site noise level is based on the assumption that all

equipment would operate at a given usage load factor, over a standard 8-hour workday, to calculate the composite average daytime L_{eq}. The load factor accounts for the fraction of time that the equipment is in use over the specified time period. The composite noise level from several pieces of equipment operating during the same phase is obtained from decibel addition of the L_{eq} of each individual unit.

Table 4.11-17 Summary of Construction Noise by Phase at Nearest Residence from Project 6 Centroid

Construction Phase	Composite Noise Level from Project 6 Centroid 1,300 ft (396 m) Average Daytime dBA
Demolition	N/A
Mow (site preparation)	61
Fine Grading – Road Construction	57
Trenching / Infrastructure Construction	57
PV Installation (pile driving)	68
Building Construction / PV Installation	56

Data compiled and methodologies developed in part from:
Federal Highway Administration, "Construction Noise Handbook", Report FHWA-HEP-06-015, 2006.
Communication with equipment manufacturers of comparable equipment.
Construction phases such as mass grading are described in 3.4 of the EIR.

The same pile driver would be used to install the PV modules at Project 6 as that for Project 1. Assuming a load or usage factor of 20 percent (FHWA 2006), it is expected that sound from pile driving would attenuate to 76 dBA at the nearest residence and would attenuate to below 60 dBA within 1 linear mile of this construction activity, depending on meteorological and topographical effects. The average noise level from pile driving is predicted to be 68 dBA, similar to the level resulting at the Project centroid located 1300 feet from the nearest residence. Because sound levels would be higher than 60 dBA at times, and up to 68 dBA at the closest residence, an exceedance of the County's construction noise level limits is anticipated. Therefore, where pile driving is planned to occur within 3000 feet of an occupied NSR an acoustic curtain or sound barrier with a sound transmission class of 19 or greater will be used to reduce received sound levels at the NSRs to levels at or below the County's construction noise limit of 60 dBA. Pile driving is expected to last more than 10 days and a variance to the noise ordinance in the County of Los Angeles would be required. However, with mitigation measures implemented, including the use of sound curtains or barriers during pile driving, construction sound levels would be less than significant.

Operations Impacts

Project 6 would generate power using PV modules mounted in rows of parallel racks. The Project is anticipated to be unmanned during normal operation. Systems monitoring would be completed remotely and onsite staff would be limited to repair or cleaning of the PV modules. Maintenance staff would visit two times per year to clean the PV modules, seasonally to clear vegetation, and as needed to perform other general maintenance activities. See Section 3.4.11 for a description of maintenance activities including the frequency of such activities.

Sound sources considered in the operational acoustic analysis include the inverters and transformers associated with the PV modules, and the transmission line. There is no substation

planned for Project 6. The principal sources of noise are the cooling-ventilation fans and the electrical components of the inverters. Gen-tie lines for Project 6 would be aboveground and therefore corona noise could occur. However, because corona noise is typically attributed to higher voltage lines of approximately 345 kV and above, noise complaints from the Project's lower voltage transmission lines (66 kV) are not anticipated. These sound sources are all predicted to be less than 35 dBA at nearby NSRs and would be less than significant.

Each PV module 1 MW block would have two inverters and a ventilation fan housed inside a pre-fabricated enclosure and one transformer mounted on a concrete pad. Each inverter generates a noise level of about 75 dBA at a distance of 10 feet and it is expected that the enclosure would provide 15 to 20 dBA of noise reduction, reducing the inverter noise to approximately 58-63 dBA at a distance of 10 feet from the enclosure. The type of PV module transformer to be implemented on the Project is unknown at this point, but generally transformers produce a noise level of about 58 dBA at a distance of 6 feet. The PV module transformers and inverters would be centrally located within each 1 MW block of solar modules. No solar arrays would be located within 50 feet of the property line and would be expected to generate low noise levels (i.e., 35 dBA or less) beyond the Project extents; however, the exact sound level of which would be dependent upon the technology the Applicant ultimately chooses to install. PV station transformers and power inverters located within the facility are generally considered a low level source of noise, limited to daytime hours when the solar arrays are generating electricity and anticipated to result in received sound levels that are at or below the assumed 35 dBA L_{eq} existing ambient sound level and would be less than significant.

4.11.5.3 Project Impacts: Criterion B – Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

For all of the proposed Projects, the region of interest for noise and vibration issues is typically localized. Groundborne vibrations generally attenuate rapidly with increasing distance from the vibration source. The distances involved depend primarily on the intensity of the vibrations generated by the source, and partly on soil and geologic conditions. Detectable vibrations travel the greatest distance through solid rock and the least distance through loose, unconsolidated soils or saturated soils. For vibration sources such as construction activity and vehicle traffic, the region of influence is typically less than 1,000 feet from the vibration source. Operation of the Projects would not result in an appreciable change in vibration levels and therefor are not discussed further because there would be no significant impact.

4.11.5.3.1 Project 1 and Gen-tie Line

Vibration associated with construction of Project 1 has the potential to be an annoyance to nearby residences. Structural damage to nearby residences from construction activities is unlikely and not anticipated. Vibratory motion is typically described by identifying the PPV (Caltrans 2004) for damage to buildings. To assess the human response to vibration, the rms amplitude is typically used (Caltrans 2004).

The Caltrans Construction Induced Vibration Guidance Manual identifies two impact criteria for buildings and humans. Table 4.11-18 describes impact criteria for buildings and Table 4.11-19 describes impact criteria for humans. Although the rms is typically used to assess human

response, Caltrans has provided threshold guidance for human response relative to PPV to maintain a consistent metric for both human response and structural impacts to buildings.

Table 4.11-18 Caltrans Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans 2004

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 4.11-19 Caltrans Guideline Vibration Annoyance Potential

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: Caltrans 2004

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Installation of the PV solar module foundations requires pile driving and has the potential for vibration impacts to structures and humans. The Applicant is planning to use a pneumatic pile driver which is a type of impact pile driver. Because pile drivers are an impact device, they are considered continuous/frequent sources of vibration. Other construction activities are assumed to be less intensive than pile driving and thus would have lower PPV than pile driving. Therefore, vibration levels from pile driving are considered worst case for solar facility construction. Caltrans vibration guidance provides the following equation to calculate PPV at sensitive receptors, such as residences:

$$PPV_{Impact\ Pile\ Driver} = PPV_{Ref} (25/D)^n \times (E_{equip}/E_{Ref}) \text{ (in/sec)}$$

Where:

PPVRef = 0.65 in/sec for a reference pile driver at 25 feet
D = distance from pile driver to the receiver in feet
n = 1.1 is a value related to the vibration attenuation rate through ground
ERef = 36,000 foot-pound (ft-lb) (rated energy of reference pile driver)
Eequip = rated energy of impact pile driver in ft-lbs

Using the referenced formula and an assumed 80,000 ft-lb rated energy for the impact pile driver, the calculated PPV at the nearest residence when construction is occurring at the centroid for Project 1 is listed in Table 4.11-20.

Table 4.11-20 Project 1 Pile Driving Vibration Analysis

Project site centroid distance to nearest residence	Estimated Pile Driving PPV
Project 1 – 2,507 feet	0.01

The vibration level at the site centroid would be considered the "average" vibration level from pile driving for Project 1. Slightly higher vibration levels (0.04 PPV) would be experienced when pile driving is conducted closer to NSRs as described in the noise technical reports in the appendices of this EIR. According to Caltrans guidance, a PPV of 0.01 would not damage the nearest residential structure, and would be barely perceptible to humans and a 0.04 PPV would be distinctly perceptible. Like noise from pile driving, vibration from pile driving would only last for a few weeks at most and would move throughout the Project rapidly with no one NSR experiencing the peak 0.04 PPV for more than an few hours and would not damage structures. Therefore, exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels due to the construction of Project 1 and the gen-tie line will be less than significant.

4.11.5.3.2 Project 2 and Gen-tie Line

Vibration impact determinations for Project 2 utilized the same methods and approach as discussed for Project 1. The distance from Project 2 construction activities is different than that for Project 1 with the nearest sensitive receptor located 1,535 feet from the project's centroid. Using the Caltrans referenced formula and an assumed 80,000 ft-lb rated energy for the impact pile driver, the calculated PPV at the nearest residence when construction is occurring at the centroid for Project 2 is listed in Table 4.11-21.

Table 4.11-21 Project 2 Pile Driving Vibration Analysis

Project site centroid distance to nearest residence	Estimated Pile Driving PPV
Project 2 – 1,535 feet	0.01

The vibration level at the site centroid could be considered the Project's "average" vibration level from pile driving. According to Caltrans guidance, a PPV of 0.01 would not damage the nearest residential structure, and would be barely perceptible to humans. For very brief periods of time a 0.09 PPV is predicted for the nearest NSR, which would be distinctly to strongly perceptible, but would not damage structures. Like noise from pile driving, vibration from pile driving would only last for a few weeks at most and would move throughout the Project rapidly with no one NSR experiencing the peak 0.09 PPV for more than an few hours and would not damage structures. Therefore, exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels due to the construction of Project 2 and the gen-tie line will be less than significant.

4.11.5.3.3 Project 3 and Gen-tie Line

Vibration impact determinations for Project 3 utilized the same methods and approach as discussed for Project 1. The distance from Project 3 construction activities is different than that for Project 1 with the nearest sensitive receptor located 1,271 feet from the project's centroid. Using the Caltrans referenced formula and an assumed 80,000 ft-lb rated energy for the impact pile driver, the calculated PPV at the nearest residence when construction is occurring at the centroid for Project 3 is listed in Table 4.11-22.

Table 4.11-22 Project 3 Pile Driving Vibration Analysis

Project site centroid distance to nearest residence	Estimated Pile Driving PPV
Project 3 – 1,271 feet	0.01

The vibration level at the site centroid could be considered the Project's "average" vibration level from pile driving. According to Caltrans guidance, a PPV of 0.01 would not damage the nearest residential structure, and would be barely perceptible to humans. For very brief periods of time a 0.1 PPV is predicted for the nearest NSR, which would be strongly perceptible, but would not damage structures. Like noise from pile driving, vibration from pile driving would only last for a few weeks at most and would move throughout the Project rapidly with no one NSR experiencing the peak 0.1 PPV for more than an few hours and would not damage structures. Therefore, exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels due to the construction of Project 3 and the gen-tie line will be less than significant.

4.11.5.3.4 Project 4 and Gen-tie Line

Vibration impact determinations for Project 4 utilized the same methods and approach as discussed for Project 1. The distance from Project 4 construction activities is different than that for Project 1 with the nearest sensitive receptor located 887 feet from the project's centroid. Using the Caltrans referenced formula and an assumed 80,000 ft-lb rated energy for the impact pile driver, the calculated PPV at the nearest residence when construction is occurring at the centroid for Project 4 is listed in Table 4.11-23.

Table 4.11-23 Project 4 Pile Driving Vibration Analysis

Project site centroid distance to nearest residence	Estimated Pile Driving PPV
Project 4 – 887 feet	0.02

The vibration level at the site centroid could be considered the Project's "average" vibration level from pile driving. According to Caltrans guidance, a PPV of 0.02 would not damage the nearest residential structure, and would be just more than barely perceptible but less than distinctly perceptible to humans. For very brief periods of time a 0.3 PPV is predicted for the nearest NSR, which would be strongly to severely perceptible, but would not damage structures. Like noise from pile driving, vibration from pile driving would only last for a few weeks at most and would move throughout the Project rapidly with no one NSR experiencing the peak 0.3 PPV for more than an few hours and would not damage structures. Therefore, exposure of persons to or

generation of excessive groundborne vibration or groundborne noise levels due to the construction of Project 4 and the gen-tie line will be less than significant.

4.11.5.3.5 Project 5 and Gen-tie Line

Vibration impact determinations for Project 5 utilized the same methods and approach as discussed for Project 1. The distance from Project 5 construction activities is different than that for Project 1 with the nearest sensitive receptor located 1,807 feet from the project's centroid. Using the Caltrans referenced formula and an assumed 80,000 ft-lb rated energy for the impact pile driver, the calculated PPV at the nearest residence when construction is occurring at the centroid for Project 5 is listed in Table 4.11-24.

Table 4.11-24 Project 5 Pile Driving Vibration Analysis

Project site centroid distance to nearest residence	Estimated Pile Driving PPV
Project 5 – 1,807 feet	0.01

The vibration level at the site centroid could be considered the Project's "average" vibration level from pile driving. According to Caltrans guidance, a PPV of 0.01 would not damage the nearest residential structure, and would be barely perceptible to humans. For very brief periods of time a 0.04 PPV is predicted for the nearest NSR, which would be distinctly perceptible, but would not damage structures. Like noise from pile driving, vibration from pile driving would only last for a few weeks at most and would move throughout the Project rapidly with no one NSR experiencing the peak 0.04 PPV for more than an few hours and would not damage structures. Therefore, exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels due to the construction of Project 5 and the gen-tie line will be less than significant.

4.11.5.3.6 Project 6 and Gen-tie Line

Vibration impact determinations for Project 6 utilized the same methods and approach as discussed for Project 1. The distance from Project 6 construction activities is different than that for Project 1 with the nearest sensitive receptor located 1300 feet from the project's centroid. Using the Caltrans referenced formula and an assumed 80,000 ft-lb rated energy for the impact pile driver, the calculated PPV at the nearest residence when construction is occurring at the centroid for each Project is listed in Table 4.11-25.

Table 4.11-25 Project 6 Pile Driving Vibration Analysis

Project site centroid distance to nearest residence	Estimated Pile Driving PPV
Project 6 – 1,300 feet	0.01

The vibration level at the site centroid could be considered the Project's "average" vibration level from pile driving. According to Caltrans guidance, a PPV of 0.01 would not damage the nearest residential structure, and would be barely perceptible to humans. For very brief periods of time a 0.03 PPV is predicted for the nearest NSR, which would be between barely and distinctly perceptible, but would not damage structures. Like noise from pile driving, vibration from pile driving would only last for a few weeks at most and would move throughout the Project rapidly

with no one NSR experiencing the peak 0.03 PPV for more than an few hours and would not damage structures. Therefore, exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels due to the construction of Project 6 and the gen-tie line will be less than significant.

4.11.5.4 Project Impacts: Criterion E – For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Project Impacts: Criterion F – For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

There are four aviation uses in the general vicinity of the Projects. General Fox Bohunk's Airpark, Little Buttes Antique Airfield, and the Skyotee Ranch Airport. Bohunk's Airpark, Little Buttes Antique Airfield, and Skyotee Ranch Airport have very low use levels; General William J. Fox Airfield has moderate use levels and is predominantly used for general aviation with some cargo operations.

4.11.5.4.1 Project 1 and Gen-tie Line

Little Buttes Antique Airfield is two miles from Project 1, and Skyotee Ranch Airport is located 4.6 miles from Project 1. Both have very low use levels. No airfield noise contours have been developed for Little Buttes Antique Airfield and Skyotee Ranch Airport, but due to low operation levels and distance from the airports, sound levels at both airfields are assumed to be below 55 dBA CNEL. Project 1 would not create residential land uses, and all Project features are outside the airfield properties. Consequently, there are no impacts from airport-related noise.

4.11.5.4.2 Project 2 and Gen-tie Line

Project 2 is located 2.5 miles from Bohunk's Airpark and 6 miles from General William J. Fox Airfield. The airpark has very low use levels and no airfield noise contours have been developed. However, due to low operation levels and distance from the airpark sound levels are assumed to be below 55 dBA CNEL. Sound contours have been produced for General William J. Fox Airfield; however, Project 2 is beyond the area included in the airport's land use compatibility plan (Los Angeles County Airport Land Use Commission 2004). As a result no aviation land use restrictions are required. Project 2 would not create residential land uses, and all Project features are outside the airpark properties. Consequently, there are no impacts from airport-related noise.

4.11.5.4.3 Project 3 and Gen-tie Line

General William J. Fox Airfield is located approximately one mile from Project 3. Residences near Project 3 are all located outside of the 65 dBA CNEL noise contour, which is the highest aviation sound level associated with compatible residential land uses according to FAA regulations (49 USC sections 47501-47510). One residence located 340 feet north of Project 3 is within the 55-60 dBA CNEL noise contour band. Sound contours developed for General William J. Fox Airfield indicate that the Project is within the 55-60 dBA CNEL noise contour and

Zone C, the extended approach/departure zone. According to the airport's land use compatibility plan (Los Angeles County Airport Land Use Commission 2004), industrial uses such as utilities are acceptable uses in this zone. Sound levels from aviation activities would continue to dominate the acoustic environment and sounds from the Project would not result in an increase in noise levels. Further from the airport but still relatively close to Project 3 (within approximately 1000 feet) are a number of other residences. These residences are all assumed to be within the 40 dBA CNEL noise contour for the airport, although noise contour mapping for the airport does not extend out this far, 40 dBA CNEL is a reasonably conservative assumption. Project sound levels are not of sufficient strength to increase the acoustic environment at these residences either. For example, even if we assumed that received Project 3 sound levels at these residences are 40 dBA CNEL the net increase would only be 3 dBA which is less than significant. Project 3 sound levels would be less than 40 dBA CNEL; therefore there is no anticipated change in sound levels and Project impacts would be less than significant.

4.11.5.4.4 Project 4 and Gen-tie Line

General William J. Fox Airfield is located four miles from Project 4, Bohunk's Airpark is located 500 feet from Project 4, and Little Buttes Antique Airfield is located 4.3 miles from Project 4. Bohunk's Airpark and Little Buttes Antique Airfield both have very low use levels. No airfield noise contours have been developed for Bohunk's Airpark or Little Buttes Antique Airfield, but due to low operation levels and separation distance from Little Buttes Antique Airfield, sound levels are assumed to be below 55 dBA CNEL. Sound contours have been produced for General William J. Fox Airfield; however, Project 4 is beyond the area included in the airport's land use compatibility plan (Los Angeles County Airport Land Use Commission 2004). As a result no aviation land use restrictions are required. Additionally, Project 4 would not create residential land uses, and all Project features are outside of airport area of influence. Consequently, there are no impacts from airport-related noise.

4.11.5.4.5 Project 5 and Gen-tie Line

Bohunk's Airpark is located three miles from Project 5. The airpark has very low use levels and no airfield noise contours have been developed. However, due to low operation levels and distance from the airpark sound levels are assumed to be below 55 dBA CNEL. Project 5 would not create residential land uses, and all Project features are outside the of airfield area of influence. Consequently, there are no impacts from airport-related noise.

4.11.5.4.6 Project 6 and Gen-tie Line

Project 6 would be located 2.3 miles from General William J. Fox Airfield and 4.5 miles from Little Buttes Antique Airfield. Project 6 would be within Zone E of the General William J. Fox Airfield land use compatibility plan (Los Angeles County Airport Land Use Commission 2004) Project 6 is not a residential or commercial use that would subject residents or workers to noise impacts from the airport. Little Buttes Antique Airfield is a low use airport and no sound contours have been prepared. Because of low operation levels at Little Buttes Antique Airfield and distance from both airports, sound levels from both airfields are assumed to be below 55 dBA CNEL. Project 6 would not create residential land uses, and all Project features are outside the airfield area of influence. In addition to not creating any residential development the proposed

Project 6 would only have a temporary impact on construction workers. Consequently, there are no impacts from airport-related noise.

4.11.6 Mitigation Measures

The following noise mitigation measures would be considered and incorporated into each Project's contract specifications as necessary to minimize noise levels associated with construction of proposed Projects 1 – 6 to the extent practicable:

N-1 Construction operations would not occur between 7:00 p.m. and 7:00 a.m. on weekdays or Saturday, or at any time on Sunday with the exception of limited low-noise generating potential night work with Los Angeles County Department of Regional Planning and Public Works approval;

N-2 Construction site and access road maximum speed limit of 15 miles per hour shall be established and enforced during the construction period;

N-3 Electrically-powered equipment shall be used instead of pneumatic or internal combustion powered equipment, except for devices like trucks, loaders, dozers, and other heavy equipment.

N-4 Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable, and no closer than 1,000 feet, from noise-sensitive receptors;

N-5 The use of noise-producing signals, including horns, whistles, alarms, and bells are prohibited except where required by OSHA or for safety or emergency warning purposes required by other regulatory agencies.

N-6 Project-related public address or music systems used on-site shall not be audible at any adjacent receptor.

N-7 All noise-producing construction equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications which are in compliance with any applicable legally required equipment noise standards. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and/or other noise control features that are readily available for that type of equipment. Mobile sound barriers with a sound transmission class of 19 or greater will be used for pile driving on Projects where received sound levels at the nearest NSR are predicted to be above the County construction noise limit of 60 dBA during the day.

With respect to mitigation during operation, potential impacts associated with on-site substations are considered. Depending on the Project's acoustic design goals, final substation design may need to incorporate appropriate mitigation measures, including:

N-8 Siting substations to achieve NEMA sound ratings at sensitive receptors as described in Section 4.11.5.2 not to be closer to the property line of sensitive receptors than the following distances for each individual project:

- Project 1 – 325 feet with a NEMA sound rating of 74 dBA
- Project 2 – 1511 feet with a NEMA sound rating of 81 dBA
- Project 3 – 650 feet with a NEMA sound rating of 74 dBA
- Project 4 (two transformers) – 1000 feet with a NEMA sound rating of 77 dBA
- Project 5 – 748 feet with a NEMA sound rating of 82 dBA

N-9 The Applicant shall use NEMA low noise rated transformer equipment which will achieve 10 dBA or greater noise reduction as compared to standard NEMA-rated transformers of a similar size and rated capacity to ensure that Project noise impacts would be less than significant.

4.11.6.1 Level of Significance After Mitigation

Temporary construction noise would comply with regulations listed in this section. Vibration from construction activities is predicted to be of low level and would comply with all applicable regulations. Design of each of the individual Project's components (i.e. substation transformers) would comply with NEMA sound ratings identified insuring that operational noise levels remain low level and within the 5 dBA increase over background ambient threshold per CEQA. Operational vibration is not anticipated from the Projects. The overall impacts to noise and vibration due to the construction and operation of Projects 1 – 6 would be less than significant with the mitigation measures implemented.

4.11.7 Cumulative Impacts

There are 29 cumulative projects within a 5-mile radius of the Projects, amounting to 20,909 acres of development including Projects 1 – 6 (see Table 3-7). Cumulative noise and/or vibration impacts occur if multiple projects affect similar geographic areas simultaneously or when the duration of noise and/or vibration impacts extends over a longer period of time. The geographic extent and time frame for assessing cumulative impacts are described below.

4.11.7.1 Geographic Extent

The following section describes the geographic extent for noise and vibration cumulative impacts.

Noise

The geographic extent for the cumulative impacts analysis includes other projects located within 5 miles of the Projects sites and is referred to as the cumulative analysis area. However, while sound from construction and operation of the Projects would be localized; it is possible that noise from other development in the cumulative analysis area could combine with Projects' noise to cause a significant impact to sensitive receptors near and in-between individual Projects, however only within one-mile. Beyond one mile from the Project sites, sounds from

impulsive events such as pile driving may be periodically audible, but steady construction noise and operational noise would dissipate to levels that would be below the Los Angeles County noise limits and would blend into the ambient acoustic environment. Therefore, the analysis of cumulative noise impacts is restricted to other planned development within 1-mile of each of the Projects because sound from other development would not appreciably affect cumulative sound levels.

Vibration

Like noise, groundborne vibration from construction of the Projects would be localized. Groundborne vibration associated with construction of the Projects would dissipate more rapidly than that of noise levels. Because of this the geographic scope for the cumulative impact analysis area of vibration impacts only includes the immediate vicinity, or areas within 500 feet of each Project.

4.11.7.2 Time Frame

The following section describes the time frame for consideration of noise and vibration cumulative impacts.

Noise

Cumulative noise impacts for the Projects would be limited to construction noise because there is very little operational noise. Additionally, noise generated by construction activities only would occur temporarily generally between the first quarter of 2014 and the second quarter of 2015. Therefore, in order for a cumulative noise issue to occur, construction activities from the Projects would need to overlap with noise being generated from one or more other projects.

Vibration

Vibration from construction of the Projects would not persist in the environment beyond the time period of which they are generated. As discussed in the vibration analysis sections of this EIR, impacts associated with groundborne vibration are based on short-term conditions. Therefore, in order for a cumulative vibration issue to occur, construction activities from the Projects would need to overlap with vibration being generated from one or more other projects. Vibration from operation of the Projects would not occur in meaningful amounts, and therefore, cumulative vibration impacts would be limited to the construction time period of the Projects.

4.11.7.3 Past, Present and Reasonably Foreseeable Future Projects

Ambient noise levels in the area of the Projects are representative of the cumulative noise being generated at a local level. Except near General William J. Fox Airfield, noise levels in the vicinity of the Projects sites are expected to be low, typical of a rural environment. There are no known existing groundborne vibration issues near the Projects sites.

Most of the non-Applicant projects are not located close enough (i.e., within 1-mile) to the Projects to result in cumulative impacts; however, two projects (Western Antelope Dry Ranch – Project ID No. CUP 11-07 and High Desert LLC – Project ID No. CUP 10-03) are in relatively

close proximity to the Projects. These non-Applicant projects have the potential to result in cumulative construction noise.

4.11.7.4 Cumulative Impact Analysis

Two non-Applicant projects identified have the potential to result in cumulative construction noise impacts, due the projects being located in relatively close proximity to the proposed Projects, but not close enough to result in vibration impacts. The Western Antelope Dry Ranch project (CUP 11-07) is located approximately 1-mile north of Project 2 and the High Desert LLC (CUP 10-03) project is located approximately 1-mile north of Project 4. These distances are close enough that construction noise could propagate out to distances near the Applicant's Projects, but are not close enough to potentially result in vibration impacts. The time period of construction for these two projects is unknown, but if construction were to overlap with construction of the proposed Projects, there is the potential for increased temporary noise levels at residences; however, none of the noise sensitive receptors that are located in close proximity to Project 4 are also located in close proximity to Antelope Solar 1 or Antelope Solar Farm projects. Therefore, sound levels from construction of the Projects would only minimally (less than 1-2 dBA), or not at all, be increased by simultaneous construction. Therefore, overall cumulative impacts of the proposed Projects 1 – 6 would be less than significant with the mitigation measures implemented.

4.11.8 References

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4.12 PUBLIC SERVICES

4.12.1 Introduction

This section of the EIR describes the public services that would be affected by proposed Projects 1 – 6. The Initial Study determined that there may be potentially significant impacts to fire and sheriff services. It was determined there would be no impact to schools, parks, libraries, or other public facilities. The following sections explain the Environmental Setting (existing fire and sheriff services in the region), regulatory setting, and analysis of potential impacts of Projects 1 – 6.

4.12.2 Environmental Setting

4.12.2.1 Los Angeles County Fire Department

The area where proposed Projects 1 – 6 would be located is served by the Los Angeles County Fire Department (LACFD) Battalion 11. The LACFD provides fire protection services to more than 4 million residents in unincorporated Los Angeles County and in 58 cities. The unincorporated territory of the County is designated with Fire Zones 1, 2, 3, 4, or Very High Fire Hazard Severity and Buffer Fire Zones. According to the Antelope Valley Area Plan Update Background Report (LACDRP 2009), areas of Very High Hazard Severity Zones are located roughly south of the California Aqueduct. According to the Los Angeles County Ordinance Chapter 26.150, all of the unincorporated territory within the County is established as Fire Zone 3 by default, except where established otherwise.

Stations 112, 140, and 157 are Call Firefighter (CFF) stations, which are common in rural and remote areas of Los Angeles County. Station 117 is staffed with four 24-hour on-duty firefighters (a 4-person Assessment Engine Company) and can be augmented with CFFs as needed. CFFs are employed by the department to serve at rural stations that do not require full-time staffing, and operate as first responders under the supervision and direction of Station 33 (Battalion 11 Headquarters). Station 130, which would be the second closest station to proposed Projects 1, 3, 4, and 6, is staffed 24 hours a day with a 3-person Engine Company and a 3-person Urban Search and Rescue Squad; combined they form a USAR Task Force. Stations 78 and 84 are also close to the proposed Projects 1 – 5 sites. Station 78 is staffed with three 24-hour on-duty firefighters (a 3-person Engine Company) and can be augmented with CFFs as needed. Station 129 serves as Antelope Valley's Hazardous Materials Task Force.

In the event of a significant fire event, fire responders are dispatched from their respective jurisdictions. In the event that resources are unavailable from the jurisdictional station, other Los Angeles County battalion and jurisdictions may be called upon to respond to emergencies. Additionally, in accordance with the California Disaster and Civil Defense Master Mutual Aid Agreement, in the event of a catastrophic event, fire protection services from departments outside of Los Angeles County would also respond as needed.

4.12.2.1.1 Los Angeles County Fire Department Level of Service Standards

The County bases the adequacy of fire services on performance measures, where the target response time for all 9-1-1 calls in the area where Projects 1 – 6 are located (i.e., rural areas) is

less than 12 minutes (Los Angeles County 2009). LACFD is currently meeting this response time, and is expected to meet this target response time during FY 2011-2012 (Los Angeles County 2009).

4.12.2.2 Los Angeles County Sheriff Department

The proposed sites for Projects 1 – 6 are served by the Los Angeles County Sheriff Department (LACSD). LACSD is the largest sheriff's department in the world, comprising more than 18,000 personnel. LACSD is responsible for more than 10 million County residents, and provides direct law enforcement services to approximately 3 million residents who live in the unincorporated areas and 40 contract cities (Los Angeles County 2010).

The proposed sites for Projects 1 – 6 are located within the area defined by LACSD as Field Operations Region 1 and have not been identified as areas with special law enforcement needs. The nearest patrol station to the proposed Projects is Lancaster Station, which is located at 501 West Lancaster Boulevard. The Lancaster Station is staffed by 189 sworn officers and 74 civilian personnel (LACSD 2012). The station has primary responsibility for covering an area of over 600 square miles, including the City of Lancaster and the communities of Antelope Acres, Quartz Hill, and Lake Los Angeles. In the event of a significant emergency, first responders from other stations may be called upon to respond to emergencies within the area of Projects 1 – 6. Additionally, LACSD has Mutual Aid Agreements with neighboring law enforcement organizations to further strengthen emergency services.

4.12.2.2.1 Los Angeles County Sheriff Department Level of Service Standards

Service Ratio. The LACSD determines that an officer-to-population ratio of one deputy sheriff per 1,000 residents would be adequate to reach a desired level of service for its service area. Lancaster Station has 189 sworn officers and provides service to approximately 190,000 residents in its service area (LACSD 2012). As a result, the Lancaster Station maintains a service ratio of approximately one deputy per 1,000 residents.

LACSD deputies are dispatched based on appropriate level of service standards. Factors used to determine the appropriate level of service of a particular area consider the residential population, nature of crimes, statistical reports, size of area, type of land uses, and transient and visitor populations.

Response Times. One means that the County uses to measure the adequacy of sheriff services is the response time for a law enforcement unit to respond to a request for service. Response times are classified depending on the type of call (emergency, priority, routine), and depend on traffic, distance to the site of the call, and availability of officers. Responses are handled by the nearest available patrol car located within the patrol area. The LACSD has established optimal response times for services of 10 minutes or less for emergency response incidents; 20 minutes or less for priority incidents; and 60 minutes or less for routine responses.

4.12.3 Regulatory Setting

4.12.3.1 Federal

No federal laws, orders, regulations, or standards were identified that are applicable to fire or sheriff services for proposed Projects 1 – 6.

4.12.3.2 State

4.12.3.2.1 California Government Code Section 8561 – California Disaster and Civil Defense Master Mutual Aid Agreement

The California Disaster and Civil Defense Master Mutual Aid Agreement is an agreement made and entered into by and between the State of California, various state departments and agencies, and the various political subdivisions, municipal corporations, and other public agencies of the State of California. The purpose of the agreement among the participants is to provide voluntary aid and assistance to each other to cope with different types of disasters, including fires and law enforcement efforts.

4.12.3.2.2 Assembly Bill 844 as Amended, Berryhill – Amendment to Section 21606

AB 844 was approved on December 1, 2008, and amends the existing State Business and Professions Code Section 21606. The amendments increase junk dealer and recycler operations accountability, and increase penalties for the potential purchase of stolen scrap metals and nonferrous materials. This legislation is potentially relevant to the proposed Projects 1 – 6 during the construction and operational phases related to possible theft of construction materials and solar power generation-related materials (e.g., copper wiring, solar panels, electrical equipment, etc.).

4.12.3.3 Local

4.12.3.3.1 Los Angeles County General Plan (1993)

No goals, policies, or objectives directly applicable to fire protection services or sheriff services were identified in the Los Angeles County General Plan (LACDRP 1993).

4.12.3.3.2 Antelope Valley Areawide General Plan (1986)

No applicable goals, policies, or objectives were identified the Antelope Valley Areawide General Plan (LACDRP 1986).

4.12.3.3.3 Los Angeles County Proposition E Special Tax Measure of 1997

The Special Tax is levied specifically to fund essential fire suppression and emergency medical services. The Special Tax rate is levied according to land use and can be adjusted annually by the County Board of Supervisors. Any adjusted increase may not exceed the 2 percent maximum allowed. Revenue from the 2009-2010 fiscal year Special Tax was estimated to be $72.8 million (Los Angeles County 2009).

4.12.4 Significance Criteria

The potential for Projects 1 – 6 to result in impacts associated with fire and sheriff services is based on the CEQA significance thresholds specified by the LACDRP. These significance thresholds are based in part on Appendix G of the State CEQA Guidelines and are as follows:

a) Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection?

b) Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for sheriff protection?

c) Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for schools?

d) Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for parks?

e) Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for libraries?

f) Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for other public facilities?

4.12.5 Impacts Analysis

As noted above, the proposed Project sites would be served by LACFD Battalion 11, which is headquartered in Lancaster, and is comprised of 11 fire stations (Table 4.12-1), all of which are located within 20 miles of the proposed Project sites 1 – 6. Also, the proposed Project sites 1 – 6 are located within the area defined by LACSD as Field Operations Region 1. The nearest patrol station to the proposed Project sites 1 – 6 is Lancaster Station, which is located at 501 West Lancaster Boulevard.

The impacts to services were evaluated by identifying several factors including distances to nearest station, estimated response times, and service ratios for each proposed Project site. These were compared to the target response times and ratios as defined by LACFD and LACSD and to the significance criteria listed above. The impacts for both construction and operations of the proposed Projects and their associated gen-tie lines were analyzed and are presented below by significance criterion.

Table 4.12-1 Fire Station Distances

Fire Station	Location	Distance to Project 1*	Distance to Project 2*	Distance to Project 3*	Distance to Project 4*	Distance to Project 5*	Distance to Project 6*
Station 33, Battalion 11 HQ	44947 Date Avenue Lancaster, 93534	12.2 miles	10.5 miles	6.9 miles	8.4 miles	11.2 miles	6 miles
Station 78	17021 West Elizabeth Lake Road Lake Hughes, 93532	11.2 miles	6.1 miles	10.8 miles	7.7 miles	5.5 miles	15.3 miles
Station 84	5030 W Avenue L-14 Quartz Hill, 93536	12.2 miles	6.3 miles	6.3 miles	5.2 miles	7.8 miles	9.1 miles
Station 112 (CFF)	8812 West Avenue E-8 Lancaster, 93536	**3.8 miles**	5.4 miles	**2.2 miles**	**3.6 miles**	**4.5 miles**	**5.6 miles**
Station 117 (Supplemental Call FF Station based on need)	44851 30th Street East Lancaster, 93535	15.3 miles	14.1 miles	10.4 miles	12 miles	14.8 miles	8.3 miles
Station 129	42110 6th Street West Lancaster, 93534	14.7 miles	10.7 miles	8.8 miles	9.1 miles	11.9 miles	9.4 miles
Station 130	44558 40th Street West Lancaster, 93536	10 miles	7 miles	4.2 miles	5 miles	7.8 miles	5.8 miles
Station 134	43225 N 25th Street West Lancaster, 93534	12.3 miles	8.5 miles	6.4 miles	6.8 miles	9.7 miles	7.6 miles
Station 135	1846 East Avenue K-4 Lancaster, 93535	15.5 miles	13.1 miles	10.1 miles	11.2 miles	14 miles	9 miles
Station 140 (CFF)	8723 Elizabeth Lake Road Leona Valley, 93550	13 miles	**4.6 miles**	8.1 miles	5.4 miles	6.4 miles	12.2 miles
Station 157 (CFF)	15921 Spunky Canyon Road Green Valley, 91350	14 miles	6.3 miles	11.6 miles	8.5 miles	6.7 miles	16.5 miles

*Direct distances
Bold Type – closest Fire Station

4.12.5.1 Project Impacts: Criterion A – Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection?

4.12.5.1.1 Project 1 and Gen-tie Line

Construction Impacts

Project 1 is located within the LACFD Battalion 11 service area. Station 112, which is 3.8 miles southeast of Project 1, is the jurisdictional station (i.e. the first-responder) to respond to incidents at the site. Additional fire stations within Battalion 11 (identified in Table 4.12-1) would also potentially be dispatched to respond to fire protection needs at the site.

During construction, workers would be temporary and would not be expected to relocate to the Project 1 area as they would mostly be hired from the available local workforce and would not be expected to result in significant changes to the local population; therefore, the construction of Project 1 is not anticipated to create significant changes to the local population that would increase the level of demand on fire protection services or that would increase the level of demand on the fire department services such that additional staff would be needed.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 1 would not result in significant traffic impacts. However, Project 1 would involve construction of an underground 0.54-mile gen-tie line along West Avenue B and an underground 0.02 mile gen-tie across 110th Street West. Transmission line construction would require work in the public road ROW, including limited encroachment into the traveled roadway. It is anticipated that the construction of the Project 1 gen-tie lines would only require partial street closures, which provide better emergency access than full street closures. It is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to West Avenue B and 110th Street West. Additionally, the LACFD Fire Stations 112, 130, and 78 would be notified at a minimum of three days in advance of any street closures that may affect fire/paramedic responses in the area. In the event that the Project 1 gen-tie line construction would require road closures, alternate route details (detour plans) and the schedule of closures would be submitted to the LACFD prior to construction. Implementation of TT-3 traffic mitigation measure would be expected to minimize potential effects to West Avenue B and 110th Street West such that the impact to LACFD access and response times would be less than significant.

Based on the Applicant's commitment to conformance of construction activities at the Project 1 site and gen-tie line ROW to federal, state, and Los Angeles County ordinances for fire protection, and implementation of proposed mitigation measures identified in Section 4.8, Hazards and Hazardous Materials, construction would not be expected to result in significant special fire problems or hazards. Additionally, construction traffic at the site would not be anticipated to have a significant impact on local intersections and road segments. Therefore, Project 1 impacts to LACFD service ratios, response times, or other performance objectives for fire protection would be less than significant.

4.12.5.1.2 Project 2 and Gen-tie Line

Construction Impacts

Project 2 is located within the LACFD Battalion 11 service area. Station 140, which is 4.6 miles southeast of Project 2, is the jurisdictional station (i.e. the first-responder) to respond to incidents at the site. Additional fire stations within Battalion 11 (identified in Table 4.12-1) would also potentially be dispatched to respond to fire protection needs at the site.

During construction, workers would be temporary and would not be expected to relocate to the Project 2 area as they would mostly be hired from the available local workforce and are not anticipated to create significant changes to the local population that would increase the level of demand on fire protection services such that additional staff would be needed.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 2 would not result in significant traffic impacts. However, Project 2 would involve construction of an underground 1.9-mile gen-tie line along 110th Street West and West Avenue J. Transmission line construction would require work in the public road ROW, including limited encroachment into the traveled roadway. It is anticipated that the construction of the Project 2 gen-tie line would only require partial street closures, which provide better emergency access than full street closures. It is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to 110th Street West and West Avenue J. Additionally, the LACFD Fire Stations 140, 112, and 78 would be notified at a minimum of three days in advance of any street closures that may affect fire/paramedic responses in the area. In the event that construction of the Project 2 gen-tie line would require road closures, alternate route details (detour plans) and the schedule of closures would be submitted to the LACFD prior to construction. Implementation of TT-3 traffic mitigation measure would be expected to minimize potential effects to 110th Street West and West Avenue J such that the impact to LACFD access and response times would be less than significant.

Based on the Applicant's commitment to conformance of construction activities at the Project 2 site and gen-tie line ROW to federal, state, and Los Angeles County ordinances for fire protection, and implementation of proposed mitigation measures identified in Section 4.8, Hazards and Hazardous Materials, construction would not be expected to result in significant special fire problems or hazards. Additionally, construction traffic at the site would not be anticipated to have a significant impact on local intersections and road segments. Therefore, Project 2 impacts to LACFD service ratios, response times, or other performance objectives for fire protection would be less than significant.

4.12.5.1.3 Project 3 and Gen-tie Line

Construction Impacts

Project 3 is located within the LACFD Battalion 11 service area. Station 112, which is 2.2 miles northwest of Project 3, is the jurisdictional station (i.e. the first-responder) to respond to incidents at the site. Additional fire stations within Battalion 11 (identified in Table 4.12-1) would also potentially be dispatched to respond to fire protection needs at the site.

During construction, workers would be temporary and would not be expected to relocate to the Project 3 area as they would mostly be hired from the available local workforce and are not anticipated to create significant changes to the local population that would increase the level of demand on fire protection services such that additional staff would be needed.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 3 would not result in significant traffic impacts. The Project 3 gen-tie line would interconnect to an existing transmission line adjacent to the Project 3 site; therefore, it is anticipated that no street closures would be required for the construction of Project 3.

Based on the applicant's commitment to conformance of construction activities at the Project 3 site and gen-tie ROW to federal, state, and Los Angeles County ordinances for fire protection, and implementation of proposed mitigation measures identified in Section 4.8, Hazards and Hazardous Materials, construction would not be expected to result in significant special fire problems or hazards. Additionally, construction traffic would not be anticipated to have a significant impact on local intersections and road segments. Therefore, Project 3 impacts to LACFD service ratios, response times, or other performance objectives for fire protection would be less than significant.

4.12.5.1.4 Project 4 and Gen-tie Line

Construction Impacts

Project 4 is located within the LACFD Battalion 11 service area. Station 112, which is 3.6 miles north of Project 4, is the jurisdictional station (i.e. the first-responder) to respond to incidents at the site. Additional fire stations within Battalion 11 (identified in Table 4.12-1) would also potentially be dispatched to respond to fire protection needs at the site.

During construction, workers would be temporary and would not be expected to relocate to the Project 4 area as they would mostly be hired from the available local workforce and are not anticipated to create significant changes to the local population that would increase the level of demand on fire protection services such that additional staff would be needed.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 4 would not result in significant traffic impacts. However, Project 4 would involve construction of an underground 0.02-mile gen-tie across West Avenue J and an underground 0.02-mile gen-tie across 90th Street West. Transmission line construction would require work in the public road ROW, including limited encroachment into the traveled roadway. It is anticipated that the construction of the Project 4 gen-tie lines would only require partial street closures, which provide better emergency access than full street closures. It is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to 90th Street West and West Avenue J. Additionally, the LACFD Fire Stations 84, 112, and 130 would be notified at a minimum of three days in advance of any street closures that may affect fire/paramedic responses in the area. In the event that Project 4 would require street closures, alternate route details (detour plans) and the schedule of closures would be submitted to the LACFD prior to construction. Implementation of TT-3 traffic mitigation

measure would be expected to minimize potential effects to 90th Street West and West Avenue J such that the impact to LACFD access and response times would be less than significant.

Based on the Applicant's commitment to conformance of construction activities at the Project 4 site and gen-tie ROW to federal, state, and Los Angeles County ordinances for fire protection and proposed mitigation measures identified in Section 4.8, Hazards and Hazardous Materials, construction would not be expected to result in significant special fire problems or hazards. Additionally, construction traffic would not be anticipated to have a significant impact on local intersections and road segments. Therefore, Project 4 impacts to LACFD service ratios, response times, or other performance objectives for fire protection would be less than significant.

4.12.5.1.5 Project 5 and Gen-tie Line

Construction Impacts

Project 5 is located within the LACFD Battalion 11 service area. Station 112, which is 4.5 miles northeast of Project 5, is the jurisdictional station (i.e. the first-responder) to respond to incidents at the site. Additional fire stations within Battalion 11 (identified in Table 4.12-1) would also potentially be dispatched to respond to fire protection needs at the site.

During construction, workers would be temporary and would not be expected to relocate to the Project 5 area as they would mostly be hired from the available local workforce and are not anticipated to create significant changes to the local population that would increase the level of demand on fire protection services such that additional staff would be needed.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 5 would not result in significant traffic impacts. However, Project 5 would involve construction of an underground 2.4-mile gen-tie line along 110th Street West and West Avenue J. Transmission line construction would require work in the public road ROW, including limited encroachment into the traveled roadway. It is anticipated that the construction of the Project 5 gen-tie line would only require partial street closures, which provide better emergency access than full street closures. It is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to 110th Street West and West Avenue J. Additionally, the LACFD Fire Stations 112, 78, and 140 would be notified at a minimum of three days in advance of any street closures that may affect fire/paramedic responses in the area. In the event that Project 5 would require road closures, alternate route details (detour plans) and the schedule of closures would be submitted to the LACFD prior to construction. Implementation of TT-3 traffic mitigation measure would be expected to minimize potential effects to 110th Street West and West Avenue J such that the impact to LACFD access and response times would be less than significant.

Based on the Applicant's commitment to conformance of construction activities at the Project 5 site and gen-tie ROW to federal, state, and Los Angeles County ordinances for fire protection and proposed mitigation measures identified in Section 4.8, Hazards and Hazardous Materials, construction would not be expected to result in significant special fire problems or hazards. Additionally, construction traffic would not be anticipated to have a significant impact on local

intersections and road segments. Therefore, Project 5 impacts to LACFD service ratios, response times, or other performance objectives for fire protection would be less than significant.

4.12.5.1.6 Project 6 and Gen-tie Line

Construction Impacts

Project 6 is located within the LACFD Battalion 11 service area. Station 112, which is 5.6 miles southwest of Project 6, is the jurisdictional station (i.e. the first-responder) to respond to incidents at the site. Additional fire stations within Battalion 11 (identified in Table 4.12-1) would also potentially be dispatched to respond to fire protection needs at the site.

During construction, workers would be temporary and would not be expected to relocate to the Project 6 area as they would mostly be hired from the available local workforce and are not anticipated to create significant changes to the local population that would increase the level of demand on fire protection services such that additional staff would be needed.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 6 would not result in significant traffic impacts. However, Project 6 would involve construction of an underground 0.02 mile gen-tie line across West Avenue D. Transmission line construction would require work in the public road ROW, including limited encroachment into the traveled roadway. It is anticipated that the construction of the Project 6 gen-tie line would only require partial street closures, which provide better emergency access than full street closures. It is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to West Avenue D. Additionally, the LACFD Fire Stations 33, 112, and 130 would be notified at a minimum of three days in advance of any street closures that may affect fire/paramedic responses in the area. In the event that Project 6 would require street closures, alternate route details (detour plans) and the schedule of closures would be submitted to the LACFD prior to construction. Implementation of TT-3 traffic mitigation measure would be expected to minimize potential effects to West Avenue D such that the impact to LACFD access and response times would be less than significant.

Based on the Applicant's commitment to conformance of construction activities at the Project 3 site and gen-tie ROW to federal, state, and Los Angeles County ordinances for fire protection and proposed mitigation measures identified in Section 4.8, Hazards and Hazardous Materials, construction would not be expected to result in significant special fire problems or hazards. Additionally, construction traffic would not be anticipated to have a significant impact on local intersections and road segments. Therefore, Project 6 impacts to LACFD service ratios, response times, or other performance objectives for fire protection would be less than significant.

4.12.5.1.7 Projects 1 – 6 and Associated Gen-tie Lines

Operations Impacts

Operations activities at Projects 1 – 6 would typically be associated with routine maintenance carried out on-site and along the associated gen-tie ROWs at periodic intervals by a small maintenance crew. These activities would not result in effects to LACFD service ratios,

response times, or other performance objectives for fire protection during operations of the proposed Projects 1 – 6; therefore, impacts would be less than significant.

However, the Applicant would be required to pay taxes as per the Proposition E Special Tax and property tax assessments, which are allocated to the LACFD. These taxes are designed to provide for potential increases in LACFD fire protection service demands to accommodate for new and existing developments.

4.12.5.2 Project Impacts: Criterion B – Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for sheriff protection?

4.12.5.2.1 Project 1 and Gen-Tie Line

Construction Impacts

The Project 1 site is located within the LACSD Field Operations Region 1 service area. The Lancaster Station, which is approximately 12.4 miles southeast of Project 1, would likely be the first responder to incidents at the site. Currently the station maintains an officer-to-population service ratio of approximately 1 to 1,000. Project 1 does not involve residential use and would not be considered to result in significant increases to population. During construction, workers would be temporary, and would not be expected to relocate to the area as they would mostly be hired from the available local workforce. The employees are planned to be hired from the available local workforce, and would not be expected to result in significant changes to the local population that would increase the level of demand on law enforcement services.

Sheriff services potentially required at Project 1 would likely include incidents of vandalism or theft. While these incidents would require sheriff services, they are not considered emergency response incidents and as such would not affect emergency response times.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 1 would not result in significant traffic impacts. However, Project 1 would involve construction of an underground 0.5-mile gen-tie line on West Avenue B and an underground 0.02 mile gen-tie across 110th Street West, which may require work in the public road ROW, and may potentially encroach into the traveled roadway. As a result, it is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to West Avenue B and 110th Street West. Implementation of this would be expected to minimize potential effects to West Avenue B and 110th Street West such that the impact to LACSD access and response times would be less than significant. As a result, construction of Project 1 would be expected to result in less than significant effects to LACSD services and response times, such that Project 1 would not require additional LACSD staffing. Therefore, impacts from the construction of Project 1 to LACSD service ratios, response times, or other performance objectives for sheriff protection would be less than significant.

4.12.5.2.2 Project 2 and Gen-Tie Line

The Project 2 site is located within the LACSD Field Operations Region 1 service area. The Lancaster Station, which is approximately 10.7 miles northeast southeast of Project 2, would likely be the first responder to incidents at the site. Currently the station maintains an officer-to-population service ratio of approximately 1 to 1,000. Project 2 does not involve residential use and would not be considered to result in significant increases to population. During construction, workers would be temporary, and would not be expected to relocate to the area as they would mostly be hired from the available local workforce. The employees are planned to be hired from the available local workforce, and would not be expected to result in significant changes to the local population that would increase the level of demand on law enforcement services.

Sheriff services potentially required at Project 2 would likely include incidents of vandalism or theft. While these incidents would require sheriff services, they are not considered emergency response incidents and as such would not affect emergency response times.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 2 would not result in significant traffic impacts. However, Project 2 would involve construction of an underground 1.9-mile gen-tie line on 110th Street West and West Avenue J, which may require work in the public road ROW, and may potentially encroach into the traveled roadway. As a result, it is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to 110th Street West and West Avenue J. Implementation of this would be expected to minimize potential effects to 110th Street West and West Avenue J such that the impact to LACSD access and response times would be less than significant. As a result, construction of Project 2 would be expected to result in less than significant effects to LACSD services and response times, such that Project 2 would not require additional LACSD staffing. Therefore, impacts from the construction of Project 2 to LACSD service ratios, response times, or other performance objectives for sheriff protection would be less than significant.

4.12.5.2.3 Project 3 and Gen-Tie Line

The Project 3 site is located within the LACSD Field Operations Region 1 service area. The Lancaster Station, which is approximately 7 miles southeast of Project 3, would likely be the first responder to incidents at the site. Currently the station maintains an officer-to-population service ratio of approximately 1:1,000. Project 3 does not involve residential use and would not be considered to result in significant increases to population. During construction, workers would be temporary, and would not be expected to relocate to the area as they would mostly be hired from the available local workforce. The employees are planned to be hired from the available local workforce, and would not be expected to result in significant changes to the local population that would increase the level of demand on law enforcement services.

Sheriff services potentially required at Project 3 would likely include incidents of vandalism or theft. While these incidents would require sheriff services, they are not considered emergency response incidents and as such would not affect emergency response times.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 3 would not result in significant traffic impacts. The Project 3 gen-tie line would interconnect to an existing

transmission line adjacent to the Project 3 site; therefore, it is anticipated that no street closures would be required for the construction of Project 3. Therefore, impacts from the construction of Project 3 to LACSD service ratios, response times, or other performance objectives for sheriff protection would be less than significant.

4.12.5.2.4 Project 4 and Gen-Tie Line

The Project 4 site is located within the LACSD Field Operations Region 1 service area. The Lancaster Station, which is approximately 8.6 miles east of Project 4, would likely be the first responder to incidents at the site. Currently the station maintains an officer-to-population service ratio of approximately 1:1,000. Project 4 does not involve residential use and would not be considered to result in significant increases to population. During construction, workers would be temporary, and would not be expected to relocate to the area as they would mostly be hired from the available local workforce. The employees are planned to be hired from the available local workforce, and would not be expected to result in significant changes to the local population that would increase the level of demand on law enforcement services.

Sheriff services potentially required at Project 4 would likely include incidents of vandalism or theft. While these incidents would require sheriff services, they are not considered emergency response incidents and as such would not affect emergency response times.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 4 would not result in significant traffic impacts. However, Project 4 would involve construction of an underground 0.02-mile gen-tie across West Avenue J and an underground 0.02-mile gen-tie across 90th Street West, which may require work in the public road ROW, and may potentially encroach into the traveled roadway. As a result, it is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to 90th Street West and West Avenue J. Implementation of this would be expected to minimize potential effects to 90th Street West and West Avenue J such that the impact to LACSD access and response times would be less than significant. As a result, construction of Project 4 would be expected to result in less than significant effects to LACSD services and response times, such that Project 4 would not require additional LACSD staffing. Therefore, impacts from the construction of Project 4 to LACSD service ratios, response times, or other performance objectives for sheriff protection would be less than significant.

4.12.5.2.5 Project 5 and Gen-Tie Line

The Project 5 site is located within the LACSD Field Operations Region 1 service area. The Lancaster Station, which is approximately 11.4 miles east of Project 5, would likely be the first responder to incidents at the site. Currently the station maintains an officer-to-population service ratio of approximately 1:1,000. Project 5 does not involve residential use and would not be considered to result in significant increases to population. During construction, workers would be temporary, and would not be expected to relocate to the area as they would mostly be hired from the available local workforce. The employees are planned to be hired from the available local workforce, and would not be expected to result in significant changes to the local population that would increase the level of demand on law enforcement services.

Sheriff services potentially required at Project 5 would likely include incidents of vandalism or theft. While these incidents would require sheriff services, they are not considered emergency response incidents and as such would not affect emergency response times.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 5 would not result in significant traffic impacts. However, Project 5 would involve construction of an underground 2.4-mile gen-tie line on 110th Street West and West Avenue J, which may require work in the public road ROW, and may potentially encroach into the traveled roadway. As a result, it is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to 110th Street West and West Avenue J. Implementation of this would be expected to minimize potential effects to 110th Street West and West Avenue J such that the impact to LACSD access and response times would be less than significant. As a result, construction of Project 5 would be expected to result in less than significant effects to LACSD services and response times, such that Project 5 would not require additional LACSD staffing. Therefore, impacts from the construction of Project 5 to LACSD service ratios, response times, or other performance objectives for sheriff protection would be less than significant.

4.12.5.2.6 Project 6 and Gen-Tie Line

The Project 6 site is located within the LACSD Field Operations Region 1 service area. The Lancaster Station, which is approximately 6.1 miles southeast of Project 6, would likely be the first responder to incidents at the site. Currently the station maintains an officer-to-population service ratio of approximately 1:1,000. Project 6 does not involve residential use, and would not be considered to result in significant increases to population. During construction, workers would be temporary, and would not be expected to relocate to the area as they would mostly be hired from the available local workforce. The employees are planned to be hired from the available local workforce, and would not be expected to result in significant changes to the local population that would increase the level of demand on law enforcement services.

Sheriff services potentially required at Project 6 would likely include incidents of vandalism or theft. While these incidents would require sheriff services, they are not considered emergency response incidents and as such would not affect emergency response times.

As discussed in Section 4.13, Transportation and Traffic, construction of Project 6's gen-tie line would not result in significant traffic impacts. However, Project 6 would involve construction of an underground 0.2-mile gen-tie line across West Avenue D, which may require work in the public road ROW, and may potentially encroach into the traveled roadway. As a result, it is proposed to require worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts to West Avenue D. Implementation of this would be expected to minimize potential effects to West Avenue D such that the impact to LACSD access and response times would be less than significant. As a result, construction of Project 6 would be expected to result in less than significant effects to LACSD services and response times, such that Project 6 would not require additional LACSD staffing. Therefore, impacts from the construction of Project 6 to LACSD service ratios, response times or other performance objectives for sheriff protection would be less than significant.

4.12.5.2.7 Projects 1 – 6 and Gen-tie Lines

Operations Impacts

The impacts to LACFD service ratios, response times, or other performance objectives for sheriff protection during operations of the proposed Projects 1 – 6 and their associated gen-tie lines are expected to be negligible and therefore, less than significant.

4.12.5.3 Project Impacts: Criterion C – Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for schools?

4.12.5.3.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and their associated gen-tie lines do not include residential development or the influx of long-term workers from outside the area whose children would attend school, and are not expected to generate population growth. Consequently, no new demands on school facilities are expected, no impact on school capacities, service levels, or performance objectives would be present, and therefore, Projects 1 – 6 would have no impact to schools.

4.12.5.4 Project Impacts: Criterion D – Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for parks?

4.12.5.4.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and their associated gen-tie lines do not include recreational uses and are not expected to generate population growth. Consequently, no new demands on park facilities are expected, no impact on park capacities, service levels, or performance objectives would be present, and therefore, Projects 1 – 6 would have no impact to parks.

4.12.5.5 Project Impacts: Criterion E – Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for libraries?

4.12.5.5.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and their associated gen-tie lines are not expected to generate population growth. Consequently, no new demands on library facilities are expected, no impact on library

capacities, service levels or performance objectives would be present, and therefore, Projects 1 – 6 would have no impact to libraries.

4.12.5.6 Project Impacts: Criterion F – Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for other public facilities?

4.12.5.6.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 1 – 6 and their associated gen-tie lines are not expected to generate population growth, or extend roads or other public infrastructure. Therefore, Projects 1 – 6 would have no impact to other public facilities.

4.12.6 Mitigation Measures

No mitigation measures specific to Public Services are required. However, the implementation of Mitigation Measures HH 1 through 4 and TT 1 through 7 presented in Section 4.8 Hazards and Hazardous Materials and Section 4.13 Traffic and Transportation, respectively, will result in less than significant impacts to Public Services.

4.12.6.1 Level of Significance After Mitigation

No potentially significant Project-related construction or operations impacts related to Public Services are expected.

4.12.7 Cumulative Impacts

There are 29 cumulative projects within a 5-mile radius of the proposed Projects amounting to 20,909 acres of development including Projects 1 – 6 (see Table 3-7). For the purposes of this cumulative analysis, the worst case scenario is assumed, i.e., all cumulative projects would be constructed at the same time. It is also assumed that all cumulative projects would comply with all applicable LORS. It is assumed that for each of the cumulative projects, worksite traffic control plans, permits, and coordination with County departments regarding potential construction impacts would be implemented.

4.12.7.1 Fire Protection

As analyzed in Section 4.12.5.1 above, Projects 1 – 6 would not cause effects to result in significant demands to fire response times. Projects 1 – 6 would be designed with appropriate fire protection considerations, and would also result in less than significant impacts to staffing and response times. Furthermore, Projects 1 – 6 would be required to provide taxes to the County that are designed to address cumulative fire department needs associated with new and existing developments. Other developments in the vicinity of Projects 1 – 6 would also be required to pay taxes and fees to the County to provide for their potential increase to LACFD fire protection service demands (LACFD 2009). Additionally, all development in the area is subject

to review and approval by the Fire Department. This ensures that all projects contain appropriate controls to reduce demand on the fire department. As a result, Projects 1 – 6 would be anticipated to result in less than significant incremental contributions to cumulative fire protection impacts.

4.12.7.2 Sheriff Protection

As analyzed in Section 4.12.5.2 above, Projects 1 – 6 would not cause effects to result in significant demands to sheriff staffing or response times. Projects 1 – 6 would also implement site security control, including 24-hour remotely monitored video cameras for security monitoring in order to prevent potential theft and vandalism activities. Additionally, a portion of Projects 1 – 6 taxes levied would be allocated to sheriff services. Other developments in the vicinity of Projects 1 – 6 would also be required to pay taxes that would be allocated to sheriff services. As a result, construction and operation of Projects 1 – 6 would be anticipated to result in less than significant incremental contributions to cumulative sheriff protection impacts. Therefore, cumulative impacts associated with sheriff services would be less than significant.

4.12.8 References

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4.13 TRANSPORTATION AND TRAFFIC

4.13.1 Introduction

This analysis of transportation and traffic includes a description of the environmental and regulatory setting, significance criteria, traffic impacts, and mitigation measures for each Project. It also includes a cumulative impacts section that analyzes the traffic impact from the Projects in relationship to other proposed projects in the area. This analysis is based on the Transportation Impact Studies (TISs) that are included in Appendix B-9 of this EIR.

4.13.2 Environmental Setting

The Projects are located closest to the following regional roadways: State Route 138 (SR-138), Interstate 5 (I-5) and State Route 14 (SR-14). SR-138, also known locally as West Avenue D, is a two-lane road that runs east from I-5 to the junction of SR-138 and SR-14 where SR-138 south is combined with SR-14 south. I-5 is a major north-south route of the Interstate Highway System providing connection between the cities of San Diego, Los Angeles, Bakersfield, and Sacramento. SR-14, also known locally as Antelope Valley Freeway, runs north-south connecting the cities of Lancaster, Rosamond, Palmdale, and Los Angeles.

Local roadways that would be used to access the individual Projects include SR-138/West Avenue D (Projects 1 and 6), SR-14 (Projects 1 and 6), West Avenue G (Project 3), West Avenue I (Projects 4 and 5), West Avenue K (Project 2), West Avenue B (Project 1), 90th Street West (Projects 1, 3 and 6), and 110th Street West (Projects 1, 2, 4 and 5), West Avenue H (Projects 1-6), 70th Street West (Projects 2 and 3), West Avenue A (Projects 1-6). West Avenue G is a paved road with between two and six lanes (lanes reduce as traffic travels west on West Avenue G). West Avenue I is a paved road with between 2 and 8 lanes (lanes reduce as traffic travels west on West Avenue I). West Avenue A, K, B, 70th, 90th, 110th Streets West are paved road with two lanes. West Avenue H is a paved road between two and eight lanes. See Figures 4.13-1 through 4.13-6 Vicinity Maps for the State and local roads around the proposed Projects 1 – 6. There are three airports located within the general vicinity of the Projects: General William J. Fox Airfield, Edwards Air Force Base, and Palmdale Regional Airport.

4.13.2.1 Regional Setting

4.13.2.1.1 Project 1

Project 1 is a 20 MW solar project located on 240 acres of primarily unproductive agricultural land in Los Angeles County. Project 1 is located in unincorporated northern section of Los Angeles County, approximately 12 miles northwest of Lancaster and approximately 8 miles northwest of the intersection of SR-138/West Avenue D and SR-14. The Project site is surrounded by agricultural fields intermixed with non-native grasslands. The proposed schedule is to begin site preparation and construction in the third quarter of 2014 and complete construction and be commercially operational by the second quarter of 2015. The Project construction activities are anticipated to take approximately 12 months to complete.

Construction traffic traveling from the north (Rosamond) and south (Los Angeles) via SR 14 would access the Project site from exit 49 to SR-138/West Avenue D, a paved two lane road. The West

Avenue D interchange would provide traffic from the south with an individual left turn lane, and traffic from the north with an individual right turn lane. Using this exit would provide efficient access to the Project site while also avoiding the urban (more densely populated) residential and commercial areas of Lancaster. From SR-138/West Avenue D, traffic would flow west to 90th Street West and then north on 90th Street West to West Avenue B. Construction traffic traveling from Bakersfield or Los Angeles (I-5) can take SR-138 east for approximately 31 miles and then north on 90th Street West approximately two miles. Then travel west approximately one and one quarter miles on West Avenue B to the ingress/egress of the Project site.

Water used on-site during construction and operation would be delivered via trucks and originate from one of the following two separate locations defined as the Homer Option or the City of Lancaster Option. All other water source options would be less of an impact than these two options and therefore are not analyzed. Acquiring transferable groundwater rights option for water would provide a closer delivery point than the two options analyzed below and therefore would be less of an impact and not analyzed. Purchasing water district 40 out-of-basin water delivery point is at 50th Street West and West Avenue I which is closer to Projects 1-6 than the options analyzed below, therefore would be less of an impact and not analyzed. If the Adjudication process were to be finalized prior to any or all of the projects initiation the on-site wells could be used as the water source. If this option were used then the traffic impact would be less than significant because the distance traveled to deliver the water to the projects would be less than the below analyzed options. Finally, the option to use on-site wells by importing water to the basin option would also provide for a less impactful alternative than the below options and would subsequently not be analyzed either.

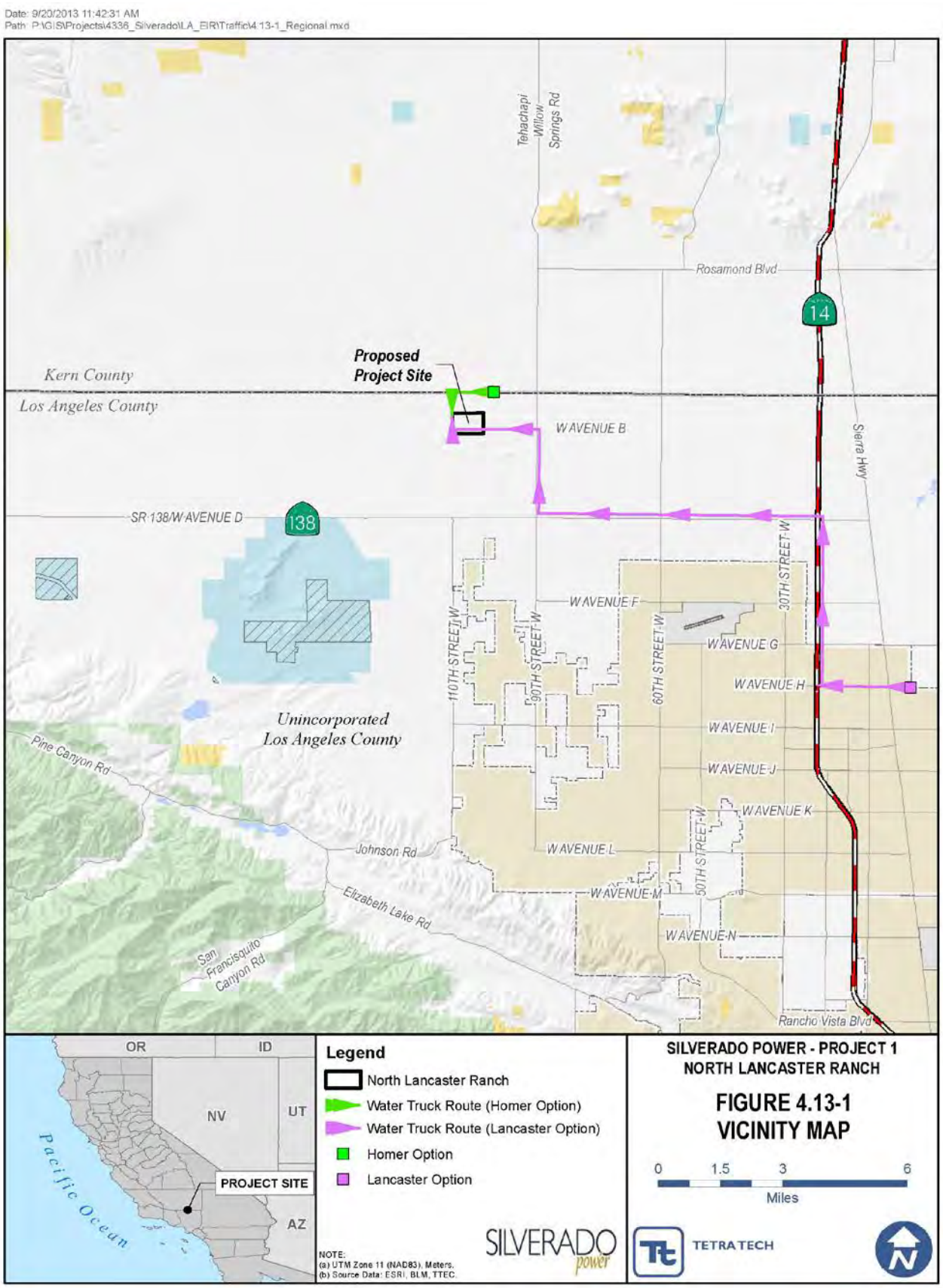
Water trucks traveling from the Homer Option would originate from 100th Street West and West Avenue A in Rosamond, California and take the following route:

- Travel west along West Avenue A for approximately 1 mile;
- Head south (turn left) along 110th Street West for approximately 1 mile;
- Head East along (turn left) on West Avenue B for approximately ½ mile to the Project site ingress/egress.

Water trucks traveling from the City of Lancaster Option would originate from West Avenue H and Division Street in Lancaster, California and take the following route:

- Travel West along West Avenue H for approximately 2 ¼ miles;
- Head North on SR-14 for approximately 4 miles;
- Head East on West Avenue D (SR 138) for approximately 7 miles;
- Head North (right turn) along 90th Street West for approximately 2 miles;
- Head west (left turn) along West Avenue B for approximately 2 miles;
- Head north (right turn) along 110th Street West for approximately ½ mile to the Project site ingress/egress.

See Figure 4.13-1 for a Vicinity Map showing the 2 possible routes for water trucks and Figure 4.13-2 for a Vicinity Aerial Map below.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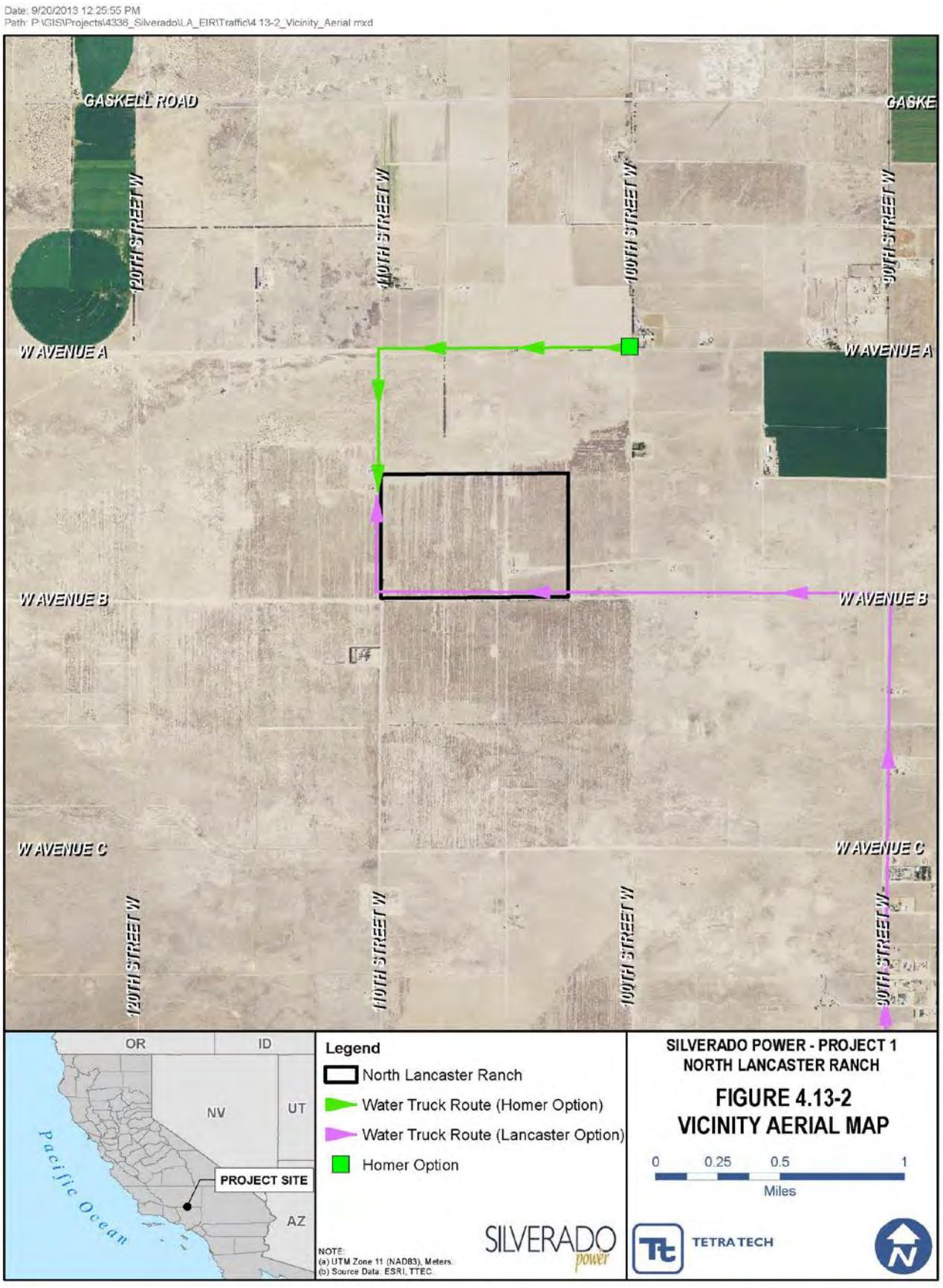
Tehachapi Willow Springs Rd
Rosamond Blvd
14
Proposed Project Site
Kern County
Los Angeles County
W AVENUE B
Sierra Hwy
SR 138/W AVENUE D
138
110TH STREET W
90TH STREET W
60TH STREET W
30TH STREET W
W AVENUE F
W AVENUE G
W AVENUE H
W AVENUE I
W AVENUE J
W AVENUE K
W AVENUE L
W AVENUE M
W AVENUE N
50TH STREET W
Unincorporated Los Angeles County
Pine Canyon Rd
Johnson Rd
Elizabeth Lake Rd
San Francisquito Canyon Rd
Rancho Vista Blvd
OR
ID
NV
UT
AZ
Pacific Ocean
PROJECT SITE
Legend
North Lancaster Ranch
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
Homer Option
Lancaster Option
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, BLM, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 1
NORTH LANCASTER RANCH
FIGURE 4.13-1
VICINITY MAP
0 1.5 3 6
Miles
TETRA TECH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GASKELL ROAD
GASKE
120TH STREET W
110TH STREET W
100TH STREET W
90TH STREET W
W AVENUE A
W AVENUE A
W AVENUE B
W AVENUE B
W AVENUE C
W AVENUE C
120TH STREET W
110TH STREET W
100TH STREET W
90TH STREET W
OR
ID
NV
UT
AZ
Pacific Ocean
PROJECT SITE
Legend
North Lancaster Ranch
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
Homer Option
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 1
NORTH LANCASTER RANCH
FIGURE 4.13-2
VICINITY AERIAL MAP
0 0.25 0.5 1
Miles
TETRA TECH
N

Traffic data was obtained from Los Angeles County Department of Public Works Machine Count Traffic Volumes for the above listed routes water trucks would take for the two options. The most recent AM peak hour (8AM) data available, for each water truck route, was obtained and projected to the year 2014 (year of Phase 1 construction) and 2015 (year of Phase 2 construction) by using a 2 percent growth rate per year. The analysis looks at 30 percent of the water trucks (3 water trucks) traveling to the site during the AM peak hour. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours and have not been included this analysis. The resulting totals for the projected 2014 and 2015 traffic with the additional water truck trips are shown in Table 4.13-1 (Homer Option) and Table 4.13-2 (City of Lancaster Option) below.

Table 4.13-1 Project 1 Existing and Projected Conditions for the Homer Option in 2014 and 2015

Road Segment	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Projected AM Peak Hour (2015)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic	2015 Conditions with Construction Traffic	2015 Percent Increase in Traffic
Traffic traveling West on W Avenue A W/O 90th Street W	26	27	28	10	3	30	11.11	31	10.71

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

Table 4.13-2 Project 1 Existing and Projected Conditions for City of Lancaster Option 2014 and 2015

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2011)[1]	Projected AM Peak Hour (2014)[2]	Projected AM Peak Hour (2015)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic	2015 Conditions with Construction Traffic	2015 Percent Increase in Traffic
Traffic traveling North on SR-14 S/O W Avenue D	1,725	N/A	1868	1905	10	3	1871	0.16	1908	0.16
Traffic traveling East on W Avenue D W/O SR-14	320	N/A	347	354	10	3	350	0.86	357	0.85
Traffic traveling North on 90th Street W N/O W Avenue D	N/A	58	62	63	10	3	65	4.84	66	4.76
Traffic traveling North on 110th Street W N/O W Avenue D	14	N/A	16	16	10	3	19	18.75	19	18.75

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes and CALTRANS

[2] Traffic projected using a 2% increase in traffic per year

4.13.2.1.2 Project 2

Project 2 is a 40 MW solar project located on 157 acres of land in unincorporated northern Los Angeles County approximately 11 miles west of Lancaster. The proposed schedule is to begin site preparation and construction in the first quarter of 2014 and complete the construction and be commercially operational by the third quarter of 2014. The Project construction activities are anticipated to take approximately eight months to complete.

Construction traffic traveling from the north (Rosamond) and south (Los Angeles) via SR-14 would access the Project site from exit 44 to West Avenue I. The West Avenue I interchange would provide traffic from the south with an individual left turn lane, and traffic from the north with an individual right turn lane. Although the Project is located off of West Avenue K, it is recommended that construction traffic use West Avenue I. Utilizing West Avenue I would safely and efficiently convey construction traffic to the Project site while avoiding the more densely populated residential and commercial areas of Lancaster. Bethel Christian School and Antelope Valley College are located off of West Avenue K and create an increase in local traffic during the peak AM and PM hours. Construction traffic traveling from Bakersfield (I-5) can take SR-138 to 110th Street West south to the Project site. The Project site ingress/egress would be off 110th Street West at the northeastern corner of the Project site.

Water used on-site during construction and operation would be delivered via trucks and originate from one of the following two separate locations defined as the Homer Option or the City of Lancaster Option.

Water trucks traveling from the Homer Option would originate from 100th Street West and West Avenue A in Rosamond, California and take the following route:

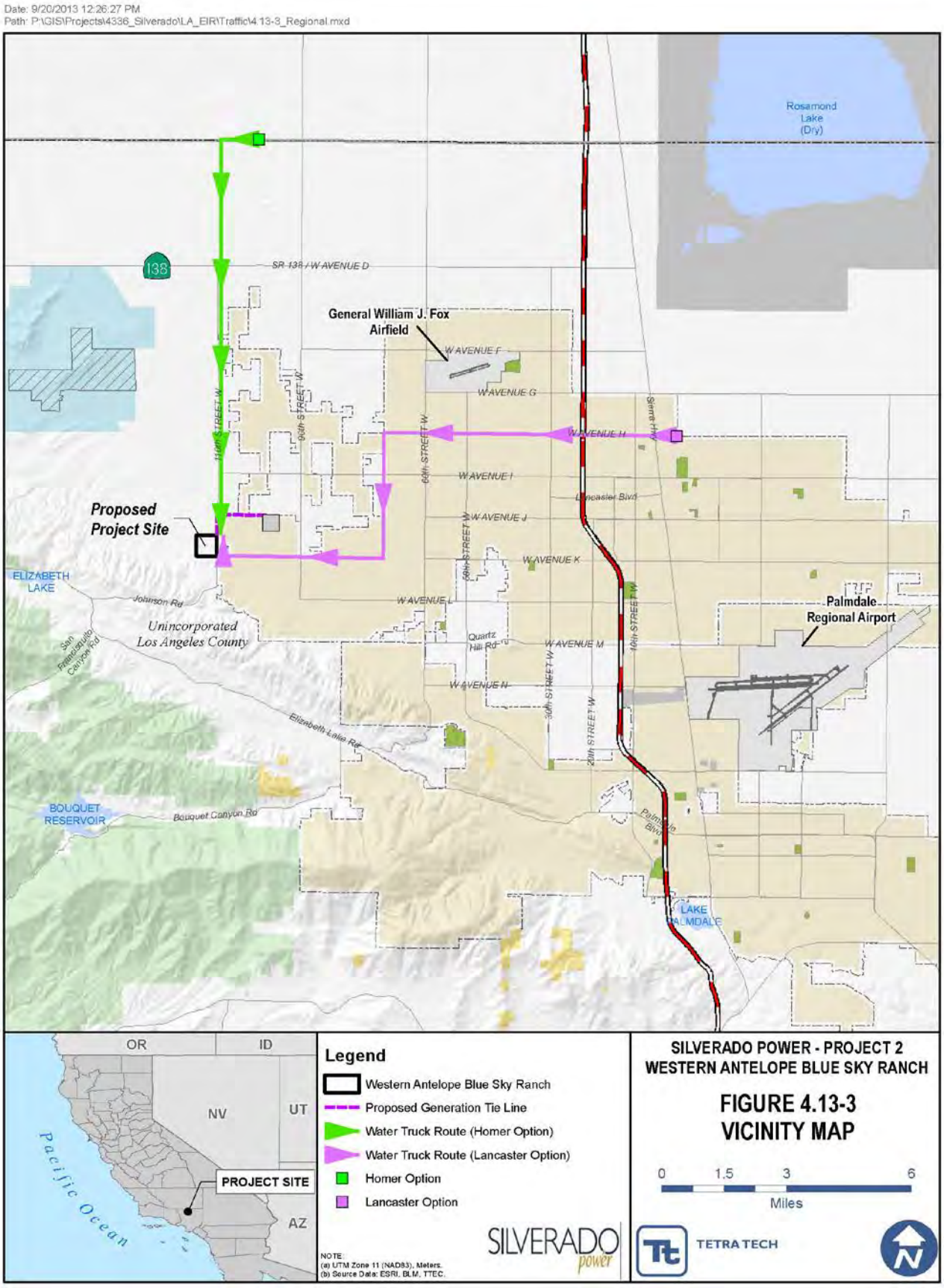
- Travel west along West Avenue A for approximately 1 mile; and
- Head south (turn left) along 110th Street West for approximately 10 miles to the Project site ingress/egress.

Water trucks traveling from the City of Lancaster Option would originate from West Avenue H and Division Street in Lancaster, California and take the following route:

- Travel west along West Avenue H for approximately 7 miles;
- Head south (turn left) on 70th Street West for approximately 3 miles;
- Head west (turn right) on West Avenue K for approximately 4 miles; and
- Head north (turn right) on 110th Street West for ½ mile to the Project site ingress/egress.

See Figure 4.13-3 for a Vicinity Map showing the 2 possible routes for water trucks and Figure 4.13-4 for a detailed Site Plan below.

Traffic data was obtained from Los Angeles County Department of Public Works Machine Count Traffic Volumes for the above listed routes water trucks would take for the two options. The most recent AM peak hour data available, for each water truck route, was obtained and projected to the year 2014 (year of construction) by using a 2 percent growth rate per year. The analysis looks at 30 percent of the water trucks (9 water trucks) traveling to the site during the AM peak hour. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours and have not been included this analysis. The resulting totals for the projected 2014 traffic with the additional water truck trips are shown in Table 4.13-3 (Homer Option) and Table 4.13-4 (City of Lancaster Option) below.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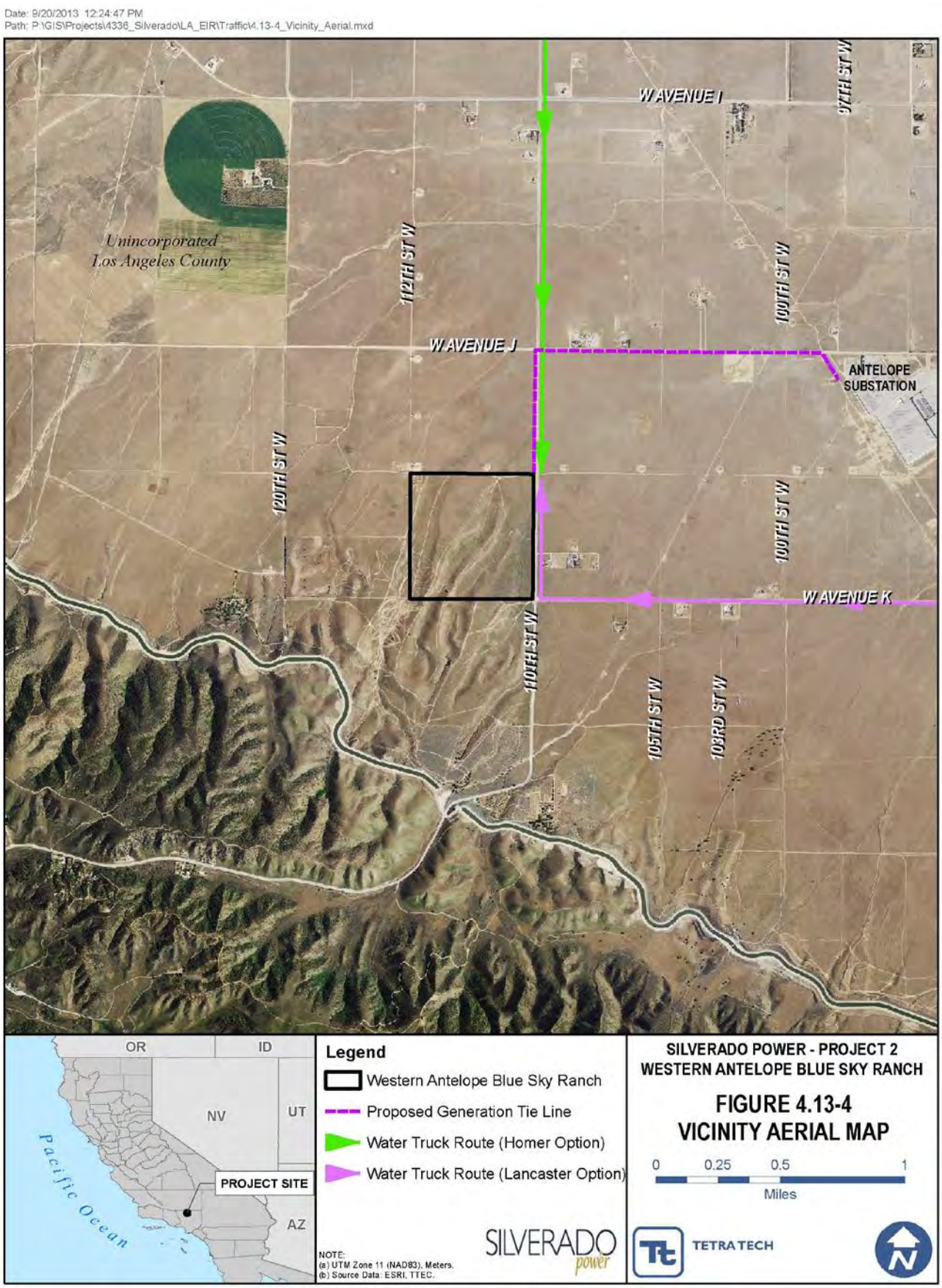
Rosamond Lake (Dry)
SR-138 / W AVENUE D
General William J. Fox Airfield
W AVENUE F
W AVENUE G
W AVENUE H
W AVENUE I
W AVENUE J
W AVENUE K
W AVENUE L
W AVENUE M
W AVENUE N
Lancaster Blvd
Palmdale Blvd
Proposed Project Site
ELIZABETH LAKE
Johnson Rd
Unincorporated Los Angeles County
San Francisquito Canyon Rd
Quartz Hill Rd
Elizabeth Lake Rd
BOUQUET RESERVOIR
Bouquet Canyon Rd
Palmdale Regional Airport
LAKE PALMDALE
110th STREET W
90th STREET W
60th STREET W
50th STREET W
40th STREET W
10th STREET W
Sierra Hwy
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Western Antelope Blue Sky Ranch
Proposed Generation Tie Line
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
Homer Option
Lancaster Option
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, BLM, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 2
WESTERN ANTELOPE BLUE SKY RANCH
FIGURE 4.13-3
VICINITY MAP
0 1.5 3 6
Miles
TETRA TECH
N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W AVENUE I
97TH ST W
112TH ST W
100TH ST W
Unincorporated
Los Angeles County
W AVENUE J
ANTELOPE
SUBSTATION
120TH ST W
100TH ST W
W AVENUE K
110TH ST W
105TH ST W
103RD ST W
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Western Antelope Blue Sky Ranch
Proposed Generation Tie Line
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 2
WESTERN ANTELOPE BLUE SKY RANCH
FIGURE 4.13-4
VICINITY AERIAL MAP
0 0.25 0.5 1
Miles
TETRA TECH
N

Table 4.13-3 Existing and Projected Conditions for the Homer Option in 2014

Road Segment	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue A W/O 90th Street W	26	28	29	9	37	32.14
Traffic traveling South on 110th Street W N/O W Avenue K	64	67	29	9	76	13.43

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

Table 4.13-4 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on Avenue H E/O 70th Street W	57	N/A	62	29	9	71	14.52
Traffic traveling South on 70th Street W S/O W Avenue H	31	N/A	34	29	9	43	26.47
Traffic traveling West on Avenue K E/O 110th Street W	114	N/A	124	29	9	133	7.26
Traffic traveling North on 110th Street W N/O W Avenue K	N/A	83	87	29	9	96	10.34

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

4.13.2.1.3 Project 3

Project 3 is a 35 MW SGF located on 135.61 acres of unproductive agricultural land in Los Angeles County, approximately 6.73 miles northwest of Lancaster. The Project site is surrounded by agricultural fields and a few small areas of development to the northwest and southeast intermixed with non-native grasslands. The proposed schedule is to begin site preparation and construction in the second quarter of 2014 and complete the construction and be commercially operational by the fourth quarter of 2014. The Project construction activities are anticipated to take seven months to complete.

Construction traffic traveling from the north (Rosamond) and south (Los Angeles) via SR-14 would access the Project site from exit 46 to West Avenue G. The West Avenue G interchange would provide traffic from the south with an individual left turn lane, and traffic from the north with an individual right turn lane. Using this exit would provide efficient access to the Project site while also avoiding the urban (more densely populated) residential and commercial areas of Lancaster. Construction traffic traveling from Bakersfield (I-5) can take SR-138 to 70th Street West. Project site ingress/egress would be at the intersection of West Avenue G and 70th Street West.

Water used on-site during construction and operation would be delivered via trucks and originate from one of the following two separate locations defined as the Homer Option or the City of Lancaster Option. Water trucks traveling from the Homer Option would originate from 100th Street West and West Avenue A in Rosamond, California and take the following route:

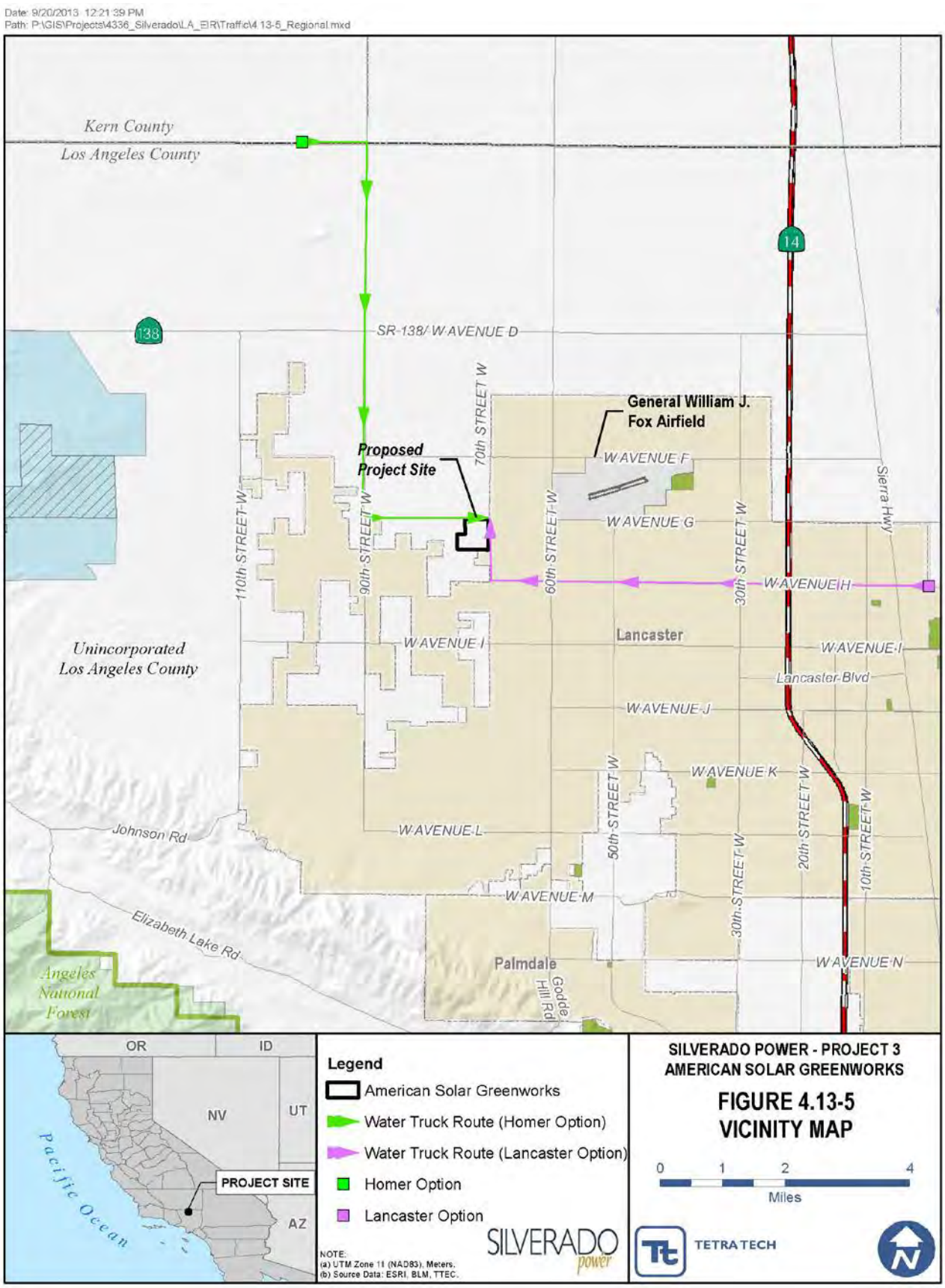
- Travel east along West Avenue A for approximately 2 miles;
- Head south (turn right) on 90th Street West for approximately 6 miles;
- Head east (turn left) on West Avenue G for approximately 2 miles; and
- Head south (turn right) on 70th Street West for approximately ¼ mile to the Project site ingress/egress.

Water trucks traveling from the City of Lancaster Option would originate from West Avenue H and Division Street in Lancaster, California and take the following route:

- Travel west on West Avenue H for approximately 7 miles; and
- Head north (turn right) on 70th Street West for approximately 1 mile to the Project site ingress/egress.

See Figure 4.13-5 for a Vicinity Map showing the 2 possible routes for water trucks and Figure 4.13-6 for a detailed Site Plan below.

Traffic data was obtained from Los Angeles County Department of Public Works Machine Count Traffic Volumes for the listed routes water trucks would take for the two options. The most recent AM peak hour data available for each water truck route was obtained and projected to the year 2014 (year of construction) by using a 2 percent growth rate per year. The analysis looks at 30 percent of the water trucks (9 water trucks) traveling to the site during the AM peak hour. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours and have not been included this analysis. The resulting totals for the projected 2014 traffic with the additional water truck trips are shown in Table 4.13-5 (Homer Option) and Table 4.13-6 (City of Lancaster Option) below.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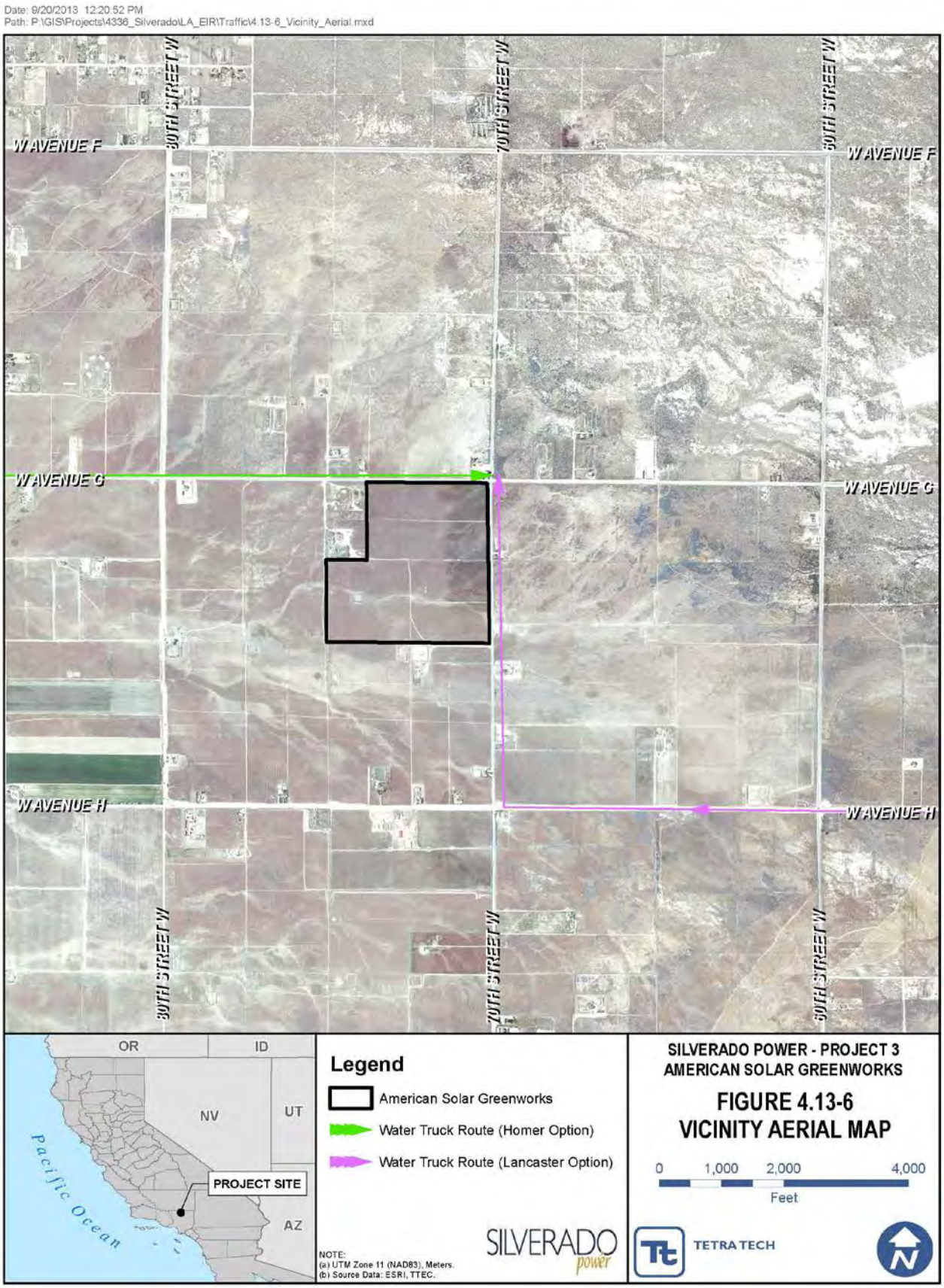
Kern County
Los Angeles County
Unincorporated
Los Angeles County
SR-138/ W AVENUE D
Proposed
Project Site
General William J.
Fox Airfield
W AVENUE F
W AVENUE G
W AVENUE H
W AVENUE I
W AVENUE J
W AVENUE K
W AVENUE L
W AVENUE M
W AVENUE N
Lancaster
Lancaster Blvd
Palmdale
Johnson Rd
Elizabeth Lake Rd
Godde Hill Rd
Angeles
National
Forest
110th STREET W
90th STREET W
70th STREET W
60th STREET W
50th STREET W
30th STREET W
20th STREET W
10th STREET W
Sierra Hwy
14
138
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
American Solar Greenworks
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
Homer Option
Lancaster Option
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, BLM, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 3
AMERICAN SOLAR GREENWORKS
FIGURE 4.13-5
VICINITY MAP
0 1 2 4
Miles
TETRA TECH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W AVENUE F
W AVENUE G
W AVENUE H
30TH STREET W
OR
ID
NV
UT
AZ
Pacific Ocean
PROJECT SITE
Legend
American Solar Greenworks
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 3
AMERICAN SOLAR GREENWORKS
FIGURE 4.13-6
VICINITY AERIAL MAP
0 1,000 2,000 4,000
Feet
TETRA TECH

Table 4.13-5 Existing and Projected Conditions for the Homer Option in 2014

Road Segment	AM Peak Hour (2011)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling East on W Avenue A W/O 90th Street W	N/A	25	27	29	9	36	33.33
Traffic traveling South on 90th Street W S/O W Avenue D	65	N/A	69	29	9	78	13.04
Traffic traveling South on 70th Street W N/O W Avenue H	N/A	25	27	29	9	36	33.33

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

Table 4.13-6 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue H E/O 70th Street W	57	N/A	62	29	9	71	14.52
Traffic traveling North on 70th Street W N/O W Avenue H	38	N/A	42	29	9	51	21.43

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

4.13.2.1.4 Project 4

Project 4 is a 52 MW solar project located on 256 acres of previously disturbed, fallow agricultural land in Los Angeles County, approximately 7.5 miles northwest of Lancaster. The Project site is surrounded by agricultural fields and a few small areas of development to the north and southeast intermixed with non-native grasslands. The proposed schedule is two phases and begins site preparation and construction in the first quarter of 2014 and complete the construction and be commercially operational by the fourth quarter of 2014. The Project construction activities are anticipated to take approximately twelve months to complete.

Construction traffic traveling from the north (Rosamond) and south (Los Angeles) via SR-14 would access the Project site from exit 44 to West Avenue I. The West Avenue I interchange would provide traffic from the south with an individual left turn lane, and traffic from the north with an individual right turn lane. Using this exit would provide efficient access to the Project site while also avoiding the urban (more densely populated) residential and commercial areas of Lancaster. Construction traffic traveling from the Bakersfield area (I-5) can take SR-138 east, then south on 110th Street West to access the Project site.

Water used on-site during construction and operation would be delivered via trucks and originate from one of the following two separate locations defined as the Homer Option or the City of Lancaster Option. Water trucks traveling from the Homer Option would originate from 100th Street West and West Avenue A in Rosamond, California and take the following route:

- Travel west along West Avenue A for approximately 1 mile;
- Head south (turn left) along 110th Street West for approximately 8 miles;
- Head east (turn left) along West Avenue I for approximately 2 miles;

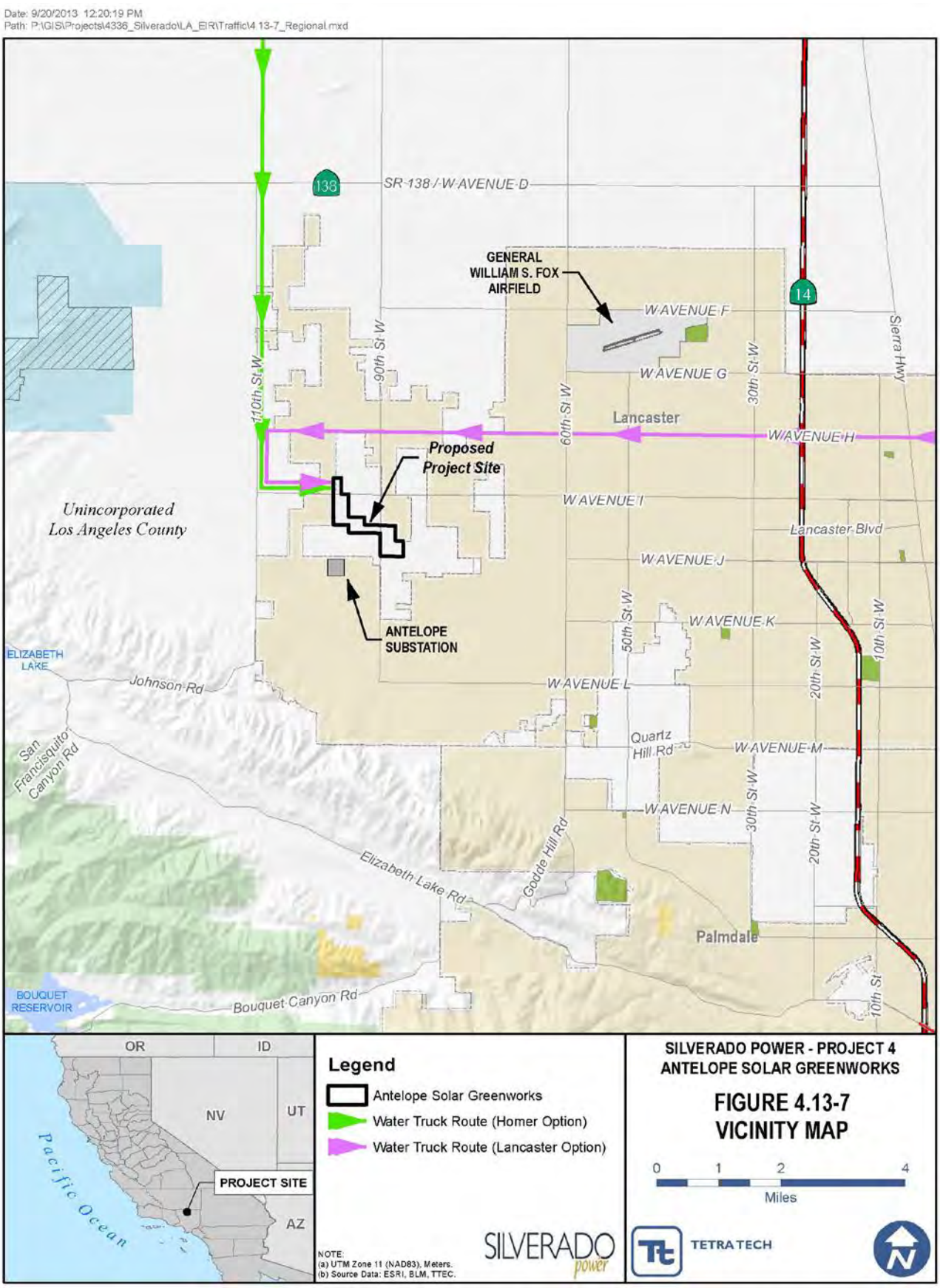
- Head south (turn right) along 90th Street West for approximately 1 mile; and
- Then head east (turn left) along West Avenue J for approximately ¼ mile to the Project site ingress/egress.

Water trucks traveling from the City of Lancaster Option would originate from West Avenue H and Division Street in Lancaster, California and take the following route:

- Travel west on West Avenue H for approximately 7 miles;
- Head south (turn left) on 70th Street West for approximately 2 miles;
- Head west (turn right) on West Avenue J for approximately 2 miles;
- Head north (turn right) on 90th Street West for approximately 1 mile; and
- Then head west (turn left) on West Avenue I for approximately 1 mile to the Project site ingress/egress.

See Figure 4.13-7 for a Vicinity Map showing the 2 possible routes for water trucks and Figure 4.13-8 for a detailed Site Plan below.

Traffic data was obtained from Los Angeles County Department of Public Works Machine count Traffic Volumes for the listed routes water trucks would take for the two options. The most recent AM peak hour data available for each water truck route was obtained and projected to the year 2014 (year of construction for both Phase 1 and Phase 2) by using a 2 percent growth rate per year. The analysis looks at 30 percent of the water trucks (9 water trucks) traveling to the site during the AM peak hour. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours and have not been included this analysis. The resulting totals for the projected 2014 traffic with the additional water truck trips are shown in Table 4.13-7 (Homer Option) and Table 4.13-8 (City of Lancaster Option) below.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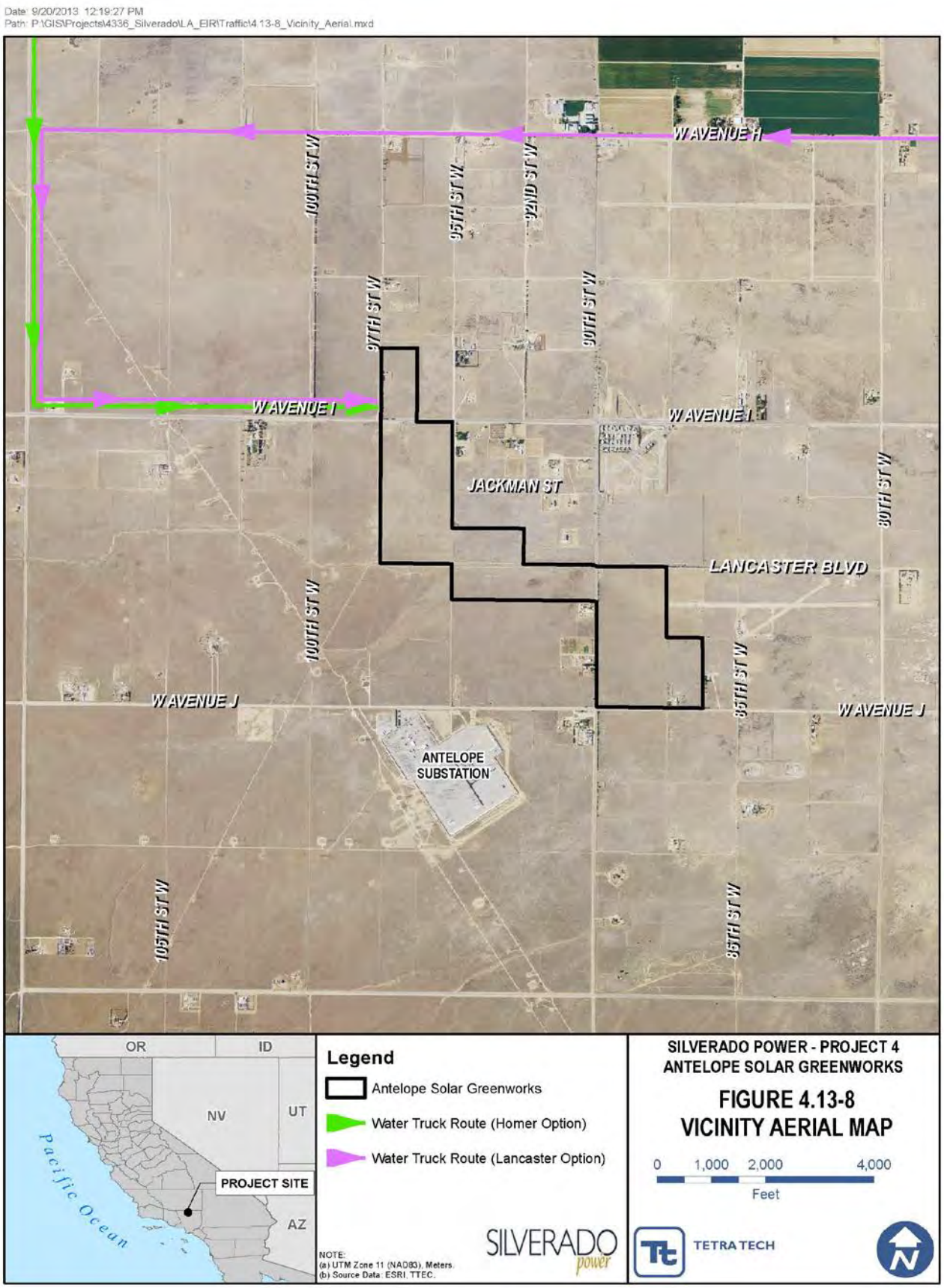
SR-138 / W AVENUE D
GENERAL WILLIAM S. FOX AIRFIELD
W AVENUE F
W AVENUE G
W AVENUE H
W AVENUE I
W AVENUE J
W AVENUE K
W AVENUE L
W AVENUE M
W AVENUE N
Lancaster
Lancaster Blvd
Palmdale
Sierra Hwy
110th St W
90th St W
60th St W
50th St W
30th St W
20th St W
10th St W
Proposed Project Site
ANTELOPE SUBSTATION
Unincorporated Los Angeles County
ELIZABETH LAKE
Johnson Rd
San Francisquito Canyon Rd
Quartz Hill Rd
Godde Hill Rd
Elizabeth Lake Rd
BOUQUET RESERVOIR
Bouquet Canyon Rd
OR
ID
NV
UT
AZ
Pacific Ocean
PROJECT SITE
Legend
Antelope Solar Greenworks
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, BLM, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 4
ANTELOPE SOLAR GREENWORKS
FIGURE 4.13-7
VICINITY MAP
0 1 2 4
Miles
TETRA TECH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W AVENUE H
100TH ST W
95TH ST W
92ND ST W
97TH ST W
90TH ST W
W AVENUE I
W AVENUE I
JACKMAN ST
80TH ST W
LANCASTER BLVD
100TH ST W
85TH ST W
W AVENUE J
W AVENUE J
ANTELOPE SUBSTATION
105TH ST W
85TH ST W
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Antelope Solar Greenworks
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 4
ANTELOPE SOLAR GREENWORKS
FIGURE 4.13-8
VICINITY AERIAL MAP
0 1,000 2,000 4,000
Feet
TETRA TECH

Table 4.13-7 Existing and Projected Conditions for the Homer Option 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue A W/O 90th Street W	N/A	26	28	32	10	38	35.71
Traffic traveling South on 110th Street W N/O W Avenue I	23	N/A	25	32	10	35	40.00
Traffic traveling East W Avenue I E/O 110th Street W	58	N/A	63	32	10	73	15.87
Traffic traveling South on 90th Street W N/O Avenue J	31	N/A	34	32	10	44	29.41
Traffic traveling East on W Avenue J W/O 90th Street W	60	N/A	65	32	10	75	15.38

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

Table 4.13-8 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue H E/O 70th Street W	57	N/A	62	32	10	72	16.13
Traffic traveling South on 70th Street W N/O W Avenue H	25	N/A	28	32	10	38	35.71
Traffic traveling West on W Avenue J E/O 90th Street W	67	N/A	73	32	10	83	13.70
Traffic traveling North on 90th Street W N/O W Avenue J	31	N/A	34	32	10	44	29.41
Traffic traveling West on W Avenue I W/O 70th Street W	50	N/A	55	32	10	65	18.18

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

4.13.2.1.5 Project 5

Project 5 is a 20 MW solar project located on 160 acres of primarily unproductive agricultural land in Los Angeles County, located approximately 10.5 miles west of Lancaster. The Project site is surrounded by agricultural fields and a few small areas of development to the north and southeast intermixed with non-native grasslands. The proposed schedule is to begin site preparation and construction in the third quarter of 2014 and complete the construction and be commercially operational by the fourth quarter of 2014. The Project construction activities are anticipated to take approximately six months to complete.

Construction traffic traveling from the north (Rosamond) and south (Los Angeles) via SR-14 would access the Project site from exit 44 to West Avenue I. The West Avenue I interchange would provide traffic from the south with an individual left turn lane, and traffic from the north with an individual right turn lane. Using this exit would provide efficient access to the Project site while also avoiding the urban (more densely populated) residential and commercial areas of Lancaster. Construction traffic traveling from Bakersfield (I-5) can take SR-138 to 110th Street West, then take a right on to West Avenue I to access the Project site. Project site ingress/egress would be from West Avenue I.

Water used on-site during construction and operation would be delivered via trucks and originate from one of the following two separate locations defined as the Homer Option or the City of Lancaster Option. Water trucks traveling from the Homer Option would originate from 100th Street West and West Avenue A in Rosamond, California and take the following route:

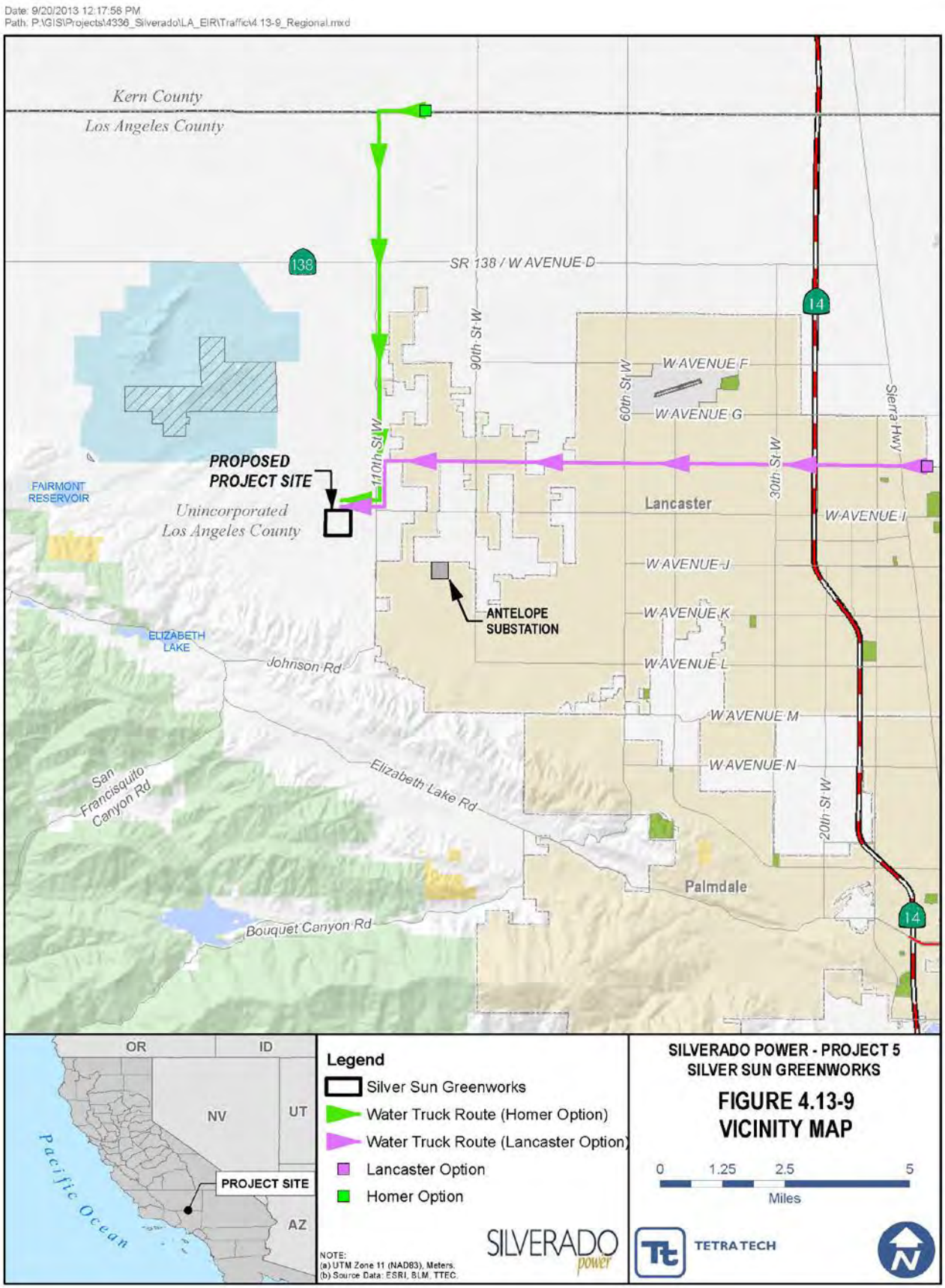
- Travel west along West Avenue A for approximately 1 mile;
- Head south (turn left) along 110th Street West for approximately 8 miles; and
- Then Head west (turn right) along West Avenue I for approximately 1 mile to the Project site ingress/egress.

Water trucks traveling from the City of Lancaster Option would originate from West Avenue H and Division Street in Lancaster, California and take the following route:

- Travel west on West Avenue H for approximately 11 miles;
- Head south (turn left) on 110th Street West for approximately 1 mile; and
- Head west (turn right) on West Avenue I for approximately 1 mile to the Project site ingress/egress.

See Figure 4.13-9 for a Vicinity Map showing the 2 possible routes for water trucks and Figure 4.13-10 for a detailed Site Plan below.

Traffic data was obtained from Los Angeles County Department of Public Works Machine Count Traffic Volumes for the above listed routes water trucks would take for the two options. The most recent AM peak hour data available, for each water truck route, was obtained and projected to the year 2014 (year of construction) by using a 2 percent growth rate per year. The analysis looks at 30 percent of the water trucks (12 water trucks) traveling to the site during the AM peak hour. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours and have not been included this analysis. The resulting totals for the projected 2014 traffic with the additional water truck trips are shown in Table 4.13-9 (Homer Option) and Table 4.13-10 (City of Lancaster Option) below.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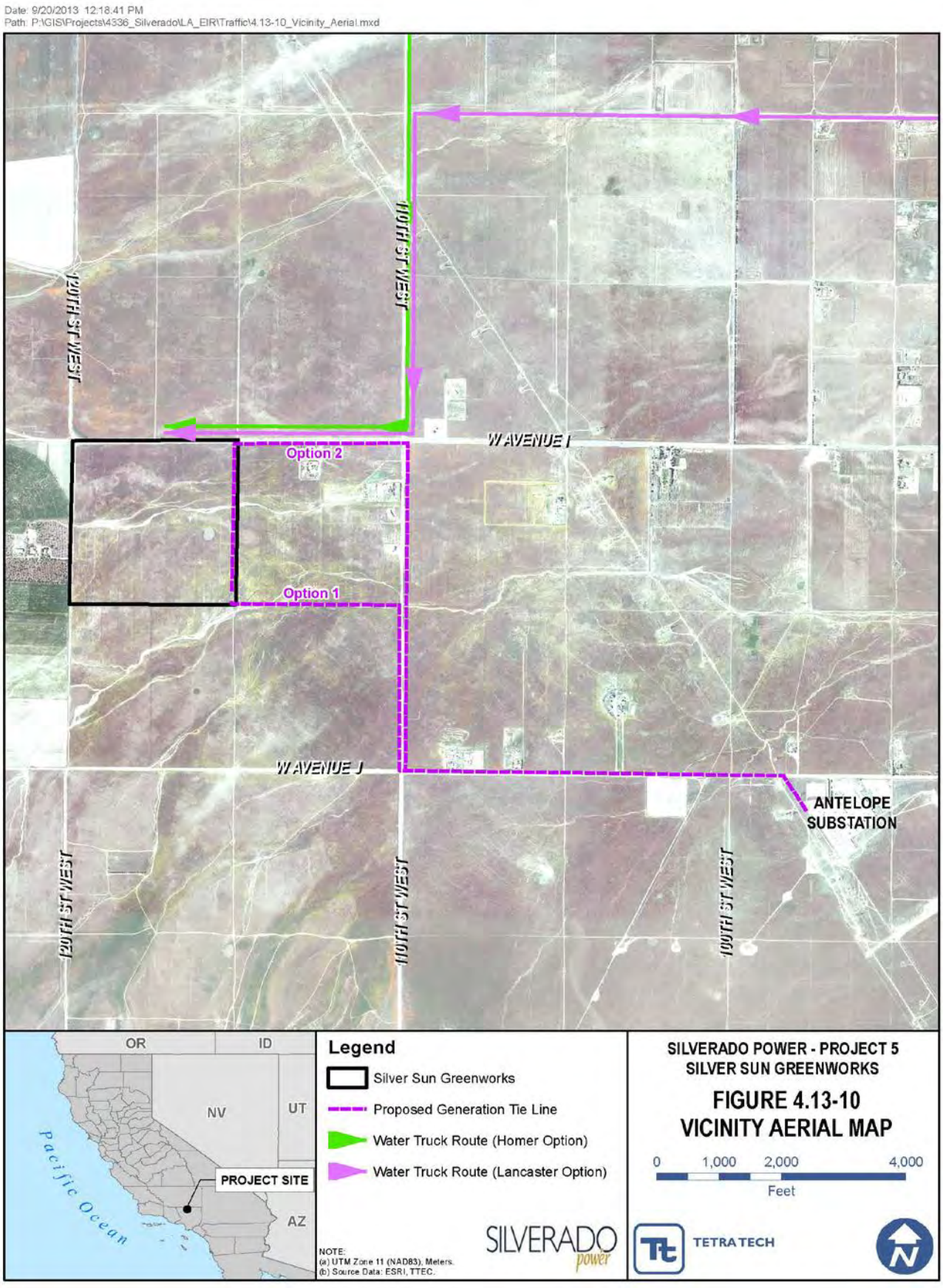
Kern County
Los Angeles County
SR 138 / W AVENUE D
90th St W
60th St W
W AVENUE F
W AVENUE G
Sierra Hwy
110th St W
30th St W
PROPOSED PROJECT SITE
FAIRMONT RESERVOIR
Unincorporated Los Angeles County
Lancaster
W AVENUE I
W AVENUE J
ANTELOPE SUBSTATION
W AVENUE K
ELIZABETH LAKE
Johnson Rd
W AVENUE L
W AVENUE M
W AVENUE N
San Francisquito Canyon Rd
Elizabeth Lake Rd
20th St W
Palmdale
Bouquet Canyon Rd
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Silver Sun Greenworks
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
Lancaster Option
Homer Option
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, BLM, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 5
SILVER SUN GREENWORKS
FIGURE 4.13-9
VICINITY MAP
0 1.25 2.5 5
Miles
TETRA TECH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120TH ST WEST
110TH ST WEST
W AVENUE I
Option 2
Option 1
W AVENUE J
ANTELOPE SUBSTATION
100TH ST WEST
90TH ST WEST
80TH ST WEST
OR
ID
NV
UT
AZ
PROJECT SITE
Pacific Ocean
Legend
Silver Sun Greenworks
Proposed Generation Tie Line
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 5
SILVER SUN GREENWORKS
FIGURE 4.13-10
VICINITY AERIAL MAP
0 1,000 2,000 4,000
Feet
TETRA TECH
N

Table 4.13-9 Existing and Projected Conditions for the Homer Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue A W/O 90th Street W	N/A	26	28	40	12	40	42.86
Traffic traveling South on 110th Street W N/O W Avenue I	23	N/A	25	40	12	37	48.00
Traffic traveling West on W Avenue I W/O 110th Street W	27	N/A	30	40	12	42	40.00
[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes							
[2] Traffic projected using a 2% increase in traffic per year							

Table 4.13-10 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue H E/O 70th Street W	57	62	40	12	74	19.35
Traffic traveling South on 110th Street W N/O W Avenue I	23	25	40	12	37	48.00
Traffic traveling West on W Avenue I W/O 110th Street W	27	30	40	12	42	40.00
[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes						
[2] Traffic projected using a 2% increase in traffic per year						

4.13.2.1.6 Project 6

Project 6 is a 5 MW solar project located on 38.49 acres of primarily unproductive agricultural land in Los Angeles County, approximately 6.4 miles north of Lancaster and approximately 1.2 miles west of the intersection of SR-138/West Avenue D and SR-14. The Project site is surrounded by agricultural fields intermixed with non-native grasslands. The proposed schedule is to begin site preparation and construction in the first quarter of 2014 and complete construction and be commercially operational by the second quarter of 2013. The Project construction activities are anticipated to take approximately three months to complete.

Construction traffic traveling from the north (Rosamond) and south (Los Angeles) via SR-14 would access the Project site from exit 49 to SR-138/West Avenue D. The West Avenue D interchange would provide traffic from the south with an individual left turn lane, and traffic from the north with an individual right turn lane. Using this exit would provide efficient access to the Project site while also avoiding the urban (more densely populated) residential and commercial areas of Lancaster. Construction traffic traveling from Bakersfield (I-5) can take SR-138 east for approximately 34.4 miles to the ingress/egress of the Project site.

Water used on-site during construction and operation would be delivered via trucks and originate form one of the following two separate locations defined as the Homer Option or the City of Lancaster Option. Water trucks traveling from the Homer Option would originate from 100th Street West and West Avenue A in Rosamond, California and take the following route:

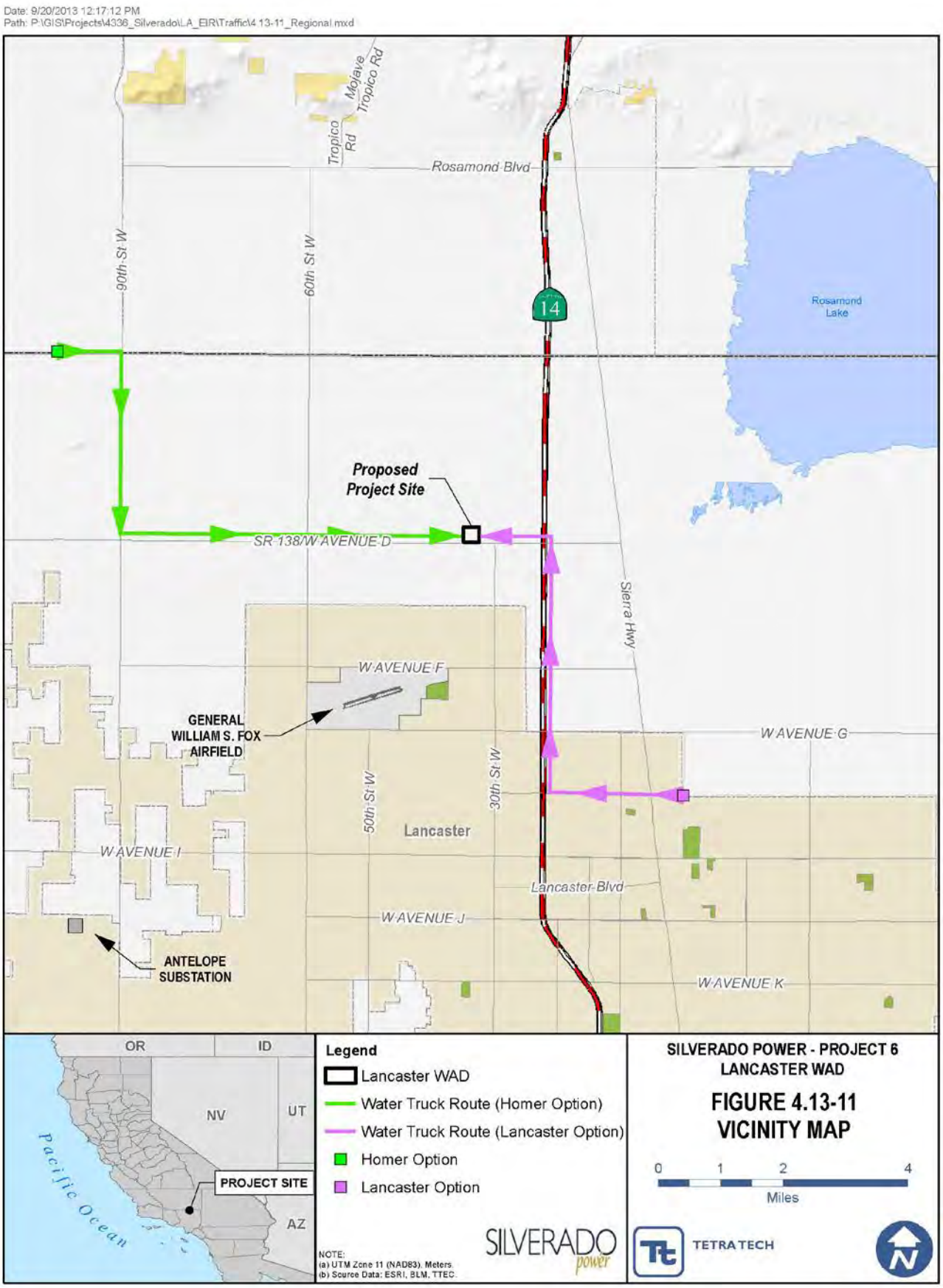
- Travel east along West Avenue A for approximately 4 miles;
- Head south (turn right) along 90th Street West for approximately 3 miles; and
- Then head east (left turn) along West Avenue D for approximately 2.6 miles to the Project site ingress/egress.

Water trucks traveling from the City of Lancaster Option would originate from West Avenue H and Division Street in Lancaster, California and take the following route:

- Travel west along West Avenue H for approximately 2 ¼ miles;
- Head north on SR 14 for approximately 4 miles; and
- Then head east on West Avenue D for approximately 1 ¼ miles to the Project site ingress/egress.

See Figure 4.13-11 for a Vicinity Map showing the 2 possible routes for water trucks and Figure 4.13-12 for a detailed Site Plan below.

Traffic data was obtained from Los Angeles County Department of Public Works Machine Count Traffic Volumes for the above listed routes water trucks would take for the two options. The most recent AM peak hour data available, for each water truck route, was obtained and projected to the year 2014 (year of construction) by using a 2 percent growth rate per year. The analysis looks at 30 percent of the water trucks (9 water trucks) traveling to the site during the AM peak hour. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours and have not been included this analysis. The resulting totals for the projected 2014 traffic with the additional water truck trips are shown in Table 4.13-11 (Homer Option) and Table 4.13-12 (City of Lancaster Option) below.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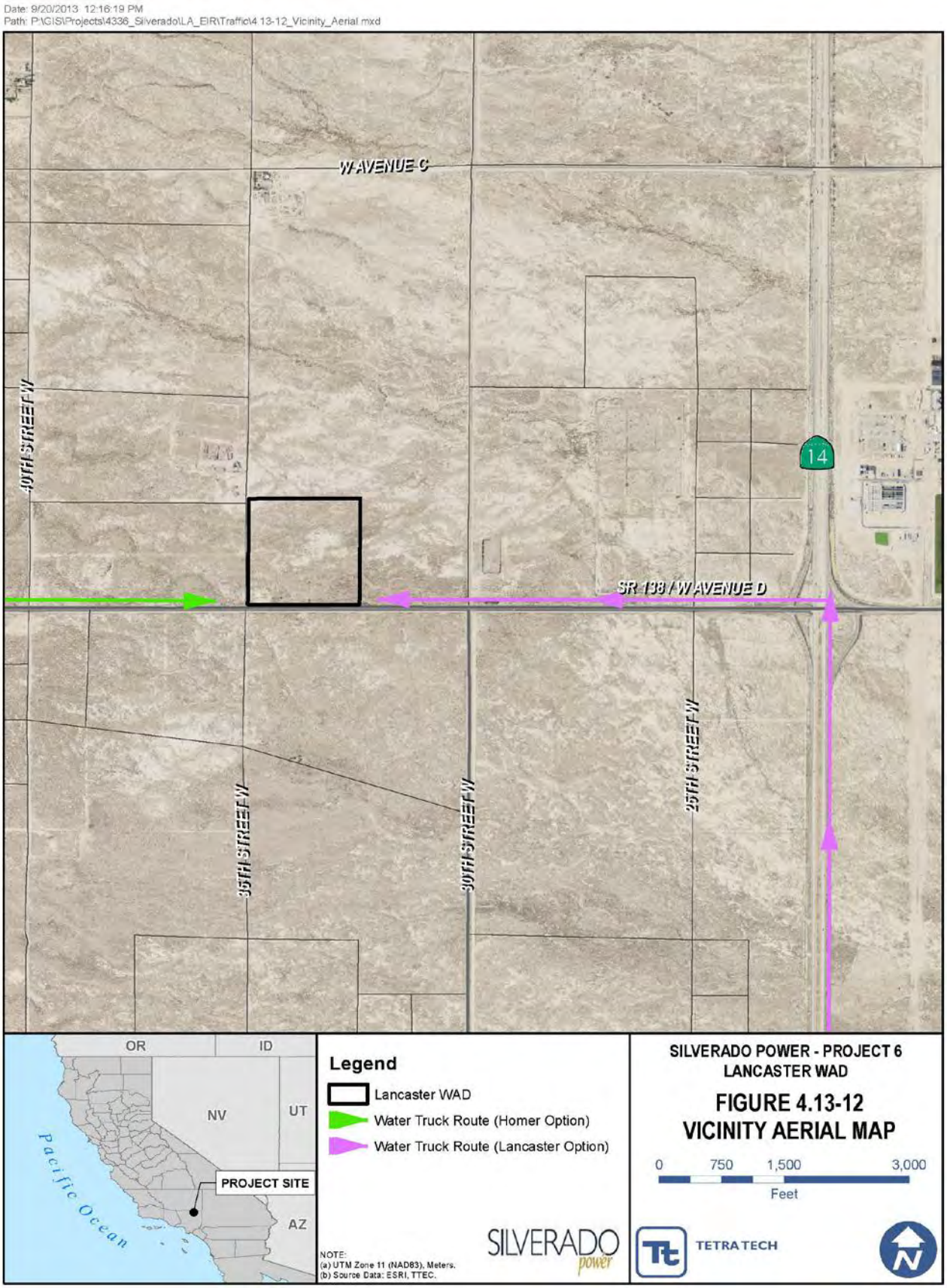
Mojave Tropico Rd
Tropico Rd
Rosamond Blvd
90th St W
60th St W
14
Rosamond Lake
Proposed Project Site
SR-138/W AVENUE D
Sierra Hwy
W AVENUE F
GENERAL WILLIAM S. FOX AIRFIELD
W AVENUE G
50th St W
30th St W
Lancaster
W AVENUE I
Lancaster Blvd
W AVENUE J
ANTELOPE SUBSTATION
W AVENUE K
OR
ID
NV
UT
AZ
Pacific Ocean
PROJECT SITE
Legend
Lancaster WAD
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
Homer Option
Lancaster Option
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, BLM, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 6
LANCASTER WAD
FIGURE 4.13-11
VICINITY MAP
0 1 2 4
Miles
TETRA TECH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W AVENUE C
40TH STREET W
SR 138 / W AVENUE D
35TH STREET W
30TH STREET W
25TH STREET W
14
OR
ID
NV
UT
AZ
Pacific Ocean
PROJECT SITE
Legend
Lancaster WAD
Water Truck Route (Homer Option)
Water Truck Route (Lancaster Option)
NOTE:
(a) UTM Zone 11 (NAD83), Meters.
(b) Source Data: ESRI, TTEC.
SILVERADO power
SILVERADO POWER - PROJECT 6
LANCASTER WAD
FIGURE 4.13-12
VICINITY AERIAL MAP
0 750 1,500 3,000
Feet
TETRA TECH

Table 4.13-11 Existing and Projected Conditions for the Homer Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2011)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling East on W Avenue A W/O 90th Street W	N/A	N/A	25	27	40	12	39	44.44
Traffic traveling South on 90th Street W N/O W Avenue D	N/A	101	N/A	108	40	12	120	11.11
Traffic traveling East on W Avenue D E/O 90th Street W	93	N/A	N/A	101	40	12	113	11.88
[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes								
[2] Traffic projected using a 2% increase in traffic per year								

Table 4.13-12 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2011)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling East on W Avenue A W/O 90th Street W	N/A	N/A	25	27	40	12	39	44.44
Traffic traveling South on 90th Street W N/O W Avenue D	N/A	101	N/A	108	40	12	120	11.11
Traffic traveling East on W Avenue D E/O 90th Street W	93	N/A	N/A	101	40	12	113	11.88

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes
[2] Traffic projected using a 2% increase in traffic per year

4.13.3 Regulatory Setting

The following federal, State, and local laws, ordinances, regulations and standards may be applicable during the construction phase of the Projects:

4.13.3.1 Federal

4.13.3.1.1 National Safety Standards

Title 49 CFR, Subtitle B, Chapter I, Parts 171-173, and 177-178. Contains national safety standards for the transport of goods, materials, and substances over public highways; and proper handling and storage of hazardous materials during transportation.

Title 49 CFR, Subtitle B, Chapter III, Parts 350–399. Motor Carrier Safety Regulations address safety considerations for the transport of goods, materials, and substances over public highways.

Hazardous Materials Transportation Act of 1974. Title 49 CFR Subtitle B, Chapter III, Part 397.9 directs the Federal Department of Transportation to establish criteria and regulations for the safe interstate transportation of hazardous materials.

4.13.3.2 State

The Projects are located within Caltrans District 7.

4.13.3.3 Local

4.13.3.3.1 County Vehicle Code

County Vehicle Code (CVC) Section 2500-2505. Authorizes the Commissioner of Highway Patrol to issue licenses for the transportation of hazardous materials.

CVC Sections 31303-31309. Requires that the transportation of hazardous materials be on the state or interstate highway that offers the shortest overall transit time possible. The administering agency for the above statutes is the CHP.

CVC, Section 35550. Imposes weight guidelines and restrictions upon vehicles traveling upon freeways and highways. The section holds that "a single axle load shall not exceed 20,000 pounds. The load on any one wheel or wheels supporting one end of an axle is limited to 10,500 pounds. The front steering axle load is limited to 12,500 pounds." Furthermore, CVC Section 35551 defines the maximum overall gross weight as 80,000 pounds and adds that "the gross weight of each set of tandem axles shall not exceed 34,000 pounds." The administering agency for the above statute is Caltrans.

CVC, Section 35780. Requires a Single-Tip Transportation Permit to transport oversized or excessive loads over state highways. The permit can be acquired through Caltrans.

4.13.3.3.2 California Street and Highways Code

CSHC Sections 117, 660-711. Require an encroachment permit from Caltrans for facilities that require construction, maintenance, or repairs on or across state highways.

CSHC Sections 660, 670, 1450, and 1460 et seq. Regulate ROW encroachment and the granting of permits for encroachment on State and county roads.

4.13.3.4 Local

4.13.3.4.1 Laws, Ordinances, Regulations and Standard

Los Angeles County issues Road Use Permits for oversized/overweight loads. This permit is also required for construction, excavation, and encroachment on public highways. The permit is issued by the Department of Public Works.

4.13.4 Significance Criteria

The CEQA thresholds for transportation and traffic are listed below and were used to evaluate impacts on each of the Projects, both individually and collectively, as applicable. Would the Projects:

a) Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b) Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

e) Would the project result in inadequate emergency access?

f) Would the project conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

4.13.5 Impact Analysis Methods

The steps described below were used to complete the TISs provided in Appendix B-9 and form the basis of the analysis that follows.

- Determine the traffic routes for two options that water trucks would take to the Project site (Homer Option and City of Lancaster Option);
- Determine the existing AM peak hour (7:00 AM) traffic for the determined routes water trucks would take to the site;
- Estimate the projected existing traffic for the expected year of construction using a growth rate of 2 percent per year;
- Determine the AM peak hour water truck trips during construction assuming 30 percent of the water trucks travel to the Projects sites during the AM peak hour;
- Calculate the percent increase in volume by comparing projected existing peak hour trips (without the Projects) with the peak hour traffic trips during construction (with the Project);
- Evaluate the Projects impacts on traffic conditions;
- Determine the applicable laws, ordinances, regulations, and standards;
- Recommend measures to mitigate the potential Projects impacts to the existing transportation infrastructure, as needed; and
- Provide conclusions of the traffic studies.

4.13.6 Impact Analysis

4.13.6.1 Project Impacts: Criterion A – Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

4.13.6.1.1 Project 1 and Gen-tie Line

Construction Impacts

Traffic generated during the construction phase of Project and its gen-tie line would include construction worker commuter trips, water truck trips, and delivery truck trips. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours. It is anticipated that 30 percent of water trucks would arrive to the Project site during the AM peak hour. The Project would have an average of 75 workers per day and a peak of 100 workers per day over a 20-day period during construction. For equipment and materials, the Project would have an average of 4 delivery truck trips per day with an expected peak of 26 delivery truck trips. It is anticipated that construction workers and delivery trucks would arrive to the Project site outside of peak hours.

Dependent upon climatic conditions during construction, the maximum estimated water use for the site is 50 acre-feet for Phase 1 and 50 acre-feet for Phase 2, which would be obtained from an off-site provider. Potable water would be brought in to the Project site for drinking and domestic needs. During the site preparation and site preparation activities, water would mainly be used for soil compaction and control of fugitive dust generation. Smaller quantities of water would also be required on an as-needed basis for preparation of the concrete required for foundations and other minor uses. Subsequent to these construction activities, water usage would primarily be used for on-going dust suppression associated with the remaining construction of the Project. The Project would require a total of 10 daily water truck trips arriving on-site. Assuming that 30 percent of the water trucks would arrive on-site during the AM peak hour (7:00 AM), 3 water trucks would be used in this analysis.

As shown in Tables 4.13-13 and 4.13-14, during the AM peak hour the local roads would experience a maximum increase in traffic volume of 18.75 percent. This is mainly due to the existing low volume and low peak traffic conditions for these roads, which are located in rural areas and operate well below the existing capacity of 1,600 vehicles per lane per hour for a 2-lane road. Therefore, it is concluded that these roads have adequate capacity to safely accommodate the increase from water truck traffic and would have a less than significant impact on the existing traffic conditions.

Table 4.13-13 Existing and Projected Conditions for the Homer Option in 2014 and 2015

Road Segment	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Projected AM Peak Hour (2015)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic	2015 Conditions with Construction Traffic	2015 Percent Increase in Traffic
Traffic traveling West on W Avenue A W/O 90th Street W	26	27	28	10	3	30	11.11	31	10.71
[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes									
[2] Traffic projected using a 2% increase in traffic per year									

Table 4.13-14 Existing and Projected Conditions for the City of Lancaster Option in 2014 and 2015

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2011)[1]	Projected AM Peak Hour (2014)[2]	Projected AM Peak Hour (2015)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic	2015 Conditions with Construction Traffic	2015 Percent Increase in Traffic
Traffic traveling North on SR-14 S/O W Avenue D	1,725	N/A	1868	1905	10	3	1871	0.16	1908	0.16
Traffic traveling East on W Avenue D W/O SR-14	320	N/A	347	354	10	3	350	0.86	357	0.85
Traffic traveling North on 90th Street W N/O W Avenue D	N/A	58	62	63	10	3	65	4.84	66	4.76
Traffic traveling North on 110th Street W N/O W Avenue D	14	N/A	16	16	10	3	19	18.75	19	18.75
[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes and CALTRANS										
[2] Traffic projected using a 2% increase in traffic per year										

During construction of gen-tie lines associated with the Project, it is anticipated that temporary one-lane road closures would be necessary. A Project Traffic Plan would be prepared to address the temporary one-lane road closures and submitted to the County for approval prior to issuance/approval of the County Grading Permit as indicated in TT-2. Parking, temporary office trailers, and construction and PV equipment lay-down areas would be located entirely within the Project site boundary. The construction impacts would be temporary and less than significant with mitigation.

Operations Impacts

The operational phase of the Project is anticipated to only generate an average of 2 additional vehicle trips during the AM and PM peak hours on a quarterly or as-needed basis with a maximum of 10 additional trips, which would only occur when panel washing operations are being conducted. Based on the traffic analysis for the water truck trips described above, the operational phase vehicle trips are considered negligible. Therefore, no additional post-construction operational analysis was conducted. It is concluded that the operational phase of the Project would have a less than significant impact on the traffic and/or transportation infrastructure.

4.13.6.1.2 Project 2 and Gen-tie Line

Construction Impacts

Traffic generated during the construction phase of Project 2 and its gen-tie line would include construction worker commuter trips, water truck trips, and delivery truck trips. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours. It is anticipated that 30 percent of water trucks would arrive to the Project site during the AM peak hour. The Project would have an average of 75 workers per day throughout construction with a peak of 140 workers per day over a 20-day period during construction. For equipment and materials, the Project would have an average of 6 delivery truck trips per day and an expected peak of 26 delivery truck trips. It is anticipated that construction workers and

delivery trucks would arrive to the Project site outside of peak hours. Dependent upon climatic conditions during construction, the maximum estimated water use for the site is 94 acre-feet, which would be obtained from an off-site provider. Potable water would be brought in to the Project site for drinking and domestic needs. During the site preparation and grading activities, water would mainly be used for soil compaction and control of fugitive dust generation. Smaller quantities of water would also be required on an as-needed basis for preparation of the concrete required for foundations and other minor uses. Subsequent to these construction activities, water usage would primarily be used for on-going dust suppression associated with the remaining construction of the Project. The Project would require a total of 29 daily water truck trips arriving on-site. Assuming that 30 percent of the water trucks would arrive on-site during the AM peak hour (7:00 AM), 9 water trucks would be used in this analysis.

As shown in Tables 4.13-15 and 4.13-16, during the AM peak hour the local roads would experience a maximum increase in traffic volume of 32.14 percent. This is mainly due to the existing low volume and low peak traffic conditions for these roads, which are located in rural areas and operate well below the existing capacity of 1,600 vehicles per lane per hour for a 2-lane road. Therefore, it is concluded that these roads have adequate capacity to safely accommodate the increase from water truck traffic and would have a less than significant impact on the existing traffic conditions.

Table 4.13-15 Existing and Projected Conditions for the Homer Option in 2014

Road Segment	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue A W/O 90th Street W	26	28	29	9	37	32.14
Traffic traveling South on 110th Street W N/O W Avenue K	64	67	29	9	76	13.43

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

Table 4.13-16 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on Avenue H E/O 70th Street W	57	N/A	62	29	9	71	14.52
Traffic traveling South on 70th Street W S/O W Avenue H	31	N/A	34	29	9	43	26.47
Traffic traveling West on Avenue K E/O 110th Street W	114	N/A	124	29	9	133	7.26
Traffic traveling North on 110th Street W N/O W Avenue K	N/A	83	87	29	9	96	10.34

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

During construction of gen-tie lines associated with the Project, it is anticipated that temporary one-lane road closures would be necessary. A Project Traffic Plan, mitigation measure TT-2, would be prepared to address the temporary one-lane road closures and submitted to the

County for approval prior to issuance/approval of the County Grading Permit. Parking, temporary office trailers, and construction and PV equipment lay-down areas would be located entirely within the Project site boundary. The construction impacts would be temporary and less than significant with mitigation.

The Project would not include any buildings, structures, or other operations that would require a change in the existing air traffic patterns. The SGF would be connecting to the existing Southern California Edison Antelope Substation (SCEAS) via a gen-tie line approximately 2 miles long. Transmission line-related radio frequency interference (RFI) is one of the indirect effects of transmission line operation. RFI is produced by the physical interactions of the electric fields generated by the transmission line. The level of RFI that occurs usually depends on the magnitude of the electric fields involved and the distance from the transmission line. It is usually associated with transmission lines of 345 kV or greater. The Project transmission lines would connect to the SCEAS with a 66 kV gen-tie line (less than 345 kV) and would not adversely impact RFI effects.

Operations Impacts

The operational phase of the Project is anticipated to only generate an average of 4 additional vehicle trips during the AM and PM peak hours on a quarterly or as-needed basis with a maximum of 12 additional trips, which would only occur when panel washing operations are being conducted. Based on the traffic analysis for the water truck trips described above, the operational phase vehicle trips are considered negligible. Therefore, no additional post-construction operational analysis was conducted. The Project would not include any buildings, structures, or other operations that would require a change in the existing air traffic patterns. The SGF would be connecting to the existing Southern California Edison Antelope Substation (SCEAS) via a gen-tie line approximately 2 miles long. Transmission line-related radio frequency interference (RFI) is one of the indirect effects of transmission line operation. RFI is produced by the physical interactions of the electric fields generated by the transmission line. The level of RFI that occurs usually depends on the magnitude of the electric fields involved and the distance from the transmission line. It is usually associated with transmission lines of 345 kV or greater. The Project transmission lines would connect to the SCEAS with a 66 kV gen-tie line (less than 345 kV) and would not adversely impact RFI effects. It is concluded that the operational phase of the Project would have less than significant impact on the traffic and/or transportation infrastructure.

4.13.6.1.3 Project 3 and Gen-tie Line

Construction Impacts

Traffic generated during the construction phase of Project 3 and its gen-tie line would include construction worker commuter trips, water truck trips, and delivery truck trips. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours. It is anticipated that 30 percent of the water trucks would arrive to the Project site during the AM peak hour. The Project would have an average of 130 workers per day and a peak of 88 workers per day over a 20-day period during construction. For equipment and materials, the Project would have an average of 5 delivery truck trips per day with an expected

peak of 23 delivery truck trips per day. It is anticipated that construction workers and deliveries would arrive to the Project site outside of peak hours.

The maximum estimated water use for the site is 82 acre-feet, which would be obtained from an off-site provider. Potable water would be brought in to the Project site for drinking and domestic needs. During the site preparation and grading activities, water would mainly be used for soil compaction and control of fugitive dust generation. Subsequent to these construction activities, water usage would primarily be used for on-going dust suppression associated with the remaining construction of the Project. The Project would require analysis total of 29 daily water trucks arriving on-site. Assuming that 30 percent of the water trucks would arrive on-site during the AM peak hour (7:00 AM), 9 water trucks would be used in the analysis.

As shown in Tables 4.13-17 and 4.13-18, during the AM peak hour the local roads would experience a maximum increase in traffic volume of 34.62 percent. This is mainly due to the existing low volume and low peak traffic conditions for these roads, which are located in rural areas and operate well below the existing capacity of 1,600 vehicles per lane per hour for a 2-lane road. Therefore, it is concluded that these roads have adequate capacity to safely accommodate the increase from water truck traffic and would have a less than significant impact on the existing traffic conditions.

Table 4.13-17 Existing and Projected Conditions for the Homer Option in 2014

Road Segment	AM Peak Hour (2011)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling East on W Avenue A W/O 90th Street W	N/A	25	27	29	9	36	33.33
Traffic traveling South on 90th Street W S/O W Avenue D	65	N/A	69	29	9	78	13.04
Traffic traveling South on 70th Street W N/O W Avenue H	N/A	25	27	29	9	36	33.33

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

Table 4.13-18 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue H E/O 70th Street W	57	N/A	62	29	9	71	14.52
Traffic traveling North on 70th Street W N/O W Avenue H	38	N/A	42	29	9	51	21.43

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

During construction of gen-tie lines associated with the Project, it is anticipated that temporary one-lane road closures would be necessary. A Project Traffic Plan, mitigation measure TT-2, would be prepared to address the temporary one-lane road closures and submitted to the County for approval prior to issuance/approval of the County Grading Permit and is described in . Parking, temporary office trailers, and construction and PV equipment lay-down areas would

be located entirely within the Project site boundary. Impacts would be less than significant with mitigation.

Operations Impacts

The operational phase of the Project is anticipated to only generate an average of 4 additional vehicle trips during the AM and PM peak hours on a quarterly or as-needed basis with a maximum of 12 additional trips, which would only occur when panel washing operations are being conducted. Based on the traffic analysis for the water truck trips described above, the operation phase vehicle trips are considered negligible. Therefore, no additional post-construction operational analysis was performed. The Project would not include any buildings, structures, or other operations that would require a change in the existing air traffic patterns. The SGF would be connecting to the existing SCEAS via a 66 kV gen-tie line. Transmission line-related RFI is one of the indirect effects of transmission line operation. RFI is produced by the physical interactions of the electric fields generated by the transmission line. The level of RFI that occurs usually depends on the magnitude of the electric fields involved and the distance from the transmission line. It is usually associated with transmission lines of 345 kilovolts (kV) or greater. The Project transmission lines would connect to the existing SCE network with a 66 kV gen-tie line (less than 345 kV) and is not expected to adversely impact the surrounding areas with RFI effects.

It is concluded that the operational phase of the Project would have less than significant impact on the traffic and/or transportation infrastructure.

4.13.6.1.4 Project 4 and Gen-tie Line

Construction Impacts

Traffic generated during the construction phase would include construction worker commuter trips and delivery truck trips. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours. It is anticipated that 30 percent of the water trucks would arrive to the Project site during the AM peak hour. The Project would have an average of 120 workers per day and a peak of 160 workers per day over a 30 day period during construction. For equipment and deliveries the Project would have an average of 3 delivery trucks per day with an expected peak of 26 delivery trips. It is anticipated that construction workers and deliveries would arrive to the Project site outside of peak hours.

Dependent upon climatic conditions during construction, the maximum estimated water use for the site during both Phase 1 and Phase 2 is 155 acre-feet, which would be obtained from an off-site provider. Potable water would be brought in to the Project site for drinking and domestic needs. During the site preparation and grading activities, water would mainly be used for soil compaction and control of fugitive dust generation. Smaller quantities of water would also be required on an as-needed basis for preparation of the concrete required for foundations and other minor uses. Subsequent to these construction activities, water usage would primarily be used for on-going dust suppression associated with the remaining construction of the Project. The Project would require analysis total of 32 daily water trucks arriving on-site. Assuming that

30 percent of the water trucks would arrive on-site during the AM peak hour (7:00 AM), 10 water trucks would be used in the analysis.

As shown in Tables 4.13-19 and 4.13-20, during the AM peak hour, the local roads would experience a maximum increase in traffic volume of 40.0 percent. This is mainly due to the existing low volume and low peak traffic conditions for these roads, which are located in a rural area and operates well below the existing capacity of 1,600 vehicles per lane per hour for a 2-lane road. Therefore, it is concluded that these roads have adequate capacity to safely accommodate the increase from water truck traffic and would have ales than significant impact on the existing traffic conditions.

Table 4.13-19 Existing and Projected Conditions for the Homer Option 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue A W/O 90th Street W	N/A	26	28	32	10	38	35.71
Traffic traveling South on 110th Street W N/O W Avenue I	23	N/A	25	32	10	35	40.00
Traffic traveling East W Avenue I E/O 110th Street W	58	N/A	63	32	10	73	15.87
Traffic traveling South on 90th Street W N/O Avenue J	31	N/A	34	32	10	44	29.41
Traffic traveling East on W Avenue J W/O 90th Street W	60	N/A	65	32	10	75	15.38

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

Table 4.13-20 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue H E/O 70th Street W	57	N/A	62	32	10	72	16.13
Traffic traveling South on 70th Street W N/O W Avenue H	25	N/A	28	32	10	38	35.71
Traffic traveling West on W Avenue J E/O 90th Street W	67	N/A	73	32	10	83	13.70
Traffic traveling North on 90th Street W N/O W Avenue J	31	N/A	34	32	10	44	29.41
Traffic traveling West on W Avenue I W/O 70th Street W	50	N/A	55	32	10	65	18.18

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

During construction of gen-tie lines associated with the Project, it is anticipated that temporary one-lane road closures would be necessary. A Project Traffic Plan, mitigation measure TT-2, would be prepared to address the temporary one-lane road closures and submitted to the County for approval prior to issuance/approval of the County Grading Permit. Parking, temporary office trailers, and construction and PV equipment lay-down areas would be located entirely within the Project site boundary. Impacts would be less than significant with mitigation.

Operations Impacts

The operational phase of the Project is anticipated to only generate an average of 4 additional vehicle trips during the AM and PM peak hours on a quarterly or as-needed basis with a maximum of 12 additional trips, which would only occur when panel washing operations are being conducted. Based on the traffic analysis for the water truck trips described above, the operational phase vehicle trips are considered negligible. Therefore, no additional post-construction operational analysis was conducted. The Project would not include any buildings, structures, or other operations that would require a change in the existing air traffic patterns. The SGFs would be connecting to the existing SCEAS via a 69 kV gen-tie line. Transmission line-related RFI is one of the indirect effects of transmission line operation. RFI is produced by the physical interactions of the electric fields generated by the transmission line. The level of RFI that occurs usually depends on the magnitude of the electric fields involved and the distance from the transmission line. It is usually associated with transmission lines of 345 kV or greater. The Project transmission lines would connect to the SCEAS through an existing 69 kV gen-tie line (less than 345 kV) and would not adversely impact RFI effects.

It is concluded that the operational phase of the Project would have a less than significant impact on the traffic and/or transportation infrastructure.

4.13.6.1.5 Project 5 and Gen-tie Line

Construction Impacts

Traffic generated during the construction phase would include construction worker commuter trips, water truck trips, and delivery truck trips. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours. It is anticipated that 30 percent of the water trucks would arrive to the Project site during the AM peak hour.

The Project would have an average of 75 workers per day and a peak of 100 workers per day over a 20-day period during construction. For equipment and deliveries, the Project would have an average of 4 delivery truck trips per day (for equipment and materials) with an expected peak of 26 delivery truck trips. It is anticipated that construction workers and deliveries would arrive to the Project site outside of peak hours.

Dependent upon climatic conditions during construction, the maximum estimated water use for the site is 97 acre-feet, which would be obtained from an off-site provider. Potable water would be brought in to the Project site for drinking and domestic needs. During the site preparation and grading activities, water would mainly be used for soil compaction and control of fugitive dust generation. Smaller quantities of water would also be required on an as-needed basis for preparation of the concrete required for foundations and other minor uses. Subsequent to these construction activities, water usage would primarily be used for on-going dust suppression associated with the remaining construction of the Project. The Project would require a total of 40 daily water truck trips arriving on-site. Assuming that 30 percent of the water trucks would arrive on-site during the AM peak hour (7:00 AM), 12 water trucks would be used in this analysis.

Parking, temporary office trailers, and construction and PV equipment lay-down areas would be located entirely within the Project site boundary. It is not expected that any road closures or restricted access along City/local roadways would be required for the Project.

As shown in Tables 4.13-21 and 4.13-22, during the AM peak hour the local roads would experience a maximum increase in traffic volume of 48.0 percent. This is mainly due to the existing low volume and low peak traffic conditions for these roads, which are located in a rural area and operates well below the existing capacity of 1,600 vehicles per lane per hour for a 2-lane road. Therefore, it is concluded that these roads have adequate capacity to safely accommodate the increase from water truck traffic and would have an insignificant impact on the existing traffic conditions.

Table 4.13-21 Existing and Projected Conditions for the Homer Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue A W/O 90th Street W	N/A	26	28	40	12	40	42.86
Traffic traveling South on 110th Street W N/O W Avenue I	23	N/A	25	40	12	37	48.00
Traffic traveling West on W Avenue I W/O 110th Street W	27	N/A	30	40	12	42	40.00
[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes							
[2] Traffic projected using a 2% increase in traffic per year							

Table 4.13-22 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling West on W Avenue H E/O 70th Street W	57	62	40	12	74	19.35
Traffic traveling South on 110th Street W N/O W Avenue I	23	25	40	12	37	48.00
Traffic traveling West on W Avenue I W/O 110th Street W	27	30	40	12	42	40.00
[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes						
[2] Traffic projected using a 2% increase in traffic per year						

During construction of gen-tie lines associated with the Project, it is anticipated that temporary one-lane road closures would be necessary. A Project Traffic Plan, mitigation measure TT-2, would be prepared to address the temporary one-lane road closures and submitted to the County for approval prior to issuance/approval of the County Grading Permit. Parking, temporary office trailers, and construction and PV equipment lay-down areas would be located entirely within the Project site boundary. Impacts would be less than significant with mitigation.

Operation Impacts

The operational phase of the Project is anticipated to only generate an average of 2 additional vehicle trips during the AM and PM peak hours on a quarterly or as-needed basis with a maximum of 10 additional trips, which would only occur when panel washing operations are

being conducted. Based on the traffic analysis for the water truck trips described above, the operational phase vehicle trips are considered negligible. Therefore, no additional post-construction operational analysis was conducted. The Project would not include any buildings, structures, or other operations that would require a change in the existing air traffic patterns. The SGF would be connecting to the existing SCEAS via a 3-mile gen-tie line. Transmission line-related RFI is one of the indirect effects of transmission line operation. RFI is produced by the physical interactions of the electric fields generated by the transmission line. The level of RFI that occurs usually depends on the magnitude of the electric fields involved and the distance from the transmission line. It is usually associated with transmission lines of 345 kV or greater. The Project transmission lines would connect to the SCEAS with a 69 kV gen-tie line (less than 345 kV) and would not adversely impact RFI effects.

It is concluded that the operational phase of the Project would have a less than significant impact on the traffic and/or transportation infrastructure.

4.13.6.1.6 Project 6 and Gen-tie Line

Construction Impacts

Traffic generated during the construction phase would include construction worker commuter trips, water truck trips, and delivery truck trips. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside of peak hours. It is anticipated that 30 percent of water trucks would arrive to the Project site during the AM peak hour. The Project would have an average of 30 workers per day and a peak of 40 workers per day over a 12-day period during construction. For equipment and materials, the Project would have an average of 4 delivery truck trips per day with an expected peak of 26 delivery truck trips. It is anticipated that construction workers and delivery trucks would arrive to the Project site outside of peak hours.

Dependent upon climatic conditions during construction, the maximum estimated water use for the site is 24 acre-feet, which would be obtained from an off-site provider. Potable water would be brought in to the Project site for drinking and domestic needs. During the site preparation and grading activities, water would mainly be used for soil compaction and control of fugitive dust generation. Smaller quantities of water would also be required on an as-needed basis for preparation of the concrete required for foundations and other minor uses. Subsequent to these construction activities, water usage would primarily be used for on-going dust suppression associated with the remaining construction of the Project. The Project would require a total of 20 daily water truck trips arriving on-site. Assuming that 30 percent of the water trucks would arrive on-site during the AM peak hour (7:00 AM), 6 water trucks would be used in the analysis.

Parking, temporary office trailers, and construction and PV equipment lay-down areas would be located entirely within the Project site boundary. It is not expected that any road closures or restricted access along City roadways would be required for the Project.

As shown in Tables 4.13-23 and 4.13-24, during the AM peak hour the local roads would experience a maximum increase in traffic volume of 44.44 percent. This is mainly due to the existing low volume and low peak traffic conditions for these roads, which are located in rural

areas and operate well below the existing capacity of 1,600 vehicles per lane per hour for a 2-lane road. Therefore, it is concluded that these roads have adequate capacity to safely accommodate the increase from water truck traffic and would have a less than significant impact on the existing traffic conditions.

Table 4.13-23 Existing and Projected Conditions for the Homer Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2011)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling East on W Avenue A W/O 90th Street W	N/A	N/A	25	27	40	12	39	44.44
Traffic traveling South on 90th Street W N/O W Avenue D	N/A	101	N/A	108	40	12	120	11.11
Traffic traveling East on W Avenue D E/O 90th Street W	93	N/A	N/A	101	40	12	113	11.88
[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes								
[2] Traffic projected using a 2% increase in traffic per year								

Table 4.13-24 Existing and Projected Conditions for the City of Lancaster Option in 2014

Road Segment	AM Peak Hour (2010)[1]	AM Peak Hour (2011)[1]	AM Peak Hour (2012)[1]	Projected AM Peak Hour (2014)[2]	Daily Water Truck Trips	30% of Daily Water Truck Trips Arriving during AM Peak Hour	2014 Conditions with Construction Traffic	2014 Percent Increase in Traffic
Traffic traveling East on W Avenue A W/O 90th Street W	N/A	N/A	25	27	40	12	39	44.44
Traffic traveling South on 90th Street W N/O W Avenue D	N/A	101	N/A	108	40	12	120	11.11
Traffic traveling East on W Avenue D E/O 90th Street W	93	N/A	N/A	101	40	12	113	11.88

[1] Traffic data obtained from LA County DPW Machine Count Traffic Volumes

[2] Traffic projected using a 2% increase in traffic per year

During construction of gen-tie lines associated with the Project, it is anticipated that temporary one-lane road closures would be necessary. A Project Traffic Plan, mitigation measure TT-2, would be prepared to address the temporary one-lane road closures and submitted to the County for approval prior to issuance/approval of the County Grading Permit. Parking, temporary office trailers, and construction and PV equipment lay-down areas would be located entirely within the Project site boundary. Impacts would be less than significant with mitigation.

Operations Impacts

The operational phase of the Project is anticipated to only generate an average of 2 additional vehicle trips during the AM and PM peak hours on a quarterly or as-needed basis with a maximum of 10 additional trips, which would only occur when panel washing operations are being conducted. Based on the traffic analysis for the water truck trips described above, the operational phase vehicle trips are considered negligible. Therefore, no additional post-construction operational analysis was conducted. The Project would not include any buildings, structures, or other operations that would require a change in the existing air traffic patterns. The SGF would be connecting to the existing SCEAS via a 12.47 kV gen-tie line. Transmission line-related RFI is one of the indirect effects of transmission line operation. RFI is produced by the physical interactions of the electric fields generated by transmission lines. The level of RFI that occurs usually depends on the magnitude of the electric fields involved and the distance from the transmission line. It is usually associated with transmission lines of 345 kV or greater.

The Project transmission lines would connect to the SCEAS with a 12.47 kV gen-tie line (less than 345 kV) and would not adversely impact RFI effects.

It is concluded that the operational phase of the Project would have a less than significant impact on the traffic and/or transportation infrastructure.

4.13.6.2 Project Impacts: Criterion B – Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

4.13.6.2.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

As explained in Section 4.13.5 Impact Analysis for the construction and operational phases of the Projects, impacts on traffic conditions during the construction and operational phases of the Projects are expected to be less than significant and would not conflict with any applicable congestion management programs.

4.13.6.3 Project Impacts: Criterion C – Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

4.13.6.3.1 Projects 1, 2, 4 and 5 and Gen-tie Lines

Construction and Operations Impacts

Air traffic would not be impacted by implementation of Projects 2, 4, and 5. The Projects would not include any buildings, structures, or other operations that would result in a change in existing air traffic patterns. The PV modules that would be used at the individual Project sites would be non-reflective and would not pose a hazard to air traffic. Gen-tie line components would be below the height limit and would not result in a change in existing air traffic patterns. Therefore, impacts would be less than significant.

4.13.6.3.2 Projects 3 and 6 and Gen-tie Lines

Construction and Operations Impacts

Projects 3 and 6 are within the General William J. Fox Airfield airport influence area. After consulting with the Los Angeles County Airport Land Use Commission (ALUC), the ALUC notified the Applicant that no further review of Projects 3 and 6 needed to be conducted because there is no anticipated impact. The consultation is included in Appendix B-12.

Therefore, air traffic would not be impacted by implementation of the Projects. The Projects would not include any buildings, structures, or other operations that would result in a change in existing air traffic patterns. The PV modules that would be used at the individual Project sites would be non-reflective and would not pose a hazard to air traffic. Therefore, impacts would be less than significant.

4.13.6.4 Project Impacts: Criterion D – Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

4.13.6.4.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

No existing roads would be altered; the Projects do not include design features or uses that would substantially increase any hazards. No impacts would occur.

4.13.6.5 Project Impacts: Criterion E – Would the project result in inadequate emergency access?

4.13.6.5.1 Projects 1 – 6 and Gen-tie Lines

Construction Impacts

Parking, temporary office trailers, and construction and PV equipment lay-down areas would be located entirely within the site boundaries of the Projects. Only temporary one-lane road closures are expected for the construction of the Gen-tie Lines. A Project Traffic Plan would be prepared to address the temporary one-lane road closures and submitted to the County for approval prior to issuance/approval of the Grading Permit. The impact is expected to be less than significant.

Operations Impacts

As stated in Section 4.13.5.4 no design features would increase hazards, therefore the proposed Projects would have no impact on emergency access.

4.13.6.6 Project Impacts: Criterion F – Would the project conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

4.13.6.6.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

The Projects are located in rural areas of Los Angeles County and would not significantly decrease the performance or safety of public transit, bicycle, or pedestrian facilities. A less than significant impact is anticipated.

4.13.7 Mitigation Measures

The following mitigation measures would be incorporated into Projects 1 – 6 and their gen-tie lines despite an already expected less than significant impact on the transportation and traffic created by the proposed Projects 1-6. A few best management practices would be implemented to also alleviate the impact of the proposed projects including; encourage carpooling between construction workers, encourage use of vanpool or commuter bus for construction workers to access the Project sites, establish flexible working hours outside of peak hours of traffic.

TT-1 Prior to issuance of a grading permit, Applicant shall document and submit all required information and/or material pertaining to the pavement conditions of construction routes for the Projects, including the formula for calculation of the Projects' fair share of any repair or reconstruction of construction routes to the satisfaction of LACDPW. Applicant shall reimburse the County of Los Angeles for the cost of any repairs and/or reconstruction of construction routes attributable to the Projects as agreed to by LACDPW. The timing of any necessary repairs and/or reconstruction of construction routes and the required payment by the Applicant shall be determined by LACDPW.

TT-2 Prior to any construction activities and/or issuance of required encroachment permits from Los Angeles County, the Applicant shall prepare worksite traffic control plans for review and approval from LACDPW and other affected agencies for any closures, partial closures of public streets, or work within or adjacent to the road right-of-way that impacts the movement of traffic. The Plans shall be prepared in accordance with the California Manual on Uniform Traffic Control Devices (2012).

TT-3 Additionally, the County, including LACFD Fire Stations 78 (for R2011-00801) and 130 (for R2011-000798, 00799, 00805,00807, & 00833) shall be notified at least three days in advance of any street closures that may affect fire and/or paramedic responses in the area. The Applicant shall provide alternate route (detour) plans to the County, including three sets to LACFD, with a tentative schedule of planned closures, prior to the beginning of construction.

TT-4 Stagger construction work shifts before or after peak traffic hours.

TT-5 Schedule truck deliveries during off peak hours.

TT-6 Limit water truck deliveries during the AM peak hour to 30 percent of the daily water truck trips. All other trips shall be at off peak hours.

TT-7 Prior to start of construction activities Applicant shall provide worker education encouraging carpooling and vanpooling by workers and shall provide assistance for organizing vanpools and carpools. A log will be developed to show compliance.

4.13.7.1 Level of Significance After Mitigation

After incorporation of mitigation measures described in Section 4.13.6, implementation of the Projects is expected to have a less than significant impact on construction and operations transportation and traffic.

4.13.8 Cumulative Impacts

Cumulative impacts for transportation and traffic are the combined effect of the Applicant's Projects 1 – 6 with the impacts of other past, present, and reasonably foreseeable future projects (other projects). This Cumulative Impacts discussion addresses the cumulative impacts of the Applicant's Projects 1 – 6 and the other projects within a geographic radius of 5-mile radius of the Projects (Project Study Area), which could potentially coincide with the expected to be construction schedule of the Applicant's Projects. Based on evaluation of the Project Study Area and available data from Los Angeles County, there are 29 other projects that have the

potential to contribute additional traffic volume within the vicinity of the Applicant's Projects. Refer to Table 3-6 for a tabular listing of all of the cumulative projects identified for the Project cumulative impact analysis.

Evaluation of the cumulative impacts within the Project Study Area was focused on the construction-phase traffic for the Applicant's Projects and other projects within a 5-mile radius. As previously stated in the individual traffic impact studies (refer to Appendix B-9) and individual Impact Analysis sections in Section 4.13.5 above, the operational phase for each Project is anticipated to only generate a maximum of 4 vehicle trips during the AM and PM peak hours on a quarterly or as-needed basis with a maximum of 12 additional trips, which would only occur when panel washing operations are being conducted. Based on the traffic analysis described in Section 4.13.5 above, the operational phase vehicle trips/traffic for the Projects are considered negligible and would not result in a significant cumulative impact on the traffic and/or transportation infrastructure in the Project Study Area.

The following methodology and assumptions were used in the cumulative impacts analysis:

1. Since there were generally no project specific cumulative trip generation data available for the cumulative projects presented in Table 3-6, it was assumed that each of the other projects would contribute a 2 percent increase in ambient traffic growth on the state routes/highways and a 20 percent ambient traffic growth on the local/county roads within the Project Study Area. These growth rates were determined based on data obtained from the Los Angeles County Congestion Management Plan and previous transportation impact studies performed for similar solar energy development projects in the area and are considered to be conservative and sufficient to account for the trip generation potential of the other projects.
2. Trip traffic data for the Applicant's Projects were obtained from the individual project traffic impact studies.
3. Due to lack of specific construction schedules for the other projects, it was conservatively assumed (worst case scenario) that each of the other projects would be constructed simultaneously with each of the Applicant's Projects in 2014.
4. The only Applicant Project being constructed in 2015 is Phase 2 of Project 1. The cumulative effect of this one project being constructed with the other projects would be approximately less than 2 percent greater than the traffic volumes determined for construction in 2014. This growth rate is based on a conservative existing baseline traffic (without construction projects) growth rate of approximately 2 percent per year, which was based on growth rates for the area obtained from the Los Angeles County Congestion Management Plan. This growth rate and volume change is considered negligible and would not result in a significant cumulative impact.
5. Assumed that all workers, equipment and material delivery trips for the other projects would occur during the peak AM hour, which was the same approach used for the development of the individual traffic impact studies for the Projects.
6. Determined the expected trip routes for each of the other projects in the Project Study Area. The trip routes for the Applicant's Projects were obtained from the individual project traffic impacts studies.
7. Determined the common road segment overlaps of the other projects trip routes and each of the two (2) potential water truck routes for the Applicant's Projects (i.e. Homer and City of Lancaster Options).

8. Determined the expected traffic volumes for each road segment without the cumulative construction projects traffic and then with the construction traffic from all cumulative projects.
9. Evaluated the significance of the traffic volume increases due to construction of the cumulative projects on each road segment.
10. Determined if additional mitigation measures, other than the measures described in Section 4.13.6, are required.

Table 4.13-13 addresses the cumulative impacts of 2014 construction traffic from all of the cumulative projects within the Project Study Area for the Homer Water Truck Route Option. Table 4.13-14 addresses the cumulative impacts of 2014 construction traffic from all of the cumulative projects within the Project Study Area for the City of Lancaster Water Truck Route Option. Each table shows the affected road segments, the specific cumulative projects that contribute construction-related traffic to each road segment, the existing projected peak hour traffic for the year 2014 (construction year for the Applicant's Projects), total construction trips for the Applicant's Projects, construction trips for the other projects, and the total AM peak hour traffic including the construction-related traffic from all of the contributing cumulative projects for each affected road segment (existing traffic plus construction traffic). Refer to Figure 4.13-7 for locations of the Applicant's Projects, the two water truck option routes (Homer and City of Lancaster) to each Project site, and the locations of the other projects evaluated in the Project Study Area (within 5-mile radius of Applicant's Projects).

4.13.9 References

Tetra Tech, Inc. 2013. *Project 1 North Lancaster Ranch, Transportation Impact Study*. September.

Tetra Tech, Inc. 2013. *Project 2 Western Antelope Blue Sky Ranch, Transportation Impact Study.* September.

Tetra Tech, Inc. 2013. *Project 3 American Solar Greenworks, Transportation Impact Study.* September.

Tetra Tech, Inc. 2013. *Project 4 Antelope Solar Greenworks, Transportation Impact Study*. September.

Tetra Tech, Inc. 2013. *Project 5 Silver Sun Greenworks, Transportation Impact Study*. September.

Tetra Tech, Inc. 2013. *Project 6 Lancaster WAD, Transportation Impact Study*. September.

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4.14 UTILITIES AND SERVICE SYSTEMS

4.14.1 Introduction

This section of the EIR describes the utility services that would be affected by the proposed Projects 1 – 6. The following sections explain the regulatory setting, identify existing utility services in the region, analyze potential impacts of the Projects, and recommend mitigation measures where applicable.

4.14.2 Environmental Setting

4.14.2.1 Regional Water Supply – Antelope Valley Groundwater Basin

The Projects overlay the Antelope Valley Groundwater Basin (Basin), which is located within the South Lahontan Hydrologic Region and is bounded on the northwest by the Garlock Fault Zone at the base of the Tehachapi Mountains and on the southwest by the base of the San Gabriel Mountains. The surface area of the Basin is over one million acres (1,580 square miles).

The Basin consists of two primary aquifers: the principal aquifer and the deep aquifer. The principal aquifer is an unconfined aquifer while the deep aquifer is considered to be confined. The total storage capacity of the Basin has been estimated to be between 68,000,000 and 70,000,000 acre-feet (ac-ft; DWR 2004). The primary sources of discharge from the groundwater system have been agricultural and urban uses. Since the 1920s, groundwater extractions have exceeded the estimated natural recharge of the Basin, which has resulted in declining water levels and land subsidence (USGS 2003). The average annual native recharge plus local return flow was estimated to be approximately 82,300 acre-feet per year (AFY) in 2010 (Appendix F, 2010). When coupled with return flows from imported water, the total sustainable yield of the Basin is estimated to be approximately 110,000 AFY (Appendix F, 2010). A copy of the Appendix F, 2010 document is included in Appendix B-10 of this EIR for reference.

4.14.2.1.1 Lancaster Subunit

The Antelope Valley Groundwater Basin is divided by the USGS into 12 subunits that are generally delineated based on groundflow patterns, recharge characteristics, and geographic location, as well as controlling geologic structures (RWMG 2007). The Projects are located in the western portion of the Lancaster subunit. Since there are a variety of uses within the Lancaster subunit, depths to water levels vary widely, generally being greater in the south and west (RWMG 2007).

4.14.2.1.2 Groundwater Extraction and Recharge

Substantial pumping of groundwater in the Antelope Valley began in the early 1900s, and a decline in groundwater levels ensued in response to the change in the extraction versus recharge ratio. Groundwater pumping peaked in the 1950s, and then decreased in the 1960s and 1970s when agricultural pumping declined. The rapid increase in urban growth in the 1980s resulted in an increase in the demand for municipal and industrial water, and an increase in

groundwater use. The use of State Water Project (SWP) water has helped stabilize groundwater levels in some areas of the Antelope Valley Region (RWMG 2007).

In locations within the rural western and far northeastern areas of the region there has been a slight rise in groundwater levels (RWMG 2007). This pattern of falling and rising groundwater levels correlates directly to changes in land use over the past 40 to 50 years. Falling groundwater levels are generally associated with areas that are developed, and rising groundwater levels are generally associated with areas that were historically farmed, but have been largely fallow during the last 40 years (RWMG 2007).

Recharge to the Basin is primarily from perennial runoff from the surrounding mountains and hills. Most recharge occurs at the foot of the mountains and hills by percolation through the head of the alluvial fan system (Durbin 1978). The main source of recharge to the Lancaster subunit is stream flow from Big and Little Rock creeks draining from the San Gabriel Mountains. As previously discussed, the most recent available estimate of average annual native recharge to the Basin (plus local return flows) is approximately 82,300 AF (Appendix F, 2010). Coupled with return flows from imported water, the total sustainable yield of the Basin is estimated to be approximately 110,000 AFY (Appendix F, 2010). However, recharge estimates may vary depending on the calculation method and assumptions utilized (USGS 2003, 1993).

The exact groundwater budget (i.e., water input versus output volume, or recharge additions versus extractions/losses) for the Antelope Valley Groundwater Basin is not available; however, estimates pertaining to groundwater production are available. An estimate from USGS (2003) contends that during the 1991 through 1995 period, groundwater extractions averaged 81,700 AFY. More current groundwater extraction rates estimate that approximately 160,000 AFY was extracted in 2008 (Appendix F, 2010). Additionally, the demand for water is projected to increase from the 2008 extraction rate (RWMG 2007).

4.14.2.1.3 Antelope Valley Water Bank Project

The Antelope Valley Water Bank Project involves the operation of underground water recharge and storage facilities for imported SWP water. When needed, stored water would be recovered for delivery to various water agencies, such as those in Kern, Los Angeles, and Orange counties. In addition to storing SWP water, the Water Bank Project would leave a portion of the recharge water in the aquifer to aid in recovery and slow the decline of the water table (KCPD 2006).

4.14.2.1.4 Groundwater Adjudication

Overdrafting of the Antelope Valley Groundwater Basin has taken place for over 50 years. The overdrafting has caused ground subsidence and derogated the quality, reliability, and availability of water to the Antelope Valley. As a result, certain property owners and public water suppliers initiated a groundwater adjudication seeking a judicial determination of the relative rights to pump groundwater from the Antelope Valley Groundwater Basin (1-05-CV-049053: Antelope Valley Groundwater Cases, Consolidated Proceeding 4408) (hereinafter the "Adjudication"). The Adjudication involves complex technical and legal issues regarding groundwater extraction

and thousands of parties. It is difficult to predict the exact timeline for this case. However, groundwater adjudications usually take years to resolve.

The issues being litigated in the Adjudication include rights to pump groundwater, the amount of groundwater that parties with rights can pump, and a groundwater management plan for the Antelope Valley Groundwater Basin ("Basin"). In the Adjudication, four phases of trial have been completed to date. Phase 1 determined the jurisdictional limits of the groundwater basin, Phase 2 determined the hydraulic nature of the Antelope Valley, including whether sub groundwater basins exist. Phase 3 determined the total safe yield of the Basin and found the Basin is in a state of overdraft. Phase 4 determined current pumping amounts. The Court has set Phase 5 for February 2014 and Phase 6 for August 2014. Phase 5 will determine rights to pump the supplemental yield from return flows of imported water and the federal reserved right. Phase 6 will determine all remaining rights to pump groundwater, including prescriptive rights. Subsequent phases are expected to result in a court directed groundwater management plan usually referred to as a "Physical Solution." Because of the overdraft, the Court will implement reductions in groundwater pumping to bring pumping amounts down to the safe yield. The Court will likely order parties who pump more than their allocated right to pay a replacement assessment to finance the purchase of imported water to offset the overpumping. The Court will retain equitable jurisdiction over the Basin and will likely appoint a water master to assist in implementing and enforcing the final judgment.

4.14.2.1.5 California State Water Project

The SWP is a water storage and delivery system maintained and operated by the California Department of Water Resources. The Antelope Valley-East Kern Water Agency (AVEK) is a SWP contractor that imports water to the Mojave Desert area. AVEK is the bulk water supplier in the area and generally supplies to water districts and large developments. AVEK is currently allocated up to 141,400 AFY of water (Appendix F, 2010).

4.14.2.1.6 Local Water Suppliers

There are four public water suppliers in the immediate area that provide water service in the vicinity of the Projects 1-6: Quartz Hill Water District, Los Angeles County Sanitation District, and Los Angeles County Waterworks Districts 37 (LACWWD 37) and 40 (LACWWD 40). The Quartz Hill Water District and LACWWD 40 acquire their water from both groundwater and the SWP. The Los Angeles County Sanitation District provides the area with recycled water for non-drinking purposes. None of these suppliers currently provide water service to any of the sites where the Projects are located. Additional smaller scale water suppliers were identified near local rural communities; however, the Projects are not within these smaller scale water suppliers' water service areas.

4.14.2.2 Projects 1 – 6 Historical Water Use

While there is little documentation available regarding the historical use of water on Project sites 1 – 6, historic estimates have been calculated using known values for water consumption for typical agricultural practices and the various crops that were grown in the region in the past.

4.14.2.2.1 Project 1 Historical Water Use

The Project 1 site was used for irrigated agricultural purposes dating back to at least 1947 and was last irrigated in 1972 (Wildermuth 2011). Communications with the current property owner revealed that alfalfa was grown in the early 1960s; however, the property has been vacant with no agricultural production in recent years. A best estimate of historic water use is based on a rate of 2.6 ac-ft of water per acre per year, which is the lowest crop water requirement of crops grown in the Antelope Valley (Wildermuth 2011). Based on this estimation, the Project 1 site would have historically required approximately 624 AFY. Nevertheless, the site is currently vacant and existing conditions require no water.

There is one well at the Project site which was in service until 2009, when the electrical wire, connections, and associated metal tubing were stolen. The well is approximately 400 feet deep and is equipped with a submersible pump. Based on landowner information, the well normally produced approximately 400 gallons per minute. Future production would be determined by the outcome of the Adjudication currently in process.

4.14.2.2.2 Project 2 Historical Water Use

The Project 2 site has no recorded history of irrigated agricultural use. Discussions with the current property owner confirmed that the property has not been farmed, irrigated or otherwise, for the past 20 years; however, limited sheep grazing has been allowed on the property in recent years (Chen 2012). There is currently no well on this site. However, this property overlies the Basin currently in Adjudication and may or may not receive an annual allotment of ground water yet to be determined.

4.14.2.2.3 Project 3 Historical Water Use

The Project 3 site was used for irrigated agricultural purposes dating back to at least 1947 and was last irrigated in 1972 (Wildermuth 2011). Communications with the current property owner revealed that the land has not been used for agricultural uses, irrigated or otherwise, in recent years (Demirdjian 2012). The best estimate of historic agricultural water use is based on a rate of 2.6 ac-ft of water per acre per year, which is the lowest crop water requirement of crops grown in the Antelope Valley (Wildermuth 2011). Based on the best estimate of water requirement, the Project 3 site would have historically required approximately 353 AFY. Nevertheless, the Project site is currently vacant and existing conditions require no water. There is one existing on-site inactive well on this property, for which future production would be determined by the outcome of the Adjudication currently in process.

4.14.2.2.4 Project 4 Historical Water Use

The Project 4 site was used for irrigated agricultural purposes dating back to at least 1947 for seven of the twelve parcels, and to 1950 for four of the twelve parcels (Wildermuth 2011). The remaining parcel, which is approximately 3 acres, has no recorded history of past agricultural use (Wildermuth 2011). Communications with the current property owners revealed little knowledge of past agricultural histories and no recent agricultural activities on the land (Stevens 2012, Thompson 2012, Danpour 2012, Dyan 2012). A best estimate of historic agricultural water use is based on a rate of 2.6 ac-ft of water per acre per year, which is the lowest crop

water requirement of crops grown in the Antelope Valley (Wildermuth 2011). Based on the best estimate of water requirement, the portions of the Project 4 site that were previously irrigated would have historically required approximately 658 AFY. Nevertheless, the Project site is currently vacant and existing conditions require no water. There are two existing inactive on-site wells on this property, for which future production would be determined by the outcome of the Adjudication currently in process.

4.14.2.2.5 Project 5 Historical Water Use

The Project 5 site was first recorded as being used for irrigated agricultural purposes in 1972, then once again in 1989 (Wildermuth 2011). There are no signs of recent agricultural production. A best estimate of historic agricultural water use is based on a rate of 2.6 ac-ft of water per acre per year, which is the lowest crop water requirement of crops grown in the Antelope Valley (Wildermuth 2011). Based on the best estimate of water requirement, the Project 5 site would have historically required approximately 416 AFY. Nevertheless, the Project site is currently vacant and existing conditions require no water. There is currently no well on this site. However, this property overlies the Basin currently in Adjudication and may or may not receive an annual allotment of some amount of ground water yet to be determined.

4.14.2.2.6 Project 6 Historical Water Use

The Project 6 site was first recorded as being used for irrigated agricultural purposes in 1947, then once again in 1961 (Wildermuth 2011). There are no signs of recent agricultural purposes. Although the type of crops that were previously farmed is unknown, A best estimate of historic agricultural water use is based on a rate of 2.6 ac-ft of water per acre per year, which is the lowest crop water requirement of crops grown in the Antelope Valley (Wildermuth 2011). Based on the best estimate water requirement, the Project 6 site would have historically required approximately 100 AFY. Nevertheless, the Project site is currently vacant and existing conditions require no water. There is currently no well on this site. However, this property overlies the Basin currently in Adjudication and may or may not receive an annual allotment of some amount of ground water yet to be determined.

4.14.2.3 Wastewater

The Projects are outside the service boundaries of the County Sanitation Districts. Sanitation District 14 serves mostly Lancaster and select portions of Palmdale and unincorporated Los Angeles County in the Antelope Valley. Although the Projects are outside the sanitation district service area, District 14 is obligated to serve any dischargers in the area, whether in the District or not (Greenwood 2012). Property owners outside the service boundaries of the County Sanitation Districts are allowed to annex their properties into the District that serves them. The District would provide the property owner with a “will serve” notification that outlines the available sewer capacities and what the property owner needs to do to get service.

The Projects do not include any structures that require wastewater collection systems. There will be some wastewater generation during construction as a result of on-site construction activity. The wastewater generated would be collected at the on-site mobile sanitation facilities and then transported to a nearby wastewater disposal facility. As defined by the Los Angeles

County Department of Public Health, a mobile sanitation facility is a portable restroom facility that is self-contained, and equipped with potable water, a toilet, a hand washing facility, and a waste water storage tank (LADPH 2012). The mobile sanitation facilities will be operated and maintained by a third party hired by the Applicant. Wastewater during operation would be generated from the PV module washing and periodic on-site maintenance workers. Since the wash water would only consist of demineralized water and dust washed off of the modules, it would not need to be treated at a wastewater treatment facility. The wastewater generated from maintenance workers would be collected at the on-site temporary mobile sanitation facilities that will be on-site for construction and as-need basis for operations and maintenance and then transported to a nearby wastewater treatment facility.

Wastewater generated at the mobile sanitation facilities would be taken to one of two existing water reclamation plants (WRPs) operated by the County Sanitation Districts in the Antelope Valley. These two treatment facilities are the Lancaster WRP, located at 1865 West Avenue D in Lancaster, and the Palmdale WRP, located at 39300 30th Street East in Palmdale. The Lancaster and Palmdale facilities provide primary and secondary treatment of approximately 16 million and 15 million gallons of wastewater per day, respectively. The Lancaster WRP also supports the Antelope Valley Tertiary Treatment Plant, which uses chemical coagulation and dual-media filtration to remove additional amounts of phosphorus from the reclaimed water used at the Apollo Lakes Regional Park, and the Membrane Bioreactor plant, which uses membrane technology and ultraviolet disinfection to produce tertiary treated reclaimed water for municipal and irrigation use.

4.14.2.4 Solid Waste

In 2010, a total of 0.89 million tons of solid waste was collected in unincorporated Los Angeles County that was disposed into landfills (LACDPW 2011). The Countywide diversion rate for 2010 was estimated to be 55 percent (LACDPW 2011). The solid waste diversion rate in unincorporated Los Angeles County has generally increased since 1995, when the County diverted 27 percent of the solid waste stream. Since 2004, the County has exceeded AB 939's 50 percent target diversion rate.

Los Angeles County has a large and complex waste management system with eight major (i.e., facilities receiving more than 50,000 tons of solid waste per year) solid waste landfills, four small solid waste landfills, and two waste-to-energy facilities. Residential, commercial, and industrial solid waste collection is handled by private haulers. Once collected, the trash may be taken to any landfill that is willing to accept the waste. The facilities currently providing service to the unincorporated areas of Los Angeles County, and their remaining landfill capacities are presented in Table 4.14-1. Non-hazardous solid waste generated in Los Angeles County is disposed at Class III landfills, transformation facilities, permitted inert landfills, or out-of-county landfills. Refer to Section 4.8, Hazards and Hazardous Materials, regarding proper disposal of hazardous materials.

Table 4.14-1 Remaining Capacity of Existing Solid Waste Disposal Facilities in Los Angeles County[1]

Facility	Location	Remaining Permitted Capacity (million tons)	Permitted Daily Capacity (TPD)
Los Angeles County Class III Landfills (Major and Minor Facilities)			
Antelope Valley Recycling and Disposal Facility Units I and II	Palmdale	6.54	3,200
Burbank	Burbank	2.846	240
Calabasas	Calabasas	6.031	3,500
Chiquita Canyon Landfill	Valencia	6.233	6,000
Lancaster Landfill and Recycling Center	Lancaster	0.886	1,700
Pebbly Beach Landfill	Avalon	0.065	49
Puente Hills	Industry	12.516	13,200
San Clemente	San Clemente Island	0.039	10
Scholl Canyon	Glendale	4.104	3,400
Sunshine Canyon City/County	Sylmar	80.805	12,100
Whittier (Savage Canyon)	Whittier	3.788	350
Los Angeles County Waste-to-Energy Transformation Facilities			
Commerce Refuse-to-Energy Facility	Commerce	467	1,000
Southeast Resource Recovery Facility	Long Beach	1,602	2,240

[1]Source: LACDPW. 2011. Los Angeles County Countywide Integrated Waste Management Plan: 2010 Annual Report. October 2011.

4.14.2.4.1 Disposal Trend

The County of Los Angeles plans for county-wide solid waste disposal capacity in 15-year periods, where the current planning period is from 2010–2025. The 2010 Los Angeles County Countywide Integrated Waste Management Plan Annual Report projects that the County would have a shortage of permitted disposal capacity during the current planning period if the County continues with status quo disposal practices (LACDPW 2011). However, the annual report also presents combinations of various strategies that if implemented, would feasibly allow Los Angeles County to meet the disposal capacity needed during the 15-year planning period. The strategies include approval of planned expansion of existing landfills, development of additional conversion technologies, increase waste reduction and recycling, and expansion of transfer and processing infrastructure (LACDPW 2011). Based on analysis of disposal trends in recent years, however, LACDPW has observed that the current economic downturn has weakened consumer demand for materials, impacted the construction industry, and slowed the production and manufacturing of goods. As a result, the amount of waste that businesses and the public generate and dispose has been impacted (LACDPW 2011). From 2000–2005, the County experienced an increase of solid waste disposal that resulted from growth in population, economy, and the building industry. However, from 2006 to 2008, which represents a timeframe that includes the effects of the economic downturn, the County experienced an overall 19.6 percent decline (from 33,731 to 27,130 tons per day) (Los Angeles County Solid Waste Management Committee 2009). LACDPW expects that the decline would continue into 2009, and the effect of the decline is estimated to extend landfill lifetimes. The County estimates that the Calabasas Landfill is expected to have a 3.5-year increase in operational years, the Antelope Valley Landfill lifetime has been increased by 2 years, and Scholl Canyon has an increased lifetime of 1.8 years) (Los Angeles County Solid Waste Management Committee 2009).

4.14.2.5 Electricity and Gas

4.14.2.5.1 Project 1

The electrical utility provider for Project 1 is the Southern California Edison (SCE). The nearest existing power lines are located along the west and south sides of the Project 1 site. A distribution line running along the west side of the site provided electricity for the old farmhouse when it was inhabited and for the well until 2009, when it was vandalized. Project 1 will temporarily connect to the SCE grid for electricity needed during construction. The Southern California Gas Company provides natural gas service in the area in which Project 1 is located.

4.14.2.5.2 Project 2

The electrical utility provider for Project 2 is SCE. The nearest existing power lines are located along the north and south sides of the Project 2 site. Project 2 will temporarily connect to the SCE grid for electricity needed during construction. The Southern California Gas Company provides natural gas service in the area in which Project 2 is located.

4.14.2.5.3 Project 3

The electrical utility provider for Project 3 is SCE. The nearest existing power lines are located along the north side of the Project 3 site. Additionally, there are power lines that run east-west and north-south through the southwestern portion of the site. Project 3 will temporarily connect to the SCE grid for electricity needed during construction. The Southern California Gas Company provides natural gas service in the area in which Project 3 is located.

4.14.2.5.4 Project 4

The electrical utility provider for Project 4 is SCE. The nearest existing power lines are located at various locations north, east, south, and west of Project 4. Additionally, there is a power line that transects a northern portion of the site, starting at West Avenue I and 95th Street West. Project 4 will temporarily connect to the SCE grid for electricity needed during construction. The Southern California Gas Company provides natural gas service in the area in which Project 4 is located.

4.14.2.5.5 Project 5

The electrical utility provider for Project 5 is SCE. The nearest existing power lines are located across the street along the north and west sides of the Project 5 site. Project 5 will temporarily connect to the SCE grid for electricity needed during construction. The Southern California Gas Company provides natural gas service in the area in which Project 5 is located.

4.14.2.5.6 Project 6

The electrical utility provider for Project 6 is SCE. The nearest existing power lines are located along the west side and across the street along the south side of the Project 6 site. Project 6 will temporarily connect to the SCE grid for electricity needed during construction. The Southern California Gas Company provides natural gas service in the area in which Project 6 is located.

4.14.3 Regulatory Setting

4.14.3.1 Federal

No federal laws, orders, regulations, or standards were identified related to utility services for the proposed Projects.

4.14.3.2 State

4.14.3.2.1 California Government Code Section 4216 – Underground Utilities

California Government Code Section 4216 requires that an excavator must contact a regional notification center at least two days prior to excavation of any subsurface installations. The notification center in turn, would notify the utilities that may have buried lines within 1,000 feet of the excavation, so that safety and avoidance measures may be taken during excavation activities. Representatives of the utilities are required to mark the specific location of their facilities within the work area prior to the start of excavation.

4.14.3.2.2 Assembly Bill 939 – California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (AB 939) was passed in order to establish an integrated waste management hierarchy consisting of source reduction, recycling and composting, and environmentally safe transformation and land disposal. AB 939 mandates that all cities and counties divert 25 percent of their waste by the year 1995 and 50 percent by the year 2000. Additionally, every county and city must develop a comprehensive solid waste management program including a Source Reduction and Recycling Element that identifies policies regarding waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, special waste, and household hazardous waste. All counties must also develop a Siting Element to address the need for landfill/transformation facilities for the next 15 years. AB 939 used to be administered by the California Integrated Waste Management Board, but was transferred to the Department of Resources Recycling and Recovery (CalRecycle) in 2010. Every city and county must submit an Annual Report to CalRecycle summarizing the jurisdiction's progress in reducing solid waste.

4.14.3.2.3 Assembly Bill 1327 – California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Act of 1991 requires each local jurisdiction to adopt an ordinance requiring local jurisdictions to adopt an ordinance that requires commercial, industrial, or institutional buildings, marinas, or residential buildings that have five or more dwelling units to provide an adequate storage area for the collection and removal of recyclable materials. AB 1327 was passed to assist local jurisdictions to meet the diversion goals set in AB 939.

4.14.3.2.4 Senate Bill 1374 – Construction and Demolition Waste Materials Diversion Requirements

The Construction and Demolition Waste Materials Diversion Requirements (SB 1374) was passed in 2002 and added PRC, Section 42912, which requires jurisdictions to include a

summary of the progress made in diverting construction and demolition waste in their annual AB 939 report. SB 1374 also requires CalRecycle to adopt a model ordinance for diverting 50 to 75 percent of all construction and demolition waste from landfills.

4.14.3.2.5 Zero Waste California

Zero Waste California is a state-launched program that promotes a new vision of waste. The goal of Zero Waste is to maximize existing recycling and reuse efforts and ensure that products are designed for the environment and have the potential to be repaired, reused, or recycled. The program promotes the goals of market development, recycled product procurement, and research and development of new and sustainable technologies and processes.

4.14.3.3 Local

4.14.3.3.1 Los Angeles County General Plan

No goals, policies, or objectives directly applicable to utility services were identified in the Los Angeles County General Plan (LACDRP 1993).

4.14.3.3.2 Antelope Valley Areawide General Plan

Water Supply and Distribution Policy 101: Develop and use groundwater sources to their safe yield limits (LACDRP 1986).

4.14.3.3.3 Los Angeles County Code

Title 12 Chapter 12.84: Low Impact Development Standards: Chapter 12.84 establishes LID standards for developments constructed after January 1, 2009. LID encourages site sustainability and smart growth in a manner that respects and preserves the characteristics of the County's watersheds, drainage paths, water supplies, and natural resources.

Title 20 Chapter 20.87: Construction and Demolition Debris Recycling and Reuse: Chapter 20.87 requires that at least 50 percent by weight of all soil, rock, gravel, and project construction and demolition debris removed from a site must be recycled or reused, unless otherwise approved by the Director. The code requires submission of a Recycling and Reuse Plan and associated annual reporting to demonstrate compliance of the requiring recycling and reuse.

Title 20 Chapter 20.89: Solid Waste Generation Service Charge: The County levies an annual solid waste generation service charge upon each parcel of real property in unincorporated Los Angeles County. The fees collected are furnished in connection with the preparation, adoption, and administration of the Los Angeles County Household Hazardous Waste Element, and the Reduction and Recycling Element of the County Integrated Waste Management Plan.

Title 22 Chapter 22.52: Green Building: On November 18, 2008, the Los Angeles County Board of Supervisors adopted green building development standards for projects constructed after January 1, 2009. The green building ordinance requires that a minimum of 65 percent of non-hazardous construction and demolition debris by weight from non-residential buildings with a gross floor area of at least 10,000 square feet shall be recycled and/or salvaged for reuse. The

minimum 65 percent threshold to recycle and/or salvage for reuse under Chapter 22.52 supersedes the 50 percent minimum threshold in Chapter 20.87.

4.14.4 Significance Criteria

The potential for the Projects to result in impacts associated with utilities and service systems is based on the CEQA significance thresholds specified by the LACDRP. The following significance criteria are interpreted from the Los Angeles County Environmental Checklist Form and correspondence with Los Angeles County included in Appendix B-1.1. These criteria form the basis for the analysis of each Project's potential impacts.

a) Would the project exceed wastewater treatment requirements of either the Los Angeles or Lahontan Regional Water Quality Control Boards?

b) Would the project create water or wastewater system capacity problems, or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

c) Would the project create drainage system capacity problems, or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

d) Would the project have sufficient reliable water supplies available to serve the project demands from existing entitlements and resources, considering existing and projected water demands from other land uses?

e) Would the project create energy utility (electricity, natural gas, propane) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Would the project create energy utility (electricity, natural gas, propane) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

4.14.4.1 Proposed Water Supply Options for Projects 1 – 6

The applicant has estimated the maximum short-term construction water use for the proposed Projects 1 – 6 with the assistance of multiple SGF construction contractors currently operating in the area. The estimates of these contractors are site-specific, and based on best management practices currently utilized in the region. These estimates were created assuming mass site grading as opposed to the mowing technique currently proposed; and are therefore considered the best estimate. These estimates were based on site-specific assumptions, and local climatic conditions. The applicant then averaged each project's estimates and multiplied the average by two to account for unforeseen weather events and soil conditions that may necessitate additional watering. The applicant is very confident with this estimate that actual water use will be much less than is contemplated here. Long-term operational water needs are far less than the short-term construction projections. The operational water use numbers were also derived from multiple SGF operators currently operating in the area. The estimates of these contractors are site-specific, and based on best management practices currently utilized in the region.

These estimates were created assuming twice annual panel washing. These estimates are presented below in Table 4.14-2.

As indicated below in the analysis for Criterion B water systems, the proposed Projects would require a significantly smaller quantity of water for both construction and operations than the historic water use estimates previously described. Below are six options that the Applicant is considering for sourcing the necessary water for construction and operations of Projects 1 – 6. Two of the six options are not currently available to the Applicant and therefore, will not be analyzed in this EIR. The four options that could be implemented for the Projects are analyzed in this DEIR

Table 4.14-2 Silverado Power Water Estimates for Projects 1 – 6

Project	EIR #	Location	Area (acres)	Maximum Construction Water Use (ac*ft)			Maximum Operational Water Use (acre feet/year)
				2014	2015	Total	
North Lancaster Ranch	1	W. Ave B & 105th St W	240	50	50	100	2.9
Western Antelope Blue Sky Ranch	2	W Ave K & 110th St W	157	94	0	94	5.8
American Solar Greenworks	3	W Ave G & 70th St W	130	82	0	82	5.1
Antelope Solar Greenworks	4	W Ave J & 90th St W	256	155	0	155	7.6
Silver Sun Greenworks	5	W Ave I & 120th St W	160	97	0	97	2.9
Lancaster WAD	6	W Ave D & 35th St W	38.5	24	0	24	1.0
Totals			987.1	502	50	552	25.3

Note:
1) Maximum construction water use values have been revised to be consistent with estimates.
2) Operational water use includes panel washing 2 times per year.

Purchase Banked Water

Under this option, the Applicant would purchase banked water from the Semitropic-Rosamond Water Bank Authority (SRWBA) through the water purveyor Homer LLC. The SRWBA is a California Joint Powers Authority that manages and operates the Antelope Valley Water Bank. Homer LLC is a contracted Customer of the SRWBA and has available in excess of 14,000 acre-feet of imported State Water Project supplies in storage as of August 1, 2013. The point of delivery would be located at 100th Street West at Avenue A. Water trucks would deliver water to the ingress/egress point(s) of each Project site, along the route with the lowest impact or shortest distance travelled. A “Will Serve” letter from SRWBA to Homer LLC and from Homer LLC to Silverado Solar is provided in Appendix B-13.

Purchase Recycled Waste Water from City of Lancaster

Under this option, the Applicant would purchase recycled waste water from the City of Lancaster. The City has a current supply capacity of approximately 16 million gallons per day of treated wastewater that is suitable for construction use and panel washing. This option would be carried out in a manner that would be consistent with the Adjudication Agreement. The point of delivery would be located at West Avenue H at Division Street. Water trucks would deliver

water to the ingress/egress point(s) of each Project site, along the route with the lowest impact or least distance travelled. A "Will Serve" letter from the City of Lancaster is provided in Appendix B-13.

Acquire New Water Supply Entitlement

Under this option, the applicant would acquire "Table A" water from a landowner and/or public water supplier. The Applicant would be required to annex the project site into the Water District 40 service area. The point of delivery via the Water District 40 infrastructure would be located at 50th Street West and West Avenue I. Water trucks would deliver water to the ingress/egress point(s) of each Project site along the route with the lowest impact or least distance to be travelled. Under this option the Applicant would receive a "Will Serve" letter from Water District 40. This option is currently possible when the Project is located within the Water District or becomes annexed into the District. Antelope Valley East Kern (AVEK) and Water District 40 agreed to provide for this type of water delivery according to a memorandum of understanding recently approved by the Board of Supervisors. This option would provide a permanent long-term operational, uninterruptible water supply to serve the needs of the Projects through the estimated 35-year operations period.

Purchase Water District 40 Out-of-District Water

Under this option, the Applicant would purchase out of District water for delivery via the AVEK or Water District 40 Infrastructure. The District 40 point of delivery would be located at 50th Street West and West Avenue I. Water trucks would deliver water to the ingress/egress point(s) of each Project site, along the route with the lowest impact or least distance travelled. This option could serve both short-term construction and long-term operational needs, but would be determined an impermanent or interruptible water supply for operational purposes and therefore not guaranteed for long-term operations.

Adjudication Allocation

Under this option, following resolution of the Adjudication, the Applicant would utilize the adjudicated allocation of each Project site via on-site wells. As discussed in Section 4.14.2.1, several property owners and public water suppliers initiated a legal proceeding that requested the Superior Court of California to determine the relative rights of users and potential users of the Antelope Valley Groundwater Basin. It is expected that the Physical Solution phase of the Adjudication, which will divide up the actual water rights of the Basin, will not occur until after the scheduled completion of the construction of the Projects. However, the Adjudication is expected to be fully completed during the operational life of the Projects.

On-site Wells, Import Water to Basin

Under this option, following the Adjudication, the Applicant would pay an assessment to the Watermaster to pump groundwater from the Basin via on-site wells, which would be offset by importing water for injection into the Basin. Although the Physical Solution phase of the Adjudication is not expected to occur until after the scheduled completion of the construction of the Projects, it is expected to be fully completed during the operational life of the Projects.

4.14.5 Impact Analysis

The impact analyses in this section were performed by applying the significance criteria from the LACDRP Initial Study Environmental Checklist to applicable baseline data and the Project 1 – 6 descriptions.

4.14.5.1 Project Impacts: Criterion A – Would the project exceed wastewater treatment requirements of either the Los Angeles or Lahontan Regional Water Quality Control Boards?

4.14.5.1.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts – Wastewater Treatment

The construction of Projects 1 – 6 and gen-tie lines would generate temporary and limited wastewater as a result of on-site construction workers. The wastewater generated would be collected at the on-site mobile sanitation facilities and then transported to a nearby wastewater disposal facility. In the event that additional wastewater is generated from construction activities, water would be stored in an on-site tank system and would be disposed of at an approved wastewater treatment facility. Construction and operational wastewater will be limited in quantity and significantly below wastewater treatment requirements of Los Angeles County and the RWQCB.

All wastewater would be treated according to the treatment requirements enforced by the NPDES permit authorized by the LRWQCB. Additionally, semi-annual washing of the PV modules would generate minimal wastewater during operation. However, since the wash water would only consist of demineralized water and dust washed off of the modules, it would not need to be treated at a wastewater treatment facility. This wash water would be allowed to infiltrate into the ground and evaporate as it drips off the PV modules. The wastewater generated from maintenance workers would be collected at the on-site temporary mobile sanitation facilities and then transported to a nearby wastewater treatment facility. Projects 1 – 6 would not exceed the requirements of LRWQCB and therefore impacts would be less than significant.

4.14.5.2 Project Impacts: Criterion B – Would the project create water or wastewater system capacity problems, or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

4.14.5.2.1 Projects 1 – 6 and Gen-tie Lines

Construction Impacts – Wastewater Systems

During the construction of Projects 1 – 6 and gen-tie lines, there would be a temporary increase in wastewater generation as a result of on-site construction workers. The wastewater generated would be collected at the on-site temporary mobile sanitation facilities and then transported to a nearby wastewater treatment facility. The wastewater generated from construction activities of Projects 1 – 6 would not enter the local conveyance system and would not affect existing sewer line capacities in the area. Wastewater generation would be temporary and minimal compared

to wastewater generated by an occupied permanent building. In the event that additional wastewater is generated from construction activities, wastewater would be stored in an on-site tank system and would be disposed of at an approved wastewater treatment facility. Any additional wastewater from construction activities is expected to be temporary and minimal. Therefore, the wastewater generated from the construction of Projects 1 – 6 would not exceed the capacity of any treatment plant and would have no impact to a wastewater system. Consequently, no new wastewater treatment facilities would need to be created and no existing facilities would need to be expanded.

Operations Impacts – Wastewater Systems

Minimal wastewater would be generated during the operation of Projects 1 – 6. Wastewater would be generated from the PV module washing and periodic on-site maintenance workers. Since the PV module wash water would only consist of demineralized water and dust washed off of the modules, it would not need to be treated at a wastewater treatment facility. The wastewater generated from maintenance workers would be collected at the on-site temporary mobile sanitation facilities and then transported to a nearby wastewater treatment facility. These mobile sanitation facilities will remain on site only when operations and maintenance staff is present. The wastewater generated from operation activities of Projects 1 – 6 would not enter the local conveyance system and would not affect existing sewer line capacities in the area. Wastewater generation would be temporary and minimal compared to wastewater generated by an occupied permanent building. Consequently, no wastewater system capacity problems would be created and no new wastewater treatment facilities or expansion of existing facilities would be required. The operation of Projects 1 – 6 would have no impact to a wastewater system.

4.14.5.2.2 Project 1 and Gen-tie Line

Construction Impacts – Water Systems

The maximum construction water use of Project 1 and the Project 1 gen-tie lines is 100 ac-ft (see Table 4.14-2). Additionally, Table 4.14-2 illustrates Project 1's maximum construction water use per year for 2014 and 2015. During construction, the Project would make priority use of the most economically feasible water sourcing option identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water systems or expansion of existing facilities would be required. The construction of Project 1 would have no impact on water systems.

Operations Impacts – Water Systems

The maximum operational water use of Project 1 is 2.9 AFY. During operations the Project would make use of the most economically feasible and available water sourcing options identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water systems or expansion of existing systems would be required. The operation of Project 1 would have no impact on water systems.

4.14.5.2.3 Project 2 and Gen-tie Line

Construction Impacts – Water Systems

The maximum construction water use of Project 2 and the Project 2 gen-tie line is 94 ac-ft (see Table 4.14-2). Additionally, Table 4.14-2 illustrates Project 2's maximum construction water use per year. During construction, the Project would make priority use of the most economically feasible water sourcing option identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water facilities or expansion of existing facilities would be required. The construction of Project 2 would have no impact on water facilities.

Operations Impacts – Water Systems

The maximum operational water use of Project 2 is 5.8 AFY. During operations the Project would make use of the most economically feasible and available water sourcing options identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water facilities or expansion of existing systems would be required. The operation of Project 2 would no impact on water systems.

4.14.5.2.4 Project 3 and Gen-tie Line

Construction Impacts – Water Systems

The maximum construction water use of Project 3 and the Project 3 gen-tie line is 82 ac-ft (see Table 4.14-2). Additionally, Table 4.14-2 illustrates Project 3's maximum construction water use per year. During construction, the Project would make priority use of the most economically feasible water sourcing option identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water facilities or expansion of existing systems would be required. The construction of Project 3 would have no impact on water systems.

Operations Impacts – Water Systems

The maximum operational water use of Project 3 is 5.1 AFY. This includes water necessary for establishing vegetative buffers during the first one to three years, and is predicted to diminish over time. During operations the Project would make use of the most economically feasible and available water sourcing options identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water facilities or expansion of existing systems would be required. The operation of Project 3 would have no impact on water systems.

4.14.5.2.5 Project 4 and Gen-tie Line

Construction Impacts – Water Systems

The maximum construction water use of Project 4 and the Project 4 gen-tie lines is 155 ac-ft (see Table 4.14-2). Additionally, Table 4.14-2 illustrates Project 4's maximum construction water

use per year. During construction, the Project would make priority use of the most economically feasible water sourcing option identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water facilities or expansion of existing facilities would be required. The construction of Project 4 would no impact on water systems.

Operations Impacts – Water Systems

The maximum operational water use of Project 4 is 7.6 AFY. This includes water necessary for establishing vegetative buffers during the first one to three years, and is predicted to diminish over time. During operations the Project would make use of the most economically feasible and available water sourcing options identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water facilities or expansion of existing facilities would be required. The operation of Project 4 would have a less than significant impact on water facilities.

4.14.5.2.6 Project 5 and Gen-tie Line

Construction Impacts – Water Systems

The maximum construction water use of Project 5 and the Project 5 gen-tie line is 97 ac-ft (see Table 4.14-2). Additionally, Table 4.14-2 illustrates Project 5's maximum construction water use per year. During construction, the Project would make priority use of the most economically feasible water sourcing option identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water facilities or expansion of existing systems would be required. The construction of Project 5 would have no impact on water systems.

Operations Impacts – Water Systems

The maximum operational water use of Project 5 is 2.9 AFY. This includes water necessary for establishing vegetative buffers during the first one to three years, and is predicted to diminish over time. During operations the Project would make use of the most economically feasible and available water sourcing options identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water facilities or expansion of existing systems would be required. The operation of Project 5 would have no impact on water systems.

4.14.5.2.7 Project 6 and Gen-tie Line

Construction Impacts – Water Systems

The maximum construction water use of Project 6 and the Project 6 gen-tie line is 24 ac-ft (see Table 4.14-2). Additionally, Table 4.14-2 illustrates Project 6's maximum construction water use per year. During construction, the Project would make priority use of the most economically feasible water sourcing option identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems

would be created and no new water facilities or expansion of existing systems would be required. The construction of Project 6 would have no impact on water systems.

Operations Impacts – Water Systems

The maximum operational water use of Project 6 is 1.0 AFY. This includes water necessary for establishing vegetative buffers during the first one to three years, and is predicted to diminish over time. During operations the Project would make use of the most economically feasible and available water sourcing options identified in Section 4.14.4.1 above. All four options would deliver water to the sites by truck. Therefore, it is expected that no water system capacity problems would be created and no new water facilities or expansion of existing systems would be required. The operation of Project 6 would have no impact on water systems.

4.14.5.3 Project Impacts: Criterion C – Would the project create drainage system capacity problems, or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

4.14.5.3.1 Projects 1, 2, and 3 and Gen-tie Lines

Construction and Operations Impacts

The Hydrology Studies performed by Tetra Tech (Appendices B-7.1, B-7.2 and B-7.3) determined the sites of Projects 1, 2 and 3 currently drain from west to east; the post-development condition would maintain this flow path. A SWPPP incorporating BMPs for temporary stormwater management would be prepared and approved before the construction of Projects 1, 2 and 3 (including gen-tie lines). The final design of Projects 1, 2 and 3 would allow the pre-development runoff amount to continue to sheet flow in the post-development condition in order to avoid disturbance to downstream drainage structures or wildlife. The design of Projects 1, 2 and 3 would eliminate the need for new drainage facilities or expansion of existing facilities. Therefore, Projects 1, 2 and 3 would have a less than significant impact on drainage facilities.

4.14.5.3.2 Projects 4 and 5 and Gen-tie Lines

Construction and Operations Impacts

The Hydrology Studies performed by Tetra Tech (Appendices B-7.4 and B-7.5) determined that Projects 4 and 5 currently drain south-west to north-east; the post-development condition would maintain this flow path. A SWPPP incorporating BMPs for temporary stormwater management would be prepared and approved before the construction of Projects 4 and 5 (including gen-tie lines). The final design of Projects 4 and 5 would allow the pre-development runoff amount to continue to sheet flow in the post-development condition in order to avoid disturbance to downstream drainage structures or wildlife. The design of Project 4 would eliminate the need for new drainage facilities or expansion of existing facilities. Therefore, Projects 4 and 5 would have a less than significant impact on drainage facilities.

4.14.5.3.3 Project 6 and Gen-tie Line

Construction and Operations Impacts

As stated in the Hydrology Study (Appendix B-7.6), it was determined that the Project 6 site currently drains from north-west to south-east; the post-development condition would maintain this flow path. A SWPPP incorporating BMPs for temporary stormwater management would be prepared and approved before the start of construction of Project 6 and the Project 6 gen-tie line. The final design of Project 6 would allow the pre-development runoff amount to continue to sheet flow in the post-development condition in order to avoid disturbance to downstream drainage structures or wildlife. The design of Project 6 would eliminate the need for new drainage facilities or expansion of existing facilities. Therefore, Project 6 would have a less than significant impact on drainage facilities.

4.14.5.4 Project Impacts: Criterion D – Would the project have sufficient reliable water supplies available to serve the project demands from existing entitlements and resources, considering existing and projected water demands from other land uses?

The analysis provided below is based on the estimated water needs for each Project and the possible sources for that water, as presented in Section 4.14.5 above.

4.14.5.4.1 Project 1 and Gen-tie Line

Construction Impacts

The construction for Project 1 and the Project 1 gen-tie lines would create a short-term temporary demand for water, primarily in association with dust control. The Applicant would provide a Dust Control Plan, as specified in Section 4.3, prior to the start of construction activities. The plan would detail site-specific dust control measures designed to minimize water use during construction activities, while minimizing fugitive dust emissions. Project 1's maximum construction water use is 100 ac-ft, which is estimated for the span of approximately 5 months as specified in Table 4.14-2. The Project 1 site would have potentially required at least 624 ac-ft of water per year for agriculture use (Wildermuth 2011).

Based on potential estimated historic groundwater use at the site, there may be adequate groundwater supply within the western portion of the Basin to meet Project 1's construction water needs. In addition, according to the Antelope Valley Integrated Regional Water Management Plan (IRWMP), groundwater is considered a reliable water source in the Antelope Valley Groundwater Basin (RWMG 2007). However, given that the Adjudication will not likely be resolved during construction of Project 1, water for the Project would be supplied via truck from either Homer LLC, or the City of Lancaster, both of which have provided "Will Serve" letters indicating their ability to meet the water demands of the Project. Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank. The City of Lancaster would provide recycled waste water from its wastewater treatment facilities. Alternatively, other options presented in Section 4.14.5 may be utilized.

As previously discussed, the potential estimated historical agricultural water usage for the Project 1 site was determined to be at least 624 AFY. Project 1's maximum construction water use is 100 ac-ft over an approximately 5-month construction period, which equates to 92

percent less than the potential estimated historical annual agricultural groundwater usage at the site. Either of the sources noted above would have sufficient reliable water supplies available to serve the Project construction demands from existing water source entitlements and water resources. Therefore the impacts from water usage during construction would be less than significant.

Operations Impacts

During operations, the maximum water use for Project 1 would be 2.9 AFY. A maximum of 2.9 AFY of additional water may be needed in the first 2 years of operation to establish the plants for the landscaping buffer. It is unlikely but possible that additional water (up to 3 AFY) may be needed later during the operations phase for supplemental plantings if landscape vegetation expires and has to be replaced.

Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank, which is outside of the Basin currently in Adjudication. This option would provide a reliable source of water for operations. The City of Lancaster has indicated that they have the ability to provide the recycled wastewater required for long-term operations of Project 1. Alternatively, other options presented in Section 4.14.5 may be utilized. Therefore the impacts from water usage during operations would be less than significant.

4.14.5.4.2 Project 2 and Gen-tie Line

Construction Impacts

The construction of Project 2 and the Project 2 gen-tie line would create a short-term temporary demand for water, primarily in association with dust control. The Applicant would provide a Dust Control Plan, as specified in Section 4.3, prior to the start of construction activities. The plan would detail site-specific dust control measures designed to minimize water use during construction activities, while minimizing fugitive dust emissions. Maximum construction water use for Project 2 would be 94 ac-ft. Although the Project 2 site was not historically used for agriculture, it is estimated that a property that size (157 acres) would require at least 408 AFY of water for agriculture (Wildermuth 2011). The maximum construction water use of Project 2 is substantially less than the best estimate of water use of 408 AFY for agriculture, which was historically the primary land use of surrounding land.

Based on potential estimated historic groundwater use at the site, there may be adequate groundwater supply within the western portion of the Basin to meet Project 2's construction water needs. In addition, according to the Antelope Valley Integrated Regional Water Management Plan (IRWMP), groundwater is considered a reliable water source in the Antelope Valley Groundwater Basin (RWMG 2007). However, given that the Adjudication will not likely be resolved during construction of Project 2, water for the Project would be supplied via truck from either Homer LLC, or the City of Lancaster, both of which have provided "Will Serve" letters indicating their ability to meet the water demands of the Project. Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank, which is outside of the Basin currently in Adjudication. The City of Lancaster would provide recycled waste water from its wastewater

treatment facilities. Alternatively, if other options presented in Section 4.14.5 become available, they may be utilized.

As previously discussed, the potential estimated historical water usage for a property the size of the Project 2 site (157 acres) is estimated to be at least 408 AFY. Project 2's maximum construction water use would be 94 ac-ft, which is 77.0 percent less than the projected historical groundwater usage. Either of the sources noted above would have sufficient reliable water supplies available to serve Project 2 construction demands from existing entitlements and resources. Alternatively, other options presented in Section 4.14.5 may be utilized. Therefore the impacts from water usage during construction would be less than significant.

Operations Impacts

During operations, Project 2's maximum water use is 5.8 AFY. Up to 5.8 AFY of may be needed in the first 2 years of operations to establish the plants for the landscaping buffer. It is unlikely but possible that additional water (up to 5.8 AFY) could be needed later during the operation phase for supplemental plantings if landscape vegetation expires and needs to be replaced.

Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank, which is outside of the Basin currently in Adjudication. This option would provide a reliable source of water for operations. The City of Lancaster has indicated that they have the ability to provide the recycled wastewater required for long-term operations of Project 2. Alternatively, other options presented in Section 4.14.5 may be utilized. Therefore the impacts from water usage during operations would be less than significant.

4.14.5.4.3 Project 3 and Gen-tie Line

The construction of Project 3 and the Project 3 gen-tie line would create a short-term temporary demand for water, primarily in association with dust control. The Applicant would provide a Dust Control Plan, as specified in Section 4.3, prior to the start of construction activities. The plan would detail site-specific dust control measures designed to minimize water use during construction activities, while minimizing fugitive dust emissions. The maximum construction water use for Project 3 would be 82 ac-ft. It is estimated that the Project 3 site would have potentially historically required at least 353 ac-ft of water per year for agriculture (Wildermuth 2011).

Based on potential estimated historic groundwater use at the site, there may be adequate groundwater supply within the western portion of the Basin to meet Project 3's construction water needs. In addition, according to the Antelope Valley IRWMP, groundwater is considered a reliable water source in the Antelope Valley Groundwater Basin (RWMG 2007). However, given that the Adjudication will not likely be resolved during construction of Project 3, water for the Project would be supplied via truck from either Homer LLC, or the City of Lancaster, both of which have provided "Will Serve" letters indicating their ability to meet the water demands of the Project. Homer LLC would provide out-of-Basin water banked in the Antelope Valley Water Bank. The City of Lancaster would provide recycled waste water from its wastewater treatment facilities. Alternatively, other options presented in Section 4.14.5 may be utilized.

As previously discussed, the historical water usage for Project 3 was estimated to be at least 353 AFY. Project 3's maximum construction water use is 82 ac-ft, which equates to 76.3 percent less than the historical groundwater usage at the site. Either of the sources noted above would have sufficient reliable water supplies available to serve Project 3 construction demands from existing entitlements and resources. Therefore the impacts from water usage during construction would be less than significant.

Operations Impacts

During operations, Project 3's maximum water use would be 5.1 AFY. Up to 5.1 AFY water may be needed in the first 2 years of operation to establish the plants for the landscaping buffer. It is unlikely but possible that additional water (up to 5.1 AFY) may be needed later during the operation phase for supplemental plantings if landscape vegetation expires and needs to be replaced.

Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank, which is outside of the Basin currently in Adjudication. This option would provide a reliable source of water for operations. The City of Lancaster has indicated that they have the ability to provide the recycled wastewater required for long-term operations of Project 3. Alternatively, other options presented in Section 4.14.5 may be utilized. Therefore the impacts from water usage during operations would be less than significant.

4.14.5.4.4 Project 4 and Gen-tie Line

Construction Impacts

The construction of Project 4 and the Project 4 gen-tie lines would create a short-term temporary demand for water, primarily in association with dust control. The Applicant would provide a Dust Control Plan, as specified in Section 4.3, prior to the start of construction activities. The plan would detail site-specific dust control measures designed to minimize water use during construction activities, while minimizing fugitive dust emissions. Project 4's maximum construction water use would be 155 ac-ft. It is estimated that the Project 4 site would have potentially historically required at least 658 ac-ft of water per year for agriculture (Wildermuth 2011).

Based on potential estimated historic groundwater use at the site, there may be adequate groundwater supply within the western portion of the Basin to meet Project 4's construction water needs. Since the Project 4 site overlies the Basin, the owner currently may have an unrestricted overlying right to use water from the Basin. In addition, according to the Antelope Valley IRWMP, groundwater is considered a reliable water source in the Antelope Valley Groundwater Basin (RWMG 2007). However, given that the Adjudication will not likely be resolved during construction of Project 4, water for the Project would be supplied via truck from either Homer LLC, or the City of Lancaster, both of which have provided "Will Serve" letters indicating their ability to meet the water demands of the Project. Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank. The City of Lancaster would provide recycled waste water from its wastewater treatment facilities. Alternatively, other options presented in Section 4.14.5 may be utilized.

As previously discussed, the historical water usage for Project 4 was estimated to be at least 658 AFY. Project 4's maximum construction water use is 155 ac-ft, which equates to 76.4 percent less than the potential historical groundwater usage at the site. Either of the sources noted above would have sufficient reliable water supplies available to serve Project 4 construction demands from existing entitlements and resources. Therefore the impacts from water usage during construction would be less than significant.

Operations Impacts

Project 4's maximum long-term operational need of 7.6 AFY equates to a little over 1 percent of the historical groundwater usage at the site. Up to 7.1 AFY of water could be needed in the first 2 years of operations to establish the plants for the landscaping buffer. It is unlikely but possible that additional water (up to 7.1 AFY) could be needed later during the operations phase for supplemental plantings if landscape vegetation expires and needs to be replaced.

Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank. This option would provide a reliable source of water for operations. The City of Lancaster has indicated that they have the ability to provide the recycled wastewater required for long-term operations of Project 4. Alternatively, other options presented in Section 4.14.5 may be utilized. Therefore the impacts from water usage during operations would be less than significant.

4.14.5.4.5 Project 5 and Gen-tie Line

Construction Impacts

The construction of Project 5 and the Project 5 gen-tie line would create a short-term temporary demand for water, primarily in association with dust control. The Applicant would provide a Dust Control Plan, as specified in Section 4.3, prior to the start of construction activities. The plan would detail site-specific dust control measures designed to minimize water use during construction activities, while minimizing fugitive dust emissions. Project 5's maximum construction water use is 97 ac-ft. It is estimated that the Project 5 site would have potentially historically required at least 416 ac-ft of water per year for agriculture (Wildermuth 2011).

Based on potential historic groundwater use at the site, there may adequate groundwater supply within the western portion of the Basin to meet Project 5's construction water needs. Since the Project 5 site overlies the Basin, the owner currently may have an unrestricted overlying right to use water from the Basin. In addition, according to the Antelope Valley IRWMP, groundwater is considered a reliable water source in the Antelope Valley Groundwater Basin (RWMG 2007). However, given that the Adjudication will not likely be resolved during construction of Project 5, water for the Project would be supplied via truck from either Homer LLC, or the City of Lancaster, both of which have provided "Will Serve" letters indicating their ability to meet the water demands of the Project. Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank. The City of Lancaster would provide recycled waste water from its wastewater treatment facilities. Alternatively, other options presented in Section 4.14.5 may be utilized.

As previously discussed, Project 5's maximum construction water use would be 97 ac-ft, which equates to 76.7 percent less than the potential estimated historical groundwater usage at the site. Either of the sources noted above would have sufficient reliable water supplies available to serve Project 5 construction demands from existing entitlements and resources. Therefore the impacts from water usage during construction would be less than significant.

Operations Impacts

Project 5's maximum long-term operational need of 2.9 AFY equates to less than 1 percent of the historical groundwater usage. Up to 2.9 AFY of water could be needed in the first 2 years of operations to establish the plants for the landscaping buffer. It is unlikely but possible that additional water (up to 2.9 AFY) could be needed later during the operations phase for supplemental plantings if landscape vegetation expires and needs to be replaced.

Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank. This option would provide a reliable source of water for operations. The City of Lancaster has indicated that they have the ability to provide the recycled wastewater required for long-term operations of Project 5. Alternatively, other options presented in Section 4.14.5 may be utilized. Therefore the impacts from water usage during operations would be less than significant.

4.14.5.4.6 Project 6 and Gen-tie Line

Construction Impacts

The construction of Project 6 and the Project 6 gen-tie line would create a temporary demand for water, primarily in association with dust control. The Applicant would provide a Dust Control Plan, as specified in Section 4.3, prior to the start of construction activities. The plan would detail site-specific dust control measures designed to minimize water use during construction activities, while minimizing fugitive dust emissions. Project 6's maximum construction water use is 24 ac-ft. It is estimated that the Project 6 site would have potentially historically required at least 100 ac-ft of water per year for agriculture (Wildermuth 2011).

Based on estimated historic groundwater use at the site, there may be adequate groundwater supply within the western portion of the Basin to meet Project 6's construction water needs. Since the Project 6 site overlies the Basin, the owner currently may have an unrestricted overlying right to use water from the Basin. In addition, according to the Antelope Valley IRWMP, groundwater is considered a reliable water source in the Antelope Valley Groundwater Basin (RWMG 2007). However, given that the Adjudication will not likely be resolved during construction of Project 6, water for the Project would be supplied via truck from either Homer LLC, or the City of Lancaster, both of which have provided "Will Serve" letters indicating their ability to meet the water demands of the Project. Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank. The City of Lancaster would provide recycled waste water from its wastewater treatment facilities. Alternatively, other options presented in Section 4.14.5 may be utilized.

As previously discussed, the potential historical water usage for Project 6 was estimated to be at least 100 AFY during a period that may be considered in the final judgment of the

Adjudication. Project 6's maximum construction water use would be 24 ac-ft, which equates to 76 percent less than the potential historical groundwater usage at the site. Either of the sources noted above would have sufficient reliable water supplies available to serve Project 6 construction demands from existing entitlements and resources. Therefore the impacts from water usage during construction would be less than significant.

Operations Impacts

Project 6's maximum long-term operational need of 1 AFY equates to 1 percent of the historical groundwater usage. Up to 1.0 AFY of water could be needed in the first 2 years of operation to establish the plants for the landscaping buffer. It is unlikely but possible that additional water (up to 1.0 AFY) could be needed later during the operation phase for supplemental plantings if landscape vegetation expires and needs to be replaced.

Homer LLC would provide out-of-Basin water stored in the Antelope Valley Water Bank. This option would provide a reliable source of water for operations. The City of Lancaster has indicated that they have the ability to provide the recycled wastewater required for long-term operations of Project 6. Alternatively, other options presented in Section 4.14.5 may be utilized. Therefore the impacts from water usage during operations would be less than significant.

4.14.5.5 Project Impacts: Criterion E – Would the project create energy utility (electricity, natural gas, propane) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

4.14.5.5.1 Projects 1 – 6 and Gen-tie Lines

Construction Impacts

Projects 1 – 6 (and gen-tie lines) do not require natural gas or propane during construction or operation; therefore there would be no system capacity problems for those utilities. Since natural gas and propane are not needed for Projects 1 – 6, no new energy facilities would need to be created and no existing facilities would need to be expanded.

Projects 1 – 6 may require electricity for the construction equipment and for lighting construction activities. The electricity would likely come from one of the existing SCE lines located on the west and south sides of the Projects 1 – 6 sites. Electricity consumption during construction would be temporary and would vary depending on the phase of construction. Overall, the construction of Projects 1 – 6 would require limited electrical consumption that the existing electrical grid has capacity to serve. Therefore, Projects 1 – 6 would have a less than significant impact on energy utility system capacity.

Operations Impacts

Projects 1 – 6 would also require electricity for ongoing maintenance operations, lighting, security systems, and other various operational needs. During daylight hours, the electricity needs for Projects 1 – 6 would be supplied by Projects 1 – 6's electricity generation. During non-daylight hours, the electricity needs for Projects 1 – 6 would be provided by either backfeed

from the electrical grid, through the proposed gen-tie, or through the existing SCE lines located on the west and south sides of the Projects 1 – 6 sites. Therefore, Projects 1 – 6 would have a less than significant impact on energy utility system capacity.

4.14.5.6 Project Impacts: Criterion F – Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

4.14.5.6.1 Project 1 and Gen-tie Line

Construction Impacts

Construction of Project 1 would require some earthwork, demolition of two existing buildings, removal of a broken-down structure, and installation of the SGF. Solid waste generated from construction of Project 1 and the Project 1 gen-tie lines may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty non-hazardous containers, and vegetation wastes. In accordance with Title 22 Chapter 22.52, 65 percent of construction and demolition debris would be recycled. Any material that cannot be recycled would be properly disposed of at a regional disposal facility. Any defective or broken solar modules would be returned to the manufacturer for recycling or recycled by the applicant as possible. In accordance with Title 22 Chapter 20.87, the Applicant would prepare a Recycling and Reuse Plan and progress reports to implement and document the Project's recycling practices. Therefore, Project 1 impacts on landfill and solid waste disposal capacity will be less than significant.

Operations Impacts

Once the SGF is installed, there would be minimal waste generated during operations of Project 1, therefore Project 1 impacts on landfill and solid waste disposal capacity would be less than significant.

4.14.5.6.2 Projects 2, 3, 5 and 6 and Gen-tie Lines

Construction Impacts

Construction of Projects 2, 3, 5 and 6 would require minimal ground disturbance during the facility installation. Solid waste generated from construction of Projects 2, 3, 5 and 6 (and gen-tie lines) may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty non-hazardous containers, and vegetation wastes. In accordance with Title 22 Chapter 22.52, 65 percent of construction and demolition debris would be recycled. Any material that cannot be recycled would be properly disposed of at a regional disposal facility. Any defective or broken solar modules would be returned to the manufacturer for recycling. In accordance with Title 22 Chapter 20.87, the Applicant would prepare a Recycling and Reuse Plan and progress reports to implement and document the Project's recycling practices. Therefore, Projects 2, 3, 5 and 6 impacts on landfill and solid waste disposal capacity would be less than significant.

Operations Impacts

Once the SGF is installed, there would be minimal waste generated during operations of Projects 2, 3, 5 and 6; therefore Projects 2, 3, 5 and 6 impacts on landfill and solid waste disposal capacity would be less than significant.

4.14.5.6.3 Project 4 and Gen-tie Line

Construction of Project 4 would require some earthwork, demolition of two existing buildings, and installation of the SGF. Solid waste generated from construction of Project 4 and the Project 4 gen-tie lines may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty non-hazardous containers, and vegetation wastes. In accordance with Title 22 Chapter 22.52, 65 percent of construction and demolition debris would be recycled. Any material that cannot be recycled would be properly disposed of at a regional disposal facility. Any defective or broken solar modules would be returned to the manufacturer for recycling. In accordance with Title 22 Chapter 20.87, the Applicant would prepare a Recycling and Reuse Plan and progress reports to implement and document the Project's recycling practices. Therefore, Project 4 impacts on landfill and solid waste disposal capacity would be less than significant.

Operations Impacts

Once the SGF is installed, there would be minimal waste generated during operation of Project 4, therefore Project 4 impacts on landfill and solid waste disposal capacity would be less than significant.

4.14.5.7 Project Impacts: Criterion G – Would the project comply with federal, state, and local statutes and regulations related to solid waste?

4.14.5.7.1 Projects 1 – 6 and Gen-tie Lines

Construction and Operations Impacts

Non-hazardous waste generated during construction, operation, and decommissioning of Projects 1 – 6 (and gen-tie lines) would be transferred by licensed waste hauling contractors and recycled or disposed of in compliance with local and state regulations. Hazardous wastes would be shipped offsite and treated or disposed in accordance with all applicable laws and regulations for hazardous waste management. The construction contractor would prepare a Project-specific hazardous materials management and hazardous waste management program for the locations of Projects 1 – 6. Refer to Section 4.8 for additional information regarding the handling and disposal of hazardous wastes. Projects 1 – 6 would have no impact relative to compliance with existing federal or state regulations pertaining to solid waste because Projects 1 – 6 would be required to comply with all relevant regulations during construction, operation and decommissioning.

4.14.6 Mitigation Measures

No mitigation measures are required for Utilities and Service Systems.

4.14.7 Cumulative Impacts

There are 29 cumulative projects within a 5-mile radius of the Projects, amounting to 20,909 acres of development including Projects 1 – 6 (see Table 3-7). For the purposes of this cumulative analysis, the worst case scenario is assumed, i.e., all cumulative projects would be constructed at the same time. It is also assumed that all cumulative projects would comply with all applicable laws, ordinances, and regulations.

Construction and operation of the cumulative projects would result in less than significant impacts with mitigation to public facilities, which include electricity, gas, wastewater, and solid waste services. During construction, all cumulative projects would follow required measures to prevent construction interference to utility services, and would comply with recycling requirements to minimize solid waste disposal at solid waste facilities. During operation, the solar and wind generation projects would provide electricity, and would generate minimal amounts of solid waste. During operation, the non-solar/non-wind commercial and residential development projects would generate solid waste as would be expected from these residential and commercial uses; it is assumed that these project proponents have planned for and mitigated for the additional solid waste generation as appropriate. The proposed Projects 1 – 6 would provide their own operational needs for electricity, no natural gas would be required for their operations, little wastewater (from panel washing) would be generated as part of the operations process, and very little solid waste would be generated. As a result, the total cumulative impacts to utility services with mitigation incorporated would be less than significant. Therefore, the incremental contribution of Projects 1 – 6 to cumulative impacts related to utility services would be less than significant.

While the sources of water for other cumulative projects is not known (use of Basin water or out of Basin water), any non-adjudicated use of Basin water would be considered a significant and unavoidable impact, while the use of out of Basin water could potentially be less than significant.

Because the Applicant has committed to using out of Basin water during construction and operations, Projects 1 – 6 would not result in a cumulatively considerable contribution to water supply impacts in the Basin and would have no significant cumulative effect on water supply.

4.14.8 References

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5.0 ALTERNATIVES TO THE PROPOSED PROJECTS 1 – 6

5.1 INTRODUCTION

The purpose of the proposed Projects 1 – 6 is to generate 172 MW of clean, renewable electrical power utilizing solar photovoltaic (PV) technology and to integrate the electrical output of each Project into the electrical grid. The proposed Projects have been sited on previously disturbed land that would use existing electrical distribution facilities, rights-of-way (ROWs), roads, and other existing infrastructure where feasible, to minimize the need for new electrical support facilities. Additionally, the electricity produced by the proposed Projects 1 – 6 would be sold via power purchase agreements (PPAs) that provide a set and secure rate of financial return for the Projects. One objective of the proposed Projects would be to deliver power to the Point of Interconnection (POI) identified in the existing PPAs; therefore the proposed Project sites need to be near the established POIs for each Project to minimize potential environmental impacts.

The Projects would contribute to meeting the existing and future demand for electricity generated from clean, renewable technology. Additionally, the Projects would assist California in meeting the newly established Renewable Energy Portfolio Standards (RPS). Senate Bill 14 established RPS targets for California, stating, “All retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020.” State government agencies have been directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines. The six Project sites qualify as eligible renewable energy resources as defined by the California Public Resources Code and would help the state meet the objective of increasing renewable energy generation. In addition, the Projects would contribute much-needed competitive energy on peak power periods to the electrical grid in California.

The power lines that would interconnect the solar generating facilities to the Southern California Edison (SCE) commercial power grid, also known as generation-tie (gen-tie) lines, are required to be placed underground in Los Angeles County whenever it is technically feasible. Thus, other alternatives for the interconnection lines were not being considered further.

The proposed Projects have been designed with the intent of meeting the objectives discussed above. In accordance with CEQA Guidelines Section 15126.6, this EIR assesses the “no project” alternative and a range of reasonable alternatives to the proposed Projects, which could feasibly attain most of the basic objectives of the proposed Projects and avoid or substantially lessen any of the significant environmental effects of the proposed Projects. The alternatives considered are described below.

5.2 ALTERNATIVE 1: NO PROJECT

The proposed Projects 1 – 6 would not be approved or implemented under the No Project Alternative. The potential environmental impacts and benefits of the proposed Projects would not occur as a direct consequence of implementation under the No Project Alternative. The No Project Alternative would involve taking no action to generate 172 MW of clean, renewable electrical power utilizing solar PV technology and to integrate the electrical output of the

Projects into the electrical grid. This alternative would not allow one of the primary purposes of the proposed Projects which is to increase the output of renewable energy in support of the RPS, such that the State of California may meet its current and planned goals for increasing renewable generation at reasonable market rates.

The No Project Alternative assumes that the sites will remain as they currently exist (primarily fallow agricultural land) and no environmental impacts would result. In summary, the No Project Alternative is provided for comparative purposes to the proposed Projects 1 – 6. This alternative is incapable of meeting the stated goals and objectives of the Projects to provide 172 MW of renewable electric energy to utility providers, and does not contribute to the state's ability to meet its near-term and long-term renewable energy generation goals and objectives.

5.3 ALTERNATIVE 2: LOWER INTENSITY PROJECTS

An alternative to the proposed action is to develop fewer than the six proposed Project sites and to generate less than 172 MW of electricity. This lower intensity alternative is technically and environmentally feasible but partially fails to accomplish the goals of the proposed Projects, which are to provide 172 MW of clean, renewable electric energy using solar PV technology, and to deliver the electric output on a wholesale basis to utility providers. The Projects are designed to meet the increasing demand for clean, renewable electrical power. Any reduction in the size of the effort results in a similar potential reduction in the reliance on foreign sources of fuel, the diversification of energy portfolios, the contribution to the reduction of GHG emissions, and the generation of "green" jobs. It would also potentially reduce the contribution to the much needed on-peak power to the electrical grid in California.

The opportunity to develop solar power in Los Angeles County has a limited timeframe because the utility companies, which purchase the power, would purchase power from another entity if the proposed Projects are not completed in a timely manner. If Los Angeles County does not approve the six viable SGFs proposed here, the opportunity to contribute to the competitive solar generation business in the County will be further lost to other projects. The proposed Projects are well positioned to compete in the industry, are comparatively environmentally superior to most other locations, and have good positions for PPAs and interconnection agreements. Additionally, any reduction of the megawatts produced from these Projects would further limit the County's contribution to the State's renewable energy production goals. These 5 to 52 MW Projects meet the utility industry needs for small projects, and any reduction of the respective Projects' size would jeopardize the success of the Projects.

5.4 ALTERNATIVE 3: SELECT OTHER PROJECT SITES

Other properties could potentially be used for the six Project sites. The Applicant's proprietary selection process utilizes a 20-point decision tree and 50 screening steps to determine the most suitable project sites. Project sites with identified material risks are not pursued, and therefore regular re-evaluations occur. One key objective for the Applicant was to locate the Projects in an area with the following characteristics: (1) adequate solar radiation; (2) close proximity to interconnection locations for each solar site; (3) project sites with landowners who are willing to sell large enough parcels of land for solar generation at market price; (4) lack of threatened and/or endangered biological species on the site; (5) lack of nearby sensitive receptors or land

uses to minimize potential conflicts with development (6) relatively flat sites that have previously been disturbed to minimize disturbance to native habitat and to minimize the need for site grading; (7) existing access to accommodate construction workforce needs; and (8) access to nearby workforce to minimize traffic and socioeconomic impacts.

The Applicant performed in-depth analyses of over 10,000 acres of land in the Western Antelope Valley. Figure 6-1 is a map of the properties the Applicant initially analyzed. Of the 10,000 acres screened, only ten percent met the stringent criteria listed above.

5.5 ALTERNATIVE 4: ROOFTOP SOLAR GENERATION

For rooftop solar to be a viable alternative to the proposed Projects it would need to provide 172 MW of electricity into the local grid. Assuming one house can produce 25 kilowatts of electricity, a total of 6,880 houses would be needed to produce 172 MW of electricity. The Applicant does not have the ability to install solar panels on private rooftops; therefore this alternative is not feasible for the Applicant.

5.6 ALTERNATIVE 5: WIND ENERGY GENERATION

For wind energy generation to be a reasonable alternative to the proposed Projects and meet the purpose and need of the proposed Projects, it would need to provide 172 MW of electricity into the local grid; and to be sited on previously disturbed land that utilizes existing electrical distribution facilities, ROWs, roads, and other existing infrastructure where feasible to minimize the need for new electrical support facilities. The area required for construction and operation of a 172 MW wind farm would require a much more specific type of geographical location than the Projects; a feasible project area of the nature required for wind electricity production is not readily available within the area of analysis for the proposed Projects. For this reason, this alternative is infeasible.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

5.7.1 Alternative 1

Alternative 1 would avoid the impacts associated with implementation of the proposed Projects. The avoided impacts would include adverse and beneficial impacts. However, with the implementation of the No Project Alternative, the goals and objectives of the proposed Projects could not be realized. In addition, the No Project Alternative is not the environmentally superior alternative. Renewable energy is needed and legally mandated in Los Angeles County and the State of California and developing no projects would not meet this objective.

5.7.2 Alternative 2

Alternative 2 is also a less desirable alternative because solar power is legally mandated in Los Angeles County and the State of California. Reducing the Projects to the development of fewer megawatts would jeopardize the financial viability of the Projects. The goals and objectives of the proposed Projects 1 – 6 would not be fully realized with the implementation of Alternative 2. While some environmental impacts would potentially be reduced, the objective of providing 172 MW of renewable energy would not be realized.

5.7.3 Alternative 3

The environmentally superior alternative is considered to be Alternative 3, Alternative SGF sites, since the power generation goals could be met if alternative sites could be found. There are potential alternative sites available that would have impacts similar to the proposed Projects 1 – 6. Alternative sites would likely have equal or greater environmental impacts since the lands presently selected are previously disturbed and generally have less environmental value compared to several other properties evaluated in the area. Additionally, other alternative sites would not meet project objectives in a timely manner as pre-arranged PPAs and interconnection agreements for the potential Project sites are already in place. The Applicant has performed its due diligence in selecting Project sites. As stated in CEQA Section 15126.6, an "EIR need not consider every conceivable alternative to a project." and an EIR "is not required to consider alternatives which are infeasible." However, the project proponent has considered a range of potentially feasible alternative sites as shown in Figure 6-1.

5.7.4 Alternative 4

Alternative 4 would require the recruiting of 6,880 home owners and/or other similar property owners for providing the supporting structures and purchasing the solar facilities. Although Alternative 4 would not use additional land and therefore would have limited environmental impacts, it is not feasible for the Applicant as the Applicant does not perform roof top solar electricity installations.

5.7.5 Alternative 5

Alternative 5 would not be feasible within the area of analysis for the proposed Projects; therefore Alternative 5 would not be considered the environmentally superior alternative.

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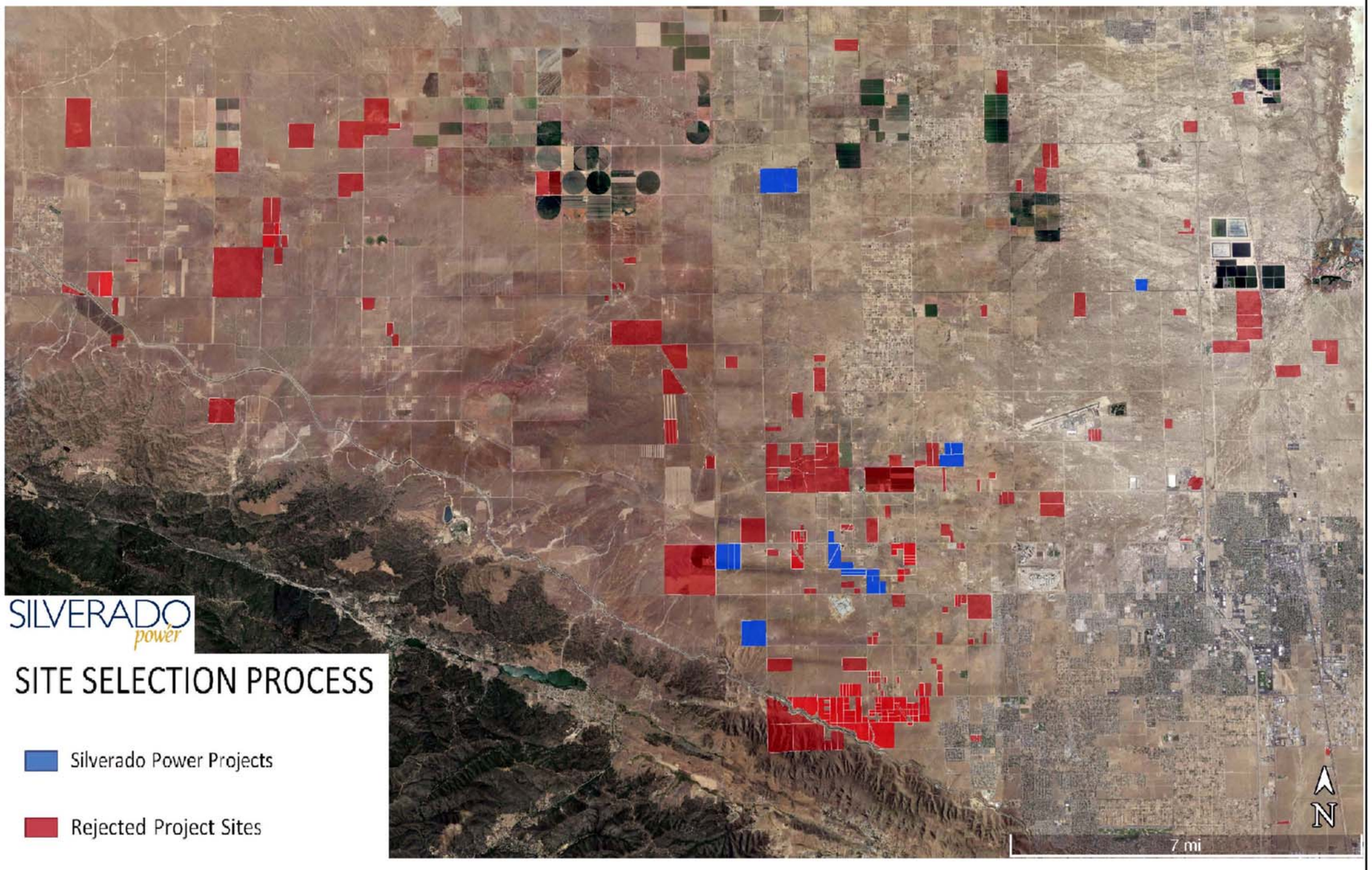

SILVERADO power

SILVERADO POWER WEST LOS ANGELES COUNTY

NOTE:
(a) Source basemap and data provided by Silverado Power.

FIGURE 5-1
ALTERNATIVE SITE
SELECTION PROCESS

TETRA TECH EC, INC.

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6.0 CONSEQUENCES OF IMPLEMENTATION OF PROJECTS

6.1 INTRODUCTION – CHANGE OF CHARACTER OF THE AREA

Impacts for every resource category required under CEQA were evaluated in Chapter 4.0 and Mitigation Measures for the impacts were included in Chapter 5.0. In this chapter the impacts for each resource category are summarized and are rated into one of the three categories given below:

- **Impacts Found to be Less than Significant** – Minor impacts or changes to the existing situation may occur either temporarily or permanently but are not significant in either case.
- **Impacts Found to be Less than Significant with Mitigation** – Impacts do occur but they are mitigated to less than significant.
- **Impacts Found to be Significant and Unavoidable** – Significant impacts occur and cannot be reduced to less than significant with the mitigation measures.

6.1.1 Change of Land Use in the Area

The development defined here and the other solar projects defined in the cumulative impacts section will cause a minor change of character for the area. Some of the open lands that had once been used for farming, and have been historically fallow since the Antelope Valley water table dropped enough to reduce farming operations in the area, may be developed as solar generating facilities. The subject solar Projects proposed are low profile in nature, panel arrays are not to exceed eight feet in height, and the facilities are to operate in a passive and quiet manner during day to day operations after the brief construction period is completed. When compared to ongoing farming operations or other alternative permitted uses in the subject zoning, the proposed solar Projects' day to day operations, which are anticipated to be passive, would make little substantive change to the character of the area.

In a 5-mile radius around the proposed Projects 1 – 6 there are approximately 165,349 acres of land. The Applicant's proposed Projects will utilize 987 acres, which is 0.60 percent of the acreage within the 5-mile radius used for cumulative impacts analysis in this EIR. The amount of land to be used for the Projects within the 5-mile radius is limited compared to the size of the Antelope Valley and these six Projects are each relatively small and widely dispersed on the west side of the valley. This data is shown in Table 3-6.

To further define the amount of land planned for solar development in the west side of the Antelope Valley, there are approximately 3,458 acres of solar development other than the presently proposed Projects, which are proposed within the Antelope Valley in Los Angeles County and the City of Lancaster. This acreage, plus the Projects 1 – 6 represent 2.7 percent of the acreage within the 5-mile radius. These data are provided in Table 3-3 and were provided by Los Angeles County Regional Planning and the City of Lancaster.

Other real estate development within the 5-mile radius would not result in a change in character of the area from the proposed Projects; the real estate development may occur with or without the proposed Projects 1 – 6. There are also approximately 1,615 acres of real estate

development located within the 5-mile radius that make up 0.98 percent of the total acreage to be developed for all the cumulative projects. This real estate development acreage is far less than was proposed in recent economic boom years. The total development in the 5-mile radius, without the wind projects, drops to 6,061 acres or to 3.66 percent. Overall, the proposed land uses for Projects 1 – 6 are compatible with other agricultural and rural land uses. Projects 1 – 6 will temporarily preclude future agricultural use at the Project locations; however, the Projects will not affect any land use outside the development sites' limits. Impacts regarding the conversion of Farmland to non-agricultural use will be less than significant. See Section 4.2, Agriculture and Forestry, and Section 4.10, Land Use, for additional information. As shown in Table 3-3 and Figure 3-3 in Chapter 3.0, the proposed Projects would entail approximately 0.60 percent of all proposed projects within a 5-mile radius. Therefore, the change in character of the area would be very minor.

6.2 IMPACTS FOUND TO BE LESS THAN SIGNIFICANT

For the following subject areas it was found that either no impact will occur or that all impacts will be less than significant as a result of development of all six Projects. Detailed analyses of the subject and of potential impacts were given in Chapter 4.0 under each subject category:

- Agriculture and Forestry Resources – Less Than Significant
- Public Services – Less Than Significant
- Utilities and Service Systems – Less Than Significant

6.3 IMPACTS FOUND TO BE LESS THAN SIGNIFICANT WITH MITIGATION

For the following subject areas it was found that all impacts will be less than significant with mitigation for all six Projects. Detailed analyses and mitigation measures are given in Chapter 4.0 for each subject category.

- Aesthetics – Less Than Significant with Mitigation
- Air Quality – Less than Significant with Mitigation
- Biological Resources – Less than Significant with Mitigation
- Cultural Resources and Paleontological Resources – Less Than Significant with Mitigation
- Geology and Soils – Less Than Significant with Mitigation
- Climate Change and Greenhouse Gas – Less Than Significant with Mitigation
- Hazards and Hazardous Materials – Less Than Significant with Mitigation
- Hydrology and Water Quality – Less Than Significant with Mitigation
- Land Use and Planning – Less Than Significant with Mitigation
- Noise – Less than Significant With Mitigation
- Transportation and Traffic – Less than Significant With Mitigation

6.4 IMPACTS FOUND TO BE SIGNIFICANT AND UNAVOIDABLE

These are no impacts that have been found to be significant and unavoidable.

6.5 IRREVERSIBLE IMPACTS

There are no irreversible impacts attributed to construction or operations of the six Project sites.

6.6 SIGNIFICANT CUMULATIVE EFFECTS

The Projects' incremental contribution when included with other proposed projects in the area would not contribute to significant cumulative effects to any environmental resources.

6.7 GROWTH INDUCEMENT

CEQA requires the analysis of a proposed project's potential to induce growth. The CEQA Guidelines (Section 15126.2(d)) identify a project to be growth-inducing if it fosters economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Significant growth impacts could occur if the project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies. New employees hired for proposed commercial and industrial development projects and population growth resulting from residential development projects represent direct forms of growth. A project would indirectly induce growth if it would increase the capacity of infrastructure or facilities in an area in which the public service currently meets demand.

6.7.1 Growth Caused by Direct Employment

Construction of the Projects would require a workforce consisting of construction management, supervisory personnel, engineers, craftsmen, laborers, and support personnel. During construction the workforce is expected to peak at 160 workers. Based on the site locations, construction workers are expected to originate primarily from Lancaster, the Los Angeles areas, and Kern County.

Construction of the Projects would not induce growth in the area. Unemployment rates were 11.6 percent in June 2009 (EDD 2009). Construction jobs in Los Angeles County were down 13.9 percent in 2009. The estimates of available construction positions in Los Angeles County were 127,600 jobs. This estimate reflects a loss of 20,600 jobs compared with construction employment in the prior year (June 2008), where 148,200 construction positions were available in Los Angeles County (EDD 2009). The Projects construction labor force needed would account for approximately 0.12 percent of the available labor force. The construction workforce would be considered negligible compared to the size of the available regional workforce. As a result, construction workers are expected to be hired locally, and workers would not be anticipated to relocate into the area during construction. Construction may be anticipated to provide employment opportunities to the current unemployed construction workforce in Los Angeles County.

The total number of utility related positions in the region of the Projects in June 2009 was 23,200 jobs, which have similarly declined since 2008 (EDD 2009). The operational employment needs for the proposed Projects would be negligible compared to the available regional workforce. The Operations and Maintenance personnel as well as the Security personnel will be obtained through the hiring of specialized contract firms. These firms may hire permanent employees from the available regional workforce, and workers would not be expected to be required to relocate to the area.

6.7.2 Growth Related to the Provision of Electric Power Generation

During the year 2000 Census, populations in the Antelope Valley Planning Area and Los Angeles County were 66,800 and 9,519,338 respectively. Residents in the Antelope Valley Planning Area and Los Angeles County are projected to increase to 243,015 (263.8 percent increase), and 12,015,889 (26.2 percent growth), respectively, by 2030 (LACDRP 2009; SCAG 2008). Based on this projected increase in population, this growth is expected to occur with or without implementation of the Projects. The regional workforce in Los Angeles County is sufficiently large enough to meet the construction and operation needs, such that worker relocation would be expected to be less than significant. As a result, impacts related to growth inducement would be less than significant.

6.8 REFERENCES

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7.0 MANDATORY FINDINGS OF SIGNIFICANCE

This section addresses the Mandatory Findings of Significance issues identified for Projects 1 – 6.

7.1 a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

As discussed in Section 4.4 Biological Resources, the total biological impacts for the Projects for all criterion are determined to be less than significant. Habitat loss for wildlife in the Antelope Valley would be 987.1 acres. This is a significant habitat loss but it would be mitigated and the mitigation measures B-1 through B-7 would reduce the overall impact to less than significant.

The loss of habitat would be mitigated for by the provision wildlife mitigation lands on a mitigation site selected with Los Angeles County and CDFW in the Antelope Valley. Attempts will be made to obtain mitigation lands that are more valuable for wildlife habitat than the previously disturbed low value habitat being used by the Applicant to develop Projects 1 – 6; otherwise, habitat restoration will be conducted on mitigation lands to elevate the levels of habitat value required of the target species. There would be an overall reduction of open space for wildlife in Antelope Valley, but the long term value and protection of the mitigation lands would compensate for this loss. The plan to maintain low growing vegetation under the solar modules and to plant specialized seed mixes would provide some limited habitat for small mammals, birds, and reptiles in the Antelope Valley.

By providing construction mitigation measures, planting of shrubs around the sites and providing high value wildlife mitigation lands in perpetuity and by planting special seed mixes on the Project 1 – 6 sites where they are viable, the unmitigated impacts are reduced and the environment would receive the maximum possible protection while allowing solar energy to be developed and utilized.

The existing Project lands consist of fallow farmlands, annual and perennial grassland, and saltbrush or rabbitbrush scrub lands which are presently habitat for plants and wildlife. Once developed, these lands would be converted to new habitat types that are tolerant of the altered site conditions within the fenced solar sites, with low growing vegetation underneath and around the modules and trees along the perimeters of some or all of the Projects. This land would be altered for the duration of the 35-year timeframe planned for the Projects.

Mitigation land provided via conservation easements or other suitable deed restrictions would replace the previously disturbed farmlands and scrub lands with better quality or similar habitat for key species such as Swainson’s Hawk and burrowing owls. While the change to the impact sites would be significant, the overall higher quality habitat provided by conservation easements or other suitable deed restrictions would provide a potential net gain in improved viability for the target species resulting in a less than significant impact with mitigations.

7.2 b) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?

The short-term environmental goals of generating clean renewable energy through PV solar electricity generation are met by the Projects (35 years). Long-term environmental goals such as air quality in the Antelope Valley would not be hindered by the Projects. In the short-term there would be temporary creation of dust and some heavy equipment emissions during the construction phases for Projects 1 – 6. Construction for Projects 1 – 6 would be conducted in phases, staggered to reduce short-term emissions. The Projects' construction would be required to comply with Rule 403. Implementing the dust suppression techniques specified in Rule 403 can reduce the fugitive dust generation (and thus the PM_{10} component) by 50 percent or more. Estimates of fugitive dust emissions during construction of the Projects are based on compliance with AVAQMD Rule 403 requirements for fugitive dust suppression. In addition, mowing sites shall be limited to no more than 3.5 acres per day at each of the six Project sites to further reduce dust emissions during construction. Therefore, the short-term construction impacts would be less than significant with mitigation.

During operations, the Projects would not require equipment that emit large amount of air pollutants and vegetation would be established in the array and perimeter areas to minimize dust generation for the long-term goal of air quality in the Antelope Valley. The sources of pollutants would be limited to the limited number of vehicles used by the operations and maintenance staff. Operation impacts for Air Quality would be less than significant.

Long-term environmental goals of maintaining open space, maintaining biological habitats, and protecting sensitive biological species are negatively impacted but are reduced by the biological Mitigation Measures. Specifically the provision for mitigation land provided via conservation easements or other suitable deed restrictions would replace the previously disturbed farmlands and scrub lands with better quality habitat for key species such as Swainson's hawk and burrowing owl. Mitigation measure B-5 would encourage the Projects to meet long-term goals for protecting habitats.

7.3 c) Does the project have possible environmental effects which are individually limited but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

As discussed in Section 3.0 Description of Projects, there are approximately 165,349 total acres of land located within a 5-mile radius of Projects 1 – 6. The proposed Projects would utilize 987.1acres of this total, which is 0.60 percent of the acreage within the 5-mile radius.

There are also approximately 3,458acres of other solar development proposed within the same 5 mile area radius. These proposed solar development acreages plus the acreage of the six proposed Projects represent 2.7 percent of the acreage within the 5-mile radius. All of the solar projects included within the 5-mile radius would generate approximately 1,027 MW of electricity. This is equivalent to slightly less than one half the output of the closest local nuclear power plant, the former output of the now closed San Onofre Nuclear Generating Station in Southern California.

As shown in Figure 3-10 in Section 3.0 Project Description, there are two wind energy projects in the foothills of the San Gabriel Mountains, which if built, would be constructed on approximately 11,208 acres; however, based on communications with the County, these projects have not been approved and at this time would not likely move forward.

The total development in the 5-mile radius is 17,269 acres or 10.44 percent of the acreage; however, without the wind projects currently on hold, it drops to 6,061 acres or 3.66 percent. Since only 2.69 percent of the 5-mile radius acreage is for solar development and all of these acres will be mitigated with Conservation Easements and other environmental mitigation measures the possible environmental effects are not determined to be "Cumulatively Considerable."

7.4 d) Will the environmental effects of the project cause substantial adverse effects on human beings, either directly or indirectly?

Construction and operations of the Projects and its associated gen-tie lines have the potential to result in impacts to humans by contributing negatively to air quality, noise, traffic, public services, and loss of habitat. However, mitigation measures would be implemented to mitigate these impacts to less than significant with the exception of loss of habitat which would be mitigated, but not to a less than significant level. The remaining impacts to habitat would not cause direct or indirect adverse effects on humans.

7.4.1 Air Quality

As shown in Table 4.3-21, short-term concentration levels during the construction phase do not expose sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1. The EPA SCREEN3 model uses conservative assumptions for screening purposes; therefore, actual concentration levels are expected to be less than what was analyzed in this report. Health risk impacts from construction would have a less than significant impact with mitigation. Incorporation of the mitigation measures AQ-1 through AQ-8 would ensure that the Projects would not conflict with or obstruct implementation of the AQMP. Implementing these mitigation measures would reduce emissions below AVAQMD requirements. Air quality impacts would therefore be less than significant after mitigation.

7.4.2 Noise

Noise impacts for the Projects would be limited to construction noise because there is very little operational noise due to solar generating facilities. Additionally, noise generated by construction activities only would occur temporarily between the first quarter of 2014 and the second quarter of 2015. Mitigation measures N-1 through N-9 would be incorporated into the Projects to minimize noise impacts to less than significant levels.

7.4.3 Traffic

Traffic generated during the construction phase of the Projects and gen-tie lines would include construction worker commuter trips, water truck trips, and delivery truck trips. Construction worker commuter trips and delivery truck trips are anticipated to arrive to the Project site outside

of peak hours. It is anticipated that 30 percent of water trucks would arrive to the Project site during the AM peak hour. The Projects would have an average of 75 workers per day and a peak of 100 workers per day over a 20-day period during construction. However, since the Projects are located in rural areas and operate below existing operations, traffic as a result of the Projects' construction would have no significant impact on existing traffic conditions.

During construction of gen-tie lines associated with the Projects, it is anticipated that temporary one-lane road closures would be necessary. Each respective Projects' site would have a Project Traffic Management Plan prepared to address any road and lane closures to the County for approval prior to issuance of the County Grading Permit.

The operational phase of the Projects is anticipated to only generate an average of 4 additional vehicle trips during the AM and PM peak hours on a quarterly or as-needed basis with a maximum of 12 additional vehicle trips, which would only occur when panel washing operations or occasional unforeseen repairs are being conducted. Based on the traffic analysis for the water truck trips described in Section 4.13 Transportation and Traffic, the operational phase vehicle trips are considered negligible.

7.4.4 Public Services

During construction, workers would be temporary and would not be expected to relocated to the Projects' area and are not anticipated to create significant changes to the local population that would increase the level of demand on public services. Operations activities at Projects 1 – 6 would typically be associated with routine maintenance at periodic intervals by a small maintenance crew; and would not generate population growth. These activities would not result in effects to public services.

During construction and operation of the SGFs, the Projects would utilize one of the currently feasible water sourcing options identified in Section 4.14 Utilities and Service Systems. The Projects' water sourcing options include: 1) purchase banked waters; 2) purchase recycled waste water from the City of Lancaster; 3) acquire transferable groundwater rights; 4) purchase other out-of-basin water; and when feasible: 5) adjudication allocation; and 6) on-site wells would be used to extract water that has been imported into the basin. It is expected that no water system capacity problems would be created and no new water systems or expansion of existing facilities would be required.

8.0 PERSONS AND ORGANIZATIONS CONSULTED

8.1 INTRODUCTION

In addition to County of Los Angeles departments (Regional Planning, Public Works, Sherriff, Fire, Parks and Recreation), the regulatory agencies and organizations listed in the following sections were consulted during preparation of the Draft EIR.

8.1.1 Organizations

The following organizations were consulted:

- Desert and Mountain Conservation Authority
- Native American Heritage Commission
- Pacific Gas and Electric Company
- Sierra Club
- Santa Monica Mountains Conservancy
- South Central Coastal Information Center (Cultural Resources)
- Southern California Edison Company
- Community of Antelope Acres Town Council
- Community of Quartz Hill Town Council
- Antelope Valley Association of Rural Town Councils
- Community of Fairmont Town Council
- Community of Oso Town Council

8.1.2 Regional and Local Agencies

The following regional and local agencies were consulted:

- Airport Land Use Commission (ALUC)
- Antelope Valley Air Quality Management District
- City of Lancaster Planning and Development Services
- City of Palmdale Planning Department
- Southern California Association of Governments

8.1.3 State Agencies

The following state agencies were consulted:

- California Department of Conservation
- California Department of Fish and Wildlife
- California Department of Transportation (Caltrans)
- Lahontan Regional Water Quality Control Board
- State Department of Parks and Recreation (including Antelope Valley California Poppy Reserve and Arthur B. Ripley Desert Woodland State Park)

8.1.4 Federal Agencies

The following federal agencies were consulted:

- Historic Preservation Office
- U.S. Fish and Wildlife Service

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